TO BE RESCINDED

1301:7-9-13 **Petroleum UST corrective action.**

(A) Purpose and scope.

For the purpose of prescribing rules in accordance with division (A) of section 3737.88 and division (B) of section 3737.882 of the Revised Code, the fire marshal hereby adopts this rule to establish release reporting and corrective action requirements for underground storage tanks containing petroleum products. This rule is adopted by the fire marshal in accordance with Chapter 119. of the Revised Code and shall not be considered a part of the "Ohio State Fire Code." The following petroleum UST systems are exempted from this rule:

(1) Any UST system holding hazardous wastes listed or identified under Chapter 3745-51 of the Administrative Code, or a mixture of such hazardous waste and petroleum;

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or Section 307(b) of the Federal Water Pollution Control Act, 33 U.S.C.A. 1251 and following;

(3) Equipment or machinery that contains petroleum for operational purposes such as hydraulic lift tanks and electrical equipment tanks;

(4) Any petroleum UST system whose capacity is one hundred ten gallons or less;

(5) Any UST system that contains a de minimus concentration of petroleum; or

(6) Any emergency spill or overflow containment UST system used for petroleum products that are expeditiously emptied after use.

(B) Applicability.

For releases reported after the effective date of this rule, owners and operators shall conduct corrective action in accordance with this rule. For releases reported prior to the effective date of this rule, owners and operators shall elect to either conduct corrective action in accordance with this rule or the rule in effect at the time the release was first suspected or confirmed. Owners and operators electing to conduct corrective action in accordance with this rule for releases reported prior to the effective date of this rule shall:

(1) Conduct activities after the effective date of this rule in accordance with the requirements of this rule; and

(2) Supplement existing data and information collected prior to the effective date of this rule to meet the requirements of this rule.

(C) Definitions.

(1) "Adjacent property" means a property or properties whose borders are contiguous or partially contiguous with that of the UST site, or would be contiguous or partially contiguous with that of the UST site but are separated by a street, road or other public thoroughfare.

(2) "Action levels" means non-site-specific concentrations for chemical(s) of concern that are protective of human health utilized during the tier 1 evaluation specified in paragraph (I)(3) of this rule.

(3) "BTEX" means benzene, toluene, ethylbenzene, and total xylenes.

(4) "Chemical(s) of concern" (COCs) means the chemical or specific constituents of the petroleum released that are identified for evaluation during the corrective action process.

(5) "Commercial land use" means land use where the current or intended use is to supply goods and or services and is open to the public.

(6) "Engineering controls" means physical modifications (e.g., slurry walls, capping, vapor controls, point of use water treatment) that reduce or eliminate the potential for exposure to a chemical(s) of concern.

(7) "Environmental media" includes, but is not limited to air, soil, and ground water.

(8) "Exposure assessment" means the qualitative or quantitative determination or estimation of the magnitude, frequency, duration and route of exposure between a source area and a receptor.

(9) "Exposure pathway" means a mechanism by which an individual or population may be exposed to a chemical(s) of concern originating from a UST site. Each exposure pathway includes a source or release from a source, a point of exposure, and an exposure route. If the exposure point is not at the source, a transport medium (e.g., air or water) also is included.

(10) "Exposure route" means the manner in which a chemical(s) of concern may come into contact with a receptor (e.g., ingestion, inhalation, dermal contact).

(11) "Free product" means a separate liquid hydrocarbon phase that has a measured thickness of greater than one one-hundredth of a foot or where chemicals of concern or petroleum are determined to be present above saturation limits in soil.

(12) "Ground water" means water underlying a UST site in a saturated zone that:

(a) Is capable of yielding a minimum of one and one-half gallons of water within eight hours of purging determined in accordance with paragraph (H)(2)(b) of this rule; and

(b) Has an in situ hydraulic conductivity greater than 5.0×10^{-6} centimeters per second.

(13) "Industrial land use" means land use where the general public is reliably excluded from access and the current or intended use includes, but not limited to, manufacturing or assembling goods including parts, machines, chemicals, and transportation uses.

(14) "Institutional controls" means the restriction on use or access e.g., deed or zoning restrictions) to a UST site to eliminate or minimize potential exposure to a chemical(s) of concern.

(15) "Immediate response action" means the course of action to mitigate fire, explosion, vapor and safety hazards, including immediate or short term abatement or containment measures to prevent the spread of a release.

(16) "Interim response action" means the course of action taken prior to implementation of a remedial action to reduce further migration of chemicals of concern in their vapor, dissolved, or liquid phase, to reduce or eliminate the concentration of chemical(s) of concern at a source area(s) or otherwise eliminate exposure passways. Interim response actions are not immediate response actions or remedial actions. Examples of interim response action include, but are not limited to, over-excavation of a former UST area, short-term dual-phase extraction in a source area, monitoring to demonstrate natural attenuation, and institutional controls.

(17) "Natural attenuation" means the reduction in the concentration(s) of chemicals

of concern in environmental media due to a combination of one or more naturally occurring physical, chemical or biological processes (e.g., diffusion, dispersion, absorption, chemical degradation and biodegradation).

(18) "Non-residential land use" means land use that does not meet the criteria for residential land use. Non-residential land use includes, but is not limited to, commercial and industrial land use.

(19) "Physical discovery" means:

(a) The presence of free petroleum product discovered during removal of an UST system or part thereof or in an excavation on the UST site or on property nearby the UST site;

(b) The discovery of petroleum product vapors within or along building foundations or other subsurface manmade structures such as building foundations, basements, pedestrian tunnels, utility vaults, sewer lines, or the like, or in a drinking water well located on the UST site or on property nearby the UST site;

(c) The presence of free product in a monitoring or an observation well located on the UST site or on property nearby the UST site; or

(d) The presence of petroleum products observed on a surface water body located on the UST site or on property nearby the UST site suspected to have arisen from a release from an UST system.

(20) "PPM" means part per million.

(21) "Point(s) of demonstration" means a location(s) selected between the source area(s) and the potential point(s) of exposure where concentrations of chemical(s) of concern must be at or below a determined target level in environmental media that is protective of human health and the environment at the point of exposure.

(22) "Point(s) of exposure" means the point(s) at which an individual or population may come in contact with a chemical(s) of concern originating from an UST site.

(23) "Reasonably anticipated future use" means future use of a UST site that can be predicted with a reasonably high degree of certainty given historical use, current use, and local government planning and zoning.

(24) "Receptors" means persons that are or may be affected by a release.

(25) "Release" means:

(a) Any spilling, leaking, emitting, discharge escaping leaching or disposing of a petroleum product from an underground storage tank system into the ground water, a surface water body, subsurface soils or otherwise into the environment;

(b) Any spilling, leaking, emitting, discharging, escaping, or disposal of a petroleum product into ground water, a surface water body, subsurface soils or otherwise into the environment while transferring or attempting to transfer petroleum products into an underground storage tank system; or

(c) Chemicals of concern in subsurface soils or ground water on the UST site found in concentrations above the action level specified in paragraph (I) of this rule and confirmed through laboratory analysis of samples from the UST site.

(26) "Residential land use" means land use where the current or intended use includes, but is not limited to, housing (single and multiple dwellings), education, custodial care or long term health care.

(27) "Saturated zone" means a part or layer of the earth's crust, excluding the capillary zone, in which all voids are filled with water.

(28) "Site conceptual exposure model" means the integrated representation of the complete and potentially complete exposure pathways at a UST site.

(29) "Site-specific target levels (SSTL)" means risk based concentrations for chemical(s) of concern that are protective of human health and the environment developed for a particular UST site under the tier 2 or tier 3 evaluations.

(30) "Source area(s)" means the location of free product, the location of highest measured soil and ground water concentrations of the chemical(s) of concern or the location where the chemical(s) of concern was released.

(31) "Surrounding area" means an area within two thousand feet of the UST system.

(32) "Surface water" means a lake or pond greater than one acre in size or a continuously running river, creek or stream.

(33) "Suspected release" means evidence of a release obtained through one or more of the following events:

(a) Monitoring results from a release detection method required by rule 1301:7-9-07 of the Administrative Code that indicate a release may have occurred unless:

(i) The monitoring device is found to be defective, and is immediately recalibrated or replaced, and additional monitoring does not confirm the initial result; or

(ii) In the case of inventory control, a second month of data does not confirm the initial result;

(b) Unusual operating conditions are observed by the owners and operators unless the system equipment is found to be defective but not leaking and is immediately repaired or replaced. Such unusual operating conditions shall include, without limitation, the erratic behavior of petroleum dispensing equipment, the sudden loss of petroleum from the UST system or an unexplained presence of water in the tank; or

(c) Physical discovery.

(34) "UST site" means the parcel of property where an UST system is or was formerly located.

(D) Reporting of releases and suspected releases.

(1) Owners and operators shall report a release or suspected release to the fire marshal and the local fire department within twenty-four hours of discovery by the owner or operator.

(2) Spills or overfills of twenty-five gallons or less that do not reach a surface water body and that are cleaned up within twenty-four hours need not be reported.

(E) Confirmation of suspected releases.

(1) Tightness test.

Upon discovery of a suspected release, owners and operators shall conduct a tank tightness test within seven days of the reporting of the suspected release and in accordance with paragraphs (E)(3) and (F)(2) of rule 1301:7-9-07 of the Administrative Code. Within three days of the receipt of the results, owners and operators shall notify the fire marshal of the results of the test by telephone, electronic mail or the like. Owners and operators shall submit the test results and supporting data to the fire marshal, which shall be actually received by the fire marshal, within ten days of receipt by the owner or operator.

(2) Drinking water well analysis.

If a release is suspected to impact a drinking water well, owners and operators shall, within three days of discovery, have the drinking water well tested for the appropriate parameters listed in table 1 of paragraph (H)(1)(b) of this rule. The fire marshal shall be notified of the test results by telephone, electronic mail, or the like, within twenty-four hours of receipt of the test results by the owner or operator. Owners and operators shall submit the test results to the fire marshal, which shall be actually received by the fire marshal within seven days of the date the release was suspected by the owner or operator.

(3) Site check.

(a) Requirements.

Within sixty days of a failed tightness test, physical discovery or the occurrence of a spill or overfill as described in paragraph (G)(1) of this rule, owners and operators shall conduct a site check to determine whether subsurface soils or ground water on the UST site have concentrations of chemical(s) of concern above the action level(s) set forth in paragraph (I) of this rule, unless a tier 1 evaluation under paragraph (H) of this rule has been begun by the owners or operators. The site check may be discontinued and a tier 1 evaluation under paragraph (H) of this rule begun if free product is discovered during the site check investigation. The fire marshal shall be notified if a site check is discontinued for any reason.

(b) Scope.

(i) A site check shall, at a minimum, consist of one of the following:

(a) Placement of a minimum of three soil borings in locations where concentrations of chemical(s) of concern would most likely be present or would have migrated, considering information known about the UST site and the suspected release;

(i) Data collection should consider the likely distribution and temporal variations of the chemical(s) of concern in the environmental media;

(ii) Soil borings shall extend to bedrock, A ground water confining layer, the uppermost saturated zone, or fifty feet, whichever is encountered first. However, if ground water is known to contain concentrations of chemical(s) of concern, borings shall extend to such ground water;

(iii) Soil borings shall be continuously sampled and the stratigraphy shall be described on soil boring logs and test pit logs for each soil boring and excavation, respectively;

(iv) The fire marshal may approve use of exploratory trenching in lieu of soil borings on the UST site.

(b) Closure of the UST system or portion of the UST system that is the potential source of the suspected release in accordance with rule 1301:7-9-12 of the Administrative Code. At least one of the samples required under rule 1301:7-9-12 of the Administrative Code shall be biased towards the suspected areas of highest concentration of chemical(s) of concern resulting from the suspected release. The owner and operator shall obtain prior approval from the fire marshal for the closure or removal of the UST system or any portion of the UST system if any of the following conditions exist:

(i) The ground water is known or suspected to contain concentrations of chemical(s) of concern;

(ii) Free product is present;

(iii) A receptor or surface water is known to be impacted by the release; or

(iv) The UST site is in a sensitive area as defined in rule 1301:7-9-09 of the Administrative Code.

(c) Collect a minimum of three samples from the native soils immediately below the source of the suspected release. Samples shall be biased towards the suspected areas of highest concentrations of chemical(s) of concern resulting from the suspected release.

(ii) Samples from each soil boring or excavation shall be screened in accordance with procedures in paragraph (H)(2)(c)(vi) of this rule and the sample with the highest field screening result from each boring or excavation shall be submitted for laboratory analysis in accordance with paragraph (H)(2)(c)(vi) of this rule. If a saturated zone is encountered in a soil boring or excavation, a sample of the water shall be collected from each soil boring or excavation and submitted for laboratory analysis in accordance with paragraph (H)(2)(c)(v) of this rule.

(c) Site check letter report.

Owners and operators shall prepare a site check letter report for the fire marshal, which shall describe the nature of the suspected release, the type and location of samples collected during the site check, and the sample results. Copies of the boring logs and laboratory data sheets shall be attached to the site check letter report. Owners and operators shall submit the site check letter report and attachments to the fire marshal, which shall be actually received by the fire marshal within sixty days of a failed tightness test, physical discovery or the occurrence of a spill or overfill as described in paragraph (G)(1) of this rule.

(F) Release determination.

(1) As part of a site check pursuant to paragraph (E)(3) of this rule, owners and operators shall determine the appropriate action levels for the UST site using the procedures set forth in paragraph (I) of this rule. If concentrations of chemical(s) of concern at any location on the UST site, as determined by the site check, are above the action levels determined for the UST site, owners

and operators shall proceed to conduct a tier 1 evaluation pursuant to paragraph (H) of this rule.

(2) If owners and operators have obtained laboratory analytical results from a study or survey of the UST site other than from a site check conducted in accordance with paragraph (E)(3) of this rule or a preliminary site assessment conducted in accordance with paragraph (H)(2) of this rule, owners and operators shall conduct a site check in accordance with this rule if any such results are above the appropriate action levels determined for the UST site using the procedures set forth in paragraph (I) of this rule.

(G) Immediate response actions.

Immediate response actions shall be taken as appropriate for the UST site conditions as follows:

(1) Cleanup of spills and overfills.

(a) If a spill or overfill of petroleum products results in a release into a nearby surface water body or consists of a release to the environment of more than twenty-five gallons of petroleum product, owners and operators shall attempt to contain and immediately clean up the spill or overfill and shall perform a site check in accordance with paragraph (E)(3) of this rule.

(b) If a spill or overfill of petroleum products does not enter a nearby surface water body and no more than twenty-five gallons of petroleum product has been released to the environment, owners and operators shall immediately contain and clean up the spill or overfill. If cleanup is accomplished within twenty-four hours, no further action shall be required. If the cleanup is not completed within twenty-four hours, owners and operators shall immediately notify the fire marshal and the local fire department and shall perform a site check in accordance with paragraph (E)(3) of this rule.

(2) Free product removal.

(a) Where free product is determined to be present on the basis of saturation limits in soil, an interim response action or a tier 2 evaluation shall be conducted. Where free product is present for any reasons other than saturation limits in soil, owners and operators shall implement a free product recovery program that removes free product to the maximum extent practicable, while continuing other actions required by this rule.

In meeting the requirements of this paragraph, owners and operators may use manual bailing, skimming, pumping or other removal techniques that:

(i) Remove free product in a manner that minimizes the spread of chemical(s) of concern into previously unimpacted zones and uses recovery and disposal techniques appropriate to the hydrogeologic conditions at the UST site and that properly treat, discharge, or dispose of recovered product in compliance with applicable federal, state and local laws; and

(ii) Handle any flammable products in a safe and competent manner to prevent fires or explosions.

(b) Owners and operators shall notify the fire marshal within twenty-four hours by telephone, electronic mail or the like, of the start of free product removal activities after starting such activities.

(c) Owners and operators shall prepare a written report describing the location of the free product, its thickness, the devices or system used for removal and management of the free product, location of recovery wells, and the amount and disposition of free product and water produced by the recovery activities.

(d) Owners and operators shall submit the initial written report to the fire marshal which shall be actually received by the fire marshal within twenty days of starting the free product removal activities. Additional written reports shall be prepared and filed with and actually received by the fire marshal every month until termination of free product removal under paragraph (G)(2)(e) of this rule or implementation of corrective action in accordance with this rule whichever is earlier. If a malfunction in a free product recovery system can not be repaired within twenty-four hours of the discovery of the malfunction, owners and operators shall immediately report the malfunction to the fire marshal and local fire department by telephone, electronic mail or the like. The malfunction shall be corrected and the system placed back into service as promptly as is technically feasible.

(e) Free product removal activities may be terminated once free product has been removed to the maximum extent practicable.

(3) UST system releases.

If testing or other evidence confirms that a release has or continues to occur from the UST system, owners and operators shall perform the following response actions within twenty-four hours of confirmation of the release:

(a) Take immediate action to prevent any further release of the petroleum from the UST system into the environment. Such actions shall include removal of petroleum product from the UST system as is necessary to prevent further release into the environment;

(b) Inspect above ground releases or exposed below ground releases and take steps to prevent further migration of such releases into surrounding soils and ground water through use of absorbent pads, absorbent booms, dikes, siphon dams, and the like;

(c) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated to subsurface structures, such as basements, sewers, or the like; and

(d) Manage soils containing concentrations of chemicals of concern that are excavated in a manner that complies with applicable state and local requirements.

(4) Receptors impacted or likely to be impacted by a release.

If a receptor is known to be impacted by a release, the owner and operator shall perform the following response actions:

(a) Owners and operators shall immediately identify and mitigate fire, explosion, vapor and safety hazards associated with such release;

(b) Owners and operators shall notify the fire marshal within twenty-four hours, by telephone, electronic mail or the like, of any immediate response actions after starting such activities;

(c) Owners and operators shall prepare a written report describing any immediate response actions taken; and

(d) Owners and operators shall submit this written report to the fire marshal which shall be actually received by the fire marshal within twenty days of starting any immediate response action.

(H) Tier 1 evaluation.

The tier 1 evaluation shall consist of the following:

(1) Initial data collection.

An initial investigation of the historical and current uses of the UST site and the current uses of the surrounding area shall be conducted to identify source areas (i.e., areas where chemical(s) of concern are likely to be present) and potential receptors that may come in contact with a release from the UST system. The owner and operator of a UST site shall collect the following data:

(a) Potential source(s) of confirmed release.

Identify the probable source(s) of the confirmed release. At minimum, the following potential source(s) located on the UST site shall be evaluated to determine the location of potential source area(s):

(i) Existing, abandoned or removed underground storage tanks;

(ii) Piping and dispenser areas; and

(iii) Areas of known or suspected surface spills of petroleum.

(b) Chemical(s) of concern.

(i) The chemical(s) of concern shall be identified based on table 1 using the following three analytical groups:

(a) Analytical group 1 is for gasoline including unleaded gasoline, leaded gasoline and aviation gasoline;

(b) Analytical group 2 is for middle distillate products including diesel, light fuel oils, kerosene, and jet fuels;

(c) Analytical group 3 is for heavy petroleum products including lubricating oils, hydraulic oils, used oils, crude and other unknown petroleum products or petroleum products not included in analytical groups 1 and 2.

(ii) If the release is a petroleum product other than those listed in

analytical groups 1 and 2, additional chemical(s) of concern and analytical methods must be selected, as appropriate, based on reasonably available information related to typical additives, impurities and degradation products of the petroleum stored or handled on the UST site. In addition, chemical(s) of concern should be selected based on their toxicity, mobility, and persistence in the environment. The owner and operator shall consult with the fire marshal for the appropriate chemical(s) of concern for products other than the petroleum products identified in analytical groups 1 and 2 in this paragraph.

Table 1

Selected Chemical(s) of Concern

(c) Potential source area(s).

Identify the location of the potential source area(s) related to the confirmed release. Potential source area(s) shall be identified based on the knowledge of the known release, the location of identified potential source(s) or through field screening methods or a combination of these.

(d) Source and location of potable water supplies.

Identify the source or sources of potable water for the UST site and the surrounding area. This must include the identification of public and private drinking water wells or public water supply sources within the surrounding area. The evaluation of potable water supplies shall be based on reasonably available information including, but not limited to, information collected or maintained by the Ohio department of natural resources, county health departments, and public water supply organizations.

(e) Potential drinking water use.

(i) The current and potential future use of ground water underlying the ust site and surrounding area shall be used to determine if ground water underlying the ust site is either a drinking water source or not a drinking water source. During the tier 1 evaluation, the following assumptions about ground water shall be made:

(a) The ground water use to be evaluated shall be the upper most saturated zone underlying the UST site; and

(b) Any identified current or potential future drinking water source in the surrounding area shall be assumed to be within the source area(s).

(ii) The evaluation of ground water use underlying the ust site or surrounding area shall be based on reasonably available information including, but not limited to, information collected or maintained by the Ohio department of natural resources, county health departments, and public water supply organizations. To the extent available, the evaluation shall include documentation of the following:

(a) The current use of the ground water, including the identification of potable wells within the surrounding area;

(b) The classification of the ground water under a state ground water classification system, if appropriate;

(c) Restricted use regulations, such as mandatory tie-ins to public water supply systems;

(d) Wellhead protection plans;

(e) The physical setting of the surrounding area, such as an urban area setting where all drinking water is supplied by a public water supply system;

(f) Estimated depth to ground water;

(g) Estimated yield rate of the upper saturated zone;

(h) Existing ground water quality, both the ambient chemical(s) of concern resulting from human activities and natural quality;

(i) Abandoned wells or other water sources that have not been properly decommissioned or their status is unknown;

(j) Non-drinking water sources; such as wells used for watering lawns or gardens; and

(k) Potable or abandoned wells or other water sources completed into a lower saturated zone, including depth and description of the confining layer.

(l) Sensitive area(s) as defined in rule 1301:7-9-9 of the Administrative Code encompassing the UST site.

(iii) Ground water underlying the UST site shall not be considered a drinking water source if any of the following apply:

(a) Ground water yields less than three gallons per minute;

(b) Ground water has a background level of total dissolved solids of three thousand milligrams per liter or greater;

(c) The UST site is located in area where an urban setting designation pursuant to Chapter 3746. of the Revised Code and rules adopted thereunder has been approved by the director of Ohio environmental protection agency; or

(d) Potable water in the surrounding area is supplied by a public water supply system, and the system is supplied from a source other than the upper most saturated zone underlying the UST site and surrounding area.

(e) Notwithstanding the above, for tier 1 purposes, ground water underlying the UST site shall be considered a drinking water source if any of the following apply:

(i) The UST site or surrounding area is located within a well head protection area;

(ii) A drinking water source in the ground water is identified within the surrounding area, even if the source is completed into a lower saturated zone than the saturated zone to be evaluated on the UST site; or

(iii) A surface water body is located within three hundred feet of the UST site.

(f) Regional geological, hydrogeological and physical characteristics of the UST site and surrounding area.

Review reasonably available information pertaining to the regional geologic, hydrogeologic, and physical characteristics of the UST site and surrounding area and geologic, hydrogeologic and physical data from previous investigations conducted on the UST site. The review must include, as necessary, the following:

(i) Depth to the uppermost saturated zone and the productivity of the saturated zone;

(ii) Representative soil type and characteristics of major stratigraphic units;

(iii) Regional aquifers, including those underlying the UST site;

(iv) Ground water recharge and discharge areas;

(v) Topographical features that may influence the ground water flow system;

(vi) UST site characteristics including size of the UST site; and

(vii) A description of surface water bodies, including the size of the water body and the source of the water in the surface water body.

(2) Preliminary site assessment.

(a) Objectives.

The preliminary site assessment shall be conducted to collect the data necessary to complete the tier 1 evaluation and to:

(i) Identify any interim response actions that may be appropriate, as set forth in paragraph (L) of this rule;

(ii) Determine if a saturated zone has sufficient ground water yield, as calculated in accordance with paragraph (H)(2)(b)(ii) of this rule, to meet the minimum criteria for being ground water in accordance with paragraph (H)(2)(b) of this rule. If a

determination is not made in accordance with paragraph (H)(2)(b) of this rule, then the saturated zone shall be considered ground water;

(iii) Investigate the source area(s) to determine the presence and concentrations of chemical(s) of concern in the source area(s) for comparison to action levels in accordance with paragraph (I) of this rule; and

(iv) Determine the geologic and hydrogeologic characteristics of the UST site and the surrounding area which may influence the migration and transport of chemical(s) of concern. This determination shall include:

(a) The direction and gradient of ground water flow if ground water is encountered;

(b) A description of faults, fissures, fractures, or other geologic transport routes;

(c) Soil type; and

(d) Depth to ground water.

(b) Ground water yield determination.

(i) For the purpose of determining that a saturated zone fails to meet the minimum criteria for being defined as ground water:

(a) The ground water yield must be determined in accordance with paragraph (H)(2)(b)(ii) of this rule; or

(b) Appropriate field test methods must be used to determine the in situ hydraulic conductivity of the saturated zone.

(ii) Ground water yield shall be determined based on one or more of the following:

(a) Ground water resources maps published by the Ohio department of natural resources or other published and verified data for the ground water being classified; or

(b) Pumping test of properly developed wells constructed to the minimum standards of a four inch diameter manufactured screen in an eight inch diameter borehole extending into the ground water, or a two inch diameter manufactured screen in a six inch diameter borehole extending into the ground water. When wells of dimensions of a two inch diameter manufactured screen in a six inch borehole are used to determine the yield, the yield must be multiplied by a factor of 1.15 for purposes of this paragraph. Monitoring wells installed in accordance with paragraph (H)(2)(c) of this rule meeting the requirements for minimum manufactured screen can be used for this determination.

(c) Initial source area(s) investigation.

The presence and concentrations of chemical(s) of concern in the source area(s) shall be determined as follows:

(i) A minimum of three soil borings shall be located in the area of highest concentration of chemical(s) of concern. If the soil borings cannot be located in the area of highest concentration of chemical(s) of concern, the soil borings shall biased to the area of highest concentration.

(ii) A minimum of three ground water monitoring wells shall be located in the area of highest concentration of chemical(s) of concern to determine the direction of ground water flow. Soil borings installed during the site check or in accordance with paragraph (H)(2)(c)(i) of this rule may be converted to ground water monitoring wells.

(iii) Non-intrusive or indirect field testing may be used to assist in selecting soil boring or monitoring well locations, but these techniques shall not be used to demonstrate that concentrations of chemical(s) of concern are below applicable action level or SSTL. Data collection should consider the likely distribution and temporal variations of the chemical(s) of concern in the environmental media and the physical parameters necessary to determine hydrologic and geologic properties of environmental media.

(iv) Soil borings and ground water monitoring wells shall be installed as follows:

(a) Soil borings shall extend to bedrock, a ground water confining layer, the uppermost saturated zone, or fifty feet, which ever shall be encountered first. However, if ground water is known to contain concentrations of chemical(s) of concern, borings shall extend to such ground water;

(b) Soil borings shall be continuously sampled and the stratigraphy shall be described on soil boring logs and test pit logs for each soil boring and excavation, respectively;

(c) Boring logs shall be maintained and soils encountered during drilling or excavation shall be characterized in accordance with ASTM D2488-90 (standard practice for description and identification of soils/visual-manual procedures) or the unified soil classification system;

(d) Data collection for monitoring wells shall include the depth to free product, free product thickness, depth of water below the top of casing, and the elevation of top of casing; and

(e) Ground water monitoring wells shall be extended to the bottom of the saturated zone or a minimum of five feet into the saturated zone, whichever is less. Ground water monitoring wells shall be screened to accommodate seasonal fluctuations in the ground water table.

(v) Ground water samples shall be collected from each monitoring well and analyzed in a laboratory for the chemical(s) of concern identified in the initial data collection in accordance with the procedures for monitoring wells set forth in paragraph (H)(1)(b) of this rule using one or more of the analytical methods listed in table 1 of paragraph (H)(1)(b) of this rule.

(vi) Soil samples shall be screened using FID or PID headspace techniques. In general, two samples per soil boring shall be collected and analyzed in a laboratory for the chemical(s) of concern identified in the initial data collection in accordance with paragraph (H)(1)(b) of this rule using one or more of the analytical methods listed in table 1 of paragraph (H)(1)(b) of this rule as follows:

(a) If ground water is encountered, the sample above the

soil/water interface exhibiting the highest headspace vapor concentration and the sample immediately above the soil/ground water interface, as encountered during drilling, shall be submitted for laboratory analysis. If the highest headspace reading is the sample immediately above the soil/ground water interface, the highest and the second highest sample above the soil/ground water interface shall be submitted for laboratory analysis. Soil samples shall not be taken from a saturated zone for analysis in a laboratory.

(b) If ground water is encountered and no soil samples exhibit headspace readings above background for the headspace technique, a sample shall be taken from immediately above the soil/water interface as encountered during drilling and submitted for laboratory analysis. Soil samples shall not be taken from below the soil/ground water interface for analysis in a laboratory.

(c) If no ground water is encountered, the sample with the highest headspace readings and the sample from the bottom of the boring shall be submitted for laboratory analysis.

(d) If no ground water is encountered and no soil samples exhibit headspace readings above background for the headspace technique, a sample shall be taken from the bottom of the boring only and submitted for laboratory analysis.

(d) Off-site access

If the preliminary site assessment requires off-site access for investigation, owners and operators shall use their best efforts to obtain permission to enter such off-site areas to complete the investigations required by this rule. If access cannot be obtained to complete the tier 1 evaluation within the time period required by paragraph (K) of this rule, the owner or operator shall submit written notice to the fire marshal of their efforts to obtain off-site access as part of the tier 1 evaluation notification required by paragraph (K) of this rule.

(I) Action level determination.

(1) Site feature determination.

(a) Upon completion of a site check in accordance with paragraph (E)(3) of

this rule or a tier 1 evaluation in accordance with paragraph (H) of this rule, owners and operators shall determine the appropriate action level for the UST site using the site feature determination in paragraph (I)(1)(b) of this rule, point(s) of exposure in paragraph (I)(2) of this rule, and action level tables set forth in paragraph (I)(3) of this rule.

(b) The site action level shall be determined as follows:

(i) Identify the chemical(s) of concern in accordance with paragraph (H)(1)(b) of this rule.

(ii) Determine if the saturated zone is ground water in accordance with (H)(2)(b) of this rule. If a determination is not made in accordance with paragraph (H)(2)(b) of this rule, then the saturated zone shall be assumed to be ground water.

(iii) Determine the average depth to the upper most saturated zone that is determined to be ground water in accordance with paragraph (H)(2)(b) of this rule utilizing the information obtained during the initial data collection or the preliminary site assessment.

(iv) Select a soil type that best represents the soil and/or bedrock under the UST site or is most typical of the area utilizing the information obtained during the initial data collection or the preliminary site assessment.

(v) Determine if ground water is drinking or non-drinking use utilizing the information obtained in the initial data collection in accordance with paragraph (H)(1)(e) of this rule. If a determination is not made in accordance with paragraph (H)(1)(e) of this rule, then ground water shall be assumed to be drinking water use.

(c) Action levels shall be determined by applying the information on ground water use, soil type and ground water depth to the action level tables in paragraph (I)(3) of this rule. An action level shall be identified for each environmental media and exposure pathway in accordance with paragraph (I)(3) of this rule.

(2) Point(s) of exposure.

In the tier 1 evaluation, it is assumed that the point(s) of exposure will be located in the source area(s). Therefore, while movement of chemical(s) of

concern outside the property lines of the UST site is not specifically evaluated in tier 1, any identified current or potential future drinking water source in the surrounding area is assumed to be within the source area(s) during the tier 1 evaluation. The fate and transport of chemical(s) of concern in the dissolved phase in ground water is evaluated under tier 2.

(3) Site action level(s).

(a) Drinking water.

If ground water is determined to be drinking water, then the maximum concentrations of each chemical of concern in soil and ground water shall be compared to the action levels in the following tables:

(i) Ground water ingestion;

(ii) Direct contact with soil;

(iii) Soil to drinking water leaching;

(iv) Soil to indoor air; and

(v) Ground water to indoor air.

(b) Non-drinking water.

If ground water is determined to be non-drinking water, then the maximum concentrations of each chemical of concern in soil and ground water shall be compared to the action levels in the following tables:

(i) Direct contact with soil;

(ii) Soil to non-drinking water leaching;

(iii) Soil to indoor air; and

(iv) Ground water to indoor air.

(c) No ground water.

If no ground water has been encountered, the maximum concentrations of each chemical of concern in soil shall be compared to the action levels in the following tables:

(i) Direct contact with soil; and

(ii) Soil to indoor air.

(d) Action levels look-up tables.

(i) The action levels in ground water for a ground water ingestion pathway for chemical(s) of concern shall be as follows:

Chemical of Concern
Benzene
Toluene
Ethyl-benzene
Total Xylenes
Methl Tertiary Butyl Ether (MTBE)
Benz (a) - Anthracene
Benzo (a) - Pyrene
Benzo (b) - fluoranthene
Benzo (k) - fluoranthene
Chrysene
Dibenz (a, h) - anthracene
Indeno (1, 2, 3 - CD) pyrene
Naphthalene

*N/A means that the particular chemical of concern is not applicable to this particular pathway.

(ii) The action levels in soil for a direct contact with soil pathway for chemical(s) of concern shall be as follows:

Chemical of Concern	Action Level
Benzene	8.20 PPM
Toluene	520 PPM
Ethyl-benzene	230 PPM
Total Xylenes	1500 PPM
Methl Tertiary Butyl Ether (MTBE)	130 PPM
Benz (a) - anthracene	5.50 PPM
Benzo (a) - pyrene	.550 PPM
Benzo (b) - fluoranthene	5.50 PPM
Benzo (k) - fluoranthene	55.0 PPM
Chrysene	550 PPM
Dibenz (a, h) - anthracene	.550 PPM
Indeno (1, 2, 3 - CD) Pyrene	5.50 PPM
Naphthalene	1800 PPM

(iii) The action levels in soil for a soil to non-drinking water leaching pathway for chemical(s) of concern shall be as follows for the applicable soil type and depth to ground water:

(a) Sand/gravel soil type:

	Depth to Ground Water			
Chemical of Concern	<15 Feet	15 - 30 Feet	31 - 50 Feet	> 50 Feet
Benzene	117 PPM	118 PPM	118 PPM	120 PPM

Toluene	N/A*	N/A*	N/A*	N/A*
Ethyl-benzene	N/A*	N/A*	N/A*	N/A*
Total Xylenes	N/A*	N/A*	N/A*	N/A*
Methl Tertiary Butyl Ether (MTBE)	N/A*	N/A*	N/A*	N/A*
Benz (a) - anthracene	N/A*	N/A*	N/A*	N/A*
Benzo (a) - pyrene	N/A*	N/A*	N/A*	N/A*
Benzo (b) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Benzo (k) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Chrysene	N/A*	N/A*	N/A*	N/A*
Dibenz (a, h) - anthracene	N/A*	N/A*	N/A*	N/A*
Indeno (1, 2, 3 - CD) pyrene	N/A*	N/A*	N/A*	N/A*
Naphthalene	N/A*	N/A*	N/A*	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(b) Silty/clayey sands soil type:

Chemical of Concern	Depth to Ground Water			
	<15 Feet	15 - 30 Feet	31 - 50 Feet	>50 Feet
Benzene	196 PPM	197 PPM	216 PPM	251 PPM

Toluene	N/A*	N/A*	N/A*	N/A*
Ethyl-benzene	N/A*	N/A*	N/A*	N/A*
Total Xylenes	N/A*	N/A*	N/A*	N/A*
Methl Tertiary Butyl Ether (MTBE)	N/A*	N/A*	N/A*	N/A*
Benz (a) - anthracene	N/A*	N/A*	N/A*	N/A*
Benzo (a) - pyrene	N/A*	N/A*	N/A*	N/A*
Benzo (b) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Benzo (k) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Chrysene	N/A*	N/A*	N/A*	N/A*
Dibenz (a, h) - anthracene	N/A*	N/A*	N/A*	N/A*
Indeno (1, 2, 3-CD) pyrene	N/A*	N/A*	N/A*	N/A*
Naphthalene	N/A*	N/A*	N/A*	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(c) Clay/silt soil type:

Chemical of Concern	15 - 30 Feet	31 - 50 Feet	>50 Feet
Benzene	N/A*	N/A*	N/A*

Toluene	N/A*	N/A*	N/A*
Ethyl-benzene	N/A*	N/A*	N/A*
Total Xylenes	N/A*	N/A*	N/A*
Methl Tertiary Butyl Ether (MTBE)	N/A*	N/A*	N/A*
Benz (a) - anthracene	N/A*	N/A*	N/A*
Benzo (a) - pyrene	N/A*	N/A*	N/A*
Benzo (b) - fluoranthene	N/A*	N/A*	N/A*
Benzo (k) - fluoranthene	N/A*	N/A*	N/A*
Chrysene	N/A*	N/A*	N/A*
Dibenz (a, h) - anthracene	N/A*	N/A*	N/A*
Indeno (1, 2, 3-CD) pyrene	N/A*	N/A*	N/A*
Naphthalene	N/A*	N/A*	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(iv) The action levels in soil for a soil to drinking water leaching pathway for chemical(s) of concern shall be as follows for the applicable soil type and depth to ground water:

(a) Sand/gravel soil type:

Chemical of Concern	Depth to Ground Water

	<15 Feet	15 - 30 Feet	31 - 50 Feet	> 50 Feet
Benzene	.150 PPM	.150 PPM	.150 PPM	.150 PPM
Toluene	58.7 PPM	58.7 PPM	59.9 PPM	62.1 PPM
Ethyl-benzene	71.1 PPM	71.0 PPM	71.4 PPM	71.9 PPM
Total Xylenes	N/A*	N/A*	N/A*	N/A*
Methl Tertiary Butyl Ether (MTBE)	.530 PPM	.530 PPM	.530 PPM	.530 PPM
Benz (a) - anthracene	N/A*	N/A*	N/A*	N/A*
Benzo (a) - pyrene	N/A*	N/A*	N/A*	N/A*
Benzo (b) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Benzo (k) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Chrysene	N/A*	N/A*	N/A*	N/A*
Dibenz (a, h) - anthracene	8.63 PPM	8.63 PPM	N/A*	N/A*
Indeno (1, 2, 3 - CD) pyrene	N/A*	N/A*	N/A*	N/A*
Naphthalene	N/A*	N/A*	N/A*	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(b) Silty/clayey sands soil type:

Chemical of Concern	Depth to Ground Water

	<15 Feet	15 - 30 Feet	31 - 50 Feet	> 50 Feet
Benzene	.240 PPM	.240 PPM	.270 PPM	.300 PPM
Toluene	112 PPM	112 PPM	N/A*	N/A*
Ethyl-benzene	131 PPM	131 PPM	N/A*	N/A*
Total Xylenes	N/A*	N/A*	N/A*	N/A*
Methl Tertiary Butyl Ether (MTBE)	.890 PPM	.890 PPM	1.00 PPM	1.19 PPM
Benz (a) - anthracene	N/A*	N/A*	N/A*	N/A*
Benzo (a) - pyrene	N/A*	N/A*	N/A*	N/A*
Benzo (b) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Benzo (k) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Chrysene	N/A*	N/A*	N/A*	N/A*
Dibenz (a, h) - anthracene	N/A*	N/A*	N/A*	N/A*
Indeno (1, 2, 3 - CD) pyrene	N/A*	N/A*	N/A*	N/A*
Naphthalene	N/A*	N/A*	N/A*	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(c) Clay/silt soil type:

Chemical of Concern	Depth to Ground Water

	<15 Feet	15 - 30 Feet	31 - 50 Feet	> 50 Feet
Benzene	.910 PPM	.910 PPM	1.08 PPM	1.36 PPM
Toluene	N/A*	N/A*	N/A*	N/A*
Ethyl-benzene	N/A*	N/A*	N/A*	N/A*
Total Xylenes	N/A*	N/A*	N/A*	N/A*
Methl Tertiary Butyl Ether (MTBE)	3.80 PPM	3.80 PPM	4.75 PPM	6.43 PPM
Benz (a) - anthracene	N/A*	N/A*	N/A*	N/A*
Benzo (a) - pyrene	N/A*	N/A*	N/A*	N/A*
Benzo (b) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Benzo (k) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Chrysene	N/A*	N/A*	N/A*	N/A*
Dibenz (a, h) - anthracene	N/A*	N/A*	N/A*	N/A*
Indeno (1,2,3-CD) pyrene	N/A*	N/A*	N/A*	N/A*
Naphthalene	N/A*	N/A*	N/A*	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(v) The action levels in soil for a soil to indoor air pathway for chemical(s) of concern shall be as follows for the applicable soil type:

(a) Sand/gravel soil type:

Chemical of Concern	Action Level
Benzene	.950 PPM
Toluene	N/A*
Ethyl-benzene	N/A*
Total Xylenes	N/A*
Methl Tertiary Butyl Ether (MTBE)	N/A*
Benz (a) - anthracene	N/A*
Benzo (a) - pyrene	N/A*
Benzo (b) - fluoranthene	N/A*
Benzo (k) - fluoranthene	N/A*
Chrysene	N/A*
Dibenz (a, h) - anthracene	N/A*
Indeno (1,2,3-CD) pyrene	N/A*
Naphthalene	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(b) Silty/clayey sands soil type:

Chemical of Concern	Action Level
Benzene	1.05 PPM
Toluene	N/A*
Ethyl-benzene	N/A*
Total Xylenes	N/A*

Methl Tertiary Butyl Ether (MTBE)	N/A*
Benz (a) - anthracene	N/A*
Benzo (a) - pyrene	N/A*
Benzo (b) - fluoranthene	N/A*
Benzo (k) - fluoranthene	N/A*
Chrysene	N/A*
Dibenz (a,h) - anthracene	N/A*
Indeno (1, 2, 3-CD) pyrene	N/A*
Naphthalene	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(c) Clay/silt soil type:

Chemical of Concern	Action Level
Benzene	1.29 PPM
Toluene	N/A*
Ethyl-benzene	N/A*
Total Xylenes	N/A*
Methl Tertiary Butyl Ether (MTBE)	N/A*
Benz (a) - anthracene	N/A*
Benzo (a) - pyrene	N/A*
Benzo (b) - fluoranthene	N/A*
Benzo (k) - fluoranthene	N/A*
Chrysene	N/A*
Dibenz (a, h) - anthracene	N/A*

Indeno (1, 2, 3-CD) pyrene	N/A*
Naphthalene	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(vi) The action levels in ground water for a ground water to indoor air pathway for chemical(s) of concern shall be as follows for the applicable soil type and depth to ground water:

(a) Sand/gravel soil type:

Chemical of Concern	Depth to Ground Water			
	<15 Feet	15 - 30 Feet	31 - 50 Feet	> 50 Feet
Benzene	3.98 PPM	3.98 PPM	4.03 PPM	4.10 PPM
Toluene	N/A*	N/A*	N/A*	N/A*
Ethyl-benzene	N/A*	N/A*	N/A*	N/A*
Total Xylenes	N/A*	N/A*	N/A*	N/A*
Methl Tertiary Butyl Ether (MTBE)	N/A*	N/A*	N/A*	N/A*
Benz (a) - anthracene	N/A*	N/A*	N/A*	N/A*
Benzo (a) - pyrene	N/A*	N/A*	N/A*	N/A*
Benzo (b) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Benzo (k) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Chrysene	N/A*	N/A*	N/A*	N/A*
Dibenz (a, h)	N/A*	N/A*	N/A*	N/A*

- anthracene				
Indeno (1,2,3 - CD) pyrene	N/A*	N/A*	N/A*	N/A*
Naphthalene	N/A*	N/A*	N/A*	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(b) Silty/clayey sands soil type:

Chemical of Concern	Depth to Ground Water			
	15 Feet	15 - 30 Feet	31 - 50 Feet	> 50 Feet
Benzene	3.99 PPM	3.99 PPM	4.06 PPM	4.16 PPM
Toluene	N/A*	N/A*	N/A*	N/A*
Ethyl-benzene	N/A*	N/A*	N/A*	N/A*
Total Xylenes	N/A*	N/A*	N/A*	N/A*
Methl Tertiary Butyl Ether (MTBE)	N/A*	N/A*	N/A*	N/A*
Benz (a) - anthracene	N/A*	N/A*	N/A*	N/A*
Benzo (a) - pyrene	N/A*	N/A*	N/A*	N/A*
Benzo (b) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Benzo (k) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Chrysene	N/A*	N/A*	N/A*	N/A*
Dibenz (a, h) - anthracene	N/A*	N/A*	N/A*	N/A*
Indeno (1,2,3 - CD) pyrene	N/A*	N/A*	N/A*	N/A*
Naphthalene	N/A*	N/A*	N/A*	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(c) Clay/silt soil type:

Chemical of Concern	Depth to Ground Water			
	15 Feet	15 - 30 Feet	31 - 50 Feet	> 50 Feet
Benzene	4.09 PPM	4.09 PPM	4.45 PPM	4.88 PPM
Toluene	N/A*	N/A*	N/A*	N/A*
Ethyl-Benzene	N/A*	N/A*	N/A*	N/A*
Total Xylenes	N/A*	N/A*	N/A*	N/A*
Methl Tertiary Butyl Ether (MTBE)	N/A*	N/A*	N/A*	N/A*
Benz (a) - anthracene	N/A*	N/A*	N/A*	N/A*
Benzo (a) - pyrene	N/A*	N/A*	N/A*	N/A*
Benzo (b) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Benzo (k) - fluoranthene	N/A*	N/A*	N/A*	N/A*
Chrysene	N/A*	N/A*	N/A*	N/A*
Dibenz (a, h) - anthracene	N/A*	N/A*	N/A*	N/A*
Indeno (1, 2, 3 - CD) pyrene	N/A*	N/A*	N/A*	N/A*
Naphthalene	N/A*	N/A*	N/A*	N/A*

* N/A means that the particular chemical of concern is not applicable to this particular pathway.

(J) Tier 1 decisions.

If the concentrations of chemical(s) of concern are at or below the action level then no further action is necessary for that chemical of concern and for the corresponding complete exposure pathway. If the concentrations of chemical(s) of concern are above the action level for one or more exposure pathways, then the owner and operator shall conduct one or a combination of the following to address the chemical(s) of concern and the corresponding pathways where concentrations of chemical(s) of concern are above the action levels:

(1) An interim response action may be implemented, in accordance with paragraph (L) of this rule, to reduce concentrations at the source area(s) below the action levels.

(2) The action level may be used as target levels for remedial action and a remedial action plan developed pursuant paragraph (P) of this rule and submitted with the tier evaluation report prepared in accordance with paragraph (N) of this rule.

(3) A tier 2 evaluation may be conducted to develop SSTL in accordance with paragraph (M) of this rule.

(K) Tier 1 evaluation notification.

Owners and operators shall submit a written tier 1 evaluation notification on a form provided by the fire marshal to the fire marshal within one hundred and eighty days of a release determined in accordance with paragraph (F) of this rule. If further tier evaluation pursuant to paragraph (M) of this rule is not to be conducted, then a tier evaluation report pursuant to paragraph (N) of this rule shall be submitted. The tier 1 evaluation notification shall include the following:

(1) Name of owner and operator;

(2) Contact person for the tier 1 evaluation;

(3) Address of the UST site;

(4) Description of the tier 1 evaluation performed in accordance with paragraph (H) of this rule;

(5) Summary of the results of the action level determination performed in

accordance with paragraph (I) of this rule; and

(6) Summary of the tier 1 decisions in accordance with paragraph (J) of this rule.

(L) Interim response action.

(1) Interim response action shall be implemented, as appropriate. Interim response actions shall be conducted prior to the submittal of the remedial action plan. Once an interim response action has been implemented, previously identified potentially complete exposure pathways should be re-evaluated.

(2) An interim response action notification shall be submitted to the fire marshal on a form prescribed by the fire marshal ten days prior to beginning the interim response action. The notification shall include the following:

(a) Name of owner and operator;

(b) Contact person for the interim response action;

(c) Address of the UST site;

(d) Description of the interim response action;

(e) Anticipated length of time of the interim response action; and

(f) Where soil is to be removed, the anticipated volume of soil to be removed.

(3) Prior approval must be obtained from the fire marshal if:

(a) The combined total volume of soil to be excavated for all tier evaluations will be greater than eight hundred cubic yards;

(b) The anticipated time to initiate and complete the interim response action is greater than three months; or

(c) More than one interim response action is to be conducted during any tier evaluation.

(4) A summary of any interim response actions shall be included in the tier evaluation report.

(M) Tier 2 evaluation.

The tier 2 evaluation shall consist of the following:

(1) Site conceptual exposure model.

(a) A site conceptual exposure model shall be developed to define the relationship between the source area(s), the transport mechanisms, and all potential receptors and exposure routes for current and reasonably anticipated future use. This model shall describe the conditions under which an exposure may occur. The site conceptual exposure model shall include all exposure pathways that can reasonably be assumed to be complete or potentially complete in the future based on the available information concerning the source area(s), transport mechanisms, point(s) of exposure, exposure routes, and receptors.

(b) The site conceptual exposure model must be clearly described. This model will then be modified during the execution of the site assessment.

(c) If further information or data collected in accordance with paragraph (M)(2) of this rule identifies an exposure pathway that was not previously considered or identified, then the exposure pathway must be added to the site conceptual exposure model.

(d) Current and potential future receptors shall be identified at the UST site and in the surrounding area. At a minimum, the following potential receptors will be evaluated in the context of the current and reasonably anticipated future use of the UST site and current and potential future ground water use at the UST site and the surrounding area:

(i) Adults and children as residents on the UST site and in the surrounding area; or

(ii) Adults as commercial or industrial workers employed on the UST site or businesses in the surrounding area.

(e) The environmental media that are likely to contain concentrations of chemical(s) of concern shall be identified for evaluation. The following environmental media shall be evaluated, as appropriate:

(i) Surface soils;

(ii) Subsurface soils; and

(iii) Ground water.

(f) Current and reasonably anticipated future use for the UST site and adjacent properties shall be determined as residential or non-residential using reasonably available information based on the following:

(i) Historical land use of the UST site;

(ii) The current land use of the UST site;

(iii) The current land use of adjacent properties;

(iv) The current zoning or planning designation for the UST site; and

(v) The current zoning or planning designation for the UST site and the adjacent properties, including zoning restrictions.

(g) Future land use for a UST site shall be residential unless:

(i) The current land use at the UST site is not residential and seventy-five percent of the area within three hundred feet of the property boundaries of the UST site is non-residential land use;

(ii) The current land use at the UST site is not residential, and seventy-five percent of the area within three hundred feet is recreational or agricultural land use; or

(iii) The owner or operator maintains a legal, equitable or possessory interest in the UST site, or a land use restriction for the UST site in accordance with paragraph (M)(4) of this rule has been implemented.

(2) Site assessment.

Data collection subsequent to the preliminary site assessment will be an iterative process designed to collect the data necessary to conduct further tier analysis, as appropriate, to:

(a) Evaluate exposure pathways to determine if the exposure pathways identified in the site conceptual exposure model developed in accordance with paragraph (M)(1) of this rule are complete.

(i) If an exposure pathway is determined to be incomplete in accordance with paragraph (M)(2)(a)(iii) of this rule, then no further evaluation will be required for that exposure pathway.

(ii) The determination that an exposure pathway is incomplete must be fully documented and based on information and data collected during the tier 1 preliminary site assessment. If an exposure pathway can not be conclusively determined to be incomplete, then that exposure pathway must be further evaluated or considered complete for purposes of the tier 2 evaluation.

(iii) An exposure pathway is incomplete when any one of the following exist:

(a) All concentrations for a chemical of concern in the identified environmental media are at or below the action levels identified for the UST site;

(b) All concentrations for a chemical of concern in the identified environmental media are at or below the action level at the point(s) of exposure and an identified transport mechanism will not cause concentrations of chemical(s) of concern to be above the action levels identified for the UST site at the point(s) of exposure;

(c) There is not an identified point(s) of exposure for a chemical of concern in an identified environmental media;

(d) Site-specific data demonstrates that there is no transport mechanism in the identified environmental media to move the chemical(s) of concern from the source area(s) to the point(s) of exposure;

(e) Resource use restrictions enforceable by local government or regulatory agencies exist that will eliminate a point of exposure; or

(f) Land use restrictions enforceable by local government or regulatory agencies exist that will eliminate a point of exposure.

(b) Determine the likely distribution of chemical(s) of concern.

(i) Distribution of chemicals of concern shall be delineated to the applicable action level(s) determined for the site.

(ii) Soil borings and ground water monitoring wells shall be installed in accordance with paragraph (H)(2)(c) of this rule.

(iii) If the highest concentration of a chemical(s) of concern is determined to be below method detection limits as established by this rule during the preliminary site assessment in accordance with paragraph (H)(2) of this rule, then that chemical(s) of concern may be excluded from future site assessment.

(iv) If the highest concentration of a chemical(s) of concern are determined to be below method detection limits as established by this rule on subsequent sampling events and it is determined that the results are representative of temporal and spatial conditions, then that chemical(s) of concern may be excluded from future monitoring.

(v) If the determination of the likely distribution of chemical(s) of concern requires off-site access, owners and operators shall use their best efforts to obtain permission to enter such off-site areas to complete the investigations required by this rule. If access cannot be obtained, the owner or operator shall submit notice to the state fire marshal which shall actually be received by the state fire marshal within forty-five days after the owner or operator determines off-site access cannot be obtained. The notice shall describe the efforts taken by the owner or operator to obtain off-site access and the reasons why access could not be obtained.

(c) Determine the geological, hydrogeological and physical characteristics of the UST site;

(d) Evaluate concentration of chemical(s) of concern at the point(s) of exposure;

(e) Determine the point(s) of demonstration;

(f) Statistically derive concentration of chemical(s) of concern in the soil in accordance with paragraph (M)(3)(a) of this rule; and

(g) Evaluate the fate and transport of chemical(s) of concern in the environmental media for the exposure pathways determined to be complete and having concentrations above the action levels or for those complete exposure pathways where no action levels were determined.

(3) Tier 2 options.

For complete exposure pathways, one or a combination of the following options shall be evaluated under a tier 2 analysis:

(a) Utilize the action level for a chemical of concern and the corresponding exposure pathway as a tier 2 SSTL and statistically derive the representative concentration by calculating the ninety-five per cent upper confidence level (UCL) of the arithmetic mean. Data sets must be comprised of a sufficient number and quality of samples as to derive a normal, log-normal, or other applicable frequency distribution. The owner and operator must use techniques for sampling normal or log-normal distributions based on appropriate statistical methodology for normal or log-normal distributions.

(b) Develop tier 2 SSTL by replacing the assumptions for the geological, hydrogeological and physical parameters used in the algorithms for the action levels in tier 1 with site-specific values. If the reasonably anticipated future use is determined to be non-residential, then non-residential exposure factors may be substituted for the residential exposure factors used in the algorithms for the action levels in tier 1.

(c) Apply the action level(s) at site-specific point(s) of exposure and back calculate tier 2 SSTL for environmental media in the source area(s) using analytical fate and transport modeling.

(i) Identify point(s) of exposure based on the current and reasonably anticipated future use at the UST site and in the surrounding area. At minimum, the following potential point(s) of exposure shall be evaluated:

(a) Public and private drinking water supply wells where ground

water has been determined to be a drinking water source in accordance with paragraph (H)(1)(e) of this rule, a point of exposure shall be either:

(i) A point located three hundred feet down gradient of the source area(s) or the property line of the UST site, whichever is further; or

(ii) If an actual public or private drinking water supply well, including a well on the UST site exists between the source area and a point three hundred feet down gradient of the source area(s) then a point of exposure will be the location of the actual drinking water well.

(b) Surface water where the point of exposure shall be the point where the ground water containing concentrations of chemical(s) of concern discharges to the surface water.

(c) Residences and other buildings located or anticipated to be located directly above soil or ground water containing concentrations of chemical(s) of concern.

(d) Subsurface structures, such as utility manways and underground tunnels; and

(e) Surface soil areas where:

(i) The current or reasonably anticipated future use is determined to be residential land use then a point of exposure for direct contact with surface soils shall be zero to ten feet below ground surface.

(ii) The current and reasonably anticipated future use is determined to be non-residential then a point of exposure for direct contact with surface soils shall be zero to two feet below ground surface.

(ii) Analytical fate and transport modeling for tier 2 analysis.

Analytical fate and transport models may be used to describe the distribution and movement of chemical(s) of concern in the environmental media, back calculate the concentrations of

chemical(s) of concern at the source area(s), or predict the concentration of chemical(s) of concern at the point(s) of demonstration determined pursuant to paragraph (R)(2) of this rule, or point(s) of exposure determined pursuant to paragraph (M)(3)(c)(i) of this rule. Models may also be used to predict natural attenuation and to determine the appropriate locations of the point(s) of demonstration. Appropriate fate and transport models, chemical characteristics and site physical characteristics shall be identified considering the following:

(a) Analytical fate and transport models must be approved by the fire marshal. Fate and transport models that have not been previously approved by the fire marshal must be submitted for approval as an alternate technology in accordance with paragraph (V) of this rule.

(b) The required input data must be representative of the UST site conditions.

(c) Proper documentation of the modeling work must be prepared. The documentation must include input values, technical basis of the model and the implicit assumptions and the results of the modeling. The modeling work must be reproducible.

(d) Model predictions and assumptions must be verified by locating a point(s) of demonstration and implementation of a monitoring program developed in accordance with paragraph (R) of this rule and submitted with the tier evaluation report prepared in accordance with paragraph (N) of this rule.

(4) Land use restrictions.

Where site-specific target levels are developed based on land use other than residential land use and non-residential land use is not established in accordance with paragraph (M)(1)(g) of this rule, the owner and operator must implement an appropriate mechanism approved by the fire marshal to restrict the land use to activities that are consistent with the land use determination. Verification of the mechanism used shall be provided with the tier evaluation report.

(5) Tier 2 decisions.

The maximum concentrations of chemical(s) of concern or the statistically derived mean concentration of chemical(s) of concern, as applicable, shall be compared to the action level or tier 2 SSTL, as applicable.

(a) If the concentrations of chemical(s) of concern are at or below the tier 2 SSTL then no further action is necessary for that chemical of concern and for the corresponding complete exposure pathway. A monitoring plan must be developed in accordance with paragraph (R) of this rule and submitted with the tier evaluation report prepared in accordance with paragraph (N) of this rule to demonstrate that concentrations of chemical(s) of concern will remain at or below tier 2 SSTL.

(b) If the concentrations of chemical(s) of concern are above the tier 2 SSTL for one or more exposure pathways, then the owner and operator shall conduct one or a combination of the following to address the chemical(s) of concern and the corresponding complete exposure pathways where concentrations of chemical(s) of concern are above the tier 2 SSTL:

(i) An interim response action, under paragraph (L) of this rule, may be implemented to eliminate a complete exposure pathway or to reduce concentrations at the source area(s) at or below the tier 2 SSTL in accordance with paragraph (L) of this rule.

(ii) The tier 2 SSTL values may be used as target levels for remedial action and a remedial action plan developed pursuant paragraph (P) of this rule and submitted with the tier evaluation report prepared in accordance with paragraph (N) of this rule.

(iii) A tier 3 evaluation plan in accordance with paragraph (O)(1) of this rule may be developed for the UST site and submitted with the tier evaluation report prepared in accordance with paragraph (N) of this rule.

(N) Tier evaluation report.

Owners and operators shall submit a tier evaluation report to the fire marshal within two years from the submission of the tier 1 evaluation notification or as otherwise required by this rule, unless an extension has been granted in accordance with paragraph (U) of this rule. The tier evaluation report shall include, the following, as appropriate:

(1) UST site description.

A brief description of the UST site and surrounding area, including:

(a) Applicable 7.5 minute usgs quadrangle map including:

(i) UST site location, map number, longitude and latitude;

(ii) Location of the quadrangle within the state boundaries.

(b) Summary of land use determination.

(c) A description of the regional geology and hydrogeology and documentation of all sources of information.

(d) Storage tank information including information on current UST systems at the site, including age, materials of construction, size, contents and available precision test results;

(e) Describe immediate response actions, including free product removal, soil excavation, and any actions taken to abate vapors or address safety concerns. Include date(s) of each action, methods/techniques used, amount of material recovered, and current or most recent UST site conditions.

(f) Provide appropriate documentation of recycling or disposal of any material recovered, including sampling and analytical data, disposal manifests and weigh tickets.

(2) Data collection.

A summary of the data collection activities and the data derived as a result of these activities including, as appropriate:

(a) A summary of the rationale for sampling and testing activities;

(b) A description of the field methodologies employed including instrument calibration techniques and the make and model of equipment used;

(c) Drilling logs and well construction diagrams, including in the drilling logs

and construction diagrams:

(i) Type of sampler used (e.g., shelby tube, california sampler, split-spoon);

(ii) The presence of chemicals of concern as determined by field readings and visual techniques (no olfactory techniques should be used);

(iii) Depth at which saturated conditions were first encountered during drilling and the depth of the static water level;

(iv) Complete description of the soil sample for each interval including moisture content, color, gradation consistency, denotation of horizontal and/or vertical fracturing, type and description or bedrock with differentiation between weathered and competent bedrock, denotation of any voids or significant pressure changes observed (in rock drilling), and graphic illustration of each interval;

(v) A denotation of which soil sample interval(s) were sent to the laboratory for analysis; and

(vi) Sample recovery for each interval

(d) Well sampling and development logs. Document the number and quantity of well purging volumes, date, time and duration of collection and development.

(e) Ground water elevations and free product thickness, including:

(i) Depth-to-fluid, depth-to-water, free product thickness measurements, and top-of-casing and ground water elevations in tabular form for each well. When available, include historical data in the table and reference the source(s) of all information presented; and

(ii) Correct ground water elevations for free product thickness per API publication 1628.

(f) Ground water level elevations:

(i) Develop a ground water elevation contour map using all relevant monitoring wells to establish ground water contour and flow direction. Clearly indicate the date that ground water measurements were collected;

(ii) Provide justification for the exclusion of specific monitoring wells in determination of flow direction, if any; and

(iii) Provide the calculation of the hydraulic gradient in an appendix;

(g) Analytical laboratory results:

(i) Present results of laboratory analyses in tabular form, by environmental medium. On a separate table, present current results along with historical results, when available. Indicate sample collection date(s) and reference source(s) of all information presented; and

(ii) Include in the table the corresponding method detection limit for each analyses that was below detection limits;

(h) Concentrations of chemical(s) of concern:

(i) Develop chemical(s) of concern concentration maps for soil (in mg/kg) and ground water (in Ug/l). Maps must also include the location of sampling points and the depth of the soil sample interval; and

(ii) Develop maps of the UST site indicating the locations of source area(s), point(s) of exposure and concentrations and spatial distribution of chemical(s) of concern;

(i) Current and future ground water use classification:

(i) Include reasonably available logs of all water wells within the surrounding area;

(ii) Reference all source(s) of information used to determine the current and future ground water use classification;

(j) Saturated zone characterization tests;

(i) Provide documentation of any models and calculations used to evaluate data; and

(ii) Include the test data in an appendix of the report; and

(k) Results of fate and transport modeling:

(i) Present results of geotechnical testing for soil properties in tabular form referencing the ASTM method used to perform each test; and

(ii) Documentation of modeling work including, but not limited to, input values and technical basis for the assumptions.

(3) Site conceptual exposure model.

A summary of the exposure pathway(s) analysis including:

(a) The site conceptual exposure model including current and future land use scenarios;

(b) Land, ground water and surface water use determinations;

(c) Identification of complete pathways to be evaluated in tier 2; and

(d) Results of exposure pathway(s) evaluation:

(i) Discuss exposure pathway(s) evaluation, including identification of potential receptors, source areas, transport mechanisms, points of exposure, routes of exposure, potential receptors considering current and reasonably anticipated future use. Document in detail all sources of information in the report; and

(ii) Include justification of exposure pathway(s) elimination.

(4) Tier evaluation.

A summary of the results of the tier 1 evaluation conducted, including

identification of exposure pathways that require further tier evaluation. A summary of the activities conducted and the results of the tier 2 evaluation, description of models or other methods used to determine SSTL, including:

(a) Discuss the results of the tier evaluation performed;

(b) SSTL determination:

(i) Present action level and SSTL in tabular form by environmental media and exposure pathway; and

(ii) Present and document all assumptions, equations, models, literature values, etc. used in determining the action level and SSTL;

(c) Include in an appendix a description of any models used to evaluate data, providing all assumptions, input parameters, output values;

(d) Include the details of any field vapor sampling or any other investigations to collect site-specific data;

(e) Discuss land use and resource use restrictions and document the source(s) of all information that details the restriction(s); and

(5) Interim response actions.

Interim response actions including the volume of soil removed or ground water treated.

(6) Future actions.

A summary of future actions and alternatives, including:

(a) A discussion of remedial action, if appropriate;

(b) A discussion of further tier analysis, if appropriate; and

(c) A summary of monitoring, as appropriate.

(7) Supporting information.

Appendices for appropriate supporting documentation including:

(a) Drilling logs;

(b) Equipment and standard procedures used;

(c) Chain of custody forms, analytical results, QA/QC procedures and data quality objectives, including, without limitation, all laboratory certificates of analysis (data sheets), completed chain-of-custody forms indicating soil boring/monitoring well numbers and laboratory sample numbers; and

(d) All calculations and modeling results relied upon.

(O) Tier 3 evaluation.

(1) Tier 3 evaluation plan.

(a) If SSTL are to be developed under a tier 3 evaluation, then a site-specific project plan shall be prepared and submitted to the fire marshal for approval with the tier evaluation report in accordance with paragraph (N) of this rule. Unless otherwise provided in this rule, the tier 3 evaluation plan shall include the following:

(i) A description of the objective of the tier 3 evaluation and the activities to be conducted;

(ii) A discussion of the effectiveness, cost and the rationale for selecting the tier 3 evaluation; and

(iii) An implementation schedule and the projected completion date of the proposed tier 3 evaluation.

(b) Upon approval of the tier 3 evaluation plan by the fire marshal, the owner and operator shall conduct the activities in accordance with the approved tier 3 evaluation plan.

(2) Tier 3 decisions.

(a) If the concentrations of chemical(s) of concern are at or below the tier 3

SSTL then no further action is necessary for that chemical of concern and for the corresponding complete exposure pathway. A monitoring plan must be developed in accordance with paragraph (R) of this rule and submitted with the tier 3 evaluation report prepared in accordance with paragraph (O)(3) of this rule to demonstrate that concentrations of chemical(s) of concern will remain at or below tier 3 SSTL.

(b) If the concentrations of chemical(s) of concern are above the tier 3 SSTL then the owner and operator shall conduct one or a combination of the following:

(i) An interim response action may be implemented, in accordance with paragraph (L) of this rule, to eliminate a complete exposure pathway or to reduce concentrations at the source area(s) below the SSTL; or

(ii) The tier 3 SSTL values may be used as target levels for remedial action and a remedial action plan prepared developed pursuant paragraph (P) of this rule and submitted with the tier 3 evaluation report prepared in accordance with paragraph (O)(3) of this rule.

(3) Tier 3 evaluation report.

A report summarizing the activities conducted in accordance with the tier 3 evaluation plan developed in accordance with paragraph (O)(1) of this rule and the results of the tier 3 decisions described in paragraph (O)(2) of this rule shall be submitted to the fire marshal within ninety days from the completion date of the tier 3 evaluation.

(P) Remedial action.

A remedial action plan shall be prepared, as appropriate, in accordance with paragraph (J)(2), (M)(5)(b)(ii), or (O)(2)(b)(ii) or (O)(2)(b)(ii) of this rule and submitted to the fire marshal for approval. The remedial action plan shall include the following:

(1) A description of the remedial action program to be implemented;

(2) Proposed targets levels, identified by chemical(s) of concern and environmental media, to be achieved by the remedial action;

(3) A conceptual design of the remedial action system, detailed engineering drawing shall not be submitted;

(4) A brief description of remedial action alternatives considered, including a discussion of the reliability, effectiveness, cost, and time needed for completion, and the rationale for the selected program;

(5) A monitoring plan prepared in accordance with paragraph (R) of this rule describing monitoring to be used to determine whether SSTL are being achieved and to demonstrate that concentrations of chemical(s) of concern will remain at or below SSTL once SSTL have been achieved, including locations of any monitoring wells designated for sampling;

(6) A description of reporting frequency and proposed content of reports;

(7) A description of permits or other governmental approvals required for implementation of the plan;

(8) A description of activities or studies, if any, required to be performed prior to implementation of the proposed remedy; and

(9) An implementation schedule and the projected completion date of the proposed remedial action.

(Q) Public participation.

(1) For each confirmed release for which a remedial action plan is submitted to the fire marshal, the owner and operator shall provide notice to the public in a format approved by the fire marshal by means designed to reach those members of the public directly affected by the release and the planned remedial action. This notice may include, but is not limited to, public notice in local newspapers, block advertisements, public service announcements, publication in a state register, letters to individual households, or personal contacts by field staff.

(2) The fire marshal shall ensure that UST site release information and decisions concerning the remedial action plans are made available to the public for inspection upon request.

(3) Before approving a remedial action plan, the fire marshal may hold a public meeting to consider comments on the proposed remedial action plan if there is sufficient public interest, or for any other reason.

(4) The owner and operator shall give public notice that complies with paragraph

(Q)(1) of this rule if implementation of an approved remedial action plan does not achieve the established cleanup levels in the plan and termination of that plan is under consideration by the fire marshal.

(R) Monitoring plan.

(1) Monitoring plan.

(a) A monitoring plan shall be developed as appropriate to:

(i) Demonstrate that no further action is appropriate in accordance with paragraph (M)(5)(a) or (O)(2)(a) of this rule;

(ii) Demonstrate that a remedial action in accordance with paragraph (P) of this rule has achieved action levels or SSTL; and

(iii) To verify fate and transport model assumptions and predictions related to the development of SSTL under a tier 2 or tier 3 evaluation in accordance with paragraph (M)(3)(c)(ii) of this rule.

(b) The monitoring plan shall be submitted with the tier evaluation report, or remedial action plan, as appropriate. The monitoring plan shall include, at a minimum, the following:

(i) A description of the purpose and objective of the monitoring activity;

(ii) A description of monitoring activities to be conducted, including those conducted to implement engineering controls;

(iii) The location of the point(s) of demonstration;

(iv) A summary of the sampling procedures developed;

(v) A description of the anticipated length and frequency of the monitoring activity;

(vi) An identification and description of the criteria for termination, as appropriate, of remedial activities; and

(vii) An identification and description of the criteria for termination, as appropriate, of the monitoring activity.

(c) Monitoring shall be conducted, at minimum, for four consecutive quarters unless the owner and operator can demonstrate that a shorter time is appropriate.

(d) If the objectives of the monitoring plan are not met then the owner and operator shall:

(i) Continue monitoring activities;

(ii) Conduct an interim response action in accordance with paragraph (L) of this rule;

(iii) Develop a remedial action plan in accordance with paragraph (P) of this rule; or

(iv) Return to the tier evaluation utilized to develop the SSTL.

(2) Point(s) of demonstration.

The process for the selection of the point(s) of demonstration must consider the location of the point(s) of exposure (including the receptor and exposure route), the transport mechanism (e.g., ground water migration, vapor migration) and the estimated travel time from the source to the point(s) of exposure. The point(s) of demonstration shall be located to monitor the progress of remedial action (including natural attenuation) and to verify the predictions related to the potential fate and transport of the chemical(s) of concern. The location of the point(s) of demonstration should be sufficiently up gradient of the point(s) of exposure to act as an early warning that continued migration of chemical(s) of concern may cause the concentrations of chemical(s) of concern to be above the action level at the point(s) of exposure.

(3) Verifying modeling results.

Where modeling is used to describe the saturated and unsaturated zones or the concentration of chemical(s) of concern in ground water or other environmental media, the model predictions shall be validated with empirical data collected from point(s) of demonstration.

(S) Implementation of remedial action plans.

(1) Upon approval of the remedial action plan, owners and operators shall implement the plan. Owners and operators shall monitor, evaluate, and report to the fire marshal the results of implementation efforts in accordance with the monitoring plan.

(2) Following implementation of a remedial action plan, if the treatment technology approved by the fire marshal in the plan has been installed and operated for a minimum of one year and the technology is unable to reduce the concentrations of chemical(s) of concern to a level at or below action levels or SSTL, as appropriate, such that the asymptotic level has been reached, then the owner and operator must:

(a) Re-evaluate the remedial action alternatives and submit a revised remedial action plan; or

(b) Return to the tier 2 evaluation and submit a revised tier evaluation report, or submit a tier 3 evaluation plan, as appropriate.

(T) Completion.

Following completion of remedial action and monitoring in accordance with this rule, owners and operators shall prepare a completion report that demonstrates that the remedial action or monitoring objectives have been met. The report shall contain documentation supporting termination of the remedial action or monitoring program. Upon approval of the report, the fire marshal shall issue to the owners and operators written notice that no further action is required at the UST site.

(U) Requests for extensions.

If an owner or operator desires an extension of any time period in which to act contained in this rule, the owner or operator must do both of the following:

(1) Prepare a written request setting forth the following:

(a) The time period in which to act contained in this rule that is the subject of the extension request;

(b) The owner's or operator's reasons for requesting the extension;

(c) The length of time that the extension is requested for;

(d) The name and complete address of the UST site that is the subject of the extension request;

(e) The name of the fire marshal employee, if any, that is assigned to monitor the corrective actions activities at the UST site that is the subject of the extension request; and

(f) The incident number, assigned by the fire marshal, for the UST site that is the subject of the extension request.

(2) Submit a timely written request in accordance with paragraph (U)(1) of this rule to the fire marshal prior to the expiration of the time period that is the subject of the extension request. Submission of the written request required by paragraph (U)(1) of this rule is completed for purposes of this paragraph only upon the actual receipt of same by the state fire marshal. The fire marshal may grant, modify, or deny any extension request at his sole discretion.

(V) Alternate technology.

(1) Technologies other than those specified in this rule may be used if the owner and operator:

(a) Demonstrate to the bureau chief that the alternate technology is at least as effective as those required by this rule; and

(b) Obtain written approval from the bureau chief to use the alternate technology before the actual implementation of such technology. If the alternate technology is approved by the bureau chief, the owner and operator using such alternative technologies shall comply with any conditions imposed by the bureau chief on its use.

(2) The bureau chief may approve the alternate technology for use at a specific UST site or for use at all UST sites. If the bureau chief approves an alternate technology for use at all UST sites, the owner and operator must comply with any conditions imposed by the bureau chief on the use of the alternate technology.

Effective:

R.C. 119.032 review dates: 11/24/2004

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Certification

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Date

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