

Mr. Bruce L. April, Deputy District Director Environmental, State of California Department of Transportation District 11 February 25, 2019			
	Comment	Response	Action Taken
General Comment No. 1	Based on information obtained at the stakeholder meeting on November 6, 2018, Caltrans understands that the original purpose of the waiver was not to limit soil that had naturally occurring metals at concentrations greater than their respective Tier values and that the Water Board is considering Waivers under the current Waiver 9 as long as the naturally occurring background metals could be demonstrated as such. Caltrans supports a Waiver for arsenic from the limits provided in waiver 9 for background concentrations of arsenic (and other metals, if applicable).	Comment noted. No changes are made in the Tentative Order.	None Necessary
General Comment No. 2	Based on discussion with Water Board staff, we understand that the added provision of Tentative Order No. R9-2019-0005, Waiver 9, is intended to clarify that naturally occurring arsenic in soil at sites without known anthropomorphic “contamination” is not regulated by the Water Board: <i>The export of soils from sites not known to be contaminated is not subject to enrollment under the Solid Waste Waiver.</i> Caltrans finds this approach acceptable, but not complete. While this clarification is helpful to some situations, the Tier 2 Screening Level Selection Method still does not integrate the best available science and current understanding of arsenic. The result is a Tier 2 soil screening level for arsenic that is well	The San Diego Water Board understands the concern but disagrees that the approach is not complete. The Tier 1 and 2 soil screening levels (SSLs) in Table Nos. 2 and 3 of Waiver No. 9 are intended to be used as screening levels and are not considered cleanup levels. Furthermore, the update to the Tier 1 and Tier 2 SSLs using the San Francisco Regional Water Quality Control Board Environmental Screening Levels (ESLs), US Environmental Protection Agency (USEPA) Ecological Preliminary Remediation Goals (ePRGs), and background concentrations did not result in a change of the respective SSLs for arsenic and therefore will not result in additional costs for the discharger.	None Necessary

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	below the level adequately protective of human health, which means site cleanups and disposal of affected soil are costlier and more time-consuming than necessary.		
Specific Comment No. 1	Existing Tier 2 thresholds are too low, particularly for arsenic, restricting access to available soil that is still protective of human health and the environment. Please consider a more appropriate threshold of 12 mg/kg for arsenic similar to other regulatory agencies.	<p>The San Diego Water Board did not accept this recommendation. The conditional waivers are intended to address discharges expected to pose a low threat to water quality, as long as the dischargers comply with the waiver conditions. The use of the ESLs, USEPA ePRGs, and background concentrations are appropriate for the characterization of metals in soil to determine whether pollutant concentrations in the soil will not result in impacts to human health and the environment. The ESLs provide conservative screening levels for over 100 chemicals and are intended to help expedite the identification and evaluation of potential environmental concerns at contaminated sites. ESLs address a range of media including soil, groundwater, soil gas, and indoor air and a range of concerns, such as (or including) impacts to drinking water, human health, nuisance and odors, vapor intrusion, and impacts to aquatic habitat. Development of Tier 1 and 2 SSLs utilizing ESLs, ePRGs, and background concentrations is a conservative method that is protective of human health and the environment.</p> <p>Finally, the threshold of 12 mg/kg for arsenic was derived using purely statistical methods. Statistical tests treat each analyte as an independently behaving entity, and do not consider the geochemical context in</p>	None Necessary

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		<p>which each element resides. Mineralogy and soil chemistry dictate that naturally occurring elements in soil and sediment exist in predictable proportion to other elements. Geochemical evaluation is based on the natural associations of trace elements with specific minerals in the soil matrix. Most trace elements in soil and groundwater have a skewed distribution of concentrations and therefore soil concentrations of metals are not normally distributed which may cause a biased interpretation of the data when using a statistical approach. San Diego Water Board staff concluded that the background concentration of 12 mg/kg for arsenic may be statistically biased and too high for soil but may be appropriate for sediment.</p>	
Specific Comment No. 2.	<p>A New Tier 3 threshold should be introduced for transportation facilities with access controlled environment with a threshold of 20 mg/kg for arsenic.</p>	<p>The San Diego Water Board did not accept this recommendation. The purpose of the conditional waivers is to provide regulatory oversight in an efficient manner while effectively minimizing or eliminating the discharge of pollutants for a type of discharge. Furthermore, the conditional waivers are not intended to be specific to any one type of facility or Discharger.</p> <p>The purpose of the conditional waivers are (1) to group the specific types of discharges into discharge classifications and (2) to establish general waiver conditions applicable to a discharge or discharge operations for all specific types of discharge within a discharge classification while maintaining effectiveness in minimizing or eliminating the discharge of pollutants and protecting water quality.</p>	None Necessary

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		The conditional waivers are applied to low threat discharges in the San Diego region and are not designed to be site specific. If the discharger determines that site-specific background values are more appropriate, the San Diego Water Board can develop and adopt individual Waste Discharge Requirements for each site.	
Detailed Evaluation Comment No. 1.	The background mean concentration presented as an option in the selection of Tier 2 soil cleanup levels is adopted from Bradford et al. (1996), which California Department of Toxic Substances Control (DTSC) routinely dismisses as a background concentration estimates are regional estimates, not site-specific, and may not be representative of soil through the State of California.	<p>The San Diego Water Board has used the background concentrations in Tables 2 and 3 of Waiver No. 9 as criteria in the development of applicable SSLs. The SSLs are not intended to be used or considered as soil “cleanup levels.”</p> <p>The Bradford et al. (1996) background levels have been developed using background total concentrations of 46 trace and major elements in 50 benchmark soils selected from 22 most representative soil types throughout the State of California. The results in this study are based on a cohesive data set available on background levels of trace and major elements in California. The study provided a statistical analysis of the results which included the minimum, maximum, and arithmetic mean concentrations of 46 different inorganic elements. Benchmark soil series sample locations for this study were selected from an extensive file of soil profile samples locations. The 50 benchmark soil samples were distant from known point sources of contamination and therefore representative of background levels throughout the State of California.</p>	None Necessary

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		The purpose of the conditional waivers is to group the specific types of discharge into discharge classifications; provide general waiver conditions applicable to a discharge or discharge operations for all specific types of discharge within a discharge classification while maintaining effectiveness in minimizing or eliminating the discharge of pollutants and protecting water quality. The conditional waivers are applied to low threat discharges in the San Diego region and are not designed to be site specific. If the discharger determines that site-specific background values are more appropriate, the San Diego Water Board can develop and adopt individual Waste Discharge Requirements for each site.	
Detailed Evaluation Comment No. 2.	Arsenic bioavailability, as discussed in HERO HHRA Note 6, should be incorporated into the development of Tier 2 (and Tier 1) soil screening levels.	The conditional waivers are designed to establish the minimum requirements that are expected of a discharger to minimize or eliminate the discharge or potential discharge of pollutants to waters of the State while maintaining consistency with the Basin Plan and remaining in the best interest of the San Diego Water Board, the dischargers, and the public. After review, staff have determined the use of ESLs, USEPA ePRGs, and background concentrations are appropriate for the characterization of metals in soil to determine whether pollutant concentrations in the soil will result in impacts to human health and the environment. Using ESLs, ePRGs, and background concentrations to develop Tier 1 and 2 SSLs is a conservative method that is protective of human health and the environment.	None Necessary

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		<p>Tables 2 and 3 of Waiver No. 9 provide SSLs which are not intended to be used or considered as soil “cleanup levels.”</p> <p>The Human and Ecological Risk Office Human Health Risk Assessment Note Number 6 – <i>2016 Evaluating Site Specific Arsenic Bioavailability in Soils</i> recommends methods for estimating relative bioavailability (RBA) of arsenic in soils. RBA is a ratio that compares the bioavailability of arsenic in soil to that of arsenic in water. When arsenic is present in soils, it associates with other minerals. These associations reduce the solubility of arsenic, thus reducing the bioavailability of arsenic and the resulting toxicity.</p> <p>As part of the renewal process San Diego Water Board staff revised Waiver No. 9 to incorporate the evaluation of solubility of metals. Since this evaluation has already been incorporated in the revised waiver, no additional modifications to the waiver are necessary to incorporate RBAs.</p>	
Detailed Evaluation Comment No. 3.	DTSC/OEHHA vacated CHHSLs in 2015. Caltrans commends the Water Board for replacing CHHSLs with RSLs in the Tentative Order No. R9-2019-0005 – Waiver 9 – Discharges/Disposal to Land of Solid Wastes, Discharge/Disposal/Reuse of Soils Characterized as Inert from Contaminated Sites to Land.	Comment noted. No changes are made in the Tentative Order.	None Necessary

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Detailed Evaluation Comment No. 4.	<p>In general, the method for selecting Tier 2 soil cleanup levels does not rely on the best available scientific information or methods:</p> <ul style="list-style-type: none"> a. There is no element of site-specificity. All cleanup levels candidate values are generic and may be either not protective or overly protective on a site-by-site basis. b. Except for RSLs, there is no element of health risk accounted for in the cleanup level candidates. The inert waste target, background concentrations, and Total Threshold Limit Concentration (TTLC) are unrelated to toxicity. c. The TTLC is a hazardous waste characterization criterion intended to represent landfill conditions. As such, the TTLC does not address health risk or land uses other than waste disposal sites, and is not, therefore, appropriate for establishing soil re-use standards. d. The three-step process for selecting the Tier 2 soil cleanup level appears to be a random process without a focus on appropriate soil characteristics for re-use. 	<p>The San Diego Water Board understands these concerns but disagrees that the method for selecting Tier 2 SSLs do not rely on the best available scientific information or methods. The San Diego Water Board has used the background concentrations in Tables 2 and 3 of Waiver No. 9 as criteria in the development of applicable SSLs. The SSLs are not intended to be used or considered as soil “cleanup levels.”</p> <ul style="list-style-type: none"> a. See response to Specific Comment No. 1 and Detailed Evaluation Comment No. 1. b. The use of the ESLs, USEPA ePRGs, and background concentrations is appropriate for the characterization of metals in soil to determine whether pollutant concentrations in the soil will result in impacts to human health and the environment. The ESLs provide conservative screening levels for over 100 chemicals and are intended to help expedite the identification and evaluation of potential environmental concerns at contaminated sites. ESLs address a range of media including soil, groundwater, soil gas, and indoor air and a range of concerns, including impacts to drinking water, human health, nuisance and odors, vapor intrusion, and impacts to aquatic habitat. c. The conditional waivers must be consistent with the 	None Necessary

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		<p>Basin Plan and in the public interest. In order for the waivers to be consistent with the Basin Plan, 1) the discharge shall not create a nuisance or pollution as defined in the Water Code, 2) the discharge shall not cause a violation of any application water quality standard for receiving waters adopted by the San Diego Water Board, or the State Water Board, as required by the Clean Water Act; and 3) the discharge of any substance in concentrations toxic to animal or plant life is prohibited. When a component exceeds the value of allowable limit for TTLC procedure, the tested waste is qualified as hazardous due to characteristic of toxicity.</p> <p>d. See response to Detailed Evaluation Comment No. 2.</p>	