State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL
Ty L. Howard
Director

A meeting of the Waste Management and Radiation Control Board has been scheduled for November 12, 2020 at 1:30 p.m.

This is an electronic/telephonic meeting. No Anchor Location.
All Board members and any interested persons will participate electronically or telephonically, via the Internet: meet.google.com/cpk-swuy-rqy
Join by phone: (US) + 1 956-320-9639 PIN: 146 566 892#

This meeting is being held in accordance with House Bill 5002, effective July 1, 2020, which amended the Open and Public Meetings Act to address electronic meetings held without an anchor location. The Chair of the Waste Management and Radiation Control Board has determined that the presence of the COVID 19 virus in the community presents a substantial risk to the health and safety of those who might be present at an anchor location. Therefore, this meeting will be conducted without an anchor location. A member of the public may view this meeting and make comments via the electronic means outlined above.

AGENDA

I. Call to Order.

II. Public Comments on Agenda Items.

III. Declarations of Conflict of Interest.

IV. Approval of the Meeting Minutes for the September 10, 2020 Board Meeting ..... Tab 1 (**Board Action Item**).

V. Underground Storage Tanks Update ..... Tab 2

VI. 2020 Petroleum Storage Tank Fund Actuarial Report summary ..... Tab 3

VII. Administrative Rules ..... Tab 4

A. Approval to proceed with formal rulemaking and a public comment period for proposed rule changes to R313-36 and R313-37 of the Radiation Control Rules to incorporate regulatory corrections promulgated by the Nuclear Regulatory Commission and published in the June 28, 2018 (83 FR 30285), November 21, 2018 (83 FR 58721), and November 18, 2019 (84 FR 63565) issues of the *Federal Register*. **(Board Action Item)**

(Over)

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VIII. Low-Level Radioactive Waste ..... Tab 4

A. Energy*Solutions* request for a site-specific treatment variance from the Hazardous Waste Management Rules. Energy*Solutions* seek authorization to receive and dispose of waste containing high-subcategory Mercury **(Board Action Item**).

IX. Other Business.

A. Miscellaneous Information Items.
B. Scheduling of next Board meeting (January 14, 2021).

X. Adjourn.

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Larene Wyss, Office of Human Resources at (801) 536-4284, Telecommunications Relay Service 711, or by email at "lwyss@utah.gov".

Waste Management and Radiation Control Board
Electronic/Telephonic Board Meeting Minutes
September 10, 2020
1:30 p.m.

No Anchor Location. All Board members participated electronically OR telephonically. UDEQ employees and others from the general public also participated either electronically or telephonically.

Board Members participating (Electronically/Telephonically):

Brett Mickelson (Chair), Dennis Riding (Vice-Chair), Richard Codell, Danielle Endres, Steve McIff, Shawn Milne, Nathan Rich, Vern Rogers and Shane Whitney

Board Members Absent/Excused: Marc Franc and Scott Baird

DEQ staff members participating (Electronically/Telephonically):

Ty Howard, Brent Everett, Thomas Ball, Arlene Lovato, Deborah Ng and Elisa Smith

I. Call to Order.

Chairmen Mickelson called the meeting to order at 1:35; roll call of Board members was conducted (see above).

Chairmen Mickelson announced that this meeting is being conducted electronically. This meeting is being held in accordance with House Bill 5002, effective July 1, 2020, which amended the Open and Public Meetings Act to address electronic meetings held without an anchor location. The Chair has determined that the presence of the COVID 19 virus in the community presents a substantial risk to the health and safety of those who might be present at an anchor location. Therefore, this meeting is being conducted without an anchor location. A member of the public may participate/view this meeting via an electronic platform Google Meet or by Telephone call-in number by utilizing the electronic link/telephone number provided in the public notice of this meeting. (Public notice of this meeting was posted on the DWMRC website and the Utah Public Notice website). Also, a member of the public may make a comment on any Agenda item during each Board meeting during the time allotted for "Public Comments on Agenda Items" listed on all Agendas.

II. Public Comments on Agenda Items. – None.

III. Declarations of Conflict of Interest. – None.

IV. Approval of the Meeting Minutes for the August 13, 2020 Board Meeting (Board Action Item).

It was moved by Shane Whitney and seconded by Dennis Riding and UNANIMOUSLY CARRIED to approve the August 13, 2020 Board Meeting Minutes.

V. Underground Storage Tanks Update. Elisa Smith will prepare.

Brent Everett, Director of the Division of Environmental Response and Remediation (DERR), informed the Board that the cash balance of the Petroleum Storage Tank (PST) Trust Fund at the end of July 2020 was $18,401,258.00. The preliminary estimate for the cash balance of the PST Trust Fund for the end of August 2020 is $18,745,128.00. The PST Trust Fund balance fluctuates throughout the year as payments are made. The DERR reviews claims closely to ensure qualified expenses are appropriately reimbursed. The DERR continues to watch the balance of the PST Trust Fund closely to ensure sufficient cash is available to provide coverage of covered releases. There were no questions or comments.

VI. Administrative Rules.

A. Final adoption on prosed rule changes to UAC R315-261, 262, 264, 265, 266, 268, 270, and 273 of the hazardous waste rules to incorporate federal regulatory changes promulgated by the Environmental Protection Agency (EPA) and published in the Federal Register on February 22, 2019 (84 FR 5816).

Tom Ball, Planning and Technical Support Section Manager of the Division of Waste Management and Radiation Control reviewed the request for the Board's approval for final adoption of the proposed changes to the hazardous waste rules UAC R315-261, 262, 264, 265, 266, 268, 270, and 273, to incorporate federal regulatory changes promulgated by the Environmental Protection Agency (EPA) and published in the Federal Register on February 22, 2019 (84 FR 5816). The final rule creates a tailored, sector-specific regulatory framework for managing hazardous waste pharmaceuticals at healthcare facilities that generate, accumulate, or otherwise handle hazardous waste pharmaceuticals and reverse distributors engaged in the management of prescription hazardous waste pharmaceuticals.

Mr. Ball stated that these rule changes have been highly anticipated by the healthcare industry, as they had difficulty complying in following industry rule for the management of hazardous waste.

At the Board meeting on July 9, 2020, the Board approved the proposed changes to UAC R315-261, 262, 264, 265, 266, 268, 270, and 273 to be filed with the Office of Administrative Rules for publication in the Utah State Bulletin. The proposed rule changes were published in the August 1, 2020 issue of the Utah State Bulletin (Vol. 2020, No. 15).

An Executive Summary and selected pages from the Utah State Bulletin showing the publication of the proposed changes were included in the September 10, 2020 Board packet. (Mr. Ball noted that that Executive Summary provided to the Board was incorrectly dated August 13, 2020 instead of September 10, 2020).

The public comment period for this rulemaking ended on August 31, 2020. No comments were received.

The Board is authorized under Subsection 19-6-105(1)(c) to make rules governing generators and transporters of hazardous wastes and owners and operators of hazardous waste treatment, storage, and disposal facilities. The rule changes also meet existing DEQ and state rulemaking procedures.

The Director recommended the Board approve final adoption of the proposed rule changes to UAC R315-261, 262, 264, 265, 266, 268, 270, and 273 as published in the August 1, 2020 issue of the Utah State Bulletin and set an effective date of September 14, 2020.

Richard Codell identified in the Board packet pages from the Utah State Bulletin that had repeated typo errors stating, "The operates one hospital" that need to be corrected to "The State operates one hospital". Mr. Ball stated he will review the documents and correct all errors.

It was moved by Dennis Riding and seconded by Danielle Endres and UNANIMOUSLY CARRIED to approve for final adoption the proposed rule changes to Hazardous Waste Rules UAC R315-261, 262, 264, 265, 266, 268, 270, and 273 to incorporate federal regulatory changes promulgated by the Environmental Protection Agency (EPA) and published in the Federal Register on February 22, 2019 (84 FR 5816), and set an effective date of September 14, 2020.

VII. Low-Level Radioactive Waste.

Otis Willoughby, Low Level Radioactive Waste Section Manager, and Tim Orton, EnergySolutions representative, reviewed EnergySolutions' request submitted on August 25, 2020, for a one-time site-specific treatment variance from the Utah Hazardous Waste Management Rules to treat by stabilization, waste containing High-Subcategory Mercury. (EnergySolutions has submitted variance requests for similar waste every year since 2001. The Board has granted each of these requests. The facility has been successful in treating these High Mercury Subcategory wastes.)

A notice for public comment will be published in the Salt Lake Tribune, the Deseret News and the Tooele County Transcript Bulletin on September 10, 2020. The 30-day public comment period begins September 10, 2020 and will end October 13, 2020.

Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site specific variance from an applicable treatment standard as allowed by R315-268.44 of the Utah Administrative Code. This is an informational item before the Board. The Director will provide a recommendation at the next Board meeting.

Tim Orton stated this is the 17th time this type of variance has been requested, since 2001. Mr. Orton gave details of Energy*Solutions* variance request for approval by the Board to receive and dispose, in EnergySolutions' Mixed Waste Landfill Cell, waste containing the D009 or U151 High Mercury-Organic Subcategory and High Mercury-Inorganic Subcategory hazardous waste codes that has been treated using stabilization/amalgamation technologies. Energy*Solutions* will perform the stabilization/amalgamation treatment on D009 and U151 High Mercury Subcategory waste streams that have not been treated prior to arrival at the Energy*Solutions* Clive facility. All actions will be performed in accordance with EnergySolutions' State-issued Part B Permit. The listed treatment technology in 40 CFR 268.40 for the D009 High Mercury-Organic Subcategory is either incineration (IMERC) or retorting/roasting for mercury recovery (RMERC). The listed treatment technology for the D009 High Mercury-Inorganic Subcategory and for U151 is RMERC. The need and justification for this action are as follows: The intent of the RMERC treatment process is to recover elemental mercury for recycling. However, radioactive mercury cannot be recycled and the RMERC process generates secondary waste (radioactive elemental mercury) which requires additional treatment by amalgamation (a stabilization technology) prior to disposal. The IMERC technology is also intended to be a mercury recovery technology where the waste is incinerated and the mercury recovered in the ash or in a specific off-gas control system. For radioactive mercury, both the ash and the control equipment/media will require further treatment. Furthermore, IMERC involves an extra handling step for the radioactive residue. Successful chemical stabilization of High Mercury-Inorganic Subcategory wastes has been demonstrated to achieve a measure of performance equivalent to the required methods which require two treatment methods (RMERC and stabilization) with no detrimental effect to human health or the environment.

The U.S. Environmental Protection Agency (US EPA) has issued a Determination of Equivalent Treatment (DET) for these High Mercury Subcategory wastes that were chemically stabilized. In the EPA's determination, they concluded that for waste streams that are radioactive and contain mercury, the recovery portion of RMERC may not be appropriate and that alternative treatment processes should be pursued. The US EPA has reviewed the treatment of mercury-bearing waste in a Federal Register Notice (68 FR 4481). In this notice, the US EPA concluded that treatment of mercury waste is possible and it is suggested that stakeholders should use the site specific treatment variance process to achieve approval for the treatment of high subcategory mercury wastes. The notice specifically designates an example of when this would be appropriate as the case of a high mercury subcategory waste that is also radioactive. This variance request consists of waste that may be shipped to EnergySolutions over the next year. To date, EnergySolutions has disposed of approximately 12,100 cubic feet of treated High Mercury Subcategory waste. From knowledge of the current market of High Mercury Subcategory Waste requiring treatment or disposal, and from past experience

receiving this type of waste, Energy*Solutions* anticipates less than 500 cubic feet of additional High Mercury Subcategory waste for disposal in the next year under this treatment variance.

VIII. Other Business.

A. Director's Report.

Ty Howard, Director of the Division of Waste Management and Radiation Control provided a brief update regarding the finding from a recent Utah Legislative Audit (Number 2020-04). The Legislative Auditors conducted an in-depth review of the Department of Environmental Quality and its divisions and were housed at the UDEQ offices for approximately 9 months.

Legislative Audits are tasks to yearly audit one state agency; UDEQ was selective for this year. These are comprehensive and budgetary audits, but they also look at the performance of each of the programs within the Department to ensure the division are following the rules/regulations, statutes and policies.

Director Howard informed the Board that the audit identified improvements needed in the X-ray and the Solid Waste Programs in the Division of Waste Management and Radiation Control. Director Howard stated the Division was already aware of concerns identified by the audit and has been working to put processes in place to improve these two programs. Director Howard reviewed the X-Ray and Solid Waste programs, the concerns and actual findings addressed by the audit and process improvements being put in place for each of the two programs.

The report is available on the Legislative Audit website for Board members to review at: https://olag.utah.gov/olag-web/

Brent Everett, Director of the Division of Environmental Response and Remediation (DERR) informed the Board that the DERR was also included as part of the legislative performance audit that was performed this year. The focus of the audit within the DERR was on the underground storage tank (UST) program. It was noted that there is a lack of regulation within the State regarding aboveground storage tanks (ASTs). A recommendation from the audit is that the DERR work with the legislature to review and consider potential legislation of ASTs. In 2017, the DERR presented information to the Natural Resources, Agriculture, and Environment Interim Committee regarding ASTs and the lack of regulation. At that time, the committee did not pursue legislation to regulate ASTs.

The DERR is happy to provide information to the legislature and continue to work with them if they decide to pursue AST regulations within the State of Utah. It is not uncommon for the DERR to receive notification of leaking ASTs through our incident notification line. The most recent AST reported was in Ticaboo. The AST leaked when transferring product from one tank to another.

The UST inspection program was also audited. The auditors felt that the inspections are generally well done. The DERR inspects approximately 950 facilities per year. The U.S. Environmental Protection Agency requires every UST facility be inspected every three years. The DERR tries to inspect facilities every 2 years.

The DERR developed a risk assessment tool a few years ago that determines the risk level of a facility. Risk factors are based on both location and equipment. Facility owners can use the tool, that is available on the DERR website, to evaluate their risk and find ways to improve their risk level. The surcharge for the facility changes based on risk level. The audit encouraged the DERR to continue to improve upon the risk-based inspections protocol.

The DERR developed an electronic inspection tool that is used to conduct all inspections. This information is now automatically uploaded into the database which should prevent possible data gaps in future years.

Continued training for inspectors was also recommended in order to provide consistency in inspections, reporting, and enforcement action. In general, it was found that enforcement actions occur within an acceptable time frame.

Director Everett thanked UST owners and operators for their timeliness in responding proactively and quickly to resolve compliance issues when they do occur. The DERR will continue to work on these items as well as other efficiencies that are already in process such as improving reimbursement processes for the PST Trust Fund.

Nathan Rich asked if there was any additional legislative follow-up.

Director Howard stated that the legislature will follow-up on specific recommendations outlined in the audit a year from now if it is similar to past audits. The Department has provided a formal response to the audit committee, which can be found at the back of the audit.

Director Everett stated the DERR has already been implementing recommendations. Most recommendations for the DERR were to continue practices that are in place. The Natural Resources, Agriculture, and Environment Appropriations Subcommittee will also usually follow up with departments regarding the results of the legislative audit.

B. Miscellaneous Information Items. – None to Report.

C. Scheduling of next Board meeting.

The October 8, 2020 Board meeting was cancelled. The next Board meeting is scheduled for November 12, 2020 (electronic/telephonic meeting).

IX. Adjourn.

The meeting adjourned at 2:10 pm.

UST STATISTICAL SUMMARY

October 1 2019 -- September 30, 2020

PROGRAM

	October	November	December	January	February	March	April	May	June	July	August	September	(+/-) OR Total
Regulated Tanks	4,092	4,089	4,081	4,090	4,108	4,113	4,116	4,130	4,123	4,128	4,128	4,135	**43**
Tanks with Certificate of Compliance	3,996	3,997	3,986	3,982	3,992	3,988	4,000	4,006	4,009	4,033	4,029	4,027	**31**
Tanks without COC	96	92	95	108	116	125	116	124	114	95	99	108	**12**
Cumulative Facilitlies with Registered A Operators	1,291	1,292	1,292	1,290	1,291	1,291	1,290	1,289	1,289	1,255	1,250	1,084	**81.44%**
Cumulative Facilitlies with Registered B Operators	1,291	1,292	1,292	1,290	1,290	1,291	1,290	1,290	1,291	1,292	1,287	1,142	**85.80%**
New LUST Sites	14	9	6	6	8	5	2	6	4	3	11	5	**79**
Closed LUST Sites	5	5	3	5	6	7	5	3	4	2	6	3	**54**
Cumulative Closed LUST Sites	5255	5261	5264	5270	5276	5281	5285	5291	5292	5295	5301	5302	**47**

FINANCIAL

	October	November	December	January	February	March	April	May	June	July	August	September	(+/-)
Tanks on PST Fund	2,663	2,661	2,647	2,636	2,641	2,637	2,637	2,637	2,642	2,662	2,661	2,657	**(6)**
PST Claims (Cumulative)	672	672	673	673	674	675	675	681	684	685	685	687	**15**
Equity Balance	-$10,323,368	-$10,502,116	-$10,575,676	-$10,309,455	-$9,997,725	-$9,765,034	-$9,475,125	-$9,022,705	-$8,712,595	-$7,717,022	-$7,373,152	-$7,311,417	**$3,011,951**
Cash Balance	$15,794,912	$15,616,114	$15,542,604	$15,808,825	$16,120,555	$16,353,246	$16,643,155	$17,095,575	$17,405,685	$18,401,258	$18,745,128	$18,806,863	**$3,011,951**
Loans	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Cumulative Loans	121	121	121	121	121	121	121	121	121	121	121	121	**0**
Cumulative Amount	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	**$0**
Defaults/Amount	1	1	1	1	1	1	1	1	2	2	2	2	**1**

	October	November	December	January	February	March	April	May	June	July	August	September	TOTAL
Speed Memos	40	40	25	136	53	27	54	32	50	7	38	95	**597**
Compliance Letters	17	19	2	22	30	8	8	7	5	15	18	32	**183**
Notice of Intent to Revoke	0	0	0	1	2	0	0	0	0	0	0	0	**3**
Orders	0	4	3	0	0	0	0	0	2	3	2	1	**15**

Taylor&Mulder

Property and Casualty Consulting Actuaries

Utah Petroleum Storage Tank Trust Fund

Loss and Loss Adjustment Expense Reserve Analysis As of June 30, 2020

September 2020

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September 24, 2020

Mr. Therron K. Blatter, M.S., P.G.
Manager, Underground Storage Tank Branch
Multi Agency State Office Building
195 North 1950 West
Salt Lake City, UT 84116

Re: Utah Petroleum Storage Tank Trust Fund Actuarial Analysis as of June 30, 2020

Dear Mr. Blatter:

Enclosed is the actuarial review of the loss and loss adjustment expense reserves of the Utah Petroleum Storage Tank Trust Fund as of June 30, 2020.

The first section in the text of our report is the Executive Summary section. This section presents our conclusions and recommendations. It also describes the purpose and scope of our report, explains the distribution and use of our report, and provides the conditions and limitations underlying our work. This section of our report includes the Background section which provides information about the PST Fund's history.

The next section of our report is the Actuarial Analysis section that describes the sources of data, our overall methodology, the selection of factors and specific methodologies and considerations. It also describes the selection of ultimate losses, and loss reserve discounting. The Exhibits section of our report follows the text of the report and includes our analyses.

Please feel free to call if you have any questions regarding any aspect of our report.

Sincerely,

Daniel W. Lupton, FCAS, MAAA, CSPA, MBA

E. Toni Mulder, FCAS, MAAA, FCA

Bobby Jaegers, ACAS, MAAA
Enclosures

Utah Petroleum Storage Tank Trust Fund
Loss and Loss Adjustment Expense Reserve
Analysis as of June 30, 2020

Contents

Executive Summary

Purpose and Scope

Taylor & Mulder, Incorporated ("T&M") was requested by the Utah Petroleum Storage Tank Trust Fund ("PST Fund") to conduct an actuarial review of the PST Fund's loss and loss adjustment expenses reserves as of June 30, 2020. This report contains our summary, conclusions and recommendations along with a description of the analysis underlying our conclusions.

Specifically, T&M was asked to conduct an actuarial analysis to include within its scope the following tasks:

1. Provide the PST Fund Actuarial Report as of June 30, 2020 by September 30, 2020.
2. Project the future of the PST Fund's cash balance along with a ten-year projection, every year as of June 30, beginning in 2020.
3. Calculate the liability for open unsettled claims regarding the next ten fiscal years, every year as of June 30, beginning in 2020.

This report presents the results of those analyses.

In accordance with the requirements of the Actuarial Standards of Practice in making statements of actuarial opinion, we provide the following statements:

> *I, Daniel W. Lupton, am an Officer and Consulting Actuary in the firm of Taylor & Mulder, Inc. I am a Fellow of the Casualty Actuarial Society in good standing and qualified to issue a Statement of Actuarial Opinion. I am also a Member of the American Academy of Actuaries.*

Conclusions

Based on our analysis, we estimate that the total unpaid claim liability as of June 30, 2020 is $28,435,280 on an undiscounted basis and $26,907,295 on a discounted basis.

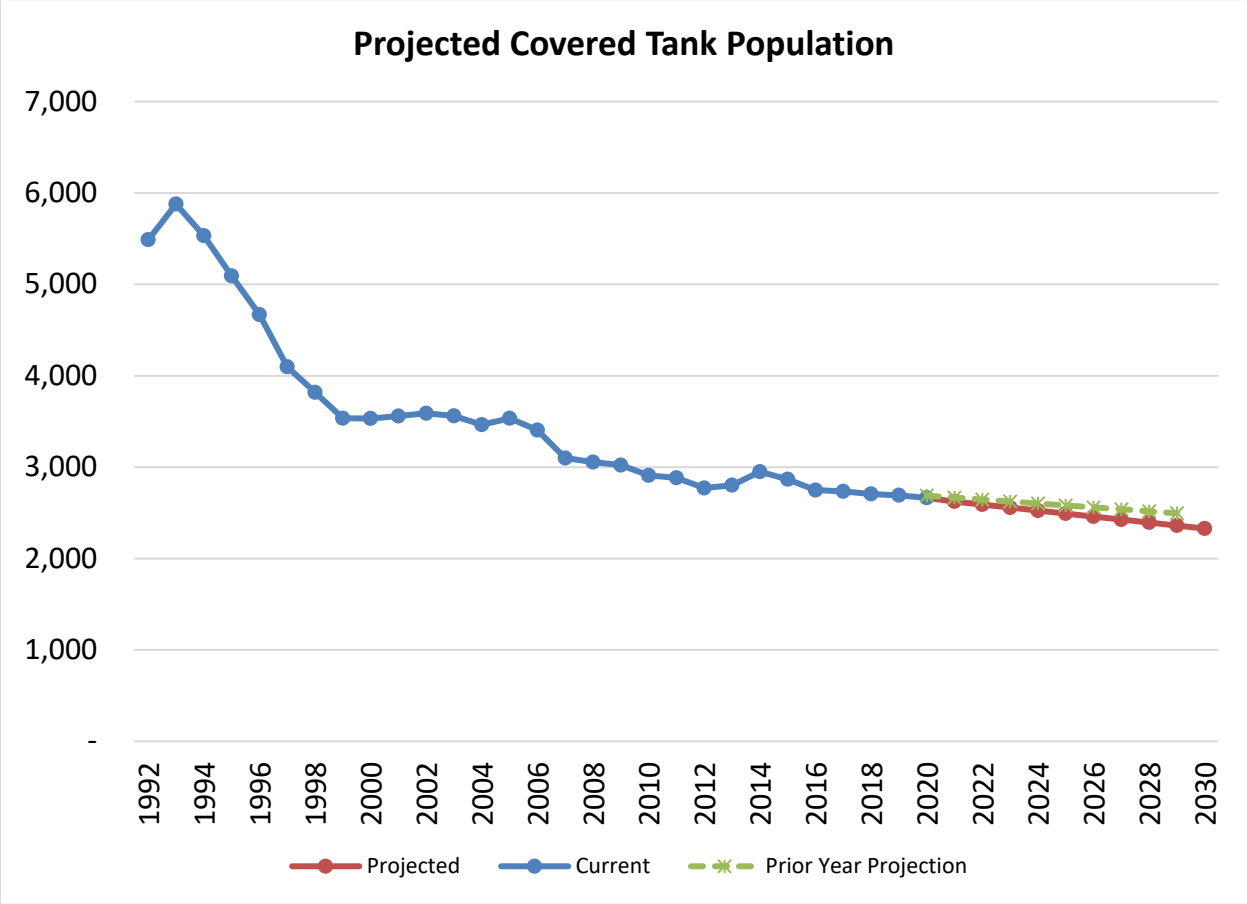
The following chart shows the projected fund balance, outstanding liability, and projected equity balance for the current year and each of the next ten years:

Utah Petroleum Storage Tank Trust Fund
Loss and Loss Adjustment Expense Reserve Analysis
As of June 30, 2020

Fiscal Year	Fund Balance	Outstanding Liability	Equity Balance
2020	17,641,479	28,435,280	(10,793,801)
2021	18,780,866	27,804,330	(9,023,464)
2022	19,937,448	27,333,359	(7,395,910)
2023	21,191,443	27,096,940	(5,905,497)
2024	22,533,603	27,096,954	(4,563,350)
2025	23,796,519	27,170,882	(3,374,363)
2026	24,939,949	27,260,597	(2,320,648)
2027	25,874,896	27,276,378	(1,401,482)
2028	26,697,840	27,309,016	(611,176)
2029	27,330,439	27,274,598	55,841
2030	27,856,278	27,249,451	606,827

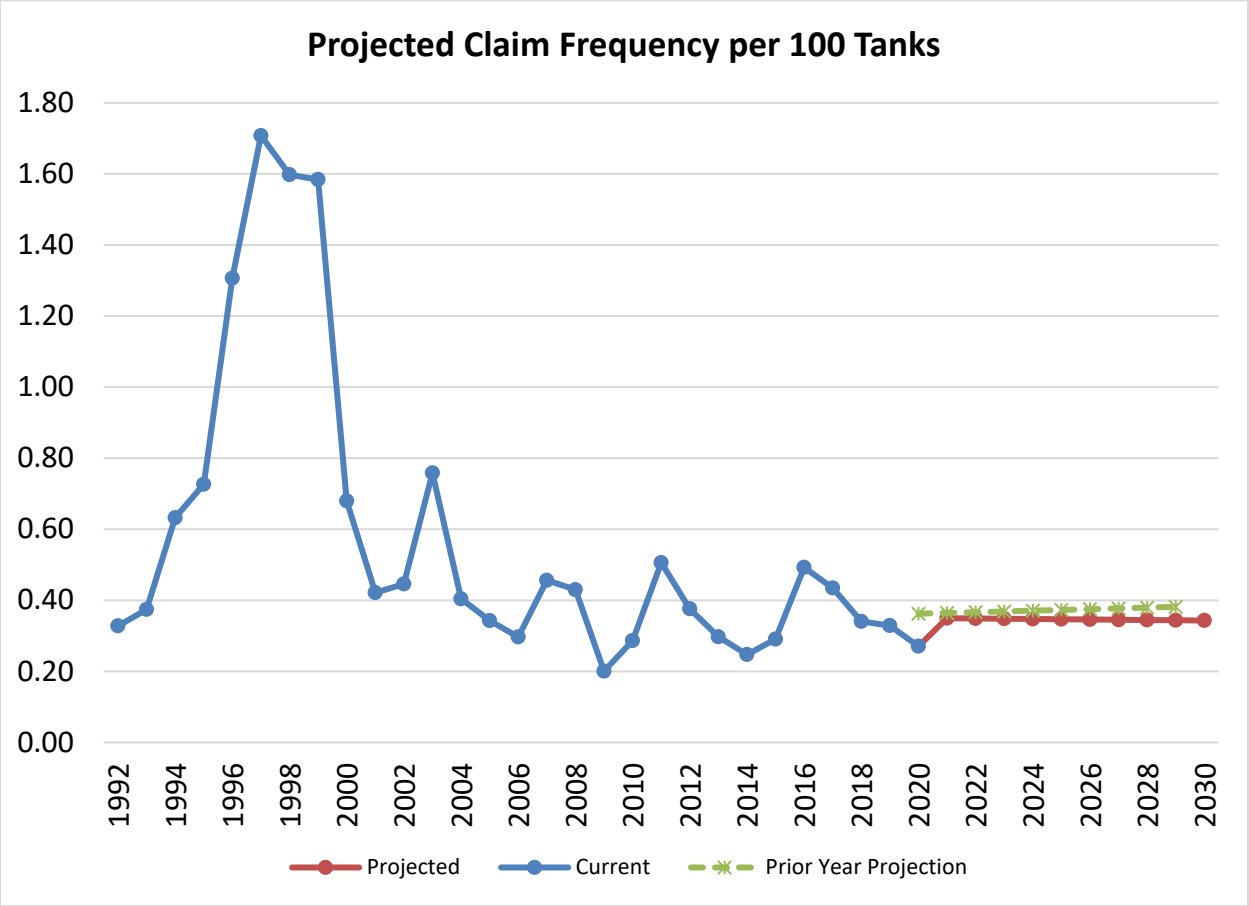
Notably, the projected negative equity balance shrinks considerably over the next ten years, finally reaching a small positive number by 2029. This pattern arises due to steady revenue projections in future years combined with anticipated payouts exceeding the additional liabilities with each subsequent notification year. However, it is important to note that ten-year projections have a higher uncertainty than shorter projections. As payment and reporting patterns continue to develop in the future, these projections will change accordingly. As a result, decisions based on longer-term projections should be considered carefully.

These projections are consistent with long-term coverage and claim trends for the fund. The following chart shows the covered tank population from 1992 through 2020, along with projections through 2030:



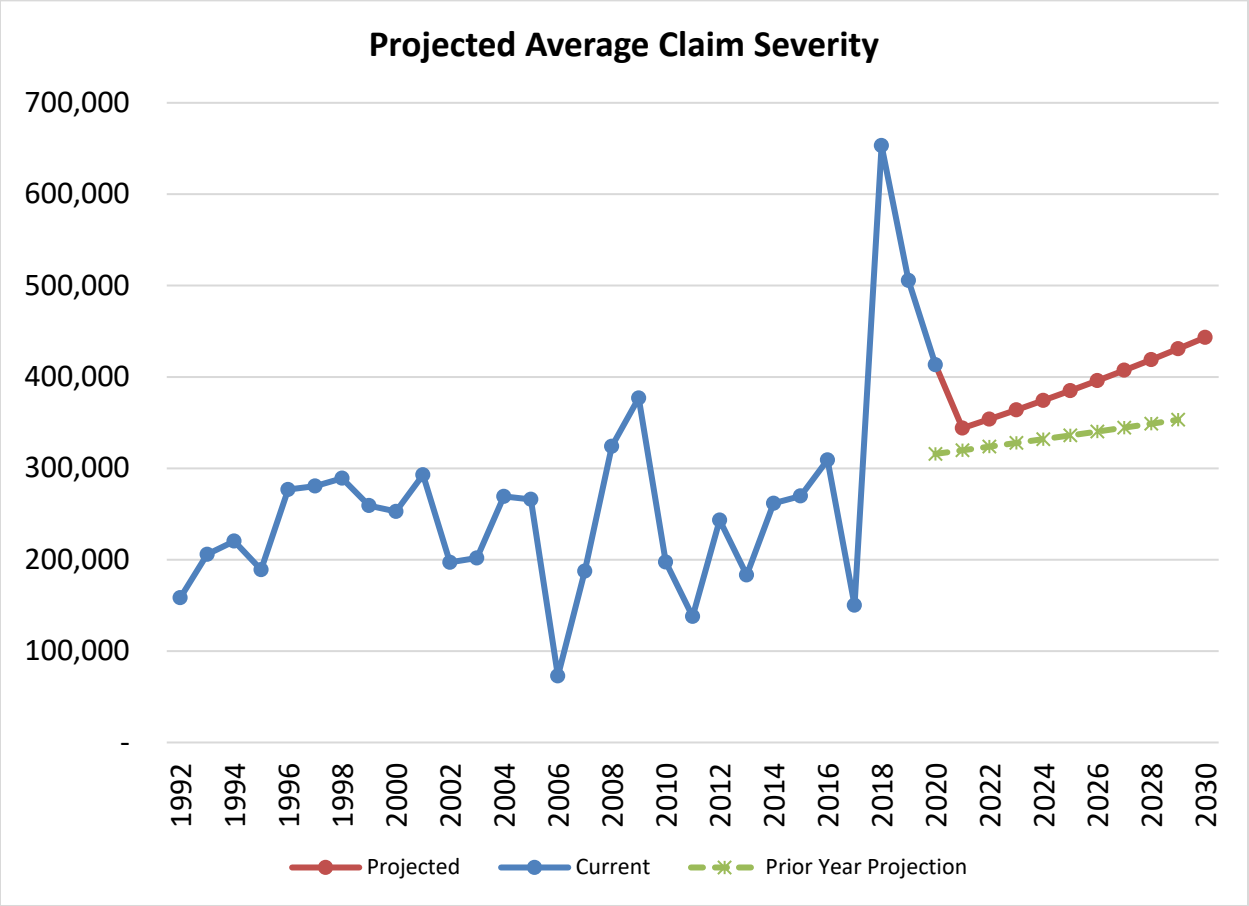
The fund has experienced fairly consistent declines in the number of covered tanks since the early 2000s. All else equal, the projected modest declines in covered tank population in the future are anticipated to correlate with declining outstanding liabilities (though also modest declines in revenues). As shown in the graph, covered tank population projections have declined a small amount relative to the projections as of June 30, 2019.

The frequency of claims per 100 covered tanks has also mostly stabilized since the mid-2000s, with some normal volatility around 0.35 claims per 100 covered tanks:



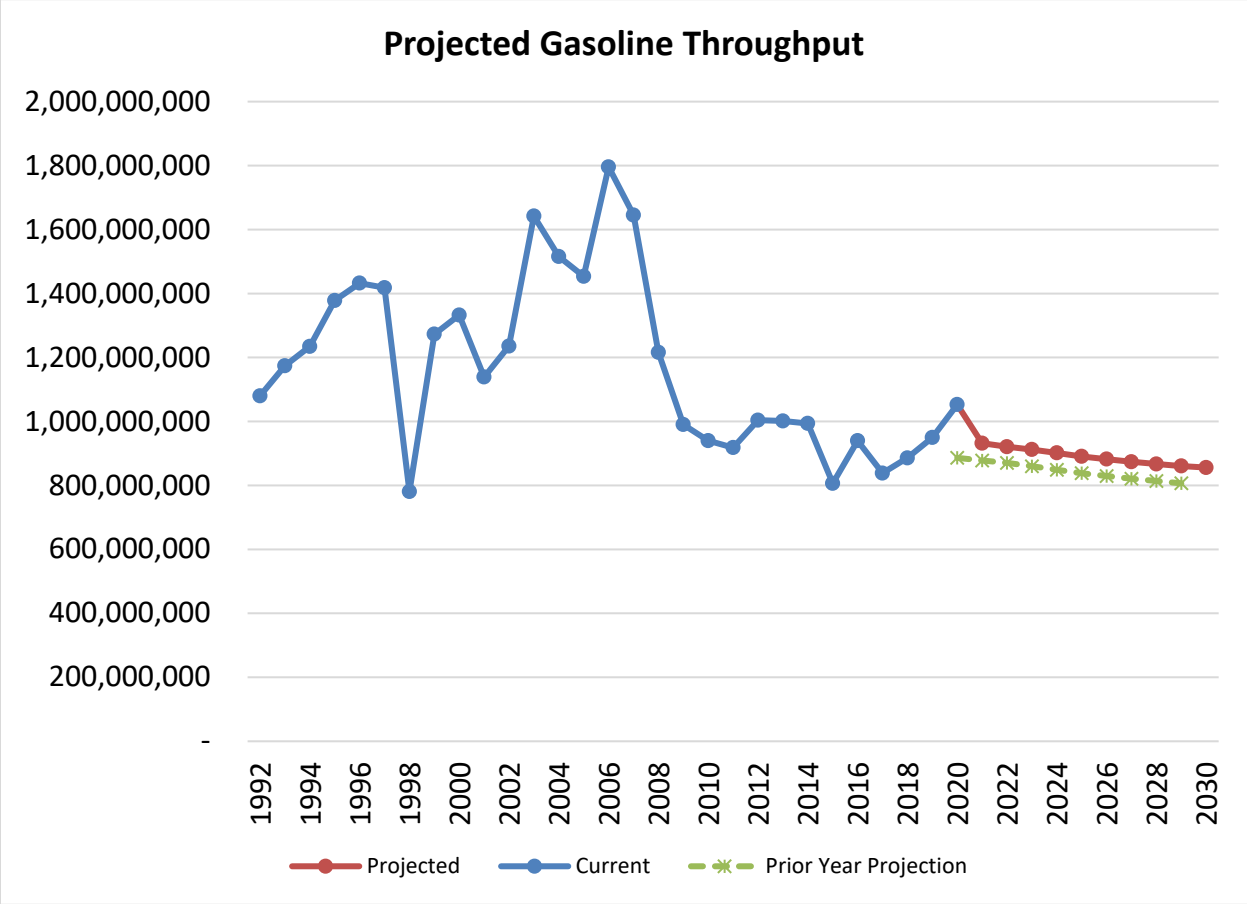
We project that trend will continue, with only very minor decreases through 2030 (at a rate of about -0.2% per year.)

Offsetting these trends in declining coverage and stable claim frequencies is a trend of increasing claim severities (i.e., cost per covered release):



Claim severities have experienced significant volatility over time, but this is largely a result of ordinary variation arising from relatively low claim counts. Over the next ten years, we anticipate average remediation costs will increase from roughly $344,000 to roughly $443,000 per covered release. However, we anticipate that some of the projection years will be much higher or much lower than our actual projections, consistent with the historic volatility.

In a new procedure compared to prior analyses, surcharge revenue was projected based on USEIA projected transit-sector energy use over the next 10 years. The following chart shows the projected gasoline throughput over time based on this benchmark:



This modest downward trend projection is consistent with expected reductions in fuel usage arising from more stringent fuel standards and alternative-energy vehicles. Note that projected gasoline throughput has increased slightly relative to projections as of June 30, 2019. This is due to higher-than-expected throughput in 2020, which suggested that 2019 projections were too conservative. However, note that these projections do not consider potential future impacts of COVID-19 on economic activity that could depress future gasoline throughput.

Background

The PST Fund was established in 1989 by the Utah State Legislature. The PST Fund provides an alternative to private insurance or self-insurance for meeting federal financial assurance requirements. The PST Fund covers eligible expenses up to a coverage limit of $2 million, subject to a $10,000 deductible.

Revenue to the tank fund is provided through several sources:

- Petroleum storage tank fees of $450 per tank per year for tanks with an annual throughput of less than 70,000 gallons and $150 per tank per year for tanks with an annual throughput exceeding 70,000 gallons.
- UST installation company permit fees
- Per-gallon surcharge on gasoline sales of $0.0065 per gallon.

The following is a list of key dates and legislative items affecting the fund since it was established:

- Fall 1995: RBCA Tier I was introduced. This defined what constitutes contamination and reduced the number of sites and cost of cleanups.
- July 1, 1997: Up to this date, Fund participation was mandatory for all tank owners. Subsequent to July 1, 1997, participation for private tanks was on a voluntary basis (though state-owned tanks are still required to participate in the Fund.)
- Spring 1998: RBCA Tier II was implemented, allowing the Fund to remediate sites to a standard that differs according to anticipated future use of the site.
- January 1, 2007: HB 271 modifies the voluntary nature of Fund coverage for private tanks. Following January 1, 2007, owner/operators are required to insure all of their tanks or none of them through the fund (i.e., to prevent adverse selection, owners/operators are not able to selectively insure their tanks through the program.)
- May 11, 2010: Prior to this date, the Fund provided up to $1 million of coverage per leak for the sum of investigation costs, remediation costs, and third-party liabilities. Pursuant to HB 120, subsequent to May 11, 2010 the Fund provides coverage of up to $2 million per release for these expenses.
- July 1, 2014: Pursuant to HB 138, the Fund is allowed to offer 0% interest loans to tank owners and operators for tank upgrades. In addition, HB 138 allowed an increase in the per gallon tax to the current rate of $0.0065 per gallon and authorized a risk-based rebate system for environmental assurance fees, among other effects of this bill.

Report Distribution and Use

This report has been prepared for use by the management of the PST Fund, their Board of Directors, their accountants, auditors, and attorneys. This report may be reproduced only in its entirety. The Exhibits are integral parts of this report. It is our understanding that this report will be presented in a public meeting of the Waste Management and Radiation Control Board by the PST Fund management and that T&M will be available at that meeting to present the report and answer questions from the Board, The PST Fund is not authorized to include this report in any marketing or request for proposal solicitations. In addition, it should be understood that T&M consultants are available to respond to any questions by authorized third parties with respect to this report.

Conditions and Limitations

The analyses contained in this report were performed using accepted loss and loss adjustment expense reserving methods adjusted to the special needs of the PST Fund and in conformance with sound actuarial standards and principles. T&M introduced assumptions and judgments that we considered appropriate in the circumstances.

With regard to projections of ultimate values, it should be understood that the emergence and settlement of claims are subject to uncertainty. While we have used our best professional judgment in all instances, projections of future ultimate losses and loss expenses are inherently uncertain because of the random nature of claims occurrences. They are also dependent upon future contingent events and are affected by many additional factors.

PST Fund claim reserving procedures and settlement philosophy, current and perceived social and economic inflation, current and future court and jury attitudes, legislative changes affecting the PST Fund, improvements in technology, and many other economic, legal, political, legislative and social factors all can have significant effects on ultimate claim costs. Therefore, we cannot warrant that actual developments will not differ from current projections. Such differences could be upward or downward and could be significant.

In summary, the ultimate loss and loss adjustment expense levels estimated in this report are subject to potential variations in estimation due to:

(1) the fact that the ultimate liability of the PST Fund is subject to the outcome of events yet to occur;
(2) the unanticipated changes in the legal, economic, legislative or claims adjudication environments;
(3) statistical fluctuation in losses around the estimated or expected values when all other factors remain constant; and
(4) the fact that the actual future loss and loss payment and reporting patterns may differ from those applied in the determination of the expected losses or there may be unanticipated changes in the loss and expense loss and expense payment and reporting patterns;

Accordingly, no assurance can be given that future loss emergence will not deviate from the estimated ultimate loss and loss adjustment expenses. However, the ultimate loss and loss adjustment expense estimates were based on a reasonable application of generally accepted actuarial procedures and techniques applied to the information available.

T&M relied without audit or verification on historical loss, loss adjustment expense, exposure data, and other information provided by the PST Fund and its employees. T&M has relied upon the data provided and on the oral and/or written statements made regarding the quality, accuracy, and completeness of the data and information supplied. Any inaccuracies or inconsistencies in the data could have a significant effect on the conclusions drawn.

Should any inaccuracies be found in the data, T&M should be notified immediately so that the analysis can be adjusted accordingly.

With regard to projections of estimated revenues, it should be understood that the revenue streams are subject to uncertainty. While we have used our best professional judgment in all instances, projections of future revenues are inherently uncertain due to potential changes in technology, the implementation of environmental requirements, the introduction of alternative vehicle fuels, and changes in the economy among others. While T&M has used its best judgment is selecting trend values for each category of revenue, actual revenue collected is dependent upon unknown future events and may be affected by additional factors outside of the PST Fund control.

T&M reflected anticipated investment income in the reserves assuming a 1.86% annual rate of return on investments. We did not independently verify the ability of the PST Fund to match this assumed rate.

The analysis in this report was limited to the loss and loss adjustment expense items noted in the scope of this project. This report does not include an examination of the assets of the PST Fund, nor did we form any opinion as to the value or validity of the assets. This report does not include a review or analysis of any income statement or other balance sheet items. This analysis with respect to loss and loss adjustment expense reserves is based upon the assumption that all reserves are backed by valid assets and that these assets reflect suitably scheduled maturities and/or sufficient liquidity to meet cash flow requirements.

This report is limited in scope to the estimate of the level of reserve adequacy at the evaluation date of the report. It also includes projections regarding cash flow of the operations of the PST Fund under certain narrow assumptions and conditions.

This report was prepared for use by persons technically competent in insurance financial matters. Persons receiving this report should be made aware of the availability of T&M, Inc. personnel to answer questions and/or amplify on any matter addressed therein.

Actuarial Analysis

Sources of Data

Data was provided by Therron Blatter, UST Program manager. Data was provided in several files. The following is a brief description of the contents of each file based on its file name:

- "All ReleasesFY2020.xlsx" – This file contains information about release notification dates, closures, and sources of release as of June 30, 2020.
- "EAP_Refund2019.xlsx" – This file contains information about rebates provided to non-participants in the UST program from 2015 through 2020. The name of this file was not updated since 2019, but the information it contained was updated.
- "PST Fund Financial History Table FY-91 through FY-20.xls" – This file contains a history of annual fund revenues and expenditures from 1991 through June 30, 2020.
- "PST Tank DescriptionFY2020.xlsx" – This file contains information about the tanks covered by the PST Fund as of June 30, 2020.
- "PSTActuarial 2020.xlsx" – This is a loss run file containing paid, committed, and estimated future expenditures by release as of June 30, 2020.
- "2020 PST Acturial Data Request Response.docx" – This document contains information on any significant changes that might affect projections as well as current information about coverage provided by the Fund.

Overall Methodology

Selection of Factors

In each of the methods described below, our selections of development factors were based on the evaluation of the predictive value of the various historical averages and the perceived presence or absence of trends and singularities. Apparent statistical aberrations were eliminated either judgmentally or by selecting a longer experience period to increase the credibility of the experience, whichever we believed more appropriate in the particular circumstances.

Paid Development Method

The paid development method uses historical loss payment patterns to project actual payments as of a given valuation date to ultimate. The PST Fund's historical payment patterns or the fitted loss development factors were relied upon in selecting the expected payment patterns at each evaluation. The difference between the projected ultimate losses and the losses and allocated loss adjustment expenses paid through the evaluation date is the estimated reserve as of the evaluation date.

Estimates produced using the paid development method are not affected by changes in the case reserve position of the PST Fund which might have occurred during the review period but may be understated since they ignore large unpaid claims. Also, this method may be susceptible to any changes in case settlement philosophy and/or speed of payment.

Paid + Committed Funds Development Method

In addition to tracking paid losses, the PST Fund tracks the committed funds remaining from approved remediation workplans for each release. This allows an additional view of losses that has some advantages and disadvantages over the traditional paid loss development method.

Historically, not all committed funds were spent. For this reason, this method may be prone to misstatement to the extent that the committed funds are systematically biased high (or low) relative to actual expenditures. However, the sum of paid + committed funds provides a pattern of losses that is not affected by incidental volatility in speed of claim payment that might impact paid loss development.

Paid + Committed + Estimated Future Expenditures (Incurred) Development Method

Each year before the loss run data is submitted to the actuary, project managers are asked to estimate the amount required to complete cleanups above what has already been paid or committed to. This is recorded as "Estimated Future Expenditures" in the loss runs from the PST Fund. In total, the paid, committed, and estimated future expenditures are analogous to the traditional actuarial concept of incurred losses. For the purposes of our analysis, we refer to the sum of paid, committed, and estimated future expenditures as "incurred."

Incurred loss development has several advantages and disadvantages over paid loss development. Incurred loss development is able to account for large unpaid claims or cases where the paid (or committed) amounts are unlikely to be close to adequate to remediate a site. However, incurred losses are susceptible to changes in the way that claims are reserved for (or, in this case, to changes in the way that estimates of future expenditures are derived).

Bornhuetter-Ferguson Methods

Loss development methods may be affected by changes in the reporting and payment of claims. Random fluctuations in the reporting and payment of claims (such as those that may result from a single unusually large claim that could cause a significant fluctuation in the reporting pattern) are magnified by the development factors, potentially resulting in biased estimates and wide changes in the estimates from one evaluation to the next. To minimize such fluctuations, we applied the Bornhuetter-Ferguson method to each of paid losses, paid + committed losses, and incurred losses. The Bornhuetter-Ferguson method is particularly suited for projecting loss reserves for longer-tailed business with volatile or limited development patterns. The Bornhuetter-Ferguson method represents a compromise between traditional loss development methods such as the paid loss development method and an expected loss ratio method.

For the paid Bornhuetter-Ferguson method, initial expected losses are derived from projected claim severities. These initial expected losses are then split into two components: expected paid losses and expected unpaid losses. The expected unpaid losses, which comprise the IBNR and case reserves for each accident year, are calculated as a function of the initial expected loss ratio, the initial expected ultimate losses, and the expected portion of ultimate losses that remains unpaid as of the evaluation date.

The paid + committed and incurred Bornhuetter-Ferguson methods proceed along analogous lines but substituting payment patterns for payments of "losses paid or committed" or "losses incurred."

Selections of Ultimate Losses

Generally, the selection of ultimate losses was based on selecting the incurred loss development method for older years, as this method seemed to give the best result. In years where there was great variability, particularly more recent Report Years, we selected a combination of methods (including the Bornhuetter-Ferguson method) to provide greater stability in results.

Any exceptions to the above description were based on our review of the methods combined with our knowledge of specific accident years and other considerations as described in the background section of our report.

Loss Reserve Discounting

T&M reflected anticipated investment income on reserves using an assumed discount rate of 0.70%. This rate is based on actual yields by the Utah Public Treasurer's Investment Fund, adjusted for $757,835 in zero-interest loans. We did not independently verify the ability of the PST Fund to match these rates at June 30, 2020.

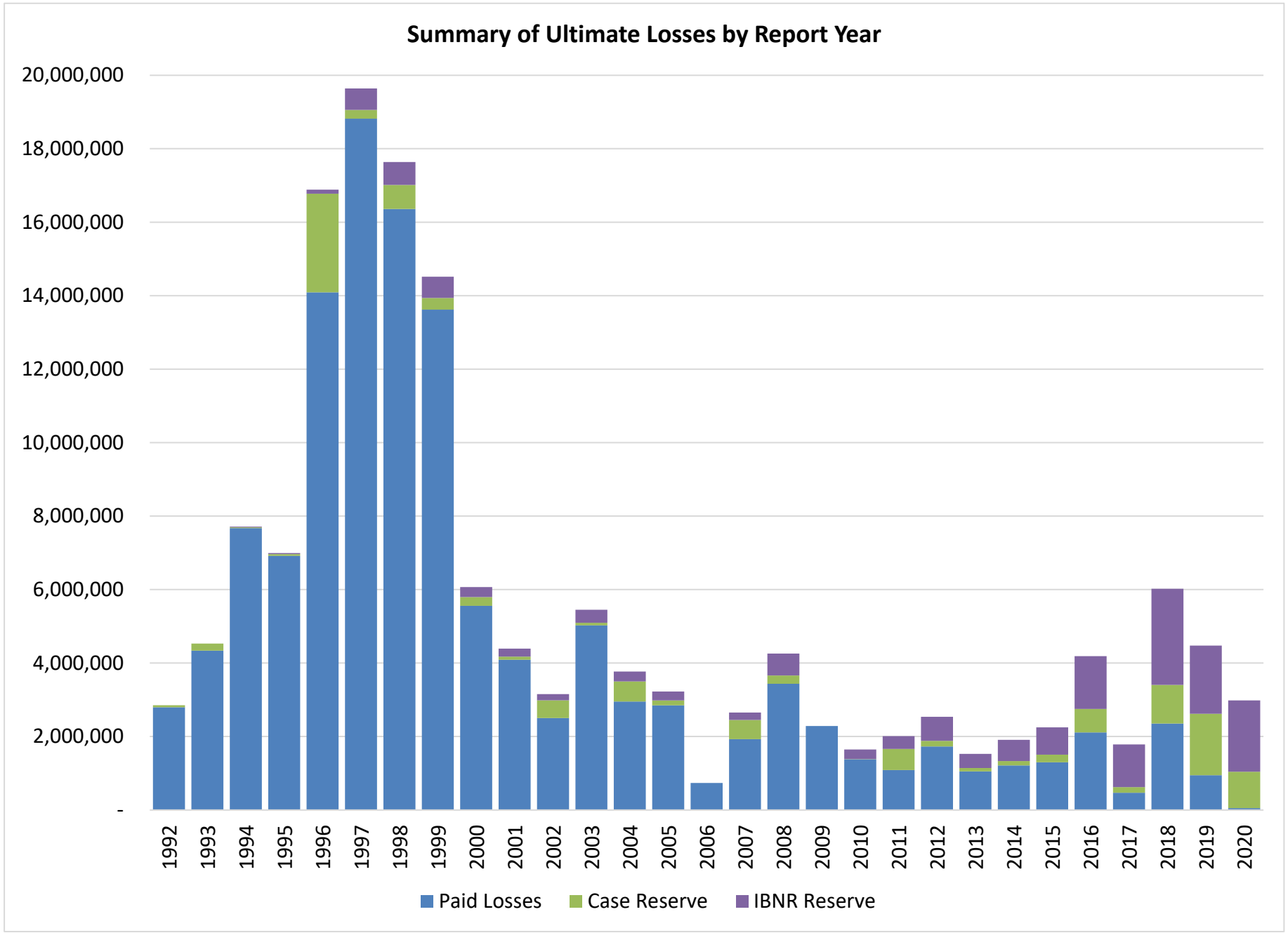
The undiscounted reserves and the discounted reserves are shown in the summary section of our report. The future payout of the undiscounted recommended reserve from 2021 to 2030 separately and for years subsequent to fiscal year 2030 on a combined basis is also provided in this section.

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Summary of Ultimate Losses

(1) Report Year	(2) Paid LDM Ultimate	(3) Paid + Comm Ultimate	(4) Incurred Ultimate	(5) Paid BF Ultimate	(6) P+C BF Ultimate	(7) Incurred BF Ultimate	(8) Selected Ultimate
1992	2,924,822	2,941,875	2,850,160	2,919,105	2,931,817	2,850,160	2,850,160
1993	4,543,327	4,562,970	4,528,845	4,495,663	4,509,864	4,536,408	4,528,845
1994	8,042,983	8,074,365	7,712,001	7,950,174	7,953,643	7,716,241	7,712,001
1995	7,275,926	7,280,644	6,994,133	7,260,863	7,251,359	7,007,519	6,994,133
1996	16,775,204	16,775,204	16,884,730	14,845,067	14,937,859	17,082,795	16,884,730
1997	20,293,808	20,299,678	19,638,689	19,821,365	19,852,736	19,495,876	19,638,689
1998	17,797,304	17,834,125	17,637,506	17,366,978	17,367,506	17,473,897	17,637,506
1999	14,924,435	14,995,333	14,515,419	14,641,544	14,746,736	14,409,065	14,515,419
2000	6,151,843	6,232,481	6,068,030	6,099,987	6,174,637	6,031,866	6,068,030
2001	4,618,537	4,625,431	4,392,982	4,474,867	4,468,612	4,334,105	4,392,982
2002	2,984,399	2,984,399	3,154,390	2,952,579	3,020,190	3,194,124	3,154,390
2003	5,843,440	5,882,283	5,449,954	5,910,128	5,908,800	5,497,357	5,449,954
2004	3,505,355	3,807,014	3,769,541	3,481,705	3,728,857	3,724,724	3,769,541
2005	3,461,714	3,454,017	3,225,668	3,440,680	3,429,301	3,278,036	3,225,668
2006	929,219	921,491	821,064	1,270,144	1,256,924	1,008,876	735,630
2007	2,518,925	2,520,032	2,784,437	2,748,883	2,800,587	2,910,161	2,652,234
2008	4,582,786	4,673,696	4,257,186	4,272,226	4,312,081	4,099,892	4,257,186
2009	3,116,363	3,148,272	2,657,600	2,724,498	2,727,759	2,519,525	2,285,389
2010	1,960,684	1,966,800	1,646,048	2,082,516	2,083,894	1,781,143	1,646,048
2011	1,661,896	1,661,896	2,010,792	2,306,614	2,309,572	2,362,554	2,010,792
2012	2,551,889	2,747,046	2,308,090	2,671,350	2,804,300	2,420,166	2,535,675
2013	1,586,790	1,579,184	1,417,093	1,860,761	1,886,337	1,637,004	1,527,689
2014	1,876,833	1,941,328	1,699,927	2,123,210	2,177,484	1,850,027	1,909,080
2015	2,174,780	2,322,329	1,953,618	2,484,249	2,544,564	2,187,763	2,248,555
2016	4,136,415	4,164,901	3,828,237	4,392,226	4,387,062	4,222,393	4,188,539
2017	1,073,052	1,076,971	976,429	2,776,362	2,650,013	2,160,722	1,785,591
2018	6,389,465	6,165,637	5,880,715	4,855,645	4,626,518	5,032,264	6,023,176
2019	4,540,236	2,940,295	5,403,878	3,737,886	3,266,435	4,476,328	4,476,328
2020	1,678,326	1,041,003	2,931,341	2,969,792	2,469,694	2,982,065	2,982,065
TOTAL	159,920,756	158,620,699	157,398,499	158,937,068	158,585,139	158,283,053	158,086,024

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Summary of Case & IBNR Reserves

(1) Report Year	(2) Selected Ultimate	(3) Paid Loss	(4) Incurred Loss	(5) Case Reserve	(6) IBNR Reserve	(7) Unpaid Loss
1992	2,850,160	2,795,047	2,850,160	55,113	-	55,113
1993	4,528,845	4,337,402	4,528,845	191,443	-	191,443
1994	7,712,001	7,673,049	7,695,049	22,000	16,952	38,952
1995	6,994,133	6,917,807	6,967,807	50,000	26,325	76,325
1996	16,884,730	14,089,617	16,775,204	2,685,588	109,525	2,795,113
1997	19,638,689	18,817,012	19,056,805	239,792	581,884	821,677
1998	17,637,506	16,359,042	17,014,389	655,347	623,117	1,278,464
1999	14,515,419	13,618,922	13,936,560	317,638	578,859	896,497
2000	6,068,030	5,555,836	5,796,395	240,559	271,634	512,193
2001	4,392,982	4,090,744	4,175,744	85,000	217,238	302,238
2002	3,154,390	2,501,694	2,984,399	482,705	169,991	652,696
2003	5,449,954	5,026,212	5,095,425	69,213	354,529	423,741
2004	3,769,541	2,951,643	3,498,782	547,139	270,759	817,898
2005	3,225,668	2,846,864	2,981,455	134,592	244,213	378,805
2006	735,630	735,630	735,630	-	-	-
2007	2,652,234	1,928,104	2,450,570	522,467	201,664	724,131
2008	4,257,186	3,436,523	3,660,946	224,422	596,241	820,663
2009	2,285,389	2,285,389	2,285,389	-	-	-
2010	1,646,048	1,382,010	1,387,010	5,000	259,039	264,039
2011	2,010,792	1,085,749	1,661,896	576,147	348,896	925,043
2012	2,535,675	1,729,281	1,881,095	151,814	654,580	806,394
2013	1,527,689	1,049,550	1,142,550	93,000	385,139	478,139
2014	1,909,080	1,211,851	1,332,808	120,957	576,273	697,230
2015	2,248,555	1,297,694	1,506,470	208,776	742,085	950,861
2016	4,188,539	2,110,073	2,751,441	641,367	1,437,098	2,078,466
2017	1,785,591	468,146	621,647	153,501	1,163,944	1,317,445
2018	6,023,176	2,353,066	3,403,618	1,050,552	2,619,559	3,670,111
2019	4,476,328	946,114	2,619,944	1,673,830	1,856,383	3,530,214
2020	2,982,065	50,673	1,041,003	990,330	1,941,063	2,931,393
TOTAL	158,086,024	129,650,743	141,839,035	12,188,292	16,246,989	28,435,280


Summary of Ultimate Losses by Report Year
20,000,000
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
1992
1993
1994
1995
1996
1997
1998
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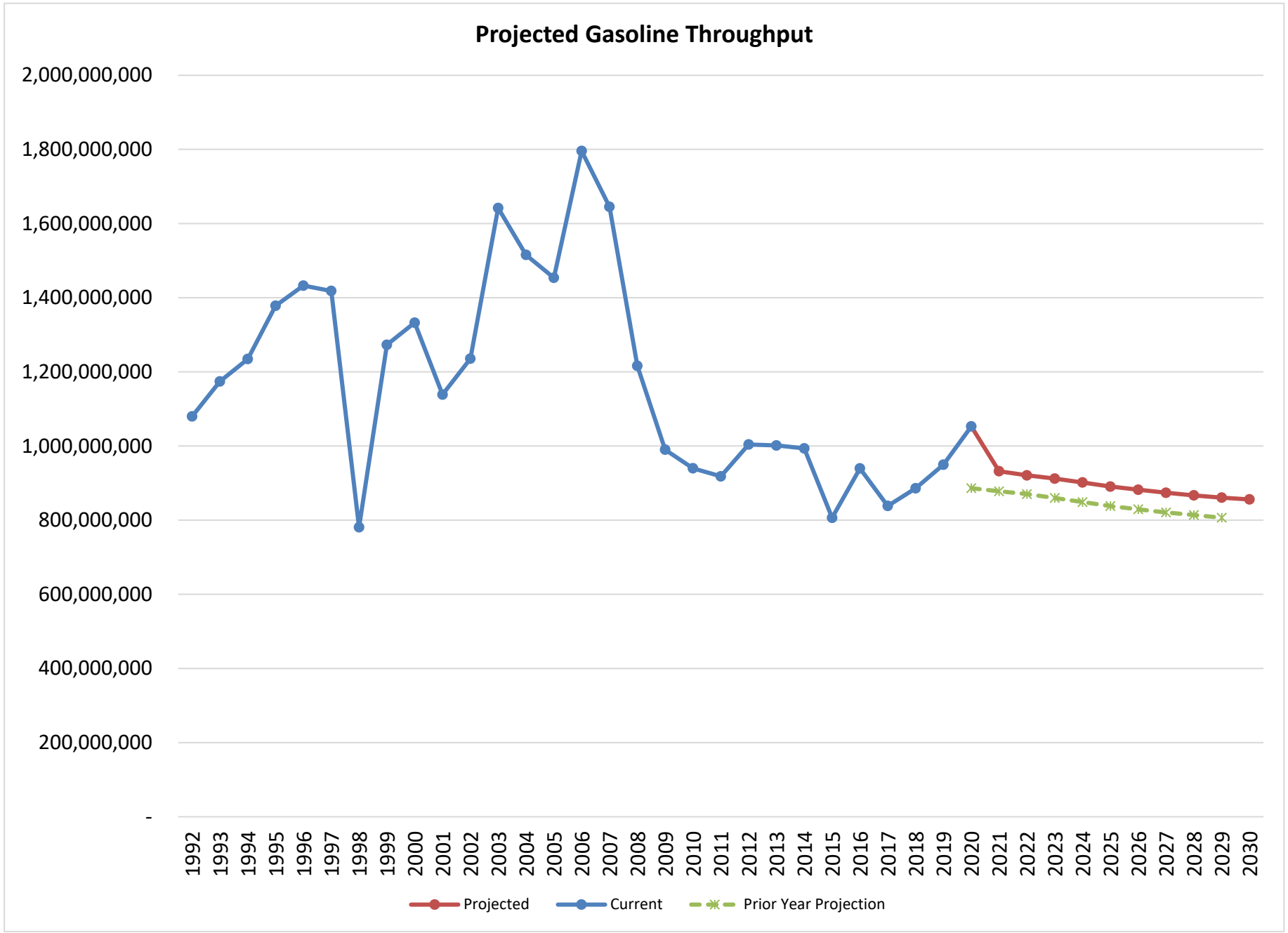
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Paid Losses
Case Reserve
IBNR Reserve

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Fiscal Year Financial Projections

(1) Fiscal Year	(2) Surcharge Revenue	(3) UST Fee Revenue	(4) Interest Revenue	(5) Total Revenue	(6) Claim Expenses	(7) Admin. Expenses	(8) Total Expenses	(9) Transfers	(10) Adjustments	(11) Ending Cash Balance	(12) Outstanding Liability	(13) Projected Equity Balance
1992	5,399,520	1,643,739	539,471	7,582,730	(11,949)	(514,926)	(526,875)			14,427,579		
1993	5,870,668	1,608,622	740,337	8,219,627	(222,466)	(614,087)	(836,553)			21,810,653		
1994	6,173,219	886,886	988,021	8,048,126	(492,429)	(621,432)	(1,113,861)	(3,800,000)	277,339	25,222,257		
1995	6,891,217	655,974	1,501,799	9,048,990	(978,868)	(883,066)	(1,861,934)	(4,580,000)		27,829,313		
1996	7,162,600	753,571	1,725,438	9,641,609	(2,272,184)	(802,778)	(3,074,962)			34,395,960		
1997	7,091,256	764,750	1,989,872	9,845,878	(3,588,617)	(991,851)	(4,580,468)	(2,000,000)		37,661,370		
1998	3,904,119	763,936	2,260,118	6,928,173	(4,855,262)	(905,400)	(5,760,662)	(2,195,000)		36,633,881		
1999	3,182,249	615,325	1,864,374	5,661,948	(6,469,912)	(963,849)	(7,433,761)	(2,000,000)		32,862,068		
2000	3,331,628	506,697	2,012,591	5,850,916	(6,146,298)	(1,116,615)	(7,262,913)		(341)	31,449,730		
2001	2,846,713	485,665	1,694,732	5,027,110	(12,675,758)	(1,149,217)	(13,824,975)			22,651,865		
2002	3,088,610	507,363	494,390	4,090,363	(8,645,589)	(1,281,922)	(9,927,511)			16,814,717		
2003	3,290,612	432,328	367,234	4,090,174	(8,061,523)	(1,181,459)	(9,242,982)			11,661,909		
2004	6,056,756	431,716	132,349	6,620,821	(8,562,969)	(1,160,907)	(9,723,876)			8,558,854		
2005	5,681,904	437,137	183,753	6,302,794	(5,737,373)	(1,158,986)	(6,896,359)		(1)	7,965,288		
2006	6,904,369	421,795	364,748	7,690,912	(4,640,381)	(1,329,535)	(5,969,916)		27,260	9,713,544		
2007	6,158,979	483,256	562,663	7,204,898	(4,212,825)	(1,332,985)	(5,545,810)		(7,128)	11,365,504		
2008	5,505,557	382,056	492,038	6,379,651	(4,177,023)	(1,398,899)	(5,575,922)			12,169,233		
2009	4,234,044	365,530	301,178	4,900,752	(3,429,936)	(1,573,631)	(5,003,567)			12,066,418		
2010	4,595,330	354,954	94,949	5,045,233	(5,359,385)	(1,643,179)	(7,002,564)			10,109,087		
2011	4,459,471	352,153	81,063	4,892,687	(2,415,918)	(1,312,442)	(3,728,360)			11,273,414		
2012	4,726,430	366,479	13,976	5,106,885	(3,257,238)	(1,306,001)	(4,563,239)			11,817,060		
2013	4,860,223	335,700	74,274	5,270,197	(4,062,397)	(1,334,500)	(5,396,897)			11,690,360		
2014	4,933,852	359,249	57,300	5,350,401	(3,832,145)	(1,510,080)	(5,342,225)	5,882,917		17,581,453		
2015	5,171,247	589,791	104,397	5,865,435	(5,631,052)	(1,825,859)	(7,456,911)			15,989,977		
2016	6,087,115	780,328	133,065	7,000,508	(4,330,284)	(2,014,573)	(6,344,857)			17,213,545		
2017	4,092,827	659,794	187,667	4,940,288	(4,029,475)	(1,844,268)	(5,873,743)			15,589,508		
2018	5,743,749	654,911	256,477	6,655,137	(7,584,668)	(1,847,100)	(9,431,768)			13,640,165		
2019	6,143,905	591,151	371,495	7,106,551	(4,397,119)	(1,876,600)	(6,273,719)			14,228,089		
2020	6,822,298	616,293	306,800	7,745,391	(2,433,174)	(1,826,707)	(4,259,880)			17,641,479	(28,435,280)	(10,793,801)
2021	6,012,222	664,376	112,309	6,788,907	(3,786,279)	(1,863,241)	(5,649,520)			18,780,866	(27,804,330)	(9,023,464)
2022	5,941,316	656,598	128,354	6,726,268	(3,669,180)	(1,900,506)	(5,569,686)			19,937,448	(27,333,359)	(7,395,910)
2023	5,883,392	650,245	136,445	6,670,082	(3,477,572)	(1,938,516)	(5,416,088)			21,191,443	(27,096,940)	(5,905,497)
2024	5,815,796	642,831	144,940	6,603,567	(3,284,120)	(1,977,286)	(5,261,406)			22,533,603	(27,096,954)	(4,563,350)
2025	5,743,909	634,946	154,089	6,532,944	(3,253,197)	(2,016,832)	(5,270,029)			23,796,519	(27,170,882)	(3,374,363)
2026	5,688,808	628,902	163,269	6,480,979	(3,280,380)	(2,057,169)	(5,337,549)			24,939,949	(27,260,597)	(2,320,648)
2027	5,635,669	623,074	171,749	6,430,492	(3,397,233)	(2,098,312)	(5,495,545)			25,874,896	(27,276,378)	(1,401,482)
2028	5,589,365	617,995	179,073	6,386,434	(3,423,211)	(2,140,278)	(5,563,489)			26,697,840	(27,309,016)	(611,176)
2029	5,549,749	613,650	185,268	6,348,667	(3,532,985)	(2,183,084)	(5,716,069)			27,330,439	(27,274,598)	55,841
2030	5,518,266	610,197	190,397	6,318,861	(3,566,276)	(2,226,745)	(5,793,021)			27,856,278	(27,249,451)	606,827

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Fiscal Year Financial Projection Comparison to Prior Year Projections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Fiscal	Surcharge Revenue Projection			UST Fee Revenue Projection			Interest Revenue Projection			Claim Expense Projections			Administrative Expense Projections		
Year	Current	Prior Year	Difference	Current	Prior Year	Difference	Current	Prior Year	Difference	Current	Prior Year	Difference	Current	Prior Year	Difference
2020	6,822,298	5,724,926	1,097,372	616,293	657,657	(41,365)	306,800	259,216	47,584	(2,433,174)	(3,800,073)	1,366,900	(1,826,707)	(1,914,132)	87,425
2021	6,012,222	5,671,403	340,819	664,376	651,546	12,829	112,309	273,312	(161,003)	(3,786,279)	(3,650,284)	(135,995)	(1,863,241)	(1,952,415)	89,174
2022	5,941,316	5,622,434	318,881	656,598	645,955	10,643	128,354	291,182	(162,828)	(3,669,180)	(3,721,336)	52,156	(1,900,506)	(1,991,463)	90,957
2023	5,883,392	5,553,618	329,774	650,245	638,098	12,147	136,445	308,300	(171,855)	(3,477,572)	(3,565,241)	87,670	(1,938,516)	(2,031,292)	92,776
2024	5,815,796	5,482,083	333,713	642,831	629,930	12,901	144,940	324,580	(179,640)	(3,284,120)	(3,359,231)	75,111	(1,977,286)	(2,071,918)	94,632
2025	5,743,909	5,412,370	331,540	634,946	621,970	12,976	154,089	342,336	(188,247)	(3,253,197)	(3,334,280)	81,084	(2,016,832)	(2,113,356)	96,524
2026	5,688,808	5,355,526	333,281	628,902	615,480	13,423	163,269	360,329	(197,060)	(3,280,380)	(3,314,923)	34,543	(2,057,169)	(2,155,624)	98,455
2027	5,635,669	5,300,456	335,213	623,074	609,192	13,882	171,749	376,977	(205,228)	(3,397,233)	(3,427,934)	30,700	(2,098,312)	(2,198,736)	100,424
2028	5,589,365	5,255,320	334,046	617,995	604,039	13,957	179,073	391,122	(212,049)	(3,423,211)	(3,361,110)	(62,101)	(2,140,278)	(2,242,711)	102,433
2029	5,549,749	5,207,040	342,709	613,650	598,526	15,124	185,268	403,276	(218,008)	(3,532,985)	(3,317,687)	(215,298)	(2,183,084)	(2,287,565)	104,481
2030	5,518,266			610,197			190,397			(3,566,276)			(2,226,745)		


Projected Gasoline Throughput
2,000,000,000
1,800,000,000
1,600,000,000
1,400,000,000
1,200,000,000
1,000,000,000
800,000,000
600,000,000
400,000,000
200,000,000
-
1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030
Projected
Current
Prior Year Projection

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Fiscal Year Surcharge Collection and UST Fee Projections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Fiscal Year	Surcharge Per Gallon	Surcharge Collected	Tax Refund to Non-Part Tanks	Risk Rebates	Non-Retro Tax Refund to NP Tanks	Adjusted Surcharge Revenue	Gallon Throughput	USEIA 2019 Projected Transit Energy Use	UST Fee Revenue	UST Fee Per 1000 Gallons
1992	0.0050	5,399,520				5,399,520	1,079,904,000		1,643,739	1.52
1993	0.0050	5,870,668				5,870,668	1,174,133,600		1,608,622	1.37
1994	0.0050	6,173,219				6,173,219	1,234,643,800		886,886	0.72
1995	0.0050	6,891,217				6,891,217	1,378,243,400		655,974	0.48
1996	0.0050	7,162,600				7,162,600	1,432,520,000		753,571	0.53
1997	0.0050	7,091,256				7,091,256	1,418,251,200		764,750	0.54
1998	0.0050	3,904,119				3,904,119	780,823,800		763,936	0.98
1999	0.0025	3,182,249				3,182,249	1,272,899,600		615,325	0.48
2000	0.0025	3,331,628				3,331,628	1,332,651,200		506,697	0.38
2001	0.0025	2,846,713				2,846,713	1,138,685,200		485,665	0.43
2002	0.0025	3,088,610				3,088,610	1,235,444,000		507,363	0.41
2003	0.0025	3,290,612	814,205			4,104,817	1,641,926,796		432,328	0.26
2004	0.0050	6,056,756	1,520,290			7,577,046	1,515,409,286		431,716	0.28
2005	0.0050	5,681,904	1,586,580			7,268,484	1,453,696,784		437,137	0.30
2006	0.0050	6,904,369	2,074,235			8,978,604	1,795,720,722		421,795	0.23
2007	0.0050	6,158,979	2,067,203			8,226,182	1,645,236,432		483,256	0.29
2008	0.0050	5,505,557	2,585,453		2,010,409	6,080,601	1,216,120,206		382,056	0.31
2009	0.0050	4,234,044	2,433,696		1,717,214	4,950,526	990,105,248		365,530	0.37
2010	0.0050	4,595,330	2,009,877		1,906,161	4,699,046	939,809,218		354,954	0.38
2011	0.0050	4,459,471	1,291,750		1,160,378	4,590,843	918,168,688		352,153	0.38
2012	0.0050	4,726,430	711,458		417,871	5,020,017	1,004,003,388		366,479	0.37
2013	0.0050	4,860,223	355,275		208,027	5,007,471	1,001,494,156		335,700	0.34
2014	0.0050	4,933,852	309,567		275,521	4,967,898	993,579,568		359,249	0.36
2015	0.0065	5,171,247	460,770	21,737	369,172	5,241,109	806,324,403		589,791	0.73
2016	0.0065	6,087,115	472,622	138,372	314,333	6,107,032	939,543,388		780,328	0.83
2017	0.0065	4,092,827	2,209,217	82,362	770,378	5,449,304	838,354,503		659,794	0.79
2018	0.0065	5,743,749	438,311	64,149	359,904	5,758,008	885,847,311		654,911	0.74
2019	0.0065	6,143,905	433,174	43,559	360,627	6,172,894	949,675,952	28.113	591,151	0.62
2020	0.0065	6,822,298	474,635	21,537	432,066	6,843,330	1,052,819,985	28.142	616,293	0.59
2021	0.0065	6,012,222	455,000	45,000	365,000	6,057,222	931,880,314	27.977	664,376	0.71
2022	0.0065	5,941,316	455,000	45,000	365,000	5,986,316	920,971,667	27.650	656,598	0.71
2023	0.0065	5,883,392	455,000	45,000	365,000	5,928,392	912,060,312	27.382	650,245	0.71
2024	0.0065	5,815,796	455,000	45,000	365,000	5,860,796	901,660,989	27.070	642,831	0.71
2025	0.0065	5,743,909	455,000	45,000	365,000	5,788,909	890,601,420	26.738	634,946	0.71
2026	0.0065	5,688,808	455,000	45,000	365,000	5,733,808	882,124,244	26.483	628,902	0.71
2027	0.0065	5,635,669	455,000	45,000	365,000	5,680,669	873,949,079	26.238	623,074	0.71
2028	0.0065	5,589,365	455,000	45,000	365,000	5,634,365	866,825,438	26.024	617,995	0.71
2029	0.0065	5,549,749	455,000	45,000	365,000	5,594,749	860,730,571	25.841	613,650	0.71
2030	0.0065	5,518,266	455,000	45,000	365,000	5,563,266	855,887,113	25.696	610,197	0.71

Notes: Column (9) from USEIA Transportation Sector Key Indicators and Delivered Energy Consumption 2019

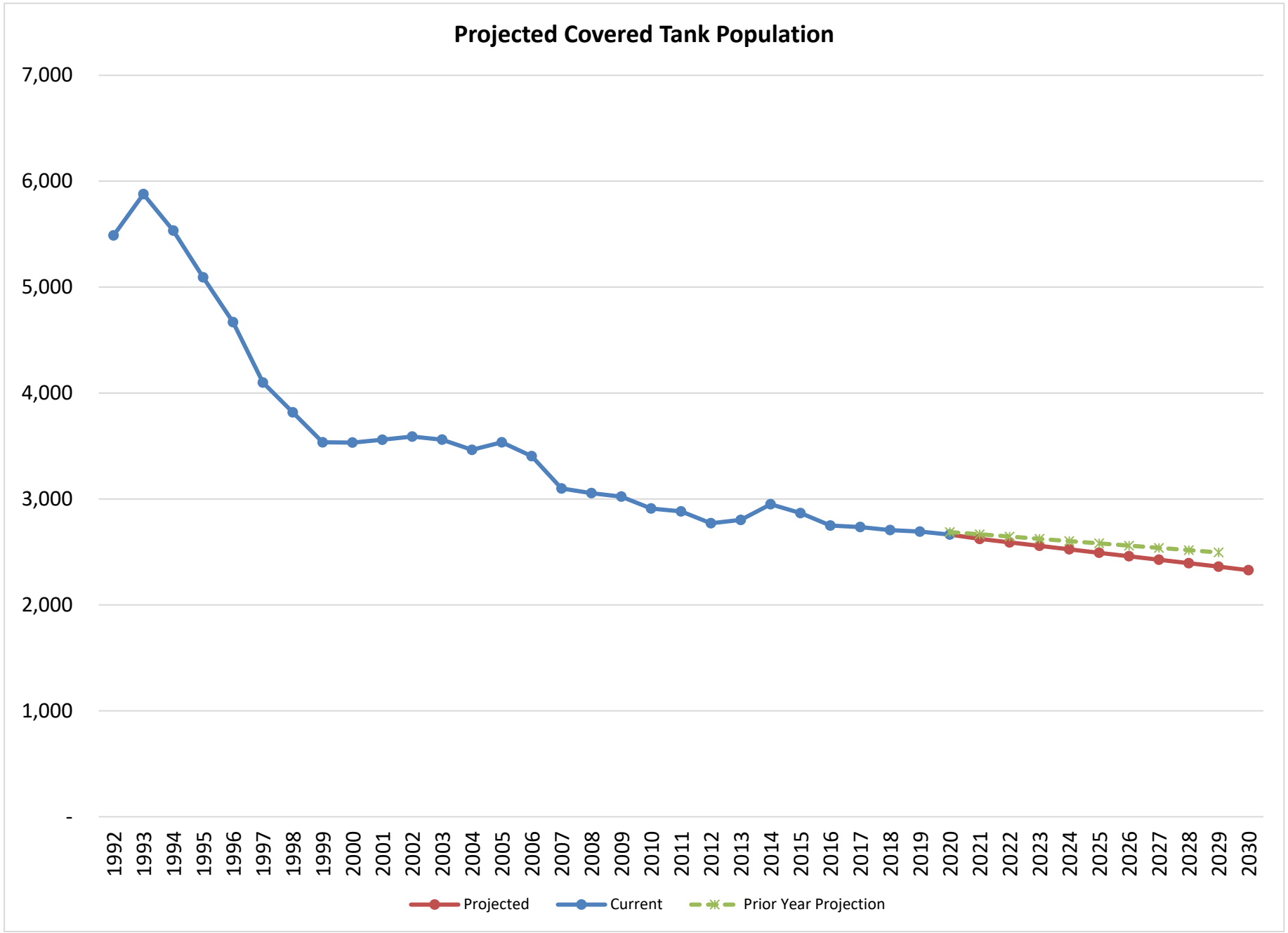
Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Cash Flow Summary

UNDISCOUNTED VALUE OF CURRENT RESERVES - PAYMENT STREAM

Report Year	Total	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	After 2030
2020 and Prior	28,435,280	3,691,012	3,010,365	2,305,318	1,881,489	1,598,819	1,330,898	1,267,545	1,216,127	1,246,347	1,206,540	9,680,820
2021	3,155,328	95,267	562,254	504,500	214,572	233,007	273,188	154,573	49,667	51,172	44,061	973,067
2022	3,198,209	-	96,562	569,895	511,357	217,488	236,173	276,900	156,673	50,342	51,868	1,030,950
2023	3,241,153	-	-	97,858	577,547	518,223	220,408	239,345	280,618	158,777	51,018	1,097,358
2024	3,284,134	-	-	-	99,156	585,206	525,095	223,331	242,519	284,340	160,883	1,163,605
2025	3,327,125	-	-	-	-	100,454	592,867	531,969	226,255	245,693	288,062	1,341,826
2026	3,370,095	-	-	-	-	-	101,751	600,524	538,839	229,177	248,867	1,650,938
2027	3,413,014	-	-	-	-	-	-	103,047	608,171	545,701	232,095	1,923,999
2028	3,455,850	-	-	-	-	-	-	-	104,340	615,804	552,550	2,183,154
2029	3,498,566	-	-	-	-	-	-	-	-	105,630	623,416	2,769,520
2030	3,541,129	-	-	-	-	-	-	-	-	-	106,915	3,434,213
Total	61,919,883	3,786,279	3,669,180	3,477,572	3,284,120	3,253,197	3,280,380	3,397,233	3,423,211	3,532,985	3,566,276	27,249,451
Outstanding Liability	28,435,280	27,804,330	27,333,359	27,096,940	27,096,954	27,170,882	27,260,597	27,276,378	27,309,016	27,274,598	27,249,451	

DISCOUNTED VALUE OF CURRENT RESERVES - PAYMENT STREAM

Report Year	Total	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	After 2030
2020 and Prior	26,907,295	3,678,073	2,978,817	2,265,194	1,835,802	1,549,079	1,280,468	1,210,980	1,153,726	1,174,120	1,128,665	8,652,372
2020	2,981,961	94,933	556,362	495,720	209,362	225,758	262,836	147,675	47,119	48,207	41,217	852,773
2021	3,001,332	-	95,550	559,976	498,940	210,722	227,224	264,544	148,634	47,425	48,520	899,798
2022	3,020,345	-	-	96,155	563,523	502,100	212,057	228,664	266,219	149,576	47,725	954,325
2023	3,038,979	-	-	-	96,748	567,000	505,198	213,365	230,075	267,862	150,499	1,008,233
2024	3,057,213	-	-	-	-	97,329	570,402	508,229	214,645	231,455	269,469	1,165,684
2025	3,075,025	-	-	-	-	-	97,896	573,725	511,190	215,896	232,804	1,443,514
2026	3,092,391	-	-	-	-	-	-	98,449	576,965	514,077	217,115	1,685,785
2027	3,109,287	-	-	-	-	-	-	-	98,987	580,118	516,886	1,913,297
2028	3,125,690	-	-	-	-	-	-	-	-	99,509	583,178	2,443,004
2029	3,141,574	-	-	-	-	-	-	-	-	-	100,014	3,041,560
Total	57,551,093	3,773,006	3,630,728	3,417,044	3,204,375	3,151,987	3,156,081	3,245,631	3,247,560	3,328,243	3,336,092	24,060,346


Projected Covered Tank Population
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
1992
1993
1994
1995
1996
1997
1998
1999
2000
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2002
2003
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2007
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2013
2014
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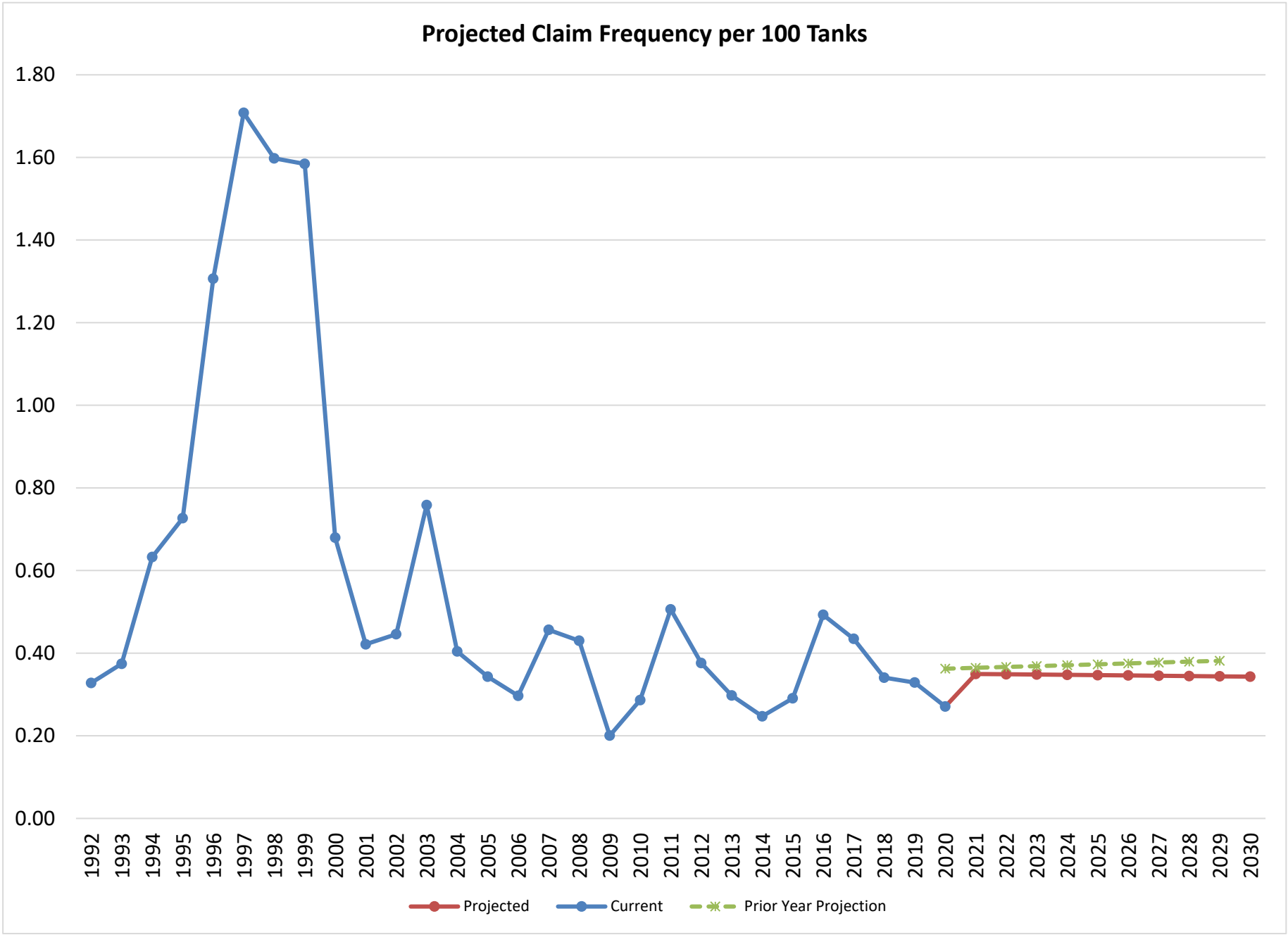
2030
Projected
Current
Prior Year Projection


Projected Claim Frequency per 100 Tanks
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
1992
1993
1994
1995
1996
1997
1998
1999
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2001
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2007
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2016
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2018
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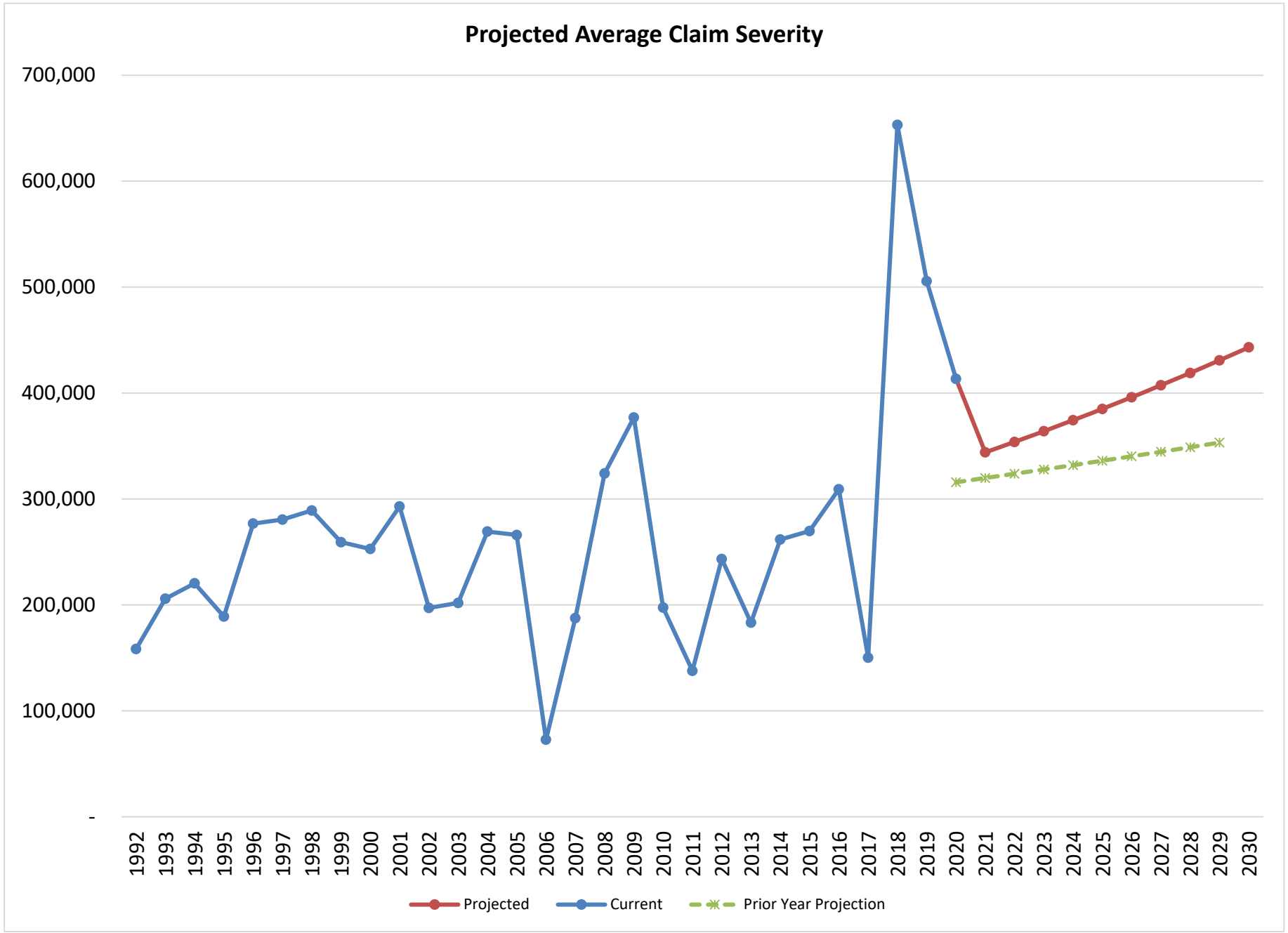
2030
Projected
Current
Prior Year Projection


Projected Average Claim Severity
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
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2008
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2029
2030
Projected
Current
Prior Year Projection

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Projection of Future Frequencies and Severities by Report Year

(1) Report Year	(2) Covered Tanks	(3) Ultimate Counts	(4) Claims Per 100 Tanks	(5) Ultimate Severity	(6) Ultimate Loss
1992	5,488	18	0.33	158,342	2,850,160
1993	5,878	22	0.37	205,857	4,528,845
1994	5,533	35	0.63	220,343	7,712,001
1995	5,092	37	0.73	189,031	6,994,133
1996	4,669	61	1.31	276,799	16,884,730
1997	4,099	70	1.71	280,553	19,638,689
1998	3,818	61	1.60	289,139	17,637,506
1999	3,535	56	1.58	259,204	14,515,419
2000	3,532	24	0.68	252,835	6,068,030
2001	3,559	15	0.42	292,865	4,392,982
2002	3,589	16	0.45	197,149	3,154,390
2003	3,560	27	0.76	201,850	5,449,954
2004	3,464	14	0.40	269,253	3,769,541
2005	3,535	12	0.34	266,006	3,225,668
2006	3,404	10	0.30	72,797	735,630
2007	3,099	14	0.46	187,472	2,652,234
2008	3,055	13	0.43	324,065	4,257,186
2009	3,022	6	0.20	376,930	2,285,389
2010	2,910	8	0.29	197,443	1,646,048
2011	2,883	15	0.51	137,825	2,010,792
2012	2,771	10	0.38	243,322	2,535,675
2013	2,802	8	0.30	183,246	1,527,689
2014	2,950	7	0.25	261,707	1,909,080
2015	2,867	8	0.29	269,713	2,248,555
2016	2,749	14	0.49	309,177	4,188,539
2017	2,735	12	0.43	150,205	1,785,591
2018	2,706	9	0.34	653,132	6,023,176
2019	2,692	9	0.33	505,622	4,476,328
2020	2,664	7	0.27	413,392	2,982,065
2021	2,623	9	0.35	343,993	3,155,328
2022	2,590	9	0.35	353,813	3,198,209
2023	2,558	9	0.35	363,915	3,241,153
2024	2,525	9	0.35	374,304	3,284,134
2025	2,492	9	0.35	384,990	3,327,125
2026	2,459	9	0.35	395,982	3,370,095
2027	2,427	8	0.35	407,287	3,413,014
2028	2,394	8	0.34	418,914	3,455,850
2029	2,361	8	0.34	430,874	3,498,566
2030	2,328	8	0.34	443,176	3,541,129

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Summary of Paid Development Method

(1) Report Year	(2) Paid LDM Ultimate	(3) Paid Loss	(4) Incurred Loss	(5) Case Reserve	(6) IBNR Reserve	(7) Unpaid Loss
1992	2,924,822	2,795,047	2,850,160	55,113	74,662	129,775
1993	4,543,327	4,337,402	4,528,845	191,443	14,483	205,926
1994	8,042,983	7,673,049	7,695,049	22,000	347,934	369,934
1995	7,275,926	6,917,807	6,967,807	50,000	308,119	358,119
1996	16,775,204	14,089,617	16,775,204	2,685,588	-	2,685,588
1997	20,293,808	18,817,012	19,056,805	239,792	1,237,003	1,476,796
1998	17,797,304	16,359,042	17,014,389	655,347	782,915	1,438,262
1999	14,924,435	13,618,922	13,936,560	317,638	987,875	1,305,513
2000	6,151,843	5,555,836	5,796,395	240,559	355,447	596,006
2001	4,618,537	4,090,744	4,175,744	85,000	442,793	527,793
2002	2,984,399	2,501,694	2,984,399	482,705	-	482,705
2003	5,843,440	5,026,212	5,095,425	69,213	748,016	817,228
2004	3,505,355	2,951,643	3,498,782	547,139	6,573	553,712
2005	3,461,714	2,846,864	2,981,455	134,592	480,259	614,851
2006	929,219	735,630	735,630	-	193,589	193,589
2007	2,518,925	1,928,104	2,450,570	522,467	68,354	590,821
2008	4,582,786	3,436,523	3,660,946	224,422	921,840	1,146,262
2009	3,116,363	2,285,389	2,285,389	-	830,974	830,974
2010	1,960,684	1,382,010	1,387,010	5,000	573,674	578,674
2011	1,661,896	1,085,749	1,661,896	576,147	-	576,147
2012	2,551,889	1,729,281	1,881,095	151,814	670,794	822,608
2013	1,586,790	1,049,550	1,142,550	93,000	444,240	537,240
2014	1,876,833	1,211,851	1,332,808	120,957	544,025	664,983
2015	2,174,780	1,297,694	1,506,470	208,776	668,311	877,086
2016	4,136,415	2,110,073	2,751,441	641,367	1,384,974	2,026,342
2017	1,073,052	468,146	621,647	153,501	451,405	604,905
2018	6,389,465	2,353,066	3,403,618	1,050,552	2,985,847	4,036,399
2019	4,540,236	946,114	2,619,944	1,673,830	1,920,291	3,594,122
2020	1,678,326	50,673	1,041,003	990,330	637,323	1,627,653
Total	159,920,756	129,650,743	141,839,035	12,188,292	18,081,721	30,270,012

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Development of Losses to Ultimate

Development Period in Months

RY	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
1992																			1.012	1.003	1.007	1.018	1.009	1.016	1.130	1.016
1993																		1.006	1.007	1.000	1.084	1.001	1.013	1.012	1.013	1.003
1994																	1.006	1.004	1.010	1.055	1.015	1.004	1.019	1.066	1.002	1.000
1995																1.036	1.014	1.014	1.026	1.084	1.015	1.008	1.003	1.026	1.002	1.003
1996															1.025	1.015	1.024	1.010	1.026	1.016	1.014	1.022	1.006	1.005	1.007	1.003
1997														1.013	1.011	1.009	1.006	1.007	1.028	1.023	1.008	1.000	1.007	1.018	1.007	1.003
1998													1.011	1.057	1.026	1.012	1.047	1.024	1.028	1.010	1.003	1.005	1.009	1.018	1.007	1.003
1999												1.027	1.077	1.032	1.045	1.036	1.006	1.011	1.076	1.015	1.001	1.007	1.009	1.018	1.007	1.003
2000											1.019	1.021	1.190	1.119	1.252	1.025	1.039	1.030	1.016	1.016	1.010	1.007	1.009	1.018	1.007	1.003
2001										1.008	1.006	1.005	1.002	1.001	1.018	1.040	1.031	1.004	1.000	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2002									1.010	1.010	1.018	1.013	1.023	1.015	1.026	1.247	1.055	1.009	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2003								1.022	1.018	1.011	1.076	1.075	1.118	1.028	1.019	1.003	1.002	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2004							1.083	1.206	1.020	1.019	1.098	1.023	1.015	1.417	1.139	1.017	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2005						1.051	1.038	1.057	1.070	1.036	1.017	1.010	1.009	1.008	1.002	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2006					1.211	1.043	1.019	1.112	1.021	1.008	1.005	1.005	1.009	1.000	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2007				1.243	2.091	1.011	1.141	1.017	1.018	1.023	2.265	1.139	1.048	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2008			1.062	1.096	1.042	1.045	1.044	1.045	1.046	1.055	1.005	1.007	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2009		1.049	1.070	1.064	1.462	1.133	1.006	1.000	1.000	1.000	1.000	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2010	2.417	1.028	1.967	1.019	1.033	1.158	1.456	1.003	1.000	1.000	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2011	1.343	1.125	1.351	1.348	1.417	1.523	1.055	1.069	1.019	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2012	101.538	1.984	1.373	1.168	1.066	1.056	1.023	1.013	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2013	4.988	1.826	1.257	1.122	1.077	1.009	1.000	1.025	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2014		2.296	1.129	1.066	1.067	1.007	1.024	1.025	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2015	1.597	1.483	1.611	1.474	1.450	1.082	1.024	1.025	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2016	6.145	2.964	1.168	1.377	1.170	1.082	1.024	1.025	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2017	11.821	1.248	1.013	1.169	1.170	1.082	1.024	1.025	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2018	3.342	1.049	1.185	1.169	1.170	1.082	1.024	1.025	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2019	5.542	1.767	1.185	1.169	1.170	1.082	1.024	1.025	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003
2020	6.902	1.767	1.185	1.169	1.170	1.082	1.024	1.025	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018	1.007	1.003

RY	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,276,834	2,303,920	2,311,527	2,327,549	2,370,489	2,392,288	2,431,009	2,746,810
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,787,864	3,810,049	3,836,275	3,836,275	4,159,261	4,162,488	4,217,377	4,268,028	4,322,739
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,426,100	6,462,935	6,489,517	6,551,930	6,910,197	7,015,525	7,046,429	7,182,877	7,659,539	7,671,973
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,535,186	5,736,790	5,814,950	5,898,444	6,051,040	6,561,207	6,657,627	6,709,804	6,732,563	6,907,259	6,917,807
1996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,988,571	12,288,948	12,478,712	12,777,436	12,901,442	13,237,847	13,449,147	13,635,870	13,933,832	14,015,779	14,089,617	14,191,359
1997	-	-	-	-	-	-	-	-	-	-	-	-	-	16,829,302	17,051,535	17,243,291	17,396,505	17,503,640	17,628,429	18,116,600	18,529,943	18,684,371	18,691,122	18,817,012	19,156,621	19,294,952
1998	-	-	-	-	-	-	-	-	-	-	-	-	13,123,819	13,269,504	14,028,179	14,395,449	14,573,665	15,258,377	15,623,125	16,056,291	16,221,723	16,277,114	16,359,042	16,502,181	16,800,011	16,921,325
1999	-	-	-	-	-	-	-	-	-	-	-	9,922,847	10,193,852	10,976,996	11,327,431	11,838,292	12,260,207	12,328,191	12,459,165	13,406,722	13,605,252	13,618,922	13,718,340	13,838,372	14,088,127	14,189,858
2000	-	-	-	-	-	-	-	-	-	-	2,833,259	2,887,712	2,947,552	3,506,214	3,923,625	4,910,992	5,034,759	5,232,196	5,386,783	5,470,500	5,555,836	5,613,711	5,654,691	5,704,168	5,807,117	5,849,050
2001	-	-	-	-	-	-	-	-	-	3,649,601	3,678,437	3,701,544	3,718,484	3,724,851	3,729,207	3,797,191	3,950,805	4,072,652	4,090,744	4,090,744	4,171,081	4,214,531	4,245,297	4,282,443	4,359,732	4,391,214
2002	-	-	-	-	-	-	-	-	1,681,590	1,698,469	1,716,205	1,747,020	1,769,227	1,809,258	1,836,391	1,884,130	2,349,676	2,479,493	2,501,694	2,549,008	2,599,068	2,626,142	2,645,313	2,668,459	2,716,619	2,736,236
2003	-	-	-	-	-	-	-	3,509,343	3,586,979	3,650,820	3,691,032	3,972,247	4,268,366	4,772,524	4,906,791	5,001,191	5,014,075	5,026,212	5,079,600	5,175,669	5,277,313	5,332,286	5,371,212	5,418,209	5,515,996	5,555,828
2004	-	-	-	-	-	-	1,160,887	1,256,835	1,515,940	1,546,379	1,576,134	1,731,223	1,770,611	1,797,639	2,547,848	2,903,010	2,951,643	3,015,117	3,047,143	3,104,773	3,165,747	3,198,724	3,222,075	3,250,267	3,308,928	3,332,822
2005	-	-	-	-	-	2,125,776	2,234,298	2,319,688	2,452,193	2,623,350	2,718,207	2,765,578	2,793,859	2,817,950	2,841,495	2,846,864	2,914,896	2,977,580	3,009,207	3,066,120	3,126,335	3,158,901	3,181,961	3,209,803	3,267,733	3,291,330
2006	-	-	-	-	489,742	593,223	618,787	630,748	701,141	715,773	721,665	725,502	729,023	735,630	735,630	764,176	782,438	799,264	807,754	823,031	839,194	847,936	854,126	861,599	877,149	883,483
2007	-	-	-	224,425	278,997	583,431	589,883	672,953	684,444	696,800	712,768	1,614,520	1,839,363	1,928,104	1,994,143	2,071,527	2,121,031	2,166,643	2,189,657	2,231,069	2,274,885	2,298,582	2,315,362	2,335,620	2,377,774	2,394,944
2008	-	-	2,223,736	2,361,576	2,587,857	2,696,866	2,818,744	2,943,066	3,075,949	3,217,964	3,395,953	3,412,142	3,436,523	3,507,881	3,628,029	3,768,816	3,858,881	3,941,865	3,983,735	4,059,078	4,138,794	4,181,907	4,212,435	4,249,293	4,325,984	4,357,222
2009	-	1,149,604	1,205,683	1,290,074	1,372,183	2,006,157	2,272,702	2,285,389	2,285,389	2,285,389	2,285,389	2,285,389	2,336,887	2,385,411	2,467,114	2,562,851	2,624,097	2,680,527	2,708,999	2,760,234	2,814,442	2,843,759	2,864,519	2,889,583	2,941,734	2,962,976
2010	158,811	383,803	394,544	776,103	791,070	817,224	946,426	1,378,334	1,382,010	1,382,010	1,382,010	1,437,870	1,470,271	1,500,800	1,552,204	1,612,438	1,650,971	1,686,474	1,704,388	1,736,622	1,770,728	1,789,173	1,802,234	1,818,003	1,850,814	1,864,179
2011	159,155	213,769	240,467	324,754	437,788	620,202	944,744	996,274	1,065,110	1,085,749	1,106,549	1,151,276	1,177,218	1,201,662	1,242,821	1,291,049	1,321,901	1,350,328	1,364,671	1,390,481	1,417,788	1,432,557	1,443,015	1,455,641	1,481,912	1,492,613
2012	4,588	465,896	924,453	1,268,928	1,481,783	1,579,824	1,668,648	1,706,414	1,729,281	1,764,916	1,798,727	1,871,432	1,913,602	1,953,336	2,020,240	2,098,636	2,148,788	2,194,997	2,218,312	2,260,267	2,304,655	2,328,663	2,345,662	2,366,186	2,408,891	2,426,286
2013	75,204	375,148	684,883	860,595	965,722	1,040,543	1,049,550	1,049,550	1,075,284	1,097,442	1,118,466	1,163,675	1,189,896	1,214,604	1,256,205	1,304,953	1,336,138	1,364,871	1,379,368	1,405,456	1,433,058	1,447,986	1,458,556	1,471,318	1,497,872	1,508,688
2014	-	408,206	937,216	1,058,275	1,128,139	1,203,235	1,211,851	1,241,393	1,271,831	1,298,040	1,322,907	1,376,378	1,407,393	1,436,617	1,485,822	1,543,480	1,580,365	1,614,351	1,631,498	1,662,354	1,695,001	1,712,658	1,725,160	1,740,255	1,771,663	1,784,456
2015	159,168	254,148	376,807	607,019	894,988	1,297,694	1,404,232	1,438,464	1,473,734	1,504,103	1,532,918	1,594,878	1,630,817	1,664,679	1,721,696	1,788,508	1,831,248	1,870,629	1,890,498	1,926,253	1,964,082	1,984,542	1,999,029	2,016,520	2,052,914	2,067,738
2016	72,024	442,591	1,311,967	1,532,688	2,110,073	2,468,203	2,670,837	2,735,948	2,803,031	2,860,793	2,915,598	3,033,446	3,101,801	3,166,207	3,274,653	3,401,728	3,483,020	3,557,921	3,595,713	3,663,718	3,735,669	3,774,583	3,802,137	3,835,405	3,904,626	3,932,822
2017	31,338	370,447	462,294	468,146	547,386	640,291	692,858	709,748	727,151	742,135	756,352	786,924	804,656	821,364	849,497	882,462	903,550	922,981	932,785	950,426	969,092	979,186	986,334	994,965	1,012,922	1,020,236
2018	671,381	2,244,077	2,353,066	2,787,568	3,259,402	3,812,601	4,125,607	4,226,182	4,329,805	4,419,028	4,503,685	4,685,723	4,791,310	4,890,798	5,058,313	5,254,603	5,380,174	5,495,873	5,554,249	5,659,296	5,770,437	5,830,547	5,873,110	5,924,499	6,031,424	6,074,977
2019	170,710	946,114	1,672,045	1,980,795	2,316,071	2,709,164	2,931,580	3,003,047	3,076,679	3,140,079	3,200,235	3,329,588	3,404,616	3,475,311	3,594,344	3,733,824	3,823,052	3,905,266	3,946,747	4,021,391	4,100,366	4,143,079	4,173,323	4,209,839	4,285,818	4,316,766
2020	50,673	349,737	618,082	732,213	856,150	1,001,459	1,083,677	1,110,095	1,137,313	1,160,750	1,182,987	1,230,803	1,258,537	1,284,670	1,328,671	1,380,231	1,413,215	1,443,605	1,458,939	1,486,532	1,515,725	1,531,515	1,542,695	1,556,193	1,584,279	1,595,719

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Selection of Loss Development Factors

	Development Period in Months																							
RY	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
1992																			1.012	1.003	1.007	1.018	1.009	1.016
1993																		1.006	1.007	1.000	1.084	1.001	1.013	1.012
1994																	1.006	1.004	1.010	1.055	1.015	1.004	1.019	1.066
1995																1.036	1.014	1.014	1.026	1.084	1.015	1.008	1.003	1.026
1996															1.025	1.015	1.024	1.010	1.026	1.016	1.014	1.022	1.006	1.005
1997														1.013	1.011	1.009	1.006	1.007	1.028	1.023	1.008	1.000	1.007	
1998													1.011	1.057	1.026	1.012	1.047	1.024	1.028	1.010	1.003	1.005		
1999												1.027	1.077	1.032	1.045	1.036	1.006	1.011	1.076	1.015	1.001			
2000											1.019	1.021	1.190	1.119	1.252	1.025	1.039	1.030	1.016	1.016				
2001										1.008	1.006	1.005	1.002	1.001	1.018	1.040	1.031	1.004	1.000					
2002									1.010	1.010	1.018	1.013	1.023	1.015	1.026	1.247	1.055	1.009						
2003								1.022	1.018	1.011	1.076	1.075	1.118	1.028	1.019	1.003	1.002							
2004							1.083	1.206	1.020	1.019	1.098	1.023	1.015	1.417	1.139	1.017								
2005						1.051	1.038	1.057	1.070	1.036	1.017	1.010	1.009	1.008	1.002									
2006					1.211	1.043	1.019	1.112	1.021	1.008	1.005	1.005	1.009	1.000										
2007				1.243	2.091	1.011	1.141	1.017	1.018	1.023	2.265	1.139	1.048											
2008			1.062	1.096	1.042	1.045	1.044	1.045	1.046	1.055	1.005	1.007												
2009		1.049	1.070	1.064	1.462	1.133	1.006	1.000	1.000	1.000	1.000													
2010	2.417	1.028	1.967	1.019	1.033	1.158	1.456	1.003	1.000	1.000														
2011	1.343	1.125	1.351	1.348	1.417	1.523	1.055	1.069	1.019															
2012	101.538	1.984	1.373	1.168	1.066	1.056	1.023	1.013																
2013	4.988	1.826	1.257	1.122	1.077	1.009	1.000																	
2014		2.296	1.129	1.066	1.067	1.007																		
2015	1.597	1.483	1.611	1.474	1.450																			
2016	6.145	2.964	1.168	1.377																				
2017	11.821	1.248	1.013																					
2018	3.342	1.049																						
2019	5.542																							
VOL WTD 3	4.077	1.350	1.212	1.292	1.185	1.028	1.024	1.023	1.004	1.026	1.144	1.044	1.022	1.145	1.044	1.054	1.023	1.017	1.047	1.013	1.005	1.008	1.006	1.026
VOL WTD 5	3.854	1.463	1.200	1.235	1.170	1.106	1.078	1.025	1.021	1.024	1.099	1.031	1.057	1.078	1.036	1.043	1.018	1.018	1.035	1.016	1.007	1.008	1.008	1.024
VOL WTD ALL	3.791	1.410	1.204	1.169	1.193	1.082	1.065	1.044	1.026	1.019	1.065	1.030	1.051	1.045	1.039	1.024	1.020	1.013	1.030	1.023	1.012	1.008	1.008	1.024
ARITH 3	6.902	1.754	1.264	1.306	1.198	1.024	1.026	1.028	1.006	1.018	1.423	1.050	1.022	1.142	1.054	1.089	1.030	1.014	1.031	1.014	1.004	1.009	1.005	1.033
ARITH 5	5.689	1.808	1.236	1.241	1.215	1.151	1.108	1.026	1.017	1.017	1.259	1.037	1.040	1.094	1.041	1.066	1.027	1.015	1.029	1.016	1.008	1.008	1.010	1.025
ARITH ALL	15.415	1.605	1.300	1.198	1.292	1.104	1.086	1.054	1.022	1.017	1.151	1.032	1.050	1.069	1.056	1.044	1.023	1.012	1.023	1.025	1.018	1.008	1.010	1.025
5 YR HI LO	5.010	1.676	1.185	1.222	1.187	1.074	1.028	1.020	1.012	1.010	1.009	1.013	1.024	1.017	1.021	1.027	1.025	1.014	1.024	1.015	1.009	1.006	1.009	1.018
7 YR HI LO	5.005	1.767	1.255	1.216	1.215	1.080	1.054	1.029	1.021	1.017	1.040	1.025	1.021	1.034	1.050	1.026	1.026	1.012	1.025	1.025	1.011	1.007	1.009	1.018
ALL YR HI LO	5.122	1.507	1.253	1.185	1.224	1.063	1.051	1.042	1.019	1.014	1.031	1.023	1.039	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018
SELECTED	6.902	1.767	1.185	1.169	1.170	1.082	1.024	1.025	1.021	1.019	1.040	1.023	1.021	1.034	1.039	1.024	1.022	1.011	1.019	1.020	1.010	1.007	1.009	1.018

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Paid Losses

	Development in Months																							
RY	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288
1992																			2,276,834	2,303,920	2,311,527	2,327,549	2,370,489	2,392,288
1993																		3,787,864	3,810,049	3,836,275	3,836,275	4,159,261	4,162,488	4,217,377
1994																	6,426,100	6,462,935	6,489,517	6,551,930	6,910,197	7,015,525	7,046,429	7,182,877
1995																5,535,186	5,736,790	5,814,950	5,898,444	6,051,040	6,561,207	6,657,627	6,709,804	6,732,563
1996															11,988,571	12,288,948	12,478,712	12,777,436	12,901,442	13,237,847	13,449,147	13,635,870	13,933,832	14,015,779
1997														16,829,302	17,051,535	17,243,291	17,396,505	17,503,640	17,628,429	18,116,600	18,529,943	18,684,371	18,691,122	18,817,012
1998													13,123,819	13,269,504	14,028,179	14,395,449	14,573,665	15,258,377	15,623,125	16,056,291	16,221,723	16,277,114	16,359,042	
1999												9,922,847	10,193,852	10,976,996	11,327,431	11,838,292	12,260,207	12,328,191	12,459,165	13,406,722	13,605,252	13,618,922		
2000											2,833,259	2,887,712	2,947,552	3,506,214	3,923,625	4,910,992	5,034,759	5,232,196	5,386,783	5,470,500	5,555,836			
2001										3,649,601	3,678,437	3,701,544	3,718,484	3,724,851	3,729,207	3,797,191	3,950,805	4,072,652	4,090,744	4,090,744				
2002									1,681,590	1,698,469	1,716,205	1,747,020	1,769,227	1,809,258	1,836,391	1,884,130	2,349,676	2,479,493	2,501,694					
2003								3,509,343	3,586,979	3,650,820	3,691,032	3,972,247	4,268,366	4,772,524	4,906,791	5,001,191	5,014,075	5,026,212						
2004							1,160,887	1,256,835	1,515,940	1,546,379	1,576,134	1,731,223	1,770,611	1,797,639	2,547,848	2,903,010	2,951,643							
2005						2,125,776	2,234,298	2,319,688	2,452,193	2,623,350	2,718,207	2,765,578	2,793,859	2,817,950	2,841,495	2,846,864								
2006					489,742	593,223	618,787	630,748	701,141	715,773	721,665	725,502	729,023	735,630	735,630									
2007				224,425	278,997	583,431	589,883	672,953	684,444	696,800	712,768	1,614,520	1,839,363	1,928,104										
2008			2,223,736	2,361,576	2,587,857	2,696,866	2,818,744	2,943,066	3,075,949	3,217,964	3,395,953	3,412,142	3,436,523											
2009		1,149,604	1,205,683	1,290,074	1,372,183	2,006,157	2,272,702	2,285,389	2,285,389	2,285,389	2,285,389	2,285,389												
2010	158,811	383,803	394,544	776,103	791,070	817,224	946,426	1,378,334	1,382,010	1,382,010	1,382,010													
2011	159,155	213,769	240,467	324,754	437,788	620,202	944,744	996,274	1,065,110	1,085,749														
2012	4,588	465,896	924,453	1,268,928	1,481,783	1,579,824	1,668,648	1,706,414	1,729,281															
2013	75,204	375,148	684,883	860,595	965,722	1,040,543	1,049,550	1,049,550																
2014	-	408,206	937,216	1,058,275	1,128,139	1,203,235	1,211,851																	
2015	159,168	254,148	376,807	607,019	894,988	1,297,694																		
2016	72,024	442,591	1,311,967	1,532,688	2,110,073																			
2017	31,338	370,447	462,294	468,146																				
2018	671,381	2,244,077	2,353,066																					
2019	170,710	946,114																						
2020	50,673																							

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Summary of Paid + Committed Development Method

(1) Report Year	(2) P + C LDM Ultimate	(3) Paid Loss	(4) Incurred Loss	(5) Case Reserve	(6) IBNR Reserve	(7) Unpaid Loss
1992	2,941,875	2,795,047	2,850,160	55,113	91,715	146,828
1993	4,562,970	4,337,402	4,528,845	191,443	34,126	225,569
1994	8,074,365	7,673,049	7,695,049	22,000	379,316	401,316
1995	7,280,644	6,917,807	6,967,807	50,000	312,836	362,836
1996	16,775,204	14,089,617	16,775,204	2,685,588	-	2,685,588
1997	20,299,678	18,817,012	19,056,805	239,792	1,242,873	1,482,666
1998	17,834,125	16,359,042	17,014,389	655,347	819,736	1,475,083
1999	14,995,333	13,618,922	13,936,560	317,638	1,058,773	1,376,411
2000	6,232,481	5,555,836	5,796,395	240,559	436,085	676,644
2001	4,625,431	4,090,744	4,175,744	85,000	449,686	534,686
2002	2,984,399	2,501,694	2,984,399	482,705	-	482,705
2003	5,882,283	5,026,212	5,095,425	69,213	786,858	856,071
2004	3,807,014	2,951,643	3,498,782	547,139	308,232	855,372
2005	3,454,017	2,846,864	2,981,455	134,592	472,562	607,153
2006	921,491	735,630	735,630	-	185,862	185,862
2007	2,520,032	1,928,104	2,450,570	522,467	69,461	591,928
2008	4,673,696	3,436,523	3,660,946	224,422	1,012,750	1,237,172
2009	3,148,272	2,285,389	2,285,389	-	862,883	862,883
2010	1,966,800	1,382,010	1,387,010	5,000	579,790	584,790
2011	1,661,896	1,085,749	1,661,896	576,147	-	576,147
2012	2,747,046	1,729,281	1,881,095	151,814	865,951	1,017,765
2013	1,579,184	1,049,550	1,142,550	93,000	436,634	529,634
2014	1,941,328	1,211,851	1,332,808	120,957	608,520	729,477
2015	2,322,329	1,297,694	1,506,470	208,776	815,859	1,024,635
2016	4,164,901	2,110,073	2,751,441	641,367	1,413,460	2,054,828
2017	1,076,971	468,146	621,647	153,501	455,324	608,824
2018	6,165,637	2,353,066	3,403,618	1,050,552	2,762,020	3,812,572
2019	2,940,295	946,114	2,619,944	1,673,830	320,351	1,994,181
2020	1,041,003	50,673	1,041,003	990,330	-	990,330
Total	158,620,699	129,650,743	141,839,035	12,188,292	16,781,664	28,969,956

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Development of Losses to Ultimate

Development Period in Months

RY	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
1992																			1.008	1.005	1.014	1.008	1.023	1.164	1.041	0.947
1993																		1.009	1.001	1.006	1.081	0.998	1.020	1.018	1.001	1.002
1994																	1.006	1.019	1.005	1.046	1.015	1.021	1.038	1.027	0.997	1.000
1995																1.030	1.016	1.035	1.002	1.089	1.044	1.007	1.002	0.985	1.002	1.000
1996															1.019	1.001	1.023	1.012	1.020	1.024	1.023	1.004	1.006	1.005	1.005	1.000
1997														1.001	1.014	1.006	1.006	1.028	1.003	1.034	1.001	1.000	1.002	1.019	1.005	1.000
1998													1.027	1.076	0.990	1.020	1.046	1.025	1.031	0.995	1.000	1.003	1.010	1.019	1.005	1.000
1999												1.014	1.114	1.034	1.061	1.044	0.998	1.009	1.027	1.000	1.004	1.004	1.010	1.019	1.005	1.000
2000											1.006	1.026	1.288	1.092	1.228	1.025	1.007	1.033	1.018	1.001	1.014	1.004	1.010	1.019	1.005	1.000
2001										1.010	1.002	1.003	1.001	1.014	1.004	1.086	1.007	0.985	1.000	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2002									1.014	1.011	1.007	1.017	1.013	1.034	1.300	1.035	1.003	1.003	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2003								1.022	1.005	1.024	1.140	1.077	1.063	1.026	1.002	0.997	1.000	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2004							1.259	1.019	1.023	1.032	1.083	1.029	1.078	1.594	1.029	1.010	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2005						1.043	1.097	1.050	1.013	1.033	1.020	1.006	1.007	1.009	1.002	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2006					1.140	1.008	1.076	1.060	1.009	1.005	1.005	1.009	0.990	1.000	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2007				1.012	2.031	1.033	1.082	1.014	1.007	1.046	2.641	0.959	1.041	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2008			1.173	1.015	1.013	1.083	1.019	1.042	1.057	1.014	1.002	1.005	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2009		1.000	1.086	1.591	1.007	1.024	1.002	1.000	1.000	1.000	1.000	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2010	1.456	1.021	1.804	1.039	1.010	1.703	0.971	1.000	0.994	1.000	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2011	1.219	1.129	1.198	1.367	1.456	1.369	0.961	1.027	0.981	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2012	14.192	1.802	0.984	1.082	1.023	1.008	1.077	1.012	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2013	2.113	1.251	1.248	1.128	1.036	0.968	0.992	1.025	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2014	2.558	1.681	0.993	1.022	1.026	1.005	1.047	1.025	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2015	1.752	1.748	0.983	1.418	1.462	1.091	1.047	1.025	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2016	1.294	1.327	0.867	1.141	1.147	1.091	1.047	1.025	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2017	1.352	1.043	1.011	1.158	1.147	1.091	1.047	1.025	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2018	1.143	1.014	1.085	1.158	1.147	1.091	1.047	1.025	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2019	4.896	1.246	1.085	1.158	1.147	1.091	1.047	1.025	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000
2020	1.651	1.246	1.085	1.158	1.147	1.091	1.047	1.025	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019	1.005	1.000

RY	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,297,629	2,315,627	2,328,024	2,359,885	2,379,471	2,434,947	2,833,992	2,949,125
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,799,276	3,832,371	3,836,275	3,861,055	4,172,662	4,163,648	4,248,129	4,325,469	4,331,647
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,465,654	6,501,824	6,624,402	6,659,032	6,965,672	7,067,663	7,217,157	7,491,109	7,696,847	7,671,973
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,635,865	5,803,605	5,895,789	6,100,718	6,114,614	6,661,185	6,951,622	6,998,127	7,009,420	6,907,259	6,917,807
1996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,384,071	12,621,025	12,638,135	12,927,452	13,076,631	13,335,390	13,651,620	13,970,277	14,024,857	14,115,474	14,192,815	14,262,585
1997	-	-	-	-	-	-	-	-	-	-	-	-	-	17,181,806	17,191,017	17,432,938	17,540,853	17,643,351	18,131,293	18,178,959	18,793,457	18,812,795	18,804,859	18,842,805	19,193,675	19,288,028
1998	-	-	-	-	-	-	-	-	-	-	-	-	13,309,681	13,663,001	14,700,233	14,553,406	14,837,698	15,525,623	15,919,138	16,410,848	16,331,260	16,332,246	16,384,883	16,554,200	16,862,455	16,945,348
1999	-	-	-	-	-	-	-	-	-	-	-	10,211,153	10,350,441	11,532,595	11,921,276	12,652,376	13,213,747	13,190,715	13,305,082	13,661,957	13,668,363	13,716,560	13,776,778	13,919,144	14,178,331	14,248,029
2000	-	-	-	-	-	-	-	-	-	-	2,905,596	2,922,115	2,999,018	3,862,956	4,218,683	5,179,016	5,306,178	5,342,862	5,519,309	5,619,231	5,624,201	5,700,987	5,726,015	5,785,186	5,892,912	5,921,880
2001	-	-	-	-	-	-	-	-	-	3,669,041	3,706,824	3,715,689	3,726,391	3,729,323	3,781,586	3,797,191	4,124,494	4,154,871	4,090,744	4,090,744	4,173,997	4,230,983	4,249,557	4,293,471	4,373,420	4,394,919
2002	-	-	-	-	-	-	-	-	1,717,786	1,741,922	1,761,649	1,773,410	1,803,043	1,826,289	1,888,416	2,454,512	2,539,682	2,546,740	2,554,399	2,592,483	2,645,243	2,681,358	2,693,130	2,720,960	2,771,626	2,785,251
2003	-	-	-	-	-	-	-	3,574,924	3,653,764	3,671,156	3,760,187	4,286,208	4,615,027	4,905,463	5,034,788	5,045,886	5,032,425	5,032,425	5,125,887	5,202,308	5,308,183	5,380,653	5,404,275	5,460,122	5,561,794	5,589,135
2004	-	-	-	-	-	-	1,192,935	1,501,311	1,529,435	1,563,882	1,614,321	1,748,221	1,798,051	1,937,582	3,088,364	3,178,870	3,210,782	3,256,986	3,317,475	3,366,935	3,435,456	3,482,360	3,497,648	3,533,791	3,599,594	3,617,289
2005	-	-	-	-	-	2,170,585	2,264,410	2,484,360	2,608,799	2,643,342	2,731,136	2,786,617	2,803,912	2,823,741	2,848,918	2,854,408	2,913,069	2,954,989	3,009,869	3,054,743	3,116,911	3,159,465	3,173,336	3,206,128	3,265,829	3,281,883
2006	-	-	-	-	551,155	628,243	633,461	681,572	722,593	728,869	732,716	736,465	743,089	735,630	735,630	761,523	777,173	788,357	802,998	814,970	831,556	842,908	846,609	855,358	871,285	875,568
2007	-	-	-	300,531	304,051	617,385	637,587	689,953	699,937	704,678	737,294	1,947,378	1,867,015	1,943,570	2,011,750	2,082,560	2,125,359	2,155,943	2,195,984	2,228,723	2,274,081	2,305,128	2,315,248	2,339,173	2,382,731	2,394,444
2008	-	-	2,304,836	2,704,673	2,745,003	2,781,104	3,012,454	3,071,056	3,199,213	3,382,673	3,428,961	3,434,709	3,453,083	3,604,580	3,731,028	3,862,353	3,941,729	3,998,451	4,072,710	4,133,430	4,217,551	4,275,132	4,293,900	4,338,272	4,419,055	4,440,778
2009	-	1,280,648	1,280,467	1,391,138	2,212,863	2,227,834	2,281,523	2,285,389	2,285,389	2,285,389	2,285,389	2,285,389	2,326,049	2,428,100	2,513,277	2,601,739	2,655,208	2,693,417	2,743,439	2,784,341	2,841,006	2,879,793	2,892,436	2,922,326	2,976,742	2,991,376
2010	298,616	434,890	444,109	801,089	832,033	840,705	1,431,739	1,390,893	1,390,687	1,382,010	1,382,010	1,427,736	1,453,137	1,516,891	1,570,103	1,625,368	1,658,771	1,682,641	1,713,891	1,739,443	1,774,843	1,799,075	1,806,973	1,825,646	1,859,641	1,868,783
2011	253,411	308,987	348,848	417,934	571,323	832,124	1,139,116	1,094,253	1,123,743	1,101,896	1,120,496	1,157,570	1,178,165	1,229,854	1,272,997	1,317,804	1,344,887	1,364,240	1,389,577	1,410,294	1,438,995	1,458,641	1,465,045	1,480,184	1,507,747	1,515,159
2012	61,134	867,604	1,563,496	1,538,150	1,664,915	1,703,035	1,716,157	1,848,223	1,871,095	1,898,223	1,930,265	1,994,132	2,029,610	2,118,655	2,192,977	2,270,165	2,316,820	2,350,159	2,393,807	2,429,496	2,478,939	2,512,783	2,523,815	2,549,895	2,597,377	2,610,145
2013	283,559	599,189	749,443	935,131	1,055,119	1,092,780	1,058,245	1,049,550	1,075,629	1,091,224	1,109,644	1,146,359	1,166,754	1,217,943	1,260,668	1,305,041	1,331,861	1,351,027	1,376,118	1,396,635	1,425,058	1,444,514	1,450,856	1,465,849	1,493,144	1,500,484
2014	273,960	700,662	1,177,746	1,169,030	1,194,367	1,225,754	1,231,808	1,290,236	1,322,296	1,341,467	1,364,111	1,409,246	1,434,318	1,497,246	1,549,769	1,604,318	1,637,288	1,660,849	1,691,695	1,716,916	1,751,857	1,775,775	1,783,571	1,802,002	1,835,557	1,844,580
2015	216,309	378,870	662,390	651,414	923,530	1,350,470	1,473,560	1,543,456	1,581,808	1,604,741	1,631,829	1,685,822	1,715,814	1,791,093	1,853,924	1,919,178	1,958,619	1,986,804	2,023,703	2,053,875	2,095,674	2,124,285	2,133,611	2,155,659	2,195,800	2,206,594
2016	1,243,169	1,608,481	2,134,089	1,850,996	2,111,641	2,421,953	2,642,706	2,768,057	2,836,839	2,877,968	2,926,548	3,023,379	3,077,168	3,212,173	3,324,855	3,441,884	3,512,618	3,563,166	3,629,341	3,683,450	3,758,414	3,809,726	3,826,451	3,865,993	3,937,981	3,957,340
2017	331,096	447,482	466,709	471,647	546,033	626,275	683,357	715,771	733,557	744,192	756,754	781,793	795,702	830,612	859,749	890,011	908,302	921,372	938,484	952,476	971,860	985,129	989,453	999,678	1,018,293	1,023,299
2018	2,148,080	2,456,240	2,489,751	2,700,170	3,126,031	3,585,412	3,912,210	4,097,778	4,199,600	4,260,487	4,332,404	4,475,751	4,555,379	4,755,238	4,922,050	5,095,297	5,200,011	5,274,841	5,372,805	5,452,908	5,563,882	5,639,844	5,664,604	5,723,140	5,829,710	5,858,368
2019	194,641	952,944	1,187,323	1,287,668	1,490,755	1,709,826	1,865,671	1,954,166	2,002,723	2,031,759	2,066,055	2,134,415	2,172,388	2,267,698	2,347,248	2,429,867	2,479,803	2,515,488	2,562,206	2,600,406	2,653,327	2,689,552	2,701,360	2,729,275	2,780,097	2,793,763
2020	50,673	83,646	104,219	113,027	130,853	150,083	163,762	171,530	175,792	178,341	181,351	187,352	190,685	199,051	206,033	213,285	217,669	220,801	224,902	228,255	232,900	236,080	237,116	239,566	244,027	245,227

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Selection of Loss Development Factors

	Development Period in Months																							
RY	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
1992																			1.008	1.005	1.014	1.008	1.023	1.164
1993																		1.009	1.001	1.006	1.081	0.998	1.020	1.018
1994																	1.006	1.019	1.005	1.046	1.015	1.021	1.038	1.027
1995																1.030	1.016	1.035	1.002	1.089	1.044	1.007	1.002	0.985
1996															1.019	1.001	1.023	1.012	1.020	1.024	1.023	1.004	1.006	1.005
1997														1.001	1.014	1.006	1.006	1.028	1.003	1.034	1.001	1.000	1.002	
1998													1.027	1.076	0.990	1.020	1.046	1.025	1.031	0.995	1.000	1.003		
1999												1.014	1.114	1.034	1.061	1.044	0.998	1.009	1.027	1.000	1.004			
2000											1.006	1.026	1.288	1.092	1.228	1.025	1.007	1.033	1.018	1.001				
2001										1.010	1.002	1.003	1.001	1.014	1.004	1.086	1.007	0.985	1.000					
2002									1.014	1.011	1.007	1.017	1.013	1.034	1.300	1.035	1.003	1.003						
2003								1.022	1.005	1.024	1.140	1.077	1.063	1.026	1.002	0.997	1.000							
2004							1.259	1.019	1.023	1.032	1.083	1.029	1.078	1.594	1.029	1.010								
2005						1.043	1.097	1.050	1.013	1.033	1.020	1.006	1.007	1.009	1.002									
2006					1.140	1.008	1.076	1.060	1.009	1.005	1.005	1.009	0.990	1.000										
2007				1.012	2.031	1.033	1.082	1.014	1.007	1.046	2.641	0.959	1.041											
2008			1.173	1.015	1.013	1.083	1.019	1.042	1.057	1.014	1.002	1.005												
2009		1.000	1.086	1.591	1.007	1.024	1.002	1.000	1.000	1.000	1.000													
2010	1.456	1.021	1.804	1.039	1.010	1.703	0.971	1.000	0.994	1.000														
2011	1.219	1.129	1.198	1.367	1.456	1.369	0.961	1.027	0.981															
2012	14.192	1.802	0.984	1.082	1.023	1.008	1.077	1.012																
2013	2.113	1.251	1.248	1.128	1.036	0.968	0.992																	
2014	2.558	1.681	0.993	1.022	1.026	1.005																		
2015	1.752	1.748	0.983	1.418	1.462																			
2016	1.294	1.327	0.867	1.141																				
2017	1.352	1.043	1.011																					
2018	1.143	1.014																						
2019	4.896																							
VOL WTD 3	1.442	1.128	0.911	1.152	1.156	0.996	1.020	1.012	0.994	1.007	1.188	0.991	1.016	1.214	1.010	1.010	1.003	1.010	1.020	0.998	1.001	1.002	1.004	1.006
VOL WTD 5	1.414	1.239	0.978	1.131	1.147	1.155	1.005	1.019	1.018	1.010	1.129	1.001	1.044	1.112	1.041	1.028	1.002	1.015	1.017	1.013	1.010	1.005	1.010	1.019
VOL WTD ALL	1.651	1.246	1.072	1.158	1.103	1.091	1.047	1.025	1.014	1.017	1.083	1.018	1.067	1.052	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019
ARITH 3	2.464	1.128	0.954	1.193	1.175	0.994	1.010	1.013	0.991	1.005	1.548	0.991	1.013	1.201	1.011	1.014	1.003	1.007	1.015	0.999	1.002	1.002	1.003	1.006
ARITH 5	2.087	1.363	1.020	1.158	1.201	1.211	1.001	1.016	1.008	1.013	1.334	1.002	1.036	1.133	1.067	1.031	1.003	1.011	1.016	1.011	1.014	1.007	1.014	1.040
ARITH ALL	3.197	1.302	1.135	1.181	1.220	1.124	1.054	1.025	1.010	1.018	1.191	1.014	1.062	1.088	1.065	1.025	1.011	1.016	1.011	1.022	1.023	1.006	1.015	1.040
5 YR HI LO	1.466	1.350	0.996	1.117	1.173	1.127	0.988	1.013	1.000	1.006	1.009	1.007	1.037	1.023	1.012	1.023	1.003	1.012	1.016	1.008	1.009	1.005	1.010	1.017
7 YR HI LO	1.814	1.410	1.034	1.151	1.110	1.098	1.012	1.019	1.004	1.017	1.050	1.013	1.025	1.035	1.065	1.027	1.005	1.015	1.014	1.021	1.017	1.004	1.013	1.017
ALL YR HI LO	2.080	1.277	1.085	1.151	1.146	1.072	1.040	1.023	1.008	1.016	1.033	1.014	1.043	1.036	1.045	1.021	1.008	1.017	1.010	1.017	1.017	1.004	1.013	1.017
SELECTED	1.651	1.246	1.085	1.158	1.147	1.091	1.047	1.025	1.014	1.017	1.033	1.018	1.044	1.035	1.035	1.021	1.014	1.019	1.015	1.020	1.014	1.004	1.010	1.019

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Paid + Committed Losses (Subject to a Minimum of $0 Committed Funds Remaining)

	Development in Months																							
RY	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288
1992																			2,297,629	2,315,627	2,328,024	2,359,885	2,379,471	2,434,947
1993																		3,799,276	3,832,371	3,836,275	3,861,055	4,172,662	4,163,648	4,248,129
1994																	6,465,654	6,501,824	6,624,402	6,659,032	6,965,672	7,067,663	7,217,157	7,491,109
1995																5,635,865	5,803,605	5,895,789	6,100,718	6,114,614	6,661,185	6,951,622	6,998,127	7,009,420
1996															12,384,071	12,621,025	12,638,135	12,927,452	13,076,631	13,335,390	13,651,620	13,970,277	14,024,857	14,115,474
1997														17,181,806	17,191,017	17,432,938	17,540,853	17,643,351	18,131,293	18,178,959	18,793,457	18,812,795	18,804,859	18,842,805
1998													13,309,681	13,663,001	14,700,233	14,553,406	14,837,698	15,525,623	15,919,138	16,410,848	16,331,260	16,332,246	16,384,883	
1999												10,211,153	10,350,441	11,532,595	11,921,276	12,652,376	13,213,747	13,190,715	13,305,082	13,661,957	13,668,363	13,716,560		
2000											2,905,596	2,922,115	2,999,018	3,862,956	4,218,683	5,179,016	5,306,178	5,342,862	5,519,309	5,619,231	5,624,201			
2001										3,669,041	3,706,824	3,715,689	3,726,391	3,729,323	3,781,586	3,797,191	4,124,494	4,154,871	4,090,744	4,090,744				
2002									1,717,786	1,741,922	1,761,649	1,773,410	1,803,043	1,826,289	1,888,416	2,454,512	2,539,682	2,546,740	2,554,399					
2003								3,574,924	3,653,764	3,671,156	3,760,187	4,286,208	4,615,027	4,905,463	5,034,788	5,045,886	5,032,425	5,032,425						
2004							1,192,935	1,501,311	1,529,435	1,563,882	1,614,321	1,748,221	1,798,051	1,937,582	3,088,364	3,178,870	3,210,782							
2005						2,170,585	2,264,410	2,484,360	2,608,799	2,643,342	2,731,136	2,786,617	2,803,912	2,823,741	2,848,918	2,854,408								
2006					551,155	628,243	633,461	681,572	722,593	728,869	732,716	736,465	743,089	735,630	735,630									
2007				300,531	304,051	617,385	637,587	689,953	699,937	704,678	737,294	1,947,378	1,867,015	1,943,570										
2008			2,304,836	2,704,673	2,745,003	2,781,104	3,012,454	3,071,056	3,199,213	3,382,673	3,428,961	3,434,709	3,453,083											
2009		1,280,648	1,280,467	1,391,138	2,212,863	2,227,834	2,281,523	2,285,389	2,285,389	2,285,389	2,285,389	2,285,389												
2010	298,616	434,890	444,109	801,089	832,033	840,705	1,431,739	1,390,893	1,390,687	1,382,010	1,382,010													
2011	253,411	308,987	348,848	417,934	571,323	832,124	1,139,116	1,094,253	1,123,743	1,101,896														
2012	61,134	867,604	1,563,496	1,538,150	1,664,915	1,703,035	1,716,157	1,848,223	1,871,095															
2013	283,559	599,189	749,443	935,131	1,055,119	1,092,780	1,058,245	1,049,550																
2014	273,960	700,662	1,177,746	1,169,030	1,194,367	1,225,754	1,231,808																	
2015	216,309	378,870	662,390	651,414	923,530	1,350,470																		
2016	1,243,169	1,608,481	2,134,089	1,850,996	2,111,641																			
2017	331,096	447,482	466,709	471,647																				
2018	2,148,080	2,456,240	2,489,751																					
2019	194,641	952,944																						
2020	50,673																							

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Summary of Incurred Development Method

(1) Report Year	(2) Incurred LDM Ultimate	(3) Paid Loss	(4) Incurred Loss	(5) Case Reserve	(6) IBNR Reserve	(7) Unpaid Loss
1992	2,850,160	2,795,047	2,850,160	55,113	-	55,113
1993	4,528,845	4,337,402	4,528,845	191,443	-	191,443
1994	7,712,001	7,673,049	7,695,049	22,000	16,952	38,952
1995	6,994,133	6,917,807	6,967,807	50,000	26,325	76,325
1996	16,884,730	14,089,617	16,775,204	2,685,588	109,525	2,795,113
1997	19,638,689	18,817,012	19,056,805	239,792	581,884	821,677
1998	17,637,506	16,359,042	17,014,389	655,347	623,117	1,278,464
1999	14,515,419	13,618,922	13,936,560	317,638	578,859	896,497
2000	6,068,030	5,555,836	5,796,395	240,559	271,634	512,193
2001	4,392,982	4,090,744	4,175,744	85,000	217,238	302,238
2002	3,154,390	2,501,694	2,984,399	482,705	169,991	652,696
2003	5,449,954	5,026,212	5,095,425	69,213	354,529	423,741
2004	3,769,541	2,951,643	3,498,782	547,139	270,759	817,898
2005	3,225,668	2,846,864	2,981,455	134,592	244,213	378,805
2006	821,064	735,630	735,630	-	85,434	85,434
2007	2,784,437	1,928,104	2,450,570	522,467	333,867	856,333
2008	4,257,186	3,436,523	3,660,946	224,422	596,241	820,663
2009	2,657,600	2,285,389	2,285,389	-	372,210	372,210
2010	1,646,048	1,382,010	1,387,010	5,000	259,039	264,039
2011	2,010,792	1,085,749	1,661,896	576,147	348,896	925,043
2012	2,308,090	1,729,281	1,881,095	151,814	426,994	578,809
2013	1,417,093	1,049,550	1,142,550	93,000	274,543	367,543
2014	1,699,927	1,211,851	1,332,808	120,957	367,119	488,076
2015	1,953,618	1,297,694	1,506,470	208,776	447,148	655,924
2016	3,828,237	2,110,073	2,751,441	641,367	1,076,796	1,718,164
2017	976,429	468,146	621,647	153,501	354,782	508,282
2018	5,880,715	2,353,066	3,403,618	1,050,552	2,477,098	3,527,650
2019	5,403,878	946,114	2,619,944	1,673,830	2,783,933	4,457,764
2020	2,931,341	50,673	1,041,003	990,330	1,890,339	2,880,669
Total	157,398,499	129,650,743	141,839,035	12,188,292	15,559,465	27,747,756

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Development of Losses to Ultimate

Development Period in Months

RY	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
1992																			1.039	1.082	0.977	0.983	0.984	1.015	1.048	0.930
1993																		1.479	0.724	0.925	1.007	0.992	1.024	1.029	0.974	1.015
1994																	1.012	1.006	0.996	1.031	1.012	1.011	1.038	1.028	0.993	1.002
1995																1.021	0.968	1.037	0.996	1.105	0.969	1.008	0.979	0.966	0.997	1.002
1996															0.973	1.007	1.014	1.005	1.012	1.004	1.045	1.019	1.004	1.131	1.003	1.002
1997														0.995	1.007	0.995	0.980	1.023	0.992	1.027	1.000	0.994	1.002	1.024	1.003	1.002
1998													1.021	1.002	0.994	1.003	1.067	0.999	1.024	0.998	0.997	0.993	1.006	1.024	1.003	1.002
1999												1.013	1.091	1.027	1.055	1.001	0.997	0.993	0.992	0.987	1.009	1.005	1.006	1.024	1.003	1.002
2000											0.998	0.996	1.189	0.849	1.208	0.997	0.996	1.023	1.021	1.001	1.005	1.005	1.006	1.024	1.003	1.002
2001										1.007	0.991	1.003	0.996	1.016	1.061	1.011	1.000	1.000	1.000	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2002									1.023	0.958	1.005	0.868	0.992	1.033	1.403	0.943	0.994	1.003	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2003								1.003	0.990	1.016	1.190	0.979	1.058	1.004	0.997	0.999	1.004	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2004							1.175	1.020	1.018	1.293	1.018	1.014	1.015	1.259	1.032	1.022	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2005						1.109	1.193	1.046	0.911	1.070	0.935	0.894	0.997	0.994	1.014	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2006					1.113	1.000	1.043	0.950	1.008	1.005	0.960	1.009	0.968	1.000	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2007				0.910	1.123	0.762	0.927	1.088	0.835	1.068	2.517	0.949	1.308	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2008			1.087	1.020	1.045	1.039	1.076	1.048	1.052	0.991	1.002	1.009	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2009		0.983	1.126	2.031	0.759	1.006	0.998	1.000	1.000	1.000	1.000	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2010	1.075	2.221	1.288	1.026	0.999	0.898	0.972	0.995	0.990	1.000	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2011	1.700	1.045	0.891	1.628	1.203	1.195	0.760	0.883	1.223	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2012	1.712	1.259	0.922	0.797	1.019	1.007	1.043	1.012	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2013	2.427	1.445	1.114	1.111	1.023	0.938	0.992	1.011	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2014	0.902	1.594	0.985	1.009	1.059	1.033	1.028	1.011	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2015	4.868	0.879	0.429	1.365	1.402	1.017	1.028	1.011	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2016	1.035	1.408	0.829	1.266	1.073	1.017	1.028	1.011	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2017	0.793	0.943	1.051	1.129	1.073	1.017	1.028	1.011	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2018	0.692	1.232	1.100	1.129	1.073	1.017	1.028	1.011	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2019	9.204	1.194	1.100	1.129	1.073	1.017	1.028	1.011	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002
2020	1.365	1.194	1.100	1.129	1.073	1.017	1.028	1.011	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024	1.003	1.002

RY	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,692,629	2,798,627	3,028,024	2,959,885	2,910,452	2,864,947	2,908,609	3,047,862
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,396,276	6,503,371	4,707,275	4,352,055	4,384,662	4,350,648	4,453,129	4,580,469	4,461,647
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,780,654	6,861,824	6,904,402	6,879,032	7,090,672	7,176,663	7,258,157	7,532,109	7,740,847	7,682,973
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,710,846	6,848,586	6,628,459	6,870,718	6,844,614	7,564,185	7,331,622	7,393,127	7,235,670	6,992,259	6,967,807
1996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,661,207	13,294,139	13,386,900	13,579,714	13,654,108	13,823,135	13,884,023	14,504,904	14,777,834	14,832,863	16,775,204	16,821,177
1997	-	-	-	-	-	-	-	-	-	-	-	-	-	18,771,549	18,683,095	18,815,016	18,715,134	18,345,632	18,769,574	18,628,240	19,122,738	19,124,576	19,018,859	19,056,805	19,511,300	19,564,770
1998	-	-	-	-	-	-	-	-	-	-	-	-	15,457,056	15,788,690	15,827,827	15,726,425	15,777,260	16,834,404	16,815,155	17,222,365	17,188,582	17,142,251	17,014,389	17,114,915	17,523,098	17,571,119
1999	-	-	-	-	-	-	-	-	-	-	-	11,887,153	12,038,441	13,132,095	13,482,776	14,228,876	14,242,247	14,204,215	14,108,582	14,002,457	13,818,363	13,936,560	14,002,603	14,085,335	14,421,263	14,460,784
2000	-	-	-	-	-	-	-	-	-	-	4,607,296	4,600,115	4,582,476	5,448,962	4,626,683	5,587,516	5,569,678	5,546,862	5,671,809	5,791,425	5,796,395	5,826,043	5,853,652	5,888,237	6,028,669	6,045,190
2001	-	-	-	-	-	-	-	-	-	3,840,841	3,868,824	3,832,689	3,843,391	3,829,323	3,891,586	4,127,191	4,174,494	4,174,871	4,175,744	4,175,744	4,196,331	4,217,795	4,237,782	4,262,820	4,364,486	4,376,447
2002	-	-	-	-	-	-	-	-	2,582,286	2,640,922	2,530,649	2,542,410	2,208,043	2,191,289	2,263,416	3,174,512	2,994,682	2,976,740	2,984,399	2,998,402	3,013,185	3,028,597	3,042,949	3,060,927	3,133,929	3,142,517
2003	-	-	-	-	-	-	-	4,077,424	4,089,764	4,048,161	4,113,591	4,897,040	4,794,859	5,075,295	5,094,619	5,080,718	5,075,425	5,095,425	5,156,254	5,180,447	5,205,987	5,232,615	5,257,412	5,288,474	5,414,602	5,429,440
2004	-	-	-	-	-	-	1,593,935	1,872,311	1,909,435	1,943,882	2,514,321	2,559,223	2,594,052	2,633,583	3,316,364	3,421,870	3,498,782	3,524,325	3,566,399	3,583,133	3,600,798	3,619,215	3,636,366	3,657,851	3,745,089	3,755,352
2005	-	-	-	-	-	2,633,038	2,920,627	3,483,399	3,643,212	3,319,137	3,550,007	3,319,231	2,966,526	2,956,355	2,939,532	2,981,455	2,993,975	3,015,833	3,051,836	3,066,155	3,081,272	3,097,032	3,111,708	3,130,093	3,204,744	3,213,527
2006	-	-	-	-	701,655	781,243	781,461	815,072	774,093	780,369	784,216	752,965	759,589	735,630	735,630	758,902	762,088	767,652	776,816	780,461	784,309	788,321	792,056	796,736	815,738	817,973
2007	-	-	-	1,119,531	1,019,051	1,144,385	872,587	808,953	879,937	734,678	784,294	1,973,878	1,874,015	2,450,570	2,494,709	2,573,630	2,584,437	2,603,305	2,634,383	2,646,744	2,659,792	2,673,397	2,686,066	2,701,936	2,766,376	2,773,957
2008	-	-	2,559,336	2,781,173	2,837,003	2,963,432	3,079,454	3,314,494	3,472,651	3,653,402	3,619,690	3,627,572	3,660,946	3,746,730	3,814,215	3,934,878	3,951,401	3,980,249	4,027,766	4,046,664	4,066,614	4,087,414	4,106,784	4,131,048	4,229,571	4,241,163
2009	-	1,333,648	1,310,467	1,475,638	2,997,363	2,275,334	2,289,523	2,285,389	2,285,389	2,285,389	2,285,389	2,285,389	2,285,389	2,338,941	2,381,069	2,456,395	2,466,710	2,484,718	2,514,381	2,526,178	2,538,633	2,551,617	2,563,709	2,578,856	2,640,361	2,647,597
2010	511,616	549,890	1,221,109	1,573,089	1,614,033	1,612,705	1,448,739	1,407,893	1,400,687	1,387,010	1,387,010	1,415,511	1,415,511	1,448,679	1,474,772	1,521,427	1,527,816	1,538,970	1,557,342	1,564,649	1,572,363	1,580,405	1,587,895	1,597,276	1,635,371	1,639,852
2011	546,411	928,784	970,565	864,934	1,408,323	1,694,124	2,024,116	1,539,253	1,358,743	1,661,896	1,694,354	1,729,170	1,729,170	1,769,689	1,801,564	1,858,556	1,866,361	1,879,986	1,902,430	1,911,356	1,920,779	1,930,604	1,939,752	1,951,213	1,997,749	2,003,223
2012	1,096,545	1,877,604	2,363,496	2,179,150	1,735,915	1,768,035	1,781,157	1,858,223	1,881,095	1,907,610	1,944,866	1,984,830	1,984,830	2,031,339	2,067,927	2,133,346	2,142,304	2,157,945	2,183,706	2,193,952	2,204,769	2,216,046	2,226,547	2,239,702	2,293,118	2,299,402
2013	276,388	670,689	968,943	1,079,631	1,199,619	1,227,280	1,151,245	1,142,550	1,154,932	1,171,211	1,194,085	1,218,622	1,218,622	1,247,177	1,269,641	1,309,806	1,315,306	1,324,909	1,340,726	1,347,016	1,353,657	1,360,581	1,367,029	1,375,105	1,407,901	1,411,759
2014	852,960	769,662	1,226,746	1,208,030	1,219,367	1,290,754	1,332,808	1,370,588	1,385,442	1,404,970	1,432,409	1,461,843	1,461,843	1,496,098	1,523,045	1,571,227	1,577,824	1,589,344	1,608,317	1,615,863	1,623,830	1,632,135	1,639,870	1,649,559	1,688,900	1,693,528
2015	428,309	2,084,870	1,833,390	787,414	1,074,530	1,506,470	1,531,711	1,575,130	1,592,200	1,614,642	1,646,177	1,680,003	1,680,003	1,719,370	1,750,339	1,805,711	1,813,293	1,826,531	1,848,337	1,857,009	1,866,164	1,875,709	1,884,598	1,895,733	1,940,945	1,946,264
2016	1,798,719	1,862,031	2,622,089	2,172,996	2,751,441	2,952,022	3,001,485	3,086,567	3,120,017	3,163,994	3,225,788	3,292,073	3,292,073	3,369,214	3,429,899	3,538,404	3,553,262	3,579,204	3,621,932	3,638,927	3,656,867	3,675,571	3,692,989	3,714,808	3,803,405	3,813,828
2017	791,096	627,482	591,709	621,647	701,781	752,942	765,557	787,258	795,790	807,007	822,768	839,675	839,675	859,350	874,829	902,504	906,294	912,910	923,809	928,143	932,719	937,490	941,932	947,497	970,095	972,753
2018	3,990,542	2,762,606	3,403,618	3,743,979	4,226,603	4,534,725	4,610,707	4,741,404	4,792,789	4,860,343	4,955,267	5,057,091	5,057,091	5,175,591	5,268,811	5,435,491	5,458,315	5,498,164	5,563,802	5,589,908	5,617,466	5,646,199	5,672,955	5,706,473	5,842,569	5,858,581
2019	284,641	2,619,944	3,127,635	3,440,399	3,883,889	4,167,027	4,236,847	4,356,948	4,404,165	4,466,242	4,553,470	4,647,037	4,647,037	4,755,928	4,841,590	4,994,754	5,015,728	5,052,346	5,112,661	5,136,650	5,161,974	5,188,377	5,212,963	5,243,763	5,368,825	5,383,538
2020	1,041,003	1,421,193	1,696,590	1,866,249	2,106,821	2,260,410	2,298,284	2,363,433	2,389,046	2,422,720	2,470,036	2,520,792	2,520,792	2,579,860	2,626,328	2,709,412	2,720,789	2,740,653	2,773,371	2,786,383	2,800,120	2,814,443	2,827,780	2,844,487	2,912,327	2,920,308

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Selection of Loss Development Factors

Development Period in Months

RY	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
1992																			1.039	1.082	0.977	0.983	0.984	1.015
1993																		1.479	0.724	0.925	1.007	0.992	1.024	1.029
1994																	1.012	1.006	0.996	1.031	1.012	1.011	1.038	1.028
1995																1.021	0.968	1.037	0.996	1.105	0.969	1.008	0.979	0.966
1996															0.973	1.007	1.014	1.005	1.012	1.004	1.045	1.019	1.004	1.131
1997														0.995	1.007	0.995	0.980	1.023	0.992	1.027	1.000	0.994	1.002	
1998													1.021	1.002	0.994	1.003	1.067	0.999	1.024	0.998	0.997	0.993		
1999												1.013	1.091	1.027	1.055	1.001	0.997	0.993	0.992	0.987	1.009			
2000											0.998	0.996	1.189	0.849	1.208	0.997	0.996	1.023	1.021	1.001				
2001										1.007	0.991	1.003	0.996	1.016	1.061	1.011	1.000	1.000	1.000					
2002									1.023	0.958	1.005	0.868	0.992	1.033	1.403	0.943	0.994	1.003						
2003								1.003	0.990	1.016	1.190	0.979	1.058	1.004	0.997	0.999	1.004							
2004							1.175	1.020	1.018	1.293	1.018	1.014	1.015	1.259	1.032	1.022								
2005						1.109	1.193	1.046	0.911	1.070	0.935	0.894	0.997	0.994	1.014									
2006					1.113	1.000	1.043	0.950	1.008	1.005	0.960	1.009	0.968	1.000										
2007				0.910	1.123	0.762	0.927	1.088	0.835	1.068	2.517	0.949	1.308											
2008			1.087	1.020	1.045	1.039	1.076	1.048	1.052	0.991	1.002	1.009												
2009		0.983	1.126	2.031	0.759	1.006	0.998	1.000	1.000	1.000	1.000													
2010	1.075	2.221	1.288	1.026	0.999	0.898	0.972	0.995	0.990	1.000														
2011	1.700	1.045	0.891	1.628	1.203	1.195	0.760	0.883	1.223															
2012	1.712	1.259	0.922	0.797	1.019	1.007	1.043	1.012																
2013	2.427	1.445	1.114	1.111	1.023	0.938	0.992																	
2014	0.902	1.594	0.985	1.009	1.059	1.033																		
2015	4.868	0.879	0.429	1.365	1.402																			
2016	1.035	1.408	0.829	1.266																				
2017	0.793	0.943	1.051																					
2018	0.692	1.232																						
2019	9.204																							
VOL WTD 3	1.186	1.260	0.710	1.210	1.152	0.995	0.916	0.966	1.057	0.995	1.179	0.991	1.097	1.105	1.012	0.991	1.000	1.011	1.001	0.994	1.001	1.001	0.998	1.064
VOL WTD 5	1.365	1.194	0.810	1.075	1.128	1.019	0.947	0.999	1.035	1.002	1.085	0.969	1.066	1.056	1.073	0.996	0.998	1.000	1.005	1.005	1.006	1.003	1.006	1.056
VOL WTD ALL	1.395	1.226	0.941	1.172	1.029	1.017	1.033	1.011	1.003	1.033	1.060	0.983	1.061	1.004	1.032	1.001	1.007	1.031	0.987	1.013	1.006	1.001	1.005	1.056
ARITH 3	3.563	1.194	0.770	1.213	1.161	0.993	0.932	0.963	1.071	0.997	1.506	0.989	1.091	1.085	1.014	0.988	0.999	1.008	1.005	0.995	1.002	1.002	0.995	1.042
ARITH 5	3.319	1.211	0.882	1.110	1.141	1.014	0.953	0.988	1.020	1.013	1.283	0.975	1.069	1.058	1.101	0.995	0.998	1.003	1.006	1.003	1.004	1.005	1.009	1.034
ARITH ALL	2.441	1.301	0.972	1.216	1.074	0.999	1.018	1.004	1.005	1.041	1.162	0.973	1.064	1.018	1.074	1.000	1.003	1.057	0.980	1.018	1.002	1.000	1.005	1.034
5 YR HI LO	2.232	1.194	0.955	1.129	1.095	0.993	0.987	1.002	1.014	1.002	0.987	0.989	1.023	1.012	1.036	1.002	0.998	1.001	1.005	1.001	1.002	1.005	1.010	1.024
7 YR HI LO	2.005	1.257	0.935	1.155	1.060	1.005	0.987	1.001	0.992	1.028	1.034	0.968	1.012	1.009	1.074	1.002	0.998	1.006	1.004	1.012	1.005	1.000	1.003	1.024
ALL YR HI LO	1.814	1.239	1.001	1.167	1.073	1.004	1.028	1.009	0.999	1.020	1.021	0.981	1.045	1.009	1.046	1.004	1.000	1.012	1.004	1.018	1.001	1.000	1.003	1.024
SELECTED	1.365	1.194	1.100	1.129	1.073	1.017	1.028	1.011	1.014	1.020	1.021	1.000	1.023	1.018	1.032	1.004	1.007	1.012	1.005	1.005	1.005	1.005	1.006	1.024

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Incurred Losses

	Development in Months																							
RY	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288
1992																			2,692,629	2,798,627	3,028,024	2,959,885	2,910,452	2,864,947
1993																		4,396,276	6,503,371	4,707,275	4,352,055	4,384,662	4,350,648	4,453,129
1994																	6,780,654	6,861,824	6,904,402	6,879,032	7,090,672	7,176,663	7,258,157	7,532,109
1995																6,710,846	6,848,586	6,628,459	6,870,718	6,844,614	7,564,185	7,331,622	7,393,127	7,235,670
1996															13,661,207	13,294,139	13,386,900	13,579,714	13,654,108	13,823,135	13,884,023	14,504,904	14,777,834	14,832,863
1997														18,771,549	18,683,095	18,815,016	18,715,134	18,345,632	18,769,574	18,628,240	19,122,738	19,124,576	19,018,859	19,056,805
1998													15,457,056	15,788,690	15,827,827	15,726,425	15,777,260	16,834,404	16,815,155	17,222,365	17,188,582	17,142,251	17,014,389	
1999												11,887,153	12,038,441	13,132,095	13,482,776	14,228,876	14,242,247	14,204,215	14,108,582	14,002,457	13,818,363	13,936,560		
2000											4,607,296	4,600,115	4,582,476	5,448,962	4,626,683	5,587,516	5,569,678	5,546,862	5,671,809	5,791,425	5,796,395			
2001										3,840,841	3,868,824	3,832,689	3,843,391	3,829,323	3,891,586	4,127,191	4,174,494	4,174,871	4,175,744	4,175,744				
2002									2,582,286	2,640,922	2,530,649	2,542,410	2,208,043	2,191,289	2,263,416	3,174,512	2,994,682	2,976,740	2,984,399					
2003								4,077,424	4,089,764	4,048,161	4,113,591	4,897,040	4,794,859	5,075,295	5,094,619	5,080,718	5,075,425	5,095,425						
2004							1,593,935	1,872,311	1,909,435	1,943,882	2,514,321	2,559,223	2,594,052	2,633,583	3,316,364	3,421,870	3,498,782							
2005						2,633,038	2,920,627	3,483,399	3,643,212	3,319,137	3,550,007	3,319,231	2,966,526	2,956,355	2,939,532	2,981,455								
2006					701,655	781,243	781,461	815,072	774,093	780,369	784,216	752,965	759,589	735,630	735,630									
2007				1,119,531	1,019,051	1,144,385	872,587	808,953	879,937	734,678	784,294	1,973,878	1,874,015	2,450,570										
2008			2,559,336	2,781,173	2,837,003	2,963,432	3,079,454	3,314,494	3,472,651	3,653,402	3,619,690	3,627,572	3,660,946											
2009		1,333,648	1,310,467	1,475,638	2,997,363	2,275,334	2,289,523	2,285,389	2,285,389	2,285,389	2,285,389	2,285,389												
2010	511,616	549,890	1,221,109	1,573,089	1,614,033	1,612,705	1,448,739	1,407,893	1,400,687	1,387,010	1,387,010													
2011	546,411	928,784	970,565	864,934	1,408,323	1,694,124	2,024,116	1,539,253	1,358,743	1,661,896														
2012	1,096,545	1,877,604	2,363,496	2,179,150	1,735,915	1,768,035	1,781,157	1,858,223	1,881,095															
2013	276,388	670,689	968,943	1,079,631	1,199,619	1,227,280	1,151,245	1,142,550																
2014	852,960	769,662	1,226,746	1,208,030	1,219,367	1,290,754	1,332,808																	
2015	428,309	2,084,870	1,833,390	787,414	1,074,530	1,506,470																		
2016	1,798,719	1,862,031	2,622,089	2,172,996	2,751,441																			
2017	791,096	627,482	591,709	621,647																				
2018	3,990,542	2,762,606	3,403,618																					
2019	284,641	2,619,944																						
2020	1,041,003																							

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Summary of Claim Counts Development

(1) Report Year	(2) Projected Claim Counts	(3) Selected Ultimate	(4) Reported Claims	(5) Tracked Claims @ 2020	(6) Claims w/ Payments	(7) IBNR Claims
1992	18	18	104	18	18	-
1993	22	22	121	22	22	-
1994	35	35	151	35	35	-
1995	37	37	112	37	37	-
1996	61	61	170	61	61	-
1997	70	71	169	71	70	-
1998	61	64	147	64	61	-
1999	56	57	186	57	56	-
2000	24	25	116	25	24	-
2001	15	15	68	15	15	-
2002	16	16	58	16	16	-
2003	27	27	75	27	27	-
2004	14	14	44	14	14	-
2005	12	13	38	13	12	-
2006	10	10	36	10	10	0
2007	14	14	59	14	14	0
2008	13	13	30	13	13	0
2009	6	6	24	6	6	0
2010	8	9	32	9	8	-
2011	15	15	44	14	14	1
2012	10	10	41	10	10	0
2013	8	8	30	8	8	0
2014	7	8	30	8	7	-
2015	8	8	35	8	8	0
2016	14	14	45	13	13	1
2017	12	12	35	11	11	1
2018	9	10	30	10	8	-
2019	9	9	30	7	6	2
2020	7	9	35	9	2	-
Total	620	630	2,095	625	606	5

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Development of Claims to Ultimate

Development Period in Months

RY	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
1992																			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1993																		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1994																	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1995																1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996															1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1997														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
1998													1.000	1.017	1.000	1.000	1.017	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1999												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
2000											1.000	1.000	1.095	1.000	1.000	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2001										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
2002									1.000	1.000	1.067	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
2003								1.000	1.000	1.040	1.038	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
2004							1.000	1.000	1.000	1.000	1.077	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
2005						1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2006					1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2007				1.000	1.000	1.000	1.083	1.000	1.000	1.000	1.077	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2008			1.000	1.000	1.222	1.000	1.182	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2009		1.200	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	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2010	2.333	1.000	1.143	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2011	1.800	1.444	1.077	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2012	7.000	1.286	1.111	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2013	1.500	1.500	0.889	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2014		1.200	1.000	1.167	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2015	1.200	1.000	1.333	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2016	4.500	1.444	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2017	2.250	1.222	1.000	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2018	2.333	1.143	1.067	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2019	3.000	1.280	1.067	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2020	2.444	1.280	1.067	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

RY	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	18	18	18	18	18	18	18
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	22	22	22	22	22	22	22	22
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	35	35	35	35	35	35	35	35	35
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	37	37	37	37	37	37	37	37	37	37
1996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	61	61	61	61	61	61	61	61	61	61	61
1997	-	-	-	-	-	-	-	-	-	-	-	-	-	70	70	70	70	70	70	70	70	70	70	70	70	70
1998	-	-	-	-	-	-	-	-	-	-	-	-	59	59	60	60	60	61	61	61	61	61	61	61	61	61
1999	-	-	-	-	-	-	-	-	-	-	-	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
2000	-	-	-	-	-	-	-	-	-	-	21	21	21	23	23	23	24	24	24	24	24	24	24	24	24	24
2001	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
2002	-	-	-	-	-	-	-	-	15	15	15	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
2003	-	-	-	-	-	-	-	25	25	25	26	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
2004	-	-	-	-	-	-	13	13	13	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
2005	-	-	-	-	-	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
2006	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
2007	-	-	-	12	12	12	12	13	13	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
2008	-	-	9	9	9	11	11	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
2009	-	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
2010	3	7	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
2011	5	9	13	14	14	14	14	14	14	14	14	14	14	14	14	14	15	15	15	15	15	15	15	15	15	15
2012	1	7	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
2013	4	6	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
2014	-	5	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2015	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
2016	2	9	13	13	13	13	13	13	13	13	13	13	13	13	13	13	14	14	14	14	14	14	14	14	14	14
2017	4	9	11	11	11	11	11	11	11	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
2018	3	7	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
2019	2	6	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
2020	2	5	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Selection of Claim Count Development Factors

	Development Period in Months																						
RY	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
1992																			1.000	1.000	1.000	1.000	1.000	1.000
1993																		1.000	1.000	1.000	1.000	1.000	1.000	1.000
1994																	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1995																1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996															1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1997														1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1998													1.000	1.017	1.000	1.000	1.017	1.000	1.000	1.000	1.000	1.000		
1999												1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
2000											1.000	1.000	1.095	1.000	1.000	1.043	1.000	1.000	1.000	1.000				
2001										1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
2002									1.000	1.000	1.067	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
2003								1.000	1.000	1.040	1.038	1.000	1.000	1.000	1.000	1.000	1.000							
2004							1.000	1.000	1.000	1.000	1.077	1.000	1.000	1.000	1.000	1.000								
2005						1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000									
2006					1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000										
2007				1.000	1.000	1.000	1.083	1.000	1.000	1.000	1.077	1.000	1.000											
2008			1.000	1.000	1.222	1.000	1.182	1.000	1.000	1.000	1.000	1.000												
2009		1.200	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000													
2010	2.333	1.000	1.143	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
2011	1.800	1.444	1.077	1.000	1.000	1.000	1.000	1.000	1.000															
2012	7.000	1.286	1.111	1.000	1.000	1.000	1.000	1.000																
2013	1.500	1.500	0.889	1.000	1.000	1.000	1.000																	
2014		1.200	1.000	1.167	1.000	1.000																		
2015	1.200	1.000	1.333	1.000	1.000																			
2016	4.500	1.444	1.000	1.000																				
2017	2.250	1.222	1.000																					
2018	2.333	1.143																						
2019	3.000																							
VOL WTD 3	2.444	1.280	1.067	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.031	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
VOL WTD 5	2.313	1.222	1.022	1.022	1.000	1.000	1.000	1.000	1.000	1.000	1.019	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
VOL WTD ALL	2.276	1.257	1.045	1.011	1.022	1.000	1.029	1.000	1.000	1.008	1.028	1.000	1.008	1.003	1.000	1.003	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ARITH 3	2.528	1.270	1.111	1.056	1.000	1.000	1.000	1.000	1.000	1.000	1.026	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
ARITH 5	2.657	1.202	1.044	1.033	1.000	1.000	1.000	1.000	1.000	1.000	1.015	1.000	1.000	1.000	1.000	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ARITH ALL	2.880	1.244	1.055	1.017	1.022	1.000	1.027	1.000	1.000	1.004	1.026	1.000	1.010	1.002	1.000	1.004	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 YR HI LO	2.528	1.188	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
7 YR HI LO	2.271	1.259	1.038	1.000	1.000	1.000	1.017	1.000	1.000	1.000	1.023	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
ALL YR HI LO	2.531	1.242	1.041	1.000	1.000	1.000	1.010	1.000	1.000	1.000	1.023	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
SELECTED	2.444	1.280	1.067	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Claims with Payment

Development in Months

RY	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288
1992																			18	18	18	18	18	18
1993																		22	22	22	22	22	22	22
1994																	35	35	35	35	35	35	35	35
1995																37	37	37	37	37	37	37	37	37
1996															61	61	61	61	61	61	61	61	61	61
1997														70	70	70	70	70	70	70	70	70	70	70
1998													59	59	60	60	60	61	61	61	61	61	61	
1999												56	56	56	56	56	56	56	56	56	56	56		
2000											21	21	21	23	23	23	24	24	24	24	24			
2001										15	15	15	15	15	15	15	15	15	15	15				
2002									15	15	15	16	16	16	16	16	16	16	16					
2003								25	25	25	26	27	27	27	27	27	27	27						
2004							13	13	13	13	13	14	14	14	14	14	14							
2005						12	12	12	12	12	12	12	12	12	12	12								
2006					10	10	10	10	10	10	10	10	10	10	10									
2007				12	12	12	12	13	13	13	13	14	14	14										
2008			9	9	9	11	11	13	13	13	13	13	13											
2009		5	6	6	6	6	6	6	6	6	6	6												
2010	3	7	7	8	8	8	8	8	8	8	8													
2011	5	9	13	14	14	14	14	14	14	14														
2012	1	7	9	10	10	10	10	10	10															
2013	4	6	9	8	8	8	8	8																
2014		5	6	6	7	7	7																	
2015	5	6	6	8	8	8																		
2016	2	9	13	13	13																			
2017	4	9	11	11																				
2018	3	7	8																					
2019	2	6																						
2020	2																							

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Determination of Average Severity

(1) Report Year	(2) Paid LDM Ultimate	(3) P + C LDM Ultimate	(4) Incurred LDMM Ultimate	(5) Selected Ultimate	(6) Ultimate Claims	(7) Average Severity
1992	2,924,822	2,941,875	2,850,160	2,905,619	18	161,423
1993	4,543,327	4,562,970	4,528,845	4,545,047	22	206,593
1994	8,042,983	8,074,365	7,712,001	7,943,116	35	226,946
1995	7,275,926	7,280,644	6,994,133	7,183,568	37	194,150
1996	16,775,204	16,775,204	16,884,730	16,811,713	61	275,602
1997	20,293,808	20,299,678	19,638,689	20,077,392	71	282,780
1998	17,797,304	17,834,125	17,637,506	17,756,312	64	277,442
1999	14,924,435	14,995,333	14,515,419	14,811,729	57	259,855
2000	6,151,843	6,232,481	6,068,030	6,150,784	25	246,031
2001	4,618,537	4,625,431	4,392,982	4,545,650	15	303,043
2002	2,984,399	2,984,399	3,154,390	3,041,063	16	190,066
2003	5,843,440	5,882,283	5,449,954	5,725,226	27	212,045
2004	3,505,355	3,807,014	3,769,541	3,693,970	14	263,855
2005	3,461,714	3,454,017	3,225,668	3,380,467	13	260,036
2006	929,219	921,491	821,064	890,591	10	88,131
2007	2,518,925	2,520,032	2,784,437	2,607,798	14	184,331
2008	4,582,786	4,673,696	4,257,186	4,504,556	13	342,895
2009	3,116,363	3,148,272	2,657,600	2,974,078	6	490,516
2010	1,960,684	1,966,800	1,646,048	1,857,844	9	206,427
2011	1,661,896	1,661,896	2,010,792	1,778,195	15	121,882
2012	2,551,889	2,747,046	2,308,090	2,535,675	10	243,322
2013	1,586,790	1,579,184	1,417,093	1,527,689	8	183,246
2014	1,876,833	1,941,328	1,699,927	1,839,363	8	229,920
2015	2,174,780	2,322,329	1,953,618	2,150,242	8	257,920
2016	4,136,415	4,164,901	3,828,237	4,043,184	14	298,448
2017	1,073,052	1,076,971	976,429	1,042,150	12	87,666
2018	6,389,465	6,165,637	5,880,715	6,145,273	10	614,527
2019	4,540,236	2,940,295	5,403,878	4,294,803	9	485,118
2020	1,678,326	1,041,003	2,931,341	1,883,557	9	209,284
Total	159,920,756	158,620,699	157,398,499	158,646,651	630	251,650

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Paid Bornhuetter-Ferguson Method

(1) Report Year	(2) Ultimate Claims	(3) Projected Severity	(4) Trended Severity	(5) Detrended Severity	(6) Expected Losses	(7) Percent Unpaid	(8) Expected Unpaid	(9) Paid Losses	(10) Indicated Ultimate	(11) Incurred Losses	(12) IBNR Reserve	(13) Case Reserve	(14) Ultimate Severity
1992	18	161,423	355,035	152,061	2,737,101	4.5%	124,059	2,795,047	2,919,105	2,850,160	68,946	55,113	162,173
1993	22	206,593	441,770	156,402	3,440,854	4.6%	158,261	4,337,402	4,495,663	4,528,845	(33,182)	191,443	204,348
1994	35	226,946	471,822	160,868	5,630,368	4.9%	277,125	7,673,049	7,950,174	7,695,049	255,125	22,000	227,148
1995	37	194,150	392,436	165,460	6,122,033	5.6%	343,055	6,917,807	7,260,863	6,967,807	293,055	50,000	196,240
1996	61	275,602	541,610	170,184	10,381,234	7.3%	755,450	14,089,617	14,845,067	16,775,204	(1,930,138)	2,685,588	243,362
1997	71	282,780	540,292	175,043	12,428,041	8.1%	1,004,353	18,817,012	19,821,365	19,056,805	764,561	239,792	279,174
1998	64	277,442	515,379	180,040	11,522,574	8.7%	1,007,935	16,359,042	17,366,978	17,014,389	352,589	655,347	271,359
1999	57	259,855	469,310	185,180	10,555,276	9.7%	1,022,622	13,618,922	14,641,544	13,936,560	704,984	317,638	256,869
2000	25	246,031	432,011	190,467	4,761,677	11.4%	544,150	5,555,836	6,099,987	5,796,395	303,591	240,559	243,999
2001	15	303,043	517,349	195,905	2,938,572	13.1%	384,123	4,090,744	4,474,867	4,175,744	299,123	85,000	298,324
2002	16	190,066	315,471	201,498	3,223,965	14.0%	450,884	2,501,694	2,952,579	2,984,399	(31,821)	482,705	184,536
2003	27	212,045	342,182	207,250	5,595,762	15.8%	883,916	5,026,212	5,910,128	5,095,425	814,704	69,213	218,894
2004	14	263,855	413,970	213,167	2,984,343	17.8%	530,063	2,951,643	3,481,705	3,498,782	(17,077)	547,139	248,693
2005	13	260,036	396,653	219,253	2,850,291	20.8%	593,817	2,846,864	3,440,680	2,981,455	459,225	134,592	264,668
2006	10	88,131	130,702	225,513	2,278,866	23.5%	534,514	735,630	1,270,144	735,630	534,514	-	125,691
2007	14	184,331	265,782	231,951	3,281,496	25.0%	820,779	1,928,104	2,748,883	2,450,570	298,313	522,467	194,303
2008	13	342,895	480,688	238,573	3,134,097	26.7%	835,702	3,436,523	4,272,226	3,660,946	611,280	224,422	325,210
2009	6	490,516	668,545	245,384	1,487,803	29.5%	439,109	2,285,389	2,724,498	2,285,389	439,109	-	449,353
2010	9	206,427	273,539	252,390	2,271,509	30.8%	700,507	1,382,010	2,082,516	1,387,010	695,507	5,000	231,391
2011	15	121,882	157,024	259,595	3,787,361	32.2%	1,220,865	1,085,749	2,306,614	1,661,896	644,718	576,147	158,101
2012	10	243,322	304,778	267,007	2,782,491	33.9%	942,069	1,729,281	2,671,350	1,881,095	790,255	151,814	256,342
2013	8	183,246	223,157	274,630	2,289,544	35.4%	811,211	1,049,550	1,860,761	1,142,550	718,211	93,000	223,197
2014	8	229,920	272,225	282,470	2,259,762	40.3%	911,359	1,211,851	2,123,210	1,332,808	790,402	120,957	265,401
2015	8	257,920	296,901	290,535	2,422,141	49.0%	1,186,555	1,297,694	2,484,249	1,506,470	977,779	208,776	297,984
2016	14	298,448	334,018	298,829	4,048,349	56.4%	2,282,153	2,110,073	4,392,226	2,751,441	1,640,785	641,367	324,212
2017	12	87,666	95,391	307,361	3,653,817	63.2%	2,308,216	468,146	2,776,362	621,647	2,154,715	153,501	233,549
2018	10	614,527	650,117	316,136	3,161,356	79.2%	2,502,579	2,353,066	4,855,645	3,403,618	1,452,027	1,050,552	485,564
2019	9	485,118	498,968	325,161	2,878,687	97.0%	2,791,772	946,114	3,737,886	2,619,944	1,117,942	1,673,830	422,212
2020	9	209,284	209,284	334,444	3,009,999	97.0%	2,919,120	50,673	2,969,792	1,041,003	1,928,790	990,330	329,977
Total	630				127,919,369		29,286,325	129,650,743	158,937,068	141,839,035	17,098,033	12,188,292	252,111

Trend = 1.0285

Pure Premium Selection	
8-Year Average x Latest	334,444
16-Year Average x Latest	341,404
All Year Average x Latest	385,612
Selected Pure Premium	334,444

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Paid + Committed Bornhuetter-Ferguson Method

(1) Report Year	(2) Ultimate Claims	(3) Projected Severity	(4) Trended Severity	(5) Detrended Severity	(6) Expected Losses	(7) Percent Uncomm	(8) Expected Uncomm	(9) Paid + Com Losses	(10) Indicated Ultimate	(11) Paid Losses	(12) Unpaid Loss	(13) IBNR Reserve	(14) Ultimate Severity
1992	18	161,423	355,035	152,061	2,737,101	4.9%	134,442	2,797,375	2,931,817	2,795,047	136,770	81,657	162,879
1993	22	206,593	441,770	156,402	3,440,854	5.0%	171,019	4,338,845	4,509,864	4,337,402	172,462	(18,981)	204,994
1994	35	226,946	471,822	160,868	5,630,368	5.0%	280,594	7,673,049	7,953,643	7,673,049	280,594	258,594	227,247
1995	37	194,150	392,436	165,460	6,122,033	5.4%	333,551	6,917,807	7,251,359	6,917,807	333,551	283,551	195,983
1996	61	275,602	541,610	170,184	10,381,234	7.2%	745,043	14,192,815	14,937,859	14,089,617	848,242	(1,837,346)	244,883
1997	71	282,780	540,292	175,043	12,428,041	8.1%	1,009,931	18,842,805	19,852,736	18,817,012	1,035,723	795,931	279,616
1998	64	277,442	515,379	180,040	11,522,574	8.5%	982,623	16,384,883	17,367,506	16,359,042	1,008,464	353,117	271,367
1999	57	259,855	469,310	185,180	10,555,276	9.8%	1,030,176	13,716,560	14,746,736	13,618,922	1,127,814	810,176	258,715
2000	25	246,031	432,011	190,467	4,761,677	11.6%	550,436	5,624,201	6,174,637	5,555,836	618,801	378,242	246,985
2001	15	303,043	517,349	195,905	2,938,572	12.9%	377,868	4,090,744	4,468,612	4,090,744	377,868	292,868	297,907
2002	16	190,066	315,471	201,498	3,223,965	14.4%	465,791	2,554,399	3,020,190	2,501,694	518,496	35,791	188,762
2003	27	212,045	342,182	207,250	5,595,762	15.7%	876,376	5,032,425	5,908,800	5,026,212	882,588	813,376	218,844
2004	14	263,855	413,970	213,167	2,984,343	17.4%	518,075	3,210,782	3,728,857	2,951,643	777,214	230,075	266,347
2005	13	260,036	396,653	219,253	2,850,291	20.2%	574,894	2,854,408	3,429,301	2,846,864	582,438	447,846	263,792
2006	10	88,131	130,702	225,513	2,278,866	22.9%	521,294	735,630	1,256,924	735,630	521,294	521,294	124,383
2007	14	184,331	265,782	231,951	3,281,496	26.1%	857,017	1,943,570	2,800,587	1,928,104	872,484	350,017	197,958
2008	13	342,895	480,688	238,573	3,134,097	27.4%	858,998	3,453,083	4,312,081	3,436,523	875,557	651,135	328,243
2009	6	490,516	668,545	245,384	1,487,803	29.7%	442,370	2,285,389	2,727,759	2,285,389	442,370	442,370	449,891
2010	9	206,427	273,539	252,390	2,271,509	30.9%	701,884	1,382,010	2,083,894	1,382,010	701,884	696,884	231,544
2011	15	121,882	157,024	259,595	3,787,361	31.9%	1,207,676	1,101,896	2,309,572	1,085,749	1,223,823	647,676	158,304
2012	10	243,322	304,778	267,007	2,782,491	33.5%	933,205	1,871,095	2,804,300	1,729,281	1,075,019	923,205	269,100
2013	8	183,246	223,157	274,630	2,289,544	36.5%	836,787	1,049,550	1,886,337	1,049,550	836,787	743,787	226,265
2014	8	229,920	272,225	282,470	2,259,762	41.8%	945,676	1,231,808	2,177,484	1,211,851	965,633	844,676	272,185
2015	8	257,920	296,901	290,535	2,422,141	49.3%	1,194,095	1,350,470	2,544,564	1,297,694	1,246,870	1,038,095	305,219
2016	14	298,448	334,018	298,829	4,048,349	56.2%	2,275,421	2,111,641	4,387,062	2,110,073	2,276,989	1,635,621	323,831
2017	12	87,666	95,391	307,361	3,653,817	59.6%	2,178,366	471,647	2,650,013	468,146	2,181,867	2,028,366	222,920
2018	10	614,527	650,117	316,136	3,161,356	67.6%	2,136,766	2,489,751	4,626,518	2,353,066	2,273,452	1,222,900	462,652
2019	9	485,118	498,968	325,161	2,878,687	80.4%	2,313,491	952,944	3,266,435	946,114	2,320,321	646,491	368,959
2020	9	209,284	209,284	334,444	3,009,999	80.4%	2,419,021	50,673	2,469,694	50,673	2,419,021	1,428,691	274,410
Total	630				127,919,369		27,872,885	130,712,254	158,585,139	129,650,743	28,934,396	16,746,104	251,553

Trend = 1.0285

Pure Premium Selection	
8-Year Average x Latest	334,444
16-Year Average x Latest	341,404
All Year Average x Latest	385,612
Selected Pure Premium	334,444

Utah Petroleum Storage Tank Trust Fund
Reserve Study as of June 30, 2020
Incurred Bornhuetter-Ferguson Method

(1) Report Year	(2) Ultimate Claims	(3) Projected Severity	(4) Trended Severity	(5) Detrended Severity	(6) Expected Losses	(7) Percent IBNR	(8) Expected IBNR	(9) Incurred Losses	(10) Indicated Ultimate	(11) Paid Losses	(12) Unpaid Loss	(13) Case Reserve	(14) Ultimate Severity
1992	18	161,423	355,035	152,061	2,737,101	0.0%	-	2,850,160	2,850,160	2,795,047	55,113	55,113	158,342
1993	22	206,593	441,770	156,402	3,440,854	0.2%	7,563	4,528,845	4,536,408	4,337,402	199,006	191,443	206,200
1994	35	226,946	471,822	160,868	5,630,368	0.4%	21,192	7,695,049	7,716,241	7,673,049	43,192	22,000	220,464
1995	37	194,150	392,436	165,460	6,122,033	0.6%	39,711	6,967,807	7,007,519	6,917,807	89,711	50,000	189,392
1996	61	275,602	541,610	170,184	10,381,234	3.0%	307,591	16,775,204	17,082,795	14,089,617	2,993,179	2,685,588	280,046
1997	71	282,780	540,292	175,043	12,428,041	3.5%	439,071	19,056,805	19,495,876	18,817,012	678,864	239,792	274,590
1998	64	277,442	515,379	180,040	11,522,574	4.0%	459,508	17,014,389	17,473,897	16,359,042	1,114,855	655,347	273,030
1999	57	259,855	469,310	185,180	10,555,276	4.5%	472,505	13,936,560	14,409,065	13,618,922	790,143	317,638	252,791
2000	25	246,031	432,011	190,467	4,761,677	4.9%	235,470	5,796,395	6,031,866	5,555,836	476,029	240,559	241,275
2001	15	303,043	517,349	195,905	2,938,572	5.4%	158,360	4,175,744	4,334,105	4,090,744	243,360	85,000	288,940
2002	16	190,066	315,471	201,498	3,223,965	6.5%	209,725	2,984,399	3,194,124	2,501,694	692,430	482,705	199,633
2003	27	212,045	342,182	207,250	5,595,762	7.2%	401,932	5,095,425	5,497,357	5,026,212	471,145	69,213	203,606
2004	14	263,855	413,970	213,167	2,984,343	7.6%	225,942	3,498,782	3,724,724	2,951,643	773,082	547,139	266,052
2005	13	260,036	396,653	219,253	2,850,291	10.4%	296,580	2,981,455	3,278,036	2,846,864	431,172	134,592	252,157
2006	10	88,131	130,702	225,513	2,278,866	12.0%	273,246	735,630	1,008,876	735,630	273,246	-	99,837
2007	14	184,331	265,782	231,951	3,281,496	14.0%	459,590	2,450,570	2,910,161	1,928,104	982,057	522,467	205,703
2008	13	342,895	480,688	238,573	3,134,097	14.0%	438,946	3,660,946	4,099,892	3,436,523	663,368	224,422	312,091
2009	6	490,516	668,545	245,384	1,487,803	15.7%	234,136	2,285,389	2,519,525	2,285,389	234,136	-	415,547
2010	9	206,427	273,539	252,390	2,271,509	17.4%	394,133	1,387,010	1,781,143	1,382,010	399,133	5,000	197,905
2011	15	121,882	157,024	259,595	3,787,361	18.5%	700,658	1,661,896	2,362,554	1,085,749	1,276,805	576,147	161,936
2012	10	243,322	304,778	267,007	2,782,491	19.4%	539,071	1,881,095	2,420,166	1,729,281	690,885	151,814	232,238
2013	8	183,246	223,157	274,630	2,289,544	21.6%	494,454	1,142,550	1,637,004	1,049,550	587,454	93,000	196,358
2014	8	229,920	272,225	282,470	2,259,762	22.9%	517,219	1,332,808	1,850,027	1,211,851	638,176	120,957	231,253
2015	8	257,920	296,901	290,535	2,422,141	28.1%	681,293	1,506,470	2,187,763	1,297,694	890,069	208,776	262,421
2016	14	298,448	334,018	298,829	4,048,349	36.3%	1,470,953	2,751,441	4,222,393	2,110,073	2,112,320	641,367	311,676
2017	12	87,666	95,391	307,361	3,653,817	42.1%	1,539,075	621,647	2,160,722	468,146	1,692,575	153,501	181,761
2018	10	614,527	650,117	316,136	3,161,356	51.5%	1,628,646	3,403,618	5,032,264	2,353,066	2,679,198	1,050,552	503,226
2019	9	485,118	498,968	325,161	2,878,687	64.5%	1,856,383	2,619,944	4,476,328	946,114	3,530,214	1,673,830	505,622
2020	9	209,284	209,284	334,444	3,009,999	64.5%	1,941,063	1,041,003	2,982,065	50,673	2,931,393	990,330	331,341
Total	630				127,919,369		16,444,019	141,839,035	158,283,053	129,650,743	28,632,310	12,188,292	251,074

Trend = 1.029

Pure Premium Selection	
8-Year Average x Latest	334,444
16-Year Average x Latest	341,404
All Year Average x Latest	385,612
Selected Pure Premium	334,444

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
EXECUTIVE SUMMARY
Proposed Amendments to Radiation Control Rules
R313-36, Special Requirements for Industrial Radiographic Operations;
and
R313-37-3, Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material
November 12, 2020

What is the issue before the Board?	Board approval to initiate formal rulemaking and receive public comment on proposed changes to R313-36, *Special Requirements for Industrial Radiographic Operations*; and R313-37-3, *Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material* of the radiation control rules to incorporate federal regulatory changes promulgated by the Nuclear Regulatory Commission (NRC) and published in the *Federal Register* on June 28, 2018 (83 FR 30285), November 21, 2018 (83 FR 58721), and November 18, 2019 (84 FR 63565).
What is the historical background or context for this issue?	The proposed changes affect the following sections of the radiation control rules that incorporate by reference the selected sections of the noted parts of the federal radiation control regulations of 10 CFR: R313-36-3 incorporates selected sections of 10 CFR Part 34; and R313-37-3 incorporates selected sections of 10 CFR Part 37. The proposed changes make minor corrections in R313-36 and in R313-37 for consistency with the corresponding federal regulations. A proposed change in R313-37 also updates the incorporation-by-reference date. By updating this date, the minor corrections made by the NRC in the above referenced *Federal Registers* are incorporated into the state radiation control rules. As an Agreement State with the NRC for the radioactive materials program, Utah is required to maintain regulatory compatibility with the corresponding NRC radioactive materials regulations. While the proposed changes are minor in nature, the NRC designated the changes as necessary for an Agreement State to adopt in order to maintain regulatory compatibility with the NRC. A more detailed summary of the proposed changes is provided in each of the rule analysis forms, the rulemaking crosswalk, and rulemaking side-by-side comparison that follow this executive summary.
What is the governing statutory or regulatory citation?	The Board is authorized under Subsection 19-3-104(4) to make rules to meet the requirements of federal law and maintain primacy of the radioactive materials program from the federal government and under Subsection 19-3-103.1(1)(a) to make rules necessary to implement the Radiation Control Act. The proposed rule changes also meet existing DEQ and state rulemaking procedures.
Is Board action required?	Yes, Board action is required to publish the proposed rule changes in the *Utah State Bulletin* and start the public comment period.

DSHW-2020-015845
Attachments: DSHW-2020-015847; DSHW-2020-015849; DSHW-2020-015851; DSHW-2020-015853

What is the Division Director's recommendation?	The Director recommends that the Board authorize initiating the formal rulemaking process by filing the proposed rule changes with the Office of Administrative Rules for publication in the *Utah State Bulletin* and commence a public comment period. With the Board's approval and following a required review by the governor's office, it is anticipated that the proposed rule changes will be published in the December 1, 2020 issue of the *Utah State Bulletin* with the public comment period beginning on December 1 and ending on January 4, 2021.
Where can more information be obtained?	For questions or additional information, please contact Rusty Lundberg (801) 536-4257, rlundberg@utah.gov) or Tom Ball (801) 536-0251, tball@utah.gov.

DSHW-2020-015845
Attachments: DSHW-2020-015847; DSHW-2020-015849; DSHW-2020-015851; DSHW-2020-015853

State of Utah
Administrative Rule Analysis
Revised May 2020

NOTICE OF PROPOSED RULE		
TYPE OF RULE: New ___; Amendment _X_; Repeal ___; Repeal and Reenact ___		
	Title No. - Rule No. - Section No.	
Utah Admin. Code Ref (R no.):	**R313-36**	**Filing No. (Office Use Only)**
Changed to Admin. Code Ref. (R no.):	**R**	

Agency Information

1. Department:	Environmental Quality	
Agency:	Waste Management and Radiation Control, Radiation	
Room no.:	Second Floor	
Building:	Multi-Agency State Office Building (MASOB)	
Street address:	195 North 1950 West	
City, state:	Salt Lake City, UT	
Mailing address:	PO Box 144880	
City, state, zip:	Salt Lake City, UT, 84114-4880	
Contact person(s):		
Name:	**Phone:**	**Email:**
Rusty Lundberg	801-536-4257	rlundberg@utah.gov
Tom Ball	801-536-0251	tball@utah.gov
Please address questions regarding information on this notice to the agency.		

General Information

2. Rule or section catchline:

Special Requirements for Industrial Radiographic Operations

3. Purpose of the new rule or reason for the change (If this is a new rule, what is the purpose of the rule? If this is an amendment, repeal, or repeal and reenact, what is the reason for the filing?)**:**

R313-36 incorporates selected sections of 10 CFR Part 34, Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations. The proposed changes add the additional statutory reference to 19-3-103.1(1)(a) due to changes made to Radiation Control Act by Senate Bill 88 (2020 General Session). The proposed changes also correct references to the appropriate NRC office and federal regulation references.

4. Summary of the new rule or change:

In R313-36-1, the reference to Subsection 19-3-103.1(1)(a) in the Radiation Control Act is added to the list to be consistent with changes made to this act by Senate Bill 88, 2020 General Session. 19-3-103.1(1)(a) states that “the Board may make rules ... that are necessary to implement this part [the Radiation Control Act].” Consequently, it is appropriate to include that reference with the other statutory references in R313-36-1 for added clarity and consistency. In R313-36-3, the proposed changes correct the referenced NRC office to the current office, “Office of Nuclear Material Safety and Safeguards,” correct the reference from “30.6(a)(2)” to “30.6(b)(2),” and delete the phrase “such as Section 21.21” to be accurate with corresponding text in the appropriate places in 10 CFR Part 34 of the federal regulations. Corresponding references in Part 34 do not include the phrase “such as Section 21.21.”

Fiscal Information

5. Aggregate anticipated cost or savings to:

A) State budget:

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for industrial radiographic operations of 10 CFR Part 34 and that are incorporated by refence in R313-36. Consequently, there are no cost or savings impacts to the state budget nor are there any state agencies that are subject to the requirements of R313-36.

B) Local governments:

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for industrial radiographic operations of 10 CFR Part 34 and that are incorporated by refence in R313-36. Consequently, there are no cost or savings impacts to local governments nor are there any local governments that are subject to the requirements of R313-36.

C) Small businesses ("small business" means a business employing 1-49 persons)**:**

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for industrial radiographic operations of 10 CFR Part 34 and that are incorporated by refence in R313-36. Consequently, there are no cost or savings impacts to any small businesses that are licensed to possess and use industrial radiographic equipment within Utah and therefore are subject to the requirements of R313-36.

D) Non-small businesses ("non-small business" means a business employing 50 or more persons)**:**

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for industrial radiographic operations of 10 CFR Part 34 and that are incorporated by refence in R313-36. Consequently, there are no cost or savings impacts to non-small businesses that are licensed to possess and use industrial radiographic equipment within Utah and therefore are subject to the requirements of R313-36.

E) Persons other than small businesses, non-small businesses, state, or local government entities ("person" means any individual, partnership, corporation, association, governmental entity, or public or private organization of any character other than an ***agency***)**:**

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for industrial radiographic operations of 10 CFR Part 34 and that are incorporated by refence in R313-36. Consequently, there are no cost or savings impacts to persons other than small businesses, non-small businesses, state, or local government entities that may be licensed to possess and use industrial radiographic equipment within Utah and therefore are subject to the requirements of R313-36.

F) Compliance costs for affected persons:

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for industrial radiographic operations of 10 CFR Part 34 and that are incorporated by refence in R313-36. Consequently, there are no compliance costs to any of the currently licensed industrial radiographers in Utah.

G) Regulatory Impact Summary Table (This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts will be included in narratives above.)

Regulatory Impact Table

Fiscal Cost	**FY2021**	**FY2022**	**FY2023**
State Government	$0	$0	$0
Local Governments	$0	$0	$0
Small Businesses	$0	$0	$0
Non-Small Businesses	$0	$0	$0
Other Persons	$0	$0	$0
Total Fiscal Cost	**$0**	**$0**	**$0**
Fiscal Benefits			
State Government	$0	$0	$0
Local Governments	$0	$0	$0
Small Businesses	$0	$0	$0
Non-Small Businesses	$0	$0	$0
Other Persons	$0	$0	$0
Total Fiscal Benefits	**$0**	**$0**	**$0**
Net Fiscal Benefits	**$0**	**$0**	**$0**

H) Department head approval of regulatory impact analysis:

The executive director of the Department of Environmental Quality, Scott Baird, has reviewed and approved this fiscal analysis.

6. A) Comments by the department head on the fiscal impact this rule may have on businesses:

While the proposed changes are necessary to maintain regulatory compatibility, they do not affect the intent, scope, meaning, or application of the requirements for industrial radiographic operations of 10 CFR Part 34 and that are incorporated by refence in R313-36. Consequently, there is no fiscal impact associated with the proposed changes to R313-36.

B) Name and title of department head commenting on the fiscal impacts:

Scott Baird, Executive Director

Citation Information

7. This rule change is authorized or mandated by state law, and implements or interprets the following state and federal laws. State code or constitution citations (required):

19-3-103.1(1)(a)	19-3-104(4)	19-3-104(7)

Incorporations by Reference Information

(If this rule incorporates more than two items by reference, please include additional tables.)

8. A) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; *if none, leave blank*)**:**	
	First Incorporation
Official Title of Materials Incorporated (from title page)	
Publisher	
Date Issued	
Issue, or version	

B) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; *if none, leave blank*)**:**	
	Second Incorporation
Official Title of Materials Incorporated (from title page)	
Publisher	
Date Issued	
Issue, or version	

Public Notice Information

9. The public may submit written or oral comments to the agency identified in box 1. (The public may also request a hearing by submitting a written request to the agency. The agency is required to hold a hearing if it receives requests from ten interested persons or from an association having not fewer than ten members. Additionally, the request must be received by the agency not more than 15 days after the publication of this rule in the Utah State Bulletin. See Section 63G-3-302 and Rule R15-1 for more information.)	
A) Comments will be accepted until (mm/dd/yyyy)**:**	01/04/2021

B) A public hearing (optional) will be held:		
On (mm/dd/yyyy)**:**	**At** (hh:mm AM/PM)**:**	**At** (place)**:**

10. This rule change MAY become effective on (mm/dd/yyyy)**:**	01/15/2021
NOTE: The date above is the date on which this rule MAY become effective. It is NOT the effective date. After the date designated in Box 10, the agency must submit a Notice of Effective Date to the Office of Administrative Rules to make this rule effective. Failure to submit a Notice of Effective Date will result in this rule lapsing and will require the agency to start the rulemaking process over.	

Agency Authorization Information

To the agency: Information requested on this form is required by Sections 63G-3-301, 302, 303, and 402. Incomplete forms will be returned to the agency for completion, possibly delaying publication in the *Utah State Bulletin*, and delaying the first possible effective date.			
Agency head or designee, and title:	Ty Howard, Division Director	**Date** (mm/dd/yyyy)**:**	11/02/2020

R313. Environmental Quality, Radiation Control.
R313-36. Special Requirements for Industrial Radiographic Operations.
R313-36-1. Purpose and Authority.

(1) The rules in R313-36 prescribe requirements for the issuance of licenses and establish radiation safety requirements for persons utilizing sources of radiation for industrial radiography.

(2) The rules set forth herein are adopted pursuant to the provisions of Subsections 19-3-103.1(1)(a), 19-3-104(4) and 19-3-104(7).

(3) The requirements of R313-36 are in addition to, and not in substitution for, the other requirements of these rules.

R313-36-2. Scope.

(1) The requirements of R313-36 shall apply to licensees using radioactive materials to perform industrial radiography.

(2) The requirements of R313-36 shall not apply to persons using electronic sources of radiation to conduct industrial radiography.

R313-36-3. Clarifications or Exceptions.

For purposes of R313-36, 10 CFR 34.3; 34.13; 34.20(a)(1); 34.20(b) through 34.41(b); 34.42(a) through 34.42(c); 34.43(a)(1); 34.43(b) through 34.45(a)(8); 34.45(a)(10) through 34.101 (2019), are incorporated by reference with the following clarifications or exceptions:

(1) The exclusion of the following:

(a) In 10 CFR 34.3, exclude definitions for "Lay-barge radiography," "Offshore platform radiography," and "Underwater radiography";

(b) In 10 CFR 34.27(d), exclude "A copy of the report must be sent to the Administrator of the appropriate Nuclear Regulatory Commission's Regional Office listed in appendix D of 10 CFR part 20 of this chapter "Standards for Protection Against Radiation.""; and

(c) In 10 CFR 34.27(e), exclude "Licensees will have until June 27, 1998, to comply with the DU leak-testing requirements of this paragraph."

(2) The substitution of the following wording:

(a) "radioactive materials" for references to "byproduct materials";

(b) "Utah Radiation Control Rules" for references to:

(i) "Commission's regulations";

(ii) "Federal regulations";

(iii) "NRC regulations"; and

(iv) "Commission regulations.";

(c) "Director" for references to:

(i) "Commission";

(ii) "appropriate NRC regional office listed in Section [~~30.6(a)(2)~~]30.6(b)(2)";

(iii) "Director, Office of [~~Federal and State Materials and Environmental Management Programs~~]Nuclear Material Safety and Safeguards" except as used in 10 CFR 34.43(a)(1); and

(iv) "NRC's Office of [~~Federal and State Materials and Environmental Management Programs~~]Nuclear Material Safety and Safeguards";

(d) "Director, the U.S. Nuclear Regulatory Commission, or an Agreement State" for references to:

(i) "NRC or an Agreement State"; and

(ii) "Commission or an Agreement State";

(e) "Director, the U.S. Nuclear Regulatory Commission, or by an Agreement State" for references to "Commission or by an Agreement State";

(f) "License(s)" for references to "NRC license(s)";

(g) "NRC or Agreement State License" for references to "Agreement State license"; and

(h) "the Utah Radiation Control Rules" for references to "this chapter[~~, such as Section 21.21~~]."

(3) The substitution of the following rule references:

(a) In 10 CFR 34.51, "R313-12" for references to "10 CFR part 20 of this chapter";

(b) "R313-15" for references to "10 CFR part 20" and "10 CFR part 20 of this chapter" except as found in 10 CFR 34.51;

(c) "R313-15-601(1)(a)" for references to "Section 20.1601(a)(1) of this chapter";

(d) "R313-15-902(1) and (2)" for references to "10 CFR 20.1902(a) and (b) of this chapter";

(e) "R313-15-903" for references to "Section 20.1903 of this chapter";

(f) "R313-15-1203" for references to "10 CFR 20.2203" and "Section 20.2203 of this chapter";

(g) "R313-12-110" for references to "Section 30.6(a) of this chapter" except as used in 10 CFR 34.43(a)(1);

(h) "R313-19-30" for references to "Section 150.20 of this chapter";

(i) "R313-19-50" for references to "Section 30.50";

(j) "R313-19-100" for references to "10 CFR part 71", and "49 CFR parts 171 - 173";

(k) "R313-22-33" for references to "Section 30.33 of this chapter";

(l) "R313-36" for references to "NRC regulations contained in this part";

(m) "R313-19-100(5)" for references to "Section 71.5 of this chapter"

(n) "R313-19-5" for references to "Sections 30.7, 30.9, and 30.10 of this chapter."

KEY: industry, radioactive material, licensing, surveys
Date of Enactment or Last Substantive Amendment: [February 14, 2020]
Notice of Continuation: July 1, 2016
Authorizing, and Implemented or Interpreted Law: [~~19-3-103~~]19-3-103.1(1)(a); 19-3-104[~~; 19-6-107~~]

State of Utah
Administrative Rule Analysis
Revised May 2020

NOTICE OF PROPOSED RULE		
TYPE OF RULE: New ___; Amendment _X_; Repeal ___; Repeal and Reenact ___		
	Title No. - Rule No. - Section No.	
Utah Admin. Code Ref (R no.):	**R313-37**	**Filing No. (Office Use Only)**
Changed to Admin. Code Ref. (R no.):	**R**	

Agency Information

1. Department:	Environmental Quality	
Agency:	Waste Management and Radiation Control, Radiation	
Room no.:	Second Floor	
Building:	Multi-Agency State Office Building (MASOB)	
Street address:	195 North 1950 West	
City, state:	Salt Lake City, UT	
Mailing address:	PO Box 144880	
City, state, zip:	Salt Lake City, UT, 84114-4880	
Contact person(s):		
Name:	**Phone:**	**Email:**
Rusty Lundberg	801-536-4257	rlundberg@utah.gov
Tom Ball	801-536-0251	tball@utah.gov
Please address questions regarding information on this notice to the agency.		

General Information

2. Rule or section catchline:

Physical Protection of Category 1 or Category 2 Quantities of Radioactive Material

3. Purpose of the new rule or reason for the change (If this is a new rule, what is the purpose of the rule? If this is an amendment, repeal, or repeal and reenact, what is the reason for the filing?)**:**

R313-37 incorporates selected sections of 10 CFR Part 37, Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material. The proposed changes update the date of the incorporation by reference from 2017 to 2020 to incorporate minor corrections made by the Nuclear Regulatory Commission (NRC) and published in the June 28, 2018 (83 FR 30285), November 21, 2018 (83 FR 58721), and November 18, 2019 (84 FR 63565) issues of the *Federal Register.* By updating this date, the minor corrections made by the NRC in the referenced *Federal Registers* are incorporated into the state radiation control rules. As an Agreement State with the NRC for the radioactive materials program, Utah is required to maintain regulatory compatibility with the corresponding NRC radioactive materials regulations. While the proposed changes are minor in nature, the NRC designated the changes as necessary for an Agreement State to adopt in order to maintain regulatory compatibility with the NRC. Also, the other proposed changes add the additional statutory reference to 19-3-103.1(1)(a) due to changes made to Radiation Control Act by Senate Bill 88 (2020 General Session) and correct references to the appropriate NRC office and federal regulation references.

4. Summary of the new rule or change:

In R313-37-1, the reference to Subsection 19-3-103.1(1)(a) in the Radiation Control Act is added to the list to be consistent with changes made to this act by Senate Bill 88, 2020 General Session. 19-3-103.1(1)(a) states that “the Board may make rules ... that are necessary to implement this part [the Radiation Control Act].” Consequently, it is appropriate to include that reference with the other statutory references in R313-37-1 for added clarity and consistency. In R313-37-3, the date of the incorporation by reference to selected sections of 10 CFR Part 37 is updated from 2017 to 2020. This results in incorporating the minor changes made by the NRC in the above referenced *Federal Registers* to: update references to the appropriate NRC office and related websites; add the phrase “list of individuals that have been approved for unescorted access” to designated paragraphs in Section 37.43; and correct the reference of “30.6(a)(2)” to “30.6(b)(2)” in 37.45(b). Also in R313-37-3, the other proposed changes: delete references to designated offices in the NRC so that applicable radioactive material licensees in Utah are to also submit the information already required to be submitted to the director of the Division of Waste Management and Radiation Control (DWMRC); correct referenced text from 10 CFR Part 37; and delete “second instance” since there is only one instance in the referenced paragraph (10 CFR 37.77(c)(1)).

Fiscal Information

5. Aggregate anticipated cost or savings to:

A) State budget:

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for the physical protection of category 1 and category 2 quantities of radioactive material of 10 CFR Part 37 and that are incorporated by refence in R313-37. Consequently, there are no cost or savings impacts to the state budget.

B) Local governments:

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for the physical protection of category 1 and category 2 quantities of radioactive material of 10 CFR Part 37 and that are incorporated by refence in R313-37. Consequently, there are no cost or savings impacts to local governments nor are there any local governments that are subject to the requirements of R313-37.

C) Small businesses ("small business" means a business employing 1-49 persons)**:**

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for the physical protection of category 1 and category 2 quantities of radioactive material of 10 CFR Part 37 and that are incorporated by refence in R313-37. Consequently, there are no cost or savings impacts to any small businesses within Utah that have a radioactive materials license and are subject to the requirements of R313-37.

D) Non-small businesses ("non-small business" means a business employing 50 or more persons)**:**

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for the physical protection of category 1 and category 2 quantities of radioactive material of 10 CFR Part 37 and that are incorporated by refence in R313-37. Consequently, there are no cost or savings impacts to any non-small businesses within Utah that have a radioactive materials license and are subject to the requirements of R313-37.

E) Persons other than small businesses, non-small businesses, state, or local government entities ("person" means any individual, partnership, corporation, association, governmental entity, or public or private organization of any character other than an ***agency***)**:**

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for the physical protection of category 1 and category 2 quantities of radioactive material of 10 CFR Part 37 and that are incorporated by refence in R313-37. Consequently, there are no cost or savings impacts to any persons other than small businesses, non-small businesses, state, or local government entities within Utah that have a radioactive materials license and are subject to the requirements of R313-37.

F) Compliance costs for affected persons:

The proposed changes are minor and do not affect the intent, scope, meaning, or application of the requirements for the physical protection of category 1 and category 2 quantities of radioactive material of 10 CFR Part 37 and that are incorporated by refence in R313-37. Consequently, there are no compliance costs to any of the current radioactive materials licensees that are subject to R313-37.

G) Regulatory Impact Summary Table (This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts will be included in narratives above.)

Regulatory Impact Table

Fiscal Cost	**FY2021**	**FY2022**	**FY2023**
State Government	$0	$0	$0
Local Governments	$0	$0	$0
Small Businesses	$0	$0	$0
Non-Small Businesses	$0	$0	$0
Other Persons	$0	$0	$0
Total Fiscal Cost	**$0**	**$0**	**$0**
Fiscal Benefits			
State Government	$0	$0	$0
Local Governments	$0	$0	$0
Small Businesses	$0	$0	$0
Non-Small Businesses	$0	$0	$0
Other Persons	$0	$0	$0
Total Fiscal Benefits	**$0**	**$0**	**$0**
Net Fiscal Benefits	**$0**	**$0**	**$0**

H) Department head approval of regulatory impact analysis:

The executive director of the Department of Environmental Quality, Scott Baird, has reviewed and approved this fiscal analysis.

6. A) Comments by the department head on the fiscal impact this rule may have on businesses:

While the proposed changes are necessary to maintain regulatory compatibility, they do not affect the intent, scope, meaning, or application of the requirements the physical protection of category 1 and category 2 quantities of radioactive material of 10

CFR Part 37 and that are incorporated by refence in R313-37 Consequently, there is no fiscal impact associated with the proposed changes to R313-37.
B) Name and title of department head commenting on the fiscal impacts:
Scott Baird, Executive Director

Citation Information

7. This rule change is authorized or mandated by state law, and implements or interprets the following state and federal laws. State code or constitution citations (required):		
19-3-103.1(1)(a)	19-3-104(4)	19-3-104(7)

Incorporations by Reference Information

(If this rule incorporates more than two items by reference, please include additional tables.)

8. A) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; *if none, leave blank*)**:**

	First Incorporation
Official Title of Materials Incorporated (from title page)	10 CFR Part 37
Publisher	U.S. Government Publishing Office
Date Issued	January 1, 2020
Issue, or version	January 1, 2020

B) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; *if none, leave blank*)**:**

	Second Incorporation
Official Title of Materials Incorporated (from title page)	
Publisher	
Date Issued	
Issue, or version	

Public Notice Information

9. The public may submit written or oral comments to the agency identified in box 1. (The public may also request a hearing by submitting a written request to the agency. The agency is required to hold a hearing if it receives requests from ten interested persons or from an association having not fewer than ten members. Additionally, the request must be received by the agency not more than 15 days after the publication of this rule in the Utah State Bulletin. See Section 63G-3-302 and Rule R15-1 for more information.)

A) Comments will be accepted until (mm/dd/yyyy)**:**	01/04/2021

B) A public hearing (optional) will be held:

On (mm/dd/yyyy)**:**	**At** (hh:mm AM/PM)**:**	**At** (place)**:**

10. This rule change MAY become effective on (mm/dd/yyyy)**:**	01/15/2021

NOTE: The date above is the date on which this rule MAY become effective. It is NOT the effective date. After the date designated in Box 10, the agency must submit a Notice of Effective Date to the Office of Administrative Rules to make this rule effective. Failure to submit a Notice of Effective Date will result in this rule lapsing and will require the agency to start the rulemaking process over.

Agency Authorization Information

To the agency: Information requested on this form is required by Sections 63G-3-301, 302, 303, and 402. Incomplete forms will be returned to the agency for completion, possibly delaying publication in the *Utah State Bulletin*, and delaying the first possible effective date.			
Agency head or designee, and title:	Ty Howard, Director	**Date** (mm/dd/yyyy)**:**	11/02/2020

R313. Environmental Quality, Waste Management and Radiation Control, Radiation.
R313-37. Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material.
R313-37-1. Purpose and Authority.

(1) The rules in R313-37 prescribe requirements for the physical protection program for a licensee that possesses an aggregated category 1 or category 2 quantity of radioactive material.

(2) The rules set forth herein are adopted pursuant to the provisions of Subsections 19-3-103.1(1)(a), 19-3-104(4) and 19-3-104(7).

(3) The requirements of R313-37 are in addition to, and not in substitution for, the other requirements of these rules.

R313-37-2. Scope.

These requirements provide reasonable assurance of the security of category 1 and category 2 quantities of radioactive material by protecting these materials from theft or diversion. Specific requirements for access to material, and use, transfer, and transportation of material are included.

R313-37-3. Clarifications or Exceptions.

For purposes of R313-37, 10 CFR 37.5, 37.11(c), 37.21 through 37.43(d)(8), 37.45 through 37.103, and Appendix A to 10 CFR 37 [(~~2017~~)](2020), are incorporated by reference with the following clarifications or exceptions:

(1) The exclusion of the following:

(a) In 10 CFR 37.5, exclude definitions for "Act", "Agreement State", "Becquerel", "Byproduct Material", "Commission", "Curie", "Government Agency", "License", "License issuing authority", "Lost or missing licensed material", "Person", "State", and "United States"[~~;~~].

[~~(b) In 10 CFR 37.77(a)(1), exclude the wording "Notifications to the NRC must be to the NRC's Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. The notification to the NRC may be made by email to RAMQC_SHIPMENTS@nrc.gov or by fax to 301-816-5151."; and~~

~~(c) In 10 CFR 37.81(g), exclude the wording "In addition, the licensee shall provide one copy of the written report addressed to the Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.".~~]

(2) The substitution of the following wording:

(a) "Utah Radiation Control Rule" for references to:

(i) "Commission regulation" in 10 CFR 37.101; and

(ii) "regulation" in 10 CFR 37.103;

(b) "Utah Radiation Control Rules" for reference to:

(i) "regulations and laws" in 10 CFR 37.31(d);

(ii) "Commission requirements" in 10 CFR 37.43(a)(3) and 37.43(c)(1)(ii); and

(iii) "regulations in this part" in 10 CFR 37.103;

(c) "Director" for references to:

(i) "appropriate NRC regional office listed in Section [~~30.6(a)(2)~~]30.6(b)(2) of this Chapter" in 10 CFR 37.45(b);

(ii) "Commission" in 10 CFR 37.103;

(iii) "NRC" in 10 CFR 37.31(d), 37.43(c)(3)(iii), 37.57(a) (second instance of NRC) and (c), 37.77, and 37.77(a)(1) (first instance) and (3), and 37.81(g);

(iv) "NRC's Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 29555-0001" in 10 CFR 37.77(c)(2) and 37.77(d);

(v) "NRC's Director of Nuclear Security, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 29555-0001" in 10 CFR 37.77(c)(1)[~~, (second instance)~~];

(vi) "NRC's Operations Center" in 10 CFR 37.81(a) and (b);

(vii) "NRC's Operations Center (301-816-5100)" in 10 CFR 37.57(a) and (b) and 37.81(a) through (f);

(viii) "NRC regional office [~~listed~~]specified in section 30.6[~~(a)(2)~~] of this chapter" in 10 CFR 37.41.(a)(3); and

[~~(ix) "NRC regional office specified in section 30.6 of this chapter" in 10 CFR 37.41(a)(3);~~]

(ix) "Director, Office of Nuclear Material Safety and Safeguards in 10 CFR 37.23(b)(2)".

(d) "Director, the U.S. Nuclear Regulatory Commission, or an Agreement State" for references to "Commission or an Agreement State" in 10 CFR 37.71 and 37.71(a) and (b);

(e) "U.S. Nuclear Regulatory Commission's Security Orders or the legally binding requirement issued by Agreement States" for references to "Security Orders" in 10 CFR 37.21(a)(3), 37.25(b)(2), and 37.41(a)(3);

(f) "mail, hand delivery, or electronic submission" for references to "an appropriate method listed in section 37.7" in 10 CFR 37.57(c) and 37.81(g); and

(g) "shall, by mail, hand delivery, or electronic submission," for reference to "shall use an appropriate method listed in section 37.7 to" in 10 CFR 37.27(c).

(3) The substitution of the following rule references:

(a) "R313-19-41(4)" for reference to "section 30.41(d) of this chapter." In 10 CFR 37.71;

(b) "R313-19-100 (incorporating 10 CFR 71.97 by reference)" for reference to "section 71.97 of this chapter" in 10 CFR 37.73(b);

(c) "R313-19-100 (incorporating 10 CFR 71.97(b) by reference)" for reference to "section 71.97(b) of this chapter" in 10 CFR 37.73(b); and

(d) "10 CFR 73" for references to "part 73 of this chapter" in 10 CFR 37.21(c)(4), 37.25(b)2), and 37.27(a)(4).

KEY: radioactive materials, security, fingerprinting, transportation
Date of Enactment or Last Substantive Amendment: [~~July 13, 2018~~]
Notice of Continuation: January 17, 2017
Authorizing, and Implemented or Interpreted Law: 19-3-103; 19-3-104[~~; 19-6-104~~]

WASTE MANAGEMENT AND RADIATION CONTROL
Rulemaking Crosswalk

FEDERAL REGISTER		U.S. Code of Federal Regulations		UTAH ADMIN. CODE		RULE CHANGE
Date	Reference	Title 10 Section	Title	R313 Section	Title	SUMMARY
6/28/2018	83 FR 30285					
		37.23	Access authorization program requirements	37-3	Clarifications or Exceptions	Date of the incorporation by reference is updated to 2020. This results in incorporating the applicable changes published in the 6/28/2018 *Federal Register*. Adds the new sentence "Provide oath or affirmation certifications to the ATTN: Document Control Desk; Director, Office of Nuclear Material Safety and Additionally, the "Director, Office of Nuclear Materials Safety and Safeguards" is added to the list of substitutions for the Director (Utah Division of Waste Management and Radiation Control) in order for our agency Director to be designated as the appropriate recipient of the oath or affirmation certications.
		37.43	General security program requirements	37-3	Clarifications or Exceptions	Incorporation by reference is updated to 2020. This results in incorporating the applicable changes published in the 6/28/2018 *Federal Register*. Adds the phrase "the list of individuals that have been approved for unescorted access" to designated paragraphs in 10 CFR 37.43.
		37.45	LLEA Coordination	37-3	Clarifications or Exceptions	Incorporation by reference is updated to 2020. This results in incorporating the applicable changes published in the 6/28/2018 *Federal Register*. Replaces reference to 30.6(a)(2) with correct reference of 30.6(b)(2).
		37.77	Advance notification of shipment of category 1 quantities of radioactive material	37-3	Clarifications or Exceptions	Incorporation by reference is updated to 2020. This results in incorporating the applicable changes published in the 6/28/2018 *Federal Register*. Updates refernce to the "Division of Materials Safety, Security, State, and Tribal Programs."

FEDERAL REGISTER		U.S. Code of Federal Regulations		UTAH ADMIN. CODE		RULE CHANGE
Date	Reference	Title 10		R313		SUMMARY
		Section	Title	Section	Title	
11/21/2018	83 FR 58721					
		37.77	Advance notification of shipment of category 1 quantities of radioactive material	37-3	Clarifications or Exceptions	Incorporation by reference is updated to 2020. This results in incorporating the applicable changes published in the 11/21/2018 *Federal Register*. Removes "Division of Security Policy" and phrase "of Nuclear Security."
		37.81	Reporting of events	37-3	Clarifications or Exceptions	Incorporation by reference is updated to 2020. This results in incorporating the applicable changes published in the 11/21/2018 *Federal Register*. Removes sentence with reference to NRC office.
11/18/2019	84 FR 63565					
		37.23	Access authorization program requirements	37-3	Clarifications or Exceptions	Incorporation by reference is updated to 2020. This results in incorporating the applicable changes published in the 11/18/2019 *Federal Register*. Corrects reference to the appropriate NRC office.
		37.27	Requirements for criminal history records checks of individuals granted unescorted access to category 1 or category 2 quantities of radioactive material	37-3	Clarifications or Exceptions	Incorporation by reference is updated to 2020. This results in incorporating the applicable changes published in the 11/18/2019 *Federal Register*. Updates refernces to NRC offices and associated website

WASTE MANAGEMENT AND RADIATION CONTROL
RULEMAKING – SIDE-BY-SIDE COMPARISON

10 CFR PART 37 – 2017	10 CFR PART 37 – 6/28/18 (83 FR 30285), 11/21/18 (83 FR 58721), & 11/18/19 (84 FR 63565)
37.23(b)(2) Each licensee shall name one or more individuals to be reviewing officials. After completing the background investigation on the reviewing official, the licensee shall provide under oath or affirmation, a certification that the reviewing official is deemed trustworthy and reliable by the licensee. The fingerprints of the named reviewing official must be taken by a law enforcement agency, Federal or State agencies that provide fingerprinting services to the public, or commercial fingerprinting services authorized by a State to take fingerprints. The licensee shall recertify that the reviewing official is deemed trustworthy and reliable every 10 years in accordance with § 37.25(c).	37.23(b)(2) Each licensee shall name one or more individuals to be reviewing officials. After completing the background investigation on the reviewing official, the licensee shall provide under oath or affirmation, a certification that the reviewing official is deemed trustworthy and reliable by the licensee. Provide oath or affirmation certifications to the ATTN: Document Control Desk; Director, Office of Nuclear Material Safety and Safeguards. The fingerprints of the named reviewing official must be taken by a law enforcement agency, Federal or State agencies that provide fingerprinting services to the public, or commercial fingerprinting services authorized by a State to take fingerprints. The licensee shall recertify that the reviewing official is deemed trustworthy and reliable every 10 years in accordance with § 37.25(c).
37.27(c)(1) For the purpose of complying with this subpart, licensees shall use an appropriate method listed in § 37.7 to submit to the U.S. Nuclear Regulatory Commission, Director, ~~Division of Facilities and Security~~, 11545 Rockville Pike, ATTN: Criminal History Program/Mail Stop ~~TWB–05 B32M~~, Rockville, Maryland 20852, one completed, legible standard fingerprint card (Form FD–258, ORIMDNRCOOOZ), electronic fingerprint scan or, where practicable, other fingerprint record for each individual requiring unescorted access to category 1 or category 2 quantities of radioactive material. Copies of these forms may be obtained by ~~writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, by calling 1–630–829–9565, or by email to *FORMS.Resource@nrc.gov.*~~ Guidance on submitting electronic fingerprints can be found at ~~*http://www.nrc.gov/site-help/e-submittals.html.*~~ (2) Fees for the processing of fingerprint checks are due upon application. Licensees shall submit payment with the application for the processing of fingerprints through corporate check, certified check, cashier's check, money order, or electronic payment, made payable to ''U.S. NRC.'' (For guidance on making electronic payments, contact the ~~Security Branch, Division of Facilities and Security at 301–492–3531.~~) Combined payment for multiple applications is acceptable. The Commission publishes the amount of the fingerprint check application fee on the NRC's public Web site. (To find the current fee amount, go to the ~~Electronic Submittals page at *http://www.nrc.gov/sitehelp/e-submittals.html*~~ and see the link for ~~the Criminal History Program under Electronic Submission Systems.~~)	37.27(c)(1) For the purposes of complying with this subpart, licensees shall use an appropriate method listed in § 37.7 to submit to the U.S. Nuclear Regulatory Commission, Director, Division of Physical and Cyber Security Policy, 11545 Rockville Pike, ATTN: Criminal History Program/Mail Stop T–8B20, Rockville, MD 20852, one completed, legible standard fingerprint card (Form FD–258, ORIMDNRCOOOZ), electronic fingerprint scan or, where practicable, other fingerprint record for each individual requiring unescorted access to category 1 or category 2 quantities of radioactive material. Copies of these forms may be obtained by emailing *MAILSVS.Resource@nrc.gov.* Guidance on submitting electronic fingerprints can be found at *https://www.nrc.gov/security/chp.html.* (2) Fees for the processing of fingerprint checks are due upon application. Licensees shall submit payment with the application for the processing of fingerprints through corporate check, certified check, cashier's check, money order, or electronic payment, made payable to ''U.S. NRC.'' (For guidance on making electronic payments, contact the Division of Physical and Cyber Security Policy by emailing *Crimhist.Resource@nrc.gov.*) Combined payment for multiple applications is acceptable. The Commission publishes the amount of the fingerprint check application fee on the NRC's public website. (To find the current fee amount, go to the Licensee Criminal History Records Checks & Firearms Background Check information page at *https://www.nrc.gov/security/chp.html* and see the link for How do I determine how much to pay for the request?).

37.43(d)(2) Efforts to limit access shall include the development, implementation, and maintenance of written policies and procedures for controlling access to, and for proper handling and protection against unauthorized disclosure of, the security plan and implementing procedures.	37.43(d)(2) Efforts to limit access shall include the development, implementation, and maintenance of written policies and procedures for controlling access to, and for proper handling and protection against unauthorized disclosure of, the security plan, implementing procedures, and the list of individuals that have been approved for unescorted access.
37.43(d)(3) Before granting an individual access to the security plan or implementing procedures, licensees shall:	37.43(d)(3) Before granting an individual access to the security plan, implementing procedures, or the list of individuals that have been approved for unescorted access, licensees shall:
37.43(d)(3)(i) Evaluate an individual's need to know the security plan or implementing procedures; and	37.43(d)(3)(i) Evaluate an individual's need to know the security plan, implementing procedures, or the list of individuals that have been approved for unescorted access; and
37.43(d)(5) The licensee shall document the basis for concluding that an individual is trustworthy and reliable and should be granted access to the security plan or implementing procedures.	37.43(d)(5) The licensee shall document the basis for concluding that an individual is trustworthy and reliable and should be granted access to the security plan, implementing procedures, or the list of individuals that have been approved for unescorted access.
37.43(d)(6) Licensees shall maintain a list of persons currently approved for access to the security plan or implementing procedures. When a licensee determines that a person no longer needs access to the security plan or implementing procedures or no longer meets the access authorization requirements for access to the information, the licensee shall remove the person from the approved list as soon as possible, but no later than 7 working days, and take prompt measures to ensure that the individual is unable to obtain the security plan or implementing procedures.	37.43(d)(6) Licensees shall maintain a list of persons currently approved for access to the security plan, implementing procedures, or the list of individuals that have been approved for unescorted access. When a licensee determines that a person no longer needs access to the security plan, implementing procedures, or the list of individuals that have been approved for unescorted access, or no longer meets the access authorization requirements for access to the information, the licensee shall remove the person from the approved list as soon as possible, but no later than 7 working days, and take prompt measures to ensure that the individual is unable to obtain the security plan, implementing procedures, or the list of individuals that have been approved for unescorted access.
37.43(d)(7) When not in use, the licensee shall store its security plan and implementing procedures in a manner to prevent unauthorized access. Information stored in nonremovable electronic form must be password protected.	37.43(d)(7) When not in use, the licensee shall store its security plan, implementing procedures, and the list of individuals that have been approved for unescorted access in a manner to prevent unauthorized access. Information stored in nonremovable electronic form must be password protected.
37.43(d)(8)(ii) The list of individuals approved for access to the security plan or implementing procedures.	37.43(d)(8)(ii) The list of individuals approved for access to the security plan, implementing procedures, or the list of individuals that have been approved for unescorted access.

37.45(b) (b) The licensee shall notify the appropriate NRC regional office listed in ~~§ 30.6(a)(2)~~ of this chapter within 3 business days if:	37.45(b) (b) The licensee shall notify the appropriate NRC regional office listed in § 30.6(b)(2) of this chapter within 3 business days if:
37.77(a)(1) The notification must be made to the NRC and to the office of each appropriate governor or governor's designee. The contact information, including telephone and mailing addresses, of governors and governors' designees, is available on the NRC's Web site at *https://scp.nrc.gov/special/designee.pdf.* A list of the contact information is also available upon request from the Director, ~~Division of Material Safety, State, Tribal, and Rulemaking Programs~~, Office of Nuclear Material Safety and Safeguards., U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. Notifications to the NRC must be to the NRC's Director, ~~Division of Security Policy~~, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The notification to the NRC may be made by email to *RAMQC\SHIPMENTS@nrc.gov* or by fax to 301–816–5151.	37.77(a)(1) The notification must be made to the NRC and to the office of each appropriate governor or governor's designee. The contact information, including telephone and mailing addresses, of governors and governors' designees, is available on the NRC's Web site at *https://scp.nrc.gov/special/designee.pdf.* A list of the contact information is also available upon request from the Director, Division of Materials Safety, Security, State, and Tribal Programs , Office of Nuclear Material Safety and Safeguards., U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Notifications to the NRC must be to the NRC's Director, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. The notification to the NRC may be made by email to *RAMQC__SHIPMENTS@nrc.gov* or by fax to 301-816-5151.
37.81(g) The initial telephonic notification required by paragraphs (a) through (d) of this section must be followed within a period of 30 days by a written report submitted to the NRC by an appropriate method listed in § 37.7. A written report is not required for notifications on suspicious activities required by paragraphs (c) and (d) of this section. ~~In addition, the licensee shall provide one copy of the written report addressed to the Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.~~ The report must set forth the following information:	37.81(g) The initial telephonic notification required by paragraphs (a) through (d) of this section must be followed within a period of 30 days by a written report submitted to the NRC by an appropriate method listed in §37.7. A written report is not required for notifications on suspicious activities required by paragraphs (c) and (d) of this section. The report must set forth the following information:

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE
Energy*Solutions*, LLC
November 12, 2020

What is the issue before the Board?	On August 25, 2020 Energy*Solutions*, LLC submitted a request for a site-specific treatment variance from the Utah Hazardous Waste Management Rules to treat by stabilization, waste containing High-Subcategory Mercury.
What is the historical background or context for this issue?	*EnergySolutions* requests approval to receive and dispose, in Energy*Solutions'* Mixed Waste Landfill Cell, waste containing the D009 or U151 High Mercury-Organic Subcategory and High Mercury-Inorganic Subcategory hazardous waste codes that has been treated using stabilization/amalgamation technologies. Furthermore, *EnergySolutions* will perform the stabilization/amalgamation treatment on D009 and U151 High Mercury Subcategory waste streams that have not been treated prior to arrival at the Energy*Solutions* Clive facility. All actions will be performed in accordance with *EnergySolutions'* State-issued Part B Permit. The listed treatment technology in 40 CFR 268.40 for the D009 High Mercury-Organic Subcategory is either incineration (IMERC) or retorting/roasting for mercury recovery (RMERC). The listed treatment technology for the D009 High Mercury-Inorganic Subcategory and for U151 is RMERC. The need and justification for this action are as follows: The intent of the RMERC treatment process is to recover elemental mercury for recycling. However, radioactive mercury cannot be recycled and the RMERC process generates secondary waste (radioactive elemental mercury) which requires additional treatment by amalgamation (a stabilization technology) prior to disposal. The IMERC technology is also intended to be a mercury recovery technology where the waste is incinerated and the mercury recovered in the ash or in a specific off-gas control system. For radioactive mercury, both the ash and the control equipment/media will require further treatment. Furthermore, IMERC involves an extra handling step for the radioactive residue. Successful chemical stabilization of High Mercury-Inorganic Subcategory wastes has been demonstrated to achieve a measure of performance equivalent to the required methods which require two treatment methods (RMERC and stabilization) with no detrimental effect to human health or the environment.

	The U.S. Environmental Protection Agency (US EPA) has issued a Determination of Equivalent Treatment (DET) for these High Mercury Subcategory wastes that were chemically stabilized. In the EPA's determination, they concluded that for waste streams that are radioactive and contain mercury, the recovery portion of RMERC may not be appropriate and that alternative treatment processes should be pursued. The US EPA has reviewed the treatment of mercury-bearing waste in a Federal Register Notice (68 FR 4481). In this notice, the US EPA concluded that treatment of mercury waste is possible and it is suggested that stakeholders should use the site specific treatment variance process to achieve approval for the treatment of high subcategory mercury wastes. The notice specifically designates an example of when this would be appropriate as the case of a high mercury subcategory waste that is also radioactive. This variance request consists of waste that may be shipped to Energy*Solutions* over the next year. To date, Energy*Solutions* has disposed of approximately 12,100 cubic feet of treated High Mercury Subcategory waste. From knowledge of the current market of High Mercury Subcategory Waste requiring treatment or disposal, and from past experience receiving this type of waste, Energy*Solutions* anticipates receiving less than 500 cubic feet of additional High Mercury Subcategory waste for disposal in the next year under this treatment variance. Energy*Solutions* has submitted variance request for similar waste every year since 2001. The Board has granted each of these requests. The facility has been successful in treating these High Sub-category Hg wastes. A notice for public comment was published in the *Salt Lake Tribune*, the *Deseret News* and the *Tooele County Transcript Bulletin* on September 10, 2020. The comment period began September 11, 2020 and ended October 13, 2020. No comments were received
What is the governing statutory or regulatory citation?	Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site-specific variance from an applicable treatment standard as allowed by R315-268.44 of the Utah Administrative Code.
Is Board action required?	Yes, this is an action item before the Board.
What is the Division/Director's recommendation?	The Director recommends approval of this variance based on the following findings: the proposed alternative treatment method meets the regulatory basis for a variance, will be as safe to human health and the environment as the required method, and the required method would create additional waste, and require waste handling that could possibly expose workers to unnecessary contact with the waste. This treatment is recommended by the USEPA and EnergySolutions has successfully treated similar waste streams in the past using this approach.

Where can more information be obtained?	For technical questions, please contact Otis Willoughby (801) 536-0220. For legal questions, please contact Bret Randall at (801) 536-0284. The variance request and supporting paperwork was provided in the September 10, 2020 Board packet.