

# MODEL TOXICS CONTROL ACT AND RIVER CORRIDOR BASELINE RISK ASSESSMENT REGULATORY CROSSWALK

## INTRODUCTION

Protection of human health and the environment and compliance with applicable or relevant and appropriate requirements (ARARs), unless waived, are the two threshold determinations that must be met when selecting a remedial alternative under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) process. Substantive requirements of the Washington State's Model Toxics Control Act (MTCA), which addresses the calculation and application of cleanup levels for chemical contaminants, meet the criteria to be considered as potential ARARs for the River Corridor remedial investigation (RI) and feasibility study (FS). Although ARARs are typically addressed in RI/FS documents separate from the baseline risk assessment, at the request of the Washington State Department of Ecology (Ecology), methodologies related to MTCA have been incorporated as feasible within the River Corridor Baseline Risk Assessment (RCBRA).

The risk assessment evaluations documented in Draft A of the 100 Area and 300 Area Component of the RCBRA were largely conducted within the framework of human and ecological risk assessment guidance for hazardous waste sites regulated under the CERCLA process. However, the risk assessment methods used in Draft A were also influenced by decisions made during a series of workshops with the Tri-Party signatories and natural resource trustees between 2005 and 2007. Some of the technical methodologies documented in Draft A arising from workshop decisions, notably the statistical methods for estimating upper bounds on average concentrations, reflected an effort to accommodate approaches described within MTCA. Other decisions made within the workshops, such as the decision to assess risks across a wide range of constituents independent of considerations such as background comparisons and detection frequency, were not completely consistent with either MTCA regulations or CERCLA guidance.

Comments from the Tri-Party signatories, natural resource trustees, and other stakeholders on Draft A of the 100 Area and 300 Area Component of the RCBRA have a number of common elements that relate to the aforementioned workshop decisions. Most importantly, these include concerns that Hanford Site-related risks have not been differentiated from aggregate risk from all possible sources, and that aspects of the technical methodology have resulted in a gross overestimation of some risks. To address these comments, substantive changes are being proposed for Draft B of the RCBRA that relate to identification of contaminants of concern (COCs) and calculation of representative concentrations of COCs in environmental media.

One of the major concerns expressed in comments by Ecology on Draft A of the RCBRA was the relationship between the risk assessment methodology used in the RCBRA and the requirements of MTCA. MTCA regulations describe the development and application of cleanup levels for hazardous chemicals. Although these are risk based, the MTCA methodologies often differ from the process for conducting human health or ecological risk assessment under CERCLA. Therefore, the relationship between MTCA regulation and CERCLA risk assessment guidance is not always clear.

A comparison of MTCA requirements in *Washington Administrative Code* (WAC) 173-340 with CERCLA requirements and recommendations in CERCLA guidance documents is provided in Attachment A. The comparison focuses on the MTCA sections listed in the Dangerous Waste regulation (WAC 173-303-646(2)(d)), based on statements from Ecology regarding MTCA being triggered as an ARAR for *Resource Conservation and Recovery Act of 1976 RCRA* corrective actions. The MTCA-CERCLA crosswalk table in Attachment A compares the regulations of WAC 173-340 with those of CERCLA at 40 *Code of Federal Regulations* CFR 300.430, or with CERCLA guidance as specified.. For each WAC 173-340 requirement, the corresponding regulation or guidance from CERCLA is shown. An assessment of consistency between the WAC 173-340 requirements and the CERCLA regulations/guidance is given. Where the CERCLA regulations/guidance are shown to be consistent with WAC 173-340, the approach currently conducted under CERCLA is considered to adequately address the requirements of WAC 173-340 as listed in WAC 173-303-646(2)(d).

Finally, the MTCA-CERCLA crosswalk table highlights portions of the requirements that are particularly relevant to conducting the risk assessment. These requirements are evaluated for consistency with CERCLA regulations and guidance. As stated above, where the CERCLA regulations/guidance is shown to be consistent with WAC 173-340, the approach currently conducted under CERCLA is considered to adequately address the requirements of WAC 173-340 as listed in WAC 173-303-646(2)(d).

## ATTACHMENT A

### WAC 173-340 Sections Considered ARAR under CERCLA<sup>1</sup>

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
<b>Section 350: Remedial investigation and feasibility study</b>					
(1) Purpose (2) Timing (3) Administrative options (4) Submittal requirements (5) Public participation (6) Scope	General discussions and nonsubstantive requirements	--	--	--	N
(7) Procedures for conducting a remedial investigation (a) Purpose	Nonsubstantive	--	--	--	N
(b) Scoping activities	(i) Assemble and evaluate existing data on the site, including the results of any interim or emergency actions, initial investigations, site hazard assessment, and other site inspections.	(b)(1)	Assemble and evaluate existing data on the site, including the results of any removal actions, remedial preliminary assessment and site inspections, and the NPL listing process.	MTCA and CERCLA are consistent	Y - addressed by standard CERCLA process.
	(ii) Develop a preliminary conceptual site model as defined in WAC 173-340-200 (potential or suspected sources of hazardous substances, types and concentrations of hazardous substances, potentially contaminated media, and actual and potential exposure pathways and receptors)	(b)(2)	Develop a conceptual understanding of the site based on the evaluation of existing data described in paragraph (b)(1) of this section.	MTCA and CERCLA are consistent	Y - addressed by standard CERCLA process.
	(iii) Begin to identify likely cleanup levels for the site	EPA RI/FS Guidance, Chapter 2.2	Identify preliminary remedial action objectives and likely response actions for the specific project	MTCA and CERCLA are consistent	N - Addressed as separate part of remedial investigation, not part of risk assessment per se.
	(iv) Begin to identify likely cleanup action components that may address the releases at the site	(b)(3)	Identify likely response scenarios and potentially applicable technologies and operable units that may address site problems.	MTCA and CERCLA are consistent	N - Addressed as separate part of RI, not part of risk assessment per se.
	(v) Consider the type, quality and quantity of data necessary to support selection of a cleanup action	(b)(5)	Identify the type, quality, and quantity of the data that will be collected during the RI/FS to support decisions regarding remedial response activities.	MTCA and CERCLA are consistent	Y - data used in RA; augmented with additional sampling where necessary.
	(vi) Begin to identify likely applicable state and federal laws under WAC 173-340-710 (chemical-, location-, and action-specific ARARs)	(b)(9)	Initiate the identification of potential federal and state ARARs and, as appropriate, other criteria, advisories, or guidance to be considered.	MTCA and CERCLA are consistent	Partial - ARAR identification is a separate part of RI; however, risk-based ARARs may be used in RA.
(c) Content	(i) General facility information (e.g., legal description, history)	EPA RI/FS Guidance, Table 3-13	General information included in RI Report.	MTCA and CERCLA are consistent	Partial - Generally covered in a separate part of RI; may be

<sup>1</sup> Sections not shown in the table are not considered ARAR under WAC 173-340-702(10), the 1994 EPA/Ecology agreement, or WAC 173-303-64620.

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
					summarized in stand-alone RA report.
	(ii) Site conditions map (e.g., property boundaries, topography, structures)	(d)(2)(i)	Physical characteristics of the site, including important surface features, soils, geology, hydrogeology, meteorology, and ecology;	MTCA and CERCLA are consistent	Partial - Generally covered in a separate part of RI; may be summarized in stand-alone RA report.
	(iii) Field investigations, including where applicable: (A) Surface water and sediments (B) Soils (C) Geology and ground water system characteristics (D) Air (E) Land use (F) Natural resources and ecological receptors (G) Hazardous substance sources (H) Regulatory classifications	(b)(4)	Undertake limited data collection efforts or studies where this information will assist in scoping the RI/FS or accelerate response actions, and begin to identify the need for treatability studies, as appropriate.	MTCA and CERCLA are consistent	Y - Data and info used in RA. Additional info include in separate part of RI.
	(iv) Workplans (safety and health plan, sampling and analysis plan)	(b)(6) and (b)(8)	(6) Prepare site-specific health and safety plans that shall specify, at a minimum, employee training and protective equipment, medical surveillance requirements, standard operating procedures, and a contingency plan that conforms with 29 CFR 1910.120 (l)(1) and (l)(2). (8) Develop sampling and analysis plans that shall provide a process for obtaining data of sufficient quality and quantity to satisfy data needs. Sampling and analysis plans shall be reviewed and approved by EPA.	MTCA and CERCLA are consistent	Y - Used in sampling and analysis to support RA.
	(v) Other information as required by Ecology	--	--	--	--
(8) Procedures for conducting a feasibility study	Nonsubstantive	--	--	--	N - Part of FS.
(a) Purpose					
(b) Screening of alternatives	May eliminate alternatives that clearly do not meet minimum requirements or are not technically possible	EPA RI/FS Guidance, Chapter 4.1.2.1	Identify and screen the technologies applicable to each general response action to eliminate those that cannot be implemented technically at the site.	MTCA and CERCLA are consistent	N - Part of FS.
(c) Content	(i) General requirements: (A) Protective of human health and the environment	(f)(1)(A)	Threshold criteria. Overall protection of human health and the environment and compliance with ARARs (unless a specific ARAR is waived) are threshold requirements that each alternative must meet in order to be eligible for selection.	MTCA and CERCLA are consistent	N - Part of FS.
	(B) Reasonable number and type of alternatives	(e)(1)	The development and evaluation of alternatives shall reflect the scope and complexity of the remedial action under consideration and the site problems being addressed.	MTCA and CERCLA are consistent	N - Part of FS.
	(C) Each alternative may consist of one or more cleanup action components	EPA RI/FS Guidance, Chapter 4.2.2	General response actions may include treatment, containment, excavation, extraction, disposal, institutional actions, or a combination of these.	MTCA and CERCLA are consistent	N - Part of FS.
	(D) May include remediation levels	(e)(3), (4)	CERCLA process allows for development of range of alternatives including combinations of containment, institutional controls, excavation	MTCA and CERCLA are consistent	N - Part of FS.
	(E) Evaluate residual threats if necessary	(e)(9)(iii)(C)	Long-term effectiveness and permanence. Alternatives shall be assessed for the long-term effectiveness and permanence they afford, along with the degree of certainty that the alternative will prove successful. Factors that shall be considered, as appropriate, include the following: (1) Magnitude of residual risk	MTCA and CERCLA are consistent	N - Part of FS.
	(F) Usually include alternatives with standard point of compliance	--	CERCLA process identifies RAGs and point of compliance; "standard" points of compliance less well defined under CERCLA; however, "standard" points of compliance may also be screened	MTCA and CERCLA are consistent in implementation	N - Part of FS.

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
			out under MTCA		
	(G) Evaluate based on Section 360	--	See comparisons for Section 360	--	N - Substantive portions of Section 360 may be considered as ARARs in FS.
	(H) May identify preferred cleanup action	(f)(2)	The lead agency, in conjunction with the support agency and consistent with §300.515(e), shall prepare a proposed plan that briefly describes the remedial alternatives analyzed by the lead agency, proposes a preferred remedial action alternative, and summarizes the information relied upon to select the preferred alternative.	MTCA and CERCLA are consistent	N - Addressed in proposed plan.
	(I) Other information required by Ecology	--	--	--	--
	(ii) Permanent alternatives: In most cases include a permanent alternative as a baseline for comparison unless permanent solution is not technically practicable or cost is so clearly disproportionate	(e)(3)(i); (e)(9)(iii)(C)	The FS shall include a range of alternatives that reduces the toxicity, mobility, and volume, of contaminants as a principal element, including an alternative that removes or destroys contaminants to the degree possible. Permanence of remedy is evaluated as one of CERCLA criteria.	MTCA and CERCLA are consistent	N - Part of FS.
(9) Additional requirements (a) Cleanup levels	Sections 700-760	--	See comparisons for the 700 series sections	--	--
(b) Compliance with other laws	Ecology may require RI/FS to include additional analysis to comply with State Environmental Policy Act or other applicable laws	--	NEPA evaluation not required under CERCLA; CERCLA functionally equivalent to NEPA; NEPA values included in CERCLA documents	SEPA/NEPA not required under CERCLA; NEPA values are included in FS or proposed plan.	N - May be included in FS or Proposed Plan.
(c) Treatability studies	May be required	(d)(1)	Bench- or pilot-scale treatability studies shall be conducted, when appropriate and practicable, to provide additional data for the detailed analysis and to support engineering design of remedial alternatives.	MTCA and CERCLA are consistent	N - May be conducted as part of FS.
(d) Other information	May be required--not specified	--	--	--	--
<b>Section 360: Selection of cleanup actions</b>					
(1) Purpose	Not substantive	--	--	--	--
(2) Minimum requirements for cleanup actions (a) Threshold requirements	(i) Protect human health and the environment	(e)(9)(iii)(A)	Overall protection of human health and the environment	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
	(ii) Comply with cleanup standards	(e)(9)(iii)(B)	More stringent state cleanup standards addressed as ARARs under CERCLA	MTCA cleanup standards addressed as ARARs	Partial - ARARs identification and compliance is separate part of RI and FS evaluation; however, ARARs relating to protectiveness may be used for comparison in RA.
	(iii) Comply with ARARs	(e)(9)(iii)(B)	Compliance with ARARs.	MTCA and CERCLA are consistent	Partial - ARARs identification and compliance is separate part of RI and FS evaluation; however, ARARs relating to protectiveness may be used for

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?  comparison in RA.
Citation	Requirement	Citation	Requirement		
	(iv) Provide for compliance monitoring	EPA RI/FS Guidance, Section 6.2.3.6	Compliance monitoring identified as part of CERCLA remedy and evaluated under implementability criterion	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
(b) Other requirements	(i) Permanent solution to the maximum extent practicable	(f)(1)(ii)(E)	Each remedial action shall utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
	(ii) Reasonable restoration time frame	(a)(1)(ii)(F)	EPA expects to return usable ground waters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site.	MTCA and CERCLA are consistent for groundwater	N - Part of FS and remedy selection.
	(iii) Public concerns	(e)(9)(iii)(I)	Community acceptance	MTCA and CERCLA are consistent	N - Part of remedy selection process.
(c) Ground water cleanup actions	Use a permanent action where possible. Treatment & removal for liquid wastes, high concentrations, highly mobile substances, or substances that can't be reliably contained. Prevent expansion of plume.	(a)(1)(ii)	(D) The use of institutional controls shall not substitute for active response measures (e.g., treatment and/or containment of source material, restoration of ground waters to their beneficial uses) as the sole remedy unless such active measures are determined not to be practicable, based on the balancing of trade-offs among alternatives that is conducted during the selection of remedy. (F) When restoration of ground water to beneficial uses is not practicable, EPA expects to prevent further migration of the plume, prevent exposure to the contaminated ground water, and evaluate further risk reduction.	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
(d) Soils at residential areas, schools, child care centers	Soils with hazardous substances in these areas must be treated, removed, or contained.	(f)(1)(ii)(A)	No specific CERCLA requirement; however, CERCLA evaluates treatment, removal, or containment alternatives and requires that selected remedy be protective based on anticipated exposure pathways	MTCA and CERCLA are consistent	Partial - Part of FS and remedy selection; exposure assessment developed as part of RA used to identify potential exposure pathways.
(e) Institutional controls	Refers to Section 440	--	See comparison for Section 440	--	N - Part of FS and remedy selection.
(f) Releases and migration	Prevent releases & migration	(a)(1)(ii)(F)	When restoration of ground water to beneficial uses is not practicable, EPA expects to prevent further migration of the plume, prevent exposure to the contaminated ground water, and evaluate further risk reduction.	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
(g) Dilution and dispersion	Cleanup actions shall not rely primarily on dilution or dispersion unless costs of active remediation measures grossly exceed dilution/dispersion costs	(e)(9)(iii)(D)	CERCLA criterion creates a preference for alternatives that employ recycling or treatment to reduce toxicity, mobility, or volume reduction	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
(h) Remediation levels	Meet minimum requirements & use disproportionate cost analysis to determine more permanent cleanup is not practicable	(e)(3), (4); CERCLA Section 121(b)(1)	CERCLA process allows for development of range of alternatives including combinations of containment, institutional controls, and excavation. Section 121(b)(1) requires utilization of permanent solutions and treatment or recovery to the maximum extent practicable	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
(3) Determining whether a cleanup action uses permanent solutions to the maximum extent practicable	Paragraphs (a)-(d) not substantive	--	--	--	--
(e) Disproportionate cost analysis	Cost vs. benefit	(e)(7)(iii)	Cost. The costs of construction and any long-term costs to operate and maintain the alternatives shall be considered. Costs that are grossly excessive compared to the overall effectiveness of alternatives may be considered as one of several factors used to eliminate alternatives. Alternatives providing effectiveness and implementability similar to that of another alternative by employing a similar method of treatment or engineering control, but at greater	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
			cost, may be eliminated.		
(f) Evaluation criteria	(i) Protectiveness	(e)(9)(iii)(A)	Overall protection of human health and the environment	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
	(ii) Permanence	(f)(1)(ii)(E)	Each remedial action shall utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
	(iii) Cost	(e)(9)(iii)(G)	Cost	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
	(iv) Effectiveness over the long term	(e)(9)(iii)(C)	Long-term effectiveness and permanence	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
	(v) Management of short-term risks	(e)(9)(iii)(E)	Short-term effectiveness	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
	(vi) Technical and administrative implementability	(e)(9)(iii)(F)	Implementability	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
	(vii) Consideration of public concerns	(e)(9)(iii)(I)	Community acceptance	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
(4) Determining whether a cleanup action provides for a reasonable restoration time frame	Factors to consider, area background concentrations, technically possible concentrations	(a)(1)(iii)(F); (e)(7)(f); (e)(9)(iii)(E) (4)	CERCLA requires restoration of groundwater within reasonable time frame wherever practicable; time to achieve protectiveness evaluated as part of effectiveness screen and short-term effectiveness criterion	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
<b>Section 400: Implementation of cleanup action</b>					
	Not substantive	--	--	--	--
<b>Section 410: Compliance monitoring requirements</b>					
	Covers protection monitoring, performance monitoring, and confirmational monitoring.	--	Applicable to FS. To be evaluated later.	--	N - Part of FS and remedy selection.
<b>Section 420: Periodic review</b>					
(1) Purpose	Not substantive	--	--	--	--
(2) Applicability	Required in cases with institutional control, cleanup level based on practical quantitation limit, modifications to default equations	(f)(4)(ii)	If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after initiation of the selected remedial action.	MTCA and CERCLA are consistent	N - Part of FS, remedy selection, and post-remediation implementation.
(3) General requirements	At least every 5 years				N - Part of post-remediation implementation.
(4) Review criteria	Consider effectiveness of engineered and institutional controls, new scientific information, new ARARs, site and resource uses, availability of more permanent remedies, improved analytical techniques				N - Part of post-remediation implementation.
(5) Notice and public comment	Site Register, principal liable parties				N - Part of post-remediation implementation.
(6) Determination of whether amendment of cleanup action plan required	Revised cleanup action plan				N - Part of post-remediation implementation.

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
(7) Determination of whether future periodic reviews required	Sites with institutional controls subject to periodic reviews as long as institutional controls required				N - Part of post-remediation implementation.
<b>Section 440: Institutional controls</b>					
(1) Purpose	Nonsubstantive	--	--	--	--
(2) Relationship to engineered controls	Nonsubstantive	--	--	--	--
(3) Applicability	Nonsubstantive	--	--	--	--
(4) Circumstances required	(a) Concentrations above Method A or B remain on site (b) Method C cleanup levels used (c) Industrial soil cleanup levels used (d) Groundwater cleanup level higher than potable water concentration (e) Conditional point of compliance (f) When required by terrestrial ecological evaluation (g) Ecology determines necessary	(e)(3)(ii)	Institutional controls used as part of CERCLA actions as necessary. Specific substantive requirements of WAC 173-340-440 standards incorporated as ARAR under CERCLA.	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
(5) Minimum requirements	Not substantive	--	--	--	--
(6) Requirement for primary reliance	Not allowed if more permanent cleanup technically possible	(a)(1)(iii)(D)	The use of institutional controls shall not substitute for active response measures (e.g., treatment and/or containment of source material, restoration of ground waters to their beneficial uses) as the sole remedy unless such active measures are determined not to be practicable, based on the balancing of trade-offs among alternatives that is conducted during the selection of remedy.	MTCA and CERCLA are consistent	N - Part of FS and remedy selection.
(7) Periodic review	Refers to Section 420	--	See comparison for Section 420	--	N - Part of FS, remedy selection, and post-remediation implementation.
(8) Format	Restrictive covenants and other mechanisms	EPA's Site Managers IC Guidance	EPA guidance addresses restrictive covenants and other mechanisms.	MTCA and CERCLA are consistent	N - Part of FS, remedy selection, and post-remediation implementation.
(9) Restrictive covenants	Covers requirements of the restrictive covenant	EPA's Site Managers IC Guidance	EPA guidance addresses restrictive covenants and other mechanisms.	MTCA and CERCLA are consistent; details of MTCA covenant requirements considered as part of institutional control implementation	N - Part of FS, remedy selection, and post-remediation implementation.
(10) Local government notification	Notify city or county department with land use planning authority	EPA's Site Managers IC Guidance	EPA guidance reflects critical requirement to coordinate with local land use authorities.	MTCA and CERCLA are consistent	N - Part of FS, remedy selection, and post-remediation implementation.
(11) Financial assurances	May be required for sites with engineered and/or institutional controls	--	Not specifically addressed in EPA guidance for Federal facilities.	EPA guidance and MTCA both recognize need for long-term viability of institutional controls	N - May be addressed as part of FS and remedy selection.
(12) Removal of restrictions	Allowed if circumstances in paragraph (4) are removed	EPA Region 10 IC Policy	Requires EPA and state concurrence in IC deletion or termination.	MTCA and CERCLA are consistent	N - Part of FS, remedy selection, and post-remediation implementation.

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
<b>Section 700: Overview of cleanup standards</b>					
	Covers terminology; Methods A, B, and C; general requirements; requirements related to petroleum. Not substantive.		See comparisons for specific media in Sections 720-760	--	--
<b>Section 702: General policies</b>					
	Not substantive	--	--	--	--
<b>Section 703: Selection of indicator hazardous substances</b>					
(1) Purpose	Not substantive	--	--	--	--
(2) Approach	Consider the following: (a) Toxicological characteristics (b) Persistence (c) Mobility (d) Natural background (e) Thoroughness of testing (f) Frequency of detection (g) Degradation by-products	EPA RI/FS Guidance, Section 3.4.2.2	EPA's process for selecting COPCs is consistent with MTCA process.	MTCA and CERCLA are consistent	Y
(3) Biological testing	May be required, though in practice it rarely is	--	Not addressed in guidance for selecting COPCs	MTCA appears more stringent on paper but in practice MTCA and CERCLA are consistent.	Y
<b>Section 704: Use of Method A</b>					
	Covers applicability, procedures, remediation levels	--	See comparisons for specific media in Sections 720-760	--	--
<b>Section 705: Use of Method B</b>					
	Covers applicability, cleanup levels, multiple hazardous substances or pathways, adjustments, remediation levels	--	See comparisons for specific media in Sections 720-760	--	--
<b>Section 706: Use of Method C</b>					
	Covers applicability, cleanup levels, multiple hazardous substances or pathways, adjustments, remediation levels	--	See comparisons for specific media in Sections 720-760	--	--
<b>Section 707: Analytical considerations</b>					
	Covers analytical methods, use of PQL for cleanup level	Various EPA methods	Various EPA methods (e.g., SW-846) exist. CERCLA would allow use of appropriate method as defined through DQO/SAP process. EPA's Risk Assessment Guidance for Superfund (RAGS) addresses use of PQLs in risk assessment.	MTCA provisions are more specific than, but not precluded by, CERCLA. Substantive MTCA requirements used as ARAR under CERCLA.	Y
<b>Section 708: Human health risk assessment procedures</b>					
(1) Purpose	Not substantive	--	--	--	--
(2) Selection of indicator hazardous substances	Refers to Section 703	--	See comparisons for Section 703	--	--

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
(3) Reasonable maximum exposure	"Highest exposure reasonably expected to occur at a site under current and potential future site use." Land uses other residential or industrial may not be used to set cleanup levels but may be used to assess protectiveness of a remedy.	EPA's Risk Assessment Guidance for Superfund (RAGS)	EPA uses reasonable maximum exposure concept to evaluate risk/protectiveness.	CERCLA allows consideration of land uses other than residential and industrial, as does MTCA in implementing "remediation levels"	Y
(4) Cleanup levels for IHSs	Not substantive	--	--	--	--
(5) Multiple hazardous substances	Adjust cleanup levels for total site hazard index of 1.0 and total site cancer risk of 1E-5	(e)(2)(i)(A)	( 1 ) For systemic toxicants, acceptable exposure levels shall represent concentration levels to which the human population, including sensitive subgroups, may be exposed without adverse effect during a lifetime or part of a lifetime, incorporating an adequate margin of safety; ( 2 ) For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10 <sup>-4</sup> and 10 <sup>-6</sup>	CERCLA's upper end target cancer risk appears less restrictive than MTCA's, but inclusion of additional exposure pathways usually results in CERCLA cleanup levels at least as stringent as MTCA. This was shown to be true for the RCBRA Draft A.	Partial - RA identifies risks exceeding risk range, protectiveness of alternatives evaluated as part of FS
(6) Multiple pathways of exposure	Adjust cleanup levels for total site hazard index of 1.0 and total site cancer risk of 1E-6	(e)(2)(i)(A)	( 1 ) For systemic toxicants, acceptable exposure levels shall represent concentration levels to which the human population, including sensitive subgroups, may be exposed without adverse effect during a lifetime or part of a lifetime, incorporating an adequate margin of safety; ( 2 ) For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10 <sup>-4</sup> and 10 <sup>-6</sup>	CERCLA's upper end target cancer risk appears less restrictive than MTCA's, but inclusion of additional exposure pathways usually results in CERCLA cleanup levels at least as stringent as MTCA. This was shown to be true for the RCBRA Draft A.	Partial - RA identifies risks exceeding risk range, protectiveness of alternatives evaluated as part of FS
(7) Reference doses	Preferred source is IRIS	EPA IRIS database.	IRIS database used in CERCLA as preferred source for toxicity information.	MTCA and CERCLA are consistent	Y
(8) Carcinogenic potency factor	Preferred source is IRIS	EPA IRIS database.	IRIS database used in CERCLA as preferred source for toxicity information.	MTCA and CERCLA are consistent	Y
(9) Bioconcentration factors	Preferred source is Clean Water Act	EPA ARARs Q&As: Compliance with Federal Water Quality Criteria	EPA uses CWA bioconcentration factors in establishing surface water standards and in evaluating cleanup levels for human exposure. WAC 173-340 surface water standards based on BCFs used as ARAR under CERCLA.	MTCA and CERCLA are consistent	Y
(10) Exposure parameters	Lists which exposure parameters may be modified for cleanup levels and which may be modified for remediation levels	EPA RAGS	RAGS includes default exposure parameters, allows for modification.	CERCLA allows more flexibility in modifying exposure parameters	Y - Used in evaluating risk associated with exposure scenarios.
(11) Probabilistic risk assessment	May not be used for cleanup levels but may be used to evaluate alternative remedies	EPA RAGS	EPA's RAGS Vol. 3 Part A provides guidance on conducting probabilistic risk assessment.	CERCLA allows probabilistic risk assessment, though it's not performed often	N - Probabilistic risk not being evaluated in RA.
<b>Section 709: Methods for defining background concentrations</b>					
(1) Purpose	Not substantive	--	--	--	--
(2) Background concentrations	Background locations for collecting samples	EPA's Reference Information Guidance	Ideally, on-site reference samples are collected from the unaffected portions of contaminated habits.	MTCA and CERCLA are consistent	Y
(3) Statistical analysis	Distributions, statistical parameters	ProUCL	Discusses statistical issues.	EPA's (2007) ProUCL Technical Guide is more current than Ecology's (1992) Statistical Guidance for Ecology Site Managers. The ProUCL guidance	Y

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
				credibly represents other statistical methods that could be approved by the department (WAC 173-340-740(7)(d)(iv)).	
(4) Sample size	Specified for soil	Background guidance	Discusses soil sampling size generically.	CERCLA guidance on background sample size (EPA 1995, 2002) is more recent and more comprehensive than MTCA.	Y
(5) Procedures	Nondetected values	ProUCL	Provides guidance on handling of nondetected values.	EPA's (2007) ProUCL Technical Guide is more current than Ecology's (1992) Statistical Guidance for Ecology Site Managers. The ProUCL guidance credibly represents other statistical methods that could be approved by the department (WAC 173-340-740(7)(d)(iv)).	Y
<b>Section 710: Applicable local, state and federal laws</b>					
	Covers definitions of "applicable" and "relevant and appropriate," variances, interim actions, permits and exemptions	EPA (1988, 1989) Compliance with Other Laws Manual	EPA's ARARs guidance is generally consistent with MTCA requirements	MTCA and CERCLA are consistent	Partial - ARAR identification is a separate part of RI; however, risk-based ARARs may be used in RA.
<b>Section 720: Ground water cleanup standards</b>					
(1) General considerations	Highest beneficial use at most sites is drinking water, protection of other media	(a)(1)(iii)(F)	EPA expects to return usable ground waters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site.	MTCA and CERCLA are consistent	Y - Beneficial use
(2) Potable ground water defined	Yield, natural background concentrations	EPA's Groundwater Cleanup Guidance	EPA generally uses state groundwater classification in determining highest beneficial use.	MTCA and CERCLA are consistent.	Y - Beneficial use
(3) Method A	Table values, ARARs, protection of surface water, natural background, PQLs	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - ARAR identification is a separate part of RI; however, risk-based ARARs may be used in RA.
(4) Method B	ARARs, equations, allowed modifications	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	Some exposure parameter values are different, but focus on ARARs and inclusion of additional exposure pathways typically result in CERCLA cleanup levels at least as stringent as MTCA. RCBRA Draft A includes dermal absorption from water, while MTCA does not. RCBRA Draft A is more protective than MTCA.	Y - Exposure parameters included in RA assessment.
(5) Method C	ARARs, equations, allowed modifications	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.		Y - Exposure parameters may be included in RA assessment.
(6) Cleanup levels for nonpotable ground water	Site-specific risk assessment allowed	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	N - RA evaluates groundwater as potable.
(7) Adjustments to cleanup levels	Total site risk, natural background, PQLs, NAPL	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - RA evaluates cumulative risk, addresses background issues, and

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
					considers characterization data that could include non-detects.
(8) Point of compliance	Standard, conditional, off-property conditional	(f)(1)(ii)(B)	Default points of compliance generally less well defined under CERCLA; however, points of compliance may adjusted under MTCA; substantive requirements of state laws are ARARs under CERCLA	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - RA identifies potential exposure pathways based on contaminant location. Point of compliance issues associated with remedies addressed in FS and remedy selection.
(9) Compliance monitoring	Unfiltered samples, three-part statistical rule, nondetected results	(f)(1)(ii)(B); EPA RAGS	EPA RAGS and other documents includes guidance on filtered vs. unfiltered samples, statistical methods, and handling of nondetected results. Substantive requirements of state laws are ARARs under CERCLA.	MTCA provisions are both more specific and less sophisticated than CERCLA guidance. In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent.	N - Applies to monitoring associated with remedy implementation.
<b>Section 730: Surface water cleanup standards</b>					
(1) General considerations	Highest beneficial use, protection of other media	(f)(1)(ii)(A) & (B)	CERCLA requires selected remedy be protective based on anticipated exposure pathways and use. Substantive requirements of state laws are ARARs under CERCLA.	MTCA and CERCLA are consistent	Y - Beneficial use
(2) Method A	ARARs, natural background, PQLs	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - ARAR identification is a separate part of RI; however, risk-based ARARs may be used in RA.
(3) Method B	ARARs, equations, allowed modifications	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	Some exposure parameter values are different, but focus on ARARs and inclusion of additional exposure pathways typically result in CERCLA cleanup levels at least as stringent as MTCA. Exposures to surface water not evaluated in RCBRA.	Y - Exposure parameters
(4) Method C	ARARs, equations, allowed modifications	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.		Y - Exposure parameters may be used in RA.
(5) Adjustments to cleanup levels	Total site risk, natural background, PQLs, NAPL levels	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - RA evaluates cumulative risk, addresses background issues, and considers characterization data that could include non-detects.
(6) Point of compliance	Standard, no mixing zone	CERCLA Section 121(d)(2)(B)(ii)	CERCLA statute requires no statistically significant increase at point of entry for groundwater discharging into surface water.	MTCA and CERCLA are consistent	Partial - RA identifies potential exposure pathways based on contaminant location. Point of compliance issues

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
					associated with remedies addressed in FS and remedy selection.
(7) Compliance monitoring	Unfiltered samples, ARARs, procedures approved by Ecology	(f)(1)(ii)(B); EPA RAGS	EPA RAGS and other documents include guidance on filtered vs. unfiltered samples. Substantive requirements of state laws are ARARs under CERCLA.	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	N - Applies to monitoring associated with remedy implementation.
<b>Section 740: Unrestricted land use soil cleanup standards</b>					
(1) General considerations	RME scenario, protection of other media	EPA's RAGS; (f)(1)(ii)(A)	EPA uses reasonable maximum exposure concept to evaluate risk/protectiveness. CERCLA requires selected remedy be protective based on anticipated exposure pathways and use.	MTCA and CERCLA are consistent	Y - RME scenarios are bases for CERCLA RA
(2) Method A	Tables, ARARs, TEE	(f)(1)(ii)(B); (f)(1)(ii)(A)	Substantive requirements of state laws are ARARs under CERCLA. Selected remedies must be protective of human health and the environment (including terrestrial ecological receptors).	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - ARAR identification is a separate part of RI; however, risk-based ARARs may be used in RA.
(3) Method B	ARARs, equations, allowed modifications	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	Some exposure parameter values are different, but inclusion of additional exposure pathways typically results in CERCLA cleanup levels at least as stringent as MTCA. RCBRA Draft A risks were shown to be more protective than MTCA.	Y - Exposure parameters
(4) Method C	Not applicable	--	--	--	--
(5) Adjustments to cleanup levels	Total site risk, natural background, PQLs	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - RA evaluates cumulative risk, addresses background issues, and considers characterization data that could include non-detects.
(6) Point of compliance	Protection of groundwater, vapors, direct contact, TEE, containment	(f)(1)(ii)(B); (f)(1)(ii)(A)	Substantive requirements of state laws are ARARs under CERCLA. Selected remedies must be protective of human health and the environment (including terrestrial ecological receptors).	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - RA identifies potential exposure pathways based on contaminant location. Point of compliance issues associated with remedies addressed in FS and remedy selection.
(7) Compliance monitoring	Three part statistical rule, nondetected results	(f)(1)(ii)(B); EPA RAGS	EPA RAGS and other documents include guidance on statistical methods and handling of nondetected results. Substantive requirements of state laws are ARARs under CERCLA.	MTCA provisions are both more specific and less sophisticated than CERCLA guidance. In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent.	N - Applies to monitoring associated with remedy implementation.

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
<b>Section 745: Soil cleanup standards for industrial properties</b>					
(1) Applicability	Criteria and expectations for qualifying for industrial land use	EPA Land Use Guidance; RAGS; (f)(1)(ii)(B)	EPA uses reasonable maximum exposure concept, including anticipated land use, to evaluate risk/protectiveness. Guidance on CERCLA industrial exposure scenarios are provided in RAGS. Substantive requirements of state laws are ARARs under CERCLA.	MTCA provisions are more specific and may be less flexible than CERCLA. In identifying substantive requirements of MTCA and CERCLA as ARARs, MTCA and CERCLA are consistent.	Partial - Land use considerations included in RA exposures.
(2) General considerations	Soils beyond property boundaries, protection of other media	(f)(1)(ii)(A) & (B)	CERCLA requires selected remedy be protective based on anticipated exposure pathways and use. CERCLA site includes all areas where hazardous substances have come to be located, including off-site areas. Substantive requirements of state laws are ARARs under CERCLA.	MTCA and CERCLA are consistent; some elements of MTCA may be more specific and incorporated as ARARs	Partial - RA considers impacts on other media; RA is part of larger risk assessment effort that will evaluate contaminants where they have come to be located.
(3) Method A	Tables, ARARs, TEE	(f)(1)(ii)(B); (f)(1)(ii)(A)	Substantive requirements of state laws are ARARs under CERCLA. Selected remedies must be protective of human health and the environment (including terrestrial ecological receptors).	MTCA and CERCLA are consistent; some elements of MTCA may be more specific and incorporated as ARARs	Partial - ARAR identification is a separate part of Ri; however, risk-based ARARs may be used in RA.
(4) Method B	Not applicable	--	--	--	--
(5) Method C	ARARs, equations, allowed modifications	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	Some exposure parameter values are different, but inclusion of additional exposure pathways typically results in CERCLA cleanup levels at least as stringent as MTCA. RCBRA Draft A risks were shown to be more protective than MTCA.	Y - Exposure parameters will be used in RA.
(6) Adjustments to cleanup levels	Total site risk, natural background, PQLs	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	MTCA and CERCLA are consistent; some elements of MTCA may be more specific and incorporated as ARARs	Partial - RA evaluates cumulative risk, addresses background issues, and considers characterization data that could include non-detects.
(7) Point of compliance	Protection of groundwater, vapors, direct contact, TEE, containment	(f)(1)(ii)(B); (f)(1)(ii)(A)	Substantive requirements of state laws are ARARs under CERCLA. Selected remedies must be protective of human health and the environment (including terrestrial ecological receptors).	MTCA provisions may be more specific. In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - RA identifies potential exposure pathways based on contaminant location. Point of compliance issues associated with remedies addressed in FS and remedy selection.

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
(8) Compliance monitoring	Three part statistical rule, nondetected results	(f)(1)(ii)(B); EPA RAGS	EPA RAGS and other documents include guidance on statistical methods and use of nondetected results. Substantive requirements of state laws are ARARs under CERCLA.	MTCA provisions are both more specific and less sophisticated than CERCLA guidance. In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent.	N - Applies to monitoring associated with remedy implementation.
<b>Section 747: Deriving soil concentrations for ground water protection</b>					
	Fixed & variable parameter 3-phase model, 4-phase model, leaching tests, alternative fate and transport models, empirical demonstration, residual saturation	(f)(1)(ii)(B); EPA RI/FS Guidance Section 3.4.2.2; EPA SSL Guidance	Substantive requirements of state laws are ARARs under CERCLA. EPA CERCLA process includes evaluation of fate-and-transport, including soil leaching to groundwater as part of baseline risk assessment.	A leaching model found acceptable under CERCLA should satisfy MTCA's requirements for an alternative fate and transport model. Some EPA fate and transport models are more sophisticated than the default, screening models (e.g., 3-phase partitioning model) identified by MTCA.	Y
<b>Section 7490-7492 &amp; 7494: Terrestrial ecological evaluation procedures</b>					
	Exclusions, simplified TEE	--	CERCLA does not have a corresponding process for exclusions or simplification of the ecological risk assessment.	CERCLA ecological risk assessment process is more stringent than MTCA in this respect, but a site-specific TEE/ecological risk assessment was conducted.	N
<b>Section 7493: Site-specific terrestrial ecological evaluation procedures</b>					
(1) Purpose	Elements: Problem formulation & selecting a method	(f)(1)(ii)(A); various EPA eco-risk guidance; Region 10 supplemental guidance	Selected remedies must be protective of human health and the environment (including terrestrial ecological receptors). EPA has issued various guidance regarding ecological risk assessment under CERCLA; EPA Region 10 has issued additional guidance.	MTCA's terrestrial ecological evaluation is modeled after and consistent with CERCLA guidance for ecological risk assessment. Note that MTCA evaluation is flexible, identifying several different methods (including "other methods approved by the department")	Y
(2) Problem formulation step	(i) Chemicals of ecological concern (ii) Exposure pathways (iii) Terrestrial ecological receptors of concern (iv) Toxicological assessment	"	"		Y
(3) Selection of appropriate terrestrial ecological evaluation methods	(a) Literature survey (b) Soil bioassays (c) Wildlife exposure model (d) Biomarkers (e) Site-specific field studies (f) Weight of evidence (g) Other methods approved by the department	"	"		Y
(4) Literature surveys	Benchmark values, toxicity reference values, bioaccumulation factors	"	"		Y
(5) Uncertainty analysis	Range of risks	"	"		Y
(6) New scientific information	Refers to Section 702(14)-(16)	"	"		Y
(7) Substitute receptor species	Groups to include in a wildlife exposure model	"	"		Y
<b>Section 750: Cleanup standards to protect air quality</b>					

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		
(1) General considerations	Sites requiring air cleanup standards, RME scenario, protection of other media	(f)(1)(ii)(B); (f)(1)(ii)(A); EPA RAGS	Substantive requirements of state laws are ARARs under CERCLA. Selected remedies must be protective of human health and the environment; air pathway included in EPA guidance.	MTCA and CERCLA are consistent; some elements of MTCA may be more specific and incorporated as ARARs	Y - RME scenario
(2) Method A	Not applicable	--	--	--	--
(3) Method B	ARARs, equations, allowed modifications	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	Some exposure parameter values are different, but the air pathway rarely dominates decision making. In RCBRA Draft A, risks for dust inhalation were 1-3 orders of magnitude lower than risks for soil ingestion.	Y - Exposure parameters
(4) Method C	ARARs, equations, allowed modifications	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.		Y - Exposure parameters may be used in RA.
(5) Adjustments to cleanup levels	Total site risk, natural background, PQLs	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	MTCA and CERCLA are consistent; some elements of MTCA may be more specific and incorporated as ARARs	Partial - RA evaluates cumulative risk, addresses background issues, and considers characterization data that could include non-detects.
(6) Point of compliance	Standard	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - RA identifies potential exposure pathways based on contaminant location. Point of compliance issues associated with remedies addressed in FS and remedy selection.
(7) Compliance monitoring	ARARs, 24-hr time-weighted average or annual average	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	MTCA and CERCLA are consistent; some elements of MTCA may be more specific and incorporated as ARARs	N - Applies to monitoring associated with remedy implementation.
<b>Section 760: Sediment cleanup standards</b>					
	References Sediment Management Standards (173-204 WAC)	(f)(1)(ii)(B)	Substantive requirements of state laws are ARARs under CERCLA.	In identifying substantive requirements of MTCA as ARARs, MTCA and CERCLA are consistent	Partial - ARAR identification is a separate part of RI; however, risk-based ARARs may be used in RA.

**Notes:**  
 ARAR = Applicable or relevant and appropriate requirement  
 FS = Feasibility study  
 IRIS = Integrated risk information system  
 NAPL = Non-aqueous phase liquid  
 NPL = National Priority List  
 PQL = Practical quantitation limit  
 RA = Risk assessment  
 RI = Remedial investigation  
 TEE = Terrestrial ecological evaluation

Table A-1. MTCA-CERCLA Crosswalk for Dangerous Waste Requirements in WAC 173-303-64620

MTCA (173-340-)		CERCLA (300.430) unless identified otherwise		Comment	Relevant to Risk Assmt?
Citation	Requirement	Citation	Requirement		

**References:**

- Ecology. 1992. Statistical Guidance for Ecology Site Managers. 92-54. Washington State Department of Ecology, Olympia, WA.
- EPA. 1995. Determination of Background Concentrations of Inorganics in Soils and Sediments at Hazardous Waste Sites. EPA/540/S-96/500. U.S. Environmental Protection Agency, Office of Research and Development, Office of Solid Waste and Emergency Response, Washington, DC.
- EPA. 2002. Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites. EPA 540-R-01-003. OSWER 9285.7-41. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC.
- EPA. 2007. ProUCL Version 4.0 Technical Guide. EPA/600/R-07/041. U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC.