



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

December 1, 2016

The Honorable David Long
President Pro Tempore
Indiana State Senate
200 W. Washington Street
Indianapolis, IN 46204

Dear President Pro Tempore David Long:

2016 SEA 255 amended IC 13-23-7-7 and added a provision that requires the Indiana Department of Environmental Management (IDEM) to arrange for an independent actuarial study examining the future obligations and fiscal sustainability of the Excess Liability Trust Fund (ELTF) once every five (5) years. IC 13-23-7-7(b). As you know, the ELTF is a dedicated state trust fund that serves as a financial responsibility mechanism for Underground Storage Tank (UST) owners and operators. In FY 2016, the ELTF paid over \$33 million in claims to UST owners, operators and assignees for corrective action and third party liability claims. Analyzing, reorganizing and improving IDEM's ELTF Program has been one of my focuses since becoming Commissioner last year.

IDEM retained Milliman Inc. to conduct the actuarial study described in IC 13-23-7-7(b). We are attaching a copy of Milliman's report. As you can see, while the ELTF is stable under current conditions, small changes to projected revenues, costs, or claims payments could seriously impact the ELTF's financial viability in the future.

In addition to retaining Milliman, IDEM retained Pinnacle Actuarial Resources, Inc., and its subcontractor, R&A Risk Professionals, to conduct a performance review of IDEM's ELTF Program. The purpose of this review was to help the ELTF Program improve accuracy and efficiency, and better identify and prevent fraud, waste and abuse. As more fully described in the report, R&A interviewed IDEM employees, met with environmental consultants and UST owners and operators, and reviewed documentation and data related to ELTF claim submissions and approvals. The R&A report is also attached.

As noted above, improving the manner in which the ELTF Program receives, processes, and pays claims has been one of my primary focuses since becoming Commissioner, and we have already made several improvements. The following is a summary of our accomplishments to date.

Creation of New Deputy Assistant Commissioner Position. The ELTF Program is part of IDEM's Office of Land Quality (OLQ). OLQ is IDEM's largest Office and has many environmental management responsibilities, including solid waste, hazardous waste, inspections, remediation, compliance, enforcement, permits, emergency response, science services, underground storage tanks (USTs) and ELTF Claims. In the past, OLQ has been led by an Assistant Commissioner and a single Deputy Assistant Commissioner (DAC). We created a second DAC position to focus on three of OLQ's branches: USTs (which includes the ELTF Program), Science Services, and Emergency Response. While our consultants were working on

their reports, I directed the new DAC to conduct a thorough internal review of all UST Branch operations with a particular focus on the ELTF Program.

UST Branch Reorganization—Effective October 2016. Following the review described above, I approved a plan to reorganize the UST Branch. In the past, we had one group of project managers dedicated only to leaking underground storage tank (LUST) sites in the ELTF Program (the ELTF Technical Section) and another group of project managers responsible for LUST sites that were not in the ELTF Program (the LUST Section). This led to inefficiency and inconsistency, so we merged the two sections in order to standardize LUST project management and oversight.

LUST Technical Support—Consistency Improvements. We have also focused on standardizing the project management process for LUST corrective action sites to ensure technical consistency across project management staff. In the past, project managers were not consistently requesting technical review from IDEM's Science Services Branch. Some project managers with a geology or chemistry background were substituting their own technical determinations in lieu of utilizing IDEM's OLQ's Science Services Branch staff. That practice resulted in an inconsistent application of remediation closure guidance to LUST corrective action projects. To increase consistency, we now require all project managers to use IDEM's Science Services Branch for technical review.

ELTF Rulemaking—Implementation of SEA 255. IDEM initiated a rulemaking (LSA# 15-231) to incorporate changes to the existing ELTF rule (328 IAC 1). We are in the process of drafting a Second Notice of Rulemaking which we expect to publish in early 2017. The new rule will remove obsolete language concerning ELTF eligibility and clarify requirements for ELTF claims. We have also modified relevant ELTF claims forms. These changes were necessary due to recent amendments to the ELTF statutes. They will streamline and simplify the process of making and processing ELTF Claims.

ELTF NPD—Labor Rates Clarification. Over the years, some ELTF applicants began providing less information to support claims for reimbursement of labor costs. In response, the agency denied some of these costs and requested additional information upon resubmittal. This resulted in longer review times, more denials and increased administrative costs for applicants. In order to resolve these issues, the agency drafted a non-rule policy document to clarify documentation requirements for ELTF applicants. The policy went into effect on September 15, 2016, and we are optimistic that it will help applicants submit complete, correct claims information, resulting in fewer denials and greater efficiency.

ELTF Eligibility and Claim Process Changes. We made numerous changes to the processes and policies by which we determine who is eligible for ELTF reimbursement, and how claims will be processed.

- **Eligibility Determinations.** We changed the eligibility determination process to provide applicants an opportunity to review a preliminary eligibility decision. This process increases transparency and gives the parties an opportunity to resolve disputes informally before a mandatory appeal requirement is triggered.
- **Assessment of Closure Status for LUST Sites Reimbursed Greater than \$1 Million.** IDEM has initiated review of outstanding LUST sites for which the ELTF has reimbursed

applicants in excess of the federally required financial assurance minimum of \$1 million dollars. For such sites, we now require LUST project managers to provide management a summary of the site's status and closure options for review and input.

- Credentialing Documentation for Senior Project Manager Staff Classification. In the past, IDEM has requested, for every site, proof of credentials for environmental consultants whose work is the basis of an ELTF claim. We are finalizing a system by which applicants can submit their consultants' credentials to the agency just once, rather than for each individual ELTF Claim. This process change reduced red tape for both the applicant and the agency.
- "Total Amount Reimbursed" Detail. This line item was added to claims decision letters, and it details the amount of costs reimbursed by the ELTF for the site to date. This information provides transparency and allows both IDEM and the responsible party to quickly assess the total cost of state-funded remediation.
- Reduction of Resubmittal Documentation and Administrative Denials. IDEM's focus has been to minimize denials by evaluating and changing the administrative denial and cost review process. ELTF Claims staff members are now directed to follow up with applicants and give them an opportunity to supplement their submissions as needed to process the claim rather than issuing a denial determination. The process changes result in fewer resubmittals, reducing the workload and claims processing costs for both applicants and IDEM.
- Process Review to Increase Claims Reviewer Consistency. We evaluated the ELTF claims review process in order to ensure consistency among claims reviewers. This process review resulted in the development of new workflows and decision trackers to assist claims reviewers in making decisions consistent with policy from IDEM senior management.
- Development of preapproval process for remediation conducted under an approved CAP. We are increasing our focus on preapproval of remediation costs for ELTF sites. This will allow for quicker review of claims and faster payment, and it will provide owners and operators more certainty with regard to reimbursement for work performed. Developing this preapproval process will also assist IDEM and responsible parties in controlling the costs of state-funded corrective action by ensuring that work completed is both necessary and reimbursable.
- Claim Decision Letters Mailing. We changed our process for issuing ELTF decision letters. In the past, the agency withheld those letters while payments were processed, creating unnecessary delay. Going forward, IDEM will issue decision letters as soon as our accounting department approves payment. This change will reduce paperwork and provide earlier notice to applicants.
- Review and Analysis of Other State Managed UST Funds. IDEM staff are reviewing and assessing database and claim processing systems used in other states that manage funds similar to the ELTF. This includes a comprehensive review of other states' cost guidelines and reimbursement procedures. Where we find best practices, we will incorporate them into our ELTF Program.

All of the changes described above have improved the timeliness and efficiency of the ELTF Program. However, we still have room to improve, and the reports from Milliman and R&A will help us formulate a plan for future improvements. Improving the ELTF Program will continue to be one of IDEM's top priorities in 2017.

Sincerely,

A handwritten signature in black ink, appearing to read "Carol S. Comer", followed by a horizontal line extending to the right.

Carol Comer, Commissioner
Indiana Department of Environmental Management

Enclosures

**EXCESS LIABILITY TRUST FUND
ACTUARIAL ANALYSIS
AS OF 6/30/16**

Prepared for: Indiana Department of Environmental Management

Date: November 29, 2016



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I. BACKGROUND

The Indiana Department of Environmental Management ("IDEM") is responsible for administering the Excess Liability Trust Fund ("ELTF"), which was established by the Indiana Legislature in 1988 to assist owners and operators of regulated underground storage tanks ("USTs"). The ELTF provides a source of money to satisfy obligations for corrective action and third party damages caused by leaking USTs. The ELTF's primary source of funds is an inspection fee corresponding to \$0.01 per gallon of fuel sold or used for motor vehicles in Indiana.

IDEM maintains data on 4,212 facilities with active tanks and 13,425 regulated tanks that are not permanently out of service (or closed). The following table provides a breakdown by age of tank.

Table 1		
Indiana Department of Environmental Management ("IDEM") Excess Liability Trust Fund Distribution of Tanks by Age		
	(1)	(2)
Age in Years	No. of Tanks	Percent of Total
0 to 10	1,928	14.4%
10 to 20	3,645	27.2%
20 to 30	4,780	35.6%
Greater than 30*	3,072	22.9%
Total	13,425	100.0%
* Includes tanks with unknown ages		

Prior to 7/1/16, UST owners and operators had to demonstrate compliance with financial responsibility requirements in order to be eligible to be covered by the ELTF. To determine whether an occurrence was eligible for reimbursement, an ELTF applicant had to have a confirmed release that resulted from a release of product from a registered UST system and dispensing components, submit an initial Site Characterization Report, submit an ELTF eligibility request, and be in substantial compliance at the time the release was first discovered. In order to receive reimbursement from the ELTF, an applicant had to receive technical approvals from IDEM and submit ELTF claims for costs incurred. A deductible was applied to submitted costs, ranging from \$20,000 to \$35,000, depending on technical characteristics of the UST system.

New legislation covering releases reported after 7/1/16 made several significant changes to the ELTF, including:

- Eliminating the standard of "substantial compliance" as a component of eligibility.
- Standardizing the deductible at \$15,000. Reimbursement will also be reduced by the total amount of unpaid annual fees due, plus an additional amount of \$1,000 for each annual fee that was not paid in the year it was originally due.
- Increasing the total amount that may be reimbursed per eligible release from \$2 million to \$2.5 million.
- Increasing the annual cap on payments to an eligible party from \$2 million (\$3 million for entities with more than 100 tanks) to \$10 million (regardless of the number of tanks).

The following table summarizes the financial results of the ELTF over the past five fiscal years, where fiscal year 2012 is the period 7/1/11 to 6/30/12.

Table 2 Indiana Department of Environmental Management Excess Liability Trust Fund Financial Summary, Fiscal Years 2012 to 2016 Amounts In \$000's					
	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014	Fiscal Year 2015	Fiscal Year 2016
Beginning Fund Balance	64,012	77,839	81,028	88,774	101,616
Claims Paid	33,322	38,546	37,776	34,441	33,127
Revenue:					
Inspection Fee	49,237	46,242	51,203	51,025	50,282
Interest	56	106	91	172	320
Other Revenue	2,822	206	1,176	351	1,085
Total Revenue	52,116	46,554	52,470	51,549	51,687
Expenses:					
Personal Services	2,054	2,103	2,420	2,635	2,532
Other Expenses	2,912	2,716	3,028	130	679
Total Expenses	4,966	4,819	5,448	2,765	3,211
Transfer to IFA	0	0	1,500	1,500	1,455
Ending Fund Balance	77,839	81,028	88,774	101,616	115,510
Cap Pending Obligation	21,132	21,958	23,833	24,786	24,698
Net Fund Balance	56,707	59,070	64,941	76,830	90,813

“Transfer to IFA” refers to amounts that have been transferred to the Indiana Financial Authority in order to assist with the cleanup of UST contamination at sites for which there is no viable responsible party.

The “Cap Pending Obligation” refers to amounts that have been approved for payment, but the funds have been held back due to the annual cap on payments to a single entity. The obligation as of 6/30/16 was \$24.7 million and the full amount relates to a single entity.

II. SCOPE AND INTENDED PURPOSE

A. Scope of Project

IDEM retained Milliman, Inc. ("Milliman") to provide an overall assessment of the financial viability of the ELTF. Specifically, the scope of our analysis includes the following:

- An independent, actuarial estimate of the ELTF's net liability for unpaid claim amounts on releases reported as of 6/30/16. This liability corresponds to estimated claim payments to be made in fiscal years 2017 and subsequent for releases that have been reported as of 6/30/16. In conjunction with this estimate, we provide various statistics, such as the average cost per release. We also estimate the current portion (due within one year) of the unpaid claim liability, and provide an estimate of the payout of the liability by fiscal year.
- Pro forma financial summaries illustrating the performance of the ELTF over a ten-year period (fiscal years 2017 to 2026) under a set of baseline assumptions and a set of adverse assumptions. Estimates for releases reported in the pro forma period reflect the legislative changes effective 7/1/16.

B. Intended Purpose

The intended purpose of this report is to provide IDEM with liability and funding estimates for financial analysis and budgeting purposes.

III. DISCLOSURES AND LIMITATIONS

A. Disclosures

1. Basis of Presentation

Our estimates are intended as measurements of expected value over a range of reasonably possible outcomes. Such an estimate is known as an “actuarial central estimate” and is conceptually similar to a mean. Since the range of reasonably possible outcomes may not include all conceivable outcomes, an actuarial central estimate is not technically a true statistical mean. For example, the range of reasonably possible outcomes may exclude conceivable extreme events whose contribution to the true statistical mean is not reliably estimable.

In addition, please note the following regarding our estimates:

- Estimates are provided both gross and net of deductibles and other adjustments based on eligibility;
- Our estimates are presented on an undiscounted basis with regard to the time value of money, and do not include an explicit risk margin; and
- Our estimates do not include provisions for IDEM’s internal costs associated with the program, such as claims administration expenses, except to the extent those costs are charged to the ELTF and are included in the financial summary expense categories, as shown in Table 2.

2. Terminology

Loss Adjustment Expenses (“LAE”). For property and casualty insurance programs, LAE are generally classified as allocated loss adjustment expenses (“ALAE”) and unallocated loss adjustment expenses (“ULAE”), where ALAE includes claims settlement costs directly assigned to specific claims, such as legal fees, and ULAE includes other claims administration expenses. IDEM’s claim payment data does not

distinguish between loss and loss adjustment expenses. Our unpaid claim liability estimates include LAE to the extent it is included in the claim payment data. The ELTF financial summary shown in Table 2 also includes LAE and other operational expenses to the extent they are charged to the ELTF.

3. Acknowledgment of Qualifications

Timothy J. Cremin is a Consulting Actuary with Milliman, a Fellow of the Casualty Actuarial Society, and a Member of the American Academy of Actuaries. Tim meets the qualification standards of the American Academy of Actuaries to provide the estimates in this report.

4. Other Disclosures

This is the first time an actuarial analysis of the ELTF has been performed. We understand that legislation effective 7/1/16 calls for future actuarial analyses to be performed every five years.

B. Limitations on Distribution and Use of Name

Milliman's work is prepared solely for the use and benefit of IDEM in accordance with its statutory and regulatory requirements. Milliman recognizes that materials it delivers to IDEM may be public records subject to disclosure to third parties. However, Milliman does not intend to benefit and assumes no duty or liability to any third parties who receive Milliman's work and may include disclaimer language on its work product so stating. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, IDEM agrees that it shall not disclose Milliman's work product to third parties without Milliman's prior written consent; provided, however, that IDEM may distribute Milliman's work to (i) its professional service providers who are subject to a duty of confidentiality and who agree to not use Milliman's work product for any purpose

other than to provide services to IDEM, or (ii) any applicable regulatory or governmental agency, as required.

Any reader of this report agrees not to use Milliman's name, trademarks or service marks, or to refer to Milliman directly or indirectly in any third party communication without Milliman's prior written consent for each such use or release, which consent shall be given in Milliman's sole discretion.

C. General Limitations

1. Reliance on Data

In performing this analysis, we relied on data and other information provided by IDEM. We have not audited or verified this data and information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete. In that event, the results of our analysis may not be suitable for the intended purpose.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

2. Uncertainty

Actuarial estimates are subject to uncertainty from various sources, including changes in claim reporting patterns and claim handling practices, legislative changes, economic conditions, etc. In particular, legislative changes effective 7/1/16 create significant uncertainty regarding the future financial results of the ELTF relative to historical

patterns and results. In performing our analysis, we used paid claim data on a gross basis with respect to deductibles and eligibility adjustments, then factored these items in separately to reflect the pre- and post-7/1/16 legislative bases, as appropriate.

In preparing these actuarial estimates, it is necessary to project future claim payments. Actual future payments will not develop exactly as projected and may, in fact, vary significantly from the estimates. Further, the estimates make no provision for future emergence of new classes or types of payments that are not sufficiently represented in the historical database or that are not yet quantifiable.

Our estimates are presented on a going concern basis. That is, we have not anticipated any changes in claim reporting patterns, claim payment patterns, claim handling practices, or claim costs that might occur if the ELTF were to cease operating as a going concern.

3. Variability of Results

Our actuarial central estimates are intended to approximate the expected value of an inherently variable process. Actual loss experience in any given year may differ from our estimates.

We considered the sensitivity of our estimates to key variables and assumptions in the analysis. Key variables and assumptions include (but are not limited to) paid loss development factors (especially "tail" factors), release count development factors, and trend factors. It is possible that reasonable alternative selections would produce materially different estimates.

The operating results contemplated by the pro forma financial summaries in this report are based in part on certain assumptions regarding future revenue, claim payments, and other items. Actual results of operations may be substantially different than those projected. The uncertainty of the pro formas increases with the time horizon.

4. Knowledge of Audience

Milliman strongly recommends that any reader who does not have actuarial expertise, and therefore may not fully recognize the uncertainties involved in these estimates, seek their own actuarial advice on our report. We are available to discuss the report with interested parties whose requests are approved by IDEM under acceptable terms and conditions.

IV. SUMMARY OF FINDINGS

A. Estimated Net Unpaid Claim Liability as of 6/30/16

Our actuarial central estimate of the net liability for unpaid claim amounts on releases reported as of 6/30/16 is \$435 million—see Exhibit 1. This figure represents claim payments that will be made in fiscal years 2017 and subsequent for releases that have been reported as of 6/30/16. The claim payments are expected to be made over a long period of time (approximately 30 years or more). We note, for example, that payments are still being made on releases that were first reported in fiscal year 1989. The current portion of the unpaid claim liability (i.e., the amount expected to be paid within one year) is estimated to be \$38.4 million. The following table provides the expected payout of the liability by year.

Table 3 Estimated Payout of the Net Unpaid Claim Liability as of 6/30/16 (\$000's)												
Fiscal Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027 and Subsequent	Total
Incremental Payout	38,399	37,990	36,184	33,346	29,611	26,628	24,319	22,233	20,063	18,677	147,657	435,106
Cumulative Payout	38,399	76,389	112,572	145,918	175,529	202,158	226,476	248,709	268,772	287,449	435,106	
Percent of Total Liability	8.8%	8.7%	8.3%	7.7%	6.8%	6.1%	5.6%	5.1%	4.6%	4.3%	33.9%	100.0%
Cumulative Percent	8.8%	17.6%	25.9%	33.5%	40.3%	46.5%	52.1%	57.2%	61.8%	66.1%	100.0%	

We note that the net unpaid claim liability estimate reflects deductibles and eligibility adjustments that applied to claims for releases reported prior to 7/1/16, and does not include the Cap Pending Obligation, which is treated as a separate liability. Also, the unpaid claim liability estimate has not been discounted for the time value of money.

As discussed, the estimates above are subject to significant uncertainty and variability due to the nature of UST releases, legislative changes, the timing of release notifications and cost reimbursement requests, etc. For example, sensitivity tests of one key parameter used in the analysis indicate that the liability would be 20% higher or

14% lower by selecting reasonable alternative indications for this parameter based on different curve fits (as shown in Appendix A). This parameter is known as the “paid tail development factor,” and it is used to estimate the development (growth) of paid claim amounts beyond the time frame encompassed by the historical data. It is important to note that this range is based on varying a single parameter and therefore it reflects a narrower range than the range of possible outcomes. Therefore, it is possible for actual results to fall outside this range, perhaps significantly.

B. Pro Forma Financial Summaries

The following table summarizes the projected financial performance of the ELTF over a ten-year period, using the following baseline assumptions:

- Revenue:
 - A constant inspection fee of \$0.01 per gallon of fuel and a 1% annual increase in fuel volume subject to the fee. The 1% annual increase in fuel volume is based on the assumption of continued moderate economic growth, relatively stable fuel prices and fuel economy (mileage), etc. Reasonable alternative selections could produce materially different results.
 - Annual interest based on 0.3% of the beginning fund balance. The 0.3% assumption is based on the interest earned in fiscal year 2016 (results are not overly sensitive to this assumption).
 - Other revenue increasing 1% per year, in line with the inspection fee (results are not overly sensitive to this assumption).
- Expenses:
 - A 1% annual increase in personal expenses and other expenses, in line with the increase in the inspection fee (results are not overly sensitive to this assumption).
- The Cap Pending Obligation is expected to decline in fiscal year 2017 by the maximum payment to the capped entity in a single year (\$10 million), less the expected amount of approved claim payments for the capped entity in fiscal year 2017 (\$4.2 million, based on the average of recent fiscal years). Subsequent years are calculated in a similar manner until the obligation is reduced to \$0. Note that the net reduction in the Cap Pending Obligation represents payments made from the ELTF in addition to the claims paid.

- The ultimate value of new releases is from Exhibit 5, where the number of releases per year is assumed to remain flat and the average cost per release increases by 2.5% per year.
- Claims paid amounts are based on the payout of the liability per Table 3, plus claims paid for new releases reported in fiscal years 2017 to 2026.

	Actual 2014	Actual 2015	Actual 2016	Projected: 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beginning Gross Fund Balance	81,028	88,774	101,616	115,510	118,682	121,875	124,276	126,663	132,731	139,550	145,042	149,473	152,788
Claims Paid	37,776	34,441	33,127	38,535	39,010	40,302	40,820	41,835	43,197	45,057	46,650	48,301	50,034
Revenue:													
Inspection Fee	51,203	51,025	50,282	50,784	51,292	51,805	52,323	52,846	53,375	53,909	54,448	54,992	55,542
Interest	91	172	320	347	356	366	373	380	398	419	435	448	458
Other Revenue	1,176	351	1,085	1,096	1,107	1,118	1,129	1,140	1,152	1,163	1,175	1,187	1,198
Total Revenue	52,470	51,549	51,687	52,227	52,755	53,289	53,825	54,367	54,925	55,490	56,058	56,627	57,199
Expenses:													
Personal Services	2,420	2,635	2,532	2,557	2,582	2,608	2,634	2,661	2,687	2,714	2,741	2,769	2,796
Other Expenses	3,028	130	679	686	693	700	707	714	721	728	736	743	750
Total Expenses	5,448	2,765	3,211	3,243	3,275	3,308	3,341	3,375	3,408	3,442	3,477	3,512	3,547
Transfer to IFA	1,500	1,500	1,455	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Net Reduction in Cap Pending Obligation				5,777	5,777	5,777	5,777	1,588	0	0	0	0	0
Gross Fund Balance	88,774	101,616	115,510	118,682	121,875	124,276	126,663	132,731	139,550	145,042	149,473	152,788	154,906
Cap Pending Obligation	23,833	24,786	24,698	18,920	13,143	7,366	1,588	0	0	0	0	0	0
Net Fund Balance	64,941	76,830	90,813	99,762	108,732	116,911	125,075	132,731	139,550	145,042	149,473	152,788	154,906
Ultimate Value of New Releases				28,405	29,136	29,885	30,653	31,440	32,246	33,073	33,920	34,789	35,679
Unpaid Net Claim Liability			435,106	424,976	415,102	404,686	394,518	384,122	373,171	361,187	348,458	334,946	320,582

The pro forma results are sensitive to certain key assumptions and parameters. Table 5 illustrates an Adverse Case pro forma, where certain baseline assumptions have been altered:

- Fuel volume subject to the inspection fee decreases by 1% per year (for example, due to factors such as lower economic growth, higher fuel prices, improved fuel economy (mileage), greater use of electric vehicles, etc.).
- A higher paid tail development factor is used. As mentioned, the liability as of 6/30/16 is sensitive to this parameter, which is used to estimate the development (growth) of paid claim amounts beyond the time period encompassed by the historical data. Appendix A includes an analysis of this parameter based on different curve fits. Using a curve fit that produces a higher factor increases the liability as of 6/30/16 by 20% and the expected cost per release for fiscal year 2017 by approximately 8% (see Adverse Case exhibits in Appendix B).
- The number of new releases reported in fiscal years 2017 to 2026 increases by 5% per year (see Exhibit 5 in Appendix B). This assumption accounts for the

possibility of an increasing trend in the number of reported releases, due to legislative changes (e.g., elimination of the "substantial compliance" standard), aging and deterioration of the current tank population, etc.

	Actual 2014	Actual 2015	Actual 2016	Projected: 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beginning Gross Fund Balance	81,028	88,774	101,616	115,510	108,842	101,092	91,744	81,790	74,430	65,763	53,856	38,647	19,931
Claims Paid	37,776	34,441	33,127	47,370	47,911	48,973	49,040	50,100	52,473	55,191	57,965	60,940	64,577
Revenue:													
Inspection Fee	51,203	51,025	50,282	49,779	49,281	48,788	48,300	47,817	47,339	46,866	46,397	45,933	45,474
Interest	91	172	320	347	327	303	275	245	223	197	162	116	60
Other Revenue	1,176	351	1,085	1,086	1,107	1,118	1,129	1,140	1,152	1,163	1,175	1,187	1,198
Total Revenue	52,470	51,549	51,687	51,221	50,714	50,209	49,704	49,203	48,714	48,226	47,733	47,236	46,732
Expenses:													
Personal Services	2,420	2,635	2,532	2,557	2,582	2,608	2,634	2,661	2,687	2,714	2,741	2,769	2,796
Other Expenses	3,028	130	679	686	693	700	707	714	721	728	736	743	750
Total Expenses	5,448	2,765	3,211	3,243	3,275	3,308	3,341	3,375	3,408	3,442	3,477	3,512	3,547
Transfer to IFA	1,500	1,500	1,455	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Net Reduction in Cap Pending Obligation				5,777	5,777	5,777	5,777	1,588	0	0	0	0	0
Gross Fund Balance	88,774	101,616	115,510	108,842	101,092	91,744	81,790	74,430	65,763	53,856	38,647	19,931	(2,961)
Cap Pending Obligation	23,833	24,786	24,698	18,920	13,143	7,366	1,588	0	0	0	0	0	0
Net Fund Balance	64,941	76,830	90,813	89,921	87,949	84,378	80,201	74,430	65,763	53,856	38,647	19,931	(2,961)
Ultimate Value of New Releases				30,839	33,212	35,767	38,518	41,480	44,669	48,103	51,800	55,780	60,065
Unpaid Net Claim Liability			521,981	505,450	490,751	477,546	467,024	458,404	450,601	443,513	437,348	432,187	427,676

We note that, under these conditions, the fund balance becomes negative in fiscal year 2026.

It is important to note that this Adverse Case pro forma is based on reasonable alternative assumptions and is not meant to illustrate a worst case scenario.

V. ANALYSIS

A. Data and Information

We relied on data and information provided by IDEM, which included the following:

1. Claim Data – IDEM maintains a database of information regarding releases for which eligibility requests and cost reimbursement claims have been received. We refer to this database as the “Claim Data.” When a release is reported, IDEM assigns the release an Incident Number, which indicates the year and month the release was reported. We assigned each release and its associated claim amounts to a fiscal year based on its Incident Number. The Claim Data was compiled following the end of fiscal year 2016 (6/30/16). The Claim Data includes information about the dates and amounts of cost reimbursement claims, applicable deductibles and other adjustments, and the date that payment authorization was issued, which we took to be an approximation for the date of payment.
2. UST Release Data – A listing of all releases reported in fiscal years 2016 and prior, indicating report year and month, as well as Disposition (Active, Deactivated, No Further Action, Referred to Another IDEM Program, etc.) for each release.
3. Financial Summaries by Fiscal Year – These summaries show the ELTF balance at the beginning and end of each fiscal year, along with amounts paid or received during the fiscal year, including claim payments made, inspection fees received, etc.
4. Background Information – IDEM provided background information regarding the operation of the ELTF, legislative changes effective 7/1/16, etc.

B. Methodology

Our methodology consists of the following steps:

1. Estimated Ultimate Number of Releases by Fiscal Year
2. Estimated Ultimate Amounts by Fiscal Year Incurred
3. Estimated Unpaid Claim Liability as of 6/30/16
4. Estimated Ultimate Amounts for Fiscal Years 2017 to 2026

1. Estimated Ultimate Number of Releases by Fiscal Year

Each record in the Claim Data has an Incident Number that encodes the year and month the release was first reported. We used the Incident Number to assign each release to a fiscal year. The Claim Data only includes releases for which an eligibility request has been received, and therefore the number of releases for a given fiscal year grows over time (eligibility requests for previously reported releases are not received for several years, in some cases). To estimate the ultimate number of releases for each fiscal year, we analyze the historical growth patterns of each fiscal year, using the earliest claim "Received Date" to determine the point in time when each release gets counted.

Appendix A includes the release count data triangle that exhibits the growth pattern of each fiscal year, and our analysis of those patterns. Based on this data, we derived a development pattern that we used to estimate the ultimate number of releases (see Exhibit 4).

We note that, in addition to the 2,988 releases included in the Claim Data, there are over 7,000 additional releases that have been reported for which no eligibility requests have ever been made. IDEM provided us with a listing of these releases as well. The data record for each release includes a "Disposition" field which indicates additional information about the release:

- “Active” means that action with regard to the release has not been finalized.
- “Deactivated” means a suspected release was reported but it was subsequently determined that no release occurred.
- “No Further Action” means corrective action has been completed and the incident is considered closed.
- “Referred to Another IDEM Program” means a different program is handling the cleanup and the ELTF is not expected to bear any additional costs.

Out of 7,222 releases in fiscal years 1988 to 2016 for which no eligibility requests have been made, 702 had the “Active” designation. We used these Active release counts as an indication of the potential magnitude by which the Claim Data release counts could develop (see Exhibit 4). In total, we are estimating that 259 of these Active releases will eventually result in claim payments by ELTF.

2. Estimated Ultimate Amounts by Fiscal Year Incurred

In Appendix A, we also display a data triangle of payments, similar to the data triangle of release counts. We used the “Amt Approved” field in the Claim Data to compile the paid data triangle. This field includes the total amount approved for the submitted claims regardless of deductible or percent eligibility. Thus, the paid amounts in the data triangle are on a “gross” basis with respect to deductibles and eligibility adjustments, so that these items can be factored in separately to reflect the pre- and post-7/1/16 legislative bases, as appropriate.

Based on this data, we derived a development pattern that we used to estimate the ultimate amounts paid for each fiscal year’s releases (see Exhibit 3). In analyzing the paid data in Appendix A, we note that the earliest years of the ELTF’s operation tended to produce higher development factors than more recent years. We expect the more recent years’ development patterns to be more representative of future development, and so we have excluded development factors for the earliest years. We also relied on curve fits to extend the development patterns beyond the period included in the historical data. In some cases, we also used the curve fits to smooth the observed development patterns.

We then use the results of Exhibit 3 and Exhibit 4 on Exhibit 2, where we calculate an average amount per release, and select an annual trend factor to put each fiscal year on a fiscal year 2016 cost basis. Based on the trended average amount per release for each fiscal year, we select an expected amount per release for 2016, and de-trend that value to older fiscal years. Multiplying the number of releases by the expected amount per release produces an expected ultimate amount incurred for each fiscal year. We then use that result on Exhibit 1 to estimate the unpaid claim liability.

We also adjust the estimates on Exhibit 1 to account for deductibles and eligibility adjustments that were made on releases reported prior to the new legislation effective 7/1/16. In particular, we reviewed the ratio of payments net of deductibles and eligibility adjustments (per the "Amt Reimbursed" field) to the ratio of gross payments (per the "Amt Approved" field). For the more mature fiscal years, where this ratio is expected to be at or near its ultimate value, the ratio generally reaches approximately 0.9. We selected 0.9 as the ultimate value of this ratio for all fiscal years.

3. Estimated Unpaid Claim Liability as of 6/30/16

We estimated the liability for unpaid claim amounts on releases reported as of 6/30/16 by subtracting net amounts paid as of 6/30/16 from estimated net ultimate amounts. We note that amounts related to the Cap Pending Obligation are actually included as payments in the data and therefore the Cap Pending Obligation should be considered as a separate liability in addition to the unpaid claim liability.

4. Estimated Ultimate Amounts for Fiscal Years 2017 to 2026

Note that we are considering the unpaid claim liability to include unpaid amounts for releases reported as of 6/30/16. Releases reported after 6/30/16 are considered to be incurred in the fiscal year in which they are reported. On Exhibit 5, we estimate the gross and net amounts expected to be incurred in each fiscal year, 2017 to 2026. We selected the number of releases for fiscal year 2017 on Exhibit 4. Also, based on recent history, we are estimating no trend in the number of releases per year (however, in the

Adverse Case, we increase the number of releases by 5% per year). The average cost per release for 2017 is based on the selected value for 2016 on Exhibit 2, and an increase in the average cost of 2.5% per year. We also factor in the standard \$15,000 deductible per release that applies to releases reported after 7/1/16. Reimbursement reductions due to unpaid annual fees are not expected to be material and were not factored into the analysis.

VI. EXHIBITS

<u>Exhibit Number</u>	<u>Description</u>
1	Estimated Unpaid Claim Liability as of 6/30/16
2	Expected Ultimate Amounts by Fiscal Year Incurred
3	Paid Development Method
4	Release Count Development Method
5	Estimated Ultimate Amounts for Future Reported Releases

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Estimated Unpaid Claim Liability as of 6/30/16

Fiscal Year	(1) Expected Gross Ultimate Payments	(2) Paid Development Factor	(3) Expected Unpaid Factor 1 - 1/(2)	(4) Expected Unpaid Amount	(5) Gross Paid as of 06/30/16	(6) Gross Ultimate as of 06/30/16 (4) + (5)	(7) Net Paid as of 06/30/16	(8) Net/Gross Ratio (7) / (5)	(9) Selected Ultimate Net/Gross Ratio	(10) Selected Net Ultimate (6) x (9)	(11) Estimated Net Unpaid Release Liability (10) - (7)
1988	1,568,211	1.129	0.114	178,042	0	178,042	0	1.000	0.000	0	0
1989	9,050,607	1.141	0.124	1,121,348	7,292,528	8,413,876	6,771,538	0.929	0.900	7,572,488	800,951
1990	39,563,130	1.155	0.134	5,312,779	38,871,019	44,183,798	35,134,513	0.904	0.900	39,765,418	4,630,505
1991	58,451,115	1.170	0.145	8,498,556	50,020,312	58,518,868	45,037,616	0.900	0.900	52,666,981	7,629,365
1992	52,745,838	1.188	0.158	8,335,191	42,748,665	51,083,856	38,077,472	0.891	0.900	45,875,471	7,897,999
1993	39,666,877	1.207	0.171	6,794,341	31,124,519	37,918,860	27,982,269	0.899	0.900	34,126,974	6,144,706
1994	48,187,910	1.227	0.185	8,921,397	42,387,669	51,309,066	38,302,711	0.904	0.900	46,178,160	7,875,449
1995	53,714,461	1.251	0.200	10,760,592	35,962,169	46,742,861	31,708,690	0.881	0.900	42,068,575	10,359,885
1996	38,919,831	1.277	0.217	8,437,003	24,426,382	32,863,385	21,463,277	0.879	0.900	29,577,046	8,113,770
1997	49,947,117	1.306	0.234	11,707,009	49,759,975	61,466,984	44,195,885	0.888	0.900	55,320,286	11,124,400
1998	57,179,719	1.339	0.253	14,469,988	59,888,962	74,358,950	53,560,645	0.894	0.900	66,823,056	13,362,410
1999	71,217,007	1.376	0.273	19,471,170	57,090,288	76,561,458	50,910,119	0.892	0.900	68,905,312	17,995,193
2000	43,309,482	1.419	0.295	12,787,266	38,144,927	50,932,195	32,706,708	0.857	0.900	45,838,976	13,130,268
2001	41,170,203	1.467	0.318	13,109,696	34,822,087	47,931,783	29,884,388	0.858	0.900	43,138,605	13,254,218
2002	41,832,506	1.523	0.343	14,364,380	37,176,083	51,540,463	32,581,847	0.876	0.900	46,386,417	13,804,570
2003	36,484,183	1.588	0.370	13,515,534	31,933,395	45,448,929	28,477,583	0.892	0.900	40,904,036	12,426,453
2004	35,854,173	1.665	0.399	14,315,980	19,014,552	33,330,532	16,159,350	0.850	0.900	29,897,479	13,838,128
2005	40,307,030	1.756	0.431	17,356,227	25,006,863	42,363,090	21,107,258	0.844	0.900	36,126,781	17,019,523
2006	51,845,905	1.865	0.464	24,048,322	25,338,559	49,386,881	21,153,262	0.835	0.900	44,448,193	23,294,931
2007	49,405,502	2.009	0.502	24,810,198	20,262,112	45,072,310	16,234,278	0.801	0.900	40,565,079	24,330,801
2008	48,512,882	2.194	0.544	26,366,641	15,747,328	42,143,969	13,344,546	0.847	0.900	37,929,572	24,585,026
2009	44,035,229	2.501	0.600	26,437,625	13,509,335	39,946,960	11,641,510	0.862	0.900	35,952,264	24,310,754
2010	42,026,944	2.901	0.655	27,538,584	8,968,402	36,506,986	7,473,338	0.833	0.900	32,856,288	25,382,950
2011	32,995,622	3.582	0.721	23,785,174	6,043,934	29,829,108	4,410,402	0.730	0.900	26,846,197	22,435,795
2012	24,425,925	4.797	0.782	19,333,849	6,966,261	26,290,110	5,665,272	0.814	0.900	23,861,099	17,995,827
2013	24,555,101	7.776	0.871	21,397,171	3,118,282	24,515,453	2,308,063	0.740	0.900	22,063,907	19,754,844
2014	29,610,563	13.957	0.928	27,489,063	3,029,351	30,518,414	2,415,942	0.798	0.900	27,466,573	25,050,631
2015	25,292,356	56.137	0.982	24,841,805	347,833	25,189,638	184,119	0.529	0.900	22,670,874	22,486,556
2016	29,035,625	418.610	0.998	28,966,263	0	28,966,263	0	1.000	0.900	26,069,636	26,069,636
Total	1,160,921,053			484,501,296	729,011,792	1,193,513,088	638,895,597			1,074,001,541	435,105,944

Notes:

(1): Exhibit 2

(2): From Appendix A

(5),(7): Based on the Claim Data provided by IDEM

(9): Selected based on the results in (8) and actuarial judgment

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Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Expected Ultimate Amounts by Fiscal Year Incurred

Fiscal Year	(1) Paid Development Method Estimated Gross Ultimate	(2) Estimated Ultimate Releases	(3) Untrended Average Amount (1) / (2)	(4) Fitted Average Amount	(5) Trend Factor to 2016	(6) Trended Average Amount (3) x (5)	(7) Expected Average Amount	(8) Expected Gross Ultimate (2) x (7)
1988	0	6					259,702	1,558,211
1989	8,323,830	34	244,819	287,531	1.948	476,858	266,194	9,050,607
1990	44,900,537	145	309,659	292,947	1.900	588,443	272,949	39,563,130
1991	58,530,395	209	280,050	298,466	1.854	519,197	279,670	58,451,115
1992	50,771,928	184	275,934	304,089	1.809	499,090	286,662	52,745,838
1993	37,557,567	135	278,204	309,817	1.765	490,922	293,929	39,666,877
1994	52,018,197	160	325,114	315,654	1.722	559,706	301,174	48,187,910
1995	44,996,350	174	258,600	321,600	1.680	434,339	308,704	53,714,461
1996	31,187,088	123	253,554	327,688	1.639	415,477	316,421	38,919,631
1997	84,993,731	154	422,037	333,831	1.599	674,690	324,332	49,947,117
1998	80,179,246	172	466,158	340,120	1.560	727,048	332,440	57,179,719
1999	78,572,493	209	375,945	346,527	1.522	572,045	340,751	71,217,007
2000	54,125,728	124	436,498	353,055	1.485	647,983	349,270	43,309,482
2001	51,090,752	115	444,267	359,706	1.448	643,432	358,002	41,170,203
2002	56,617,213	114	496,642	366,482	1.413	701,742	366,952	41,882,508
2003	50,724,089	97	522,929	373,386	1.379	720,863	376,126	36,484,183
2004	31,653,121	93	340,356	380,420	1.345	457,741	385,529	35,854,173
2005	43,917,956	102	430,568	387,587	1.312	584,943	395,167	40,307,030
2006	47,259,523	128	369,215	384,888	1.280	472,626	405,046	51,845,905
2007	40,701,259	119	342,027	402,327	1.249	427,145	415,172	49,405,502
2008	34,542,410	114	303,004	409,907	1.218	369,180	425,552	48,512,882
2009	33,781,940	101	334,475	417,629	1.189	397,585	436,190	44,055,229
2010	26,014,991	94	276,755	425,496	1.160	320,951	447,095	42,026,944
2011	21,651,863	72	300,720	433,512	1.131	340,237	458,273	32,995,622
2012	33,368,141	52	641,695	441,678	1.104	708,311	469,729	24,425,925
2013	24,246,806	51	475,428	449,999	1.077	511,983	481,473	24,555,101
2014	42,281,774	60	704,696	458,476	1.051	740,371	493,509	29,610,553
2015	19,526,143	50	390,523	467,113	1.025	400,286	505,847	25,292,356
2016	0	56	0	475,913	1.000	0	518,493	29,035,625
Total/Average	1,163,535,072	3,247	358,342					1,160,921,053

Annual Trend Based on Curve Fit
Selected Annual Severity Trend

1.9%
2.5%

Averages Excluding Latest Year:
Wtd. Avg. All Years
Latest 15
Latest 10
Latest 10 x Hi, Low
Selected for 2016

537,826
518,493
468,868
453,419
518,493

Notes:

- (1): Exhibit 3
- (2): Exhibit 4
- (4): Based on fitting an exponential curve to the data in (3)
- (5): Based on the selected annual trend
- (7): Based on the selected value for 2016 and the trend factors in (5)

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Paid Development Method

	(1)	(2)	(3)
Fiscal Year	Gross Paid as of 06/30/16	Paid Development Factor	Estimated Gross Ultimate (1) x (2)
1988	0	1.129	0
1989	7,292,528	1.141	8,323,830
1990	38,871,019	1.155	44,900,537
1991	50,020,312	1.170	58,530,395
1992	42,748,665	1.188	50,771,928
1993	31,124,519	1.207	37,657,567
1994	42,387,669	1.227	52,018,197
1995	35,982,169	1.251	44,986,350
1996	24,426,382	1.277	31,187,088
1997	49,759,975	1.306	64,993,731
1998	59,888,962	1.339	80,179,246
1999	57,090,288	1.376	78,572,493
2000	38,144,927	1.419	54,125,728
2001	34,822,087	1.467	51,090,752
2002	37,176,083	1.523	56,617,213
2003	31,933,395	1.588	50,724,089
2004	19,014,552	1.665	31,653,121
2005	25,006,863	1.756	43,917,956
2006	25,338,559	1.865	47,259,523
2007	20,262,112	2.009	40,701,259
2008	15,747,328	2.194	34,542,410
2009	13,509,335	2.501	33,781,940
2010	8,968,402	2.901	26,014,991
2011	6,043,934	3.582	21,651,863
2012	6,956,261	4.797	33,388,141
2013	3,118,282	7.776	24,246,806
2014	3,029,351	13.957	42,281,774
2015	347,833	56.137	19,526,143
2016	0	418.610	0
Total	729,011,792		1,163,535,072

Notes:
(1): Based on the Claim Data provided by IDEM
(2): From Appendix A

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Release Count Development Method

Fiscal Year	(1) Reported Releases as of 06/30/16	(2) Release Factor	(3) Estimated Ultimate Releases (1) x (2)	(4) Additional Releases (3) - (1)	(5) Active Releases Not Evaluated	(6) Ratio (4) / (5)	(7) Selected Ratio (4) / (5)	(8) Selected Additional Releases (5) x (7)	(9) Selected Ultimate Releases (1) + (8)
1988	6	1.015	6	0	6	0.000	0.000	0	6
1989	33	1.017	34	1	7	0.143	0.143	1	34
1990	142	1.019	145	3	25	0.120	0.120	3	145
1991	204	1.022	209	5	53	0.086	0.086	5	209
1992	179	1.025	184	5	55	0.091	0.091	5	184
1993	131	1.028	135	4	31	0.129	0.129	4	135
1994	155	1.031	160	5	43	0.116	0.116	5	160
1995	168	1.035	174	6	38	0.158	0.158	6	174
1996	118	1.040	123	5	27	0.185	0.185	5	123
1997	147	1.045	154	7	16	0.438	0.438	7	154
1998	164	1.050	172	8	27	0.296	0.296	8	172
1999	198	1.055	209	11	45	0.244	0.244	11	209
2000	117	1.062	124	7	28	0.250	0.250	7	124
2001	108	1.069	115	7	7	1.000	1.000	7	115
2002	106	1.077	114	8	9	0.889	0.889	8	114
2003	90	1.085	98	8	7	1.143	1.000	7	97
2004	85	1.095	93	8	8	1.000	1.000	8	93
2005	92	1.106	102	10	13	0.769	0.769	10	102
2006	121	1.117	135	14	7	2.000	1.000	7	128
2007	103	1.130	122	14	11	1.273	1.000	11	119
2008	101	1.145	116	15	13	1.154	1.000	13	114
2009	87	1.161	101	14	20	0.700	0.700	14	101
2010	80	1.178	94	14	16	0.875	0.875	14	94
2011	60	1.198	72	12	21	0.571	0.571	12	72
2012	43	1.220	52	9	20	0.450	0.450	9	52
2013	41	1.244	51	10	18	0.556	0.556	10	51
2014	47	1.272	60	13	22	0.591	0.591	13	60
2015	35	1.399	49	14	37	0.378	0.400	15	50
2016	22	2.962	65	43	67	0.642	0.600	34	56
Total	2,988		3,268	280	702			259	3,247
						Average Latest 10	Expected Annual Frequency Trend		
						Latest 5	Selected for 2017		
							0.0%		

Notes:
(1): Based on the Claim Data provided by IDEM
(2): From Appendix A
(5): Based on information provided by IDEM
(7): Selected based on (6) and actuarial judgment

Milliman

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Estimated Ultimate Amounts for Future Reported Releases

	(1)	(2)	(3)	(4)	(5)	(6)
	Estimated Ultimate Releases	Gross Ultimate per Release	Estimated Gross Ultimate	Estimated Net Ultimate	Inspection Fee	(4) / (5)
Historical:						
2012	52	505,579	26,290,110	23,661,099	49,237,490	0.461
2013	51	480,695	24,515,453	22,063,907	46,242,130	0.477
2014	60	508,640	30,518,414	27,466,573	51,203,441	0.536
2015	50	503,793	25,189,638	22,670,674	51,026,492	0.444
2016	56	517,255	28,966,263	26,069,636	50,261,583	0.518
Projected:						
2017	55	531,456	29,230,060	26,405,060	50,764,399	0.559
2018	55	544,742	29,960,811	26,135,811	51,262,243	0.568
2019	55	556,361	30,709,831	26,884,831	51,805,166	0.577
2020	55	572,320	31,477,577	27,652,577	52,323,217	0.586
2021	55	586,628	32,264,517	28,439,517	52,846,449	0.595
2022	55	601,293	33,071,129	29,246,129	53,374,914	0.604
2023	55	616,326	33,897,908	30,072,908	53,908,663	0.613
2024	55	631,734	34,745,355	30,920,355	54,447,749	0.623
2025	55	647,527	35,613,989	31,788,989	54,992,227	0.633
2026	55	663,715	36,504,339	32,679,339	55,542,149	0.642

Notes:

- (1): Exhibit 4
 (2): Historical = (3)/(1); Projected is based on the selection for 2016 in Exhibit 2 and the annual severity trend selection in Exhibit 2
 (3): Historical is from Exhibit 1; Projected is (1) x (2)
 (4): Historical is from Exhibit 1; Projected is (3) less [(1) x \$15,000 deductible per release]
 (5): Historical is from information provided by IDEM; Projected assumes 1.0% annual change.

Appendix A
Analysis of Release Count Development and Paid Development

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")

Appendix A
Exhibit 1
Sheet 1

Release Count

Fiscal Year	at 12	at 24	at 36	at 48	at 60	at 72	at 84	at 96	at 108	at 120	at 132	at 144	at 156	at 168	at 180	at 192	at 204	at 216	at 228	at 240	at 252	at 264	at 276	at 288	at 300	at 312	at 324	at 336	at 348		
	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	
1988	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	
1989	0	0	0	0	6	6	8	14	16	17	17	20	21	22	25	27	27	27	27	32	32	33	33	33	33	33	33	33	33	33	33
1990	0	0	0	13	23	34	46	54	61	63	84	89	98	111	116	118	125	129	133	135	136	139	140	140	140	140	141	142	143	143	143
1991	0	0	0	19	33	41	57	65	72	81	103	132	152	170	178	179	182	190	194	197	198	199	203	204	204	204	204	204	204	204	204
1992	0	7	23	37	45	61	72	78	101	109	120	145	154	157	161	164	167	169	177	177	177	178	178	179	179	179	179	179	179	179	179
1993	0	4	18	34	40	43	53	59	70	77	93	98	107	109	112	119	121	123	127	129	130	131	131	131	131	131	131	131	131	131	131
1994	1	22	38	50	60	65	81	87	99	117	131	142	138	146	150	152	152	153	153	154	155	155	155	155	155	155	155	155	155	155	155
1995	12	24	32	40	52	58	69	79	91	105	128	136	144	153	155	162	162	164	165	165	165	165	165	165	165	165	165	165	165	165	165
1996	13	25	35	50	53	60	69	83	95	110	130	135	140	146	148	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
1997	13	34	48	79	82	102	118	125	126	127	130	135	137	143	143	143	145	146	146	146	146	146	146	146	146	146	146	146	146	146	146
1998	16	46	72	95	109	129	137	140	146	148	155	157	158	161	161	162	162	163	163	163	163	163	163	163	163	163	163	163	163	163	163
1999	21	69	96	115	133	148	150	160	164	171	178	181	184	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
2000	25	50	64	77	87	93	95	101	107	108	113	114	114	115	116	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117
2001	17	50	74	82	94	96	98	100	103	105	108	107	107	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108
2002	35	73	98	95	98	100	101	103	104	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
2003	21	61	71	82	83	84	85	87	88	88	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
2004	32	64	73	85	84	84	84	84	84	84	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
2005	27	55	71	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
2006	60	89	102	108	115	115	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116
2007	38	77	95	101	101	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103
2008	53	81	95	97	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98
2009	58	77	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83
2010	45	69	77	78	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
2011	25	53	57	59	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
2012	17	37	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
2013	19	37	39	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
2014	20	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
2015	16	35																													
2016	22																														

Milliman

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")

Release Count Development

Appendix A
Exhibit 1
Sheet 2

Fiscal 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
Year	1983																												
Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months
1989				1,769	1,000	1,333	1,750	1,143	1,063	1,000	1,478	1,050	1,048	1,138	1,080	1,333	1,250	1,209	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1990			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1991			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1992			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1993			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1994			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1995			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1996			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1997			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1998			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1999			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2000			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2001			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2002			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2003			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2004			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2005			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2006			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2007			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2008			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2009			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2010			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2011			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2012			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2013			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2014			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2015			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2016			1,737	1,242	1,380	1,478	1,353	1,174	1,130	1,033	1,333	1,060	1,112	1,121	1,045	1,017	1,031	1,015	1,007	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Vol Wtd Avg	2,017	1,281	1,150	1,085	1,065	1,062	1,058	1,058	1,056	1,049	1,056	1,034	1,034	1,024	1,013	1,011	1,015	1,018	1,006	1,008	1,007	1,001	1,007	1,002	1,003	1,008	1,000	1,000	1,000
7 Yr Vol Wtd Avg	1,721	1,111	1,024	1,023	1,019	1,017	1,015	1,015	1,009	1,007	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004
5 Yr Vol Wtd Avg	1,890	1,100	1,017	1,011	1,014	1,004	1,012	1,008	1,004	1,004	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002
3 Yr Vol Wtd Avg	2,117	1,087	1,017	1,010	1,008	1,000	1,013	1,007	1,003	1,003	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
Inverse Power Curve	1,985	1,103	1,029	1,017	1,018	1,008	1,007	1,009	1,006	1,003	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,010	1,002	1,003	1,006	1,000	1,000	1,000
Exponential Curve	1,987	1,048	1,032	1,024	1,019	1,016	1,014	1,012	1,011	1,010	1,009	1,008	1,007	1,007	1,008	1,006	1,008	1,005	1,005	1,005	1,005	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004
Weibull Curve	1,981	1,039	1,029	1,023	1,019	1,016	1,014	1,013	1,011	1,010	1,009	1,008	1,008	1,007	1,007	1,007	1,006	1,006	1,005	1,005	1,005	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004
Selected	2,117	1,100	1,022	1,020	1,018	1,017	1,015	1,014	1,013	1,012	1,010	1,009	1,008	1,008	1,007	1,007	1,006	1,005	1,005	1,005	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004	1,004
Cumulative	2,362	1,389	1,272	1,244	1,220	1,198	1,178	1,161	1,145	1,130	1,117	1,106	1,095	1,085	1,077	1,069	1,062	1,055	1,050	1,045	1,040	1,035	1,031	1,028	1,025	1,022	1,019	1,017	1,015
Ratio to Ultimate	0.253	0.715	0.765	0.804	0.820	0.834	0.849	0.861	0.873	0.885	0.895	0.904	0.913	0.922	0.929	0.935	0.942	0.948	0.952	0.957	0.962	0.966	0.970	0.973	0.975	0.978	0.981	0.983	0.985

Milliman

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")

Paid Loss Development

Appendix A
Exhibit 2
Sheet 2

Fiscal Year	12-04	24-06	36-18	48-60	60-72	72-84	84-08	08-10	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
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2016																													

Vol 1004.Dwg
7 VV Vol 1004.Awt
8 VV Vol 1004.Bwt
9 VV Vol 1004.Cwt
10 VV Vol 1004.Dwt
11 VV Vol 1004.Ewt
12 VV Vol 1004.Fwt
13 VV Vol 1004.Gwt
14 VV Vol 1004.Hwt
15 VV Vol 1004.Iwt
16 VV Vol 1004.Jwt
17 VV Vol 1004.Kwt
18 VV Vol 1004.Lwt
19 VV Vol 1004.Mwt
20 VV Vol 1004.Nwt
21 VV Vol 1004.Owt
22 VV Vol 1004.Pwt
23 VV Vol 1004.Qwt
24 VV Vol 1004.Rwt
25 VV Vol 1004.Swt
26 VV Vol 1004.Twt
27 VV Vol 1004.Uwt
28 VV Vol 1004.Vwt
29 VV Vol 1004.Wwt
30 VV Vol 1004.Xwt
31 VV Vol 1004.Ywt
32 VV Vol 1004.Zwt

Appendix B
Adverse Case Exhibits

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Estimated Unpaid Claim Liability as of 6/30/16

Fiscal Year	(1) Expected Gross Ultimate Payments	(2) Paid Development Factor	(3) Expected Unpaid Factor 1 - 1/(2)	(4) Expected Unpaid Amount (1) x (3)	(5) Gross Paid as of 06/30/16 (4) x (5)	(6) Gross Ultimate as of 06/30/16 (4) + (5)	(7) Net Paid as of 06/30/16	(8) Net/Gross Ratio (7) / (5)	(9) Selected Ultimate Net/Gross Ratio	(10) Selected Net Ultimate (5) x (9)	(11) Estimated Net Unpaid Release Liability (10) - (7)
1988	1,687,947	1.223	0.182	307,778	0	307,778	0	1.000	0.000	0	0
1989	9,804,156	1.236	0.191	1,874,897	7,292,528	9,167,425	6,771,538	0.929	0.900	8,250,683	1,479,145
1990	42,857,138	1.251	0.201	8,606,786	38,871,019	47,477,805	35,134,513	0.904	0.900	42,730,024	7,595,512
1991	63,317,726	1.268	0.211	13,365,167	50,020,312	63,385,479	45,037,616	0.900	0.900	57,046,931	12,009,316
1992	57,137,432	1.287	0.223	12,726,784	42,748,665	55,475,449	38,077,472	0.891	0.900	49,927,905	11,850,433
1993	42,969,522	1.307	0.235	10,096,987	31,124,519	41,221,506	27,962,269	0.899	0.900	37,099,355	9,117,087
1994	52,200,012	1.329	0.248	12,933,500	42,387,669	55,321,169	38,302,711	0.904	0.900	49,789,052	11,486,341
1995	58,186,701	1.355	0.262	15,232,932	35,982,169	51,215,101	31,708,690	0.881	0.900	46,093,591	14,384,901
1996	42,180,278	1.383	0.277	11,677,449	24,426,382	36,103,831	21,463,277	0.879	0.900	32,483,448	11,030,172
1997	54,103,690	1.415	0.293	15,866,582	48,759,975	65,625,557	36,560,645	0.888	0.900	59,063,002	14,867,116
1998	61,940,475	1.450	0.310	19,230,744	59,888,962	79,119,706	53,560,845	0.894	0.900	71,207,735	17,647,091
1999	77,146,501	1.491	0.329	25,400,664	57,030,288	82,430,952	50,910,119	0.892	0.900	74,241,857	23,331,738
2000	48,915,408	1.537	0.349	16,393,195	38,144,927	54,538,122	32,708,708	0.857	0.900	49,084,310	16,375,602
2001	44,598,014	1.589	0.371	16,537,508	34,822,087	51,359,595	29,884,388	0.858	0.900	46,223,635	16,339,248
2002	45,315,460	1.650	0.394	17,847,335	37,176,083	55,023,418	32,581,847	0.876	0.900	49,521,076	16,939,229
2003	39,521,839	1.721	0.419	16,553,189	31,933,395	48,486,584	28,477,563	0.892	0.900	43,637,926	15,160,343
2004	38,839,374	1.803	0.445	17,301,181	19,014,552	36,315,733	16,159,360	0.850	0.900	32,684,160	16,524,810
2005	43,662,974	1.902	0.474	20,712,171	25,006,863	45,719,034	21,107,258	0.844	0.900	41,147,130	20,038,873
2006	58,162,570	2.020	0.505	28,364,987	25,338,559	53,703,546	21,153,262	0.835	0.900	48,333,192	28,032,932
2007	53,519,981	2.176	0.540	28,923,677	20,262,112	49,185,789	16,234,278	0.801	0.900	44,267,210	28,632,270
2008	52,552,041	2.376	0.579	30,435,800	15,747,328	46,183,128	13,344,546	0.847	0.900	41,564,816	26,220,270
2009	47,723,246	2.709	0.631	30,105,842	13,509,335	43,614,977	11,841,510	0.862	0.900	39,253,479	27,611,970
2010	45,526,087	3.142	0.692	31,037,728	8,988,402	40,006,130	7,473,338	0.833	0.900	36,005,517	28,532,179
2011	35,742,821	3.881	0.742	26,532,373	6,043,934	32,576,307	4,410,402	0.730	0.900	29,318,677	24,908,275
2012	26,459,616	5.196	0.808	21,367,540	6,956,261	28,323,801	5,665,272	0.814	0.900	25,491,421	19,826,149
2013	26,599,547	8.423	0.881	23,441,616	3,118,282	26,559,898	2,309,063	0.740	0.900	23,903,909	21,594,846
2014	32,075,924	15.119	0.934	29,954,424	3,029,351	32,983,775	2,415,942	0.768	0.900	29,685,398	27,269,456
2015	27,398,185	60.810	0.984	26,947,635	347,833	27,295,468	184,119	0.529	0.900	24,565,921	24,381,802
2016	31,453,117	453.463	0.998	31,383,755	0	31,383,755	0	1.000	0.900	28,245,379	28,245,379
Total	1,257,578,784			561,159,027	729,011,792	1,290,170,819	638,895,597			1,160,876,738	521,981,140

Notes:

- (1): Exhibit 2
(2): From Appendix A
(5),(7): Based on the Claim Data provided by IDEM
(9): Selected based on the results in (8) and actuarial judgment

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Expected Ultimate Amounts by Fiscal Year Incurred

Fiscal Year	(1) Paid Development Method Estimated Gross Ultimate	(2) Estimated Ultimate Releases	(3) Unfunded Average Amount (1) / (2)	(4) Fitted Average Amount	(5) Trend Factor to 2016	(5) Trended Average Amount (3) x (5)	(7) Expected Average Amount	(8) Expected Gross Ultimate (2) x (7)
1988	0	5						
1989	9,016,888	34	265,202	311,470	1.948	516,560	281,324	1,867,947
1990	48,638,934	145	335,441	317,338	1.900	637,436	288,358	9,804,156
1991	63,403,607	209	303,367	323,316	1.854	562,425	295,566	42,857,138
1992	54,999,174	184	298,909	328,407	1.809	540,644	302,956	63,317,726
1993	40,684,592	135	301,367	335,612	1.765	531,796	310,530	57,137,432
1994	56,349,207	160	352,183	341,935	1.722	606,307	318,293	42,969,522
1995	48,742,724	174	280,131	348,376	1.680	470,502	326,250	52,200,012
1996	33,783,710	123	274,864	354,939	1.639	450,069	334,406	58,186,701
1997	70,405,078	154	457,176	361,626	1.599	730,864	342,766	42,160,278
1998	86,854,932	172	504,971	368,438	1.560	787,582	351,336	54,105,690
1999	85,114,401	209	407,246	375,379	1.522	619,673	360,119	61,940,475
2000	58,632,210	124	472,840	382,450	1.485	701,934	369,122	77,146,501
2001	55,344,544	115	481,257	389,655	1.448	697,003	378,350	46,915,408
2002	61,331,135	114	537,992	396,996	1.413	780,169	387,809	44,598,014
2003	54,947,353	97	566,468	404,474	1.379	780,882	387,504	45,315,460
2004	34,288,545	93	368,694	412,094	1.345	495,852	407,442	39,521,839
2005	47,574,544	102	466,417	418,857	1.312	611,980	417,628	38,839,374
2006	51,194,329	128	399,956	427,767	1.280	511,977	428,068	43,662,974
2007	44,090,026	119	370,504	435,825	1.249	462,709	438,770	56,162,570
2008	37,418,395	114	328,232	444,035	1.218	399,918	449,739	53,518,981
2009	36,594,808	101	362,323	452,400	1.189	430,688	460,983	52,552,041
2010	28,180,986	94	299,798	460,923	1.160	347,673	472,507	47,723,246
2011	23,454,587	72	325,758	469,606	1.131	368,565	484,320	45,526,087
2012	36,146,356	52	695,122	478,452	1.104	767,285	496,428	35,742,821
2013	26,265,584	51	515,011	487,466	1.077	554,611	508,839	26,459,616
2014	45,802,135	60	763,369	496,649	1.051	802,014	521,560	26,599,547
2015	21,151,880	50	423,038	506,005	1.025	433,614	534,599	32,075,924
2016	0	56	0	515,537	1.000	0	547,964	27,398,185
Total/Average	1,260,410,446	3,247	388,177				561,663	31,453,117
								1,257,578,784
Annual Trend Based on Curve Fit		1.9%	Averages Excluding Latest Year:					
Selected Annual Severity Trend		2.5%	Wtd. Avg. All Years		582,605			
			Latest 15		581,663			
			Latest 10		507,906			
			Latest 10 x Hi, Low		491,171			
			Selected for 2016		561,663			

Notes:

- (1): Exhibit 3
(2): Exhibit 4
(4): Based on fitting an exponential curve to the data in (3)
(5): Based on the selected annual trend
(7): Based on the selected value for 2016 and the trend factors in (5)

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Paid Development Method

Fiscal Year	Gross Paid as of 06/30/16	(1)	(2)	(3)
		Paid Development Factor	Estimated Gross Ultimate (1) x (2)	
1988	0	1.223	0	
1989	7,292,528	1.236	9,016,868	
1990	38,871,019	1.251	48,638,934	
1991	50,020,312	1.268	63,403,607	
1992	42,748,665	1.287	54,998,174	
1993	31,124,519	1.307	40,684,592	
1994	42,387,669	1.329	56,349,207	
1995	35,982,169	1.355	48,742,724	
1996	24,425,382	1.383	33,768,710	
1997	49,759,975	1.415	70,406,078	
1998	59,888,962	1.450	86,854,932	
1999	57,090,288	1.491	85,114,401	
2000	38,144,927	1.537	58,632,210	
2001	34,822,087	1.589	55,344,544	
2002	37,176,083	1.650	61,331,135	
2003	31,933,395	1.721	54,947,353	
2004	19,014,552	1.803	34,288,545	
2005	25,006,863	1.902	47,574,544	
2006	25,338,559	2.020	51,184,329	
2007	20,262,112	2.176	44,090,026	
2008	15,747,328	2.376	37,418,395	
2009	13,509,335	2.709	36,594,608	
2010	8,968,402	3.142	28,180,986	
2011	6,043,934	3.881	23,454,587	
2012	6,956,261	5.196	36,146,356	
2013	3,118,282	8.423	26,265,584	
2014	3,029,351	15.119	45,802,135	
2015	347,833	60.810	21,151,880	
2016	0	453.463	0	
Total	729,011,792		1,260,410,446	

Notes:
(1): Based on the Claim Data provided by IDEM
(2): From Appendix A

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Release Count Development Method

Fiscal Year	(1) Reported Releases as of 06/30/16	(2) Release Development Factor	(3) Estimated Ultimate Releases (1) x (2)	(4) Additional Releases (3) - (1)	(5) Active Releases Not Evaluated	(6) Ratio (4) / (5)	(7) Selected Ratio	(8) Selected Additional Releases (5) x (7)	(9) Selected Ultimate Releases (1) + (8)
1988	6	1.015	6	0	6	0.000	0.000	0	6
1989	33	1.017	34	1	7	0.143	0.143	1	34
1990	142	1.019	145	3	25	0.120	0.120	3	145
1991	204	1.022	209	5	58	0.086	0.086	5	209
1992	179	1.025	184	5	55	0.091	0.091	5	184
1993	131	1.028	135	4	31	0.129	0.129	4	135
1994	155	1.031	160	5	43	0.116	0.116	5	160
1995	168	1.035	174	6	38	0.158	0.158	6	174
1996	118	1.040	123	5	27	0.185	0.185	5	123
1997	147	1.045	154	7	16	0.438	0.438	7	154
1998	164	1.050	172	8	27	0.298	0.298	8	172
1999	198	1.055	209	11	45	0.244	0.244	11	209
2000	117	1.062	124	7	28	0.250	0.250	7	124
2001	108	1.069	115	7	7	1.000	1.000	7	115
2002	106	1.077	114	8	9	0.889	0.889	8	114
2003	90	1.085	98	8	7	1.143	1.000	7	97
2004	85	1.085	93	8	8	1.000	1.000	8	93
2005	92	1.106	102	10	13	0.769	0.769	10	102
2006	121	1.117	135	14	7	2.000	1.000	7	128
2007	108	1.130	122	14	11	1.273	1.000	11	119
2008	101	1.145	116	15	13	1.154	1.000	13	114
2009	87	1.161	101	14	20	0.700	0.700	14	101
2010	80	1.178	94	14	16	0.875	0.875	14	94
2011	60	1.198	72	12	21	0.571	0.571	12	72
2012	43	1.220	52	9	20	0.450	0.450	9	52
2013	41	1.244	51	10	18	0.556	0.556	10	51
2014	47	1.272	60	13	22	0.591	0.591	13	60
2015	35	1.399	49	14	37	0.378	0.400	15	50
2016	22	2.962	65	43	67	0.642	0.500	34	56
Total	2,988		3,268	280	702			259	3,247

Average Latest 10 Latest 5
Selected for 2017
Expected Annual Frequency Trend

Notes:
(1): Based on the Claim Data provided by IDEM
(2): From Appendix A
(5): Based on information provided by IDEM
(7): Selected based on (6) and actuarial judgment

Indiana Department of Environmental Management ("IDEM")
Excess Liability Trust Fund ("ELTF")
Estimated Ultimate Amounts for Future Reported Releases

	(1)	(2)	(3)	(4)	(5)	(6)
	Estimated Ultimate Releases	Estimated Gross Ultimate per Release	Estimated Gross Ultimate	Estimated Net Ultimate	Inspection Fee	(4) / (5)
Historical:						
2012	52	544,688	28,323,801	25,491,421	43,237,490	0.518
2013	51	520,752	26,559,898	23,903,909	46,242,130	0.517
2014	60	549,730	32,983,775	29,685,398	51,203,441	0.580
2015	50	545,909	27,295,468	24,565,921	51,025,492	0.481
2016	56	550,424	31,383,755	28,245,379	50,281,583	0.562
Projected:						
2017	55	575,704	31,663,740	30,838,740	49,778,767	0.620
2018	58	590,097	34,078,101	33,211,851	49,280,979	0.674
2019	61	604,849	36,676,556	35,766,993	48,788,170	0.733
2020	64	619,971	39,473,143	38,518,102	48,300,288	0.797
2021	67	635,470	42,482,970	41,480,178	47,817,285	0.867
2022	70	651,357	45,722,297	44,669,364	47,339,112	0.944
2023	74	667,641	49,208,622	48,103,043	46,865,721	1.026
2024	77	684,332	52,960,779	51,799,921	46,397,064	1.116
2025	81	701,440	56,999,039	55,780,138	45,933,093	1.214
2026	85	718,976	61,345,215	60,065,370	45,473,762	1.321

Notes:

- (1): Exhibit 4
- (2): Historical = (3)/(1); Projected is based on the selection for 2016 in Exhibit 2 and the annual severity trend selection in Exhibit 2
- (3): Historical is from Exhibit 1; Projected is (1) x (2)
- (4): Historical is from Exhibit 1; Projected is (3) less [(1) x \$15,000 deductible per release]
- (5): Historical is from information provided by IDEM; Projected assumes -1.0% annual change.

Indiana Department of Environmental Management



Excess Liability Trust Fund Program

November 28, 2016



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Commitment Beyond Numbers



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Senior Consulting Actuary
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November 28, 2016

Donald M. Snemis
Deputy Chief of Staff and General Counsel
Indiana Department of Environmental Management
100 N. Senate Avenue, Room #1307
Indianapolis, IN 46204

Dear Mr. Snemis:

Pinnacle Actuarial Resources, Inc. (Pinnacle) is happy to present its report on the claims processing study of the Indiana Excess Liability Trust Fund (ELTF). The report has been prepared for the State of Indiana, Department of Environmental Management (IDEM or Department).

This report reflects Pinnacle's review of the claims processing system. Recommendations contained herein are reflective of this review. Other improvements may be made to the management of the ELTF outside the scope of this review of the claims processing system. Additional study in these areas can be developed if desired by IDEM. This report does not provide an estimate of the ultimate liability of the ELTF. It is Pinnacle's understanding that IDEM has contracted the services of another independent actuarial firm to conduct such an analysis.

This report is provided to IDEM by Patrick J. Rounds, Thomas J. Norris, and John E. Wade, ACAS, MAAA. Mr. Wade meets the basic education standards of the Casualty Actuarial Society and the American Academy of Actuaries and continuing education standards of the American Academy of Actuaries to make statements of actuarial opinion.

Donald M. Snemis
Deputy Chief of Staff and General Counsel
Indiana Department of Environmental Management
November 28, 2016

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Pinnacle has enjoyed working with IDEM on this engagement. Please direct any questions about this report to any of the respective contacts by using the information shared below.

Thank you for allowing Pinnacle Actuarial Resources to work with IDEM on this engagement.

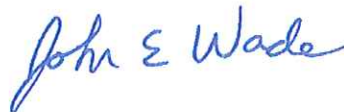
Best Regards,



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Indiana Department of Environmental Management

Excess Liability Trust Fund Program

Executive Summary

Pinnacle Actuarial Resources, Inc. (Pinnacle), entered into a contract with the Indiana Department of Environmental Management (the State) to conduct a performance audit of the Excess Liability Trust Fund (ELTF) Program to assess whether the program's processes and procedures are meeting the goals and objectives of the program. Pinnacle was directed to examine ELTF policies, procedures and processes regarding the receipt, analysis and processing of ELTF claims to determine whether those policies and practices need to be modified to:

1. Detect and reduce errors by employees (improve accuracy),
2. Increase efficiency of processing claims (timeliness), and
3. Identify and prevent fraud by applicants.

Performance of these services included a preliminary kick-off meeting, staff interviews, and reviews of electronic files. IDEM forms and documentation requirements were reviewed and analyzed to determine:

1. If the forms should be revised,
2. If any documentation requirements are not being met, and
3. If further documentation is necessary to properly process claims.

Pinnacle evaluated how forms are utilized, prepared and submitted. Likewise, Pinnacle determined whether the form completion and submittal process is efficient, or if modifications, including technology enhancement and database integration can be implemented to streamline the process internally or externally. As part of the analysis, Pinnacle evaluated whether technological tools can be utilized to meet the goals and objectives of the program and to increase efficiency and accuracy of the claims process. Pinnacle evaluations considered existing program policies, procedures and processes and actual processing as indicated by staff and as noted in file reviews.



Findings

The ELTF claims review process is very detailed and time consuming with extensive resources expended to compare invoices to fixed tables that dictate maximum unit rates for various services based on the date the services were performed. Minimal oversight of the quantity of measured services or the services selected is performed. Emphasis is placed on documentation and unit costs associated with services rather than the value of, or need for, the service. The claim reviews confirm that invoice documentation meets written criteria but does not evaluate the cost effectiveness or necessity of the service.

Prior scope and budget approval would eliminate much of the claim review process. Electronic claim submittal requirements and Web-based data submittal could eliminate claim adjustments for incorrect rates by limiting the allowable rate that can be entered into the claim submittal database. The utilization of a Web-based claims application with the ability to include necessary documentation, as well as providing invoicing and documentation on a standardized basis, would reduce disallowed costs, increase the accuracy of applications and reduce improperly entered rates. Eliminating redundant reviews of forms submitted for subsequent claim submittals would increase review efficiency.

Background

Pinnacle Actuarial Resources, Inc., entered into a contract with the Indiana Department of Environmental Management to conduct a performance audit of the Excess Liability Trust Fund Program to assess whether the program's processes and procedure are meeting the goals and objectives of the program. Pinnacle was directed to examine ELTF policies, procedures and processes regarding the receipt, analysis and processing of ELTF claims to determine whether those policies and practices need to be modified to:

1. Detect and reduce errors by employees (improve accuracy),
2. Increase efficiency of processing claims (timeliness), and
3. Identify and prevent fraud by applicants.

Performance of these services included a preliminary kick-off meeting at IDEM on April 14, 2016, involving Carol Comer, Commissioner, IDEM; Bruno Pigott, Chief of Staff, IDEM; Donald Snemis, Deputy Chief of Staff and General Counsel, IDEM; Julie Lange, Deputy Assistant Commissioner of Tanks, Underground Storage Tank Branch, Office of Land Quality, IDEM; and Roberta Steiff, Technical Environmental Specialist, Underground Storage Tank Branch, Office of Land Quality, IDEM. IDEM staff

indicated that as part of this project they also wanted suggestions for cost savings associated with incident expenses and claims processing.

Pinnacle reviewed Indiana codified statutes, administrative rules, and IDEM internal policies, procedures and forms. Pinnacle interviewed IDEM, Underground Storage Tank (UST) and Leaking Underground Storage Tank (LUST) staff on June 14, 15 and 16, 2016. IDEM and ELTF staff interviewed included Donald Snemis; Deputy Chief of Staff and General Counsel; Julie Lange Deputy Assistant Commissioner of Tanks, Brian Pace, Section Chief ELTF Section, Roberta Steiff, Technical Environmental Specialist Underground Storage Tank Branch; Stephen Onochie, Senior Environmental Manager LUST; Craig Schroer, Chief Underground Storage Tank Branch; Bill Davis, ELTF Technical; Rita Browne, Senior Environmental Manager ELTF; Lynn Truax, Environmental Manager ELTF; Tom Newcomb, Tech 7 UST; and Jason Goulet, Tech 7 UST Information Technology. Pinnacle also held a conference call with Julie Lang former Deputy Assistant Commissioner of tanks; Amy Smith Deputy Assistant Commissioner of tanks; Andrea Robertson, Brownfields Technical Staff Coordinator; and Meredith Gramalspacher, Brownfields Director & General Counsel, to discuss how the Brownfields LUST program operates. Pinnacle reviewed 50 electronic files and electronic data as of June 16, 2016 from 52,091 claim submittals received since 2012. Additional industry data were considered through July 18, 2016.

In response to Amendment #1 which contained new Task G, Pinnacle met with and accepted comments from consultants and owners/operators concerning their suggestions on possible modifications to ELTF program policies, procedures and processes regarding the receipt, analysis and processing of ELTF claims, and how those policies and practices could be modified to improve accuracy and timeliness, and better detect and prevent fraud, waste and abuse.

IDEM forms and documentation requirements were reviewed and analyzed to determine:

1. If the forms should be revised,
2. If any documentation requirements are not being met, and
3. If further documentation is necessary to properly process claims.

Pinnacle evaluated how forms are utilized, prepared and submitted. Likewise, Pinnacle determined whether the form completion and submittal process is efficient, or if modifications, including technology enhancement and database integration can be implemented to streamline the process internally or externally. As part of the analysis Pinnacle evaluated whether technological tools can be utilized to meet the goals and objectives of the program or to increase efficiency and accuracy of the claims process. Pinnacle evaluations considered existing program policies, procedures and processes and actual processing as indicated by staff and as noted in file reviews.

PROGRAM SUMMARY

The Excess Liability Trust Fund (ELTF) Program oversees a financial assurance mechanism required under state and federal law for owners and operators of regulated petroleum underground storage tanks (UST), and is utilized by most owners and operators to pay for corrective action costs and third party liability associated with the release of petroleum from a UST. ELTF staff determines eligibility and reimburses corrective action costs and third party claims associated with confirmed releases from regulated USTs. The ELTF provides financial assurance mandated by U.S. EPA and Indiana, and provides funding for the cleanup of release from regulated USTs. ELTF staff review all information submitted for the release and for the facility where the release occurred to determine if the release is ELTF eligible. Corrective action includes determining the full nature and extent of contamination and cleanup when necessary in order to adequately eliminate or control unacceptable risks.

RECENT STATUTORY REVISIONS

The statutes governing the ELTF underwent significant revision during the 2016 legislative session. The revisions provided clarification of the statutory scheme and allowed broader access to the fund. Six new definitions were created including “Eligible party” and “Eligible release”, and the concept of “substantial compliance” has been deleted from the statute. The deductible has been reduced to a flat \$15,000, maximum reimbursement per eligible release was increased from \$2 million to \$2.5 million and the maximum payout to any eligible party per fiscal year was raised to \$10 million. The revisions also allow for an independent actuarial study every five years. IDEM staff indicates that the ELTF Program funding cannot be diverted for other uses and the revenue stream can be adjusted.

Observations

- The claim submittal review process is complicated and time consuming. Staff interviews and file reviews confirm that the claim submittal review process is extremely labor intensive and places significant time demands on the ELTF claims processing staff to approve line item labor rates, labor classifications for various tasks, drilling rates, mileage rates and other specific line item unit costs. The ability to adequately verify unit pricing based on the date of performance is limited by the requirement to have all claim submittals reviewed and a response issued within 60 days of receipt by ELTF. The review process requires claim reviewers to determine allowable unit rates prescribed in rule with different allowable rates depending on the date the costs were incurred.

- The claims staff performs detailed reviews that are very accurate. Errors in the reimbursement process were not discovered. Documentation requirements and approved rates were applied consistently in reviewed files.
- IDEM Technical approval, either by written notice or milestones in the ULCERS database, are required for Site Characterization Approval, Corrective Action Plan Approval, Corrective Action Plan Implementation Approval, and No Further Action. Once the necessary technical milestone is reached, ELTF claims personnel review the approval letters to determine whether the work conducted matches the work approved when those costs are submitted for reimbursement.
- Of 52,091 electronic claim submissions reviewed (dating back to 2012), 65.7 percent were original expense submissions, 7 percent were eligibility determinations only with no reimbursable expenses requested, and 27.4 percent were resubmission of previously denied reimbursement requests. A significant majority of denied expenses are subsequently approved.
- The review process may take hours to perform a single claim submittal review. Senior reviewers, who verify and check the initial claim submittal reviews, have limited ability to perform their audits or re-reviews based on the time required for the complex process associated with unit rate verification. Management spends considerable time and resources attempting to manage workflow of the ELTF claims review staff to comply with required processing deadlines. The ability of the ELTF technical staff to perform scientific and engineering technical oversight for the ELTF claims reviewers is diminished by the deadlines and staff workflow issues.
- Of 35 recognized UST funds in the United States, only six funds take longer to pay claims than Indiana and only two funds had more appeals in 2015. (Association of State and Territorial Solid Waste Management Officials, Inc., (ASTSWMO) 2015 State Fund Survey)
- The ability to submit claims up to three times creates processing backlogs and slows the review process considerably. Eligible parties have the option of resubmittal (up to two times) of previously denied costs with clarifications. These resubmittals are subject to the same 60 day turnaround requirement. ELTF staff indicate that as many as 25 percent of the initial claim submittals are denied. Denials may be due to minor clerical errors or administrative information included in the initial eligibility application form or the subsequent application form, resulting in the entire claim being denied. Approximately 27 percent of all submittals are resubmittals of previously denied reimbursements. Each denial takes staff time to process and log, as well as providing the basis for the denial in writing to the applicant. This requires staff resources that could be used to review other claim submittal documentation requirements.

- Claim review staff must rely on UST regulatory staff to determine if all registration fees have been paid and if there are other administrative issues which would preclude or limit reimbursement.
- Approximately 20 percent of expenses recently submitted for reimbursement were disallowed according to ELTF staff. Denials are generally related to improper labor rate categorization, billing for non-reimbursable items or items not included in guidance and pricing schedules. Most of these disallowed expenses are eventually reimbursed following resubmittal. The resources expended by ELTF claims staff to review forms and rate tables to compare to invoiced amounts based on the date the services were conducted may exceed the ultimate savings recognized by the reductions in submitted invoices.
- The ability of the environmental consulting firm to have the eligibility for reimbursement assigned from the responsible party (RP) removes a critical fraud, waste and abuse detection transaction. The assignment allows the consulting firm to submit claims for costs directly to ELTF for reimbursement. This unique arrangement tends to remove the RP from the ELTF process eliminating any oversight of the services performed for the RP. With the assignment, the consulting firm could benefit from an increase in the scope of work or duration of a project leaving only the ELTF to approve the increased scope or to verify the activity was necessary. The elimination of the RP may create an economic incentive if the consultant is able to increase project scope and cost without having to justify the increase to an interested RP. The percentage of claims paid to consultants has increased over the years from 16% in 2012 to 80% in 2015 according to IDEM staff. Although assignments are allowed, the consultant does not have to accept responsibility for completing the corrective action. The average reimbursement (paid to date) for ELTF claims is approximately \$341,135 per incident (as reported in the ASTSWMO 2015 State Fund Survey). The average claim amount reported to ASTSWMO has increased from \$191,760 in 2010 to \$341,135 in 2015.
- There are 35 state UST funds that provide approved financial responsibility coverage for tank owners. For all other similar UST funds in the United States the average incident claim is approximately \$157,347. (ASTSWMO 2015 State Fund Survey). The ELTF has the third highest pay out of all similar programs in the United States at 217 percent of the national average. Reimbursements are 3.16 times greater than similar claims in Ohio, 2.82 times greater than similar claims in Kentucky, and 1.94 times greater than similar claims in Illinois (ASTSWMO 2015 State Fund Survey). No obvious environmental factors exist that would cause Indiana to have significantly greater corrective action costs than bordering states. For comparison purposes, the Bureau of Economic Analysis measures Regional Price Parities (RPPs) between the states.

RPPs measure the differences in the price level of goods and services across the states and are expressed as a percentage of the overall national price level for each year. The most recent data indicate that Indiana is 91.4 percent of the national average, yet ELTF claims greatly exceed the national average. Possible factors causing the excessive claim size include:

- The industrial default contaminant level (IDCL) of 14 parts per billion (PPB) Benzene and residential default contaminant level (RDCL) of 8.4 PPB Benzene are extremely aggressive groundwater cleanup standards that are only slightly above federal drinking water standards or maximum contaminant level MCL's of 5 PPB Benzene. With such stringent goals, these standards almost always drive remediation as the corrective action response rather than determining whether there are potential receptors and the existence of complete pathways to those potential receptors. The conservative contaminant level goals greatly increase corrective action costs. The use of Environmental Restrictive Covenants (ERC's) seem to be primarily used after some type of remedial activities have taken place at a site and as a mechanism to rationalize classifying a site as No Further Action (NFA) when the IDCL's and RDCL's cannot be effectively reached.
- Recent statutory change has increased the per incident limit to \$2.5 million. Indiana now has the highest per-incident limit of all state funds. Most other UST funds limit reimbursement to \$1 million per incident, which is consistent with federal financial responsibility requirements. Twenty five of the 35 state funds have \$1 million per incident limits. The higher limit eliminates pressure on the consulting firm to complete corrective action within the \$1 million limit. To date the ELTF has approved payments exceeding \$1 million for 177 incidents, approving nearly \$69 million more than would be allowed with a \$1 million per incident limit. The increased per incident limit will cause the average claim amount to increase in the future.
- Corrective action rules allow numerous laboratory analyses. Reliable characterization can be obtained with less expensive and fewer standardized analyses. Standard EPA methods such as 8260, 8020, 8010, and 8240/8270 are some of the most common analyses used throughout the nation.
- Prior budget approval by ELTF is not required. Competitive bidding is not required, except when bidding to subcontractors in the corrective action implementation stage and the scope of services is not controlled by the ELTF. The only cost control tools are price lists and documentation requirements. Using competitive bids to select the primary consultant, or bidding of entire aspects of a project such as site assessment,

free product recovery, and/or implementation and operation & maintenance of corrective action activities would lead to more competitive pricing. This coupled with prior budget approval requirements would likely allow easier cost control for the program.

- Several time consuming documentation requirements add significant review burden without adding similar value to the reimbursement process. In some instances the potential cost savings are minor or the expenses are generally reimbursed on the second or third submittal. Many denied expenses are eventually reimbursed after appeal. Some of the required documentation does not affect the work product or improve the accuracy of the reimbursement process. Examples include:
 - Chain of custody review for lab samples.
 - Consultant staff qualification documentation.
 - Claim application verification after the original application is approved.
 - Prioritization classification process.
 - Reimbursable expense documentation for:
 - Hotel rooms
 - Meals
 - Miscellaneous minor expenses
- There does not appear to be an evaluation of reasonableness or cost effectiveness of selected corrective action plans or denial of costs because the work performed was unreasonable or for lack of cost effective performance as authorized pursuant to 328 IAC 1-3-5.
- Claim reserves are not established when eligibility is determined or as claims progress.
- Subrogation is not pursued against potentially responsible parties including contractors that may have performed improper installation, maintenance, or repairs of UST systems or against manufacturers of faulty UST components.
- Based upon the extremely high corrective action costs associated with each incident, the ELTF should focus on loss prevention and preventative measures to reduce total program costs. An example of a cost effective loss prevention strategy is annual tank inspections. Finding and stopping just one eligible incident per year would save the ELTF more than \$340,000. The ELTF is authorized to pay for expenses of the Department to inspect underground storage tanks.

Comments from the environmental consulting industry provided the following observations:

- Commenters indicated there appears to be a lack of trust of the environmental consulting industry by the ELTF staff as noted by staff looking for any reason to deny claims.
- Poor communication between ELTF and consulting industry results in denial of claims based upon ELTF implementation of changes in procedures or new interpretations impacting claims already submitted, causing resubmittals, delaying payments, and creating additional workload on consultants and ELTF staff.
- Since ELTF brought claim processing in house, more claims are denied for minor administrative issues rather than conducting a substantive review of the submittal.
- There are inconsistencies among the different ELTF reviewers.
- Complete denials are issued when partial denials of specific items appear more appropriate.
- New claim submission requirements preclude the ability to obtain payment of past expenses because newly required documentation did not exist and was not required when the expense was incurred.
- The bifurcation of technical reviews by the ELTF technical staff (now the LUST staff) and ELTF claims staff created significant delays of up to a year in the claims review process.
- ELTF Technical and ELTF Claims staff is not receptive to corrective action ideas that may reduce corrective action costs.
- Administrative denials take up to 90 days during which time no technical reviews are conducted.
- ELTF encourages claim denials by giving reviewers a productivity “credit” for denying claims.
- Commenters expressed concern over why both paper and CD submittals of claims are required and why resumes of staff must be included in every submittal.
- Commenters noted that reviewers deny claims for unspecified “site specific decisions” that cannot be corrected because the issues are not identified.

- Specific labor rates are denied without support as to why the reviewer determined that another labor rate would be more appropriate for the specified task.
- The existing per diem rate of \$26 per day is not adequate and has not been adjusted similar to mileage rates.
- It was noted that reviewers will deny overnight expenses even if those expenses are less than the cost of remobilization.
- Commenters expressed concern over the burden of submitting time sheets based upon the past practices of a few consultants that overbilled the ELTF.
- Delayed payments from ELTF for costly capital expenditures, increases the burden and expense for consultants.

Suggestions from the environmental consultants include:

- A request for more consistent, proactive communication from the ELTF review staff prior to changes in policy or new interpretations.
- Contact the consultant to ask for missing or incomplete documents, or to correct documents with minor errors, rather than deny an entire claim and require a resubmittal.
- Implement a “triage,” “administrative review” or “QA/QC” process to review a claim quickly to make sure it is complete and appropriate from an administrative/procedural perspective. This would expedite the overall claims process.
- Request direct communication with the project manager when a claim or portion of a claim is denied.
- Publish an organizational chart so consultants can understand ELTF’s internal structure.
- More predictability, calibration and consistency relating to the claims review process.
- Inclusion of fees for preparing claim submittals to address the added expenses associated with new claim documentation and submittal requirements.
- Better and more formal communication between the ELTF and the consulting industry including

additional “consultant days”.

- There was some support for a pre-budget approval process similar to that used in the Brownfields LUST program.
- Establish an FTP site to upload the data directly to IDEM to eliminate the submittal of CD and paper copies of claims.

Comments from LUST site owners provided the following observations:

- Concern over the time required to be reimbursed based upon the submission and resubmission requirements that sometimes cause delays of up to six years.
- Concern over nine month time frame to receive notice of a denial.
- Concern over complete denial of claims over administrative issues.
- Concern over detailed denials of small items such as padlocks or supplies rather than focusing on the big picture.
- Some owners indicated that claims in other states are processed quicker, and require less documentation.
- Concern that the overall time to reach closure and obtain a “No Further Action” (NFA) letter is too long.
- Other states pay consultants directly.
- Owners indicated that they felt getting concurrence on scopes of work from the LUST technical staff was problematic and led to delays in claims processing.
- Most owners support the ability to assign claims to consultants because small owners do not have the ability to finance the expenses while waiting for claims to be paid and many may not be able to properly manage and comply with the claims submittal process.
- Believe that six months delay in approving a scope of work is too long.

Suggestions from owners/operators include:

- Most commenters believe the claims process could be improved and claims could be processed more timely if there was better communication between the ELTF, the consultants and the site owners.

Analysis of Brownfield LUST Program

The Indiana Brownfields Program addresses corrective action at petroleum contaminated properties that qualify for treatment as a Brownfield. The corrective action activities are nearly identical to the activities that are reimbursable under the ELTF; however the average cost of corrective action at a Brownfield LUST site is less than half of the cost of corrective action at ELTF eligible sites and routinely includes tank removal costs that are not reimbursed under the ELTF program. We evaluated the Brownfields LUST program to determine differences between it and the ELTF program that may provide insight into the project cost differences between the programs.

Pinnacle held a conference call with Julie Lang former Deputy Assistant Commissioner of tanks, Amy Smith Deputy Assistant Commissioner of tanks, Andrea Robertson (Brownfields Technical Staff Coordinator) and Meredith Gramalspacher (Brownfields Director & General Counsel) to discuss how the Brownfields group handles their LUST claims as a comparison to the ELTF Program. The following observations were noted:

- The Brownfield LUST program has a list of pre-qualified consultants that are authorized to bid on the scope of work at Brownfield sites.
- Projects are bid based upon project manager generated scopes of work.
- Time and material reimbursements are generally not necessary.
- Project managers establish the scope of work, make regulatory decisions and manage change orders.
- The Brownfields program has limited funding and staff resources which may place an emphasis on efficient and cost effective solutions.
- The Brownfields Program utilizes the Indiana Department of Environmental Management IDEM Remediation Closure Guide (RCG) formerly the Risk Integrated System of Closure (RISC) guidance, which is designed to provide consistent application of risk-based closure policies by IDEM and provides flexibility to achieve a balance between environmental protection and

economic development. Applying RCG allows the opportunity for an Indiana Brownfields Program site to achieve closure or make a seamless transition to or from IDEM remediation programs.

- While both programs allow Environmental Restrictive Covenants to close sites based upon less conservative action levels, it appears that corrective action goals based upon ERCs are examined early in the process on Brownfields LUST cases, while the less conservative action levels are not considered until after corrective action has stalled or has become prohibitively expensive under the ELTF program.
- The Brownfields program is able to achieve closure with small amounts of residual free product remaining while all ELTF sites continue with corrective action until there is no free product remaining.
- The Brownfields technical staff generally does not rely on Science Services for technical assistance.
- The Brownfields program uses a consistent, integrated approach of project management with one technical staff and one financial staff handling all duties on one site until the completion of the corrective action activities.
- There are less statutory and rule constraints on the Brownfields invoice reimbursement process.
- Brownfield project managers are trained and educated scientists focused on completing projects rather than complying with reimbursement criteria.
- Brownfield project managers generally do not have to coordinate with responsible parties when approving corrective action plans or deciding to utilize restrictive covenants.

Based upon comparisons of the programs, it appears that the following are key factors in the efficiency, cost effectiveness and success of the Brownfields program:

- Implementation of competitive bidding of complete projects (not just small portions of projects) with prior approval of budgets and elimination of the time and material activities.
- Use of Environmental Restrictive Covenants when determining the scope of required corrective action.

- Dedicated project manager able to approve budgets and establish closure goals.
- Elimination of burdensome reimbursement documentation.

Forms Use and Review

The following forms were identified, reviewed and their use evaluated:

- Initial Incident Report Form 54487
- Excess Liability Trust Fund Eligibility Application, State Form 55459
- Excess Liability Trust Fund Application, Form # 47139
 - Invoice Summary
 - Submission Pay Request
 - Affidavit Regarding Payment of Costs
- Cost Review Summary
- Claim Summary
- ELTF Claim Preparation QC Checklist
- ELTF Program Claim QC Checklist
- Site Characterization for Prioritization of Claims Form 51920
- Scope of Work Form 51955

UST Initial Incident Report, State Form 54487

The Initial Incident Report Form 54487 is the primary document that generates an incident file for the IDEM and forms the basis for IDEM to require further investigation into an incident. It contains the details of the release and administrative information about the responsible party, contact information and facility address. It contains specific information regarding the UST systems in use at the site, the UST system that is the source of the release, date of discovery and report date. It asks the applicant to provide information about knowledge of the release, the source of the release, and the cause of the release. The form asks for further information regarding affected areas, priority factors and additional site information. This form has historically been received by the LUST department to set up an incident file.

Although this form is not utilized by the ELTF claims processing area, our review indicates that this form provides useful information for the department; however, some of the information requested would be unknown at the time of reporting. It is acknowledged that this form may be partially completed by applicants initially and supplemented by IDEM staff so the Incident Priority Information can be logged by LUST staff. This form seems to be appropriate in its current form.

Excess Liability Trust Fund Eligibility Application, State Form 55459

This form is used for initial eligibility determination. It includes applicant information, site information, UST tank fee payment information, incident reporting information, initial site characterization (ISC) information and UST regulatory compliance information. This form is used consistently and provides the data necessary for an eligibility determination based on the applicant and the status of the tank system with respect to fees and regulatory compliance.

Excess Liability Trust Fund Application, Form # 47139 (Claims payment application)

This form must accompany all reimbursement requests. It includes applicant information, site information and detailed information on the reimbursement request. The applicant must confirm the most recent technical determination of the incident, sign the application, include an executed affidavit regarding payment of costs (form is included) and provide a detailed invoice summary for all costs in the request, including the name of the vendor, invoice number, invoice date, invoice amount, requested amount, proof of payment, use of a dropdown list for description of the line item, explanation of the task performed, number of units, unit description, unit cost, tax and markup, all divided by new submittals and resubmittals. It is utilized by the ELTF staff to determine eligibility for specific invoice items.

This form is required on all claims submissions. Sections 1 & 2 relate to the applicant and the site and are redundant with data submitted with Form 55459 and all previous claim payment applications. Entire submittals are denied if data is improperly entered on this form.

The application includes three forms required for submission: the Invoice Summary, Subsequent Pay Request and Affidavit Regarding Payment of Costs.

- The **Invoice Summary** is submitted with each application providing listing of invoices being submitted for reimbursement by vendor name, invoice number, invoice date and amount. It also includes a proof of payment column that is typically satisfied by providing an affidavit

signed by the applicant attesting to the costs being paid before submitting the claim. Invoices must be separated between subsequent claims and resubmittal claims.

- The **Subsequent Pay Request** separates into specific line items with required descriptions, tasks performed, units, type of unit, unit cost, mark up and taxes. Each page of the listing is tracked by invoice number, incident number, name of applicant and name of vendor. These requests are numbered sequentially.
- The **Affidavit Regarding Payment of Costs** must be executed with every Subsequent Pay Request indicating that all costs submitted were incurred, proof of payment will be maintained on file, and no credits, rebates, refunds or other payments have been made to the applicant. It also includes the applicant contact information.

The application includes six pages of instructions outlining specific items of information the ELTF Program needs and listing the requirements for claim submissions and associated backup documentation. The length and complexity of the instructions implies the preciseness required by the ELTF. This form appears difficult to accurately and fully complete, especially by an owner or operator that does not have significant experience in petroleum remediation. Much of the data required by this form would become obsolete if task-based, prior approval were required.

Internal ELTF Forms

- The **Cost Review Summary** is created by ELTF staff to track all line items submitted for payment, identifying the amount disallowed, total approved and reason for disallowed costs. This form tracks the site name, ELTF number, facility ID number, invoice line item number, resubmission number, vendor, invoice number, amount requested, amount disallowed and total approved. It is included in every claim approval or denial.
- The **Claim Summary** is created by ELTF staff to track eligibility data for each incident. The form tracks the incident number, ELTF number, claim number, facility ID number, date the claim was received, claim type, previous assigned ELTF staff, target date, tank fees paid (by percent), eligibility status, site name, site address, release reporting data including incident numbers, priority, responsible technical staff, milestones and date approved, and claim deductible amount. This data is necessary to process payments and should be available in the database at all times.

- The **ELTF Claim Preparation QC Checklist** is an internal form utilized by administrative staff for initial claim file set up and to track various dates on which functions of the claims review process are completed. All parties handling the claim submission are required to initial and date the form when their respective function in the process has been completed. Because of the necessity to allocate workload among claims reviewers in an equitable manner and to comply with the turnaround requirement for all claims submissions, this document does have value in the current claim processing scheme. However if a more task based, competitive bid process would be undertaken by the program, this form may be able to be consolidated with other forms.
- The **ELTF Program Claim QC Checklist** is an internal form that tracks administrative requirements for contacts and notices, including claim information, decision letter, cost review summaries, general layout, ULCERS information, signatures, and trigger dates associated with technical reviews. This seems to be a redundant form considering the ELTF Claims Checklist form above addresses many of the same factors. This form has more details to be checked and rechecked by the claims reviewer, peer reviewer (when that process was utilized, it had been suspended at the time of our interviews), and senior reviewer to ensure that all items have been checked and reviewers have approved with their signatures. Administrative issues could be tracked electronically to become more streamlined while still satisfying the documentation needs of the program.

Site Characterization for Prioritization of Claims, State Form 51920

This form is required to be submitted before a claim can be processed. Data for the prioritization comes from the Initial Site Characterization Report, Further Site Investigation Report or other technical corrective action or site assessment activities. Although a prioritization score is required for reimbursement, all categories are eligible for immediate payment.

Scope of Work, State Form 51955

This ELTF form is required to be included for all proposed corrective actions submitted after September 29, 2004. Item 1 of the instructions states:

This form must be included for all proposed corrective actions submitted after September 29, 2004, [328 IAC 1-3-3(a)(1)] and should be included with technical documents related to the below referenced phases. {emphasis in original}

Consistent use of this form would allow the ELTF to approve or disapprove activities at each incident site and to affect the scope of work before costs are incurred. There are no cost estimates required in this form. The addition of cost estimates associated with proposed scope of work would be beneficial. Prior approval of both scope and costs would eliminate the need for the detailed analysis and rate comparison required with **Form 47139**, the **Invoice Summary**, **Subsequent Pay Request** and the **Affidavit Regarding Payment of Costs**. This form is not consistently used and is not required by ELTF.

Recommendations

- Eligibility determinations should be completed for initial eligibility. Future eligibility should be reviewed only if a change in status has been submitted. This will reduce redundant eligibility reviews.
- Registration fees and administrative issues should be maintained in a database that can be accessed by claim administration staff to eliminate the delay caused by requesting reimbursement eligibility determination by UST regulatory staff.
- Database submittal of reimbursement requests should be required with a database that will limit specific line items at the time of input. This will eliminate comparisons to rate tables based on the date the service was performed and will eliminate multiple submissions of the same expenses for reimbursement.
- The utilization of a Web-based claims application with the ability to include necessary documentation and provide invoicing and documentation on a standardized basis would reduce disallowed costs, increase the accuracy of applications and reduce improperly entered rates.
- Documentation for smaller line item expenses can be eliminated through the use of per task fees and per diem rates that will not require copies of invoices.
- Reserves should be established and tracked for every eligible incident to assist in cash flow management.
- All corrective action services and reimbursement requests should be evaluated to determine whether the performance is reasonable and cost effective.
- Subrogation should be pursued against potentially responsible parties.
- Loss prevention activities designed to reduce releases should be a priority.
- Claim review deadlines create bottlenecks and unnecessary disallowed determinations for costs that are eventually reimbursed after receipt of appropriate documentation. Immediate, informal requests for additional documentation by ELTF reviewers to applicants (via phone or email) to support submitted costs before disallowing the costs could streamline the data review process and eliminate disallowed costs that require additional ELTF workload to review the resubmittal of the disallowed costs.
- Chain of custody for specific lab analysis should be documented by the laboratory and not be required to be rechecked by ELTF staff.
- Limit lab analysis to a limited number of standardized, cost effective methods created specifically for petroleum constituents.

- If prioritization is not required, do not perform prioritization evaluation.
- Require consistent use of Scope of Work, Form 51955, or a similar form, for all future activities.
- Require competitive bidding for all phases of corrective action, including site characterization, corrective action plans, corrective action implementation, free product recovery and long term monitoring.
- Require task-based prior approval of all expenses. This will eliminate reimbursement tasks associated with form and rate table compliance.
- Discontinue the ability of consultants to submit reimbursement requests on a time and material basis except in limited, pre-approved circumstances.
- Tie assignment of eligibility for reimbursement to acceptance of accountability as the responsible party.
- Limit eligibility to \$1 million per claim.
- Implement risk based corrective action standards that take into consideration potential receptors, and exposure pathways.
- Consider the use of Environmental Restrictive Covenants and other risk based solutions early in the project before designing and implementing active corrective action plans.
- Increase loss control efforts to reduce the overall frequency and severity of incidents eligible for reimbursement.
- Encourage the ELTF review staff, LUST staff and the consultant to work cooperatively to focus efforts on determining reasonable project scopes of work in advance of implementation.
- Encourage open communication between ELTF staff and consultants to address administrative or technical issues to reduce denials and subsequent resubmittal applications.
- Where possible, assign the same ELTF and LUST reviewers throughout the lifetime of the project.

Distribution & Use

This study has been conducted at the request of Indiana Department of Environment officials. The report has been prepared so that our assumptions and judgments are documented. Judgments about the conclusions drawn in this report should be made only after considering the report in its entirety. We remain available to answer any questions that may arise regarding this report. We assume that the user of this report will seek such explanation on any matter in question.

Reliances & Limitation

We have prepared this report in conformity with its intended use by persons technically competent in the areas addressed and for the stated purposes only. Judgments as to conclusions, methods, and data contained in this report should be made only after studying the report in its entirety. Furthermore, we are available to explain any matter presented herein.

Throughout our review we have, without audit or verification, relied on historical data and qualitative information provided by IDEM. We considered this data for consistency among data elements. We believe the data to be reasonable and accurate. The accuracy of our results is dependent upon the accuracy and completeness of this underlying data. Therefore, any material discrepancies discovered in this data by IDEM should be reported to us and this report amended accordingly, if warranted.

There is a limitation upon any estimates of financial impact from adopting any recommendations contained herein in that there is an inherent uncertainty in how effectively recommendations would be implemented. Also our projections are subject to a high degree of uncertainty because they require prediction of future operational, economic, legal, and judicial conditions which are not knowable in advance. In our judgment, we have employed techniques and assumptions that are appropriate, and the conclusions presented herein are reasonable, given the information currently available. However, it should be recognized that future financial results will likely deviate, perhaps materially, from our estimates.

Pinnacle's report is intended solely for the internal use of IDEM. We understand that IDEM may also wish to share a copy of this report with other state agencies and legislative bodies. This distribution is granted on the conditions that the entire report be distributed rather than excerpts and that all recipients are made aware that Pinnacle is available to answer any questions regarding the report. Third parties reading this report should recognize that the furnishing of this report is not a substitute for their own due diligence and should place no reliance on this report or the data contained herein that would result in the creation of any duty or liability by Pinnacle to the third party. Any further use or distribution is not authorized without prior written consent of Pinnacle.