

Response to Comments

For comments received on: “[Draft] Model Remedies for Sites with Petroleum Impacts to Groundwater” (Publication No. 16-09-057)

Date: August 3, 2016

To: Interested Persons

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Comment No. 1 – Removing the requirement for a feasibility study / disproportionate cost analysis removes the formal mechanism for Ecology site managers to evaluate restoration time frames (WAC 173-340-360 (4)). Removing this formal mechanism is a mistake.

Currently, following primary source control, other more active remedial technologies are typically used, due to the order of magnitude or longer restoration time frames required for monitored natural attenuation. If there is no requirement to choose an alternative with a far shorter reasonable restoration time frame, monitored natural attenuation will invariably be the preferred alternative as it is generally the cheapest option. Site cleanups in Washington State will take far longer as a result of the decision to remove the formal preference for shorter reasonable restoration timeframes.

If monitored natural attenuation after source removal is retained in the final draft Model Remedies for Sites with Petroleum Impacts to Groundwater, I strongly suggest you provide a formal mechanism for Ecology site managers to include a preference of shorter reasonable restoration time frames.

Response – Both the MTCA Statute and Rule specify that a Feasibility Study/Disproportionate Cost Analysis are not required for sites that use a model remedy. However, Ecology does not believe this will increase the timeframe necessary to complete cleanups. Information contained in a September, 2011 EPA report entitled: “The National LUST Cleanup Backlog: A Study of Opportunities” included an analysis of Washington’s LUST Program. Based on the data available, two of the major conclusions EPA made were that sites are taking a long time to move through the cleanup process and that the progress of many old sites has stalled. EPA concluded that a large percentage of sites have been in the remediation process for more than 10 years and a majority of these sites involve groundwater contamination.

Approximately 25% of these sites were subject to Ecology oversight, so only a relatively small percentage received review comments on the remedy selected. The remainder are sites in the Independent Process that are not required to seek Ecology feedback or oversight. The goal of establishing model remedies is to encourage Potentially Responsible Parties (PLP's) to implement a remedy that is sufficient to obtain a timely No Further Action (NFA) letter. Many sites in the VCP Program have a financial incentive to complete the cleanup, typically a property transaction, and therefore tend to achieve an NFA determination more quickly. Use of model remedies has the ability to speed up independent cleanups by providing an incentive to complete the necessary work. If a PLP chooses to remain in the Independent Process, then the model remedy document would not have any effect on the overall timeline.

As a final note, WAC 173-340-360(4) provides criteria for determining if the cleanup provides for a reasonable restoration timeframe, but does not require that an alternative with a "far shorter reasonable restoration timeframe be selected." Instead, the rule provides a series of factors that need to be considered. Many of these same factors are included in Appendix B of the guidance document that need to be used when evaluating whether a Conditional Point of Compliance (CPOC) is appropriate for the site.

Comment No. 2 – Several of the draft remedies address source removal limitations with respect to structural impediments. However, in many cases, the presence of these structures also limits a responsible party's ability to delineate the full vertical and lateral extent of residual contamination. Ecology is generally not willing to establish cleanup levels, points of compliance, or evaluate remedial effectiveness in these situations due to insufficient characterization. For many parties, getting this data is not possible due to the costs. However, even if a FS/DCA is completed and the results show a preference for leaving contamination in place, Ecology is likely to reject the analysis due to insufficient characterization. With respect to ECs, this is not an issue because the EC identifies locations on the property where contamination resides. The EC can also be used to identify areas of potential contamination at low risk sites that cannot be confirmed due to the presence of structures. The remedies need to be clarified to address how Ecology will interpret these situations so responsible parties will have more certainty that work they conduct will not be deemed insufficient.

Response – All of the model remedies that can't meet the appropriate cleanup levels due to one or more structural impediments are required to file an Environmental Covenant documenting that contaminated soil remains on the property. The issue of adequately defining the extent of residual contamination is not limited to sites pursuing a model remedy. However, for any site with structural impediments, such as contamination under a building, it is incumbent on the PLP to make a demonstration that characterization is not necessary, in order to confirm that all the potential pathways (such as vapor intrusion) are adequately protected.

Comment No. 3 – The procedure for establishing a CPOC discussed in Appendix B indicates that in order to establish a CPOC it must be demonstrated through documentation that all practicable methods of treatment have been used in site cleanup. Chapter 1 of the document also states that *A Feasibility Study evaluates and screens potential remedial technologies that may be appropriate for addressing contamination at a particular site*. Please clarify how the evaluation and documentation required to establish a CPOC differs from a Feasibility Study.

Response – WAC 173-340-720(8) specifies that “Where a conditional point of compliance is proposed, the person responsible...shall demonstrate that all practicable methods of treatment are to be used in the site cleanup”. MTCA defines all practicable methods of treatment as: “all technologies and/or methods currently available and demonstrated to work under similar circumstances...and applicable to the site at a reasonable cost”. A Feasibility Study evaluates potential remedial technologies that meet the threshold requirements to determine if they would be considered permanent to the maximum extent practicable. Conversely, the performance of the selected remedy is evaluated using the criteria in Appendix B to determine whether a CPOC is appropriate.

Comment No. 4 – Appendix B states that an EC must be filed when a CPOC is approved and the EC must prohibit the construction of any water supply well. The State of Washington and multiple counties, cities, and other jurisdictions already have laws in place that restrict where water supply wells can be constructed due the presence of known or potential contamination. If water supply wells are not allowed by law, risks associated with the leaching to groundwater and drinking water pathways are minimized and effectively managed through institutional controls. A model remedy is needed to address this situation.

Response – WAC 173-340-440(4) specifically requires that when a CPOC is approved, an Environmental Covenant must be filed to assure both the continued protection of human health and the environment as well as the integrity of the cleanup action. Appendix A of the guidance document requires compliance with all local, state and Federal laws, and while certain jurisdictions may have restrictions on where water supply wells can be constructed, these provisions do not supersede the requirements of MTCA.

Comment No. 5 – None of the proposed remedies include a risk-based model remedy.

Response – The statutory language specifies that model remedies are to address routine, lower risk sites. Developing and justifying risk based cleanup levels are typically complicated and are not consistent with the intent of establishing model remedies.

Comment No. 6 – Many of the open cleanup sites have contamination that extends under adjacent right of ways. Does the department plan to prepare a model remedy that specifically addresses this situation?

Response – As specified in Chapter 6, any of the model remedies identified can be expanded to address off-property impacts, including contamination in the right-of-way. However, contamination remaining in the right-of-way after cleanup is often difficult to resolve if the property is not owned by the source property owner. For groundwater, WAC 173-340-720 limits the situations where an off-property conditional point of compliance can be established. This includes situations where the source property is adjacent to or in close proximity to surface water or when plumes are co-mingled. For situations with only contaminated soil, Ecology is evaluating whether other options can be used for right-of-ways instead of an Environmental Covenant.

Comment No. 7 – Several of the remedies propose using ECs as an institutional control. However, comfort levels implementing ECs varies considerably between regions and site managers. What is Ecology doing to ensure that ECs are implemented consistently throughout the state?

Response – Last year, Ecology did training for Site Managers in all of the Regions on the use of Environmental Covenants. In addition, Ecology has completed model language and associated guidance that is intended to improve the comfort and consistency is using Environmental Covenants.

Comment No. 8 – Although reviewing sites that have received an NFA when developing the model remedies provides an acceptable starting point, a more appropriate evaluation would include an assessment of sites that have been denied NFAs, sites have been open for decades with little risk or motivation to seek NFAs, and sites whose owners have simply given up due the challenges associated with cleanup under MTCA. Ecology needs to evaluate the real challenges that property owners and responsible parties face when it comes to cleanup.

Response – State Statutes specify that model remedies meet the cleanup standards and remedy selection criteria of MTCA, which is why the focus of Ecology’s effort was on sites that have received an NFA letter. An evaluation of why sites have stalled is beyond the scope of developing specific model remedies. However, as part of several separate efforts, Ecology is in the process of evaluating site information to identify the factors that have slowed the cleanup process.

Comment No. 9 – As written, the model remedies meet the requirements and language of the 2013 Senate bill. However, given the text of the remedies, there is little certainty that the changes will result in expedited and more efficient cleanups. Waiving review costs and eliminating the need to conduct an FS/DCA does little to reduce overall cleanup costs and offers little certainty that a cleanup will be sufficient. Additional work is needed by both the legislature and Ecology to revise MTCA so owners and responsible parties are motivated to conduct cleanup.

Response – This comment is well beyond the scope of model remedy development. Ecology has previously indicated an intention to pursue targeted revisions to MTCA, once significant progress has been made in developing revisions to the LUST rule.

Comment No. 10 – Ecology should consider a Model Remedy (MR) that will evaluate the current land use/operations for commercial properties? Elaborating or further refining WAC 173-340-357(f)(i) Commercial gas station scenario or other possible properties e.g. auto repair shops. This could include the use of Environmental Covenants (ECs) similar to a number of MRs proposed. Scenario's where permanence of a cleanup is not complete due to the operations of a property, a MR that addresses that pathway would enable the appropriate protections and a meaningful path for cleanup.

Response – The 12 model remedies proposed are not limited by land use or property use, but instead are based on the type of contamination (i.e. petroleum impacts to groundwater). MTCA requires that model remedies be developed with a preference for permanence. The model remedies identified can also be applied to operating properties with the extent of the cleanup necessary based on documenting that soil removal was implemented to the maximum extent practicable.

Comment No. 11 – If the MR selected incorporates the use of environmental covenants (EC), will Ecology have to agree an EC is appropriate for this site prior to the selection of the MR?

Response – All of the model remedy options were developed with the intent of providing as much detail as possible on the criteria that apply to each specific remedy. Assuming that the specified criteria are met, then Ecology has already determined that use of an Environmental Covenant is appropriate. If the site has unique circumstances and is in the VCP Program, it may be worth requesting Ecology's opinion before formally filing the Environmental Covenant.

Comment No. 12 – A number of the MRs indicate the use EC as part of remedy. The steps for initiating and finalizing an EC is not well established and has been interpreted differently across Ecology representatives. Will there be any revisions to the process for how Ecology works through the preparation of an EC, so that the process is consistent across the department/regions.

Response – See response to Comment No. 7.

Comment No. 13 – Sites with off-site migration of impacts are excluded from using MR's. What is the purpose of excluding this scenario? Specifically when public ROW is in play? The EC process has guidance/requirements for when the EC will incorporate area's (Properties) outside of the source property. By limited it to just the onsite scenario it would effectively be prohibiting the means effective cleanup or reaching closure on Sites that have minimal risk to human health and the environment and have been listed sites for many years.

Response – As specified in Chapter 6 of the guidance, any of the model remedy options can be expanded to address off- site contamination. See the response to Comment No. 6 for more specific information.

Comment No. 14 – Chapter 4 indicates *“the contamination cannot exceed the property boundary”* for the site to be eligible for using a MR. However, in Appendix A, Access Agreements, it is stated *“.....In order to use a model remedy to address off-property contamination, the site characterization must address the full extent of contamination from the release without regard to property boundaries”*. Which is then countered again in Appendix B stating *“none of the model remedies set forth in chapter 6 of this document allow for off-site soil or groundwater contamination above Method A CULs, Following the completion of the cleanup. Therefore, none of the three off-property options for establishing a conditional point as specified in WAC 173-340-720(8)(d) are allowed”*. Please clarify this language? Why can't these options be permitted as part of the implementation of a MR, specifically in scenarios where characterization has been completed and deemed sufficient.

Response – The intent of all of these provisions is to allow any of the model remedies identified to be used for addressing off-property contamination, provided the extent of contamination is fully characterized and that once the cleanup action is completed, no contamination exists off of the source property. Chapter 4 and the Access Agreement Section of Appendix A have been modified so the language is more consistent throughout the document.

The reason that the 3 scenarios in WAC 173-340-720(8)(d) are not allowed is because model remedies are intended for routine, lower risk sites and it is Ecology's experience that sites with impacts (or potential impacts) to surface water as well as sites with co-mingled plumes are typically not routine or lower risk.

Comment No. 15 – Chapter 4 Threshold requirements section (iii): *Comply with applicable state and federal laws*: The language indicates some state or federal laws will not be applicable due to the lower risk nature of these Site. Who will provide that determination within the department of what laws and regulations will not be permitted? Will the Department provide written justification for the exclusion of a particular state/federal law?

Response – The intent of this provision is to make PLP’s aware that other state or Federal laws may apply and that using a model remedy does not waive the need to comply with these provisions. As with cleanups using other Ecology processes, this responsibility rests with the PLP.

Comment No. 16 – Remedial limitations due to obstructions (a component of Model Remedies 2 and 8), how will this affect the mean for “adequately characterizing a Site” from a regulatory review of the Site. If one of these MRs are chosen will this be considered as part of the characterization of the Site? Will Ecology see this as a data gap leading to insufficient characterization?

Response – See response to Comment No. 2.

Comment No. 17 – Many of the MRs state “Soil Removal was implemented to the greatest degree practical” will all sites require that soil have been removed in order to be eligible for use of a MR? Or will the use of Remedy Selections outlined in Chapter 3 (Page 8) be sufficient if confirmation of mass removal or attenuation is observed through sampling?

Response – All of the model remedies must utilize soil removal to address the source of the contamination to the greatest degree practicable. The language on page 8 of Chapter 3 has been expanded to better clarify this intent.

Comment No. 18 - A MR that addresses sites where groundwater is determined Non-Potable should be included. Whether it be by hydrogeological conditions, feasibility to access the aquifer or available groundwater. The evaluation of what is potable and/or non-potable should not be a factor in establishing the MR but represent that scenario. However, Ecology should clarify the method(s) and justification in which is used by site managers when evaluate a non-potability request.

Response – The necessary technical information to demonstrate whether groundwater meets the definition of non-potable has been a challenging issue. Ecology intends to develop additional guidance that clarifies the approach and expectations for making these demonstrations. Since non-potable groundwater determinations are applicable to many more sites than just those seeking to use a model remedy, Ecology anticipates that the guidance will be issued as a separate document.

Comment No. 19 – MR's in this application have been prepared to provide a liable parties a specific path and streamlined path to closure and obtaining an NFA for sites that are typically managed through VCP or Independent cleanup actions. These MRs should not be limited to 6 scenarios (per designation- all sites/ Industrial sites). MRs should be devised to promote meaningful cleanup of Sites.

Response – Many of the options provided are based on remedies that have been previously used to achieve NFA determinations. As a result, Ecology believes the draft guidance does provide realistic and meaningful options for achieving NFA's at sites with petroleum impacts to groundwater. Once the guidance has been finalized and experience has been gained with using the proposed options, Ecology will seek feedback on the usefulness of the options provided and also whether alternative approaches may be appropriate.

Comment No. 20 – The eligibility criteria's outlined still have a sense of vagueness and uncertainty whether a primary remedy and associated characterization will be sufficient to proceed with an MR efficiently and effectively.

Response – As with any new process, all of the implementation issues cannot be fully anticipated. As stated in the response to Comment No. 19, Ecology intends to conduct a post-implementation evaluation to address any questions or concerns identified.

Comment No. 21 – Consider allowing sites to be eligible for using model remedies if metal concentrations exceed the PQL's provided they meet the appropriate cleanup standards at the time an NFA request is made.

Response – Chapter 3 has been modified so that sites with metal concentrations above the practical quantitation limits (PQL's) are not excluded from being eligible to use a model remedy.

Comment No. 22 – Add another model remedy that would apply to situations where groundwater has been determined to meet the definition of non-potable.

Response – See response to Comment No. 18.

Comment No. 23 – When sites that use a model remedy submit a no further action request, are they required to apply to be in the VCP Program?

Response – After evaluating other potential options, Ecology feels that using the VCP process will be the most straightforward and easily implemented, rather than developing an alternative approach. (cont'd.)

Appendix A has been modified to clarify that PLP's seeking an NFA determination need to enter the VCP Program.

Comment No. 24 – Although soil removal is addressed in a comparable manner to the *Model Remedies for Sites with Petroleum Contaminated Soil*, Chapter 6 does not actually indicate specific remedial technologies or procedures to be implemented for groundwater cleanup (acceptable technologies are only briefly mentioned in Chapter 3 – Remedy Selection). We suggest that the acceptable technologies be explicitly identified in Chapter 6 so that it is clear to anyone looking at the section that defines the 12 allowable Model Remedies that they meet the definition of a “Model Remedy” under the Model Toxics Control Act.¹

Response – The requested change was made to the guidance.

Comment No. 25 – Unlike the Model Remedies for soil, each of the Model Remedies presented cannot actually be demonstrated until after the remedy is completed as evidence by the phrases “Following remediation, sufficient confirmation sampling and post-remedial monitoring would be necessary to document compliance . . .” or “This Model Remedy applies to situations where, following remediation . . .” or some variant thereof that is used in nearly every option. Therefore, it will be difficult to identify which Model Remedy will actually be “used” based on these predictive/post-remedy demonstrative Model Remedies.

We understand that it is Ecology's intent to build in flexibility into the Model Remedy process by allowing a number of outcomes that would still meet the substantive requirements of MTCA. However, this is not clear from the guidance document. Therefore, we suggest that Ecology make it clear within Section 6, that the Twelve Model Remedies are all potential outcomes of using the one or more of the five acceptable groundwater remedial technologies, and that while the intent may be to specifically achieve one of the twelve remedies identified, achieving any of the twelve at the end of the cleanup is acceptable.

Response – Chapter 6 was expanded to clarify that it may not always be possible to identify the specific model remedy that will be used to seek an NFA determination up front. However, as long as the specified criteria are met, any of the model remedies would be acceptable.

¹ Chapter 70.105D.20(20) RCW defines “Model Remedy” as “a set of **technologies, procedures** [emphasis added], and monitoring protocols identified by the department for use in routine types of clean-up projects.”

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