

May 17, 2013

Ms. Elizabeth Callahan
Director of Policy & Program Planning
Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup, 6th Floor
One Winter Street
Boston, Massachusetts 02108



Dear Ms. Callahan:

249 Vanderbilt Avenue
Norwood
Massachusetts
02062
781-278-3700
FAX 781-278-5701
<http://www.gza.com>

This letter presents comments prepared by GZA GeoEnvironmental, Inc. (GZA) concerning proposed amendments to the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000). GZA commends MassDEP's efforts regarding streamlining of the MCP and acknowledges the Department's intensive and thoughtful approach toward revising the regulations. While GZA believes that many of the proposed changes will be beneficial to the timely, cost-effective, and environmentally responsible completion of response actions, some of the proposed changes appear overly prescriptive, while others may actually increase the regulatory burden for both the Department and responsible parties. We also believe that some aspects of the proposed amendments would more appropriately be included in guidance documents, which can more easily be updated as the state of the practice evolves, rather than in regulations.

GZA's comments, presented below, are grouped into the categories presented in the Public Hearing Draft of the Proposed Amendments to the MCP.

PERMIT/TIER CLASSIFICATION AND NUMERICAL RANKING SYSTEM (NRS)

GZA concurs with the rationale for eliminating the NRS and Tier I permit process and providing a simplified method for determining which sites are Tier I sites. We do, however, have comments on the Tier I inclusionary criteria, as presented below.

40.0510(2)(g): Assessment-only IRAs are still response actions. GZA suggests clarifying this issue by adding an item (d) indicating that sites that are subject to assessment-only IRAs are not categorically Tier I sites.

40.0520(2)(b): The revision to this section indicates that current Tier 1A, 1B and 1C sites will automatically transition to Tier 1. GZA suggests that there be a specified transition period during which LSPs may demonstrate based on current conditions that the Tier I criteria are not met and reclassify to Tier II. GZA also supports the suggestion in the Notes to Reviewers to "... include the classification criteria on transmittal forms used for relevant response action submittals (e.g. the transmittal forms for Comprehensive Response Actions and Immediate Response Actions). If the revised classification completed at the time a transmittal is made indicates current site conditions do not meet any of the Tier I Criteria, then Department records will be simultaneously updated to reflect the revised classification."



40.0560(2): GZA supports the proposed amendments at 310 CMR 40.0560(2) which are intended to provide more time for completing Phase II investigations.

40.0560(7)(d): This section should clarify that the extension is valid for two years from the expiration date, not two years from the effective date of Tier classification. There should also be a provision for sites that are moving out of a Temporary Solution category into active remediation (following identification of a feasible Permanent Solution during a 5-year Periodic Review, for example) where the classification may have expired more than two years ago. As presently worded, these sites could never come back into compliance if dormant for two years beyond the original Tier Classification expiration. GZA agrees with the proposal to make the extension for two years rather than for only one year.

ACTIVITY AND USE LIMITATIONS (AULs)

40.0020(2): The language in this section indicates circumstances where MassDEP must invalidate a previously filed Permanent Solution, without any opportunity for discretion. GZA suggests a revising the language to indicate that MassDEP may deem the Permanent Solution invalid or may require appropriate steps be taken to ensure a condition of No Significant Risk is achieved and maintained.

40.0020(2): This provision obligates a former owner or operator of a site who obtains knowledge to notify MassDEP if a change in site activities or exposures occurs without an LSP evaluation. We do not believe that knowledge without control should create this obligation or potential liability. GZA suggests eliminating the phrase, “and/or any other person who is liable under M.G.L. c. 21E for the disposal site who has knowledge of such.”

40.0020(2): This provision invalidates a Permanent Solution if site activities or exposures change without an LSP evaluation. GZA believes that this provision generates unnecessary uncertainty in the liability endpoint created by the 1998 Brownfields Amendments and we recommend modifying the wording. .

40.1074(1): GZA agrees with the elimination of the separate LSP Opinion to avoid discrepancies between consistent and inconsistent use language in the 1075 Form and the Opinion. However, inserting the lengthy Opinion language into the form may detract from the key content of the 1075 Form (restricted and permitted uses). We suggest that MassDEP consider leaving the Opinion language (without the restricted and permitted uses) in a separate attachment.

VAPOR INTRUSION AND CLOSURE

In general, GZA considers the proposed vapor intrusion regulation revisions to be a move away from performance- and risk-based systems measures a more prescriptive system. Additionally, the wider “net” cast by the Substantial Release Migration (SRM) definition changes will require increased MassDEP involvement in site management and appears to run counter to a main objective of the streamlining process. In regard to the proposed definition of historic fill, GZA recommends that MassDEP address implementation issues associated with the proposed definitions, perhaps via a workgroup or draft technical



update, to identify what the Department is expecting in terms of burden of proof under the current and proposed regulations, guidance and policies.

Our specific comments are provided below.

40.0006: Condition of SRM – The proposed changes to the definition of conditions that trigger the 72-hour notification (and subsequent IRA provisions and requirements) cast an overly broad “net.” The original wording that placed a time frame of one year for discharge of vapors into school buildings/occupied residences was appropriate and should be retained. Furthermore, the six conditions provided at 40.0313(5)(f) are appropriate as “triggers” to conduct a more detailed vapor intrusion assessment at a site, but not directly indicative of the need to conduct accelerated response actions.

40.0006: The added Daycare definition is useful but it should clarify whether short-term child drop-off centers (such as those associated with fitness centers and other facilities) are included. GZA recommends that these be specifically excluded from the definition.

40.0046(3): The proposed amendments would require MassDEP approval for the application of remedial additives within 100 feet of a School, Daycare or Child Care Center or occupied Residential Dwelling. GZA believes that this language as written will discourage and delay remedial action in many cases. There should be no restrictions on application of remedial additives within the 100-foot distances if the application point is downgradient of or hydraulically isolated from the receptor. The potential for impact on a sensitive receptor should be left to the judgment of the LSP. Additionally, the mechanism for obtaining MassDEP approval is not cited; the Department should have a streamlined mechanism for reviewing the plans and providing approval (if appropriate) in the cases where there is some potential for impact on sensitive receptors. This revision appears to be a situation where MassDEP is recommending prescriptive regulation changes based on a single case (or perhaps a few cases) of apparent mismanagement of remedial additives. This approach does not appear to be consistent with the intent of the streamlining process.

40.0313: The proposed movement of the SRM definition text to 40.0313 and the revisions of SRM criteria substantially expand the SRM/IRA net. GZA recommends that the exemptions to new SRM notifications be clarified as part of the new regulatory changes since the new criteria could be interpreted to require new notifications for sites that have been thoroughly characterized and for which effective remedial actions are ongoing. Several of the criteria included (such as GW-2 exceedance proximate to building) may be indicative of the need to do further assessment to define the nature and extent or potential for complete exposure pathways, such as inhalation of vapors in indoor air, or to identify Conceptual Site Model (CSM) data gaps rather than the need to take accelerated response actions. These new criteria seem to go beyond the intent of the “SRM” and “IRA” provisions under the MCP.

40.0313(d)(e): Under the proposed change, groundwater impacted with VOCs at any concentrations, including those that are commonly found as laboratory artifacts (acetone, toluene, methylene chloride etc.), triggers SRM. There should be some room for judgment by the LSP regarding the significance of a trace VOC detection. Perhaps a concentration



criterion that is a fraction of the S-1 RC may be more appropriate than the detection of VOCs at any concentration.

40.0313(5)(f)(1): This revision proposes that soil impacted with VOCs at any concentration within 6 feet horizontally and 10 feet vertically from a School, Daycare Center, or Residence (S/DC/R) triggers SRM. This would include trace levels of relatively non-toxic VOCs that are ubiquitous in the environment or commonly found as laboratory artifacts (acetone, toluene, etc.). The minimum level of “impact” to soil that would result in a condition of SRM should be defined. The comments above apply to this section as well.

40.0313(5)(f)(2): Some judgment regarding the direction of groundwater flow or the existence of a hydraulic connection should be incorporated into this criterion.

40.0313(5)(f)3: The area where this condition applies (>10 times GW-2 standards within 100 feet of a S/DC/R) should be limited to the area upgradient of the building(s), or at least should exclude the area downgradient of the building(s) or areas that are clearly hydraulically isolated from the building. A site should not be considered to have a condition of SRM requiring an IRA (and therefore become a Tier I site) due to the presence of contamination downgradient of a building. Note that the concentration trigger for trichloroethene (TCE) for this criterion under the new regulations would be 50 ppb. This is a large universe of sites and represents a major burden on the regulated community; we recommend that this criterion be eliminated. Also, what would the transition provisions be for existing sites that meet this criterion or the criterion at 310 CMR 40.0313(5)(f)2? Would sites that have been undergoing response actions for many years suddenly require a new SRM notification and an IRA?

40.0313(5)(f)4: What constitutes “near” for this criterion? Is there a *de minimis* level? Additionally, the comments above for 40.0313(5)(f)(1) regarding *de minimis* levels of relatively non-toxic VOCs apply to this criterion as well.

40.0313(5)(f)(6): GZA suggests the addition of “that would result in the potential for vapor intrusion into occupied living/workspaces or result in significant risk to utility workers.”

40.0425: Regarding reporting requirements for CEPs, GZA concurs with the proposed revisions that reduce the reporting requirements for CEPs that do not pose an Imminent Hazard.

40.0926: The proposed revisions to 40.0926(6) and (7) appear to eliminate the use of fate and transport modeling to develop exposure point concentrations (EPCs) except for the single case of indoor air impacted by ongoing commercial and/or industrial operations. This would appear to also preclude dilution evaluations for surface water EPC and ambient air modeling for trench exposures. This wording should be revised to allow the use of these models. Additionally, we recommend that modeling be acknowledged as a line of evidence for the evaluation of vapor intrusion issues for future structures.



40.0942(1)(d): The second “or” should be changed back to “and.” Otherwise, this requirement would be inappropriate.

40.0006: Definition of Historic Fill: The proposed definition does not address pesticides or herbicides in historic fill. Are there any upper limits for anthropogenic background concentrations? The definition criteria of being contaminated prior to placement and not being a result of illegal disposal of waste material at the time of placement are typically very difficult to verify. Lack of this knowledge should not preclude identifying material as historic fill. In addition, the proposed definition indicates that historic fill “is not hazardous waste.” Would TCLP failure, for example, indicate that the material in question is hazardous waste and exclude it from historic fill designation? GZA’s experience indicates that exceedance of TCLP lead concentrations is not unusual for some historic urban fill materials.

40.0006: Definition of Anthropogenic Background: Other common commercial or household products contain compounds regulated under the MCP that are not considered exempt under 310 CMR 40.0006 such as arsenic as a result of pesticide application. We realize that MassDEP is concerned that many LSPs utilize the pesticide application exemption when lead and/or arsenic are found, sometimes without extensive documentation. It would be helpful to have guidance regarding levels of common pesticide/herbicide constituents that MassDEP considers consistent with application of such in accordance with their labels.

40.0006: Definition for Active Exposure Pathway Elimination Measures (AEPEMs). The revisions use generation of waste for disposal/recycling as the distinction between Active Remedial Systems and “Exposure Pathway Elimination Measures” (EPEMs). GZA recommends revising this definition because AEPEMs may indeed generate waste in the form of spent granular activated carbon (GAC) for vapor emission controls. The current language may discourage the use of GAC as a voluntary measure to control emissions. The potential use of GAC (or other absorbent media) for AEPEMs should be acknowledged or the waste disposal language should be deleted from both definitions.

40.0000 Subpart G: The requirement to have both an AUL and a Permit to run an AEPEM as part of a Permanent or Temporary Solution seems overly burdensome and stigmatizing. GZA agrees that a site that requires an AEPEM would fall within the category of Permanent Solution with Conditions (or Temporary Solution), but the nature of the conditions should be simplified so that it ensures enforceability by MassDEP. To the extent that MassDEP will require a permit, GZA agrees that it should be essentially a permit-by-rule to reduce MassDEP and LSP time and effort.

40.0700: Regarding the new section outlining the permit requirements for AEPEMs, while we support the concept of allowing Permanent Solutions with an operating permit for active sub-slab systems, the permit requirements seem overly burdensome. The requirement for immediate notification to MassDEP for system shutdown in all cases appears to be excessive; we recommend that the immediate notification provision be limited to those situations where a brief system shutdown would pose potential risks.



40.0700(4): An AEPPEM cannot be used to support a Permanent or Temporary Solution if suspension of such measure for 60 days would result in an IH. GZA presumes that this language should be revised to read that an AEPPEM “alone” cannot be used in this situation. We do not see any reason why an AEPPEM could not be used in conjunction with some other remedial approach in this scenario. What would be the option for addressing such situations?

40.0711(5): This section does not acknowledge the use of a RAM for installation of an AEPPEM, only IRAs and comprehensive response actions. Why would a RAM not be an appropriate avenue for an AEPPEM?

40.0711(5): The proposal for telemetry may result in “alarm overkill,” as it may be triggered by even transient blackouts, which are common during the summer months. Instead of saying “immediately upon failure of the system” we suggest “if at any time the system shuts down for more than 24 hours.” The auto-dialers can be programmed to dial after a delay if the system does not come back on. This could avoid multiple short power interruption alarms.

40.0720(3): We support the provision allowing voluntary operation of an AEPPEM without the rigorous permit and documentation requirements following a determination that it is no longer necessary to maintain a Permanent Solution.

40.0752: What is the transition process for existing subslab systems?

40.1055: Class C-2 RAOs will not transition as Temporary Solutions but rather into the current phase of work. This will likely leave many sites in Class C-2 status in a non-compliance situation since a Permanent or Temporary solution will not have been achieved within the 5-year deadline. We recommend that some more specific transition category be established for these sites or that they just become Temporary Solutions.

40.1057(2)(b): Language varies from 40.1050(1) which allows for elimination, control or mitigation of sources. Mitigation has been deleted from this section. We recommend that this be added back in.

40.1067(7): This section apparently eliminates the potential to conduct further response actions as RAMs or post-RAO “definitive and enterprising steps toward a Permanent Solution” following submittal of a Temporary Solution which is allowed under the current regulations. Such actions would have to be conducted as formal Phase IV Comprehensive Remedial Response Actions. This limits the flexibility associated with voluntary, sensible response actions for Temporary Solution sites, increases the paperwork burden and may discourage appropriate remedial action. We recommend that the language be changed back to the previous wording allowing some flexibility regarding the appropriate regulatory filing based on the nature of the response action.



RISK ASSESSMENT AND MCP STANDARDS

40.0975: No change to tetrachloroethylene (PCE) standards was included in the proposed revisions. GZA recommends adopting the EPA IRIS value and revising the PCE standards with this revision of the MCP.

40.0993: USEPA PPRTV also provides screening values; GZA recommends the hierarchy of the PPRTV screening values be included in 40.0993(5)(b).

Lead RAF for Soil Ingestion: The default RAF for lead for the soil ingestion pathway is listed as 0.5 in the MassDEP Supporting documentation for the public review of the proposed Method 1 Standards. This value was first presented in the MassDEP (1992) User's Guide for Risk Assessment Shortform and was developed based on the highest value presented in the various literature dated between 1971 and 1982. As indicated in the MassDEP (1992) User's Guide for Risk Assessment Shortform, "*The oral and dermal chronic reference dose for lead is based on back-calculation from the drinking water action level. In this calculation, an absorbed dose was used. Therefore, the RAF is the absorption efficiency by the route in question.*" That is, the RAF for the soil ingestion pathway is the absorption efficiency by the soil ingestion pathway. USEPA (2007) recommended a default absorption factor¹ of 0.3 for lead in soil in the User's Guide for the Integrated Exposure Uptake Biokinetic Model for Lead in Children. GZA recommends adopting the USEPA's default value of 0.3 for evaluating the soil ingestion pathway for lead.

Lead RAF for Water Ingestion: The default RAF for lead for the water ingestion pathway is listed as 1 in the MassDEP supporting documentation for the public review of the proposed Method 1 Standards. USEPA (2007) recommended a default absorption factor of 0.5 for lead in water in the User's Guide for the Integrated Exposure Uptake Biokinetic Model for Lead in Children. GZA recommends adopting the USEPA's (2007) default absorption for water ingestion exposure.

RfD for Cadmium for Soil Exposure: IRIS provides RfDs for cadmium for two exposure pathways - food and water. MassDEP uses the RfD for water exposure for the soil exposure pathway in the supporting documentation for the public review of the proposed Method 1 Standards. GZA recommends adopting the RfD for food for the soil exposure pathway.

CAS # for Bis(2-Chloroisopropyl)ether: The CAS# for bis(2-Chloroisopropyl)ether listed in the MassDEP Supporting documentation for the public review of the proposed Method 1 Standards is 39638-32-9. According to AWQC, "*9. Correction of Chemical Abstract Services Number The Chemical Abstract Services number (CAS) for Bis(2-Chlorisoprpyl) Ether, has been revised in IRIS and in the table. The correct CAS number for this chemical is 108-60-1. The previous CAS number for this pollutant was 39638-32-9.*"

¹ Termed as bioavailability, which was defined as absorption of intake from the gut or lung into the blood in the USEPA (2007) document.



(<http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm>). Should the CAS # for bis(2-Chloroisopropyl)ether be revised to 108-60-1?

ORSG and AAL/TEL for Tetrahydrofuran: USEPA finalized the assessment for tetrahydrofuran in February 2012, and the IRIS system now lists RfD and RfC values different from MassDEP's recommendations listed for drinking water (<http://www.mass.gov/dep/water/dwstand.pdf>) and air (AAL/TEL). GZA recommends MassDEP reviewing the IRIS values and providing recommendations.

NON-AQUEOUS PHASE LIQUID (NAPL) AND SOURCE CONTROL

40.0313(1): The reduction in the 72-hour notification requirement for NAPL from 1/2 inch to 1/8 inch will drag many more sites into the IRA net and would seem to run contrary to the objectives of the streamlining process. We recommend either leaving the 72-hour criterion at 1/2-inch or moving it from the 72-hour notification category to the 120 day section. An additional criterion involving observation of NAPL in an excavation during a UST removal could be added as appropriate.

40.0996(6): We applaud the Department's decision to remove the 1/2-inch UCL criterion. This is consistent with the current science and removes a large impediment to the achievement of Permanent Solutions.

40.1003(5)(a) & 40.1003(5)(b): The current wording of the criteria for Permanent and Temporary Solutions and Source Control implies that active remediation of a NAPL plume is required in all cases even if the criteria for a Permanent Solution exists at the time of notification and assessment. The requirement that all Permanent Solutions with NAPL present require an Activity and Use Limitation (AUL) may be too conservative. NAPL that does not present a risk for current or unrestricted site use (present at a low concentrations, stable, and/or at depths greater than 15 feet below grade, for example), may not require an AUL to be protective of future site use. The LSP should be able to conduct a risk-based determination regarding the need for an AUL.

The wording of parts (a) and (b) along with the subsequent definition of Source Control in (c) is confusing. While part (c) includes a feasibility analysis as part of determining if source elimination/control has been achieved, part (a) and (b) indicate that only a Temporary Solution is possible if a source elimination/control is conducted to the extent feasible.

The option for source "mitigation" has been deleted (item b) and should be restored.

40.1003(5)(c): We recognize the logic in applying LNAPL CSM (LCSM) procedures to the issue of source control for these types of sites (in place of the 1/2-inch UCL criterion). However, it appears that there is no consensus among practitioners regarding the practical application of LCSM principles to the source control question. Some specific guidance is needed to support the implementation of this revision.



40.1003(d) (former): The exemption of defining the downgradient edge of a dissolved plume as a source of oil/hazardous material should be maintained. The new vapor intrusion guidance and draft regulations adequately address vapor intrusion concerns and requirements for assessment/mitigation.

40.1003(5)(c)(4): As currently written, this requirement would preclude achievement of even a Temporary Solution for sites where concentrations of DNAPL constituents exceed 1% of solubility. This is an unacceptable requirement that would result in a non-compliance status for many sites where aggressive remedial action is ongoing. Note that this criterion would translate to concentrations of PCE above 1.5 mg/l resulting in an “uncontrolled source.” For naphthalene at possible coal tar sites, this criterion would be 0.3 mg/l. This requirement for demonstrating source control should be removed or clearly linked to feasibility.

MISCELLANEOUS/GENERAL

40.0045(3)1: If the site is not in a GW-1 area, why would downgradient discharges be required to meet drinking water standards? In some cases, systems have to be augmented to remove non-COC contaminants to meet these discharge criteria even if they are not in a GW-1 area and remove COCs to below background. GZA suggests keeping 1) for GW-1 areas, but if the site is not in a GW-1 area, meet 2).

40.0049(6): The monitoring requirements for remedial air emissions are quite prescriptive and might be better left for a guidance document. Additionally, this section should be revised to clarify that off-gas control systems that are employed on a voluntary basis (e.g. for an SSDS that emits less than 100 pounds of VOCs per year) would not be subject to these prescriptive monitoring requirements. Otherwise, the revisions would discourage voluntary use of off-gas controls.

We commend the Department on the extensive effort that clearly went into the proposed regulation revisions and we appreciate the opportunity to provide comments on the changes.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Charles A. Lindberg'.

Charles A. Lindberg, LSP
Senior Principal