Adopted February 21, 2007
Effective March 19, 2007

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) adopts amendments to §§350.2 - 350.4, 350.33, 350.34, 350.37, 350.51, 350.54, 350.71, 350.73 - 350.77, 350.79, 350.91 - 350.96, 350.111, and 350.134, and adopts new §350.90. Sections 350.2, 350.4, 350.33, 350.34, 350.37, 350.51, 350.73 - 350.77, 350.90, and 350.95 are adopted *with changes* to the proposed text as published in the September 8, 2006, issue of the *Texas Register* (31 TexReg 7257). Sections 350.3, 350.54, 350.71, 350.79, 350.91 - 350.94, 350.96, 350.111, and 350.134 are adopted *without changes* to the proposed text and will not be republished.

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULES

The initial rulemaking of Chapter 350 was originally adopted on September 2, 1999, and became effective September 24, 1999. The purpose of the original rulemaking was to create a unified performance-based remediation program that is risk-based, consistent, streamlined, and that expedites site remediations. Subsequent to the initial adoption, the rulemaking has been readopted under the Quadrennial Review requirements. In August 2003, §350.1 was modified to include a provision to confirm that engineering, geoscience, and surveying information submitted to the agency must comply with the applicable professional licensing and registration acts. Other than the August, 2003 amendment, the rule has remained unchanged since its original adoption. Throughout this preamble, the Texas Risk Reduction Program (TRRP) rule in existence prior to these adopted amendments will be referred to as the "prior rule" or the "prior TRRP rule."

The agency has gained much experience over the last seven years through intensive implementation of the rule at thousands of contamination sites located throughout Texas. The agency has noticed errors (misspellings, typographical, mathematical) in the rule that need to be corrected, as well as provisions that either need clarification or modification to facilitate consistent and effective rule application. Some rule provisions required updating to reflect the latest scientific information. Additionally, the agency has reevaluated some policy positions and has developed new positions and procedures in guidance that were previously unaddressed by the rules.

Finally, the agency is adopting new rule provisions in support of a new electronic data management system initiative and expanded use of geographical information system technology to increase agency effectiveness and institutional memory as well as to improve the public availability of technical information stored at the agency. For all of these reasons, these amendments are adopted.

SECTION BY SECTION DISCUSSION

Administrative and grammatical changes are adopted throughout the sections to bring the rule language into agreement with Texas Register requirements, agency guidelines, and guidance provided in the *Texas Legislative Council Drafting Manual*, August 2006.

The name of the agency has changed from Texas Natural Resource Conservation Commission (TNRCC) to Texas Commission on Environmental Quality (TCEQ) since the original adoption of the rule. Therefore, changes are adopted to §§350.4(a)(58) and (b), 350.73(a)(4) and (c), and

350.111(a)(7) and (8) and (c), as well as to Figures 30 TAC §§350.73(f), 350.74(a), and 350.77(b) to reflect this agency name change.

Section 350.2(g), Applicability, was changed in response to public comment on the rule, which is explained in the RESPONSE TO COMMENTS section of the preamble. The change provides the agency the latitude to grant a variance that will foster regulatory consistency between leaking petroleum storage tank (LPST) sites that have comparable conditions and are located within 0.25 miles from each other. As explained in the March 26, 1999, issue of the *Texas Register* (24 TexReg 2208) preamble to the original adoption rulemaking, one reason this chapter was adopted was to create greater uniformity between regulatory programs, and thus between remediation sites. However, because of the large number of LPST sites that have been remediated under the 30 TAC Chapter 334 regulations, the application of this chapter to an LPST site has sometimes had the opposite effect, resulting in regulatory inconsistency with comparable LPST sites located within 0.25 miles that have been regulated under Chapter 334. The variance provides remediation flexibility to the landowner under appropriate and qualified circumstances, while maintaining protection of human health and the environment.

Therefore, these provisions are adopted in order to provide the executive director with the discretion to grant a site-specific variance to use the Chapter 334 regulations in lieu of this chapter in certain instances. These adopted amendments provide criteria that must be met to be eligible to request the variance. Most importantly, there must be an LPST site within 0.25 miles that is regulated under the Chapter 334 risk-based corrective action regulations, and the regulatory requirements for the site must

be substantially different from what is required by Chapter 350, even though the site conditions, release conditions, and receptor conditions are comparable.

If the person can demonstrate that Chapter 334 requirements apply to comparable LPST sites, located within 0.25 miles from the property seeking the variance, and that to comply with Chapter 350 unjustifiably imposes greater requirements, the person will be able to formally submit a request for a variance as set forth in these amendments. The person is responsible for initiating the variance request, providing all information required under these amendments, and supplying any additionally requested information that is reasonable and appropriate. The requested variance will be granted if the executive director agrees with the person that the sites are comparable, and an unjustifiable difference in requirements will result if this chapter is applied to the LPST site. With the variance, the person will then apply the Chapter 334 risk-based corrective regulations in lieu of those set forth in Chapter 350.

However, the agency has chosen to allow this variance only for LPST sites that ceased aboveground or underground storage tank use and removed the tanks before September 1, 2003, the effective date of Chapter 350 for LPST sites. Further, the variance is only for those properties and future subdivisions of those properties where the landowner voluntarily commits to impose a permanent prohibition against any future aboveground or underground storage tank use at that property by means of a restrictive covenant enforceable by the State of Texas. In the opinion of the agency, these criteria ensure any LPST releases that will qualify for this variance are constrained to those releases that occurred prior to the date Chapter 350 became effective for LPST sites. This ensures that the application of Chapter 334

will be allowed only for legacy or historical releases that occurred prior to the effective date of Chapter 350. Any release occurring or potentially occurring as a consequence of storage tank system operation after that date, should be regulated under Chapter 350. Further, the agency believes if compliance with Chapter 350 does not create regulatory inconsistency with obligations under Chapter 334, then the variance is not warranted and compliance with Chapter 350 is fully appropriate.

If in the future the landowner of the property or subdivision of the property desires to resume storage tank use at the property or at a subdivision of the property, then the LPST release for which the variance was granted must be brought into full compliance with Chapter 350 at that time.

Adopted §350.2(m), concerning the use of this chapter on or after May 1, 2000, clarifies provisions regarding switching rules once the person established grandfather status under the previously applicable rules contained in 30 TAC Chapter 335, Subchapters A and S (Industrial Solid Waste and Municipal Hazardous Waste in General; Risk Reduction Standards, respectively). These provisions specify that, first, a person who desires to remain subject to Chapter 335 risk reduction standards may not use any provisions of Chapter 350 and that, second, a person who switches to Chapter 350 to complete a response action may not revert back to Chapter 335. As originally structured, the second provision appeared to apply only to risk reduction standard number 3. By deleting these two provisions from subsection (m)(1) and (2) and adding them to subsection (m), the provisions will apply uniformly to all three risk reduction standards set forth in Chapter 335.

Adopted §350.3, Process, modifies flowcharts that describe the sequence and timing for reporting to the agency. The adopted changes to the flowcharts correct typographical errors and more accurately summarize the rule. The amendment clarifies that documentation of any required institutional controls related to Remedy Standard A must be submitted within 90 days of agency approval of a Response Action Completion Report. The amendment also clarifies that proof of compliance with institutional control requirements must be submitted within 120 days of agency approval of a Response Action Plan, if a waste control unit, technical impracticability demonstration, and/or plume management zone (PMZ) is used. The adopted changes neither alter nor add requirements to the institutional control and reporting requirements of the prior rule.

Adopted §350.4, Definitions and Acronyms, includes revisions to correct typographical errors, revisions to the definitions for "Commercial/industrial land use," "Implementation Procedures," and "Person," changing the term "Sample quantitation limit" to "Sample detection limit," and adding the acronym "TPDES" (Texas Pollutant Discharge Elimination System).

Section 350.4(a)(6) concerning the definition of anthropogenic background for surface water and sediment is not being adopted as proposed. The change from the proposed rule was effected based upon public comments received.

Adopted §350.4(a)(13), concerning the definition of "Commercial/industrial land use," clarifies that the hiring of domestic household help at a property does not result in the land use of that property being

considered commercial/industrial under the TRRP rule. The definition of the prior TRRP rule indicated that land use activities consistent with commercial/industrial land use include North American Industrial Classification System (NAICS) Code 814, which relates to the use of domestic help in a private household. The adopted change excludes NAICS Code 814.

Adopted §350.4(a)(45), concerning the definition of "Implementation Procedures," corrects a reference to an agency document. The prior rule defined "Implementation Procedures" when used in the TRRP rule, as referring to the agency document, "Implementation of the Texas Natural Resource Conservation Commission Standards via Permitting." This document has been renamed. The correct document to use when "Implementation Procedures" is referenced in the prior TRRP rule is now entitled "Procedures to Implement the Texas Surface Water Quality Standards."

Changes are adopted to §350.4(a)(62), relating to the definition of "Person." The definition of "Person" contained in the prior version of the TRRP rule excluded "a governmental entity that is not a responsible party performing a remedial action." The agency has determined that the prior definition was too broad with regard to governmental entities, in that it unintentionally implied that remediation projects conducted by governmental entities that were not responsible parties were not regulated by the TRRP rule. The definition of the prior rule was intended, in part, to provide relief for the situation where a governmental entity which is performing a remedial action but is not a responsible party, such as governmental entities remediating brownfields properties, or performing State Lead Petroleum Storage Tank (PST) or Superfund remediation, from being required to obtain: a) a restrictive covenant

in the situation where the landowner refuses to execute the covenant; or b) the written consent from a landowner prior to filing a deed notice or Voluntary Cleanup Program certificate of completion on that landowner's property. Given the potential for overbroad application of the definition of "Person" in the prior TRRP rule, the definition is narrowed. The related adopted changes to §350.111(c) specifically address this institutional controls requirement more suitably.

Adopted §350.4(a)(78), concerning the definition of "Sample quantitation limit," replaces the word "quantitation" with "detection" in order to better fit the definition provided in the rule. Conforming changes are also adopted for §§350.51(d)(1) and (n), 350.54(h)(2), 350.71(k)(1), and 350.79.

Section 350.4(a)(88), concerning the definition of "Surface soil," is not being adopted as proposed. The change from the proposed rule was modified based upon unsupportive public comments received and the lack of new information to compel such a change.

Section 350.33(f)(4)(E), Remedy Standard B, is not being adopted as proposed. After further consideration, the amendment was determined to be unnecessary and offers no further clarification of the rule.

Section 350.34(1) and (2), No Further Action, was changed in response to public comment on the rule, which is explained in the RESPONSE TO COMMENTS section of the preamble. The change provides additional cross-references for rule requirements that may trigger the need for an institutional control.

Adopted §350.37(i) and (k), Human Health Points of Exposure, corrects and clarifies the rule. The amendment factors in potential impacts to downgradient reaches of the surface water body, and establishes the point of exposure (POE) for sediment or surface soil in intermittent streams.

Adopted §350.51(d), Affected Property Assessment, corrects and clarifies the rule so that it is fully consistent with the intent behind the rule provision. The goal of the provision is to ensure that the key question of whether groundwater has been affected by a chemical of concern (COC) release is specifically answered. Both the prior rule and the adopted rule require that the vertical extent of the release be investigated to the greater of the method quantitation limit or to the background concentration, or until groundwater is encountered, in which case the groundwater will be sampled. When groundwater has already been investigated, the prior rule softened the vertical assessment required by allowing the vertical assessment to terminate at the ^{GW}Soil protective concentration level (PCL). That reference to ^{GW}Soil in §350.51(d)(1) contained in the prior TRRP rule was incorrectly too specific, and should have instead more generally stated "the residential assessment level."

Also, adopted §350.51(d)(1) is split into additional paragraphs (2) and (3) to enhance readability, and paragraph (2) of the prior TRRP rule is renumbered as paragraph (4). In paragraph (2), an amendment is adopted to clarify that in the context of using §350.75(i)(7)(C) to limit the vertical assessment under §350.51(d), an adequate groundwater assessment must be conducted, unless the executive director approves the omission or modification of the groundwater assessment on a site-specific determination. Information to be considered in the site-specific determination should include, but not necessarily be

limited to, depth to the groundwater-bearing unit, characteristics of the geology that prohibit or impede vertical migration of COCs, and the physical and chemical properties of the COCs. An example of when such a determination may be made is the situation of a release over the Eagle Ford Shale. In this situation, the case may be made that the shale will prohibit migration of COCs to the groundwater-bearing unit below the shale. The lines of evidence that include the depth to that groundwater-bearing unit, the geology and hydrogeology of the site, and the chemical/physical properties of the COCs may, in combination, provide sufficient justification to not require sampling of groundwater to define the vertical extent of COCs. Note that depth to groundwater by itself is not an adequate justification for not sampling groundwater to define the vertical extent of COCs.

Section 350.51(i), concerning connections to a public water supply, is not being adopted as proposed. The change from the proposed rule was based upon unsupportive public comments received.

Adopted §350.51(j), concerning the collection of representative samples of groundwater, revises the text to reflect the fact that samples collected from any environmental medium (not just groundwater) should be collected and handled in a manner which will yield representative concentrations of COCs.

Adopted §350.51(k), concerning collecting representative samples of surface water, revises the text to reflect the fact that samples collected from either surface water or sediment should be collected and handled in a manner in accordance with a different, more appropriate guidance document for surface water/sediment collection, than was indicated in the prior rule. For this change, *Implementation*

Procedures is deleted, and S*urface Water Quality Monitoring Procedures, Volume I* is to be used in its place. Here, alternate sampling methodologies are still allowable with approval by the executive director.

Adopted §350.51(m), concerning site-specific background soil concentrations, adds the word "soil" into the rule to clarify that the Texas-specific background concentrations are for soil. Adopted changes to Figure 30 TAC §350.51(m), entitled, "Texas-Specific Background Concentrations," include amending the title to include the word "soil," because the table pertains exclusively to soils, not groundwater or other media; and also amending the title to include the units of milligrams per kilogram (mg/kg). In addition, the reference from fluorine is changed to fluoride, since fluoride is the correct form of the element that should be listed in the table. Finally, the table has been corrected to reflect thorium instead of thallium, as it was mistakenly portrayed as thallium in the prior rule, and had been previously corrected in guidance.

A footnote is adopted for additional clarification to the figure in §350.51(m). It references the document which is the source of the table data: *Background Geochemistry of Some Rocks, Soils, Plants, and Vegetables in the Conterminous United States*, by Jon J. Connor, Hansford T. Shacklette, *et al.*, Geological Survey Professional Paper 574-F, U.S. Geological Survey.

Adopted §350.54(d), Data Acquisition and Reporting Requirements, revises the laboratory accreditation requirements to be consistent with 30 TAC Chapter 25, Environmental Testing Laboratory

Accreditation and Certification. The new requirements will be implemented on July 1, 2008. The adopted changes clarify the requirements for data generated prior to the implementation of the amended rule. Also adopted is an amendment to §350.54(e)(4) to clarify that method detection limits are not analyst dependent.

Adopted §350.71(k), General Requirements, simplifies, clarifies, and changes the rule. Adopted paragraph (4) is added and is referenced in subsection (k). Additional text adopted for paragraph (1) adds specific context to clarify the intent of the rule and to facilitate consistent rule application. Additional text is also adopted for paragraph (2) to clarify the residential assessment level is the analytical performance criteria to screen COCs from PCL development under this paragraph. Furthermore, the additional text makes paragraph (2) self-contained, eliminating the prior need to also apply paragraph (3) when applying paragraph (2). The adopted amendment to paragraph (3) shortens and simplifies the rule language by deleting subparagraphs (A) and (B)(i) - (vi) from the prior rule. Under amended paragraph (3), a COC not detected in the environmental medium, but known or reasonably anticipated to be associated with activities conducted at the on-site property, can be dropped from PCL development if all of the sample detection limits for the COC are less than the residential assessment level in the environmental medium. Adopted paragraph (4) clarifies that a COC not known or not reasonably anticipated to be associated with a facility or site activity and not detected in the environmental medium can be dropped from PCL development. If the COC is detected in another environmental medium at the on-site property, the COC is considered potentially associated with the facility or site and cannot be screened under adopted paragraph (4). The residential assessment level is

intentionally not included in paragraph (4) to allow the person to use a broad spectrum analytical method without having to evaluate each of the analytes reported for those methods when those analytes are not detected and are not known or not reasonably anticipated to be associated with the on-site property.

Section 350.73, Determination and Use of Human Toxicity Factors and Chemical Properties, was changed in response to public comment on the rule, which is explained in the RESPONSE TO COMMENTS section of the preamble. The changes include revisions to §350.73(a) to add a new source to the list of acceptable sources for obtaining human toxicity factors, and to §350.73(b) and §350.73(a), which allow the executive director to direct persons to use a chronic human toxicity factor from a source other than that selected under the hierarchy in §350.73(a) in cases where the executive director has determined it to be necessary to use a more scientifically valid toxicity factor from a different source. The adopted new source of toxicity factors is United States Environmental Protection Agency (EPA) Provisional Peer Reviewed Toxicity Values (PPRTVs) (i.e., Superfund Health Risk Technical Support Center). This change is adopted to §350.73(a) because two of the sources in the list, the "EPA Health Effects Assessment Summary Table" and the "EPA National Center for Environmental Assessment," will no longer have updates to toxicity factors, however, it will likely take a number of years for new toxicity factors to be developed to replace some of the values that are in those sources. Changes are adopted to §350.73(a) and §350.73(b) to give the executive director flexibility to approve a toxicity factor from a different tier of the source hierarchy in cases where a toxicity factor from the source selected in accordance with the hierarchy list provided in §350.73(a) is

determined by appropriate TCEQ staff to be less scientifically valid than that from a different source tier based on more recent science. A change is adopted to §350.73(b) to redesignate it as §350.73(c) and to allow for the provision provided in adopted §350.73(b). Subsequent paragraphs and figures are renumbered to accommodate adopted subsection (b).

Changes are adopted to Figure: §350.73(f) to reflect current available chemical and physical data for 2-ethoxy ethanol (Table Compound No. 172).

Adopted §350.73(f)(1) removes incorrect references to leachate tests, including the Synthetic Precipitation Leaching Procedure (SPLP), as appropriate tests for determining the soil-water partition coefficient (K_d) of inorganic compounds or the organic carbon-water partition coefficient (K_{oc}) of ionizing organic compounds. The changes are adopted because leachate tests such as SPLP are not appropriate for determining the partitioning coefficients. The adopted changes continue to allow the use of data from appropriately conducted tests to be used to determine a site-specific K_d or K_{oc}.

Changes are adopted to Figure §350.73(f)(1)(C) to add pH-dependent soil-water partition coefficients (K_d) for antimony and a revised single value for vanadium.

Figure: 30 TAC §350.74(a), entitled "Risk-Based Exposure Limit Equations and Default Exposure Factors for Residents," is adopted to correct the reference citation for the relative bioavailability factor (RBAF) from §350.74(j)(1)(D) to §350.74(j)(1)(C). Figure: 30 TAC §350.74(a), entitled "Risk-Based

Exposure Limit Equations and Default Exposure Factors for Residents," and "Risk-Based Exposure Limit Equations and Default Exposure Factors for Commercial/Industrial Worker," is adopted to renumber the references for RBEL-6: Surface Water RBEL to conform to the renumbering in adopted §350.74(h)(5) – (8).

Adopted §350.74(h), concerning the surface water risk-based exposure limit (^{SW}RBEL), includes new language to make persons more aware that they may have to develop multiple RBELs or PCLs depending on the distance downstream from the contaminated site that COCs are expected to be present in the watershed, and that the RBELs and PCLs will vary with the different uses and exposure pathways within the watershed.

Adopted §350.74(h)(2) adds contact recreation as a water body use that the person must consider when applying human health criteria to establish ^{SW}RBELs. Adding contact recreation as a water body use acknowledges the fact that incidental ingestion of surface water and dermal contact with surface water sometimes occurs, and therefore, may be pathways of exposure to COCs, even when a water body is not a drinking water source.

Adopted §350.74(h)(3) replaces "limits" with "effluent limitations" to be more technically accurate. Also, the reference to 30 TAC Chapter 321, Subchapter H, is adopted to be changed to Texas Pollutant Discharge Elimination System (TPDES) General Permit Number TXG830000, because the existing

reference is no longer valid. The adopted language also clarifies that these limitations apply to releases of groundwater or storm water that has been impacted by petroleum fuel.

Adopted §350.74(h)(4) is amended to spell out "United States" rather than use the abbreviation "U.S." In addition, language that clarifies the meaning of the term "federal guidance criteria" is added.

Adopted §350.74(h)(5) is added to be elevated from the former §350.74(h)(6)(B). Elevation of this subsection emphasizes the fact that the specified analytes (chlorides, sulfates, etc.) should be treated as COCs where applicable at the affected property. In response to public comment on the rule, a change was made to §350.74(h)(5) to use these specific analytes as COCs when appropriate.
Because of the adopted additions previously discussed, §350.74(h)(6) is re-designated as §350.74(h)(7), and §350.74(h)(7) is re-designated as §350.74(h)(8). Also, adopted §350.74(h)(7) clarifies the fact that some parameters (nutrients, total dissolved solids, etc.) are sometimes COCs themselves, and adds an example where the RBEL is modified to address general criteria.

Changes are adopted to the groundwater-to-surface water PCL equation contained in Figure: 30 TAC §350.75(b)(1) to clarify that ecological receptors must be considered when determining PCLs for groundwater discharges to surface water. Prior to this rulemaking, the term in the numerator of the equation (^{SW}RBEL) was only related to aquatic life and human health exposure pathways that are addressed by the Texas Surface Water Quality Standards (TSWQS). The adopted new term for the numerator of the equation, the PCL for surface water (^{SW}SW), takes ecological receptors into

consideration (including aquatic life) and other human pathways not addressed by the TSWQS, as described in later discussions of adopted changes to this section of the TRRP rule.

Changes are adopted to Figure: 30 TAC §350.75(b)(1) to correct the missing temperature term "K" for the units for the Universal Gas Constant in two places in the figure, and to update the amount of time that an individual is assumed to be exposed to a chemical or multiple COC (i.e., the exposure interval). The exposure interval value is used when performing certain calculations used to determine risk-based values. To reflect more recently published EPA information, the exposure interval(s) value is changed to 9.5×10^8 seconds (30 years). Prior to this rulemaking the value was 1.0×10^9 (33 years). The change reflected in this adoption has already been addressed and implemented in guidance. Another adopted change to the figure replaces incorrect cross-references to tables that are supposed to contain "Soil organic carbon-water coefficient" values (i.e., K_{oc} values) with the correct cross-reference. The adopted cross-references refer to tables containing K_d values, instead of K_{oc} values. An additional adopted change to the figure corrects the definition of the term "LDF," changing it from "Lateral Dilution Factor" to "Leachate Dilution Factor," to better represent the fact that the dilution factor is used in calculations for predicting the concentrations of a COC contained in groundwater after it leaches through soils containing that COC and dilutes in the groundwater. The adopted rule also changed the equation for calculating "The residential saturation limit where NAPL becomes mobile" to show the term "θ_T" as a multiplier, rather than as an exponent, and to correct the residential saturation value

given in the figure, changing it from 0.0167 to the correct value of 0.04514. This too has already been achieved through guidance.

Adopted changes to Figure: §350.75(b)(1) also include revising the "Surface Water Exposure Pathway PCL Equation" section of the table to clarify that the PCL for surface water (^{SW}SW) is determined by comparing the value of the risk-based exposure limit for surface water for aquatic life and human health concerns ($^{SW}RBEL$), to the value of the PCL for surface water for ecological protection ($^{SW}SW_{Eco}$), and choosing the smaller of the two values. A change is adopted to the same section of the table to add a cross-reference to §350.77(a).

Adopted §350.75(i)(4) clarifies that PCLs for discharges from groundwater to surface water are equal to PCLs for surface water plus adjustments for dilution (when allowed). The previously mentioned adopted change also clarifies that adjustments for dilution apply to ecological exposure pathways, as well as human health exposure pathways, for discharges from groundwater to surface water. Additional adopted changes to §350.75(i)(4) clarify that the PCLs for surface water for ecological protection ($^{SW}SW_{Eco}$) must be considered when developing PCLs for discharges from groundwater to surface water, provide a cross-reference to the appropriate section of the rule for developing those PCLs, add a cross-reference to §350.75(i)(4)(A) for clarity, and remove unnecessary cross-references. In response to public comment, additional adopted changes to §350.75(i)(4)(A) clarify that different dilution factors

may be applicable to the surface water RBEL and the $^{SW}SW_{eco}$. Section 350.75(i)(4)(A) provides that the final groundwater to surface water PCL would be based on the lowest quotient for a given COC.

The deleted cross-references were unnecessary because they are contained in §350.75(i)(4)(B). A reference to determining whether a water body is fresh water or marine is deleted because it applies to the establishment of PCLs for surface water, rather than the development of PCLs for the discharge of groundwater to surface water.

Changes are adopted to §350.75(i)(4)(A) - (C) as a part of the previously mentioned clarification that adjustments for dilution apply to ecological exposure pathways (including aquatic life), as well as to human health exposure pathways.

Adopted §350.76(c), Approaches for Specific Chemicals of Concern to Determine Human Health Protective Concentration Levels, provides flexibility to establish residential lead $^{Tot}Soil_{Comb}$ PCLs. The revision to the rule allows for the use of property specific inputs and models. Adopted subsection (c)(2) establishes that any model is considered a Tier 3 evaluation. Input values and models used in Tier 3 evaluations require the approval of the agency, but variance from certain model default exposure factors such as soil/dust ingestion rates and exposure frequency is not allowed in accordance with adopted §350.76(c)(2). In response to public comment, a request for variance from the soil/dust ingestion rates and exposure frequency is not allowed in accordance with adopted §350.76(c)(2). Subsequent

paragraphs and figures are renumbered to accommodate adopted subsection (c)(2).

Adopted §350.76(e) directs the use of the same approach currently being used to demonstrate attainment of the critical PCL for 2,3,7,8-Tetrachlorodibenzodioxin (TCDD) in soil, for attainment of the critical PCL for 2,3,7,8-TCDD in other media (e.g., groundwater, sediment).

Changes are adopted to Figure: §350.76(g)(2), relating to Total Petroleum Hydrocarbons, to revise the surrogate chemicals. The prior rule addressed total petroleum hydrocarbon (TPH) contamination using a surrogate-chemical toxicity/physical property approach for the various aliphatic and aromatic carbon range fractions resulting from analysis by TCEQ Method 1006. The surrogate chemicals used by TCEQ for the various aliphatic and aromatic fractions appear in Figure: §350.76(g)(2). The Massachusetts Department of Environmental Protection (MA DEP) was one of the first regulatory agencies to use the toxicity surrogate-chemical approach for addressing environmental TPH contamination (MA DEP, 1994). In 1997, the Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG) published *Development of Fraction Specific Reference Doses (RfDs) and Reference Concentrations (RfCs) for Total Petroleum Hydrocarbons* (TPHCWG, 1997). TCEQ review of the 1994 MA DEP and 1997 TPHCWG approaches was useful in developing the current TRRP toxicity surrogate approach for TPH. TPHCWG surrogate chemicals and toxicity factors are currently used by TCEQ for several aliphatic and aromatic fractions. In November 2003, MA DEP published their *Final Updated Petroleum Hydrocarbon Fraction Toxicity Values for the VPH/EPH/APH Methodology*. TCEQ reviewed the 2003 MA DEP document and determined that several revisions to the surrogate

chemicals found in Figure: §350.76(g)(2) are justified based on new scientific information and/or analyses conducted since the TPHCWG surrogate toxicity factors were published in 1997. Additionally, the footnote to this figure is revised to correct the term to reflect "less than or equal to."

Section 350.77, Ecological Risk Assessment and Development of Ecological Protective Concentration Levels, is amended. An ecological risk assessment is conducted to determine the potential impacts posed to ecological receptors (i.e., aquatic life and wildlife) by COCs. The process is a tiered approach, with increasingly complex criteria being evaluated as the process progresses from Tier 1 (using an exclusion criteria checklist to determine if significant exposure to COCs is likely), to Tier 2 (comparing concentrations of COCs at an affected property to literature-based PCLs), to Tier 3 (using site-specific measurements of exposure and the effects of exposure to COCs).

Adopted §350.77(a) acknowledges existing agency guidance that was planned, but not in existence at the time the prior TRRP rule was created. The specific guidance document is the agency's *Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas* (RG-263), as amended. The procedures contained in the guidance document have been in use since 2001. Referencing the document in the rule serves to make the person aware of the existence of the guidance document earlier in the ecological risk assessment process.

Adopted §350.77(a) also provides the ability to end an ecological risk assessment evaluation even if the Tier 1 evaluation failed, provided the person can demonstrate that a response action (e.g., a cap that

prevents exposure to impacted soils) will eliminate the potential for wildlife to be exposed to COCs, or if it can be demonstrated that concentrations of COCs that are protective for humans are also protective of ecological receptors. The prior version of the TRRP rule indicated that a person could end the ecological risk assessment evaluation, based on the previously described factors, only if the response action is completed to address exposure to COCs by humans. The adopted changes broaden the type of response actions that may be considered as justification for ending the ecological risk evaluation to include response actions completed for any reason, so long as the potential for ecological receptors to be exposed to a COC is eliminated or rendered insignificant. The agency has determined that the adopted changes will reduce costs and effort with regard to ecological risk evaluations, without significantly impacting the protection of human health and the environment.

In addition, adopted §350.77(a) acknowledges the possibility of ending an ecological risk assessment evaluation following a Tier 1 evaluation that is failed due to surface water and/or sediment exposure pathway issues, using the expedited stream evaluation process. The expedited stream evaluation process has been implemented via the previously mentioned *Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas* (RG-263), as amended. The expedited stream evaluation process allows a person to exit the ecological risk assessment process if the evaluation establishes that the completed surface water and sediment exposure pathways are insignificant. Acknowledging the existence of the expedited stream evaluation process in the rule serves to make the person aware of the existence of the guidance document earlier in the ecological risk assessment process.

Adopted §350.77(b) includes a revision to correct a typographical error and a clarification that a person is required to continue on to Tier 2 or Tier 3 of the ecological risk assessment process unless a reasoned justification, as described in §350.77(a), and/or an expedited stream evaluation demonstrates that the ecological risk involved is acceptable. The adopted changes also inform the person that the reasoned justification approach and the expedited stream evaluation process are described in the agency's guidance. That guidance document is the *Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas* (RG-263), as amended.

Adopted §350.77(c) is amended to provide a reference to the agency's ecological risk assessment guidance. The adopted revision informs the person of the location of guidance concerning the elimination of a COC that does not pose an ecological risk and the development of PCLs for a COC that does pose an unacceptable risk to selected ecological receptors.

Adopted §350.77(c) also clarifies the current procedure for conducting a Tier 2 screening-level ecological risk assessment. The adopted clarifications are intended to enable the person to avoid a recurring issue that has been observed by agency staff reviewing Tier 2 screening-level ecological risk assessments. The adopted changes do not modify the current procedures for conducting Tier 2 screening-level ecological risk assessments.

Adopted new §350.90, Spatial and Electronic Information, was changed in response to public comment on the rule, which is explained in the RESPONSE TO COMMENTS section of the preamble. The rule

requires a person to provide accurate spatial coordinates for any site data (e.g., sampling locations), as required by the agency, in a format to be specified by the agency. The change made to §350.90(b) adds the stipulation that reports required under this subchapter may be requested in an electronic format. These provisions are adopted to facilitate agency management of the data and evaluation and use of the data. Also adopted are conforming rule changes that delete §§350.91(c), 350.92(b), 350.93(b), 350.94(m), 350.95(f), and 350.96(b). Further conforming rule changes are adopted to §§350.92, 350.93, and 350.96, striking the "(a)" to make subsection (a) in each case implied.

Adopted §350.91(b)(7), Affected Property Assessment Report, adds language to indicate that if an expedited stream evaluation is conducted, it should be included in the Affected Property Assessment Report (APAR).

Additional language is added in §350.91(b)(15) to indicate that the person is to provide spatial data coordinates, as requested by the agency, for the affected property and any sampling or testing locations, in a format that is approved or required by the agency. Prior §350.91(b)(15) is renumbered as §350.91(b)(16).

Adopted §350.95(b), Response Action Completion Report, was changed in response to public comment on the rule. The change adds additional cross-references to institutional control rule requirements in the rule to clarify that institutional controls may be required for reasons other than commercial/industrial land use. The adopted language also includes the term "when applicable."

Adopted §350.96(a), Post-Response Action Care Reports, replaces the word "reports" with "report."

Adopted §350.111(c), Use of Institutional Controls, reflects a clarification and resulting change in language that acknowledges that the subject at issue is more appropriately addressed in this section rather than in the definition of "Person" contained in §350.4(a)(62) of the prior version of the TRRP rule. Therefore, the definition of "Person" is changed in the adopted rule, and the institutional control practice for non-responsible party governmental entities as it existed in the prior version of the rule is preserved by incorporating the necessary language into this section of the adopted rule. This adopted change is consistent with both current agency practice and the prior version of the TRRP rule. The adopted change reflects the intent that a governmental entity that is not a responsible party is excluded from the requirement of having to obtain written consent from the landowner prior to filing a deed notice or Voluntary Cleanup Program certificate of completion in the real property records. The language is also amended so that if subsection (b)(4) relating to change in circumstance, subsection (d) relating to technical impracticability, or subsection (f) relating to missing landowner, of this section apply, persons also are not required to obtain written landowner consent.

Adopted §350.111(c)(4) also incorporates the language and concept that was removed from the definition of "Person" in adopted §350.4(a)(62). This change is consistent with both current practice and the prior version of the TRRP rule which provides a governmental entity who is performing

remediation activities under this title, but who is not a responsible party, the ability to impose a deed notice on property if the landowner refuses consent to file a restrictive covenant on the property in accordance with Remedy Standard B requirements. This rule provision is needed to extend the beneficial use of finite state and federal remediation funds so that more sites can be addressed, rather than expending excessive funds to complete an unwarranted removal/decontamination remedy, when a control-based remedy that is fully protective of human health and the environment is the lowest cost remedial alternative. Conforming rule changes are adopted to §350.111(c)(2) and (3) to move the "or" at the end of paragraph (2) to the end of paragraph (3).

Adopted §350.111(e) replaces the incorrect cross-reference of §350.33(f)(3)(E) with §350.111(f)(3)(F).

Adopted §350.134(b), Qualifying Criteria (for establishing a facility operations area), references 30 TAC Chapter 60, Compliance History, which was adopted post-Chapter 350. Chapter 60 rules establish additional criteria for evaluating the compliance history of a facility.

FINAL REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the adopted rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the rulemaking is not subject to §2001.0225 because it does not meet the definition of a "major environmental rule" as defined in that statute. A "major environmental rule" means a rule, the specific intent of which, is to protect the environment or reduce risks to human health from exposure and that may adversely affect in a material way, the

economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The commission has determined that the adopted rulemaking does not fall under the definition of a "major environmental rule" because the adopted amendments and new rule are primarily designed to clarify the existing regulatory requirements and adjust methods and measures to ensure a consistent application of soil and water analysis and remediation standards. In furtherance of this effort at promoting consistency, certain policies and practices concerning sampling, remediating, and reporting are altered in a manner which ensures flexibility in the remediation process while maintaining appropriate protection of human health and the environment. The adopted amendments and new rule do not rise to the level of material, but rather are limited to incorporating modifications to the current regulatory framework based upon the implementation of the rules to date.

Furthermore, the adopted rulemaking does not meet any of the four applicability requirements listed in Texas Government Code, §2001.0225(a). Texas Government Code, §2001.0225(a), only applies to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law. This rulemaking does not meet any of these four applicability requirements because this rulemaking: 1) does not exceed any standard set by federal law; 2) does not exceed the requirements of state law; 3) does not exceed a requirement of a delegation agreement or contract

between the state and an agency or representative of the federal government to implement any state and federal program; and 4) is not adopted solely under the general powers of the agency, but rather under specific authorizing statutes as referenced in the STATUTORY AUTHORITY sections of this preamble.

TAKINGS IMPACT ASSESSMENT

The commission evaluated the adopted rules and performed an assessment of whether these adopted rules constitute a takings under Texas Government Code, Chapter 2007. The specific purpose of the rules is to clarify the existing regulatory requirements and adjust methods and measures to ensure a consistent application of soil and water analysis and remediation standards. Among other technical changes, the adopted rule contains a clarification of language regarding the filing of institutional controls by non-responsible party governmental entities performing remedial actions. The adopted change reflects the practice of the prior version of the TRRP rule but inserts the clarifying language in §350.111 as opposed to the prior means of excluding the qualifying governmental entities from the defined subset of persons to whom TRRP is applicable in §350.4(a)(62). Inserting the language in §350.111, rather than §350.4(a)(62), is adopted to achieve the same result of the prior TRRP rule regarding institutional controls while avoiding the overbroad and unintended interpretation that governmental entities are excluded from all other requirements of TRRP.

Promulgation and enforcement of the adopted amendments and new rule constitute neither a statutory nor a constitutional taking of private real property. Specifically, the adopted regulations do not affect a

landowner's rights in real property because the clarification in the rulemaking does not burden (constitutionally) nor restrict or limit the owner's right to property and reduce its value by 25% or more beyond that which would exist in the absence of the adopted clarification of the regulations. In other words, there are no burdens imposed on private real property under this rulemaking because the adopted amendments and new rule do not materially change the substance of the rule but rather clarify the institutional control process as it relates to non-responsible party governmental entities conducting remedial actions. Therefore, the adopted rules do not have any impact on the use or enjoyment of private real property, and there will be no reduction in value of property as a result of this rulemaking.

CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission reviewed the adopted rulemaking and found that it is identified in the Coastal Coordination Act Implementation Rules, 31 TAC §505.11(b)(2) relating to rules subject to the Coastal Management Program, and will, therefore, require that goals and policies of the Texas Coastal Management Program (CMP) be considered during the rulemaking process.

The commission reviewed this rulemaking for consistency with the CMP goals and in accordance with the regulations of the Coastal Coordination Council and determined that the rulemaking is procedural in nature and will have no substantive effect on commission actions subject to the CMP and is, therefore, consistent with CMP goals and policies.

PUBLIC COMMENT

The commission received comments from Brown and Caldwell (B&C), Groundwater Services, Inc. (GSI), Lowerre & Frederick, submitting on behalf of Lowerre & Frederick, Clean Water Action, Environmental Defense, Public Citizen, Sustainable Energy and Economic Development Coalition, and Texas Campaign for the Environment (Lowerre & Frederick), Texas Chemical Council (TCC), the Office of Public Interest Counsel of the Texas Commission on Environmental Quality (OPIC), URS Corporation (URS), and an individual. The public comment period closed at 5:00 p.m. on October 9, 2006.

RESPONSE TO COMMENTS

§350.2(g), Applicability

The TCEQ received comments concerning this section from TCC, Lowerre & Frederick, and OPIC. TCC supported the proposed language. Lowerre & Frederick and OPIC both expressed concern that the commission did not provide reasoned justification for the proposed changes. OPIC stated that a justification as to how the variance would benefit human health and the environment was not provided. Lowerre & Frederick and OPIC expressed a concern that the proposed rule language is contrary to the original intent and purpose of applying Chapter 350 to PST sites.

The commission acknowledges the comments submitted by TCC.

In response to Lowerre & Frederick's and OPIC's comments, the commission stresses that the proposed rule change would continue to be protective of human health and the environment

insofar as standards under Chapter 334 are designed to ensure such protectiveness. As explained in the March 26, 1999, preamble to the TRRP rules adopted at that time, the agency shifted from Chapter 334 to Chapter 350 for LPST sites with the intention of making the regulatory strategies and requirements consistent for the benefit of both the regulated community and the agency (see the March 26, 1999, issue of the *Texas Register* (24 TexReg 2210 - 2211)). The adopted variance provides remediation flexibility to the landowner under appropriate and qualified circumstances, while maintaining protection of human health and the environment.

In the 1999 preamble to the TRRP rule, the commission originally expressed that it was seeking consistency with other programs which deal with the same types of chemicals of concern. However, in light of the experience gained since TRRP became applicable to LPST sites, the commission has re-evaluated its position for the limited circumstances described in the adopted rule. The commission notes that many of the LPST releases being reported are discovered through real estate transactions conducted at properties where a tank system has been removed, in some cases prior to implementation of Chapter 334. Other LPST sites exist in close proximity to sites which had tank systems removed and either have already been closed or are still conducting corrective action under Chapter 334. These LPST sites potentially have similar types of releases, subsurface and receptor conditions, and, in many cases, the hydrocarbon plumes from the sites are commingled, yet would be required to conduct activities under two different rules. In order to avoid such inconsistency, a qualified person may choose to apply for the variance, as described in the adopted rule, which may result in a more timely remediation effort and related

potential benefits to human health and the environment.

The variance will be applicable only to sites where a release occurred prior to the application of Chapter 350 to LPST releases. New releases from all operational facilities will be regulated under Chapter 350.

Lowerre & Frederick also requested clarification regarding whether the variance will be applicable for LPST sites that are being remediated under the Voluntary Cleanup Program.

Under prior TRRP rules, LPST sites that are in the Voluntary Cleanup Program may comply with either the TRRP rule or with Chapter 334, depending on whether or not the release was reported prior to September 1, 2003 (March 26, 1999, issue of the *Texas Register (*24 TexReg 2210 - 2211)). Under the adopted rules, the owner/operator of a site with historic contamination (release occurring prior to September 1, 2003) may apply for a variance.

OPIC noted that language in the preamble makes reference to "neighboring" sites, and the rule stated sites in "proximity." OPIC suggested the term adjacent be used, or that proximity be defined.

The commission agrees with OPIC's comments, and is specifying in the rule that a variance may be granted for a property within 0.25 miles of another LPST site which is regulated under Chapter 334. Within this distance, it is reasonable to expect comparable subsurface conditions as

they relate to potential receptors. This distance is also appropriate in consistently remediating commingled plumes. Most of these mature releases have stable plumes typically limited in extent (most not exceeding 1,200 feet) as indicated in the 1997 Texas Bureau of Economic Geology study "Extent, Mass and Duration of Hydrocarbon Plume from Leaking Storage Tanks Sites in Texas" (GC97-1).

OPIC commented that the detection date should not determine which facilities fall under TRRP versus under Chapter 334. Additionally, OPIC stated that the later detection of a release may increase risk and adverse effects to the environment and human health.

The commission will consider granting a variance only to LPST sites where the facility ceased to operate, and the underground storage tank/aboveground storage tank system has been permanently removed. This would restrict the use of Chapter 334 to legacy/historical contamination situations. All releases occurring after September 1, 2003, would be regulated in accordance with Chapter 350.

The variance is only applicable to sites with comparable conditions (e.g., release, site, and receptor conditions). The variance will not be granted for situations where the person cannot demonstrate that additional regulatory requirements would be necessary if activities were conducted in accordance with Chapter 350. In instances where there is a high risk to human health and the environment, the variance may not be considered, since the regulatory

requirements under both rules would be comparable.

OPIC commented that if the variance is adopted, the rule language should be revised to enhance readability and understanding. OPIC recommended the reordering of the rule language and suggested changes to clarify the requirements, and applicability of the variance.

The commission thanks OPIC for their comments and has incorporated the suggestions in the adopted rule.

§350.4(a)(6), Definitions

Regarding the proposal in §350.4(a)(6) to include diffuse non-point source pollution in surface water and sediment as an example of an anthropogenic source, Lowerre & Frederick objected for a number of reasons. They argue that non-point source pollution in these media may not be evident to the person sampling the media, and that many upstream point sources may be causing contamination that the person is tempted to attribute to anthropogenic background. Lowerre & Frederick argue that unless a non-point source is evident, that persons should not use the anthropogenic background argument. Lowerre & Frederick further stated that if the agency's intent is to reduce the extent of investigation and remediation of surface water and sediment, it should do so using its broad prosecutorial discretion. In an example using nitrates, Lowerre & Frederick argue that where an entire water body is impacted by nitrates, the anthropogenic background designation would remove the water body in part or in whole from meeting the surface water RBEL.

Concerning the definition of "Background," the proposed language would have added diffuse non-point source pollution in surface water and sediment as an example of anthropogenic background. The commission proposed the addition to make it clear that the agency would consider non-point source pollution as a possible anthropogenic background argument for surface water and sediment. The commission agrees with Lowerre & Frederick that it would have been difficult for persons to demonstrate that COCs in surface water and sediment are attributable to non-point source pollution, rather than the TRRP affected property in question, or multiple upstream point sources. As is, the existing rule language does not preclude consideration of an anthropogenic background proposal for surface water and sediment, including anthropogenic background attributable to non-point source pollution. For this reason, combined with the need to discuss this topic more in guidance, the commission has deleted the proposed change to §350.4(a)(6).

§350.4(a)(62), Definitions

Concerning §350.4(a)(62), Lowerre & Frederick commented that the change of the definition of "Person" to make governmental entities that are not responsible parties subject to TRRP is not necessary since the entities' exclusion from the prior definition was by design and not confusing. Lowerre & Frederick further commented that there is no reasoned justification for the change. Lowerre & Frederick's comment recognized the need to provide relief for non-responsible party governmental entities from certain institutional control requirements; however, this comment argued that the prior

rule addressed the situation with more wisdom by omitting governmental entities who are not responsible parties from the entirety of the rule.

As stated in the preamble to the proposed rule, the TCEQ agrees that non-responsible party governmental entities performing cleanups were intentionally excluded from the definition of "Person" contained in the prior rule. The prior definition of the rule was intended, in part, to provide relief for a governmental entity that was performing a remedial action but was not a responsible party, from being required to obtain: a) a restrictive covenant in the situation where the landowner refuses to execute the covenant; or b) the written consent from a landowner prior to filing a deed notice or Voluntary Cleanup Program certificate of completion on that landowner's property. TCEQ's basis for this definition change is not founded upon the premise that the prior definition was merely confusing. Rather, the change is adopted because of the unintended, broad interpretation of the prior definition which seemed to invite the argument that non-responsible party governmental entities conducting cleanups on National Priorities List sites were exempt from following the substantive requirements (such as certain Protective Concentration Levels) of TRRP as provided by 40 Code of Federal Regulations Part 300. The TCEQ consistently opposes such arguments when they are proffered; yet the resultant delay and additional burden on resources necessary to repeatedly oppose the argument provide a reasoned justification for the rule change. As stated in the preamble to the proposed rule changes, the rule changes are based on the need to correct and clarify provisions to promote consistency. This definition change is necessary to insure the consistent application of TRRP to the remediation of

sites conducted by governmental entities which are not responsible parties. Therefore, the rule is adopted as proposed and corresponding amendments are made in §350.111(c) to address the institutional control requirements for non-responsible party governmental entities conducting cleanups.

§350.4(a)(88), Definitions

The commission received a number of comments expressing divergent points of view regarding the proposed revision to the definition of "Residential surface soil" contained in §350.4(a)(88). Under the proposed revision, "Residential surface soil" would have been redefined from 0-15 feet below ground surface (bgs) to 0-5 feet bgs, or to the top of the uppermost groundwater-bearing unit or bedrock, whichever is less in depth. Lowerre & Frederick opposed the proposed revision and commented that the TCEQ has a long history of recognizing exposure to soils in the 0-15 feet bgs interval (from the excavation of soil for swimming pool installation, for example) as a reasonably anticipated to be complete exposure pathway for residential scenarios and that the rationale TCEQ used in the 1999 TRRP preamble to reject comments lobbying for a more shallow surface soil interval and to support the 0-15 feet bgs residential surface soil interval remains sound. Lowerre & Frederick also expressed concern that there are no institutional control requirements for residential property under Remedy Standard A to notify innocent landowners and construction workers that bring soils from depths greater than 5 feet bgs to the surface that the soil may contain concentrations which are not health-protective. OPIC asked why the definition of surface soil is more appropriately adjusted to a depth of 5 feet bgs than to 15 feet bgs for both residential and commercial/industrial properties if the proposed change is

only for the sake of consistency and simplicity of the application of TRRP. TCC, URS, and GSI agreed with the proposed revision to simplify the application of TRRP and preparation of affected property assessment reports.

Historically, TCEQ has considered exposure to soils in the 0-15 feet bgs interval from excavation for residential construction (e.g., swimming pools, septic systems) as a reasonably anticipated to be complete exposure pathway for residential scenarios. Although the commission believes a residential surface soil definition of 0-5 feet bgs would reduce the complexity of applying the TRRP rule and be sufficiently health-protective in the majority of cases, there is a lack of new information (e.g., federal guidance, published studies) since 1999 which would compel such a change. Additionally, residential pools are common in Texas and the possibility of excavated soils from 5-15 feet bgs being deposited at the surface with subsequent frequent exposure cannot be ruled out. If this were to occur, there would be no notice to residents of contaminants in subsurface soil, as institutional controls are not required for many Remedy Standard A response actions at residential properties. Therefore, as a reasonable precaution, the commission is not adopting the revision as proposed and is retaining the prior rule definition of residential surface soil.

§350.33(f)(4)(E), Remedy Standard B

Concerning §350.33(f)(4)(E), two commenters supported the proposed change. The TCC commended the TCEQ for developing a risk-based approach to non-aqueous phase liquids (NAPL) management

which is protective of human health and the environment while providing common sense and flexible application of NAPL response actions. The TCC supported the proposed change because risk-based NAPL response actions provide a valuable tool needed for TRRP implementation. URS noted this change to be consistent with the current state of science relative to NAPL and believes that it will provide reasonable flexibility during a remedy implementation while remaining protective of human health and the environment.

The commission acknowledges the comments from TCC and URS, but is not adopting the proposed changes in response to other comments in order to restore the provisions to reflect the commission's original intent as described in the adoption preamble to the prior rule.

Concerning §350.33(f)(4)(E), Lowerre & Frederick noted a disparity between the executive summary and the actual proposed rule change. The executive summary implied that NAPL will continue to be removed to the extent practicable, while the actual proposed rule language struck this, or at least the removal of readily recoverable NAPL, as a requirement. Lowerre & Frederick opposed the actual rule proposal which will allow NAPL to remain in place if it does not pose any adverse health risk. In their opinion, NAPL recovery should be addressed under a pollution cleanup approach, not a risk-based approach.

The commission agrees with the commenter regarding the apparent disparity between the executive summary comments and preamble compared to the actual proposed rule. The commission's original preference as described in the adoption preamble to the prior rule (see the

September 17, 1999, issue of the *Texas Register* (24 TexReg 7546)), that identified NAPL be removed or treated, did not carry over clearly into the proposed rule. The commission's objective in the prior rule was to strike a balance between the starting presumption that readily recoverable NAPL within a Plume Management Zone be removed to the extent practicable and the recognition that controls may be appropriate in some situations. Therefore, the commission has decided to not make this proposed amendment and to instead maintain the 1999 rule. In contrast, the proposed language in clause (i) appears to be overly broad and could result in situations where no readily recoverable NAPL is removed if the person were to demonstrate that the NAPL remaining in place is protective of human health and the environment. Additionally, the commission has determined that this proposal is not supportable based upon the following reasons: 1) As proposed, clause (i) is redundant to the general requirements for Remedy Standard B as stated in §350.33(a) for protection of human health and the environment; 2) Clause (i) does not provide the person with any clearer direction for compliance compared to the original performance standard of recovering readily recoverable NAPL; 3) The performance requirement in the prior rule was promulgated to be compatible with a major policy of the EPA that regards NAPL as "principal threat waste" which should at a minimum be removed or treated. The proposed text appears to depart from the EPA policy. The commission chooses not to establish exceptions within this provision requiring a different response to NAPL for sites regulated under delegated federal programs such as the Resource and Conservation Recovery Act; and 4) Clause (i) could also conflict with clause (iv) of this subparagraph in certain situations. For instance, a person attempts to show that a NAPL release meets clause (i) by means of a PMZ with natural

containment of the stable NAPL zone. However, monitoring over time shows that the extent of NAPL begins to expand under natural conditions or offsite influences. So long as the NAPL zone stays within the PMZ, the person is compliant with clause (i) because of its broad wording, yet compliance with clause (iv) could only be achieved with sufficient NAPL recovery such that an active recovery system can be demonstrated to effectively control or contain NAPL migration.

With regard to the comment that NAPL should be addressed under a pollution cleanup approach, not a risk-based approach, the commission points out that the person can address NAPL within a PMZ with any combination of removal, decontamination and control options available under Remedy Standard B. In keeping with the original intent of this provision, the commission is restoring the consideration for recovering readily recoverable NAPL which is initially a pollution cleanup approach. The commission is developing technical guidance in support of this provision which will clarify the conditions requiring recovery of readily recoverable NAPL. The guidance will be titled *Risk-Based NAPL Management* (RG-366/TRRP-32). Therefore, the commission is not adopting the revisions as proposed.

Lowerre & Frederick commented that if NAPL is not removed, groundwater resources will be compromised for many generations beyond what would be the case if NAPL removal had occurred. Lowerre & Frederick stressed the importance of preserving these valuable resources for future Texans, even if the approach is simply natural attenuation.

The commission agrees and points out that the prior rule and adopted revisions retain the overall intent to protect human health and the environment, including groundwater resources. With particular regard to NAPL within a PMZ, the commission advocated in the original TRRP rule's adoption preamble as published in the September 17, 1999, issue of the *Texas Register* (see 24 TexReg 7546) that remediation be completed in a timely manner*: Specifically with regard to monitored natural attenuation, the remedial life span of the matter will be longer with NAPLs in place which serve as a continuing source of dissolved-phase COCs. However, as with any remedy, source area abatement is generally paramount to shortening remedial time frames. The acceptability of the remedial time frame will be made in the context of overall site risks on a site-specific basis. This commenter also questions whether using a monitored natural attenuation remedy, NAPL could remain in place, even though the monitoring period could be quite long. The commission notes that all response actions, including monitored natural attenuation, must be capable of achieving the Remedy Standard B response objectives 'within a reasonable time frame'. 'Quite long' using a monitored natural attenuation approach does not appear 'reasonable' if there are any other more prompt and workable response approaches. The commission advocates that remediations be completed in a timely manner and included the institutional control provisions of §350.31(h) to reinforce this point. Nevertheless, the commission also recognizes the fact that corrective action resources are finite and limited, and remedial time frames can be adjusted in a protective manner to provide an effective balance of progress and cost. So there is no elimination of the use of monitored natural attenuation solely for the presence of NAPLs*. Thus, without achieving removal of readily recoverable NAPL, a person is more likely to remain in a state of perpetual post-response action

care.

Lowerre & Frederick noted several concerns about leaving NAPL in place. Lowerre & Frederick stated that without an evaluation of the vapor intrusion exposure pathway, the TCEQ cannot ensure that high levels of toxins are not entering the homes and businesses of the people they are supposed to protect. The commenter stated that the vapor intrusion potential with NAPL present far exceeds the potential where no NAPL is present, and more generations of Texans may be adversely affected by leaving the NAPL in place.

The commission shares the commenter's concern regarding the need to protect people from exposure to vapors from NAPL, particularly if left in place, but disagrees with the commenter regarding the evaluation of the vapor intrusion pathway. The TRRP rule addresses the vapor intrusion pathway with several approaches. First, as part of the general requirements for remedy standards, §350.31(a) and §350.33(a)(1) require the person to make the affected property protective and prohibit the exposure of humans to concentrations of COCs in exposure media, in this case the air, in excess of the critical human health PCL. Second, §350.31(c) requires the person to address and respond to buildup of explosive atmospheres in surface and subsurface structures and areas of routine construction. When volatile NAPLs and high concentrations of volatile COCs are in close proximity to basements, for example, the person can be required to conduct monitoring and take appropriate actions. While this provision is intended to address explosive hazards, it also follows that vapors, though not at explosive concentrations, could be a

human health concern from long-term inhalation. Thus, the air inhalation pathway can be considered complete or reasonably anticipated to be complete and the person would have to respond to §350.71(c)(3) to develop PCLs protective for inhalation of volatile emissions in outdoor air above a PMZ. The person can attempt to show that the pathway is not complete by either demonstrating with vapor monitoring data or other appropriate method that emissions from groundwater are protective, or demonstrate that an existing structure (e.g., concrete slab) effectively blocks the pathway. Third, specifically focused on NAPLs in a PMZ is §350.33(f)(4)(E)(v) which requires that NAPLs not result in critical PCLs for other environmental media, in this case air, being exceeded at the applicable point of exposure. Lastly, the agency notes that if removal of readily recoverable NAPLs would not result in concentrations of COCs protective for air inhalation, then supplemental NAPL control measures which address suitable future use conditions or construction measures could be used so as to attain protective air exposure conditions. To address the concerns about vapor intrusion from NAPL adversely affecting more generations of Texans, the commission refers to its response to the preceding comment regarding NAPL removal and reasonable time frames for achieving response objectives.

Lowerre & Frederick commented that NAPLs present in the PMZ may spread beyond the PMZ without causing the COCs in dissolved-phase groundwater to exceed PCLs, while still impacting groundwater quality beyond the PMZ in terms of aesthetic properties (odor, taste, color, etc, such as “old” diesel type aspects). Lowerre & Frederick stated that this may happen because the monitoring requirements at

the point of exposure downgradient of the PMZ do not screen for aesthetic properties; they only screen for human health and environment protective concentration levels.

The commission points out that this concern is addressed in the TRRP rule by a number of provisions. First, NAPL expansion within an existing PMZ would trigger §350.33(f)(4)(E)(iv), which requires the person to operate an active recovery system to effectively control or contain NAPL migration. To illustrate another example of the way the rule addresses the concern is to presume the person is developing a PMZ to address a NAPL zone. As part of the affected property assessment required by §350.51, the person must conduct a field survey to locate water wells at least 500 feet beyond the boundary of the affected property and conduct a records survey to identify all water wells within 0.5 miles of the limits of the groundwater affected property. This information has bearing on the establishment of a PMZ as reflected in §350.33(f)(4)(A)(i) which considers, among other items, the proximity and withdrawal rates of groundwater users, the current and future uses of groundwater in the area, and the persistence and permanence of the potentially adverse effects. If the commission determines that aesthetics are a concern in light of these findings, the person can be required to develop numeric criteria in accordance with §350.74(f), regarding the groundwater ingestion risk-based exposure limit, and §350.74(i), regarding aesthetics. The person would then use these numeric criteria for groundwater monitoring purposes at the alternate point of exposure established at the downgradient limit of the PMZ.

§350.34, No Further Action

Lowerre & Frederick commented that the TCEQ should clarify that Remedy Standard A closures are limited to institutional controls on land use and modify §350.32(b)(1) to state that, along with physical controls, other institutional controls are prohibited under Remedy Standard A.

The commission disagrees that clarification is needed that Remedy Standard A closures are limited to institutional controls on land use and that modification is needed to §350.32(b)(1) to state that other institutional controls are prohibited under Remedy Standard A. The commission believes that the prior rule is sufficiently clear as to the allowable institutional controls under Remedy Standard A. This has not proven to be an issue of confusion or concern, since the prior rule was implemented in 1999. As previously noted, the adopted revisions to §350.34 do not add or remove any institutional control requirements for either Remedy Standard A or B.

Concerning §350.34(1), Lowerre & Frederick opposed the proposed changes. Lowerre & Frederick commented that the proposed change would imply that institutional controls other than land use can be utilized under Remedy Standard A. Lowerre & Frederick commented that the prior rule does not seem to specifically authorize any institutional controls to be utilized in a Remedy Standard A closure other than land use.

The commission disagrees that the proposed revisions to §350.34(1) would allow any additional institutional controls to be applied to any property that did not exist in the prior rule, regardless

of the Remedy Standard or land use of that property. The revisions are intended to clarify the rule by adding references to provisions under which an institutional control may be required under Remedy Standard A.

Lowerre & Frederick also commented that the proposed revisions to §350.34(1) do not conform to the idea of complete risk reduction under Remedy A, due to the reference in §350.51(l)(3) to the use of statistical methods to determine representative concentrations of COCs.

The commission notes that the use of statistical approaches to determine representative concentrations of COCs at a property is allowed under the prior rule for Remedy Standard A, subject to agency approval. The proposed revisions to §350.34 do not alter risk reduction of the prior rule under either Remedy Standard A or B.

Lowerre & Frederick commented that the agency has not provided a reasoned justification for the proposed revisions to §350.34(1).

The commission considers the adopted revisions to §350.34(1) to be reasonably justified because the only change made is to add references to the prior rule provisions. This modification does not change the requirements of the prior rule; however, due to the apparent misunderstanding as to the intent of the proposed changes, the adopted §350.34(1) and (2) contain additional clarification regarding the institutional controls in question. The additional clarification spells out the basis, as

set forth in the prior rule, for the need for the newly-referenced institutional controls (e.g., that an institutional control is required for the use of a non-default exposure area, the use of occupational inhalation criteria as RBELs, or the use of non-default RBEL exposure factors).

Concerning §350.34(1) and (2) TCC commented that the proposed rule language contained a typographical error which should have read "§350.51(l)(3) or (4)" rather than "§350.51(1), (3) or (4)."

The TCEQ agrees with this comment and has made the change to the adopted rule.

§350.37(i) Human Health Points of Exposure

Regarding POEs for surface water runoff or groundwater discharges to surface water, URS commented that the proposed change to §350.37(i) to include the entire extent of any on-site or off-site surface water body meeting the criteria may be burdensome as it is unclear how far downstream potential impacts must be identified. Additionally, TCC recommended deletion of the word, "any" in the last sentence. TCC stated that this is a significant overstatement with implications regarding extent and commingling that would best be addressed in guidance.

The commission disagrees with the suggestion that this language is burdensome because the rule has not defined the distance to which downstream impacts must be identified. Where there are releases to surface water, the objective of this language is to ensure that persons will be mindful that water bodies down gradient of the initial point of entry may need to be evaluated depending

on the nature of the release, fate and transport characteristics of the COCs in question, and the nature of the watershed. Based on this information, persons should make a determination as to the distance downstream to evaluate a release, subject to agency concurrence. In response to the TCC suggestion that the word "any" be removed from the last sentence, the sentence has been modified to state, "this includes the surface water body at the initial point of entry and other water bodies that may be impacted by COCs associated with the release in question."

§350.37(k), Human Health Points of Exposure

Regarding POEs for intermittent water bodies (§350.37(k)), TCC combined concerns with those offered in response to the proposed change to §350.37(i).

The TCC recommendation is not specific to the language added in §350.37(k) related to the application of both sediment and surface soil POEs to intermittent water bodies. The intent of the proposed language is to make persons aware that it may be appropriate to evaluate intermittent streams as soil and sediment depending on the possible human health and ecological exposure pathways at a particular affected property. The language is not intended to direct persons to do this in every case. The commission agrees that the discussion of affected property characteristics that would necessitate consideration of either exposure medium (soil or sediment), would be best addressed in guidance. The commission has made no changes to the proposal in response to this comment.

§350.51(d), Affected Property Assessment

Regarding vertical soil assessment requirements in §350.51(d), Lowerre & Frederick commented that the Executive Summary describes a rule change that is not listed in the proposed rule and the actual proposed rule changes are not listed in the Executive Summary.

The commission agrees that the language in the Executive Summary regarding the proposed changes to §350.51(d) does not accurately reflect the proposed changes in the rule. The commission clarifies that the prior rule and the adopted rule both require that the vertical extent of a release be investigated to the greater of the method quantitation limit or the background concentration. The adopted amendment in the rule changes the reference to the "^{GW}Soil PCL" to "residential assessment level" for vertical assessment requirements when an adequate groundwater assessment has been conducted.

Lowerre & Frederick, in commenting on the Executive Summary, requested that the commission require a groundwater sample be collected in almost every case and vertical assessments should not allow use of SPLP as a groundwater protection based PCL.

The commission's response to the comments that pertain to the proposed changes as reflected in the Executive Summary language is that the commission is not substituting the phrase "the higher of the method quantitation limit or background concentrations" with the phrase "the residential assessment level." With this understanding, the commission believes the comments that pertain to

the proposed changes as reflected in the Executive Summary language have been addressed.

Lowerre & Frederick also commented that the proposed changes to §350.51(d) reflected in the rule are supported and give more clarity as to how §350.75(i)(7)(C) is to be evaluated in relation to assessment requirements.

The commission acknowledges the support for the adoption of this rule.

Lowerre & Frederick also commented that depth of vertical delineation wells itself should not be a factor in eliminating further vertical delineation requirements, but rather other factors such as the competence and thickness of a geologic formation to prevent contaminant migration and the absence of preferential vertical migration pathways should be considered.

The commission agrees that the depth of the groundwater-bearing unit and the corresponding depth of a soil boring/groundwater monitoring well required to assess such groundwater-bearing unit is not in and of itself a justification for use in §350.75(i)(7)(C). Site-specific determinations for applicability of using §350.75(i)(7)(C) for vertical assessment will require several supporting lines of evidence. The commission agrees that competence and thickness of a geologic formation and absence of preferential vertical migration pathways are lines of evidence that should be considered in determining applicability of §350.75(i)(7)(C).

The TCC expressed support for the proposed amendment as reflected in the Executive Summary to allow the vertical extent of a release to be investigated to the assessment level, rather than to the currently stated greater of the method quantitation limit or the background concentration.

The commission clarifies that the prior rule and the adopted rule require that the vertical extent of a release must be investigated to the greater of the method quantitation limit or the background concentration. The adopted rule changes the reference to the "^{GW}Soil PCL" to "residential assessment level" for vertical assessment requirements when an adequate groundwater assessment has been conducted.

§350.51(i), Affected Property Assessment

Regarding §350.51(i), GSI commented that although it understands the commission must facilitate the implementation of Texas Water Code (TWC), §26.408, the addition of the new language is problematic because water utilities (and other entities) do not maintain "publicly-available lists" of properties that are connected to their water systems. GSI also commented that while utility companies may be able to provide their general geographic areas of service to the public, they "will not" identify the specific properties for which service is provided. GSI further commented that the precise meaning of the word "connected" is unclear, and asks whether undeveloped properties that have access to a public water supply, but do not have current service, are considered to be "connected."

Also regarding §350.51(i), Lowerre & Frederick commented that while it supports the memorialization

of TCEQ's TWC, §26.408 data collection requirements, it cannot support the rule change because it appears to link TWC, §26.408 data collection efforts to the submittal of an APAR, and this in turn increases the time that private well owners may ingest contaminated groundwater. Lowerre & Frederick further commented that the reporting of contaminated groundwater to the TCEQ should be linked to a document submittal that immediately follows reporting of the release to the commission. Lastly, the TCC commented that they supported the proposed change to §350.51(i).

The commission agrees that groundwater contamination should be reported to the TCEQ as soon as possible. The commission guidance document *Determining Which Releases are Subject to TRRP* (October 21, 2003), for example, states in part that releases must be reported to the TCEQ within 24 hours of occurrence or discovery, in accordance with the TWC and applicable program requirements. The proposed language was not intended to be a comprehensive memorialization of all TWC, §26.408 data collection requirements, as these are already contained in the guidance, *Preparation of a Drinking Water Survey Report* (RG-428). Based upon the public comments received, and in consideration of all relevant information, the commission has decided not to adopt the proposed change to §350.51(i).

§350.51(m), Affected Property Assessment

Regarding §350.51(m), URS supported the proposed changes but requested that the rule clarify that these background concentrations defined in rule for soil, can also be used for sediments in intermittent streams. URS was concerned that limiting the use of the Texas-specific background concentrations to

soil is problematic in that additional data may need to be collected where sediment in an intermittent stream is being evaluated in its dry scenario as soil.

URS is correct that the agency, in certain circumstances, has accepted soil background data in lieu of sediment background data for intermittent streams. Normally, the use of soil background data to evaluate sediment constituents is not appropriate since the sediment (aquatic) and soil (terrestrial) environments (chemistry and biology) are dissimilar and cannot be used interchangeably. The agency's position in guidance has been that this approach (use of soil background concentrations for intermittent streams) may be useful where perennial pools do not occur, and there is adequate justification provided to evaluate the stream bottom as soil. This has been allowed on a case-by-case basis only. Therefore, the commission disagrees with the suggestion. Furthermore, the suggestion is beyond the scope of the proposal. No change has been made in response to this comment.

§350.71(k), General Requirements

Regarding §350.71(k), Lowerre & Frederick commented the proposed rule strikes out many valuable considerations when the sample quantitation limit is greater than the residential assessment level. These are important considerations and should be left in the rule as they are currently listed.

The commission disagrees the rule language in the existing §350.71(k)(3)(B)(i) - (vi) should be retained, when considering the entirety of the adopted rule. By removing §350.71(k)(3)(B)(i) - (vi)

from the rule, the commission eliminates the potential for misapplication of that provision to COCs known or reasonably anticipated to be associated with current or historical activities conducted at the on-site property. The rule is amended to allow the person to focus on the detected COCs and the COCs known or reasonably anticipated to be associated with activities conducted at the on-site property. In addition, commonly used broad spectrum methods generate analytical results for a large number of analytes amenable to those analyses. The language in §350.71(k)(3)(B) removed from the rule by this amendment required the person to evaluate each of those analytes against the respective residential assessment level even though the analyte was not detected in any environmental medium at the on-site property and the analyte was not known or reasonably anticipated to be associated with the on-site property. The adopted provisions require that evaluation only for detected COCs and COCs known or reasonably anticipated to be associated with the on-site property, but do not require the person to make that evaluation for COCs not detected in any environmental medium at the on-site property and not known or reasonably anticipated to be associated with the on-site property. As adopted, §350.71(k)(2) and §350.71(k)(3) require the sample quantitation limits (now termed the sample detection limits by this amended rule) are less than the respective residential assessment level for detected COCs and COCs known or reasonably anticipated to be associated with the on-site property. To ensure the appropriate analytical method is used for detected COCs and COCs known or reasonably anticipated to be associated with the on-site property, §350.54(e)(3) requires the person to use an analytical method capable of quantitating the COC at or below the residential assessment level. When no available analytical method is capable of achieving a method quantitation limit less than

the residential assessment level for the COC, the §350.54(e)(3) provision allows the person to use the best available method having the lowest method quantitation limit.

URS commented that the revisions are generally supported and clarify the data screening process.

The commission acknowledges the support for the adoption of this rule.

TCC commented that they are in agreement with the approach presented in the amended language and commented that the provision will prevent the development of needless PCLs, thus helping to reduce the time needed for APAR development.

The commission acknowledges the support for the adoption of this rule.

§350.73(a), Determination and Use of Human Toxicity Factors and Chemical Properties

The commission received several comments regarding the proposed revision to the method of selecting appropriate chronic human health toxicity factors contained in §350.73(a). Lowerre & Frederick opposed the change and commented that the revision would result in human toxicity factors developed by the regulated community moving from the bottom to the top of the hierarchy and superseding the objectivity and public trust inherent in toxicity factors from the other sources. Additionally, Lowerre & Frederick expressed concern that the executive director approval required for toxicity factors from "other scientifically valid sources" under §350.73(a)(7) would be delegated solely to TCEQ project

managers. TCC also opposed the change, commenting that peer-reviewed and scientifically-defensible toxicity data should be the preferred method of selecting toxicity factors. However, the TCC supported adding Provisional Peer Reviewed Toxicity Values (PPRTVs) as the secondary source in the hierarchy of sources for human toxicity factors. GSI expressed concerns that some of the listed sources are not readily available and the proposed rule language may require that provisional toxicity factor values or other inappropriate values be used, and suggested TRRP indicate that the TCEQ tables provide appropriate toxicity factors.

The commission recognizes the importance of peer-reviewed and scientifically defensible chronic human toxicity factors and agrees that toxicity factors from sources high in the hierarchy list of the prior rule, such as the Integrated Risk Information System (IRIS), are generally preferred. The commission appreciates TCC support in regards to adding PPRTVs as the secondary source in the hierarchy of sources for human toxicity factors. Under the proposed revision to §350.73, toxicity factors available from sources high in the hierarchy list would have continued to be utilized in the vast majority of cases. However, to address the concerns raised in comments, the proposed rule language was revised to retain the toxicity factor source hierarchy of the prior rule with a provision added as §350.73(b) to provide the agency with flexibility, if needed, based on scientific considerations. In limited instances, a toxicity factor from the source selected under the hierarchy list in §350.73(a) may be determined by appropriate TCEQ staff to be no longer scientifically defensible based on more recent science (e.g., a toxicity factor may have been developed more than 10 years ago and in some cases may no longer be utilized by the agency

which developed it). In such cases, the agency desires the flexibility for the executive director to approve a toxicity factor from a different tier of the source hierarchy (e.g., "other scientifically valid sources as approved by the executive director"). Therefore, the proposed rule language was revised to retain the toxicity factor source hierarchy in §350.73(a) with the provision that in accordance with new adopted §350.73(b), the executive director may direct persons to use a toxicity factor from a source other than that selected under the hierarchy in cases where the executive director has determined it to be necessary to use a more scientifically valid toxicity factor from a different source. The flexibility provided by adopted §350.73(b) is similar to that which would have been provided by proposed §350.73(a)(7), which would have allowed the executive director to approve a more recent and more scientifically valid toxicity factor from a source other than that selected in accordance with the hierarchy list (e.g., potentially EPA's Office of Pesticide Programs or Office of Water). Appropriate TCEQ staff will be delegated the task of determining when utilizing toxicity factors in accordance with §350.73(b) is necessary and appropriate based on scientific validity. The TCEQ will continue to maintain a table of appropriate chronic human health toxicity factors for convenient reference because many users of the TRRP rule rely on TCEQ tables, as opposed to the original sources. The table will also aid in ensuring consistency and the use of appropriate toxicity factors across sites. The commission adopts §350.73(a) - (c).

§350.73(f)(1), Determination and Use of Human Toxicity Factors and Chemical Properties

Concerning §350.73(f)(1), comments were received from B&C and from GSI. The comments from

both B&C and GSI expressed the desire to retain the current rule language and to allow the use of Synthetic Precipitation Leaching Procedure (SPLP) in the determination of site-specific soil/soil-water partition coefficients. GSI stated that SPLP leachate tests are the only practical method available to measure a site-specific K_d value and B&C quote from the EPA (1994) (*Test Methods for Evaluating Solid Waste*, SW-846, US EPA, OSWER, Washington D.C.) SPLP method, noting that it was designed to determine the mobility of both organic and inorganic analytes present in liquids, soils, and wastes.

The commission disagrees with the comments of GSI. The SPLP analytical method (EPA Method 1312) was developed to estimate mobility of hazardous waste in the soil column. The EPA made clear that the analytical method was to be used to " . . . model an acid rain leaching environment . . . " (EPA, 1996: *Soil Screening Guidance: User's Guide*, EPA 540-R-96-018, US EPA, OSWER, Washington D.C.). In April 1996, the EPA introduced the option of using a leach test that ". . . may be used instead of the soil/water partition equation . . ." (EPA, 1996: *Soil Screening Guidance: User's Guide*, EPA 540-R-96-018, EPA, OSWER, Washington D.C.), making a clear distinction between a synthetic leaching procedure and the determination of K_d. Further, the EPA indicates that ". . . if this option is chosen, soil parameters are not needed for this pathway . . ." (EPA, 1996). The EPA intends that a leach test may be used in lieu of the soil/water partitioning equation model for evaluating mobility of constituents in soils. Neither the EPA, nor states, intend that results of a leach test are to be substituted for, or otherwise used to develop soil-water partition coefficients. Additionally, a leach test should not be blended into a fate and transport model. The TCEQ objects to the use of the SPLP analytical method for use in the determination of soil-water partitioning

coefficients for the following reasons: 1) the SPLP method (EPA Method 1312) is not intended for, nor does it address K_d determination in any way; 2) a K_d determination is made at chemical equilibrium, and the SPLP (EPA Method 1312) does not require, nor does it address chemical equilibrium; 3) the determination of the K_d is based on a number of analytical results over a range of concentrations to construct the sorption isotherm from which a K_d can be derived, the SPLP procedure does not address the construction of sorption isotherms nor the derivation of K_d; and 4) the determination of the K_d isotherm requires a rigorous analysis to construct appropriately (e.g., Langmuir D, 1997 *Aqueous Environmental Geochemistry*; EPA, 1999 *Understanding Variation in Partition Coefficient, K_d, Values; Volume I: The K_d Model of Measurement, and Application of Chemical Reaction Codes*, EPA 402-RR-99-004A, OAR, Washington, D.C.). It is for these reasons that the TCEQ believes not only that use of the SPLP leachate is not "the only practical method available to measure a site-specific K_d value," but that it is not a K_d determination method at all. The TCEQ agrees with B&C's observation that the SPLP procedure is designed to determine the mobility of both organic and inorganic analytes present in liquids, soils and wastes.

B&C commented that the SPLP leaching of actual samples of affected soils provides a more accurate measure of partitioning than many laboratory partitioning tests.

The commission disagrees with the comment because K_d determinations are predicated upon the establishment of chemical equilibrium of chemical components partitioned between the solid and liquid phases of the system being measured. Wisconsin Department of Natural Resources (DNR) (*Guidance on Use of Leaching Tests*, PUBL RR-523-03, 2003) states that many systems subjected

to EPA Method 1312 do not reach equilibrium within 24 hours and may require up to 96 hours. The SPLP method specifies an extraction period of 18 ± 2 hours and does not require chemical equilibrium. Therefore, since the SPLP analytical method does not even address the most fundamental aspect of the K_d determination, it cannot qualify as a method for determining K_d values.

GSI acknowledged that while SPLP was not developed specifically as a method to measure K_d, the method can be used to measure K_d provided that the chemical concentration in the leachate is not limited by compound solubility and that the SPLP procedure is very similar to American Society for Testing and Materials (ASTM) Standard D 5285-03, a procedure for measuring K_d recommended in *Toxicity Factors and Chemical/Physical Parameters* (TCEQ RG-366/TRRP-19).

The commission agrees with GSI regarding the limitations of the SPLP analytical method. However, GSI's comments do not acknowledge the most important aspect of the K_d determination laboratory procedure: attaining chemical equilibrium within the system. The commission concurs with GSI's observation that ASTM Standard Test Method D 5285 is "very similar" to the SPLP method, with one important exception: ASTM D 5285 requires confirmation of equilibrium conditions during the laboratory experiment. This test feature is among the reasons the TCEQ has recommended its use for K_d determinations in Table 1 of TRRP-19.

B&C commented that many laboratory partitioning tests which rely on spiked samples and do not accurately simulate aging of a release that may have occurred over the course of decades in some cases.

The commission acknowledges the potential for such a scenario. However, since K_d determinations are based on chemical equilibria, the "simulation of aging" is not relevant either to the appropriate laboratory experiments or to the SPLP analytical method.

GSI commented that although TRRP-19 provides recommended methods for measuring site-specific K_d, none of these methods are appropriate because: 1) they are not standard methods offered by commercial laboratories; and 2) they require use of clean site soils, and therefore do not reflect "dual equilibrium" desorption or other processes that limit the desorption of chemicals from historically contaminated soils.

The commission disagrees with aspects of this comment. Firstly, TRRP-19 recommends four international (ASTM) standard methods for K_d determinations. The remaining methods recommended in TRRP-19 are those used by the EPA specifically for K_d determinations. Since the proper determination of K_d is a laboratory experimental procedure, not merely a sample analysis, it should be considered a specialized procedure, and not all commercial environmental laboratories could be expected to provide that service. However, the TCEQ is aware of commercial laboratories willing and capable of performing a standard K_d determination. Secondly, TCEQ-recommended K_d determination methods are capable of evaluating and accommodating numerous complex isotherm sorption models (e.g., EPA, 1999 *Understanding Variation in Partition Coefficient, K_d, Values; Volume I: The K_d Model of Measurement, and Application of Chemical Reaction Codes*, EPA 402-RR-99-004A, OAR, Washington, D.C.). The

complete absence of K_d-related determination methodology in EPA Method 1312 is among the primary reasons that the commission considers the SPLP leaching method inappropriate for use in K_d determinations.

GSI commented that only tests that utilize contaminated site soils will yield K_d values that accurately reflect the site-specific potential for chemical leaching to groundwater.

The commission believes this statement is imprecise. Proper K_d determinations utilize representative uncontaminated soils from contaminated sites that provide the most accurate site-specific K_d values for use in the Tier 2 and Tier 3 ^{GW}Soil PCL models.

GSI commented that other state regulatory agencies (e.g., Wisconsin DNR) have recognized the utility of leaching tests and specifically SPLP for measuring site-specific K_d values. The TCEQ should retain this valuable tool for the development of appropriate site-specific PCLs that accurately reflect the potential for leaching to groundwater and if necessary, the TCEQ should issue guidance presenting the appropriate application of SPLP for measuring site-specific K_d values.

Aspects of this comment inaccurately characterize the regulatory acceptance of SPLP. Other state regulatory agencies (e.g., Wisconsin DNR) do not use SPLP for measuring site-specific K_d values. As discussed, Wisconsin DNR (*Guidance on Use of Leaching Tests*, PUBL RR-523-03, 2003) states that many systems subjected to EPA Method 1312 do not reach equilibrium within 24 hours and

may require up to 96 hours. The SPLP method specifies an extraction period of 18 ± 2 hours and does not require chemical equilibrium. Therefore, since the EPA Method 1312 (SPLP analytical method) must be modified with respect to confirmation of equilibrium, it is no longer the SPLP method. As such, the adopted rule language acknowledges this critical technical distinction and instead continues to allow the use of "very similar" K_d-determination-specific methods in Table 1 of TRRP-19, as previously noted by GSI.

GSI commented that a guidance document could address appropriate chemical concentrations in soil relative to the compound solubility and present the appropriate methods for calculating K_d from the SPLP test results.

The commission points out that it has published recommended standard methods for the determination of K_d in Table 1 of TRRP-19, but that the use of SPLP in those determinations is inappropriate.

B&C commented that the valence state of spiked inorganics may differ from the valence state of the actual release, thereby rendering recovery of spiked inorganics even less representative of the actual mobility of inorganic COCs in the affected media. It is recognized that SPLP involves a 20x dilution; this should be corrected for by multiplying the reported leachate concentration by 20 before comparing total concentrations to SPLP leachate concentrations to arrive at a Tier 2 soil-leachate partition factor for the COC (K_{sw}). Obviously, a sufficient number of total and SPLP analyses must be conducted and a

reasonable curve fit must be demonstrated before a Tier 2 K_{sw} can be established based upon the comparison of total to SPLP concentrations. However, if these conditions are met, the relationship between total and SPLP concentrations provides a technically defensible method for developing a Tier 2 K_{sw}.

The commission agrees with the comment by B&C that use of SPLP in the determination of K_d is fraught with complexities, requires significant modifications, and must be supplemented by methodologies that can provide a defensible K_d value. These are the primary reasons that led the commission to conclude that the most accurate and defensible site-specific K_d values can most easily be obtained using the recommended standard laboratory experiments published in Table 1 of TRRP-19. These are the same primary reasons for adopting the rule language that removes reference to the SPLP method for K_d determination. However, the TCEQ continues to accept non-standard proposals for K_d-determination methods for approval.

B&C commented that in accordance with §350.75(g), the executive director may require the person to provide sufficient monitoring data to verify that PCLs established under any tier are based on an appropriate understanding of conditions at the affected property. Therefore, a Tier 2 K_{sw} established by use of SPLP testing can be verified by groundwater monitoring.

The commission acknowledges the provision for requesting sufficient monitoring. However, the use of SPLP for purposes of K_d determinations is excluded from the rule language for the reasons

provided.

§350.74(h), Development of Risk-Based Exposure Limits

Regarding the new provision in §350.74(h) that the surface water RBEL is protective of down gradient water bodies, URS requested that the TCEQ clarify how far downstream this change would be applicable. URS further stated that if applied to a great distance downstream, additional work would be required without a corresponding benefit. TCC had similar objections and stated that the provision is too ill-defined and should be deferred to guidance.

The commission disagrees with the suggestion that the rule clarify the distance downstream for consideration of the surface water RBEL. The adopted rule language already notes that the fate and transport characteristics of the COC should be considered. Furthermore, it should be noted that in the development of the existing TRRP-24 guidance document (related to the determination of surface water and sediment PCLs), the multi-stakeholder work group attempted to define a distance downstream but was not able to reach consensus. A definition of a "cutoff" distance downstream is beyond the scope of the proposal. Consideration of a "cutoff" distance would warrant input from the public. This distance should be determined on a case-by-case basis. No change has been made in response to this comment.

§350.74(h)(3), Development of Risk-Based Exposure Limits

Regarding the proposed changes to §350.74(h)(3), the TCC recommended that the rule be modified to

clarify that the associated limits (the surface water RBELs) apply to TRRP only when the general TPDES permit currently applies to the affected property, and suggests language to this effect.

The commission disagrees with the TCC suggestion that the general permit limits apply to TRRP only when the affected property currently has a general TPDES permit. As was the intent in the original rule language referencing Chapter 321, Subchapter H, the general permit is being used as a source of RBEL values only, not as a way to restate what is already regulated through the general permit at a particular affected property. The limits in the general permit would then be one of the sources of RBELs for given COCs. If, for example, the MTBE (methyl tert-butyl ether) limit in the general permit is lower than the MTBE RBEL applicable to aquatic life and human health (e.g., paragraphs (1), (2), and (4), then the surface water RBEL would be based on the limit defined in the general permit. The question whether the affected property discharge is regulated by the general permit is irrelevant. What is relevant is whether the release of groundwater or storm water from the facility in question has been impacted by petroleum fuel as defined in the general permit. Currently the general permit defines petroleum fuel as gasoline, diesel fuel, fuel oil, kerosene, and jet fuel. No change has been made to the proposed rule language.

§350.74(h)(5), Development of Risk-Based Exposure Limits

In response to the proposal in §350.74(h)(5) that the criteria for chlorides, sulfates, total dissolved solids, and pH be emphasized as RBELs, the TCC recommended leaving this discussion in the TRRP-

10 guidance document.

Elevation of this subsection emphasizes the fact that the specified analytes (chlorides, sulfates, et al.) should be treated as COCs where appropriate, and as such, they would have corresponding RBEL values. As provided in the existing TRRP-24 guidance, these types of parameters need only be evaluated in association with an affected property if they are COCs for the affected property. Once they are determined to be COCs, then this particular rule language provides the source for the appropriate RBEL values. The identification of a COC or target COC is not the subject of this rule provision, and will likely be discussed in the TRRP guidance document (TRRP-10, "Target COCs") noted in the TCC comment. The commission disagrees with the TCC recommendation. However, since there is a possible misunderstanding that the rule is directing that these types of parameters will always be COCs, the commission is modifying the proposed rule language to state that "The person shall apply the numerical criteria, as appropriate, for chlorides, sulfates, total dissolved solids, and pH, for classified segments as specified in §307.10(1) of this title (relating to Appendices A - E), as amended."

§350.75(b)(1), Tiered Human Health Protective Concentration Level Evaluation

Regarding Figure §350.75(b)(1), TCC commented that the word "lesser" should be used rather than "lessor."

The commission agrees and has made the recommended change.

§350.75(i)(4), Tiered Human Health Protective Concentration Level Evaluation

Regarding §350.75(i)(4), TCC commented that the proposed change does not accurately reflect the process of calculating a groundwater-to-surface water PCL (^{SW}GW), as the language suggests that there is only one surface water dilution factor for all surface water RBELs, and neglects the possibility that different dilution factors may be applicable to different surface water RBELs. TCC provided an example where dilution factors for ecological and human health exposure pathways are based on differing critical stream flows. TCC suggested the addition of a clarifying statement at the end of the paragraph to account for situations where different surface water dilution factors may be applicable to the surface water RBEL or the ecological surface water PCL. In such cases, TCC recommended that the RBEL and PCL be divided by their respective dilution factors prior to determining the critical groundwater PCL relevant to these pathways.

The commission agrees and has made the recommended change. This scenario (use of differing stream flows to determine the dilution factor) will only occur where the groundwater discharge is clearly greater than 15% of the 7Q2 (seven-day, two-year low-flow) for releases to freshwater streams and rivers (per §350.75(i)(4)(D)). When determining the groundwater-to-surface water dilution factor in this particular case, it is appropriate to pair the human health surface water RBEL with the harmonic mean flow, and to pair the aquatic life surface water RBEL with 0.25 times the 7Q2 for acute criteria, and the 7Q2 for chronic criteria.

§350.76(c), Approaches for Specific Chemicals of Concern to Determine Human Health Protective Concentration Levels

Lowerre & Frederick commented on the potential use of EPA's Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children. Lowerre & Frederick opposed the proposed revision unless the model is insulated with conservative assumptions, citing concerns that neither the person performing the remediation nor TCEQ staff are likely to be able to ensure that the model is appropriately calibrated for site-specific conditions, that the model assumptions based on current conditions (e.g., exposure patterns, lead species) may not be protective of potential future exposure, and that assessment and notice to innocent landowners will be limited in the event a higher residential soil lead PCL is calculated. TCC expressed agreement with the proposed revision.

The commission appreciates TCC support of the proposed revision and recognizes the importance of the concerns raised by Lowerre & Frederick. The proposed language for §350.76(c)(2) indicates that both use of a model and site-specific model input values must be approved by the executive director. Given the potential adverse impact of lead on young children, the executive director will consider it critical, when deciding whether to approve model use for a site, that potential exposure of children to elevated soil lead be reduced through remediation of elevated soil lead in as timely a manner as possible. If model use or site-specific model inputs are not approved by the executive director, response actions must proceed using the Tier 1 PCL for residential soil lead. If use of a model is approved for a site, appropriate TCEQ staff will ensure that the model is properly calibrated for site-specific conditions and that appropriately conservative input values

(e.g., exposure factors) are utilized such that the calculated Tier 3 residential soil PCL for lead is expected to be protective of both current and future residential exposure. Proposed site-specific inputs which are less conservative than default model inputs will be rigorously evaluated and must be scientifically defensible and consider potential future residential exposure, since in many cases institutional controls are not required for Remedy Standard A response actions at residential properties. To aid in ensuring that model assumptions result in the calculation of a Tier 3 PCL which is adequately protective of potential future residential exposure, the proposed rule language was revised for adopted §350.76(c)(2) to indicate that consistent with the procedure used to develop residential human health risk-based exposure limits (RBELs) for chemicals without a chemical-specific approach in accordance with §350.74, variance from certain model default exposure factors such as soil/dust ingestion rates and exposure frequency to less conservative (i.e., lower) numerical values will not be allowed. Additionally, because it is often difficult to anticipate the future use of different areas of a residential property, the use of area-specific model inputs (e.g., exposure factors for a lawn versus a garden) to derive different residential soil lead PCLs for the various areas of a residential property will not be allowed. Incorporation of site-specific inputs (e.g., bioavailability) could result in either a higher or lower residential soil PCL for lead, which in either case would be more scientifically defensible than use of default input values.

TCC submitted a comment in support of proposed §350.76(e). Section 350.76(e) directs the use of the same approach currently being used to demonstrate attainment of the critical PCL for 2,3,7,8-TCDD in soil for attainment of the critical PCL for 2,3,7,8-TCDD in other media (e.g., groundwater, sediment).

The commission recognizes TCC's support of adopted §350.76(e).

§350.77(a), Ecological Risk Assessment and Development of Ecological Protective Concentration Levels

URS commented that they are concerned that the impact of this proposed change might differ from agency expectations. As they understand the process, the change does not "end" the ecological risk assessment, but effectively moves it downstream. This then would require a person to collect more data, in the form of additional samples, or apply dilution factors to develop alternate ecological PCLs.

The primary purpose of this revision is to acknowledge in the rule the expedited stream evaluation process that is being implemented through the commission's ecological risk assessment guidance. The conditions under which this type of evaluation can be conducted are specified in detail in the guidance. URS is correct that the expedited stream evaluation itself does not end the ecological evaluation in that the primary assessment is moved further downstream. However, the combination of a Tier 1 Exclusion Criteria Checklist that failed because of the surface water/sediment pathway, and a completed expedited stream evaluation for qualifying waters that showed no downstream impacts, does constitute a potential exit point from the ecological risk assessment process that was not previously identified in the rule. The commission has made no changes in response to this comment.

§350.90, Spatial and Electronic Information

Concerning §350.90, which requests the collection and reporting of spatial coordinates and associated data attributes in a format approved or required by the executive director, the TCC commented that they support this proposal.

The commission appreciates TCC's support of the proposal.

§350.91(b)(7), Affected Property Assessment Report

Concerning §350.91(b)(7) that amends the information to be submitted in the Affected Property Assessment Report to include an expedited stream evaluation, the TCC commented that they support this proposal.

The commission appreciates TCC's support of the proposal.

§350.91(b)(15), Affected Property Assessment Report

Concerning §350.91(b)(15), the TCC commented that they support the proposal to provide spatial coordinates, as requested by the agency, for the affected property and any sampling or testing locations.

The commission appreciates TCC's support of the proposal.

GSI's recommendation was that, while the proposal is sensible and appropriate, an effective date should be included to clarify that the requirement does not apply to locations sampled prior to adoption of the

new requirement. The effective date would prevent problems associated with locating samples prior to adoption of the proposed change for which accurate spatial coordinates may not be available.

The commission recognizes and agrees that there are many sampling locations, such as borings and surficial soil samples, which can no longer be located. The commission has no intention of requesting spatial data on sampling points that can no longer be located. However, on active cases the commission would expect the collection of spatial data for monitor wells and other obvious sampling points. The commission does not expect spatial data on sites where the case has been closed with no further action. For these reasons, the commission disagrees that an effective date for the rule provision is necessary, and therefore the commission has made no changes in response to this comment.

An individual requested clarification on this proposed revision. He asks if it means that persons will need to provide longitude and latitude, Universal Transverse Mercator, or other coordinates for each sampling location. He further inquires as to what other data attributes are envisioned. He asks if the new provision would require that actual global positioning system coordinates for each sample location be provided in a table. Finally, he inquires as to what problems TCEQ is trying to address with these regulations.

The commission will address the last question first. The commission is requesting spatial data in order to utilize geographic information system mapping capabilities. With spatial data on sites

and other points of interest, the commission will be able to conduct spatial evaluations of release sites. This information will provide more complete knowledge of regional problems and provide the ability to manage programs and cases on a strategic basis.

The commission is in the process of procuring a data management system. At this time the exact data attributes and database structure have not yet been determined. Once the data management system is implemented, the agency will provide instructions on how to submit spatial coordinates and other data, and the precise data which will need to be submitted under the rule.

§350.95(b), Response Action Completion Report

Concerning §350.95(b), Lowerre & Frederick opposed the proposed revisions. Lowerre & Frederick indicated that the reasons for opposing the proposed revisions are similar to those which they raised in addressing §350.34(l). Lowerre & Frederick commented that the current rule structure was derived from the predecessor rule, the Texas Risk Reduction Standards, at Chapter 335, Subchapter S. Lowerre & Frederick further commented that the Risk Reduction Standards required that any form of institutional control, other than land use, fell under Risk Reduction Standard No. 3. Lowerre & Frederick also commented that Risk Reduction Standard No. 3 included the derivation of medium-specific concentrations based upon site-specific factors, and that an equivalent structure should be retained in the TRRP rule so that land owners and prospective purchasers can continue to believe that Remedy Standard A is a "no strings attached" closure except for specified commercial/industrial land use.

The commission disagrees with the comments for reasons similar to those noted in the response to the comments to the proposed revisions to §350.34(l). The adopted revisions are intended to clarify the rule by adding the appropriate references to rule provisions under which an institutional control may be required. The structure of the prior rule is unaffected by the adopted revisions to §350.95(b), because the institutional control requirements of the prior rule would not be changed; however, due to the apparent misunderstanding as to the intent of the proposed changes, the adopted §350.95(b) contains additional clarification to that provided in the originally proposed revisions. The additional clarification spells out the basis, as contained in the prior rule, for the need for the newly-referenced institutional controls (e.g., that an institutional control is required for the use of a non-default exposure area, the use of occupational inhalation criteria as RBELs, or the use of non-default RBEL exposure factors).

The commission considers the adopted revisions to §350.95(b) to be reasonably justified because the only change to prior §350.95(b) was to add references to rule provisions which were already present in the prior rule.

Concerning §350.95(b) TCC commented that the proposed rule language contained a typographical error which should have read "§350.51(l)(3) or (4)" rather than "§350.51(1), (3) or (4)."

The TCEQ agrees with this comment and has made the change to the adopted rule.

§350.111(c), Use of Institutional Controls

Concerning §350.111(c) and (c)(4), Lowerre & Frederick commented that the preamble for the 1999 TRRP rulemaking noted commission concerns regarding potential takings and slander of title arguments that could be lodged against the agency for the filing of deed notices without consent. The comment suggested that the TCEQ should consider these potential claims in this current rule undertaking. In a general comment to the rule, Lowerre & Frederick argued that the change to the rule attempts to provide regulatory backing for the filing of a deed notice without consent and will subject the agency to claims of takings.

In the 1999 adoption preamble to the TRRP rule, the agency did, in fact, note a concern regarding the risk of potential takings claims associated with implementing a rule that allowed persons conducting cleanups to file deed notices on affected property without obtaining consent. In that preamble, the commission also recognized that its statements regarding the requirement for obtaining consent for the filing of a deed notice were being made out of an abundance of caution. Additionally, in the 1999 adoption preamble the agency acknowledged that its Takings Impact Analysis for the adopted TRRP rule supported the argument that a regulatory taking could not be claimed based solely on the impact of a deed notice because the institutional control provisions of the rule are "not the producing cause of any diminution of property" since "levels of COC are already present at the affected property; and it is the presence of these chemicals that may have caused any property devaluation" (March 26, 1999, issue of the *Texas Register* (24 TexReg 2452)). At that time, without a compelling reason otherwise, the commission could not justify allowing for even a minimal risk of exposure to takings claims by crafting a rule that would

establish the filing of deed notices without consent as the normal practice for all persons conducting cleanups.

Even during the initial stage of the development of the original TRRP rule, however, the commission recognized that the rule would be unworkable if it required governmental entities conducting cleanups for which they were not responsible to secure either a restrictive covenant or consent for the filing of a deed notice. To address the problem of the finite state and federal public resources for remediation efforts, the agency opted to define non-responsible party governmental entities out of the purview of the 1999 TRRP rule altogether. As mentioned in the section discussing the definition of "Person," the agency now recognizes that the prior definitional solution for dealing with the institutional control issue is no longer ideal; yet, the need is still present for exceptions to the institutional control requirements as they apply to non-responsible governmental entities. Therefore, the agency is changing the rule to mirror the current practice and policy related to institutional controls and more clearly deal with that subject in §350.111(c).

As was true at the time of the 1999 adoption of the TRRP rule, the agency does not believe that a viable regulatory taking claim can be made based on the rule's provision for non responsible governmental entities to file a deed notice on the rare occasion when consent cannot be obtained. In addition to those factors listed in the 1999 adoption preamble, the grounds for a taking claim would not exist where a governmental entity that did not cause or contribute to the contamination is performing the remediation and arguably greatly improving the value of the land through those remediation efforts. Further, the adopted rule does not prevent the pursuit of damages by the

affected property owners from the responsible parties. Additionally, the Private Real Property Rights Preservation Act creates an exception for governmental actions taken in response to a real and substantial threat to public health and safety. The remediation and institutional control actions are being taken to address the real and substantial threats to public health and safety posed by the Site, and these response actions squarely fit within the "taking" exception (Texas Government Code, §2007.003(b)(13)).

Concerning §350.111(c) and §350.111(c)(4), Lowerre & Frederick commented that the inclusion of non-responsible party governmental entities in the TRRP rule can only water down the existing rule because responsible parties will seek to apply the same standards used by these non-responsible governmental entities. The comment argued that omitting governmental entities who are not responsible parties from the entirety of the rule is the wiser option. In a general, yet related, comment to the rulemaking, Lowerre & Frederick argued that this change will create an arbitrary distinction between governmental agencies who are not responsible parties and those governmental agencies that are responsible parties (and responsible parties in general).

The revision of the rule to include governmental entities which are not responsible parties within the framework of TRRP, while excluding them from certain specific process requirements of §350.111, strengthens the TRRP rule rather than weakens it. As discussed in the section related to the definition of "Person," the inclusion of non-responsible party governmental entities in this definition is an important change in the effort to require the consistent application of TRRP

substantive requirements to NPL sites. However, the necessary definitional change dictates this corresponding change to the institutional control requirements to maintain the status quo for these non-responsible party governmental entities which are using finite state and federal public funds to remediate property contaminated by others. In other words, this rule provision is necessary to maintain the existing condition of the rule and extend these funds so that more sites can be addressed, rather than expending excessive funds to complete an unwarranted removal/decontamination remedy, when a control-based remedy that is fully protective of human health and the environment is the lowest cost remedial alternative. Given this policy rationale, the varied treatment of these non-responsible party governmental entities is logical, rather than arbitrary. Further, the language of the rule is unambiguous in its sole application to governmental entities which are not responsible parties. Neither the language nor the supporting policy of the rule would apply to any entity apart from one that qualifies as a governmental entity which is not a responsible party; therefore, the dilution of the rule is not a warranted concern.

Concerning §350.111(c), in a general comment to the rule, Lowerre & Frederick commented that allowing a non-responsible party governmental entity to file a deed notice rather than a restrictive covenant will undermine the agency's historical assertion that restrictive covenants are superior to deed notices in terms of protectiveness.

The agency has firmly established a regulatory preference for restrictive covenants for innocent landowners in the TRRP rule, and that priority remains intact, and even bolstered, with the

amendment to §350.111. The TRRP rule favors the restrictive covenant because this mechanism provides the agency with enforcement power over activity of innocent landowners that could potentially interfere with controls implemented in the remediation process. Again, this preference remains unchanged in the rule, and is underscored by the requirement that was added to the rule whereby non-responsible party governmental entities must first seek to obtain consent for the implementation of a restrictive covenant. Only after the non-responsible party governmental entity has sought and is denied the consent for a restrictive covenant does the rule allow for that party to initiate the implementation of a deed notice. While the preference for a restrictive covenant has consistently been the policy followed by the agency for cleanups implemented by non-responsible party governmental entities, no such requirement was previously contained in rule. This addition to §350.111 underscores, rather than undermines, the agency's preference for the protection afforded by the restrictive covenant.

Concerning §350.111(c) and §350.111(c)(4), Lowerre & Frederick commented that the TCEQ model deed notice language borders on being restrictive in a manner which is inappropriate for a deed notice. The comment opposed the use of these notices as quasi-restrictive covenants.

The TCEQ has crafted model deed notice language such that current and prospective lessees and landowners of property will be sufficiently warned of the residual chemicals of concern or other environmental issues associated with the affected property and will employ necessary precaution in property use. The cautionary language in the model deed notice clearly delineates the

environmental concerns and the corresponding precautions that should be understood by those associated with affected property; however, unlike a restrictive covenant, the deed notice does not add to the cautionary language words of prohibition that would unduly restrict the property. The agency does not employ deed notices as quasi-restrictive covenants. As previously noted, the TRRP rule strongly favors the use of restrictive covenants for innocent landowner property by all parties conducting cleanups whether or not the party is a governmental entity or a non-responsible party.

Concerning §350.111(c) and §350.111(c)(4), Lowerre & Frederick commented that it is unnecessary to include Voluntary Cleanup Program certificates in the exception to the requirement for landowner consent in deed notices secured by non-responsible party governmental entities given the unlikelihood that a landowner would object to the filing given the benefits of a certificate of completion.

The TRRP rule requires consent not only for deed notices and restrictive covenants but also Voluntary Cleanup Program certificates of completion. Therefore, providing this exception to consent for Voluntary Cleanup Program certificates of completion in the amended rule is appropriate.

Concerning §350.111(c) and §350.111(c)(4), TCC submitted a comment supporting this change.

The TCEQ acknowledges the support for the adoption of this rule.