State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL

Douglas J. Hansen
Director

A meeting of the Waste Management and Radiation Control Board has been scheduled for September 8, 2022, at 1:30 pm at the Utah Department of Environmental Quality, (Multi-Agency State Office Building) Conference Room #1015, 195 North 1950 West, SLC.

Board members and interested persons may participate electronically/telephonically.

Join via the Internet: meet.google.com/gad-sxsd-uvs
Join via the Phone: (US) +1 978-593-3748 PIN: 902 672 356#

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 August 11, 2022, Board meeting ..... Tab 1 (**Board Action Item**)

V. Petroleum Storage Tanks Update ..... Tab 2

VI. Petroleum Storage Tank Rules ..... Tab 3

A. Proposed Nonsubstantive changes to Petroleum Storage Tank Rules R311-203 and R311-206 (Information Item).

VII. Administrative Rules ..... Tab 4

A. Approval to proceed with formal rulemaking and 30-day public comment period on proposed rule changes to Utah Administrative Code R313-19-100 of the Radiation Control Rules, to incorporate federal regulatory changes requested by the Nuclear Regulatory Commission to maintain the compatibility of Utah radiation control rules with the federal regulations **(Board Action Item)**.

(Over)

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144880 • Salt Lake City, UT 84114-4880
Telephone (801) 536-0200 • Fax (801) 536-0222 • T.D.D. (801) 536-4284
www.deq.utah.gov
Printed on 100% recycled paper

B. Approval to proceed with formal rulemaking and 30-day public comment period on proposed rule changes to Utah Administrative Code R315-101 of the Hazardous Waste Rules amending the rule to include the most up-to-date methods and procedures being used by industry to conduct cleanups of contaminated sites and risk assessments based on EPA guidance (**Board Action Item**).

VIII. Director's Report.

IX. Other Business.

A. Miscellaneous Information Items.
B. Scheduling of next Board meeting (October 13, 2022).

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 Meeting
Utah Department of Environmental Quality
Multi-Agency State Office Building (Conf. Room #1015)
195 North 1950 West, SLC
August 11, 2022
1:30 p.m.

Board Members Participating at Anchor Location: Brett Mickelson (Chair), Dennis Riding (Vice-Chair), Mark Franc, Steve McIff, Nathan Rich, Vern Rogers, Kim Shelley, Shane Whitney

Board Members Participating Virtually: Richard Codell, Danielle Endres, Scott Wardle

Board Members Excused: None.

UDEQ Staff Members Participating at Anchor Location:
Therron Blatter, Jalynn Knudsen Tom Ball, Eric Baiden, Tyler Hegburg, Avery Holyoak, Arlene Lovato, Brad Maulding, Deborah Ng, Bret Randall, Elisa Smith, Otis Willougbhy

Others Attending at Anchor Location: Steve Gurr, Tim Orton

Other UDEQ employees and interested members of the general public also participated either electronically or telephonically.

I. Call to Order and Roll Call.
Chairman Mickelson called the meeting to order at 1:30 pm. Roll call of Board members was conducted, see above.

II. Public Comments on Agenda Items – None.
III. Declarations of Conflict of Interest – None.

IV. Approval of the meeting minutes for the July 14, 2022 Board meeting (Board Action Item).

It was moved by Dennis Riding and seconded by Mark Franc and UNANIMOULSY CARRIED to approve the July 14, 2022 Board meeting minutes.

V. Petroleum Storage Tanks Update.

Therron Blatter, Petroleum Storage Tank (PST) Branch Manager of the Division of Environmental Response and Remediation (DERR), informed the Board that the cash balance of the PST Fund at the end of June 2022, was $26,757,575.00. The preliminary estimate of the cash balance of the PST Fund for the end of July 2022, and the end of the fiscal year is $26,750,775.00. The DERR continues to watch the balance of the PST Fund closely to ensure sufficient cash is available to cover qualified claims for releases. There were no comments or questions.

VI. Low-Level Radioactive Waste.

A. Energy*Solutions* request for a site-specific treatment variance from the Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive and macroencapsulate ash contaminated with dioxins and furans (Information Item).

DRAFT

Tyler Hegburg, Environmental Scientist, Low-Level Radioactive Waste Section, Division of Waste Management and Radiation Control, informed the Board that on July 20, 2022, Energy*Solutions*, LLC submitted a request to the Director of the Division of Waste Management and Radiation Control for a one-time site-specific treatment variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive and macroencapsulate approximately 20 tons of ash contaminated with dioxins and furans as Underlying Hazardous Constituents (UHCs) for treatment and disposal.

Steve Gurr, Energy*Solutions* representative reviewed Energy*Solutions'* request for a variance from Utah Administrative Code (UAC) R315-268 for an incinerator ash waste that meets all treatment standards except those for dioxins and furans as Underlying Hazardous Constituents (UHCs).

Mr. Gurr stated that requiring the waste to meet the dioxin and furan treatment standards is inappropriate based on the incineration process that generates the waste. The ash is from incinerator and metal recycling processes that are generated at Energy*Solutions'* Bear Creek Facility.

Prior to receiving this variance in 2018, the generator attempted to reduce the concentrations of the dioxins and furans in the ash by re-incineration, which resulted in very little reduction.

The generator has previously analyzed each container of ash for metals contamination. If metals were below the toxicity characteristic concentrations the waste would be shipped to the Clive facility as Low-Level Radioactive Waste (LLRW) and disposed in the Class A Embankment. However, if the metals were above the limits, then the waste would need treated for those metals as well as all UHCs, including dioxins and furans. It is inappropriate to require treatment of dioxin and furan contaminants in instances where characteristic metals are found in the waste when treatment is not required if the metals are below characteristic concentrations in the waste.

Energy*Solutions* plans to treat the waste to all treatment standards except for the dioxin and furan UHC standards and then to macroencapsulate the residue in MACRO Vaults.

This variance request has previously been approved by the Waste Management and Radiation Control Board in 2018, 2019, and 2021.

Over the previous year this variance was in effect, the Energy*Solutions'* Clive facility received approximately 18 tons (three shipments) of this ash for treatment. Energy*Solutions* forecasts similar amounts of this waste over the next year. This variance is being requested for approximately 20 tons (three or four shipments) of ash that will contain elevated concentrations of dioxins and furans.

Mark Franc reviewed the information provided that indicate it is inappropriate to require additional incineration based on the processes that generate the waste (metal recycling and incineration). Mr. Franc stated that it was also mentioned that the metal recycling and incineration process is performed by Energy*Solutions* and questioned if the waste is generated by Energy*Solutions*?

Mr. Gurr affirmed Mr. Franc's statement and reiterated that the waste is coming from Energy*Solutions'* Bear Creek Facility in Tennessee.

Mr. Franc asked what is being incinerated to produce this waste.

Mr. Gurr stated that the waste consists of different metals, metal recycling and a few other processes that are incinerated at that facility.

Mr. Franc asked how is it related to metal recycling?

DRAFT

Tim Orton, Energy*Solutions'* representative, further reviewed and clarified the two different processes that are performed at their facility in Tennessee.

Mr. Franc stated after this discussion, his assertion is that it is not necessarily the way the materials are produced or the way the waste is generated, that it is more about what is left after the waste is generated that renders it inappropriate to be treated further.

Vern Rogers asked for record of the amount of waste that has been disposed as the variance has been requested since 2018. Mr. Gurr stated that last year, Energy*Solutions* received approximately 18 tons of ash, and through the years the variance has been received that has been on average, for a total of approximately up to 60 tons received and that Energy*Solutions* forecasts similar amounts of this waste to be received over the next year. Mr. Orton stated this type of waste had been received prior to the variance and has been received and disposed of in their low-level cell.

Danielle Endres stated she is aware that the Board has approved previous variance requests and asked what types of checks are being conducted on this waste stream that has already been processed. Specifically, what does Energy*Solutions* know about how safely it has been processed and the success of this particular method (with those previous methods the Board has given a variance).

Mr. Gurr stated that when the waste comes in, Energy*Solutions* will still stabilize the waste and then analyze the waste for everything except the dioxin and furan UHCs. Energy*Solutions* is also continuing to sample the waste in accordance with the permit requirements as well.

Mr. Rogers asked if in addition to what Ms. Endres questioned regarding sampling of incoming shipments, has Energy*Solutions* ever received anything that exceeded what was specified in the manifest or that had things that were out beyond the bounds of the permit for treatment.

Mr. Gurr stated that he is not aware of that occurring. Once the waste is stabilized and once the post-treatment analytic results are final, if it is still exceeding the limits then it would need to be re-treated for everything except the dioxin and furans.

Mr. Rogers asked if since 2018, all manifest information has been accurate for incoming shipments.
Mr. Gurr confirmed that statement.

Mr. Hegburg stated that because the 30-day public comment period will end after the next Board meeting, the Director will provide a recommendation at the October Board meeting.

VII. Presentation on Utah Administrative Code R315-101 of the Hazardous Waste Rules.

Brad Maulding, Corrective Action Section Manager, Division of Waste Management and Radiation Control updated the Board regarding the efforts in addressing and revising Utah Administrative Code Rule R315-101. This rule establishes information requirements to support risk-based cleanup and closure standards at sites for which remediation or removal of hazardous constituents to background levels will not be achieved. The procedures in this rule also provide for continued management of sites that have met risk-based standards.

Mr. Maulding discussed the rule and its importance as well as reviewed the timelines that have impacted this rule with a presentation titled "Utah Administrative Code Rule R315-101, Revision Timeline". (A copy of the is document is provided with the meeting minutes.)

Mr. Maulding also informed the Board that this rule is fast approaching its 30th year birthday and it was determined approximately seven years ago that this rule needed to be evaluated and improvements were

needed. The process to evaluate the rule and identify improvements has been a long endeavor to get to this point. Mr. Maulding reviewed the timelines that included the Rule being brought to the Board on October 14, 2021, to begin a formal rulemaking and 30-day public comment period. However, as discussed in his presentation many comments were received by five stakeholders, and discussions with those five stakeholders' group were held to address certain aspects of the rule as they felt some parts were cumbersome. Responses to the formal and informal comments was issued to the five stakeholder groups and the Division is currently waiting to see if any additional comments are received.

The Division now anticipates requesting Board approval to proceed with formal rulemaking and a second 30-day public comment period

Danielle Endres asked who the five stakeholders' group were that commented on the rule.

Mr. Maulding stated the stakeholders included environmental consultant groups, attorneys, and one facility that is regulated by the Division.

Mark Franc mentioned and recognized the level of effort to get to this point with this rule. Mr. Franc stated this will be a great improvement to this rule and that industry involvement and the level of effort that has been required to get to this point needed to be recognized. Mr. Franc expressed his appreciation for that.

VIII. Other Business.

A. Miscellaneous Information Items.

Jalynn Knudsen, Assistant Director, Division of Waste Management and Radiation Control informed the Board that a memorable event occurred last week. Nuclear Regulatory Commission (NRC) Commissioner David A. Wright, visited the Division/Department. In the history of Utah's radiation program and becoming an agreement state with the NRC, Utah has not had a visit by an NRC commissioner.

Commissioner Wright also held a Q&A session, so staff members could ask questions. Commissioner Wright was candid with his answers and was also willing to bringing some of the questions he could not answer back to headquarters to get better answers/clarification.

Management also accompanied Commissioner Wright on a tour of Energy*Solutions'* facility. Ms. Knudsen reiterated that it was a great experience for the Division.

B. Scheduling of next Board meeting (September 8, 2022).

The next meeting is scheduled for September 8, 2022 at the Utah Department of Environmental Quality, Multi-Agency State Office Building.

Interested parties can join via the Internet at: meet.google.com/gad-sxsd-uvs
Or by phone at (US) +1 978-593-3748 PIN: 902 672 356#

IX. Adjourn.

The meeting adjourned at 1:50 p.m.

DRAFT

PST STATISTICAL SUMMARY
August 1, 2021 - July 31, 2022

PROGRAM

	August	September	October	November	December	January	February	March	April	May	June	July	(+/-) OR Total
Regulated Tanks	4,140	4,128	4,136	4,142	4,136	4,132	4,150	4,157	4,178	4,176	4,182	4,178	**38**
Tanks with Certificate of Compliance	4,056	4,050	4,052	4,060	4,049	4,048	4,059	4,061	4,057	4,057	4,071	4,061	**5**
Tanks without COC	84	78	84	82	87	84	91	96	121	119	111	117	**33**
Cumulative Facilitlies with Registered A Operators	1,290	1,291	1,288	1,284	1,288	1,287	1,285	1,284	1,288	1,286	1,286	1,288	**98.17%**
Cumulative Facilitlies with Registered B Operators	1,292	1,292	1,289	1,285	1,288	1,288	1,285	1,285	1,289	1,287	1,287	1,289	**98.25%**
New LUST Sites	3	8	5	7	2	10	12	9	7	6	7	9	**85**
Closed LUST Sites	0	9	4	6	1	2	13	13	14	13	9	2	**86**
Cumulative Closed LUST Sites	5378	5390	5397	5398	5399	5405	5419	5431	5447	5454	5455	5463	**85**

FINANCIAL

	August	September	October	November	December	January	February	March	April	May	June	July	(+/-)
Tanks on PST Fund	2,653	2,649	2,642	2,646	2,635	2,629	2,631	2,628	2,619	2,609	2,613	2,651	**(2)**
PST Claims (Cumulative)	701	702	702	702	702	703	704	705	706	705	710	710	**9**
Equity Balance	-$5,540,984	-$4,033,695	-$3,921,878	-$2,867,569	-$2,900,167	-$2,363,604	-$1,761,847	-$1,826,879	-$1,634,540	-$986,270	-$639,953	-$646,753	**$4,894,231**
Cash Balance	$22,894,296	$23,363,833	$23,475,650	$24,529,959	$24,497,361	$25,033,924	$25,635,681	$25,570,649	$25,762,988	$26,411,258	$26,757,575	$26,750,775	**$3,856,479**
Loans	0	0	0	0	0	0	0	0	0	1	0	0	**0**
Cumulative Loans	121	121	121	121	121	121	121	121	121	122	122	122	**1**
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	$4,740,989	$4,740,989	$4,740,989	**$2,622**
Defaults/Amount	2	2	2	0	0	0	0	0	0	0	0	0	**-2**

	August	September	October	November	December	January	February	March	April	May	June	July	TOTAL
Speed Memos	51	78	100	77	61	41	50	76	59	78	65	32	**768**
Compliance Letters	16	21	8	21	16	11	18	16	15	9	6	8	**165**
Notice of Intent to Revoke	0	0	2	0	1	1	0	2	0	0	0	0	**6**
Orders	0	0	0	0	1	1	0	2	2	0	0	0	**6**

Board Information Item
Proposed Nonsubstantive changes to R311, Petroleum Storage Tank Rules

Background:
The Division of Environmental Response and Remediation (DERR) is proposing nonsubstantive changes to R311, the Petroleum Storage Tank (PST) rules. These changes fix references in rule that are incorrect due to renumbering and typographic errors and are presented as an information item. The Division believes that the corrections can be made using the Division of Administrative Rule's Nonsubstantive rule change process. This process does not require public comment or formal Board approval; however, the Division recognizes the Board's rulemaking authority and feels it is appropriate to seek the Boards concurrence before filing.

The needed corrections are:

Changes are as follows:

- R311-203-5(10)(c) incorrectly references R311-203-5(2). It should be R311-203-5(1) "Tank tightness testing".
- R311-206-3(1)(g) incorrectly references R311-200-1(2)(b) for "as-built drawing". It should be R311-200-1(2)(d).
- R311-206-3(1)(g) incorrectly references R311-200-1(2)(rr) for "site plat". It should be R311-200-1(2)(ccc).
- R311-206-6(2)(b) fixed an incorrect reference. Subsection 19-6-15(2) should be 19-6-415(2).

The Nonsubstantive Change analysis forms for R311-203 and R311-206 have been included for your review.

State of Utah
Administrative Rule Analysis
Revised June 2022

NONSUBSTANTIVE CHANGE		
Title No. - Rule No. - Section No.		
Rule or Section Number:	**R-311-203**	**Filing ID: Office Use Only**

Agency Information

1. Department:	Utah Department of Environmental Quality	
Agency:	Utah Division of Environmental Response and Remediation	
Room number:		
Building:	Multi Agency State Office Building	
Street address:	195 North 1950 West	
City, state and zip:	Salt Lake City, Utah 84116	
Mailing address:	P.O. Box 144840	
City, state and zip:	Salt Lake City, Utah 54114-4840	
Contact persons:		
Name:	**Phone:**	**Email:**
David Wilson	385-251-0893	djwilson@utah.gov
Therron Blatter	801-554-6762	tblatter@utah.gov
Please address questions regarding information on this notice to the agency.		

General Information

2. Rule or section catchline:
R311-203. Petroleum Storage Tanks: Technical Standards.
3. Reason for the change (Why is the agency submitting this filing?)**:**
Fixing an error in a reference.
4. Summary of the change (What does this filing do?)**:**
R311-203-5(10)(c) incorrectly references R311-203-5(2). It should be R311-203-5(1) “Tank tightness testing”.

Agency Authorization Information

To the agency: The Office of Administrative Rules is responsible for setting the effective date of nonsubstantive changes (see Section R15-4-6). The agency does NOT file a notice of effective date.			
Agency head or designee and title:	Brent Everett, Director	**Date:**	mm/dd/yyyy

R311. Environmental Quality, Environmental Response and Remediation.
R311-203. Petroleum Storage Tanks: Technical Standards.
R311-203-1. Definitions.

Definitions are found in Rule R311-200.

R311-203-2. Notification.

(1) The owner or operator of an UST must notify the director when:
(a) new USTs are brought into use;
(b) the owner or operator changes;
(c) changes are made to the tank or piping system; and
(d) release detection, corrosion protection, or spill or overfill prevention systems are installed, changed, or upgraded.
(2) Notifications must be submitted on the current approved notification form.
(3) Notifications submitted to meet the requirements of Subsection R311-203-2(1) shall be submitted within 30 days of the completion of the work or the change of ownership.
(4) To satisfy the requirement of Section 19-6-407 the certified installer shall:
(a) complete the appropriate section of the form to be submitted by the owner or operator, and ensure that the notification form is submitted by the owner or operator within 30 days of completion of the installation; or
(b) provide separate notification to the director within 60 days of the completion of the installation.

(5) The owner or operator of an APST that is in service on or after May 5, 2021, must notify the director according to the requirements of Subsection 19-6-407(2).

(6) The owner or operator of an APST that is not in service before May 5, 2021,

(a) must notify the director according to the requirements of Subsection 19-6-407(2)(a)(i);

(b) is subject to delivery prohibition requirements in Section R311-206-8;

(c) is subject to closure requirements under Subsections 19-6-407(2)(a)(iii) and (iv) and Section R311-204-2;

(d) must demonstrate the tank has been emptied of any regulated substance to the lowest discharge point on the tank;

(e) is subject to release reporting requirements as outlined in Subsection 19-6-407(2)(a)(iv); and

(f) must notify local emergency responders of a spill or overfill exceeding 25 gallons within 24 hours.

(7) The owner or operator of an APST that is not in service before May 5, 2021, is not subject to the requirements of Subsection 19-6-407(2)(c) and Section 19-6-412 unless the owner or operator elects to bring the APST back in service.

R311-203-3. New Installations, Permits.

(1) Certified UST installers must notify the director at least ten business days, or another time period approved by the director, before commencing any of the following activities:

(a) the installation of a full UST system or tank only;

(b) the installation of underground product piping for one or more tanks at a facility, separate from the installation of one or more tanks at a facility;

(c) the internal lining of a previously-existing tank;

(d) the installation of a cathodic protection system on one or more previously-existing tanks at a facility;

(e) the installation of a bladder in a tank;

(f) any retro-fit, replacement, or installation that requires the cutting of a manway into the tank;

(g) the installation of a spill prevention or overfill prevention device;

(h) the installation of a leak detection monitoring system; or

(i) the installation of a containment sump or under-dispenser containment.

(2) The UST installation company must submit to the director an UST installation permit fee of $200 when any of the activities listed in Subsections R311-203-3(1)(a) through R311-203-3(1)(f) is performed on an UST system that has not qualified for a certificate of compliance before the commencement of the work.

(3) The fees assessed under Subsection 19-6-411(2)(a)(i) will be determined based on the number of full UST installations performed by the installation company in the 12 months previous to the fee due date.

(a) installations for which the fee assessed under Subsections 19-6-411(2)(a)(ii) and R311-203-3(3) is charged shall count toward the total installations for the 12-month period.

(4) For the purposes of Subsections 19-6-411(2)(a)(ii), 19-6-407(1)(c), and R311-203-2(4), an installation is considered complete when:

(a) in the case of installation of a new UST system, tank only, or product piping only, the new installation first holds a regulated substance; or

(b) in the case of installation of the components listed in Subsections R311-203-3(1)(d) through R311-203-3(1)(f), the new installation is functional and the UST holds a regulated substance and is operational.

(5) If, before completion of an installation for which an UST installation permit fee is required, the owner or operator decides to install additional UST system components, the installer shall notify the director of the change.

(a) when additions are made, the UST installation permit fee shall be increased based on the additional number of tanks to be installed in accordance with Subsection 19-6-411(2)(a)(i) and the Department of Environmental Quality Fee Schedule, as approved annually by the Legislature.

(6) The number of UST installation companies performing work on a particular installation will not be a factor in determining the UST installation permit fee for that installation.

(a) each installation company must be identified on the UST installation permit.

(7) When a new UST system, tank only, product piping only, or new cathodic protection system is installed, the owner or operator must submit to the director an as-built drawing that meets the requirements of Subsection R311-200-1(2)(b).

R311-203-4. Petroleum Storage Tank Registration Fee.

(1) Registration fees will be assessed by the Department against tanks which are not permanently closed for the entire fiscal year, and will be billed per facility.

(2) Registration fees are due on July 1 of the fiscal year for which the assessment is made, or, for PSTs brought into use after the beginning of the fiscal year, registration fees are due when the tanks are brought into use, as a requirement for receiving a certificate of compliance.

(3) The director may waive all or part of the penalty assessed under Subsection 19-6-408(5) if no fuel has been dispensed from the tank on or after July 1, 1991 and if the tank has been properly closed according to Rules R311-204 and R311-205, or in other circumstances as approved by the director.

(4) The director shall issue a certificate of registration to owners or operators for individual PSTs at a facility if:

(a) the tanks are in use or are temporarily closed as outlined in 40 CFR Part 280 Subpart G; and

(b) the PST registration fee has been paid.

(5) Pursuant to Subsection 19-6-408(5)(c), past due PST registration fees, late payment penalties and interest must be paid before the director may issue or re-issue a certificate of compliance regardless of whether there is a new owner or operator at the facility.

(a) the director may decline active collection of past due registration fees, late payment penalties and interest if a certificate of compliance is not issued and the new owner or new operator properly closes the PSTs within one year of becoming the new owner or operator of the facility.

(6) A UST will be assessed the higher registration fee established under Section 63J-1-504 if it is found to be out of compliance with the EPA Technical Compliance Rate during an inspection, and remains out of compliance for six months or greater following the initial inspection.

(a) the higher registration fee is due July 1 following the documented six-month period of non-compliance.

(7) When the director is notified of the existence of a previously unregistered regulated PST, the director shall assess the applicable notification fee and PST registration fee for the current fiscal year.

(a) if the PST is properly permanently closed within 90 days of the notification of the existence of the PST, the director may decline active collection of pastdue registration fees, late payment penalties, and interest for previous fiscal years.

R311-203-5. PST Testing Requirements.

(1) Tank tightness testing. The testing method must be able to test the PST system at the maximum level that could contain regulated substances.

(a) tanks with overfill prevention devices that prevent product from entering the upper portion of the tank may be tested at the maximum level allowed by the overfill device.

(2) Spill prevention equipment. An individual who conducts a test of spill prevention equipment to meet the requirements of 40 CFR 280.35(a)(1)(ii) must report the test results using:

(a) the form "Utah Spill Prevention Test"; or

(b) the form "Appendix C-3 Spill Bucket Integrity Testing Hydrostatic Test Method Single and Double-Walled Vacuum Test Method," found in PEI RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities;" or

(c) another form approved by the director.

(3) Containment sump testing. An individual who conducts a test of a containment sump used for interstitial monitoring to meet the requirements of 40 CFR 280.35(a)(1)(ii) or a test of a piping containment sump or under-dispenser containment to meet the requirements of Section R311-206-11 must report the test results using:

(a) the form "Utah Containment Sump Test"; or

(b) the form "Appendix C-4 Containment Sump Integrity Testing Hydrostatic Testing Method," found in PEI RP1200; or

(c) another form approved by the director.

(4) When a sump sensor is used as an automatic line leak detector, the secondary containment sump must be tested for tightness annually according to the manufacturer's guidelines or standards, or by another method approved by the director.

(a) the sensor shall be located as close as is practicable to the lowest portion of the sump.

(5) Cathodic protection testing. Cathodic protection tests must meet the inspection criteria outlined in 40 CFR 280.31(b), or other criteria approved by the director. The tester who performs the test must provide the following information:

(a) location of at least three test points per tank;

(b) location of one remote test point for galvanic systems;

(c) test results in volts or millivolts;

(d) pass or fail determination for each tank, line, flex connector, or other UST system component tested;

(e) the criteria by which the pass or fail determination is made;

(f) a site plat showing locations of test points; and

(g) a re-test of any cathodic protection system is required within six months of any below-grade work that may harm the integrity of the system.

(6) UST testers performing tank and line tightness testing must include the following as part of the test report:

(a) pass or fail determination for each tank or line tested;

(b) measured leak rate;

(c) test duration;

(d) product level for tank tests;

(e) pressure used for pressure tests;

(f) type of test; and

(g) test equipment used.

(7) overfill prevention equipment inspection. An individual who conducts an inspection of overfill prevention equipment to meet the requirements of 40 CFR 280.35(a)(2) must report the results using:

(a) the form "Appendix C-5 UST Overfill Equipment Inspection Automatic Shutoff Device and Ball Float Valve," found in PEI RP1200, when the overfill prevention is provided by either an automatic shutoff device or a ball float valve;

(b) the form "Appendix C-6 Overfill Alarm Operation Inspection," found in PEI RP1200, when overfill prevention is provided by an overfill alarm; or

(c) another form approved by the director.

(8) Automatic tank gauge inspection. An individual who conducts an inspection of automatic tank gauges to meet the requirements of 40 CFR 280.40(a)(3) must report the results using:

(a) the form "Appendix C-7 Automatic Tank Gauge Operation Inspection," found in PEI RP1200, and if the PST system or any portion thereof is interstitially monitored, "Appendix C-8: Liquid Sensor Functionality Testing," found in PEI RP1200; or

(b) another form approved by the director.

(9) Automatic line leak detector testing. An individual who conducts a test of automatic line leak detectors to meet the requirements of 40 CFR 280.40(a)(3) must report the results using:

(a) the form "Appendix C-9 Mechanical and Electronic Line Leak Detector Performance Tests," found in PEI RP1200; or

(b) another form approved by the director.

(10) Leak Detection and Testing Requirements for APSTs using the EAP for financial responsibility:

(a) line tightness testing or monthly monitoring is required for underground piping associated with APSTs.

(i) an individual who conducts a tightness test of product lines must perform the test as set forth in 40 CFR 280.44(b).

(ii) when pressurized underground product piping is connected to an APST that is not double-walled, sensor equipped, and monitored monthly, the product piping must be tested for tightness annually. The test must meet the requirements of Subsection R311-203-5(6).

(b) spill prevention equipment associated with an APST must meet the standards set forth in International Fire Code (IFC) 2306.6.2.6 referenced in the Utah State Fire Code adopted pursuant to Section 15A-5-103 and be double-walled and monitored monthly; or have an integrity test performed every three years. The test must meet the requirements of Subsection R311-203-5(1).

(c) beginning July 1, 2026, an APST resting on the ground must perform monthly interstitial monitoring, a monthly 0.2 gallon per hour release detection test, or a tank tightness test every 5 years. The test must meet the requirements of Subsection R311-203-5([~~2~~]1).

(d) beginning July 1, 2026, if applicable, APSTs and associated piping are required to have cathodic protection that meets the standards set forth in IFC 5704.2.7.9 and National Fire Protection Agency (NFPA) 30.23.3.5 and must have a passing cathodic protection test every 3 years. The test must meet the requirements of Subsection R311-203-5(5).

(e) beginning July 1, 2026, an APST shall have an overfill prevention device that meets the standards set forth in IFC 2306.6.2.3, 5704.2.7.5.8 and 5704.2.927.5 and must have an overfill prevention equipment inspection performed every three years. The overfill prevention equipment inspection must meet the requirements of Subsection R311-203-5(7).

(f) beginning July 1, 2026, an APST with pressurized underground product piping shall have an automatic line leak detector that meets the standards set forth in IFC 2306.7.7.1 and must have an automatic line leak detector test performed annually. The test must meet the requirements of Subsection R311-203-5(9).

R311-203-6. Secondary Containment and Under-Dispenser Containment.

(1) Secondary containment for tanks and piping.

(a) to meet the requirements of Subsection 42 USC 6991b(i) of the Solid Waste Disposal Act, tanks and product piping that are installed as part of an UST system after October 1, 2008 and before January 1, 2017 must have secondary containment if the installation is located 1,000 feet or less from an existing community water system or an existing potable drinking water well.

(b) the secondary containment installed under Subsection R311-203-6(1) must meet the requirements of 40 CFR 280.42(b), and shall be monitored monthly for releases from the tank and piping.

(i) monthly monitoring must meet the requirements of 40 CFR 280.43(g).

(c) containment sumps for piping installed under Subsection R311-203-6(1) are required:

(i) at the submersible pump or other location where the piping connects to the tank;

(ii) where the piping connects to a dispenser, or otherwise goes aboveground; and

(iii) where double-walled piping that is required under Subsection R311-203-6(1) connects with existing piping.

(d) containment sumps for piping that is installed under Subsection R311-203-6(1) must:

(i) contain submersible pumps, check valves, unburied risers, flexible connectors, and other transitional components that connect the piping to the tank, dispenser, or existing piping; and

(ii) meet the requirements of Subsection R311-203-6(2)(b).

(e) in the case of a replacement of tank or piping, only the portion of the UST system being replaced is subject to the requirements of Subsection R311-203-6(1).

(i) if less than 100% of the piping from a tank to a dispenser is replaced, the requirements of Subsection R311-203-6(1) applies to new product piping that is installed.

(ii) the closure requirements of Rule R311-205 apply to product piping that is taken out of service.

(iii) when new piping is connected to existing piping that is not taken out of service, the connection between the new and existing piping must be secondarily contained, and monitored for releases according to 40 CFR 280.43(g).

(f) the requirements of Subsection R311-203-6(1) do not apply to:

(i) piping that meets the requirements for "safe suction" piping in 40 CFR 280.41(b)(2); or

(ii) piping that connects two or more tanks to create a siphon system.

(g) the requirements of Subsection R311-203-6(1) apply to emergency generator USTs installed after October 1, 2008.

(2) Under-dispenser containment.

(a) to meet the requirements of Subsection 42 USC 6991b(i) of the Solid Waste Disposal Act, new motor fuel dispenser systems installed after October 1, 2008 and before January 1, 2017, and connected to an UST, must have under-dispenser containment if the installation is located 1,000 feet or less from an existing community water system or an existing potable drinking water well.

(b) the under-dispenser containment must:

(i) be liquid-tight on its sides, bottom, and at penetrations;

(ii) be compatible with the substance conveyed by the piping; and

(iii) allow for visual inspection and access to the components in the containment system, or be continuously monitored for the presence of liquids.

(c) if an existing dispenser is replaced, the requirements of Subsection R311-203-6(2) apply to the new dispenser if any equipment used to connect the dispenser to the PST system is replaced.

(i) this equipment includes unburied flexible connectors, risers, and other transitional components that are beneath the dispenser and connect the dispenser to the product piping.

(3) The requirements of Subsections R311-203-6(1) and R311-203-6(2) do not apply if the installation is located more than 1,000 feet from an existing community water system or an existing potable drinking water well.

(a) the PST owner or operator must provide to the director documentation to show that the requirements of Subsections R311-203-6(1) and R311-203-6(2) do not apply to the installation.

(b) the documentation shall be provided at least 60 days before the beginning of the installation, and shall include:

(i) a detailed to-scale map of the proposed installation that demonstrates that no part of the installation is within 1,000 feet of any community water system, potable drinking water well, or any well the owner or operator plans to install at the facility; and

(ii) a certified statement by the owner or operator explaining who researched the existence of a community water system or potable drinking water well, how the research was conducted, and how the proposed installation qualifies for an exemption from the requirements of Subsections R311-203-6(1) and R311-203-6(2).

(4) To determine whether the requirements of Subsections R311-203-6(1) and R311-203-6(2) apply, the distance from the UST installation to an existing community water system or existing potable drinking water well shall be measured from the closest part of the new UST, piping, or motor fuel dispenser system to:

(a) the closest part of the nearest community water system, including:

(i) the location of the wellheads for groundwater and the location of the intake points for surface water;

(ii) water lines, processing tanks, and water storage tanks; and

(iii) water distribution/ and service lines under the control of the community water system operator, or

(b) the wellhead of the nearest existing potable drinking water well.

(5) If a new UST facility is installed, and is not within 1,000 feet of an existing community water system or an existing potable drinking water well, the requirements of Subsections R311-203-6(1) and R311-203-6(2) apply if the owner or operator installs a potable drinking water well at the facility that is within 1,000 feet of the UST, piping, or motor fuel dispenser system, regardless of the sequence of installation of the UST system, dispenser system, and well.

(6) To meet the requirements of 40 CFR 280.20, tanks and product piping that are installed or replaced as part of an UST system on or after January 1, 2017 must be secondarily contained and use interstitial monitoring in accordance with 40 CFR 280.43(g).

R311-203-7. Operator Inspections.

(1) Owners and operators must perform periodic inspections in accordance with 40 CFR 280.36.

(a) inspections must be conducted by or under the direction of the designated Class B operator.

(b) the Class B operator must ensure that documentation of each inspection is kept and made available for review by the director.

(2) The individual who conducts inspections to meet the requirements of 40 CFR 280.36(a)(1) or 208.36(a)(3) shall use the form "UST Operator Inspection- Utah" or another form approved by the director.

(3) An UST facility whose tanks are properly temporarily closed according to 40 CFR 280.70 and Section R311-204-4 must have an annual operator inspection.

(4) An owner or operator who conducts visual checks of tank top containment sumps and under-dispenser containment sumps for compliance with piping leak detection in accordance with 40 CFR 280.43(g) must conduct the visual checks monthly and report the results on the operator inspection form.

R311-203-8. Unattended Facilities.

(1) An UST facility that:

(a) normally has no employee on site or is open to dispense fuel at times when no employee or trained operator is on site must have:

(i) a sign posted in a conspicuous place, giving the name and telephone number of the facility owner, operator, or local emergency responders; and

(ii) an emergency shutoff device in a readily accessible location, if the facility dispenses fuel.

KEY: fees, hazardous substances, petroleum, underground storage tanks
Date of Last Change: July 15, 2022
Notice of Continuation: March 8, 2022
Authorizing, and Implemented or Interpreted Law: 19-6-105; 19-6-403; 19-6-408

State of Utah
Administrative Rule Analysis
Revised June 2022

NONSUBSTANTIVE CHANGE		
Title No. - Rule No. - Section No.		
Rule or Section Number:	**R-311-206**	**Filing ID: Office Use Only**

Agency Information

1. Department:	Utah Department of Environmental Quality	
Agency:	Utah Division of Environmental Response and Remediation	
Room number:		
Building:	Multi Agency State Office Building	
Street address:	195 North 1950 West	
City, state and zip:	Salt Lake City, Utah 84116	
Mailing address:	P.O. Box 144840	
City, state and zip:	Salt Lake City, Utah 54114-4840	
Contact persons:		
Name:	**Phone:**	**Email:**
David Wilson	385-251-0893	djwilson@utah.gov
Therron Blatter	801-554-6762	tblatter@utah.gov
Please address questions regarding information on this notice to the agency.		

General Information

2. Rule or section catchline:
R311-206. Petroleum Storage Tanks: Certificate of Compliance and Financial Assurance Mechanisms.
3. Reason for the change (Why is the agency submitting this filing?)**:**
Fixing references in rule that are incorrect due to renumbering of the rules and an incorrect reference.
4. Summary of the change (What does this filing do?)**:**
R311-206-3(1)(g) incorrectly references R311-200-1(2)(b) for “as-built drawing”. It should be R311-200-1(2)(d). R311-206-3(1)(g) incorrectly references R311-200-1(2)(rr) for “site plat”. It should be R311-200-1(2)(ccc). R311-206-6(2)(b) fixed an incorrect reference. Subsection 19-6-15(2) should be 19-6-415(2).

Agency Authorization Information

To the agency: The Office of Administrative Rules is responsible for setting the effective date of nonsubstantive changes (see Section R15-4-6). The agency does NOT file a notice of effective date.			
Agency head or designee and title:	Brent Everett, Director	**Date:**	mm/dd/yyyy

R311. Environmental Quality, Environmental Response and Remediation.
R311-206. Petroleum Storage Tanks: Certificate of Compliance and Financial Assurance Mechanisms.
R311-206-1. Definitions.

Definitions are found in Rule R311-200.

R311-206-2. Declaration of Financial Assurance Mechanism.

(1) To demonstrate financial assurance, as required by Section 19-6-412 and Subsection 19-6-407(2)(c), owners or operators of petroleum storage tanks must:

(a) declare they will participate in the EAP and meet the requirements for participation in the EAP under Sections 19-6-410.5, 19-6-428 and R311-206-4; or

(b) demonstrate financial assurance by an allowable method specified in Section R311-206-5.

(2) For the purposes of Subsection 19-6-412(6), tanks at a facility must be covered by the same financial assurance mechanism, and must be considered to be in one area, unless the director determines there is sufficient information so that releases from different tanks at the facility could be accurately differentiated.

R311-206-3. Requirements for Issuance of Certificates of Compliance.

(1) The director shall issue a certificate of compliance to an owner or operator for individual petroleum storage tanks at a facility if:

(a) the owner or operator has a certificate of registration;

(b) the owner or operator must certify that the PST is in substantial compliance with state and federal statutes, rules, and regulations applicable to PST systems;

(i) APSTs using the EAP for financial responsibility, the owner or operator may meet the requirements outlined in Subsection R311-206-4(6).

(c) the tank tightness test, as required by Section 19-6-413 conducted within six months before the tank was registered or within 60 days after the date the tank was registered, indicates that each individual PST is not leaking;

(d) the owner or operator has submitted a letter to the director stating that based on customary business inventory practices standards there has been no release from the tank;

(e) the owner or operator has submitted a completed application according to a form provided and approved by the director, and demonstrated the financial assurance mechanism that will be used;

(f) the owner or operator has met the requirements for the financial assurance mechanism chosen, including payment of applicable fees;

(g) the owner or operator has submitted an as-built drawing, for newly-installed systems, that meets the requirements of Subsection R311-200-1(2)([~~b~~]d) or a site plat, for existing systems, that meets the requirements of Subsection R311-200-1(2)([~~ii~~]ccc); and

(h) the owner or operator has, for newly-installed tanks, submitted the completed tank manufacturer's installation checklist.

R311-206-4. Requirements for Environmental Assurance Program Participants.

(1) In accordance with Subsection 19-6-411(1)(a), the annual facility throughput rate, if reported, shall be reported to the director as a specific number of gallons, based on the throughput for the previous calendar year.

(2) In accordance with Subsection 19-6-411(1)(b), when a petroleum storage tank is initially registered with the director, any petroleum storage tank fee for that tank for the current fiscal year is due when the tank is brought into use, as a requirement for receiving a certificate of compliance.

(3) In accordance with Subsection 19-6-411(2)(a)(i), if an installation company receives its annual permit after the beginning of the fiscal year, the annual fee must be paid for the entire year.

(4) Auditing of PST facility throughput records.

(a) owners and operators must retain for seven years the monthly tank throughput records of the facility.

(b) tank throughput records shall include financial and product documentation for receipts, deliveries, transfers, and inventories.

(c) the director may audit or commission an audit, by an independent auditor, of records which support the amount of throughput, for each tank at a participant's facility.

(i) records must be made available at the department for inspection within 30 calendar days after receiving notice from the director.

(ii) audits may be determined by random selection or for particular reasons, including suspicion or discovery of inaccuracies in throughput reports, aggregating throughput reports, having a release, or filing a claim.

(iii) auditing tank throughput may be accomplished by any method approved by the director.

(iv) costs of an independent audit shall be paid by the owner or operator.

(5) Owners or operators eligible for participation in the EAP must demonstrate financial assurance for the difference between coverage provided by the EAP and coverage amounts required by 40 CFR 280 Subpart H.

(a) if the owner or operator chooses self-insurance as the mechanism for demonstrating financial assurance for the difference, they must document a tangible net worth of $10,000 upon request and to the satisfaction of the director.

(i) the director may require the owner or operator to submit an independent audit to demonstrate new worth for self-insurance.

(A) the owner or operator will bear the expense for the audit.

(B) the criteria for an audit are the same as set forth in Subsection R311-206-4(4)(b).

(b) an owner or operator may also select and document another mechanism specified in 40 CFR 280.94 to demonstrate financial assurance for the difference.

(c) the processing fee requirement referenced in Subsection R311-206-5(2) is not applicable because the administrative cost is covered by the EAP fee.

(6) For a facility with an APST using the EAP for financial responsibility, the director shall issue a certificate of compliance to an owner or operator for individual APSTs, if:

(a) before July 1, 2026, the owner or operator:

(i) documents compliance with spill prevention equipment requirements and submits a spill prevention equipment test; and

(ii) documents compliance with applicable leak detection and testing requirements outlined in Section R311-203-5.

(b) on or after July 1, 2026, the owner or operator:

(i) if applicable, documents compliance with cathodic protection requirements and submits a cathodic protection test, if required by Subsection R311-203-5(10)(d) indicating that the cathodic protection system is functioning properly;

(ii) documents compliance with overfill prevention requirements and submits an overfill prevention equipment inspection per Subsection R311-203-5(10)(e);

(iii) documents compliance with automatic line leak detector and submits an automatic line leak detector test, if required by Subsection R311-203-5(10)(f), indicating that each individual automatic line leak detector is functioning properly; and

(iv) documents compliance with APST secondary containment requirements as outlined in International Fire Code 2306.5 & 5704.2.10 referenced in the Utah State Fire Code pursuant to Section 15A-5-103.

R311-206-5. Requirements for Owners and Operators Demonstrating Financial Assurance by Other Methods.

(1) Owners and operators who elect to utilize an alternate form of financial assurance must meet the minimum coverage amounts using one or a combination of mechanisms as outlined in 40 CFR 280.94.

(a) owners and operators must submit to the director the documents required by 40 CFR 280.111 to be kept and maintained for the mechanism used.

(b) formats, calculations, letters, reporting, and record keeping shall be done in accordance with each applicable financial assurance mechanism specified in 40 CFR 280 subpart H.

(c) if the financial assurance documentation submitted to the director is not in accordance with 40 CFR 280 subpart H, it shall be rejected and shall be invalid.

(2) The processing fee established in Subsection 19-6-408(2) for each new or changed financial assurance document submitted for approval shall be included with the financial assurance document and shall be payable to the Department.

(a) processing fees for subsequent reviews of financial assurance documents are due on July 1 of the fiscal year for which the review is required.

(b) pursuant to 40 CFR 280.97, if the financial assurance mechanism is an insurance policy, the insurer is liable for payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third party, with right of reimbursement by the insured for such payment made by the insurer.

(i) this provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in 40 CFR 280.95 through 280.102 and 280.104 through 280.107.

(ii) a showing of financial assurance for the deductible, if such a showing is made, shall be treated as a separate financial assurance mechanism subject to the processing fee requirement referenced in Subsection R311-206-5(2).

(c) if an owner or operator desires to make any material change to the financial assurance document, the change shall be approved by the director, and an additional processing fee shall be paid in circumstances as determined by the director.

(3) Evidence of a current and approved financial assurance mechanism must be reported to the director as follows:

(a) owners and operators using the financial test of self-insurance must submit the "Letter from Chief Financial Officer" to the director within the maximum 120-day period specified in 40 CFR 280.95.

(b) owners and operators using insurance and risk retention group coverage for financial assurance must submit the coverage policy in its entirety, with the current Certificate of Insurance or Endorsement specified in 40 CFR 280.97(b), to the director within 30 days of acceptance of such policy by the insurer or risk retention group.

(i) if the insurance policy or risk retention group coverage is canceled, the insurer or risk retention group shall provide written notice of cancellation or other termination of coverage required by 40 CFR 280.97(b)(1)2.d. and 280.97(b)(2)2.d. to the director as well as the insured.

(ii) the insurer must have a rating of A- or greater by A.M. Best Co.

(c) owners and operators using an irrevocable letter of credit must submit proof of the letter of credit, standby trust fund, and formal certification of acknowledgement to the director within 30 days of issuance from the issuing institution.

(d) owners and operators using a fully funded trust fund for financial assurance must submit proof of the trust fund and formal certification of acknowledgement to the director within 30 days after implementation of the trust fund.

(e) owners and operators using a guarantee for financial assurance shall submit the Guarantee document, standby trust fund, and certification of acknowledgement to the director within 30 days of issuance.

(i) the owner or operator must also submit the guarantor's letter from the chief financial officer within the 120-day period specified in 40 CFR 280.95.

(f) owners and operators using a surety bond for financial assurance must submit the surety bond document, standby trust fund, and certification of acknowledgement to the director within 30 days of issuance.

(g) guarantees and surety bonds may be used as financial assurance mechanisms in Utah only if the requirement of 40 CFR Part 280.94(b) is met.

(h) owners and operators using one of the local government methods specified in 40 CFR 280.104 through 280.107 must submit the letter from the chief financial officer and associated documents to the director within 120 days of the end of the owner, operator, or guarantor's fiscal year.

(4) The director may require reports of financial condition or any other information relative to justification of the financial assurance mechanism from the owner or operator at any time.

(a) information requested must be reported to the director within 30 calendar days after receiving the request.

(b) owners and operators must maintain evidence of all financial assurance mechanisms as specified in 40 CFR 280.111.

(c) owners and operators must keep records of all financial assurance mechanisms in accordance with 40 CFR 280.111 and 280.113.

(d) the director may audit or commission an audit of records supporting the financial assurance mechanism at any time.

(i) audits may be determined by random selection or for specific reasons, including the occurrence of a release or suspected release, deficiencies in complying with regulations or orders, or the suspicion or discovery of inaccuracies.

(ii) auditing of financial assurance methods may be accomplished by any method approved by the director.

(5) Any costs of securing a selected financial assurance mechanism and generating and providing the necessary reporting evidence of an assurance mechanism to the director is the sole responsibility of the owner or operator.

(6) Processing of the alternate financial assurance mechanism documents may be accomplished utilizing any method approved by the director.

R311-206-6. Voluntary Admission of Eligible Exempt Underground Petroleum Storage Tanks and Eligible Exempt Aboveground Storage Tanks Containing Petroleum to the Environmental Assurance Program.

(1) Owners or operators of eligible exempt USTs specified in Subsection 19-6-415(1)(a) may voluntarily participate in the EAP by:

(a) performing a site check in accordance with Rule R311-205;

(b) meeting the requirements of Subsections 19-6-428(3)(a), 19-6-415(1) and R311-206-3(1);

(c) properly performing release detection according to the requirements of 40 CFR Part 280 Subpart D; and

(d) meeting the upgrade requirements in 40 CFR 280.21 or the new tank requirements in 40 CFR 280.20, as applicable.

(2) Owners or operators of eligible exempt aboveground storage tanks containing petroleum may voluntarily participate in the EAP by

(a) performing a site check in accordance with Rule R311-205; and

(b) meeting the requirements of Subsections 19-6-415(2) and 19-6-428(3)(a), and Sections R311-206-3 and R311-206-4.

R311-206-7. Revocation and Lapsing of Certificates.

(1) The director shall revoke a certificate of compliance or registration if the director determines that the owner or operator has willfully submitted a fraudulent application or is not in compliance with any requirement pertaining to the certificate.

(2) A PST owner or operator who has had a certificate of compliance revoked under Section 19-6-414 or Subsection R311-206-7(1) may have the certificate reissued by the director after the owner or operator demonstrates compliance with Subsections 19-6-412(2), 19-6-428(3), and Section R311-206-3.

(3) A PST owner or operator who has had a certificate of compliance lapse under Subsection 19-6-408(5)(c) may have the certificate reissued by the director after the owner or operator demonstrates compliance with Sections 19-6-412 and R311-206-3.

(4) A PST owner or operator who has had eligibility to receive payments for claims against the fund lapse under Subsection 19-6-411(3)(c)(ii) must:

(a) meet the requirements of Subsection 19-6-428(3); and

(b) pay fees, interest, and penalties due to reinstate eligibility.

(5) Upon permanent closure of a tank which is covered by the Petroleum Storage Tank Fund, the eligibility to make a claim against the Petroleum Storage Tank Fund will terminate as specified in Section R311-207-2.

(a) permanently closed tanks are not eligible to be reissued a certificate of compliance.

(6) In accordance with Section 19-6-414, the director may revoke a certificate of compliance for the owner's or operator's failure to comply with the following requirements as outlined in 40 CFR 280:

(a) release reporting;

(b) abatement;

(c) investigation;

(d) corrective action; or

(e) other measures to bring the release site under control.

R311-206-8. Delivery Prohibition.

(1) In accordance with Subsection 19-6-411(7) and 19-6-407(2)(d)(ii), the director shall authorize the placement of a delivery prohibition tag identifying a tank:

(a) for which the certificate of compliance has been revoked in accordance with Section 19-6-414;

(b) for which the certificate of compliance has lapsed for non-payment of fees in accordance with Subsection 19-6-408(5);

(c) that has never qualified for a certificate of compliance, and is not a new installation under Subsection R311-206-8(1)(d); or

(d) that is a new installation, and has not been issued a certificate of compliance.

(2) For USTs, in accordance with Subsection 19-6-403(1)(b)(i), the director shall authorize the placement of a delivery prohibition tag to be placed on the UST as soon as practicable after the determination is made that a tank does not have:

(a) spill prevention equipment required under 40 CFR 280.20(c) or 280.21(d);

(b) overfill prevention equipment required under 40 CFR 280.20(c) or 280.21(d);

(c) equipment required for tank or piping leak detection in accordance with 40 CFR 280 Subpart D; or

(d) equipment required for tank or piping corrosion protection in accordance with 40 CFR 280 Subpart B or C.

(3) For APSTs, the director shall authorize the placement of a delivery prohibition tag to be placed on the APST as soon as practicable after the determination that the APST was not in service after May 5, 2021.

(4) The delivery prohibition tag shall be placed on the tank fill or in a visible location near the tank fill.

(5) A person who delivers or accepts delivery of a regulated substance or petroleum into a tank marked with a delivery prohibition tag shall be subject to the penalties outlined in Section 19-6-416, unless authorized under Subsection R311-206-8(5).

(6) The director may issue written approval for a delivery of petroleum to:

(a) provide ballast for a new tank during installation, or

(b) allow for the tank tightness test required under Section 19-6-413.

(7) The delivery prohibition tag must remain in place until the director issues:

(a) for tanks that have a tag in place in accordance with Subsection R311-206-8(1):

(i) a new certificate of compliance for the tank; and

(ii) written authorization to remove the delivery prohibition tag; or

(b) for tanks that have a tag in place in accordance with Subsection R311-206-8(2):

(i) written authorization to remove the delivery prohibition tag.

(8) If a delivery prohibition tag is removed without the authorization specified in Subsection R311-206-8(6)(a)(ii) or R311-206-8(6)(b)(i), the PST owner or operator is subject to:

(a) a re-inspection and any applicable fees; and

(b) placement of a new delivery prohibition tag on the tank.

R311-206-9. Removing Participating Tanks from the Environmental Assurance Program.

(1) Owners and operators of PSTs who have voluntarily elected to participate in the EAP may cease participation in the EAP and be exempted from the requirements described in Section R311-206-4 by:

(a) permanently closing tanks as outlined in 40 CFR 280, subpart G and Rules R311-204 and R311-205; or

(b) meeting the following requirements:

(i) demonstrating compliance with Section R311-206-5; and

(ii) notifying the director in writing at least 30 days before the date of cessation of participation in the EAP, and specifying the date of cessation.

(A) the director may waive the 30-day requirement if the owner or operator has already documented current financial assurance under Section R311-206-5 for other petroleum storage tanks owned or operated by the owner or operator.

(B) the date of cessation of participation in the EAP may occur after the date designated in Subsection R311-206-9(1)(b)(ii) if the owner or operator does not document compliance with Section R311-206-5 by the date originally designated.

(2) prorata refunds will not be given.

(3) For tanks being removed voluntarily from the EAP, the date of cessation of participation in the EAP shall be the date on which coverage under the EAP ends.

(a) subsequent claims for payments from the Petroleum Storage Tank Fund must be made in accordance with Sections 19-6-424 and R311-207-2.

(4) For any facility that participates in the EAP and is sold to a company with facilities that do not participate in the EAP, the date of termination of coverage is the closing date for the real estate transaction.

(a) the purchaser shall provide documentation of the closing date to the director within 30 days of closing.

R311-206-10. Participation in the Environmental Assurance Program After a Period of Non-participation.

(1) Owners and operators not participating in the EAP must, before any subsequent participation in the EAP, meet the following requirements:

(a) notify the director of the intent to participate in the EAP;

(b) comply with the requirements of Subsection 19-6-428(3); and

(c) meet the requirements of Section R311-206-3 to qualify for a new certificate of compliance.

R311-206-11. Environmental Assurance Fee Rebate.

(1) To meet the requirements of Subsection 19-6-410.5(5)(d), for each UST Facility participating in the EAP, a risk value will be calculated according to the "Environmental Assurance Program Risk Factor Table and Calculation," which is incorporated by reference.

(a) the table, dated June 2, 2014, contains risk factors and the formula for risk value calculation.

(2) The risk value for each facility participating in the EAP shall be:

(a) calculated on a facility basis;

(b) valid for the calendar year;

(c) based on the facility characteristics as of December 15 of the prior calendar year; and

(d) determined, at sites with mixed equipment, by considering the highest risk-valued petroleum storage tank system component for each risk factor.

(3) To qualify as secondarily contained for purposes of risk calculation, tanks shall:

(a) meet the requirements for secondary containment in 40 CFR 280.20; and

(b) meet one of the following:

(i) use an interstitial sensor and documentation of monthly interstitial monitoring; or

(ii) documentation of monthly visual checks of a brine-filled interstitial space.

(4) To qualify as secondarily contained for purposes of risk calculation, piping shall:

(a) meet the requirements for secondary containment outlined in 40 CFR 280.20; and

(b) meet one of the following:

(i) maintain monthly records of monitoring of the interstice by vacuum, pressure, or liquid filled interstitial space, or

(ii) use an interstitial monitoring method not listed in Subsection R311-206-11(4)(b)(i).

(5) To qualify as secondarily contained for purposes of risk calculation, piping containment sumps, and under-dispenser containment shall be double-walled with monthly documentation of monitoring of the space between the walls.

(6) Each facility that participates in the EAP may be eligible for a rebate of a portion of the Environmental Assurance Fee according to the rebate schedule in "Environmental Assurance Fee Rebate Table," dated June 2, 2014, which is incorporated by reference.

(7) A facility that begins participation in the EAP after January 1 of a calendar year shall have its risk value calculated for that year based on the risk factors in place at the facility on the date the facility begins participation in the EAP.

(8) The Environmental Assurance Fee rebate does not apply to APSTs until July 1, 2026 as per Subsections 19-6-410.5(5)(d) and 19-6-410.5(5)(e).

KEY: petroleum, underground storage tanks
Date of Last Change: July 15, 2022
Notice of Continuation: March 8, 2022
Authorizing, and Implemented or Interpreted Law: 19-6-105; 19-6-403; 19-6-410.5; 19-6-428

WASTE MANAGEMENT AND RADIATION CONTROL BOARD

Executive Summary

Public Comment -- Proposed Rule Changes

UAC R313-19-100

September 8, 2022

What is the issue before the Board?	Approval from the Board to proceed with formal rulemaking and public comment on the proposed changes to R313-19-100 of the radiation control rules to incorporate changes requested by the Nuclear Regulatory Commission (NRC)to maintain the compatibility of Utah radiation control rules with the federal regulations. A copy of the NRC letter is included with this summary.
What is the historical background or context for this issue?	The Division of Waste Management and Radiation Control received a comment from the NRC in July of 2022 indicating that they had discovered an incompatibility in our rules. The purpose of this amendment is to correct that incompatibility. Section R313-19-100 incorporates by reference 10 CFR 71.97(a) and (b) into R313-19-100. The NRC stated that 10 CFR Part 71.19 is designated as Compatibility Category NRC, which means that these are program elements that belong solely to the NRC and should not be adopted by the Agreement States. The change removes the incorporation by reference of 10 CFR 71.19(a) and (b) from R313-19-100 to meet the Compatibility Category NRC designation assigned to 10 CFR part 71.19. The proposed changes to R313-19-100 follow this Executive Summary. Changes are highlighted in yellow.
What is the governing statutory or regulatory citation?	The Board is authorized under Subsection 19-3-103.1(1) to make rules that are necessary to implement the Radiation Control Act. The rule changes also meet existing DEQ and state rulemaking procedures and are necessary for the state to maintain compatibility with federal regulations for radioactive materials.
Is Board action required?	Yes. Board approval is necessary to begin the formal rulemaking process by filing the appropriate documents with the Office of Administrative Rules for publishing the proposed rule changes in the *Utah State Bulletin* and conducting a public comment period.

DSHW-2022-023157
Attachments: DSHW-2022-023155, DSHW-2022-023165

What is the Division Director's recommendation?	The Director recommends 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 October 1, 2022, issue of the *Utah State Bulletin* with a public comment period beginning on October 1, 2022 and ending on October 31, 2022.
Where can more information be obtained?	Please contact Tom Ball at (801) 536-0251 (tball@utah.gov) or Spencer Wickham at (801) 536-0082 (swickham@utah.gov).

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 11, 2022

Douglas J. Hansen, Director
Division of Waste Management
and Radiation Control
Utah Department of Environmental Quality
195 North 1950 West
Salt Lake City, UT 84114-4880

Dear Mr. Hansen:

We have reviewed the final revisions to the Utah regulations R313-12-3 and R313-19-100 received by our office on June 17, 2022. These regulations were reviewed by comparison to the equivalent U.S. Nuclear Regulatory Commission (NRC) rules and the requirements of Regulation Amendment Tracking System Identification Numbers (RATS IDs) 2015-3, and 2019-2. We discussed our review of the regulations with Thomas Ball on June 23, 2022.

As a result of our review, we have one comment that has been identified in the enclosure. Please note that we have limited our review to regulations required for compatibility and/or health and safety. Under our current procedure, a finding that the Utah regulations meet the compatibility and health and safety categories of the equivalent NRC regulation may only be made based on a review of the final Utah regulations. However, we have determined that if your proposed regulations were adopted, incorporating our comments and without other significant change, they would meet the compatibility and health and safety categories established in the Office of Nuclear Material Safety and Safeguards (NMSS) Procedure SA-200, “Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements.”

We request that when the revised regulations are adopted and published as final regulations, a copy of the “as published” regulations be provided to us for review. As requested in NMSS Procedure SA-201, “Review of State Regulatory Requirements,” please highlight any final changes and provide a copy to Division of Material, Safety, State, Tribal, and Rulemaking Programs, NMSS.

The State Regulation Status (SRS) Data Sheet summarizes our knowledge of the status of other Utah regulations, as indicated. Please let us know if you note any inaccuracies, or have any comments on the information contained in the SRS Data Sheet. This letter, including the SRS Data Sheet, is posted on the NMSS State Communication Portal: https://scp.nrc.gov/rulemaking.html.

If you have any questions regarding the review, the compatibility and health and safety categories, or any of the NRC regulations used in the review, please contact Michelle Beardsley, State Regulation Review Coordinator, at 301-415-0275 (michelle.beardsley@nrc.gov).

Sincerely,

Signed by Anderson, Brian
on 07/11/22

Brian Anderson, Chief
State Agreement and Liaison Programs Branch
Division of Materials Safety, Security, State
and Tribal Programs
Office of Nuclear Material Safety
and Safeguards

Enclosure:
Utah SRS Data Sheet

SUBJECT: UTAH FINAL REGULATIONS TO RATS IDS 2015-3, AND 2019-2
DATE July 11, 2022

DISTRIBUTION: SP 08
DIR RF 22-48
Jackie Cook, RSAO
Utah File

ADAMS Accession No. ML2222180A264 pkg and ML22192A148 letter

OFFICE	NMSS/MSST	OGC	NMSS/MSST
NAME	MBeardsley	NA	BAnderson
DATE	07/11/22		7/11/22

OFFICIAL RECORD COPY

COMPATIBILITY COMMENT ON UTAH FINAL REGULATIONS

STATE SECTION		NRC SECTION	RATS ID	CATEGORY	SUBJECT and COMMENTS
1	R313-19-100	§71.19(a) and (b)	2015-3	NRC	**Previously approved package** Utah incorporates by reference 10 CFR Part 71.19(a) and (b). 10 CFR Part 71.19 is designated as Compatibility Category NRC and should not be adopted by the Agreement States. Utah needs to remove 10 CFR Part 71.19(a) and (b) from R313-19-100 to meet the Compatibility Category NRC designation assigned to 10 CFR Part 71.19.

STATE REGULATION STATUS

State: Utah

Tracking Ticket Number: 22-48
Date: July 11, 2022

[# amendment (s) reviewed identified by a * at the beginning of the equivalent NRC requirement.]

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1991-1	Safety Requirements for Radiographic Equipment Part 34 55 FR 843 (**Superceded by 1997-5**)	01/10/1994	Final ML032180130	No Comments 08/28/2003 ML032400630	Utah has adopted Final Regulations Equivalent to RATS ID: 1997-5.
1991-2	ASNT Certification of Radiographers Part 34 56 FR 11504 (**Superceded by 1997-5**)	none	Not Required	Not Required	Utah has adopted Final Regulations Equivalent to RATS ID: 1997-5.
1991-3	Standards for Protection Against Radiation Part 20 56 FR 23360; 56 FR 61352; 57 FR 38588; 57 FR 57877; 58 FR 67657; 59 FR 41641; 60 FR 20183	01/01/1994	Final	No Comments 02/10/1998	
1991-4	Notification of Incidents Parts 20, 30, 31, 34, 39, 40 and 70 56 FR 64980	10/15/1994	Final ML032180130	No Comments 08/28/2003 ML032400630	See correction to SRS sheet submitted in ML14303A210
1992-1	Quality Management Program and Misadministrations Part 35 56 FR 34104 **(Superceded by 2002-2)**	01/27/1995	Not Required	Not Required	Utah has adopted Final Regulations Equivalent to RATS ID: 2002-2.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1992-2	Eliminating the Recordkeeping Requirements for Departures from Manufacturer's Instructions Parts 30 and 35 57 FR 45566	none	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1993-1	Decommissioning Recordkeeping and License Termination: Documentation Additions [Restricted areas and spill sites] Parts 30 and 40 58 FR 39628	10/25/1996	Final	No Comments 01/08/1997	
1993-2	Licensing and Radiation Safety Requirements for Irradiators Part 36 58 FR 7715	07/01/1996	Final	No Comments 06/14/2000	
1993-3	Definition of Land Disposal and Waste Site QA Program Part 61 58 FR 33886	07/22/1996	Final ML071990559	No Comments 09/04/2007 ML072470237	
1994-1	Self-Guarantee as an Additional Financial Mechanism Parts 30, 40 and 70 58 FR 68726; 59 FR 1618	none	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1994-2	Uranium Mill Tailings Regulations: Conforming NRC Requirements to EPA Standards Part 40 59 FR 28220	07/01/1997	Final ML023100574	No Comments 11/22/2002 ML023290240	
1994-3	Timeliness in Decommissioning Material Facilities Parts 30, 40 and 70 59 FR 36026	08/15/1997	Final	No Comments 02/10/1998	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1995-1	Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use Parts 30, 32 and 35 59 FR 61767; 59 FR 65243; 60 FR 322	01/01/1998	Final	No Comments 02/10/1998	
1995-2	Frequency of Medical Examinations for Use of Respiratory Protection Equipment Part 20 60 FR 7900	03/13/1998	Final ML071990559	No Comments 09/04/2007 ML072470237	
1995-3	Low-Level Waste Shipment Manifest Information and Reporting Parts 20 and 61 60 FR 15649; 60 FR 25983	03/01/1998	Final ML071990559	No Comments 09/04/2007 ML072470237	
1995-4	Performance Requirements for Radiography Equipment Part 34 60 FR 28323 **(Superceded by 1997-5)**	06/30/1998	Final ML032180130	No Comments 08/28/2003 ML032400630	Utah has adopted Final Regulations Equivalent to RATS ID: 1997-5.
1995-5	Radiation Protection Requirements: Amended Definitions and Criteria Parts 19 and 20 60 FR 36038	08/14/1998	Final ML071990559	No Comments 09/04/2007 ML072470237	
1995-6	Clarification of Decommissioning Funding Requirements Parts 30, 40 and 70 60 FR 38235	11/24/1998	Final	No Comments 02/10/1998	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1995-7	Medical Administration of Radiation and Radioactive Materials Parts 20 and 35 60 FR 48623 **(Superceded by 2002-2 and 2005-2)**	10/20/1998	Not Required	Not Required	Utah has adopted Final Regulations Equivalent to RATS IDs: 2002-2 and 2005-2.
1996-1	Compatibility with the International Atomic Energy Agency Part 71 60 FR 50248; 61 FR 28724 **(Superceded by 2004-1)**	04/01/1999	Final	No Comments 04/16/1999	
1996-2	One Time Extension of Certain Byproduct, Source and Special Nuclear Materials Licenses Parts 30, 40 and 70 61 FR 1109	02/15/1999	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1996-3	Termination or Transfer of Licensed Activities: Record Keeping Requirements Parts 20, 30, 40, 61 and 70 61 FR 24669	06/17/1999	Final	No Comments 02/10/1998	Part 30 only
1997-1	Resolution of Dual Regulation of Airborne Effluents of Radioactive Materials; Clean Air Act Part 20 61 FR 65120	01/9/2000	Final ML071990559	No Comments 09/04/2007 ML072470237	
1997-2	Recognition of Agreement State Licenses in Areas Under Exclusive Federal Jurisdiction Within an Agreement State Part 150 62 FR 1662	02/27/2000	Final ML032180130	No Comments 08/28/2003 ML032400630	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1997-3	Criteria for the Release of Individuals Administered Radioactive Material Parts 20 and 35 62 FR 4120	05/29/2000	Final ML071990559	No Comments 09/04/2007 ML072470237	
1997-4	Fissile Material Shipments and Exemptions Part 71 62 FR 5907 **(Superceded by 2004-1)**	02/10/2000	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility. (See STP-97-078)
1997-5	Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiography Operations Parts 30, 34, 71 and 150 62 FR 28947	06/27/2000	Final	No Comments 04/01/1998	
1997-6	Radiological Criteria for License Termination Parts 20, 30, 40 and 70 62 FR 39057	08/20/2000	Final	No Comments 06/14/2000	
1997-7	Exempt Distribution of a Radioactive Drug Containing One Microcurie of Carbon-14 Urea Part 30 62 FR 63634	01/02/2001	Final	No Comments 04/16/1999	
1998-1	Deliberate Misconduct by Unlicensed Persons Parts 30, 40, 61, 70, 71 and 150 63 FR 1890; 63 FR 13773	02/12/2001	Final ML011100015	No Comments 07/31/2001 ML012150220	
1998-2	Self-Guarantee of Decommissioning Funding by Nonprofit and Non-Bond-Issuing Licensees Parts 30, 40 and 70 63 FR 29535	07/01/2001	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1998-3	License Term for Medical Use Licenses Part 35 63 FR 31604 **(Superceded by 2002-2)**	07/10/2001	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility. (See STP-98-074) Utah has adopted Final Regulation equivalent to RATS ID: 2002-2.
1998-4	Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations Part 34 63 FR 37059	07/09/2001	Final ML071990559	No Comments 09/04/2007 ML072470237	
1998-5	Minor Corrections, Clarifying Changes, and a Minor Policy Change Parts 20, 32, 35, 36 and 39 63 FR 39477; 63 FR 45393	10/26/2001	Final ML032510947	No Comments 09/16/2003 ML032730694	
1998-6	Transfer for Disposal and Manifests: Minor Technical Conforming Amendment Part 20 63 FR 50127	11/20/2001	Final ML013530478	No Comments 02/07/2002 ML020390486	
1999-1	Radiological Criteria for License Termination of Uranium Recovery Facilities Part 40 64 FR 17506	06/11/2002	Final ML023100574	No Comments 11/22/2002 ML023290240	
1999-2	Requirements for Those Who Possess Certain Industrial Devices Containing Byproduct Material to Provide Requested Information Part 31 64 FR 42269	10/04/2002	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1999-3	Respiratory Protection and Controls to Restrict Internal Exposure Part 20 64 FR 54543; 64 FR 55524	02/02/2003	Final ML013530478	No Comments 02/07/2002 ML020390486	
2000-1	Energy Compensation Sources for Well Logging and Other Regulatory Clarifications Part 39 65 FR 20337	05/17/2003	Final ML012850044	No Comments 12/27/2001 ML020020182	
2000-2	New Dosimetry Technology Parts 34, 36 and 39 65 FR 63750	01/08/2004	Final ML052850130	No Comments 10/20/2005 ML052940121	
2001-1	Requirements for Certain Generally Licensed Industrial Devices Containing Byproduct Material Parts 30, 31 and 32 65 FR 79162	02/16/2004	Final ML040580276	No Comments 03/08/2004 ML040690493	
2002-1	Revision of the Skin Dose Limit Part 20 67 FR 16298	04/05/2005	Final ML052640263	No Comments 10/18/2005 ML052930360	
2002-2	Medical Use of Byproduct Material Parts 20, 32 and 35 67 FR 20249	10/24/2005	Final ML052640263	No Comments 10/18/2005 ML052930360	
2003-1	Financial Assurance for Materials Licensees Parts 30, 40 and 70 68 FR 57327	12/03/2006	Final ML062910213	No Comments 11/09/2006 ML063130115	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2004-1	Compatibility With IAEA Transportation Safety Standards and Other Transportation Safety Amendments Part 71 69 FR 3697	10/01/2007	Final ML080350285	No Comments 02/26/2008 ML080560403	
2005-1	Security Requirements for Portable Gauges Containing Byproduct Material Part 30 70 FR 2001	07/11/2008	Final ML070370332	No Comments 03/06/2007 ML0706050102	
2005-2	Medical Use of Byproduct Material - Recognition of Specialty Boards Part 35 70 FR 16336; 71 FR 1926	04/29/2008	Final ML062000081	No Comments 08/02/2006 ML062150142	
2005-3	Increased Controls for Risk-Significant Radioactive Sources (NRC Order EA-05-090) 70 FR 72128	12/01/2005	License Condition ML052920243	No Comments 10/20/2005 ML052940078	
2006-1	Minor Amendments Parts 20, 30, 32, 35, 40 and 70 71 FR 15005	03/27/2009	Final ML091540302	No Comments 07/02/2009 ML091730130	
2006-2	National Source Tracking System - Serialization Requirements Part 32 with reference to Part 20 Appendix E 71 FR 65685	02/06/2007	Final ML080370626	No Comments 02/28/2008 ML080590006	
2006-3	National Source Tracking System Part 20 71 FR 65685, 72 FR 59162	01/31/2009	Final ML080370626	No Comments 02/28/2008 ML080590006	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2007-1	Medical Use of Byproduct Material - Minor Corrections and Clarifications Parts 32 and 35 72 FR 45147, 54207	10/29/2010	Final ML091540302	No Comments 07/02/2009 ML091730130	
2007-2	Exemptions From Licensing, General Licenses, and Distribution of Byproduct Material: Licensing and Reporting Requirements Parts 30, 31, 32 and 150 72 FR 58473	12/17/2010	Final ML110120370	No Comments 02/23/2011 ML110250295	
2007-3	Requirements for Expanded Definition of Byproduct Material Parts 20, 30, 31, 32, 33, 35, 61 and 150 72 FR 55864	11/30/2010	Final ML120790065	No Comments 04/17/2012 ML120930319	
2007-4	Order Imposing Fingerprinting Requirements and Criminal History Records Check Requirements for Unescorted Access to Certain Radioactive Material NRC Order EA-07-305 72 FR 70901	06/05/2008	License Condition ML080980588	No Comments 05/01/2008 ML081220351	
2008-1	Occupational Dose Records, Labeling Containers, and Total Effective Dose Equivalent Parts 19 and 20 72 FR 68043	02/15/2011	Final ML110120370	No Comments 02/23/2011 ML110250295	
2009-1	Medical Use of Byproduct Material – Authorized User Clarification Part 35 74 FR 33901	09/28/2012	Final ML110120370	No Comments 02/23/2011 ML110250295	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2011-1	Decommissioning Planning Parts 20, 30, 40 and 70 76 FR 35512	12/17/2015	Proposed ML16014A720 Final ML16145A321	Comment 02/08/16 ML16014A719 No Comments 06/22/2016 ML16145A315	
2011-2	Licenses, Certifications, and Approvals for Materials Licensees Parts 30, 36, 39, 40, 70 and 150 76 FR 56951	11/14/2014	Proposed ML1423A425 Final ML15223B281	No Comments 10/10/2014 ML14232A322 No Comments 10/15/2015 ML15223B269	
2012-1	Change of Compatibility of Parts 31.5 and 31.6 (See RATS ID: 2001-1 for Rule text) 77 FR 3640	01/25/2015	Final ML14303A327	No Comments 12/03/2014 ML14303A210	
2012-2	Advance Notification to Native American Tribes of Transportation of Certain Types of Nuclear Waste Part 71 77 FR 34194	08/10/2015	Final ML15098A613	No Comments 05/07/2015 ML15098A595	
2012-3	Technical Corrections Parts 30, 34, 40 and 71 77 FR 39899	08/06/2015	Final ML15197A182	No Comments 08/14/2015 ML15197A173	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2012-4	Requirements for Distribution of Byproduct Material Parts 30, 31, 32, 40 and 70 77 FR 43666	10/23/2015	Final ML15267A376 Revised Final ML16247A487	Comments 11/13/2015 ML15267A359 No Comments 08/15/2016 ML16247A486	
2013-1	Physical Protection of Byproduct Material, Parts 20, 30, 32, 33, 34, 35, 36, 37, 39 and 71 78 FR 16922	03/19/2016	Proposed ML14276A635 Final ML15098A618	Comments 12/16/2014 ML14273A445 No Comments 05/07/2015 ML15098A595	
2013-2	Distribution of Source Material to Exempt Persons and to General Licensees and Revision of General License and Exemptions, Parts 30, 40 and 70 78 FR 32310	08/27/2016	Proposed ML16363A224 Final ML17339A952	Comment 03/07/2017 ML16363A219 Comments 01/16/2018 ML17339A950	
2015-1	Domestic Licensing of Special Nuclear Material – Written Reports and Clarifying Amendments Part 70 79 FR 57721, 80 FR 143	01/26/2018	Final ML17360A133	No Comments 01/09/2018 ML17360A131	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2015-2	Safeguards Information - Modified Handling Categorization, Change for Materials Facilities Parts 30, 37, 73 and 150 79 FR 58664, 80 FR 3865	01/28/2018	Final ML18353B542	No Comments 02/04/2019 ML18353B541	
*2015-3	Revisions to Transportation Safety Requirements and Harmonization with International Atomic Energy Agency Transportation Requirements Part 71 80 FR 33987	07/13/2018 *extended to 08/15/2020 See STC 17-060	Proposed ML21361A133 Final ML22180A292	Comment 01/14/2022 ML21361A115 Comment 07/11/2022 ML22180A264	Utah incorporates Part 71 by reference.
2015-4	Miscellaneous Corrections, Parts 37 and 40 80 FR 45841	09/02/2018	Final ML18353B542	No Comments 02/04/2019 ML18353B541	
2015-5	Miscellaneous Corrections, Parts 19, 20, 30, 32, 37, 40, 61, 70, 71 and 150 80 FR 74974	12/31/2018	Proposed ML18353B542 Final ML20280A828	No Comments 02/04/2019 ML18353B541 No Comments 10/26/2020 ML20280A660	
2018-1	Medical Use of Byproduct Material – Medical Event Definitions, Training and Experience, and Clarifying Amendments, 10 CFR Parts 30, 32 and 35	01/14/2022	Proposed ML19183A115	No Comments 08/01/2019 ML19183A076	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2018-2	Miscellaneous Corrections - Organizational Changes 10 CFR Parts 37, 40. 70 and 71	12/21/2021	Proposed ML20280A828 Final ML21047A447 Revised Final ML21287A083	No Comments 10/26/2020 ML20280A660 Comment 03/10/2021 ML21047A044 No Comments 10/26/2021 ML21287A077	
2018-3	Miscellaneous Corrections 10 CFR Parts 1, 2, 34, 37, 50, 71, 73, and 140	07/30/2022	Proposed ML20280A828 Final ML21047A447 Revised Final ML21287A083	No Comments 10/26/2020 ML20280A660 Comment 03/10/2021 ML21047A044 No Comments 10/26/2021 ML21287A077	
2019-1	Miscellaneous Corrections 10 CFR Parts 2, 21, 37, 50, 52, 73, and 110	12/18/2022	Proposed ML20280A828 Final ML21047A447	No Comments 10/26/2020 ML20280A660 No Comments 03/10/2021 ML21047A044	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
*2019-2	Organizational Changes and Conforming Amendments Parts 1, 2, 37, 40, 50, 51, 52, 55, 71, 72, 73, 74, 100, 140, and 150	12/30/2022	Proposed ML21361A133 Final ML22180A292	No Comments 01/14/2022 ML21361A115 No Comments 07/11/2022 ML22180A264	
2020-1	Individual Monitoring Devices Parts 34, 36, and 39	06/16/2023			
2020-2	Social Security Number Fraud Prevention Parts 9 and 35	08/17/2023			
2020-3	Miscellaneous Corrections 10 CFR Parts 1, 2, 19, 20, 21, 30, 34, 35, 40, 50, 51, 52, 60, 61, 62, 63, 70, 71, 72, 73, 74, 75, 76, 110, and 140	11/16/2023			
2021-1	Miscellaneous Corrections 10 CFR Parts 2, 11, 20, 25, 32, 35, 37, 50, 52,55, 70, 72, 73, 95, and 110	09/08/2024			
2021-2	Miscellaneous Corrections 10 CFR Parts 9, 37, 40, 50, 51, 52, 55, 71, 73, and 110	12/30/2024			
2022-1	Miscellaneous Corrections 10 CFR 1, 2, 20, 30, 40, 50, 55, 70, 73, and 170	none			Provisions are not required for compatibility.
N/A	10 CFR 61.13, Technical analyses	N/A	Final ML110730004	No Comments 04/05/2011 ML110800571	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
N/A	10 CFR Part 34, not associate with a specific RATS ID	N/A	Final ML120790065	Comments 04/17/2012 ML120930319	
N/A	Enabling Legislation	N/A	ML12255A021	No Comments 10/25/2012 ML12289A098	Radiation Control Agency only
N/A	Radiation Control Amendments to Enabling Legislation	N/A	Final ML13051A474	No Comments 08/29/2013 ML13091A047	
N/A	Parts 30, 39 and 61, not associated with a specific RATS ID	N/A	Final and License Condition ML14126A497 Revised Final ML15113B137	Comments 07/24/2014 ML14126A095 No Comments 05/15/2015 ML15113B128	
N/A	Minor editorial revisions to Part 40 not associated with a specific RATS ID	N/A	Proposed ML16363A224 Final ML17339A952	No Comments 03/07/2017 ML16363A219 No Comments 01/16/2018 ML17339A950	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
N/A	Part 150.31 not associated with a specific RATS	11/14/2014	Proposed ML1423A425 Final ML15222A410	Comments 10/15/2014 ML14232A322 No Comments 10/15/2015 ML15222A346	
N/A	Amendments to Legislation regarding the Radiation Control Agency	N/A	Proposed ML15058A267 Response ML15302A240 Response ML18019A129	Comments 03/18/2015 ML15058A256 Comments 11/25/2015 ML15302A236 No Comments 02/16/2018 ML18019A108	
N/A	Medical Use Advisory Committee	N/A	Final ML15231A193	No Comments 10/19/2015 Ml15231A195	

R313. Environmental Quality, Waste Management and Radiation Control, Radiation.
R313-19. Requirements of General Applicability to Licensing of Radioactive Material.
R313-19-100. Transportation.

For purposes of Section R313-19-100, 10 CFR 71.0(c), 71.0(d)(1), 71.1(a), 71.3, 71.4, 71.13, 71.14(a), 71.15, 71.17, [~~71.19(a), 71.19(b),~~] 71.21 through 71.23, 71.47, 71.83, 71.85 introductory paragraph, 71.85(d), 71.87 through 71.89, 71.91(a), 71.91(c), 71.91(d), 71.97, 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.103(a), 71.103(b), 71.105, 71.106, 71.127, 71.129, 71.131, 71.133, 71.135, 71.137, and Appendix A to Part 71 (2020) are incorporated by reference with the following clarifications or exceptions:

(1) The exclusion of the following:

(a) In 10 CFR 71.4 the following definitions:

(i) "close reflection by water";

(ii) "licensed material";

(iii) "optimum interspersed hydrogenous moderation";

(iv) "spent nuclear fuel or spent fuel;"

(v) "special form radioactive material", since this definition exists in Section R313-12-3; and

(vi) "state."

(b) In 10 CFR 71.91(c) and 71.91(d), the phrase "certificate holder and applicant for a COC";

(c) In 10 CFR 71.101(a), the sentence "Each certificate holder and applicant for a package approval is responsible for satisfying the quality assurance requirements that apply to the design, fabrication, testing, and modification of package subject to this subpart;" and

(d) In 10 CFR 71.101(b), each instance of "certification holder, and applicant for a COC."

(2) The substitution of the following rule references:

(a) "Rule R313-36, incorporating 10 CFR 34.31(b) by reference," for "Sec. 34.31(b) of this chapter" as found in 10 CFR 71.101(g);

(b) "Section R313-15-502" for reference to "10 CFR 20.1502";

(c) "Rule R313-14" for reference to "10 CFR Part 2 Subpart B";

(d) "Rule R313-32, 10 CFR Part 35," for reference to "10 CFR part 35";

(e) "Subsection R313-15-906(5)" for reference to "10 CFR 20.1906(e)";

(f) "Subsection R313-19-100(5)" for "Sec.71.5";

(g)(i) "10 CFR 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.103(a), 71.103(b), 71.105, 71.106, and 71.127 through 71.137" for "subpart H of this part" or for "subpart H";

(ii) "10 CFR 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.103(a), 71.103(b), 71.105, 71.106, and 71.127 through 71.137" for "this subpart" in 71.101(a) and 71.101(c)(1).

(h) "10 CFR 71.0(c), 71.0(d)(1), 71.1(a), 71.3, 71.4, Subsection R313-19-100(5), Sections R313-19-1 and R313-19-5, 71.83, 71.85 introductory paragraph, 71.85(d) through 71.89, 71.91(a), 71.91(c), 71.91(d), 71.97, 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.103(a), 71.103(b), 71.105, 71.106, and 71.127 through 71.137" for "subparts A, G, and H of this part";

(i) "10 CFR 71.47" for "subparts E and F of this part";

(j) "10 CFR 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.103(a), 71.103(b), 71.105, 71.106, and 71.127 through 71.137" for "Sec. Sec. 71.101 through 71.137." in 71.101(b) and 71.105(a);

(k) "10 CFR 71.85(a) through (c)" for "paragraphs (a) through (c) of this section" in 71.85(d);

(l) "10 CFR 73.24" for "73.24 of this chapter" in 71.88(b);

(m) "71.14(a)" for "71.14" in 71.91(a);

(n) "R313-12-110" for "Sec. 71.1(a)" and for the NRC contact information in 71.101(c)(1) and 71.106(b); and

(o) "10 CFR 71.111" for "Sec. 71.111" in 71.135.

(3) The substitution of the following terms:

(a) "Director" for:

(i) "Commission" in 10 CFR 71.0(c), 71.17(a), 71.17(b), 71.21(a), 71.21(b), 71.22(a), 71.22(b), 71.23(a), 71.23(b), 71.91(c), and 71.101(c)(1);

(b) "Director, the U.S. Nuclear Regulatory Commission, or an Agreement State" for "Commission" in 10 CFR 71.3;

(c) "Specific or general" for "NRC" in 10 CFR 71.0(c);

(d) "The Director at the address specified in SecR313-12-110" for reference to "ATTN: Document Control Desk, Director, Spent Fuel Project Office, Office of Nuclear Material Safety and Safeguards" in 10 CFR 71.101(c)(1);

(e) "Each" for "Using an appropriate method listed in Sec. 71.1(a), each" in 10 CFR 71.101(c)(1);

(f) "The material shall be contained in a Type A package meeting the requirements of 49 CFR 173.417(a)." for "The fissile material need not be contained in a package which meets the standards of subparts E and F of this part; however, the material must be contained in a Type A package. The Type A package must also meet the DOT requirements of 49 CFR 173.417(a)." as found in 10 CFR 71.22(a) and 71.23(a);

(g) "Licensee" for "licensee, certificate holder, and applicant for a COC"; and

(h) "Licensee is" for reference to "licensee, certificate holder, and applicant for a COC are."

(4) The insertion of "NRC-issued" in 10 CFR 71.17(c)(1) immediately before "Certificate of Compliance."

(5) Transportation of licensed material

(a) Each licensee who transports licensed material outside the site of usage, as specified in the license issued by the Director, the U.S. Nuclear Regulatory Commission or an Agreement State, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the U.S. Department of Transportation regulations in 49 CFR parts 107, 171 through 180, and 390 through 397 (2014), appropriate to the mode of transport.

(i) The licensee shall particularly note DOT regulations in the following areas:

(A) Packaging--49 CFR part 173: subparts A, 49 CFR 173.1 through 49 CFR 173.13, B, 49 CFR 173.21 through 49 CFR 173.40, and I, 49 CFR 173.401 through 49 CFR 173.477.

(B) Marking and labeling--49 CFR part 172: subpart D, 49 CFR 172.300 through 49 CFR 172.338; and 49 CFR 172.400 through 49 CFR 172.407 and 49 CFR 172.436 through 49 CFR 172.441 of subpart E.

(C) Placarding--49 CFR part 172: subpart F, 49 CFR 172.500 through 49 CFR 172.560, especially 49 CFR 172.500 through 49 CFR 172.519 and 49 CFR 172.556; and appendices B and C.

(D) Accident reporting--49 CFR part 171: 49 CFR 171.15 and 171.16.

(E) Shipping papers and emergency information--49 CFR part 172: subparts C, 49 CFR 172.200 through 49 CFR 172.205 and G, 49 CFR 172.600 through 49 CFR 172.606.

(F) Hazardous material employee training--49 CFR part 172: subpart H, 49 CFR 172.700 through 49 CFR 172.704.

(G) Security plans--49 CFR part 172: subpart I, 49 CFR 172.800 through 49 CFR 172.804.

(H) Hazardous material shipper or carrier registration--49 CFR part 107: subpart G, 49 CFR 107.600 through 49 CFR 107.606.

(ii) The licensee shall also note DOT regulations pertaining to the following modes of transportation:

(A) Rail--49 CFR part 174: subparts A through D, 49 CFR 174.1 through 49 CFR 174.86, and K, 49 CFR 174.700 through 49 CFR 174.750.

(B) Air--49 CFR part 175.

(C) Vessel--49 CFR part 176: subparts A through F, 49 CFR 176.1 through 49 CFR 176.99, and M, 49 CFR 176.700 through 49 CFR 107.720.

(D) Public Highway--49 CFR part 177 and parts 390 through 397.

(b) If DOT regulations are not applicable to a shipment of licensed material, the licensee shall conform to the standards and requirements of the DOT specified in Subsection R313-19-100(5)(a) as if the shipment or transportation were subject to DOT regulations. A request for modification, waiver, or exemption from those requirements, and any notification referred to in those requirements, shall be filed with, or made to, the Director, PO Box 144850, Salt Lake City, Utah 84114-4850.

KEY: licenses, reciprocity, transportation, exemptions
Date of Last Change: May 16, 2022
Notice of Continuation: April 8, 2021
Authorizing, and Implemented or Interpreted Law: 19-3-104; 19-6-104

WASTE MANAGEMENT AND RADIATION CONTROL BOARD

Executive Summary

Public Comment -- Proposed Rule Changes

UAC R315-101

September 8, 2022

What is the issue before the Board?	Approval from the Board to proceed with formal rulemaking and public comment on proposed changes to R315-101 of the hazardous waste rules amending the rule to include the most up-to-date methods and procedures being used by industry to conduct cleanups of contaminated sites and risk assessments based on EPA guidance.
What is the historical background or context for this issue?	The revised Rule R315-101 was submitted to the Office of Administrative Rules in November of 2021 and underwent a 45-day comment period. After responding to comments and working with several commentors and stakeholders to make additional revisions to the rule, the revised rule has been prepared for submission to the Office of Administrative Rules for a second time. Rule R315-101 establishes information requirements to support risk-based cleanup and closure standards at sites for which remediation or removal of hazardous constituents to background levels is not the remediation objective. The procedures in Rule R315-101 also provide for continued management of sites for which risk-based clean closure standards are not met. The current rule contains limited information and is not clear in its' requirements resulting in confusion and inconsistent interpretations. The revised rule provides consistency in interpretations and requirements needed to conduct risk assessments. The changes to the rule are summarized below. The amended rule provides several available approaches for conducting risk assessments allowing regulated entities to choose the approach that best fits their situation. The rule is being amended to adequately address groundwater at all contaminated sites. The amended rule spells out a hierarchy of toxicological sources that are scientifically defensible for use in risk assessment evaluation. The amended rule provides more details, requirements and information resources that are needed to conduct an acceptable ecological risk assessment. The amended rule defines what an acceptable risk assessment needs to contain and provides clear risk management options available depending on the level of risk.

	The amended rule provides a well-defined interpretation of the term No Further Action (NFA) with regards to the level of risk at a site and the land use exposure scenario. The requirements for drafting a site management plan (SMP) as well as termination are clearly provided. There is a section in the amended rule that contains a list of guidance documents and other resources that are incorporated by reference into the rule and a section that provides clear definitions of terms used in the rule. The Rule Analysis Form with proposed changes to R315-101 follow this Executive Summary.
What is the governing statutory or regulatory citation?	The Board is authorized under Subsection 19-6-105 to make rules that establish minimum standards for protection of human health and the environment. The rule changes also meet existing DEQ and state rulemaking procedures.
Is Board action required?	Yes. Board approval is necessary to begin the formal rulemaking process by filing the appropriate documents with the Office of Administrative Rules for publishing the proposed rule changes in the *Utah State Bulletin* and conducting a public comment period.
What is the Division Director's recommendation?	The Director recommends the Board approve proceeding with formal rulemaking and public comment by publishing in the October 1, 2022, *Utah State Bulletin* the proposed changes to UAC R315-101 and conducting a public comment period from October 1 to October 31, 2022.
Where can more information be obtained?	Please contact Tom Ball at (801) 536-0251, tball@utah.gov

State of Utah
Administrative Rule Analysis
Revised June 2022

NOTICE OF PROPOSED RULE		
TYPE OF RULE: New ___; Amendment _X__; Repeal ___; Repeal and Reenact ___		
Title No. - Rule No. - Section No.		
Rule or Section Number:	**R315-101**	**Filing ID: Office Use Only**

Agency Information

1. Department:	Environmental Quality	
Agency:	Waste Management and Radiation Control	
Room number:		
Building:	MASOB	
Street address:	195 N. 1950 W.	
City, state and zip:	Salt Lake City, Utah 84116	
Mailing address:	P.O. Box 144880	
City, state and zip:	Salt Lake City, Utah 84114-4880	
Contact persons:		
Name:	**Phone:**	**Email:**
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:

R315-101. Cleanup Action and Risk-Based Closure Standards.

3. Purpose of the new rule or reason for the change (Why is the agency submitting this filing?)**:**

Rule R315-101 is being amended to include the most up-to-date methods and procedures being used by industry to conduct cleanups of contaminated sites and risk assessments based on EPA guidance.

4. Summary of the new rule or change (What does this filing do? If this is a repeal and reenact, explain the substantive differences between the repealed rule and the reenacted rule)**:**

The current rule contains limited information and is not clear in its' requirements resulting in confusion and inconsistent interpretations. The revised rule provides consistency in interpretations and requirements needed to conduct risk assessments. The rule is being amended to provide several available approaches for conducting risk assessments allowing regulated entities to choose the approach that best fits their situation.
Contaminated groundwater is not adequately addressed in the current rule. The rule is being amended to adequately address groundwater at all contaminated sites.
The amended rule spells out a hierarchy of toxicological sources that are scientifically defensible for use in risk assessment evaluation.
The amended rule provides more details, requirements and information resources that are needed to conduct an acceptable ecological risk assessment.
The amended rule defines what DEQ considers to be an acceptable risk range and the target risk considered to be the point of departure. The amended rule also provides clear risk management options available depending on the level of risk. The interpretation of the term No Further Action (NFA) is well defined with regards to the level of risk at a site and the land use exposure scenario. The requirements for drafting a site management plan (SMP) as well as termination are clearly provided. There is a section in the amended rule that contains a list of guidance documents and other resources that are incorporated by reference into the rule and a section that provides clear definitions of terms used in the rule.

Fiscal Information

5. Provide an estimate and written explanation of the aggregate anticipated cost or savings to:

A) State budget:

It is not anticipated that there will be any cost or savings to the state budget due to this rule amendment. There will be no change to the procedures and manpower used by the State to review risk assessments and cleanup plans that are based on the amended rule. Any State agencies that may be or may need to perform cleanups or risk assessments would be required to do so under the existing rule. This amendment does not add any requirements to the rule that would increase costs, nor does it remove any requirements that would decrease costs.

B) Local governments:

It is not anticipated that there will be any cost or savings to local governments due to this rule amendment. Any local governments that may be or may need to perform cleanups or risk assessments would be required to do so under the existing rule. This amendment does not add any requirements to the rule that would increase costs, nor does it remove any requirements that would decrease costs.

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

It is not anticipated that there will be any cost or savings to small businesses due to this rule amendment. Any small businesses that may be or may need to perform cleanups or risk assessments would be required to do so under the existing rule. This amendment does not add any requirements to the rule that would increase costs, nor does it remove any requirements that would decrease costs.

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

It is not anticipated that there will be any cost or savings to non-small businesses due to this rule amendment. Any non-small businesses that may be or may need to perform cleanups or risk assessments would be required to do so under the existing rule. This amendment does not add any requirements to the rule that would increase costs, nor does it remove any requirements that would decrease costs.

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***)**:**

It is not anticipated that there will be any cost or savings to persons other than small businesses, non-small businesses, state, or local government entities due to this rule amendment. Any persons other than small businesses, non-small businesses, state, or local government entities that may be or may need to perform cleanups or risk assessments would be required to do so under the existing rule. This amendment does not add any requirements to the rule that would increase costs, nor does it remove any requirements that would decrease costs.

F) Compliance costs for affected persons (How much will it cost an impacted entity to adhere to this rule or its changes?)**:**

Because this is an amendment to an existing rule and the changes to the rule do not significantly change how cleanups and risk assessments are conducted under the rule it is not anticipated that the compliance costs for affected persons will change due to the rule amendments.

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	**FY2023**	**FY2024**	**FY2025**
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	**FY2023**	**FY2024**	**FY2025**
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 comments on fiscal impact and approval of regulatory impact analysis:

The head of the Department of Environmental Quality, Kimberly D. Shelley, has reviewed and approved this fiscal analysis.

Citation Information

6. Provide citations to the statutory authority for the rule. If there is also a federal requirement for the rule, provide a citation to that requirement:

19-6-105	19-6-106	

Incorporations by Reference Information

7. Incorporations by Reference (if this rule incorporates more than two items by reference, please include additional tables)**:**

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*)**:**

Official Title of Materials Incorporated (from title page)	Groundwater Statistics and Monitoring Compliance
Publisher	Interstate Technology Regulatory Council (ITRC)
Date Issued	December 2013
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*)**:**

Official Title of Materials Incorporated (from title page)	ECO-Risk Database
Publisher	Los Alamos National Laboratory (LANL)
Date Issued	2011
Issue, or version	

C) 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*)**:**

Official Title of Materials Incorporated (from title page)	Toxicological Benchmarks for Wildlife: 1996 Revision
Publisher	Oakridge National Laboratory (ORNL)
Date Issued	1996
Issue, or version	1996

D) 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*)**:**

Official Title of Materials Incorporated (from title page)	A Guide to the ORNL Ecotoxicological Screening Benchmarks: Background, Development, and Application
Publisher	Oakridge National Laboratory (ORNL)
Date Issued	May 1998
Issue, or version	Revision 1

E) 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*)**:**

Official Title of Materials Incorporated (from title page)	Guidelines for the Health Risk Assessment of Chemical Mixtures
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	1986
Issue, or version	

F) 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*)**:**

Official Title of Materials Incorporated (from title page)	Risk Assessment Guidance for Super Fund Volume 1: Human Health Evaluation Manual (Part A)
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	1989
Issue, or version	Interim Final

G) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Risk Assessment Guidance for Super Fund Volume 1: Human Health Evaluation Manual Supplemental Guidance Standard Default Exposure Factors
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	March 25, 1991
Issue, or version	Interim Final

H) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Risk Assessment Guidance for Super Fund Volume 1: Human Health Evaluation Manual (Part B Development of Risk-based Preliminary Remediation Goals)
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	December 1991
Issue, or version	Interim Final

I) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Wildlife Exposure Factors Handbook, Volume I of II
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	December 1993
Issue, or version	

J) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Supplemental Guidance to RAGS: Calculating the Concentration Term
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	May 1992
Issue, or version	

K) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Framework for Ecological Risk Assessment
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	February 1992
Issue, or version	

L) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Wildlife Exposure Factors Handbook, Appendix: Literature Review Database, Volume II of II
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	December 1993
Issue, or version	

M) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Soil Screening Guidance Technical Background Document
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	May 1996
Issue, or version	

N) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	June 1997
Issue, or version	Interim Final

O) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Guidelines for Ecological Risk Assessment
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	April 1998
Issue, or version	

P) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	August 2000
Issue, or version	

Q) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	2001
Issue, or version	Final

R) 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*)**:**	
Official Title of Materials Incorporated (from title page)	EPA Requirements for Quality Management Plans
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	2001
Issue, or version	

S) 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*)**:**

Official Title of Materials Incorporated (from title page)	Risk Assessment Guidance for Superfund: Volume III - Part A, Process for Conducting Probabilistic Risk Assessment
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	December 2001
Issue, or version	

T) 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*)**:**

Official Title of Materials Incorporated (from title page)	Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	2002
Issue, or version	

U) 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*)**:**

Official Title of Materials Incorporated (from title page)	Guidance for Quality Assurance Project Plans
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	December 2002
Issue, or version	

V) 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*)**:**

Official Title of Materials Incorporated (from title page)	Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	December 2002
Issue, or version	December 2002(a)

W) 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*)**:**

Official Title of Materials Incorporated (from title page)	Guidance for Developing Ecological Soil Screening Levels
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	November 2003
Issue, or version	February 2005

X) 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*)**:**

Official Title of Materials Incorporated (from title page)	Human Health Toxicity Values in Superfund Risk Assessment
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	December 2003
Issue, or version	

Y) 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*)**:**

Official Title of Materials Incorporated (from title page)	User’s Guide for Evaluating Subsurface Vapor Intrusion into Buildings

Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	February 2004
Issue, or version	February 22, 2004

Z) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Model (Part E, Supplemental Guidance for Dermal Risk Assessment)
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	July 2004
Issue, or version	Final

AA) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Guidelines for Carcinogen Risk Assessment
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	March 2005
Issue, or version	March 2005(b)

BB) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	March 2005
Issue, or version	March 2005(c)

CC) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Guidance on Systematic Planning Using the Data Quality Objectives Process
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	February 2006
Issue, or version	

DD) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	January 2009
Issue, or version	Final

EE) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance
Publisher	United States Environmental Protection Agency (US EPA)

Date Issued	March 2009
Issue, or version	Rinal

FF) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Risk Assessment Guidance for Super Fund Volume 1: Human Health Evaluation Manual (Part C, Risk Evaluation of Remedial Alternatives)
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	December 1991
Issue, or version	Interim

GG) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Exposure Factors Handbook: 2011 Edition
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	September 2011
Issue, or version	2011

HH) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Superfund Vapor Intrusion FAQs
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	February 2012
Issue, or version	

II) 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*)**:**	
Official Title of Materials Incorporated (from title page)	ProUCL Version 5.1 Technical Guide Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	October 2015
Issue, or version	

JJ) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	February 2014
Issue, or version	

KK) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Vapor Intrusion Screening Level (VISL) Calculator User's Guide
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	May 2014

Issue, or version	

LL) 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*)**:**	
Official Title of Materials Incorporated (from title page)	OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	June 2015
Issue, or version	

MM) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	June 2015
Issue, or version	

NN) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Update of Ecological Soil Screening Level (Eco-SSL) Guidance and Contaminant Specific Documents
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	March 2005
Issue, or version	

OO) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Guidelines for Mutagenicity Risk Assessment
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	September 1986
Issue, or version	

PP) 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*)**:**	
Official Title of Materials Incorporated (from title page)	Establishing Background Levels
Publisher	United States Environmental Protection Agency (US EPA)
Date Issued	September 1995
Issue, or version	

Public Notice Information

8. 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. See Section 63G-3-302 and Rule R15-1 for more information.)

A) Comments will be accepted until:	10/31/2022

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

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

9. This rule change MAY become effective on:	11/14/2022
NOTE: The date above is the date the agency anticipates making the rule or its changes effective. It is NOT the effective date.	

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:	Douglas J. Hansen, Division Director	**Date:**	mm/dd/yyyy

R315. Environmental Quality, Waste Management and Radiation Control, Waste Management.
R315-101. Cleanup Action and Risk-Based Closure Standards.
R315-101-1. Purpose, Applicability.

(a) Purpose. Rule R315-101 establishes information requirements to support risk-based cleanup and closure standards at sites for which remediation, including [~~or~~]removal of hazardous constituents to background levels [~~will not be achieved~~]is not the remediation objective. The procedures in [~~this rule~~]Rule R315-101 also provide for continued management of sites for which [~~minimal~~]risk-based clean closure standards [~~cannot be~~]are not met.

(b) Applicability.

(1) Rule R315-101 [~~is applicable~~]applies to any responsible party, or other interested party on a voluntary basis, such as a prospective purchaser, a lending institution, or land developer, involved in management of a site contaminated with hazardous waste,[~~or~~] hazardous constituents, or other contaminants, as determined by the director. [~~This r~~]Rule R315-101 does not apply to a site that has been or will be cleaned to background levels of constituents.

(2) In the event of a release of hazardous waste or material [~~which~~]that, when released, becomes hazardous waste, [~~these~~]the requirements of Rule R315-101 apply if the responsible party fails to clean up [~~all~~]the released material and any residue or contaminated soil, water, or other material resulting from the release, as required by Section R315-263-31. The requirements of Section R315-263-31 shall be considered met if:

(i) [~~If~~] the level of cumulative risk present at the site is [~~below~~]less than or equal to 1×10^{-6} for carcinogens and [~~a~~]the [~~H~~]hazard [~~I~~]index [~~of~~]is less than or equal to one for non-carcinogens based on [~~the~~]a risk assessment conducted [~~in accordance with~~] assuming the land use exposure scenario defined in Subsection R315-101-5[~~.2(b)~~](g)(1);

(ii) [~~and~~] the [~~D~~]director determines that ecological effects are insignificant based on the approved assessment conducted in accordance with Subsection R315-101-5[~~.3(a)(8)~~](j); and

(iii) [~~, the requirements of R315-9-3 shall be considered met~~] the director determines that current and potential future impacts to groundwater are insignificant in accordance with Subsection R315-101-5(f)(8).

(3) [~~The owner or operator of a hazardous waste management facility or a facility subject to interim status requirements shall meet the requirements of 40 CFR 265.110 through 120, incorporated by reference in Rule R315-265, and Sections R315-264-110 through 120 prior to implementation of any activities described in R315-101. The requirements of Subsections R315-270-1(c)(5) and (6) shall be met for a hazardous waste management unit if the level of risk present at the site is below 1×10^{-6} for carcinogens and a Hazard Index of less than or equal to one for non-carcinogens based on the risk assessment conducted in accordance with R315-101-5.2(b)(1) and the Director determines that ecological effects are insignificant based on the approved assessment conducted in accordance with R315-101-5.3(a)(8). If these risk exposure criteria are met, a request for a risk-based closure may be submitted to the Director for review.~~]The responsible party of a hazardous waste management site shall meet the requirements of Sections R315-265-110 through R315-265-120 or Sections R315-264-110 through R315-264-120, as applicable, prior to implementation of any activities described in Rule R315-101.

(4) [~~If the risk present at the site is greater than the exposure limit as defined in R315-101-1(b)(2) or (3) or the Director determines that ecological effects may be significant, then a risk-based closure will not be granted and appropriate management will be required and may include corrective action, post-closure care, monitoring, deed restrictions, and security of the site. For determinations of appropriate corrective action or management activities at a site, the following criteria shall be considered in order of importance:~~

~~(a) The impact or potential impact of the contamination on the human health;~~

~~(b) The impact or potential impact of the contamination on the environment;~~

~~(c) The technologies available for use in clean-up; and~~

~~(d) Economic considerations and cost-effectiveness of clean-up options~~]The requirements of Subsections R315-270-1(c)(5) and R315-270-1(c)(6) shall be considered met for a hazardous waste management unit or solid waste management unit if:

(i) the level of risk, cumulative, present at the site is less than or equal to 1×10^{-6} for carcinogens and a hazard index of less than or equal to one for non-carcinogens, based on the risk assessment conducted, assuming the land use exposure scenario defined in Subsection R315-101-5(g)(1);

(ii) the director determines that ecological effects are insignificant based on the approved assessment conducted in accordance with Subsection R315-101-5(j); and

(iii) the director determines that current and potential future impacts to groundwater are insignificant in accordance with Subsection R315-101-5(f)(8).

(5) If these risk criteria are met, a request for a risk-based clean closure in accordance with Subsection R315-101-(7)(a) may be submitted to the director for review and approval.

(6) If the level of risk, cumulative, present at the site is greater than the limits defined in Subsections R315-101-1(b)(2) or R315-101-1(b)(4) or the director determines that ecological effects may be significant in accordance with Subsection R315-101-5(j), or current and potential future impact to groundwater is significant in accordance with Subsection R315-101-5(f)(8), then a risk-based clean closure shall not be granted. Either corrective action, as determined in accordance with Section R315-101-6 and as defined in Subsection R315-101-13(a)(21), appropriate site management as defined in Subsection R315-101-13(a)(6) and as determined in Subsections R315-101-7(b) and R315-101-7(c), or both, shall be required.

(c) For determination of appropriate corrective action at a site, the following criteria shall be considered in order of importance:

(1) the impact or potential impact of the contamination on human health;

(2) the impact or potential impact of the contamination on the environment;

(3) the technologies available for use in cleanup; and

(4) economic considerations and cost-effectiveness of cleanup options.

(d) The responsible party shall follow applicable guidance documents, including Utah and federal risk assessment guidance and methods approved by the director, as set forth in Rule R315-101.

R315-101-2. Stabilization of Releases.

(a) The responsible party [~~must~~]shall immediately take appropriate action to stabilize the site either through source removal or source control. [~~After the responsible party has attempted to complete the requirements of Sections R315-263-30 through 33 and the Director determines that additional work is needed to stabilize the site, the Director will notify the responsible party that additional work is necessary and provide the responsible party with objectives to be addressed in developing a work plan to further stabilize the site. The work plan shall be submitted to the Director for review and approval within fifteen days of receiving notification that additional work will be necessary to complete the emergency actions required by Sections R315-263-30 through 33. Work plans shall be of a scope commensurate with the work to be performed and site-specific characteristics. This work plan shall include a description of the interim measure and how it will meet the criteria of source removal or source control. The implementation of the work plan shall be according to the schedule contained within the approved plan. All interim measures shall be at the expense of the party responsible for the site. If the party responsible for the site fails to take the measures required for stabilizing the site, the Director may request the Executive Director of the Department to take abatement and cost recovery actions as provided in Section 19-6-301, et seq., Utah Hazardous Substances Mitigation Act~~]If the director determines that the action taken is insufficient to meet the requirements of Section R315-263-30, the responsible party shall submit a work plan pursuant to Subsection R315-101-2(b) to the director for approval within 60 days of receiving notice from the director.

(b) The work plan shall:

(1) define the scope of work to be performed;

(2) include a description of the interim measures and other corrective actions to be taken; and

(3) include a description of how the plan shall meet the criteria of source removal or source control.

(c) The responsible party shall implement the work plan in accordance with the schedule contained in the approved plan. The responsible party shall implement interim measures or other corrective actions as approved. If the responsible party fails to take the measures required for stabilizing the site, the director may request the executive director of the Department of Environmental Quality to take abatement and cost recovery actions as provided in Sections 19-6-301 to 19-6-326 of the Utah Hazardous Substances Mitigation Act.

R315-101-3. Principle of Non-degradation.

(a) When closing or managing a contaminated site that has been stabilized in accordance with Section R315-101-2, the responsible party shall, to the extent practicable in accordance with Subsection R315-101-1(c), not allow the mass of contaminants in the source area to increase. [~~I~~]Levels of contamination in groundwater, regardless of quality, [~~surface water, soils, and air to~~]shall not increase beyond the existing levels of contamination at a site at the time the responsible party has defined the nature and extent of contamination pursuant to Section R315-101-4. Consideration will be given to naturally occurring variations in groundwater contaminant concentrations, natural groundwater flow, and dispersion.[~~when site management commences.~~]

(b) The responsible party [~~will~~]shall demonstrate compliance with [~~this policy~~]Subsection R315-101-3(a) by submitting appropriate [~~monitoring data~~]sampling or other data as may be required by the [~~D~~]director.

(c) If at any time the level of contamination increases to a significant level, as determined by the director on a case-by-case basis, the responsible party shall take [~~immediate corrective~~]action, as determined by the director, such as source removal or source control, to prevent further degradation of [~~any medium~~]groundwater. A work plan addressing interim action or other corrective action to mitigate the situation shall be submitted to the director for review and approval.

R315-101-4. Site Characterization, Data Collection and Documentation.

[~~The following information shall be collected to characterize the site, and define site boundaries and Area(s) of Contamination:~~

~~(a) A legal description of the site;~~

~~(b) Historical land use and ownership of the site;~~

~~(c) Topographical map(s) of sufficient detail, scale, and accuracy to depict and locate all past and current physical structures~~

~~including all building(s) and waste activities at the site;~~

~~(d) Information and maps of sufficient detail, scale, and accuracy to describe regional, local, and site geology, surface water, and hydrogeological conditions;~~

~~(e) An inventory of all current and past wastestreams managed at the site, including process descriptions and suspected contamination source information;~~

~~(f) Background levels of suspected hazardous constituents based on the inventory as determined in R315-101-4(e) in media of concern, e.g. sediments, soil, groundwater, surface water, and air which are representative of the site; and~~

~~(g) Location and boundaries of all Area(s) of Contamination, including concentrations, types and extent of hazardous constituents. Media to be sampled may include sediments, soil, groundwater, surface water, and air, as applicable.~~]

(a) Purpose. The intent of a site investigation or characterization is to define the nature and extent of all impacted environmental media, whether on-site or off-site. A phased approach to site characterization may be conducted as applicable on a case-by-case basis. These data shall be collected as part of an initial site investigation to define the nature and extent of potential contamination. The known or suspected history of past or current operations at the facility, in any environmental media shall be considered. Site characterization may also include data collected to demonstrate efficacy of a corrective action remedy pursuant to Section R315-101-6. Prior to the collection of any data that shall be used in a site characterization, corrective action, or post-remedial corrective action risk assessment, the responsible party shall develop and submit a work plan to the director for review and approval. The work plan shall include the following:

(1) sampling and analysis plan specifying methods and procedures to be used for data collection and analysis as outlined in Section R315-261-1090, Appendix I, and in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" EPA Publication SW-846, available at the EPA Hazardous Waste Test Methods/SW-846 website;

(i) Samples shall be analyzed by a Utah certified laboratory using procedures and methods in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" EPA Publication SW-846, available at the EPA Hazardous Waste Test Methods/SW-846 website.

(ii) Analysis not available in Utah or methods not contained in Subsection R315-101-4(a)(1)(i) may be reviewed and approved by the director.

(iii) Documentation for laboratory work shall include the data accompanied by quality assurance and quality control measures taken in accordance with current environmental laboratory standards for a level III data package, or other QA/QC data level as determined by the director on a site-specific basis.

(2) representative proposed media sample locations with depths, sample analytes and justification that the proposed sampling is sufficient to define the nature and extent of contamination;

(i) Surface soil is defined as surface or zero to a maximum of six inches below ground surface, or as determined on a case-by-case basis.

(ii) Subsurface soils is defined as greater than six inches below ground surface, or as determined on a case-by-case basis.

(3) conceptual site model for a site-specific characterization, identifying and showing potential primary source areas, media of concern, contaminant release mechanism, receptors of interest, exposure pathways and possible contaminant migration pathways. Media may include sediments, soil, biota, groundwater, surface water, and air as applicable based on current site conditions;

(4) data quality objective process steps related to the implementation of the sampling and analysis plan in accordance with "Guidance on Systematic Planning Using the Data Quality Objectives Process," EPA QA/G-4, EPA/240/B-06/001, as incorporated by reference in Section R315-101-12;

(5) quality assurance project plan for field procedures, chain-of-custody and laboratory analytical methods to be used for the sampled media; and

(6) field quality assurance and quality control procedures to characterize and dispose of any investigation derived waste in an appropriate manner, including a plan for decontamination procedures, field instrument calibration procedures, any standard operating procedures and other relevant documentation.

(b) Background levels. Based on the site characterization sampling results, the responsible party may determine or propose background levels of suspected hazardous constituents and may follow or consider procedures in the Soil Background and Risk Guidance document available on the Interstate Technology Regulatory Council website. The constituent list may be based on the inventory as determined in Subsection R315-101-4(c)(5) in media of concern, including; sediments, soil, groundwater, surface water, and air that are representative of the site.

(c) Additional information. The following additional information shall be collected to characterize the site and to define site boundaries and areas of contamination:

(1) a description of the site, including legal boundaries;

(2) historical land use and ownership of the site, including existing aerial photos of the site through time if requested by the director;

(3) topographical and other relevant maps of sufficient detail, scale, and accuracy to depict and locate each past and current physical structure including any buildings and waste activities at the site;

(4) information and maps of sufficient detail, scale, and accuracy to describe regional, local, and site geology, surface water, groundwater and groundwater quality, drainage features and other hydrogeological conditions;

(5) an inventory of each current and past waste stream managed at the site, hazardous waste management units, areas of concern and solid waste management units at the site, including process descriptions, amounts and types of waste generated and disposed and suspected contamination source information;

(6) location and boundaries of areas of concern including any hazardous waste management units and solid waste management

units;

(7) any past sampling results, and an inventory of any releases, discharges and spills;

(8) available information such as reports and data on any previous corrective actions; and

(9) a list of all off-site property owners whose property has been or may have been affected by the release of contaminants for which the responsible party is responsible. This list shall include the name and address of each property owner and shall identify the current land use of each property.

(d) Petroleum wastes and total petroleum hydrocarbon.

At sites where petroleum wastes may be present, the media samples shall be analyzed for volatile organic compounds, semi-volatile organic compounds including Poly Aromatic Hydrocarbons (PAHs), and total metals.

(e) The responsible party may propose other analytical suites for the impacted media for review and approval by the director. This shall include Polychlorinated Biphenyls (PCBs), dioxins and furans, and any other emerging contaminant of concern, as determined on a case-by-case basis, based on the history of the site and activities.

(f) Relevant information gathered in Subsections R315-101-4(a) through R315-101-4(e) shall be submitted in a site characterization report to the director for review and approval. In addition, the site characterization report shall include:

(1) site location, legal description and objectives of the site investigation;

(2) methodology and field activities completed, including the handling of any investigation-derived wastes;

(3) maps of sufficient detail and accuracy to depict waste management units, areas of contamination, nature and extent of contamination, topography, geology, groundwater quality, and potentiometric surface;

(4) site and regional geological, hydrogeological, and hydrological descriptions;

(5) a detailed discussion of any areas of contamination found during the site characterization field work;

(6) listing and concentrations of any historic and current hazardous constituents identified in Section R315-101-4;

(7) background levels of hazardous constituents, including details of statistical methods used to analyze the data gathered, if applicable;

(8) the hazardous constituents identified in accordance with Subsections R315-101-4(f)(6) and R315-101-4(f)(7) shall be known as contaminants of interest;

(9) descriptions of historic and current releases of hazardous constituents and expected extent of migration from the areas of contamination;

(10) deviations from the approved site characterization work plan and the sampling and analysis plan;

(11) discussion of the evaluated potential exposure pathways including groundwater, surface water, sediments, surface and sub-surface soils and air;

(12) a summary outlining the completion of data quality objectives, completed analytical request forms for each analysis performed reported on dry weight basis, actual sampling locations and depths with justification for variations to the approved sampling and analysis plan, any statistical analysis performed if completed, and quality assurance and quality control results and analytical data validation report in accordance with current environmental laboratory standards for a level II data package, or other QA/QC data level, as determined by the director on a site-specific basis;

(13) revised conceptual site model identified in Subsection R315-101-4(a)(3) based on the information presented in the final site characterization report; and

(14) conclusions and recommendations for additional site work and applicable supporting documentation, including figures, tables, and appendices.

(15) Groundwater, on-site or off-site, shall be considered impacted if contaminant levels are above screening levels as defined in Subsection R315-101-5(f)(1)(vii) or maximum contaminant levels.

(g) Additional site characterization data shall be collected after corrective action or other remedial actions. The confirmation data shall be used to support a closure risk assessment.

R315-101-5. Human Health and Ecological Risk Evaluation Criteria[~~,~~] and Risk Assessment.

[~~5.1 REQUIRED STUDY~~]

(a) When conducting the risk assessment, the responsible party [~~will use all applicable site characterization data and shall consider the following parameters~~]shall use the conceptual site model, as defined in Subsection R315-101-13(a)(15) and as described in Subsections R315-101-4(a)(3) or R315-101-4(f)(13), as applicable, and shall use applicable site characterization or confirmation data. For the areas of contamination as defined in Subsection R315-101-13(a)(7), the following shall be included when conducting the risk assessment:

(1) identification, concentration, and distribution of [~~all~~]any suspected hazardous constituents identified in [~~Subs~~]Section R315-101-4[~~(c)~~] and defined as contaminants of interest in Subsection R315-101-4(f)(8);

[~~(2) All area(s) of contamination at the site;~~]

[~~(3)~~](2) fate of contaminants of interest and any pathways [~~of contaminant~~]and transport of contaminants of interest;[~~and~~]

[~~(4) Potentially exposed populations.~~](3) any potential exposure routes;

(4) human receptors; and

(5) ecological receptors.

[~~5.2~~](b) [~~CHARACTERIZATION AND EVALUATION OF RISK~~]General Human Health Risk Assessment Methodology.

[~~(a)~~](1) A risk assessment shall be conducted once the nature and extent of contamination has been adequately defined or corrective action completed. The risk assessment may be performed for impacted media by choosing either a Tier 1 approach in accordance with

Subsection R315-101-5(f) or a Tier 2 risk assessment process in accordance with Subsection R315-101-5(g). Tier 1 shall be a screening risk assessment and Tier 2 shall be a refined risk assessment that may include site-specific exposure assumptions and allowance for alternative approaches, such as a Monte Carlo exposure risk analysis, probabilistic risk assessment. If excess risks are noted for the Tier 1 assessment a Tier 2 assessment is required.[~~The responsible party shall conduct a risk assessment which includes the following:~~]

(2) The concentration term for each medium and for each contaminant of interest identified in Section R315-101-4 and Subsection R315-101-4(f)(8) and determined to be a contaminant of potential concern following comparison to background shall be evaluated using either the maximum detected concentration or an upper confidence limit as derived using the US EPA ProUCL program.

(3) The fate, pathways, and transport of contaminants of interest identified in Section R315-101-4, defined in Subsection R315-101-4(f)(8), and determined to be a contaminant of potential concern following comparison to background, shall be evaluated using the conceptual site model developed pursuant to Subsections R315-101-4(a)(3) or R315-101-4(f)(13), as applicable and approved by the director.

~~[(1) The concentration term "C" for each medium for each hazardous constituent identified in R315-101-5.1(a)(1);~~

~~(2) Evaluation of the fate of contaminants and of all pathways of contaminant transport identified in R315-101-5.1(a)(3);~~

~~(3) Exposure assessment identifying the RME for all exposure pathways, intakes, and identified constituents;~~

~~(4) Current toxicity information for carcinogenic and noncarcinogenic effects;~~

~~(5) Risk characterization identifying carcinogenic risk, individual and multiple substances, and noncarcinogenic hazardous index, individual and multiple substances;~~

~~(6) An ecological evaluation which provides for terrestrial and aquatic processes; and~~

~~(7) Current toxicity information for all the constituents and biological processes relevant to the ecological evaluation.~~

~~(b) The risk assessment shall be conducted using one or both of the standard exposure scenarios listed below, as needed to determine site management options:~~

~~(1) Residential. This exposure scenario includes ingestion of water (must include surface water and ground water regardless of water quality), ingestion of soil and dust, ingestion of contaminated and potentially contaminated food, inhalation of contaminants, dermal contact with chemicals in soil, and dermal contact with chemicals in water for a human being ages zero through 70 years old using the equations and default variable values found in the Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual Supplemental Guidance, "Standard Default Exposure Factors", Interim Final, OSWER Directive 9285.6-03, March 25, 1991 or most recent edition;~~

~~(2) Actual land use conditions or potential land use conditions based upon applicable zoning and future land use planning considerations, if potential land use conditions offer a more protective exposure scenario than actual land use conditions. This exposure scenario involves an assessment based on actual site conditions using standard default variable values. The potential land use exposure scenario should include a conceptual model including current site conditions, expected future conditions based upon site specific physical and chemical information, and the assumption that contaminated media will not have undergone any remedial engineering.~~

~~5.3 DATA PRESENTATION~~

~~(a) A risk assessment report shall be submitted to the Director and must include at a minimum the following:~~

~~(1) An executive summary;~~

~~(2) An overview of the site and the areas of contamination;~~

~~(3) A site characterization report which includes:~~

~~(i) Maps of sufficient detail and accuracy to depict areas of contamination, topography, geology, and groundwater contours or potentiometric surface;~~

~~(ii) Site and regional geological and hydrological descriptions;~~

~~(iii) A detailed discussion of areas of contamination;~~

~~(iv) Background levels of hazardous constituents including details of statistical methods used to determine background; and~~

~~(v) Descriptions of releases of hazardous constituents and expected extent of migration from the area of contamination.~~

~~(4) Identification and concentration of hazardous constituents identified in R315-101-5.1(a)(1). A sampling and analysis plan shall be prepared and utilized for the collection of all data. This plan shall be developed using procedures and methods outlined in Section R315-261-1090 and the most current version of "SW-846, Test Methods for Evaluating Solid Waste." It shall contain a summary outlining data quality objectives, completed analytical request forms for all analysis performed, dry weight equivalents, sampling location identification and justification, standard operating procedures used for data collection, all statistical analysis performed, quality assurance and quality control plans (QA/QC plan) and QA/QC results, instrument calibration results, and analytical methods including constituent detection limits;~~

~~(5) Exposure assessment identifying exposure levels for all exposure pathways identified in R315-101-5.2(a)(3). If fate and transport models are used, the users manual, model theory, computer software for the model, installation verification data set for the model and parametric analysis of the input parameters must be provided upon request of the Director;~~

~~(6) Identification of toxicity information gathered for all identified hazardous constituents for carcinogenic, slope factors and weight of evidence classification, noncarcinogenic effects, chronic reference doses (RfDs) and critical effects associated with RfDs from, in order of preference, the Integrated Risk Information System (IRIS), Health Effects Assessment Summary Tables (HEAST), Agency for Toxic Substances and Disease Registry (ATSDR) toxicological profiles, Environmental Criteria and Assessment Office (ECAO), or other scientifically accepted listings. The source and date of the toxicological information must be identified and be acceptable to the Director;~~

~~(7) The risk characterization identifying carcinogenic risk, individual and multiple substances, noncarcinogenic hazardous index, individual and multiple substances, chronic hazard quotient, subchronic hazard quotient, uncertainties, and a tabulation of all risk characterization data presented in a format approved by the Director; and~~

~~(8) Unless justification is provided to the Director, and a waiver of this requirement is granted by the Director in writing, an~~

~~ecological assessment of the site which contains at least the following:~~

~~(i) An inventory of the current biological community;~~

~~(ii) Estimates of ecological effects based on a subset of ecological endpoints;~~

~~(iii) The magnitude and variation of toxic effects; and~~

~~(iv) Identification of extent of effects, specifically from the presence of hazardous waste.~~

~~(b) If the risk assessment report does not contain all required information of sufficient quality and detail, the Director will notify the responsible party in writing of the deficiencies and require resubmittal of the report in a designated time frame.~~

~~(c) If the risk assessment report contains all required information of sufficient quality and detail, the Director will approve the risk assessment report in writing.~~]

(c) The exposure scenarios identified in the conceptual site model shall be estimated using reasonable maximum exposure parameters and shall be based on both current and potential future anticipated land use and receptors defined in Subsections R315-101-5(g)(1) and R315-101-5(g)(2).

(d) The conceptual site model shall include a determination as to whether or not each of the following pathways is complete under both current and anticipated future conditions. Risks shall be quantified for those receptors where exposure pathways have a reasonable potential for being complete unless it may be demonstrated that the risk is less significant when compared to other quantified receptor risks.

(1) Potential exposure pathways for surficial soils include:

(i) leaching to groundwater;

(ii) migration to a surface water body; and

(iii) human exposure through ingestion of soil, dermal contact with soil, inhalation of vapors and particulates emitted by surficial soils.

(2) Potential exposure pathways for subsurface soils include:

(i) leaching or vapor migration, including sinking vapors, to groundwater;

(ii) migration to a surface water body;

(iii) volatilization and upward migration of vapors from subsurface soil and potential indoor or outdoor inhalation of these emissions; and

(iv) human exposure through ingestion of soil, dermal contact, inhalation of vapors and particulates.

(3) The soil exposure interval applicable to residents is defined as surface down to ten feet below ground surface. The soil exposure interval applicable to the industrial or commercial worker is defined as surface to one foot below ground surface. The soil exposure interval applicable to the construction worker is defined as surface down to depth of construction of ten feet below ground surface. Alternative soil exposure intervals shall be determined on a case-by-case basis as approved by the director.

(4) Soil exposure pathways applicable to all receptors where the conceptual site model, in accordance with Subsections R315-101-4(a)(3) or R315-101-4(f)(13), identifies soils as a complete or potentially complete exposure pathway, shall include:

(i) ingestion;

(ii) dermal contact with soil;

(iii) inhalation of vapor emissions; and

(iv) inhalation of particulates from soil.

(5) Groundwater exposure pathways applicable to all receptors where the conceptual site model, in accordance with Subsections R315-101-4(a)(3) or R315-101-4(f)(13), identifies ground water as a complete or potentially complete exposure pathway, shall include:

(i) ingestion;

(ii) dermal contact with groundwater; and

(iii) inhalation of vapor emissions.

(6) Additional exposure to groundwater shall be considered on a site-specific basis which may include:

(i) volatilization and upward migration of vapors from groundwater and potential indoor inhalation of vapor emissions;

(ii) volatilization and upward migration of vapors from groundwater and potential outdoor inhalation of vapor emissions;

(iii) potable use of groundwater, including ingestion of groundwater, dermal contact with groundwater during showering or bathing, and inhalation of vapors from domestic use of groundwater if pathway is complete; and

(iv) migration to surface water body and potential impacts to surface water and potential exposures to surface water.

(7) Other exposure pathways that may need to be considered on a site-specific basis may include the following:

(i) contact with soils and ingestion of soils, sediments, inhalation of vapors and particulates, surface water and groundwater for any other anticipated human contacts, such as recreational and trespasser activities;

(ii) ingestion of produce grown in impacted soils;

(iii) use of groundwater for irrigation purposes;

(iv) use of groundwater for industrial purposes;

(v) ingestion of livestock or fish or other aquatic organisms that, as a result of media contamination, have bio-accumulated constituents of potential concern through the food chain; and

(vi) ingestion, dermal contact, and inhalation of vapors from surface water such as from recreational activities, including swimming.

(e) The responsible party shall develop a risk assessment work plan for review and approval by the director prior to the risk evaluation.

(f) Tier 1 screening risk assessment. The Tier 1 evaluation shall assume no institutional or engineering controls in place, such as security, signage, pavements, personal protective equipment, fences, or remediation. The Tier 1 risk assessment evaluation may not be

appropriate under circumstances when every complete exposure pathway is not covered by the screening values. The Tier 2 refined risk assessment approach may be more appropriate for evaluation in this circumstance.

(1) Screening levels. The Tier 1 evaluation shall use one or more of the following screening levels:

(i) US EPA Regional Screening Levels available at the US EPA Risk Assessment, Regional Screening Levels (RSLs) website;

(ii) site-specific background 95% upper tolerance limit levels developed in accordance with the US EPA ProUCL model;

(iii) vapor intrusion screening levels calculated using US EPA Vapor Intrusion Screening Level Calculator, as incorporated by reference in Section R315-101-12, available at the EPA Vapor Intrusion Screening Levels Calculator website;

(iv) petroleum vapor intrusion screening guidelines developed in accordance with "Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites," US EPA, as incorporated by reference in Section R315-101-12;

(v) site-specific confidence limits for groundwater background established for the site in accordance with "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance," US EPA, as incorporated by reference in Section R315-101-12; or

(vi) in instances where a US EPA regional screening level is not available, a responsible party, with the approval of the director, may develop and calculate a site-specific screening value.

(2)(i) The US EPA regional screening levels, confidence limits, site specific background levels, calculated site-specific screening values, and vapor intrusion screening levels shall be known collectively as screening values.

(ii) Documents referenced in Subsections R315-101-5(f)(1)(i) through R315-101-5(f)(1)(vi) and other director approved sources shall be used as sources for obtaining screening values.

(3) Determination of constituents of potential concern.

(i) For inorganic contaminants of interest, the following steps shall be followed for determination of constituents of potential concern that shall be included in the risk evaluation.

(A) The maximum detected concentration of each contaminant of interest for soil, sediment, and groundwater may be compared to the site-specific background reference level, defined as the 95% upper tolerance limit or a confidence limit as defined for groundwater. If the maximum detected site concentration is greater than the background reference level, the inorganic contaminants of interest shall be considered a constituent of potential concern. If site-specific background reference levels are not available, the detected inorganic contaminant shall be retained as a contaminant of potential concern.

(B) For those inorganic contaminants of interest whose maximum concentrations are greater than the background reference, a test of means hypothesis shall be used to determine if inorganic contaminants of interest are present at elevated levels over background levels.

(C) If the results of the test of means hypothesis indicate the detected inorganic contaminant of interest is elevated over background level, it will be retained as a constituent of potential concern.

(D) If a test of means hypothesis cannot be performed due to sample size or if there is no established site-specific background reference level, the inorganic contaminant of interest shall be retained as a constituent of potential concern.

(ii) For organic contaminants of interest, all contaminants with a minimum of one detection shall be retained as constituents of potential concern. If site-specific background reference levels are available for organics, additional refinement of organic contaminants of potential concern may be conducted in accordance with Subsection R315-101-5(f)(3)(i).

(4) Exposure point concentration.

(i) The initial exposure point concentration for all inorganic and organic constituents of potential concern shall be the maximum detected concentration for each medium evaluated in the Tier 1 assessment.

(ii) If the maximum detected concentration results in a cancer risk greater than $1x10^{-6}$ or a hazard quotient greater than one, a refined exposure point concentration based on a 95% upper confidence limit on the mean may be calculated using the USEPA ProUCL program. The lesser of the maximum concentration and the 95% upper confidence limit concentration shall be selected as the exposure point concentration.

(iii) If the minimum required sample size of eight or more for calculating the 95% upper confidence limit cannot be met, the maximum detected concentration shall be the exposure point concentration.

(5) Cumulative risk shall be determined for all carcinogenic constituents of potential concern and a hazard index shall be determined for all noncarcinogenic contaminants of potential concern.

(i) The cumulative effects screening cancer risk estimate is calculated as the sum of the ratios of exposure point concentrations and screening values for the combined land use exposure pathways, identified under the conceptual site model developed in accordance with Subsections R315-101-4(a)(3) or R315-101-4(f)(13) as applicable for soil and groundwater media, multiplied by $1x10^{-6}$.

(ii) The hazard index is calculated as the sum of the ratios of exposure point concentrations and screening values for the combined residential land use exposure pathways identified under the conceptual site model in accordance with Subsections R315-101-4(a)(3) or R315-101-4(f)(13) as applicable for soil and groundwater media.

(iii) If a contaminant of potential concern has both carcinogenic and noncarcinogenic toxicity, both toxicities shall be evaluated using both the carcinogenic and noncarcinogenic based US EPA regional screening level or other screening levels.

(iv) If the cumulative effects screening cancer risk is less than or equal to $1x10^{-6}$ and hazard index is less than or equal to one, then the cumulative effects screening risks posed by detected carcinogenic contaminants of interest at the site meet acceptable risk levels and additional evaluation for the receptor and scenario is not required.

(v) If the cumulative effects screening cancer risk is greater than $1x10^{-6}$ or the hazard index is greater than one, then a Tier 2 risk assessment or further evaluation may be required.

(6) Residential land use.

(i) Risks to residents from ingestion of livestock grazing on a contaminated site shall be determined and added to the cumulative

effects risk equation if it is determined to be a plausible and complete exposure pathway.

(ii) Vapor intrusion pathway if complete, shall be evaluated and added to the cumulative effects screening risk equation.

(iii) Any other relevant exposure pathway consistent with the residential exposure pathway shall be evaluated and added to the cumulative risk.

(iv) If it is determined that the residential land use cumulative effects screening cancer risk posed by constituents of potential concern is less than or equal to the target cancer risk of $1x10^{-6}$ and the hazard index is less than or equal to one for each combined residential land use exposure pathways, and it is determined that there are no current and potential future impacts to groundwater as determined by site-specific attenuation factors derived using "Supplemental Guidance For Developing Soil Screening Levels," US EPA, as incorporated by reference in Section R315-101-12, Subsections R315-101-4(f)(15), R315-101-5(f)(8) and R315-101-5(f)(1)(vii), and ecological impacts are insignificant in accordance with Subsection R315-101-5(j), then the site meets the risk based clean closure criteria for no further action or unrestricted land use as identified in Subsection R315-101-7(a).

(v) If it is determined that the residential land use cumulative effects screening cancer risk posed by constituents of potential concern is greater than the target risk of $1x10^{-6}$ or the hazard index is greater than one for each combined residential land use exposure pathway, then further evaluation of the site may be conducted using either the Tier 2 refined risk assessment evaluation approach for a residential land use exposure scenario as identified in Subsection R315-101-5(g)(1) or a non-residential land use exposure scenario as identified in Subsection R315-101-5(g)(2) and site management as identified in Section R315-101-7, or the responsible party may choose to conduct corrective action as identified in Section R315-101-6 to mitigate risks at the site to residential acceptable levels.

(vi) An ecological evaluation shall also be completed as part of the screening residential land use risk evaluation as described in Subsection R315-101-5(j).

(vii) A groundwater impact evaluation shall also be completed as part of the screening residential land use risk evaluation as identified in Subsection R315-101-5(f)(8).

(7) Industrial or commercial land use or construction worker.

(i) If the cumulative effects screening risk is less than or equal to a cancer risk of $1x10^{-6}$ and the hazard index is less than or equal to one, then the cumulative effects screening risks posed by detected contaminants of potential concern at the site meets the industrial or commercial land use or both or construction worker risk and the site meets the criteria for restricted land use as identified in the Subsection R315-101-7(b).

(ii) If the cumulative effects screening risk is greater than a cancer industrial risk of $1x10^{-6}$ or the hazard index is greater than one, then the cumulative effects screening risks posed by the detected contaminants of potential concern at the site do not meet the industrial or commercial land use or both, and a Tier 2 assessment or further evaluation is required.

(iii) If the cumulative effects screening risk is greater than cancer industrial risk of $1x10^{-6}$ but less than $1x10^{-4}$ and the hazard index is less than or equal to one, then restricted land use closure with land use controls may be used in accordance with Subsections R315-101-7(b)(1) and R315-101-7(c).

(iv) Exposure scenarios not covered in the screening values shall be evaluated separately and added to the cumulative effects risks. Evaluations may include the vapor intrusion pathway if it is determined to be complete using the vapor intrusion screening levels.

(v) Other receptors relevant to the industrial or commercial land use or both scenario, such as a trespasser or recreational user, shall be evaluated.

(vi) An ecological evaluation, as identified in Subsection R315-101-5(j), shall also be completed as part of the screening industrial or commercial land use or both risk evaluation.

(vii) A groundwater impact evaluation, as identified in Subsections R315-101-5(f)(8) and R315-101-4(f)(15), shall also be completed as part of the screening industrial or commercial land use or both risk evaluation.

(8) For evaluation of potential future impacts to groundwater one or more of the following steps shall be used:

(i) Step 1. Compare the maximum detected constituents of potential concern in soil to the US EPA Regional Screening Levels, groundwater protection soil screening level based on a dilution attenuation factor of 20, unless it may be demonstrated that background levels for the contaminants of concern at the site exceed the applicable soil screening levels. If the maximum detected concentrations exceed the US EPA Soil Screening Levels for groundwater protection, the potential exists for future impacts to groundwater. The groundwater protection soil screening level value shall be the greater of either the maximum contaminant level or the risk-based groundwater protection soil screening level value for evaluation. If the potential for future groundwater contamination exists, the responsible party may provide additional lines of evidence and a reevaluation using a refined exposure point concentration of the 95% upper confidence limit. If sufficient data are not available to calculate a 95% upper confidence limit, the maximum constituent of potential concern concentration value shall be used for evaluation, or the director may approve an alternate value; or

(ii) Step 2. Derive a site-specific dilution attenuation factor and a site-specific groundwater protection soil screening level value. The development of the site-specific dilution attenuation factor shall follow "Supplemental Guidance for Developing Soil Screening Levels," US EPA, as incorporated by reference in Section R315-101-12. If the 95% upper confidence limit concentration exceeds the calculated groundwater protection soil screening level, the potential exists for future impacts to groundwater. The groundwater protection soil screening level value shall be the greater of either the maximum contaminant level or the risk-based groundwater protection soil screening level value for evaluation. If the potential for future groundwater contamination exists, the responsible party may choose to submit a work plan for approval by the director describing actions that will be taken to protect groundwater from future impacts due to soil contamination. In addition, the work plan shall include a proposal for collection of sufficient monitoring data to evaluate both current and future groundwater conditions; or

(iii) Step 3. The responsible party shall propose an alternate method for evaluating potential future impacts to groundwater due to

soil contamination to the director for approval. If it is determined that the potential for future groundwater contamination exists, the responsible party shall submit a work plan for approval by the director describing actions that will be taken to protect groundwater from future impacts due to soil contamination. In addition, the work plan shall include a proposal for collection of sufficient monitoring data to evaluate both current and future groundwater conditions.

(g) Tier 2 refined risk assessment. A Tier 2 refined risk assessment shall be conducted using the methodologies described in the "US EPA Risk Assessment Guidance for Superfund Sites," Parts A to F, as incorporated by reference in Section R315-101-12, and following standard land use exposure assumption scenarios listed in Subsections R315-101-5(g)(1) and R315-101-5(g)(2):

(1) Residential Land Use.

(i) child receptor; and

(ii) adult receptor

(2) Non-residential Land Use.

(i) commercial or industrial or both;

(ii) construction worker; and

(iii) trespasser or recreationalist as applicable.

(3)(i) The Tier 2 risk assessment shall assume no institutional or engineering controls in place, such as security, signage, pavements, personal protective equipment, fences or remediation.

(ii) The risk assessment shall use US EPA standard default exposure parameters, variables and equations based on reasonable maximum exposure in the evaluation, unless scientific evidence suggests otherwise. If a US EPA standard default exposure parameter or variable is not available, the responsible party shall use the "Exposure Factors Handbook," US EPA, as incorporated by reference in Section R315-101-12, for default values, or other sources as approved by the director.

(iii) A refined risk assessment may be conducted using site specific exposure parameters and a Monte Carlo simulation in a probabilistic risk analysis with the approval of the director.

(4) Evaluations shall be conducted in accordance with US EPA approved standards and methodologies and other methodologies as approved by the director. This may include the following guidance:

(i) "Guidelines for the Health Risk Assessment of Chemical Mixtures", Risk Assessment Forum, EPA/630/R-98/002, as incorporated by reference in Section R315-101-12;

(ii) "Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Parts A-F)," Office of Emergency and Remedial Response EPA/504/1-89/002, Interim Final, as incorporated by reference in Section R315-101-12;

(iii) "Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors," US EPA OSWER Directive 9200.1-20, as incorporated by reference in Section R315-101-12;

(iv) "Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures," US EPA, as incorporated by reference in Section R315-101-12;

(v) "Soil Screening Guidance Technical Background Document," US EPA and "Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites," US EPA, as incorporated by reference in Section R315-101-12;

(vi) "Guidelines for Carcinogen Risk Assessment," EPA/630/P-03/001F, as incorporated by reference in Section R315-101-12;

(vii) "Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens," EPA/630/R-03/00F, as incorporated by reference in Section R315-101-12;

(viii) "OSWER Technical Guidance for Assessing and Mitigating the Vapor Intrusion Pathway From Subsurface Vapor Sources to Indoor Air," US EPA OSWER 9200.2-154, as incorporated by reference in Section R315-101-12;

(ix) "Technical Guide For Addressing Petroleum Vapor Intrusion At Leaking Underground Storage Tank Sites," US EPA, as incorporated by reference in Section R315-101-12; and

(x) "Risk Assessment Guidance for Superfund, Part A, Volume III, Process for Conducting Probabilistic Risk Assessment," EPA 540-0R-02-002 OSWER 9285.7-45 PB 2002 963302, as incorporated by reference in Section R315-101-12.

(5) In performing the Tier 2 risk assessment, the responsible party shall use toxicity information for carcinogenic and non-carcinogenic effects in accordance with Subsections R315-101-5(i) and R315-101-5(j)(8).

(6) Risk characterization shall identify carcinogenic risks and non-carcinogenic risks for the constituents of potential concern.

(7) The age-dependent-adjustment-factors shall be applied to carcinogens with a mutagenic mode of action.

(8) Risk characterization shall be based on cumulative risk effects and assumption of additivity in the absence of adequate evidence of toxicological interactions as follows.

(i) For non-carcinogenic toxicants acting by similar modes of action or affecting common organs, dose addition shall be followed.

(ii) For carcinogenic risks or toxicants acting independently, response addition shall be followed.

(9) Carcinogenic cumulative risk may also be be calculated as the sum of the probabilities of each chemical across the exposure pathways for cumulative risks less than 0.01. For cumulative risks greater than 0.01, the One-Hit Model, as specified in "Risk Assessment Guidance for Super Fund Volume 1: Human Health Evaluation Manual," Part A, US EPA, Office of Emergency and Remedial Response EPA/504/1-89/002, Interim Final, as incorporated by reference in Section R315-101-12, shall be used.

(10) Non-carcinogenic hazard indices shall be calculated as the sum of the non-carcinogenic effects for each chemical across the exposure pathways. However, if the hazard index is greater than one, the hazard quotients should be summed separately by target organ or mode of action.

(11) If total petroleum hydrocarbons are present, the risk assessment shall be evaluated using indicator compounds, and shall be conducted in accordance with Subsections R315-101-5(f), R315-101-5(f)(8), R315-101-5(g), R315-101-5(j), "Supplementary Guidance for

Conducting Health Risk Assessment of Chemical Mixtures," EPA/630/R-00/002, as incorporated by reference in Section R315-101-12, and the US DOE Risk Assessment Information System website, and in accordance with other procedures approved by the director.

(i) The cumulative risk of the petroleum mixture shall assume additivity, dose addition or response addition, unless there is data suggesting toxicological interaction.

(ii) The risk assessment shall be based on the conceptual site model identified in Subsections R315-101-4(a)(3) or R315-101-4(f)(13) as applicable.

(12) Current and future anticipated land use scenarios evaluation.

(i) The evaluation shall be based on current and reasonably anticipated future uses of the property. Sources of information on land uses may include:

(A) current zoning and comprehensive plan maps and applicable regulations provided by the local jurisdiction for the properties within the locality of the site;

(B) inquiries made and responses as to whether there are regional trends that are relevant to land uses and activities in the locality of the site;

(C) inquiries made of any environmental protection zones or regulations; and

(D)(I) the property owner's planned use of land.

(II) An inactive or vacant, fenced or non-fenced, property with no proposed land use in an area zoned for industrial or commercial land use or both shall be assumed to be reasonably used for industrial or commercial use or both in the future.

(III) An inactive or vacant, fenced or non-fenced, property in an area zoned for residential land use shall be assumed to be reasonably used for residential land use in the future.

(IV) For the protection of human health and the environment, if future anticipated land use conditions offer a more protective exposure scenario than the current land use scenario, the more protective future anticipated land use shall be evaluated.

(V) A summary of the results and conclusions along with supporting documentation as to what the current and reasonably anticipated future land uses are for parcels within the locality of the site shall be submitted with the Tier 2 refined risk assessment for approval.

(h) Data and results presentation.

(1) A risk assessment report shall be submitted to the director for review and approval. The report may be a standalone document or included in a site characterization or closure report. The risk assessment, whether submitted by itself or included in a larger report, shall include, at a minimum, the following:

(i) an executive summary;

(ii) an overview of the site;

(iii) a detailed discussion of areas of contamination;

(iv) an exposure assessment identifying exposure levels for the exposure pathways identified in Subsections R315-101-5(c) and R315-101-5(j)(4)(i);

(v) if fate and transport models are used, the user's manual, model theory, computer software for the model, installation verification data set for the model and input files for the model runs shall be provided upon request by the director;

(vi) the output results of the model runs;

(vii) background levels of identified hazardous constituents including any statistical methods used in evaluation of background data;

(viii) identification and concentration of the contaminants of interest identified in Subsection R315-101-4(f)(8);

(ix) a list of constituents of potential concern, contaminants of concern, and contaminants with mutagenic mode of action for human health and constituents of potential ecological concern;

(x) US EPA Regional Screening Levels or, when US EPA Regional Screening Levels are not used, the toxicity information of identified constituents of potential concern, specifically listing mutagenic constituents of potential concern, including slope factors, inhalation unit risks, weight-of-evidence classification, non-carcinogenic chronic reference doses, age dependent adjustment factors, chronic deference concentrations and critical effects associated with reference doses and reference concentrations, toxicity reference values and any other ecological benchmarks used in the risk assessment;

(xi) a list of identified ecological receptors;

(xii) a list of identified ecological habitats;

(xiii) risk characterization calculations including data used; and

(xiv) the risk characterization identifying carcinogenic risk and non-carcinogenic risk for the constituents of potential concern, ecological hazard indices as determined in accordance with Subsection R315-101-5(j), uncertainties analysis, and a tabulation of the risk characterization data presented in a format approved by the director.

(2) If the risk assessment report does not contain the required information of sufficient quality and detail, the director will notify the responsible party in writing of deficiencies and shall require resubmittal of the report in a designated time frame.

(3) If the risk assessment report contains the required information of sufficient quality and detail, the director will approve, the risk assessment report in writing.

(i) Identification of sources of toxicity information.

(1) Sources of toxicity information gathered for identified hazardous constituents, weight-of-evidence classification and critical effects associated with reference doses and reference concentrations shall be in order of preference based on the US EPA hierarchy of human health toxicity values tiered system, "Human Health Toxicity Values in Superfund Risk Assessment," EPA OSWER Directive 9285.7-53, as incorporated by reference in Section R315-101-12. The approved hierarchy, in order of acceptance is as follows:

(i) US EPA Integrated Risk Information System.
(ii) US EPA Provisional Peer Reviewed Toxicity Values.
(iii) Additional sources may include US EPA and non-US EPA sources of toxicity information with priority given to sources that have been peer reviewed including the following:
(A) California Environmental Protection Agency toxicity values;
(B) Agency for Toxic Substances and Disease Registry Minimal Risk Levels;
(C) US EPA additional sources; or
(D) US EPA Health Effects Assessment Summary toxicity data.
(2) US EPA Regional Screening Levels; and
(3) US DOE Risk Assessment Information System website.
(j) Ecological risk assessment.
(1) Prior to conducting the risk assessment, the responsible party shall submit a work plan for approval.
(2) An ecological risk assessment for the site shall include terrestrial and aquatic processes as appropriate using toxicity information for the constituents and biological processes relevant to the ecological evaluation. This shall include plants, soil invertebrates, benthic invertebrates, wildlife species and other ecological receptors as approved by the director. A list of all ecological receptors of interest shall also be included.
(3) A waiver of this requirement may be granted by the director if the responsible party demonstrates that ecological receptors will not be affected by any contamination using any of the following criteria:
(i) environmental conditions at the site may be used to eliminate the need for ecological risk assessment;
(ii) the affected property is not a viable habitat and the site cannot be used by potential ecological receptors as a habitat;
(iii) complete or potentially complete exposure pathways do not exist due to prevailing conditions or property setting; or
(iv) detected chemicals at the site are below the ecological screening bench mark levels.
(4) An ecological risk assessment for a site shall be conducted to include the following information:
(i) a problem formulation, identification of constituents of potential ecological concern, identification of habitats, media sampled, potential ecological effects, relevant ecological receptors, relevant exposure pathways, initial definition of assessment and measurement endpoints, with respect to current and reasonably anticipated future land and water uses as described in a conceptual site model;
(ii) the data quality objectives for the ecological risk assessment shall be based on the conceptual site model, with emphasis on analytical detection limits appropriate for ecological receptors;
(iii) an exposure analysis to include identification and selection of constituents of potential ecological concern, identification and selection of target or representative ecological receptors, an exposure pathway model relating target or representative receptors, exposure routes and measurement endpoints for both current and reasonably anticipated future land and water use scenarios;
(iv) an ecological response analysis including a summary of current information regarding the toxicological effects, ecological effects, bio-concentration potential, bio-accumulation potential, bio-magnification potential, persistence of the identified constituents of potential ecological concern and ecological benchmark values;
(v) a risk characterization presenting the quantitative ecological risks potentially associated with the site, a discussion of any available site-specific ecological studies, a detailed discussion of risks associated with the bio-concentration potential, bio-accumulation potential, bio-magnification potential, and persistence of each contaminant, and consideration of any other available, published and peer-reviewed scientific information on other sources of adverse ecological conditions as appropriate;
(vi) an evaluation of the potential for significant adverse effects on the health or viability of individual ecological receptors or local populations, including a weight-of-evidence analysis or population viability analysis. These evaluations may include field studies, laboratory investigations, appropriate population models, or any combination of these or other methods of evaluation as approved by the director; and
(vii) a quantitative and qualitative uncertainty analysis as appropriate for each element of the risk assessment.
(5) Ecological risk assessment estimates shall be conducted:
(i) at the individual level for species present in the locality of the site if the species is listed as threatened or endangered, or is a state sensitive species; and
(ii) at the population level for any other species of plants or animals in the locality of the site.
(6) Cumulative hazard from multiple hazardous substances shall be assessed by summing the hazards posed separately by individual hazardous substances in the locality of the site, unless it is demonstrated that the summation assumption is not appropriate.
(7) Ecological risk assessment shall be conducted in accordance with the following:
(i) "Framework for Ecological Risk Assessment," EPA/630/R-92/001, as incorporated by reference in Section R315-101-12;
(ii) "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments Interim Final," EPA 540-R.97-006, OSWER 9285.7-25. PB97-963211, as incorporated by reference in Section R315-101-12;
(iii) "Guidelines for Ecological Risk Assessment," US EPA, as incorporated by reference in Section R315-101-12;
(iv) US EPA "Guidance for Developing Ecological Screening Levels," US EPA, as incorporated by reference in Section R315-101-12; and
(v) any other sources as approved by the director.
(8) Appropriate sources of exposure factor information and toxicological parameters may include the following:
(i) "Wildlife Exposure Factors Handbook," US EPA, as incorporated by reference in Section R315-101-12;
(ii) "Toxicological Benchmarks for Wildlife," Oak Ridge National Laboratory (ORNL), as incorporated by reference in Section R315-101-12;

(iii) Los Alamos National Laboratory (LANL) ECO Risk Database;

(iv) US EPA Ecological Soil Screening Levels;

(v) "Guidance for Developing Ecological Soil Screening Levels," US EPA, as incorporated by reference in Section R315-101-12; and

(vi) any other sources as approved by the director.

(9) In the absence of available and acceptable toxicity information, the director may require the development of site-specific toxicity information.

(10) An ecological risk assessment shall be conducted using a tiered evaluation approach as described in Subsections R315-101-5(j)(10)(i) through R315-101-5(j)(10)(x).

(i) A Tier 1 ecological screening risk assessment shall use conservative assumptions and shall include:

(A) a conceptual site model;

(B) an evaluation of fate and transport mechanisms;

(C) an identification of constituents of potential ecological concern;

(D) a characterization of the ecological setting; and

(E) a selection of toxicity endpoints and receptors of ecological significance.

(ii) Tier 1 ecological screening risk assessment - exposure pathways:

(A) each ecological receptor shall be considered to be exposed to constituents of potential ecological concern in soil in the zero to two feet below ground surface interval. In addition, burrowing animals and deep rooted plants may be considered to be exposed to constituents of potential ecological concern in soils deeper than two feet; and

(B) exposure pathways may include ingestion, inhalation, direct contact for burrowing receptors, exposure through uptake of biota exposed to constituents of potential ecological concern, and plant uptake of constituents of potential ecological concern.

(iii) The exposure assessment for the Tier 1 ecological screening risk assessment shall be conducted by assuming:

(A) the maximum detected concentrations as the exposure point concentration for calculating exposure doses;

(B) the area use factor is equal to one indicating that the home range of the receptor is the entire contaminated area;

(C) the bioavailability of contaminants is equal to 100%;

(D) the maximum reported ingestion rate from literature;

(E) the dietary composition consists of direct ingestion of 100% of the constituents of potential ecological concern levels in soil;

(F) each calculation is performed on a dry-weight basis; and

(G) minimum receptor body weight.

(iv) The toxicity assessment for the Tier 1 ecological screening risk assessment shall be conducted by assuming:

(A) for wildlife, the dose-based toxicity reference values, which are receptor, media, and chemical specific, shall be the applicable protective standards available in peer reviewed literature sources;

(B) the toxicity reference values selected shall be those based on no observed adverse effects levels for evaluation;

(C) the responsible party may use a literature search to determine availability of data for derivation of a toxicity reference value if detected constituents of potential ecological concern have no published toxicity reference values, and shall provide the following:

(I) the responsible party shall provide supporting data to the director for approval of the newly derived toxicity reference value; and

(II) if the responsible party is unable to derive a toxicity reference value based on literature, the detected constituents of potential ecological concern shall be addressed qualitatively in the uncertainty analysis of the ecological risk assessment report;

(D) for plants and other invertebrate receptors, such as soil organisms, benthic organisms and aquatic organisms, concentration-based effects benchmarks shall be used. Concentration levels identified in peer reviewed literature sources shall be used as measurement endpoints for evaluation of chemical effects on receptors;

(E) the effects concentration levels shall be the no observed effects concentrations; and

(F) the responsible party may use a literature search to determine availability of data for derivation of effects concentration levels if detected constituents of potential ecological concern have no published effects concentration levels.

(I) The responsible party shall provide supporting data to the director for approval of the newly derived effects concentration levels; and

(II) If the responsible party is unable to derive effects concentration levels based on literature, the detected constituents of potential ecological concern shall be addressed qualitatively in the uncertainty analysis of the ecological risk assessment report.

(v) The risk characterization for Tier 1 ecological screening risk assessment shall include:

(A) for plants and other invertebrate receptors, a screening hazard quotient, shall be calculated as the maximum detected exposure concentration of constituents of potential ecological concern divided by the no observed effects concentration;

(B) for wildlife, a screening hazard quotient shall be calculated as the estimated exposure dose or contaminant intake divided by the no observed adverse effects level-based toxicity reference value; and

(C) tier 1 screening results.

(I) If the calculated screening hazard quotient or hazard index is less than or equal to one, no further evaluation is required.

(II) If the calculated screening hazard quotient or hazard index is greater than one, then there may be the potential for adverse ecological risk from the detected constituents of potential ecological concern at the site. The responsible party shall either conduct corrective action or conduct further evaluation in a Tier 2 refined ecological risk assessment.

(vi) A Tier 2 refined ecological risk assessment shall:

(A) use constituents of potential ecological concern with screening hazard quotients or hazard indices greater than one for a refined

problem formulation; and

(B) use site-specific exposure assumptions in Subsections R315-101-5(j)(10)(ii) and R315-101-5(j)(10)(iii) for the refined evaluation.

(vii) The exposure assessment in the Tier 2 refined ecological risk assessment shall include exposure dose calculated utilizing site-specific exposure assumptions as follows:

(A) exposure point concentration:

(I) calculate exposure point concentration as the 95% upper confidence limit if sufficient data are available in accordance with US EPA ProUCL software; and

(II) if sufficient data are not available to calculate the 95% upper confidence limit, an alternate value, as approved by the director, shall be used as the exposure point concentration;

(B) estimate the site-specific area use factor for each representative receptor by dividing the receptor's average home range by the area of contamination or area of the solid waste management units. This estimate shall have a value between zero and one;

(C) the bioavailability of constituents of potential ecological concern shall be assumed to be other than 100% based on available literature or other sources as approved by the director;

(D) the ingestion rate for each representative receptor shall be assumed to be the average reported ingestion rate in reported literature or estimated from average body weight using allometric equations;

(E) the dietary composition shall be based on receptor specific percentages of plant, animal, and soil matter. The non-dietary ingestion of soil shall be assumed to be in addition to the dietary intake rate to add up to 100%, soil and dietary items;

(F) the concentrations of constituents of potential ecological concern in receptor dietary elements, plant and animal matter, shall be predicted by using bio-uptake and bioaccumulation models;

(G) each calculation shall be performed on a dry-weight basis;

(H) if a bioaccumulation model is not available, 100% uptake factor shall be assumed;

(I) each equation and variables used to estimate constituents of potential ecological concern in plants shall be listed;

(J) the methodologies for determination of bioaccumulation factors for the constituents of potential ecological concern shall be documented; and

(K) exposure doses for wildlife receptors shall be assessed using bio-uptake and bioaccumulation modeling to predict the concentration of constituents of potential ecological concern in animal matter that may be ingested by wildlife receptors.

(viii) The toxicity assessment for a Tier 2 refined ecological risk assessment shall be based on:

(A) the lowest observed adverse effects levels for wildlife receptors and lowest observed effects concentrations for plants and invertebrate receptors; and

(B) the toxicity reference values shall be based on the lowest observed adverse effects levels for each wildlife receptor and shall be based on lowest observed effects concentrations for any other receptors including invertebrates, with the exception of endangered, threatened and sensitive species for which a no observed adverse effects level applies.

(ix) The risk characterization of the Tier 2 refined ecological risk assessment.

(A) For wildlife vertebrate receptors, a hazard quotient shall be calculated as the ratio of the estimated receptor-specific contaminant intake or dose to the lowest observed adverse effects level-based toxicity reference value.

(B) For plants and other invertebrate receptors, a qualitative discussion of the potential for adverse effects shall be provided in the assessment. The assessment shall be based on plant hazard quotients or hazard indices as well as site observations that were made during a habitat survey.

(C) Hazard quotients shall be summed for the constituents of potential ecological concern with similar receptor-specific modes of toxicity.

(D) Tier 2 assessment results.

(I) If the hazard quotient or the hazard index is less than or equal to one, adverse ecological effects are not expected and no further action is needed.

(II) If the hazard index is greater than one, there is potential for adverse ecological effects to occur at the site and the responsible party shall either conduct corrective action or conduct further evaluation in a Tier 3 refined ecological risk assessment as outlined in Subsection R315-101-5(j)(10)(x).

(x) A Tier 3 refined ecological risk assessment shall be conducted based on:

(A) a site-specific ecological evaluation;

(B) uptake factors, bioaccumulation factors, bioavailability factors, and plant uptake factors determined from the analysis of animal and plant tissue collected at the site;

(C) the evaluation of unique exposure pathways and effects of exposure to various life stages or other assessment endpoints as determined by the director;

(D) the evaluation of habitat suitability including habitat quality; and

(E) the calculation of refined hazard quotients and hazard indices for the constituents of potential ecological concern shall take into account information from Subsections R315-101-5(j)(10)(i) through R315-101-5(j)(10)(x).

(xi) Tier 3 refined ecological risk assessment results and possible outcomes.

(A) If the Tier 3 refined evaluation results in a hazard index greater than one, the responsible party, shall, in conjunction with the results of a Tier 2 refined evaluation, use several lines of evidence and a weight-of-evidence approach to facilitate a final determination regarding the need for corrective action.

(B) Site remediation shall be required if unacceptable or potential significant adverse ecological effects are documented by the risk assessment results.

(C) The director has the discretion to require corrective action at the site based on data and ecological significance as reported.

(11) Results presentation.

An ecological risk assessment report shall be prepared and submitted to the director in accordance with the requirements in Subsection R315-101-5(h).

R315-101-6. Corrective Action.

(a) Corrective action is required at a site when:

(1) the level of risk present at the site is greater than $1x10^{-4}$ for carcinogens and a hazard index greater than one for non-carcinogens for the risk assessment conducted assuming the land use exposure scenario defined in Subsection R315-101-5(g)(1) or R315-101-5(g)(2);

(2) the director determines that ecological effects are significant based on the approved assessment conducted in accordance with Subsection R315-101-5(j); or

(3)(i) groundwater contamination is exceeded, on-site or off-site, in accordance with Subsection R315-101-4(f)(15) or groundwater contaminant concentrations have been shown to be above a corrective action level using a statistical corrective action test in accordance with "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities" US EPA Unified Guidance, as incorporated by reference in Section R315-101-12, or the "Groundwater Statistics and Monitoring Compliance Guidance Document," Interstate Technology Regulatory Council (ITRC), as incorporated by reference in Section R315-101-12; or

(ii) residual contamination present at the site poses a potential threat to groundwater in accordance with Subsection R315-101-5(f)(8) and "Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites," US EPA, as incorporated by reference in Section R315-101-12, and "Soil Screening Guidance Technical Background Document," US EPA, as incorporated by reference in Section R315-101-12.

(b) The responsible party shall submit a corrective action work plan that includes the responsible party's proposed remedial option for cleanup of the site for review and approval prior to implementation of the corrective action activities at the site. Determination of appropriate corrective action measures shall be made in accordance with criteria identified in Subsection R315-101-1(c). Any proposed modifications to the approved plan shall be reviewed and approved by the director prior to implementation of the proposed modification.

(c) Any corrective action levels proposed shall be protective of the complete exposure pathways or potentially complete exposure pathways for all receptors.

(d) The responsible party shall submit a corrective action report after completion of corrective action activities at the site to the director for review and approval.

(e) The corrective action report shall include a request for a corrective action completeness determination from the director.

R315-101-[6]7. Risk Management: Site Management Plan and Closure Equivalency.

(a) A determination of no further action or corrective action complete without controls or unrestricted land use or risk-based clean closure and no site management shall be approved when:

(1) the level of risk present at the site is equal to or less than $1x10^{-6}$ as the point of departure for carcinogens and the hazard index is less than or equal to one for non-carcinogens based on the approved risk assessment conducted assuming the land use exposure scenario defined in Subsection R315-101-5(g)(1);

(2) the director determines that ecological effects as the site are insignificant based on the approved assessment conducted in accordance with Subsection R315-101-5(j); and

(3) current impacts to groundwater are insignificant in accordance with Subsection R315-101-4(f)(15) and residual contamination present at the site possess no future threat to groundwater in accordance with Subsection R315-101-5(f)(8) and "Soil Screening Guidance Technical Background Document," US EPA, as incorporated by reference in Section R315-101-12, or groundwater contaminant concentrations have been shown to be below a corrective action level using statistical corrective action test in accordance with "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities," US EPA Unified Guidance, as incorporated by reference in Section R315-101-12 or the "Groundwater Statistics and Monitoring Compliance Guidance Document," Interstate Technology Regulatory Council (ITRC) as incorporated by reference in Section R315-101-12, as applicable.[

~~(a) A site management plan which is supported by the findings in the approved risk assessment report shall be submitted to the Director within 60 days of approval of the risk assessment report. This plan may be submitted along with the risk assessment report and must include a schedule for implementation.~~]

(b) A determination of corrective action complete with controls or restricted land use or no further investigation and site management plan shall be approved when:

(1) the level of risk present as the site is greater than $1x10^{-6}$ but less than $1x10^{-4}$ for carcinogens and the hazard index is less than or equal to one for non-carcinogens based on the approved risk assessment conducted assuming the land use exposure scenario defined in Subsection R315-101-5(g)(1) or R315-101-5(g)(2);

(2) Clean closure is not supported by conclusions of either the investigation or corrective action risk assessment.

[~~(b) The Director shall review and approve or disapprove of the conclusions of the proposed site management plan. If the Director finds that the site management plan is not adequate for protection of human health and the environment, the responsible party shall then submit a revised site management plan addressing the comments of the Director within an appropriate time frame as specified by the Director. The Director shall review and approve or reject the revised site management plan. Upon draft approval of the site management plan, the~~

~~Director shall follow the requirements of R315-101-7 prior to issuance of final approval. The approved site management plan shall be implemented according to the approved schedule. If the Director rejects this revised site management plan, the revised plan will be considered deficient for the reasons specified by the Director in a statement of disapproval.~~](c) The site management plan shall:

(1) be submitted within 60 days of approval of the risk assessment report and include a schedule for implementation;

(2) be supported by the findings in the approved risk assessment report and contain appropriate site management activities;

(3) encompass any activities, controls and conditions necessary to manage the risk to human health and the environment so that acceptable risk levels are not exceeded under current or reasonably anticipated future land use conditions;

(4) ensure that the assumptions made in the estimation of risk and applicable target risk levels are being met; and

(5) ensure that adverse ecological effects are controlled and managed so that documented hazard quotients and indices are less than or equal to one.

[~~(c)(1) The site management plan may contain a no further action option only if the level of risk present at the site is below 1 x 10^{-6} for carcinogens and a Hazard Index of "less than or equal to one" for non-carcinogens based on the approved assessment conducted in accordance with R315-101-5.2(b)(1) and the Director determines that ecological effects are insignificant based on the approved assessment conducted in accordance with R315-101-5.3(a)(8);~~

~~(2) The requirements of Subsections R315-270-1(c)(5) and (6) shall be deemed met for a hazardous waste management unit if the level of risk present at the site is below 1 x 10^{-6} for carcinogens and a Hazard Index of "less than or equal to one" for non-carcinogens based on the risk assessment conducted in accordance with R315-101-5.2(b)(1) and the Director determines that ecological effects are insignificant based on the approved assessment conducted in accordance with R315-101-5.3(a)(8). If this risk exposure criterion is met, a request for a risk-based closure may be submitted; or~~

~~(3) If the risk present at the site is greater than or equal to 1 x 10^{-6} for carcinogens or a Hazard Index of "greater than one" for non-carcinogens based upon the exposure assessment conducted in accordance with R315-101-5.2(b)(1), or the Director determines that ecological effects may be significant based on the approved assessment conducted in accordance with R315-101-5.3(a)(8), a risk-based closure will not be granted. The responsible party shall then submit a site management plan fulfilling the requirements of R315-101-6(d) or (e) as applicable.~~](d) Appropriate site management activities shall be measures and controls taken to manage and reduce risks greater than 1 x 10^{-6} but less than 1x10^{-4} under both current and reasonably anticipated future land use conditions, through land use controls, such as institutional controls and engineering controls, groundwater monitoring, post-closure care, or corrective action as determined by the director on a case-by-case basis as defined in Subsection R315-101-13(a)(6).

[~~(d) If the level of risk present at the site is less than 1 x 10^{-4} for carcinogens and a hazard index is "less than or equal to one" for the risk assessment conducted in accordance with R315-101-5.2(b)(2) but greater than or equal to 1 x 10^{-6} for carcinogens or a hazard index is greater than one for a risk assessment conducted in accordance with R315-101-5.2(b)(1) or the Director determines that ecological effects may be significant based on the approved assessment conducted in accordance with R315-101-5.3(a)(8), the site management plan may contain, but is not required to contain, procedures for corrective action. The site management plan shall contain appropriate management activities e.g., monitoring, deed notations, site security, or post-closure care, as determined on a case-by-case basis in accordance with criteria identified in R315-101-1(b)(4).~~](e) The site management plan shall be reviewed and approved by the director prior to implementation of the plan. Prior to approval, the site management plan shall be subject to the public notice requirements of Section R315-101-10.

[~~(e) The site management plan must contain procedures for corrective action if the level of risk present at the site is greater than or equal to 1 x 10^{-4} for carcinogens or a Hazard Index of "greater than one" for non-carcinogens based on the approved assessment conducted in accordance with R315-101-5.2(b)(2) or the Director concludes that corrective action is required to mitigate ecological effects based on the approved assessment conducted in accordance with R315-101-5.3(a)(8). For determination of appropriate corrective action the criteria identified in R315-101-1(b)(4) shall be considered.~~](f)(1) If the director finds that the site management plan is not adequate for protection of human health and the environment, the responsible party shall re-submit a revised site management plan addressing the comments of the director within an appropriate time frame as specified by the director. The director shall review and approve or reject the revised site management plan. The responsible party shall resubmit the site management plan addressing the deficiencies in a time frame specified by the director.

(2) The site management plan shall be implemented in accordance with the approved schedule.

[~~(f) If hazardous constituents are present only in groundwater at the site, and if the hazardous constituents are listed in Table 1 of Section R315-264-94, the Maximum Concentration Levels listed in Table 1 can be presented in lieu of health risk estimates for those constituents. The RME for Table 1 constituents must be determined in accordance with approved site characterization methods listed in R315-101-4.~~]

(g)(1) Upon completion of the requirements in Subsection R315-101-7(a), corrective action shall be considered complete without controls and the land is acceptable for unrestricted use.

(2) The requirements of Subsections R315-270-1(c)(5) and (6) shall be deemed met if Subsection R315-101-7(a) is met.

(h) The site management plan shall include a land use control plan that specifies allowable and prohibited use of the site.

(i) Land use controls shall guarantee that pathways of exposure to contaminants of concern remain incomplete for as long as there are hazardous wastes or hazardous waste constituents remaining that could pose an unacceptable risk to human health and the environment.

(j) Land use controls shall be reliable, enforceable, and consistent with the risk posed by the contaminants of concern as documented in the approved risk assessment report. Land use controls may include engineering controls such as capping, paving, fencing, signage, site security, and institutional controls, such as post-closure care and land use restrictions, as determined on a case-by-case basis and approved by the director.

(k) In instances where contamination, including groundwater, has migrated off site, and the director determines that the contaminant

concentration poses a potential risk exceeding the acceptable risk level for residential land use exposure scenario defined in Subsection R315-101-5(g)(1), the responsible party shall:

(1) Submit a proposed written notice of contamination to the director for approval prior to its distribution to the off-site property owners affected or potentially affected by the contamination.

(i) The written notice shall at a minimum, include the following:

(A) names of the contaminants detected above applicable screening levels;

(B) the corresponding screening levels;

(C) the respective detected contaminant concentrations; and

(D) adverse effects on human health and the environment.

(2) Notify the off-site property owners, in writing, within thirty days of director approval of written notice.

(3) Provide the director with a certified mail return receipt, or any other form of delivery that provides confirmation of receipt.

(4) With the property owner's consent, and with the director's approval, conduct corrective action in accordance with Section R315-101-6 to reduce concentrations of constituents of concern on the property to or below residential land use exposure scenario defined in Subsections R315-101-5(g)(1) or R315-101-4(f)(15) as applicable, if it is determined by the director that the action is necessary for protection of human health and the environment, or that groundwater-use is designated as a drinking water source or is potentially a drinking water source; or

(5) If groundwater contamination has migrated off site but Subsections R315-101-7(k)(1) through R315-101-7(k)(4) are not applicable, the responsible party shall inform the off-site property owner in writing of the contamination, as required by Subsection R315-101-7(k)(1), and with the property owner's consent, and with the director's approval, conduct corrective action in accordance with Section R315-101-6 to reduce concentrations of contaminants of concern on the off-site property to non-residential land use exposure levels consistent with the requirements of Subsection R315-101-5(g)(2) and the designated groundwater-use, and develop a site management plan in accordance with Section R315-101-7. The responsible party shall prepare and obtain the director's approval for an environmental covenant concerning the property. The responsible party shall request the property owner to record the environmental covenant and document to the director its efforts to have the environmental covenant recorded.

(l) If the responsible party is unable to gain access to further characterize the off-site property, or to assess and manage risks, or to conduct corrective action on the off-site property, the responsible party shall:

(1) document each attempt to gain access to the off-site property, and obtain concurrence from the director that the attempts made were reasonable and that no further attempts need to be made;

(2) meet the applicable target risk levels or some approved groundwater protection standards at the boundary of the site; and

(3) with a site management plan approved by the director, take the necessary actions to prevent further migration of contaminants of concern beyond the site boundary.

(m) For impacts to off-site groundwater, surface water bodies and sediments, and other media, the corrective action levels shall be protective of each receptor, human and ecological, for each current and potential future exposure pathway.

(n) The site management plan in Subsections R315-101-7(k)(5) and R315-101-7(l)(3) addressing off-site and site groundwater contamination respectively, shall include the activities and conditions necessary to address current and potential future impacts to groundwater. The proposed controls and measures shall be consistent with Section R315-101-3 and prevent further ground water degradation at the site or off-site property so that risks are controlled, reduced or maintained at levels within the acceptable risk range as defined in Subsection R315-101-13(a)(3).

(o) Once the site management plan as specified in Subsections R315-101-7(b), R315-101-7(k)(5) or R315-101-7(l)(3) as applicable has been approved by the director, the contamination level shall not be allowed to exceed the level of risk specified in the plan. The responsible party has the burden to demonstrate that future levels of contamination at either the site or off-site property or both are either below or within the range of risk levels specified in the site management plan.

(p) If the responsible party cannot demonstrate that the level of contamination at either the site or off-site property or both is either below or within the range of risk levels specified in the site management plan, then further corrective action may be required as determined by the director to bring the risk levels to within the acceptable risk range as specified in the site management plan. A revised site management plan may be required by the director.

(q) In instances where contaminated groundwater has been determined by the director as having no complete exposure pathways and there is no migration of the contaminated plume off site, or when the director has approved a claim of technical impracticability for corrective action, then, instead of meeting specific cleanup levels, the acceptable management goals and remedy, shall be the following:

(1) source control of releases of contaminants that may pose a threat to human health and the environment;

(2) protection of human health and the environment from any potential exposure pathways to contaminated groundwater;

(3) long-term plume containment system for protection of human health and the environment;

(4) perpetual care obligation of the responsible party;

(5) periodic groundwater monitoring, unless terminated by the director after an evaluation of the site-specific conditions and risk characteristics, to demonstrate that contaminant levels are not increasing and the groundwater plume is stationary; and,

(6) periodic re-evaluation of the technical impracticability decision as part of routine performance monitoring to ensure long-term protection of human health and the environment.

R315-101-8. Contents of a Site Management Plan, Land Use Controls, Environmental Covenants, Restrictions, Controls and Conditions.

(a) The content of the site management plan. The site management plan to be approved by the director shall contain at a minimum:

(1) a legal description of the site including a legal plat map, a copy of the recorded deed showing ownership, and documents showing all liens;

(2) a summary of the media investigations conducted at the site including the characterization, delineation and listing of identified constituents of potential concern and contaminants of concern;

(3) a summary of the completed human health risk assessment and ecological risk assessment performed in accordance with Section R315-101-5;

(4) an implementation schedule of the site management plan within the site;

(5) a description of the groundwater conditions under the site and within the impacted aquifer, as defined in a site characterization report and including activity and use limitations for potable, culinary, domestic, process, irrigation or any other groundwater uses;

(6) a complete list of the persons or entities that have rights of reasonable access to the site at any time after the effective date of the site management plan for activities such as monitoring and compliance with the site management plan, along with any other terms and conditions of the site management plan;

(i) the site management plan shall also indicate that persons with legal interest in land and those subject to the site management plan are required to allow compliance with the site management plan;

(7) provisions that the director, and his authorized officers, employees, or representatives may at any reasonable time and upon presentation of appropriate credentials, have access to the site to monitor, sample or determine compliance with the site management plan or environmental covenant;

(8) a list of the contact names and information for site management plan inquiries; and

(9) a general description of any site-specific groundwater monitoring including:

(i) a general overview of the proposal;

(ii) a summary of site groundwater conditions; and

(iii) the current and potential uses of groundwater and the contaminants of concern.

(b) Activities related to monitoring potential contamination of the groundwater at the site shall be conducted under an approved groundwater monitoring plan. The responsible party shall submit a draft plan to the director and shall not proceed with any portion of the plan until the director has given written approval.

(1) Based on the results of the groundwater monitoring, the potential need for additional site management activities shall be evaluated and implemented, if necessary, to protect human health and the environment. Groundwater monitoring shall be the responsibility of the property owner and its assignees.

(c) If an existing groundwater monitoring well is lost, abandoned, destroyed, or needs to be relocated for development purpose, the owner shall replace the wells in an area that provides the groundwater data required by the site management plan. Any proposal to replace groundwater monitoring wells requires review and approval by the director. If drinking water wells are proposed, the responsible party shall provide prior notice to the director after obtaining either any necessary permits approval or both for the installation of the proposed drinking water wells by the appropriate state, local or other regulatory agencies.

(d) Site management plan modification and termination. The site management plan shall be subject to review and may be terminated or modified as follows.

(1) If groundwater sampling data within the site or off-site property indicates that approved groundwater corrective action levels found in Subsections R315-101-4(f)(15), R315-101-6(a)(3)(i), R315-101-7(k)(4), as applicable, have been met for the site or impacted off-site property, the responsible party may request modification or termination of the groundwater monitoring program, as follows:

(i) groundwater data shall be evaluated using a statistical corrective action test in accordance with the "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance," US EPA, or the "Groundwater Statistics and Monitoring Compliance Guidance Document," Interstate Technology Regulatory Council (ITRC), as incorporated by reference in Section R315-101-12;

(ii) a demonstration that future levels of contamination will not exceed the approved groundwater corrective action levels; and

(iii) land use controls, either engineering or institutional or both, shall be relied upon to ensure protection of human health and the environment if the approved corrective action levels are in excess of the drinking water standards, maximum contaminant levels.

(2) If soil sampling data, including soil vapor, within the site or off site indicate corrective action levels as found in Section R315-101-6 have been met for the soil portion of the site, the owner may request a modification or termination of the section of the site management plan addressing soil management at the site or at an impacted off-site property.

(3) If the owner or responsible party satisfies Subsections R315-101-8(d)(1) and R315-101-8(d)(2) and, in addition, meets the requirements defined in Subsections R315-101-7(a), the owner may request a corrective action complete without controls determination or a no further action determination.

(4) If Subsection R315-101-8(d)(3) is satisfied, a request for termination of the site management plan and the environmental covenant may be submitted to the director for approval.

(5) The director may require public comment on any modifications or termination of the approved site management plan and environmental covenant in accordance with Section R315-101-10.

(6) The director may require a re-evaluation of the approved risk assessment, the site management plan and the environmental covenant upon receipt of new information or data that brings into question the protectiveness of the existing site management plan.

(e) Land use controls.

(1) The site management plan shall identify land use limitations for the site, such as residential, industrial, commercial, recreational, agricultural or any other comparable use with a similar level of human occupancy and exposure. The site management plan shall also identify

the land use controls to be placed upon the site. Any subsequent plans for development of the site shall demonstrate to the director that the level of risk present for the proposed use shall not exceed the applicable risk levels specified in the site management plan.

(2) The site management plan shall contain as many land use controls, institutional and engineering, as is deemed necessary to protect human health and the environment. Controls may include maintaining pavement, capping, soil excavation restrictions, and groundwater use limitations. Each control shall be approved by the director.

(3) The proposed land use controls shall be developed and included in the site management plan.

(4) Land use controls shall be used at any site where cumulative carcinogenic risk exceeds a level of $1x10^{-6}$ but is less than $1x10^{-4}$ after cleanup or as indicated by the approved risk assessment report.

(5) Land use controls shall ensure that pathways of exposure to contaminants of concern remain incomplete for as long as there are contaminants of concern remaining that could pose an unacceptable risk to human health or the environment.

(6) Land use controls shall be enforceable pursuant to Section 57-25-111 and consistent with the risks posed by the contaminants of concern reported in the approved risk assessment report. The responsible party, or a subsequent land owner who assumes the responsibility of maintaining land use controls, shall be responsible for reimbursing the agency for any costs associated with periodic administrative oversight to ensure that land use controls are maintained and are in compliance with the site management plan. Costs shall not exceed the authorized statutory rate for technical oversight by the agency at the time of service.

(f) An environmental covenant. An environmental covenant pursuant to Sections 57-25-101 to 57-25-114 shall be required for each site unless it has been documented that any contaminants of interest at the site are at or below background levels or the following requirements have been met:

(1) the level of risk is less than or equal to $1x10^{-6}$ for carcinogens and the hazard index is less than or equal to one for non-carcinogens pursuant to the risk assessment conducted assuming the land use exposure scenario defined in Subsection R315-101-5(g)(1);

(2) the ecological effects have been determined to be insignificant; and

(3) there are no current or potential future impacts to groundwater.

(g) The content of the environmental covenant. The environmental covenant shall contain at a minimum:

(1) a brief narrative description of the contamination and remedy;

(2) a list of the constituents of potential concern and contaminants of concern;

(3) a list of the exposure pathways;

(4) the limits of exposure;

(5) the locations and extent of the contamination;

(6) a brief narrative description of land use limitations for the site;

(7) any groundwater use limitations;

(8) any ground surface use limitations; and

(9) any worker safety limitations.

(h) For all legal interests in the subject property created subsequent to the recording of the environmental covenant and for all interests voluntarily subordinated to the environmental covenant the environmental covenant shall indicate that persons with legal interest in land and those subject to the site management plan are required to maintain compliance with the site management plan.

(i) The environmental covenant shall include provisions that the director, and his authorized officers, employees, or representatives may at any reasonable time and upon presentation of appropriate credentials, have access to the site to monitor, sample or determine compliance with the site management plan or the environmental covenant.

(j) The terms and conditions of the land use controls established on the property shall be consistent with the environmental covenant recorded for the site.

(k) Within 30 days of the director signing the environmental covenant, the owner shall record the approved environmental covenant with the county recorder's office, and within 30 days of recording shall submit a copy of the recorded document to the director.

(l) Restrictions, controls and conditions. Restrictions, controls and conditions specified in the environmental covenant and the site management plan shall be enforceable by the director under Section 57-25-111 and Rule R315-101.

R315-101-9. Owner Responsibilities.

(a) The owner or responsible party shall ensure compliance with the environmental covenant and the land use restrictions such as groundwater use restrictions, soil removal restrictions, hazard notifications, implementation of the groundwater monitoring program and any other restrictions or conditions cited in the site management plan. Documentation of compliance with the site management plan requirements shall be submitted to the director upon request.

(b) The owner or responsible party shall notify present and future workers at the site of the residual risk at the site and the existence of the site management plan. This includes site workers present for a typical work week and construction workers who may be temporary. If the site management plan specifies controls to prevent workers from exposure, the owner or responsible party shall provide those controls.

(c) Within 48 hours of becoming aware of a deviation from the site management plan the owner or responsible party shall notify the director of the deviation. The owner or responsible party shall submit to the director a written report within 30 days detailing the nature of the deviation and an evaluation of whether the situation and existing site management practices compromise the level of protection afforded by the original site management plan requirements and whether an alternate site management plan is needed to provide a comparable level of protection. Any proposed modification to the site management plan requirements shall require director approval.

(d) The environmental covenant shall run with the land and shall be binding on the current and all subsequent owners. The site management plan requirements shall be imposed and enforced on the current owner through an environmental covenant. Additionally, after

the environmental covenant is recorded in the appropriate county recorder's office, each deed, title or other instrument conveying an interest in the property executed by the owner or his successors in title to the property shall include a notice stating that the property is subject to the site management plan and environmental covenant, and shall reference the recorded location of the site management plan and environmental covenant and the restrictions applicable to the property in the site management plan.

(e) In instances where groundwater contamination has migrated off site, and the director determines that the contaminant concentration poses a potential risk, the responsible party shall notify the impacted off-site property owners in accordance with Subsections R315-101-7(k) and R315-101-7(l).

(f) The responsible party, with the approval of the director, shall comply with Subsections R315-101-7(k)(4), R315-101-7(k)(5) or R315-101-7(l) as applicable.

R315-101-[~~7~~]10. Public Participation.

(a) The [~~D~~]director may provide for public participation in [~~all~~]each phase[~~s~~] of the cleanup action process, as defined in Sections R315-101-4 through R315-101-[~~6~~]7.[~~—As directed by the Director and based on the circumstances and level of public interest at the site, pertinent work plans shall describe how information will be made available to the public through, for example, fact sheets or information repositories and, where appropriate, contain proposed time frames for public input through, for example, public meetings, hearings, or comment periods.—~~]

(b) Prior to approving the site management plan, [~~T~~]the [~~D~~]director shall[~~—also~~] provide public notice[~~,—a~~] for public comment period~~s~~[~~,~~] and public hearings[~~(s)~~] for the site management plan in accordance with Sections R315-124-10 through R315-124-12 and R315-124-17.

R315-101-[~~8~~]11. [~~Cleanup/Management Action~~]Administrative Oversight.

(a) [~~Upon approval of the site management plan by the Director, all remedial activities at the site shall proceed according to the schedule established in the approved site management plan using the method(s) described therein~~] The director or his representatives shall have access to the site as described in Section R315-260-5 and at any time when activity pursuant to Rule R315-101 is taking place. The director or his representatives may collect environmental samples or document any visit to the site by photographic, or videographic or some other reasonable means.

(b) [~~Cleanup/Management Report. The Cleanup/Management Report shall detail remediation, treatment, and monitoring activities undertaken at the site by the responsible party as required by the approved site management plan. If the Cleanup/Management Report provides analytical data as evidence that levels of contamination at the site meet the requirements established in the site management plan for a risk-based closure or no further action as defined in R315-101-6(c)(2), the responsible party shall submit a certification of completion as outlined in R315-101-8(e), or request risk-based closure as outlined in Subsection R315-270-1(c)(6), whichever is applicable~~]The director shall send an invoice to the responsible party for review of plans, reports or other technical documents submitted, contractor costs, laboratory costs and time spent on correspondence, telephone calls, meetings, field work, and any associated activities to meet the requirements of Rule R315-101.

(c) [~~Certification of Completion. Within 60 days of the completion of all activities documented in the Cleanup/Management Report, a Certification of Completion of Cleanup/Management Action shall be submitted to the Director by registered mail. The certification of completion shall state the site has been managed in accordance with the specifications in the approved Site Management Plan and shall be signed by the responsible party and by an independent Utah registered professional engineer~~]The owner shall pay any invoices it receives from the director in accordance with the instructions on the invoice.

(d) [~~Oversight.~~

~~(1) The Director or his representatives shall have access to the site as described in Section R315-260-5 and at all times when activity pursuant to R315-101 is taking place. The Director or his representatives may take samples or make records of any visit to the site by photographic, electronic, videotape or any other reasonable means.~~

~~(2) The Director shall bill the responsible party for review of plans submitted to meet the requirements of this Rule.~~

~~(3) The responsible party shall notify the Director at least seven days prior to any sampling event or remediation activity~~]The responsible party shall notify the director at least seven days prior to any field work such as a sampling event or remediation activity.

(e) Information submitted to the director shall be signed by the responsible party.

R315-101-12. Documents Incorporated by Reference.

(a) For purposes of Rule R315-101 regarding cleanup action and Risk-Based Closure Standards, the following documents are adopted and incorporated by reference.

(1) Interstate Technology Regulatory Council (ITRC), December 2013, "Groundwater Statistics and Monitoring Compliance" Guidance Document.

(2) Los Alamos National Laboratory (LANL), 2011, "ECO-Risk Database."

(3) Oakridge National Laboratory (ORNL), 1996, "Toxicological Benchmarks for Wildlife: 1996 Revision." ES/ER/TM-86/R3.

(4) Oakridge National Laboratory (ORNL), May 1998, "A Guide to the ORNL Ecotoxicological Screening Benchmarks: Background, Development, and Application," ORNL/TM-13615.

(5) United States Environmental Protection Agency (US EPA), 1986, "Guidelines for the Health Risk Assessment of Chemical Mixtures", Risk Assessment Forum, EPA/630/R-98/002.

(6) United States Environmental Protection Agency (US EPA), 1989, "Risk Assessment Guidance for Super Fund Volume 1:

Human Health Evaluation Manual (Part A)", Office of Emergency and Remedial Response EPA/504/1-89/002, Interim Final.

(7) United States Environmental Protection Agency (US EPA), March 25, 1991, "Risk Assessment Guidance for Super Fund Volume 1: Human Health Evaluation Manual Supplemental Guidance Standard Default Exposure Factors." Interim Final. OSWER Directive 9285.6-03.

(8) United States Environmental Protection Agency (US EPA), December 1991, "Risk Assessment Guidance for Super Fund Volume 1: Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals)," Office of Emergency and Remedial Response EPA/504/1-89/003, Interim Final.

(9) United States Environmental Protection Agency (US EPA), December 1993, "Wildlife Exposure Factors Handbook, Volume I of II," EPA/600/R-93/187.

(10) United States Environmental Protection Agency (US EPA), May 1992, "Supplemental Guidance to RAGS: Calculating the Concentration Term," Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-081.

(11) United States Environmental Protection Agency (US EPA), February 1992, "Framework for Ecological Risk Assessment," EPA/630/R-92/001.

(12) United States Environmental Protection Agency (US EPA), December 1993, "Wildlife Exposure Factors Handbook, Appendix: Literature Review Database, Volume II of II" EPA/600/ R-93/187.

(13) United States Environmental Protection Agency (US EPA), May 1996, "Soil Screening Guidance Technical Background Document," EPA/540/R95/128.

(14) United States Environmental Protection Agency (US EPA), June 1997, "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments," Interim Final, EPA 540-R.97-006, OSWER 9285.7-25, PB97-963211.

(15) United States Environmental Protection Agency (US EPA), April 1998, "Guidelines for Ecological Risk Assessment."

(16) United States Environmental Protection Agency (US EPA), August 2000, "Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures," EPA/630/R-00/002, August Risk Assessment Forum Technical Panel.

(17) United States Environmental Protection Agency (US EPA), December 2001, "Risk Assessment Guidance for Superfund: Volume 1 Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)," Final, OSWER 9285.7-47.

(18) United States Environmental Protection Agency (US EPA), March 2001, "EPA Requirements for Quality Management Plans," EPA QA/R-2, EPA/240/B-01/002.

(19) United States Environmental Protection Agency (US EPA), December 2001, "Risk Assessment Guidance for Superfund: Volume III - Part A, Process for Conducting Probabilistic Risk Assessment," EPA 540-0R-02-002 OSWER 9285.7-45 PB 2002 963302.

(20) United States Environmental Protection Agency (US EPA), December 2002, "Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites," OSWER 9355.4-24.

(21) United States Environmental Protection Agency (US EPA), December 2002, "Guidance for Quality Assurance Project Plans," EPA QA/G-5, EPA/240/R-02/009 , OSWER 2002.

(22) United States Environmental Protection Agency (US EPA), December 2002(a), "Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites."

(23) United States Environmental Protection Agency (US EPA), February 2005, "Guidance for Developing Ecological Soil Screening Levels," Office of Solid Waste and Emergency Response OSWER Directive 9285.7-55.

(24) United States Environmental Protection Agency (US EPA), December 2003, "Human Health Toxicity Values in Superfund Risk Assessment," Office of Solid Waste and Emergency Response, OSWER Directive 9285.7-53.

(25) United States Environmental Protection Agency (US EPA), February 2004, "User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings."

(26) United States Environmental Protection Agency (US EPA), July 2004, "Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment)," EPA/540/R/99/005, Final.

(27) United States Environmental Protection Agency (US EPA), March 2005(b), "Guidelines for Carcinogen Risk Assessment," EPA/630/P-03/001F.

(28) United States Environmental Protection Agency (US EPA), March 2005(c), "Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens," EPA/630/R-03/003F.

(29) United States Environmental Protection Agency (US EPA), February 2006, "Guidance on Systematic Planning Using the Data Quality Objectives Process," EPA/240/B-06/001.

(30) United States Environmental Protection Agency (US EPA), January 2009, "Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)," EPA/540/R/070/002, OSWER 9285.7-82.

(31) United States Environmental Protection Agency (US EPA), March 2009, "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance," Final, EPA 530/R-09-007.

(32) United States Environmental Protection Agency (US EPA), December 1991, "Risk Assessment Guidance for Super Fund Volume 1: Human Health Evaluation Manual (Part C, Risk Evaluation of Remedial Alternatives)," Office of Emergency and Remedial Response EPA/540/R-92/004, Interim.

(33) United States Environmental Protection Agency (US EPA), September 2011, "Exposure Factors Handbook: 2011 Edition," Office of Research and Development, EPA/600/R-090/052F.

(34) United States Environmental Protection Agency (US EPA), February 2012, "Superfund Vapor Intrusion FAQs."

(35) United States Environmental Protection Agency (US EPA), October 2015, "ProUCL Version 5.1 Technical Guide Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations", EPA/600/R-07/041.

(36) United States Environmental Protection Agency (US EPA), February 2014, "Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors," OSWER Directive 9200.1-20.

(37) United States Environmental Protection Agency (US EPA), May 2014, "Vapor Intrusion Screening Level (VISL) Calculator User's Guide."

(38) United States Environmental Protection Agency (US EPA), June 2015, "OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air," OSWER 9200.2-154.

(39) United States Environmental Protection Agency (US EPA), June 2015, "Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites."

(40) United States Environmental Protection Agency (US EPA), March 2005, "Update of Ecological Soil Screening Level (Eco-SSL) Guidance and Contaminant Specific Documents".

(41) United States Environmental Protection Agency (US EPA), September 1986, "Guidelines for Mutagenicity Risk Assessment", EPA/630/R-98/003.

(42) United States Environmental Protection Agency (US EPA), September 1995, "Establishing Background Levels", OSWER Directive 9285.7-19FS, EPA/540/F-94/030.

R315-101-13. Definitions.

(a) Terms used in Rule R315-101 regarding cleanup action and Risk-Based Closure Standards are defined as follows:

(1) "95% Upper Confidence Limit or 95% UCL" means an estimate of the arithmetic average concentration for a contaminant and it provides reasonable confidence that the true site average will not be underestimated.

(2) "95% Upper Tolerance Limit or 95% UTL" means a value not to be exceeded of possible background concentration values and so provides a reasonable upper limit on what is likely to be observed in the background with 95% confidence.

(3) "Acceptable Risk Range" means cancer risk greater than 1 x 10-6 but less than or equal 1 x 10-4 or a hazard index less than or equal to one with justifiable, reasonable and practicable measures in place to reduce and control risk within the range.

(4) "Action Level" means the existence of a contaminant concentration in the environment that is high enough to warrant an action or trigger a response action under the National Oil and Hazardous Substances Contingency Plan.

(5) "Adverse Effect" means any effect that causes harm to the normal functioning of plants or animals due to exposure to a chemical contaminant.

(6) "Appropriate Site Management Activities" means measures that are reasonable and practical that will be taken to control and reduce risks greater than 1×10^{-6} and less than 1×10^{-4} for carcinogen and hazard index equal to or less than one for non-carcinogens under both current and reasonably anticipated future land use conditions, for example, institutional controls, engineering controls, groundwater monitoring, post-closure care, or corrective action and ensuring that assumptions made in the estimation of cancer risk and non-cancer hazard in the risk assessment report are not violated.

(7) "Area of Contamination" means a hazardous waste management unit or a solid waste management unit or an area where a release has occurred.

(8) "Assessment Endpoints" means an explicit expression of environmental value that is to be protected. It is the part of the ecosystem that should be protected at a superfund site and it is generally some characteristic of a species of plant or animal, for example, reproduction, growth, that may be described numerically.

(9) "Background" means substances or locations that are not influenced by releases from a site and are naturally occurring in the environment in forms that have not been influenced by human activity or are natural and human-made substances present in the environment as a result of anthropogenic activities and not related to the site.

(10) "The boundary" means the furthest extent where contamination from a defined source has migrated in any medium at the time the release is first identified.

(11) "Cancer Risk" means the probability that an individual with contract cancer after lifetime exposure to a carcinogen.

(12) "Cleanup" means the range of corrective action activities that occur in the context of addressing environmental contamination at RCRA sites to lower contaminant concentration or decrease chemical toxicity. Activities may include waste removal, contaminated media removal or source reduction, such as excavation or pumping, in-place treatment of waste or contaminated media, such as bioremediation, containment of waste or contaminated media, such as barrier walls, low permeability covers, liners or capping, or various combination of these approaches.

(13) "Concentration Term - 95% Upper Confidence Limit" means the intake variable and it is an estimate of the arithmetic average concentration for a contaminant based on a set of site sampling results. Because of the uncertainty associated with estimating the true average concentration at a site, the 95% Upper Confidence Limit of the arithmetic mean is used to represent this variable and provides reasonable confidence that the true site average will not be underestimated.

(14) "Complete Exposure Pathway" means how a contaminant may be traced or expected to travel from a source to a plant or animal that may be affected by that chemical and shall meet the following:

(a) the presence of a source and transport;

(b) exposure point or contact (receptor); and

(c) exposure route. Otherwise exposure is incomplete.

(15) "Conceptual Site Model" means a written, illustrative, or both, representation of a site that documents the physical, chemical

and biological processes that control the transport, migration, actual or potential, or both impacts of contamination in soil, air, ground water, surface water, sediments, to human or ecological receptors, or both, exposure pathways, at a site or at a reasonably anticipated site under both current and potential future land use scenarios.

(16) "Contaminate" means to render a medium polluted through the introduction of hazardous waste or hazardous constituents as identified in Section R315-261-1092, which incorporates by reference 40 CFR 261, Appendix VIII.

(17) "Contaminants of Concern" means Constituents of Potential Concern that significantly contribute to a pathway in a land use scenario for a receptor that either exceeds a cumulative cancer risk of $1x10^{-4}$ or exceeds a non-cancer hazard index of one.

(18) "Contaminants of Interest" means chemicals detected at the site during the site characterization process that may pose threat to human health or the environment.

(19) "Constituents of Potential Concern" means constituents detected in a medium that are selected to be addressed in the risk assessment process because contact with humans may result in adverse effects.

(20) “Constituents of Potential Ecological Concern” means any constituent that is shown to pose possible ecological risk at a site. It is generally a constituent that may or may not be causing risk or adverse effects to plants and animals at a site.

(21) "Corrective Action" means the cleaning up of environmental problems caused by the mismanagement of wastes, or the cleanup process or program under RCRA and any activities related to the investigation, characterization, and cleanup of release of hazardous waste or hazardous constituents from solid waste management units or hazardous waste management units at a permitted or interim status treatment storage or disposal facilities or voluntary cleanup sites or brownfield sites.

(22) "Corrective Action Complete With Controls" means a condition of a solid waste management unit, a hazardous waste management unit, an area of contamination or a contaminated site where site characterization or risk assessment indicate corrective action is required and completed and the results of the risk assessment meet the closure standards and requirements specified in Subsection R315-101-7(b), or a condition of a solid waste management unit, a hazardous waste management unit, area of contamination or a contaminated site where site characterization or risk assessment indicate corrective action is not required but also meets the closure standards and requirements specified in Subsection R315-101-7(b).

(23) "Corrective Action Complete Without Controls" means a condition of a solid waste management unit, a hazardous waste management unit, area of contamination or a contaminated site where site characterization or risk assessment indicate corrective action is required and completed and the results of the risk assessment meet the closure standards and requirements equivalent to a no further action or meeting the requirements of Subsections R315-101-7(a) or a condition of a solid waste management unit, a hazardous waste management unit, area of contamination or a contaminated site when site characterization or risk assessment indicate corrective action is not required but also meets the closure standards and requirements equivalent to a no further action or meeting the requirements of Subsections R315-101-7(a).

(24) "Corrective Action Level" means the concentration of a contaminant in a medium after cleanup of a site that is protective of human health and the environment.

(25) “Data Quality Objectives” means qualitative and quantitative statements of the quality of data needed to support specific decisions or regulatory actions.

(26) “Dilution Attenuation Factor” means the ratio of the contaminant concentration in soil leachate to the concentration in groundwater at the receptor point.

(27) "Environment" means the surroundings or conditions in which a person, animal, or plant lives or operates.

(28) “Exposure” means contact of an organism with a chemical or physical agent and it is the amount of the agent available at the exchange boundaries of the organism.

(29) “Exposure Pathway” means the course a chemical or physical agent takes from a source to an exposed organism.

(30) "Exposure Point Concentration" means either a statistical derivation of measured data or modeled data that represents an estimate of the chemical concentration available from a particular medium or route of exposure. The exposure point concentration value is used to quantify potential cancer risks and non-cancer hazards.

(31) "Groundwater Cleanup Levels" means site-specific groundwater chemical concentration levels based on groundwater use designation and exposure pathway established to ensure the protection of human health and the environment when defining groundwater cleanup objectives.

(32) "Groundwater Use" means the current or reasonably expected maximum beneficial use of groundwater that warrants the most stringent cleanup levels, including drinking or other uses.

(33) "Hazard Index" means the sum of hazard quotients.

(34) "Hazard Quotient" means the ratio of exposed dose to some reference dose or reference concentration.

(35) “Lowest Observed Adverse Effects Level or Lowest Observed Adverse Effects Concentration” means the lowest level of a chemical stressor evaluated in a toxicity test that shows harmful effects on a plant or animal. A Lowest Observed Adverse Effects Level is based on dose of a chemical ingested while Lowest Observed Adverse Effects Concentration refers to direct exposure to a chemical such as through the skin.

(36) "Maximum Contaminant Level" means the highest level of a contaminant that is allowed in drinking water and is set as close to the "Maximum Contaminant Level Goal" as feasible using the best available treatment technology and taking cost into consideration. Maximum Contaminant Levels are enforceable standards.

(37) "Maximum Contaminant Level Goal” means the level of a contaminant in drinking water below which there is no known or expected risk to health. Maximum Contaminant Level Goals allow for a margin of safety and are non-enforceable public health goals.

(38) "Measures of Effects" means quantitative measurements of effects expressed as statistical or numerical assessment endpoint

summaries of the observations that make up the measurement.

(39) "Measurement End Point" means a measurable ecological characteristic that is related to the valued characteristic chosen as the assessment endpoint and it is a measure of biological effects such as death, reproduction, or growth, of a particular species.

(40) "Natural Resources" means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other similar resources.

(41) "No Further Action" means the state of a solid waste management unit, a hazardous waste management unit, or a contaminated site at closure meeting the requirements in Subsections R315-101-7(a) and it is equivalent to corrective action complete without controls if the site was under corrective action activities. No further action is equivalent to unrestricted land use.

(42) "No Observed Adverse Effects Level or No Observed Adverse Effects Concentration" means the highest level of a chemical stressor in a toxicity test that did not cause a harmful effect in a plant or animal. A No Observed Adverse Effects Level refers to a dose of chemical that is ingested, while a No Observed Adverse Effects Concentration refers to direct exposure to a chemical such as through the skin.

(43) "Point of Departure" means the target risk level that risk to an individual is considered insignificant.

(44) "Potentially Complete Exposure Pathway" means a pathway that, due to current site conditions is incomplete, but could become complete at a future time because of changing site practices. For example the ingestion pathway of groundwater from a residential well in a high total dissolved solids aquifer. This pathway could be complete if treatment technologies like reverse osmosis become economically feasible and are observed to be employed successfully in that aquifer.

(45) "Reasonable Maximum Exposure" means the highest exposure that is reasonably expected to occur at a site. Reasonable Maximum Exposure combines upper-bound and mid-range exposure factors so that the result represents an exposure scenario that is both protective and reasonable; not the worst possible case.

(46) "Regional Screening Levels" means risk-based chemical concentrations derived from standardized equations combing exposure assumptions with EPA chemical-specific toxicity values and target risk levels that are used for site screening and initial cleanup goals.

(47) "Release" means spill or discharge of hazardous waste, hazardous constituents, or material that becomes hazardous waste when released to the environment.

(48) "Responsible Party" means the owner or operator of a site, or any other person responsible for the release of hazardous waste or hazardous constituents.

(49) "Risk-Based Clean Closure" means closure of a site where hazardous waste was managed or any medium that has been contaminated by a release of hazardous waste or hazardous constituents, and where hazardous waste or hazardous constituents remain at the site in any medium at concentrations determined, in Rule R315-101, to cause minimal levels of risk to human health and the environment so as to require no further action or monitoring on the part of the responsible party nor any notice of hazardous waste management on the record of title to the property.

(50) "Risk-Based Concentration" means the concentration of a contaminant the values of which are derived from equations combining toxicity factors with standard exposure scenarios to calculate chemical concentrations corresponding to some fixed levels of risks in any medium, such as water, air, fish tissue, sediment, and soil.

(51) "Robust Statistic" means a statistic that is resistant to errors in the results, produced by deviations from assumptions, such as, normality. This means that the limits are not susceptible to outliers, or distributional assumptions. For example, if the limits are centered on the median, instead of on the mean, or on a modified, "robust mean," and constructed with suitable weighting, or influence, or function, they could be considered "robust."

(52) "Site" means the area of contamination and any other area that could be impacted by the released contaminants, or could influence the migration of those contaminants, regardless of whether the site is owned by the responsible party.

(53) "Site Specific Screening Value" means contaminant screening values derived for media, such as soil, sediment, water, at a site based on relevant site assumptions and factors.

(54) "Source Control" means a range of actions, for example, removal, treatment in place, and containment, designed to protect human health and the environment by eliminating or minimizing migration of or exposure to significant contamination.

(55) "Target Risk" means any acceptable specified risk level. The preferred Target Risk is $1x10^{-6}$ which is at the protective end of the acceptable risk range for screening of contaminants in risk assessment.

KEY: hazardous waste
Date of Enactment or Last Substantive Amendment: April 25, 2013
Notice of Continuation: March 10, 2016
Authorizing, and Implemented or Interpreted Law: 19-6-105; 19-6-106