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INDEPENDENT REGULATORY
REVIEW COMMISSION

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September 26, 2000

Via Federal Express

Environmental Quality Board
Rachel Carson Office Building
15th Floor
400 Market Street
Harrisburg, PA 17101-2301

Dear Sir or Madam:

On behalf of BP Exploration & Oil, Inc. ("BP"), Babst, Calland, Clements and Zomnir, P.C. is pleased to submit the enclosed comments to the Environmental Quality Board's proposed amendments to 25 Pa. Code Chapter 245. Should you have any questions or if you would like to meet with BP to discuss these comments, please do not hesitate to contact me.

Very truly yours,

Monica Gambino

Enclosures

cc: Susan Sharp
Alan C. Seese
Edward A. Merric
Charles Pinzone, Esquire
Caryn Barnes
Richard Blackburn
Joseph K. Reinhart, Esquire

COMMENTS ON

THE ENVIRONMENTAL

QUALITY BOARD'S PROPOSED

AMENDMENTS TO 25 PA. CODE 245

Submitted by
BP Exploration & Oil Company

September 26, 2000

I. Introduction

BP Exploration & Oil Inc. ("BP") is pleased to present these comments on the Pennsylvania Environmental Quality Board's ("EQB's") proposed amendments to 25 Pa. Code Chapter 245 (relating to the administration of the Storage Tank and Spill Prevention Act ("Tank Act")). The proposed amendments mainly affect Subchapter D of Chapter 245, relating to the corrective action process for releases from storage tanks and storage tank facilities (the "Corrective Action Process" or "CAP" regulation). BP has identified and provided comments on specific issues raised by the proposed amendments in Section II of these comments. In Section III, BP discusses issues that have not been specifically addressed in the proposed rule.

BP generally supports the EQB's effort to harmonize the CAP regulations with regulations promulgated pursuant to the Land Recycling and Environmental Remediation Standards Act ("Act 2"). BP is performing corrective actions at numerous sites in Pennsylvania and has been active in numerous risk-based remediation efforts. BP has commented on previous Department of Environmental Protection (the "Department" or the "DEP") documents relating to remediation, including the draft Act 2 Technical Guidance Manual. BP incorporates by reference those comments as relevant herein, in particular, Sections 3 and 4. See attached "Comments on the Pennsylvania Department of Environmental Protections December 1997 Draft Act 2 Technical Guidance Manual," submitted by BP and four other entities, dated May 28, 1998. In addition, BP is planning to provide comments on the proposed amendments to the Act 2 regulations in early October 2000.

II. Specific Comments on the Proposed Revisions to the CAP Regulations

A. Selection of Cleanup Levels

The proposed revisions add a new paragraph 26 to establish that the site characterization report should identify the Act 2 remediation standard that has been chosen. Proposed 25 Pa. Code §245.310(a)(26). BP supports this revision to the CAP regulations. It is consistent with §904(c) of Act 2, which recognizes that the Act 2 standards apply to corrective actions under the Tank Act. Moreover, as a practical matter, there is no reason to differentiate tank remediations from other types of remediation. The selection of the remediation standard will allow the remediator to make critical decisions considering the future use of the property and the economics of the remediation. This protocol has been working well at Act 2 cleanup sites and should be extended to responsible parties conducting cleanups of releases from regulated storage tanks.

B. Release Reporting

The EQB is proposing to extend the period in which the owner or operator of storage tanks and storage tanks facilities shall notify the appropriate regional office of the Department of releases from regulated storage tanks. Proposed 25 Pa. Code §245.305. Under the proposal, the owner or operator must notify the

Department as soon as practicable, but no later than twenty-four (24) hours after the confirmation of a reportable release. This proposal reflects a change from the current maximum reportable period of two (2) hours to twenty-four (24) hours. BP supports the extension of the reporting period to twenty-four (24) hours. The EQB's proposal is consistent with Executive Order 1996-1 which sets forth the principle that if federal regulations exist, regulations of the Commonwealth may not exceed federal standards unless justified by a compelling and articulable Pennsylvania interest or required by state law. The federal underground storage tank regulations at 40 CFR Part 280 provide a twenty-four (24) hour maximum reporting period. Therefore, this proposed revision is consistent with federal regulation. In addition, because a remedial action must be initiated immediately, there is no compelling Pennsylvania interest in maintaining the maximum reporting period at two (2) hours.

The proposed revisions to the CAP regulations would also revise the definition of "reportable release" to be consistent with the definition found under the federal regulations. Proposed 25 Pa. Code 245.305. Under the proposal, releases of less than twenty-five (25) gallons of petroleum to the surface of the ground or releases of a hazardous substance to the surface of the ground that are less than their reportable quantities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, are not "reportable releases." As discussed immediately above, this proposed change is consistent with the Governor's mandate under Executive Order 1996-1. The current provisions under the CAP regulations set forth a more stringent and somewhat arbitrary release-reporting scheme. BP supports the EQB's proposed revisions.

C. Ecological Receptors

BP supports the EQB's efforts to harmonize the manner in which ecological receptors are evaluated at regulated tank corrective action sites and the procedures which are set forth under Act 2 for all other remediation sites. Specifically, the EQB is proposing to add new language to §245.310 (regarding site characterization reports) to cross reference §250.311 and §250.402(d) of the Act 2 regulations and to delete existing subparagraphs in §245.310 concerning effects to potential receptors, including, *inter alia*, "fish and wildlife, aquatic life and threatened or endangered species" as well as "sensitive environmental receptors." *See* 25 Pa. Code §§245.310(a)(11), 310 (a)(12). New paragraph 28 requires that, where appropriate given the circumstances of a release, the site characterization report should assess the impacts to "ecological receptors" in accordance with §250.311 or 250.402(d). Proposed 25 Pa. Code §245.311(a)(28). §250.311(a) of the Act 2 regulations clearly defines the "ecological receptors of concern" that should be assessed in determining an appropriate remedy for the site of a chemical release that is protective of the environment. The remaining subsections of §250.311 provide various screening mechanisms for a remediator to use to determine if a more rigorous ecological study is warranted. For instance, in the context of a cleanup to statewide health standards, §250.311(b)(1) of the Act 2 regulations does not require additional ecological assessment where the only

constituents detected on site are "jet fuel, gasoline, kerosene, #2 fuel oil or diesel fuel." In the context of cleanup to a site-specific standard, a remediator may conduct an ecological risk assessment in accordance with ASTM or EPA guidance approved by the DEP. BP supports the proposed revisions to §245.310 because it clarifies the circumstances when ecological receptors must be assessed, identifies the ecological receptors of concern and allows flexibility to the tank owner/operator to demonstrate that the environment is being protected.

D. Conceptual Site Model

Another new element of the site characterization report is a conceptual site model describing the sources of contamination, fate and transport of contaminants and potential receptors. Proposed 25 Pa. Code §245.310(a)(23). BP endorses the use of conceptual site models as consistent with the Act 2 regulations. The use of conceptual site models at storage tank corrective action sites will expedite site characterization.

E. No Duty to Discuss Other Remedial Options

Consistent with the EQB's clarification that the responsible party selects the remediation standard, the proposed regulation deletes the requirement that a description of each remedial action option considered be included in the site characterization report. Proposed 25 Pa. Code §245.310. BP supports this proposed change, as it is consistent with Act 2 and its implementing regulations and will result in a more streamlined site characterization report. Given that the responsible party is authorized under Act 2 to select the remediation standard, the responsible party has discretion to determine the best approach to achieving the standard. The options considered by the remediator are not relevant to the review process.

F. No Requirement for RAP if No Open Exposure Pathway

A new subsection (c) is being proposed to 25 Pa. Code §245.311 which would eliminate the need for a remedial action plan ("RAP"). No RAP will be required where the Act 2 site-specific standard is chosen and no cleanup is required to be proposed or completed because no current or future exposure pathway exists. Proposed 25 Pa. Code §245.311(c). BP supports this addition of new subsection (c) as it is consistent with the procedures for pathway identification and elimination in the Act 2 regulations. See 25 Pa. Code §250.404(c). It is BP's position that releases from regulated storage tanks should be managed in the same manner as other releases managed under Act 2.

G. Site Characterization Reports Serve As Final Reports

1. Where Soil is the Media of Concern

Under §245.310(b), the EQB is proposing to afford the responsible party the opportunity to submit a site characterization report as the final report under Act 2 where soil is the only media of concern and all contaminated soil has been excavated as an interim remedial action. The use of the site characterization report as the final report is limited to those sites where statewide health standards ("SHS") are selected as the remedial standard. BP supports the use of a site characterization report as a final report where soil is the only media of concern,. However, BP is concerned about the type of investigation that would be needed to demonstrate affirmatively that "groundwater is not a media of concern" in order to conclude interim actions and site characterization activities. BP opposes groundwater monitoring obligations for sites where it is unlikely that groundwater has been impacted simply to demonstrate that groundwater is not a media of concern. Under Act 2, a remediator may choose to request a release of liability only for soil and not pursue a release of liability for groundwater. Of course, in such cases the DEP has the prosecutorial discretion to require an assessment of groundwater if circumstances demonstrate that such an investigation is necessary to protect human health and the environment. In order to maintain this approach for regulated tank sites, BP suggests that the proposed regulation be amended to delete the condition that a remediator prove that groundwater is not a media of concern, and insert language which applies this paragraph to sites where soil is the only media of concern.

2. Where Groundwater Is a Media of Concern

BP suggests that the EQB consider additional revisions to §245.310(b) in order to allow a site characterization report to be submitted as a final report where groundwater can be demonstrated to achieve SHS. A remediator of any other Act 2 site is authorized to submit a final report demonstrating attainment of the SHS, rather than submitting a site characterization report as well as a final report. However, the current CAP regulations require a site characterization report to be filed within 180 days of reporting a release to the DEP. A demonstration of attainment for groundwater requires at least four (4) quarters of data, precluding the submission of a final report in 180 days. Section 245.310 (a) authorizes the DEP to allow a remediator an alternative time frame to submit a site characterization report. In order to encourage remediation to SHS's, streamline the reporting procedures for tank sites and harmonize the CAP regulations with the Act 2 regulations, BP urges the EQB to amend the CAP regulations to allow: (a) a site characterization report to serve as a final report for groundwater meeting SHS; and (b) increase the period of time required for submission of the site characterization report from 180 days to one year where a remediator chooses to achieve SHS for groundwater.

H. Use of Act 2 Eco-Screen In-Site Characterization Reports

Proposed §245.310(b)(4) allows the use of site characterization reports as final reports under the conditions discussed above. The proposed regulations set forth the elements of the site characterization report that are required in the final report. One such element is proposed §345.310(b)(4) which requires that the "results of the evaluation of ecological receptors" be included. BP assumes that the EQB is referring to the ecological receptor evaluation conducted in accordance with §250.311 of the Act 2 regulations; however, the proposed rule as written is ambiguous. BP requests that the EQB specifically reference §250.311 in its discussion of the results of the evaluation of ecological receptors in §245.310(b)(4).

I. The Doubling of the Groundwater Monitoring Period for Demonstrations of Attainment

The EQB is proposing to delete §245.312(g) from the final regulations. Subsection (g) required that where groundwater has been impacted and the level of cleanup achieved, the groundwater was to be sampled quarterly for one (1) year to demonstrate attainment. The EQB has suggested that the attainment requirements under Act 2 now supersede those requirements currently in the CAP. The Act regulations require eight quarters of groundwater monitoring, unless otherwise approved by DEP.

BP opposes the EQB's proposal to extend the attainment period to eight quarters. There is nothing in Act 2 nor its implementing regulations that supports the abandonment of four quarters as the general standard of groundwater monitoring under the Tank Act. The proposed regulations under the Tank Act do not reference any studies or analysis to support a doubling of the current groundwater sampling monitoring period which has been used successfully for years in the Commonwealth. Furthermore, other states accept even shorter sampling periods to demonstrate attainment. For example, New Jersey accepts two quarters of sampling to demonstrate attainment of cleanup standards when the results show that the concentrations of constituents of concern ("COCs") are below the state cleanup levels. N.J.A.C. 726E-6.3(e)(i)(1),(2) and (3). BP recommends that the final amendments retain the language allowing for the collection of four quarters of groundwater sampling to demonstrate attainment the COC is at or below the applicable SHS.

J. DEP Approval of Change of Remedy

The proposed amendments to the CAP regulations add new procedures for changing the remedy during the implementation phase. The amendments require that if the responsible party determines that the remedy will not achieve the selected remedial standard, the responsible party must submit a new RAP to the Department for approval. Proposed 25 Pa. Code §245.312(e). BP requests

clarification as to what procedure must be followed should the remediator decide to select a more stringent remedy during the implementation of the approved remedy. For example, suppose because of development pressures, the responsible party decides to abandon a remedy that would meet site specific standards in favor of excavation of all impacted soil. Must the responsible party submit a new RAP to the Department or may the new remedial process proceed without waiting for Department approval? BP believes that under such circumstances, the flexibility of the Act 2 process should be applied to regulated tank cleanups so long as the Act 2 procedures are followed.

III. Comments on Issues Not Addressed in the Proposed Amendments to the CAP

A. Approval Periods for Tank Act Reports

The proposed amendments do not provide the mandatory review times and "deemed approved" provisions of Act 2 for reports submitted as part of regulated storage tank cleanups. Although BP acknowledges that Act 2 does not impose mandatory review times on the Department, BP's experience with the submission of RAPs to the regional offices indicates that a party's corrective actions may be unreasonably and unnecessarily delayed while waiting for a response from the Department. BP urges the Department to take this opportunity to develop a mechanism to streamline the review and approval of RAPs and site characterization reports. This process may include, if necessary and appropriate, a commitment in the final amendments to the CAP regulation to review and respond to such reports within a defined timeframe (e.g., ninety (90) days of DEP's receipt). This is consistent with the timeframe set forth in Act 2 for the review of cleanup plans aimed at sites-specific standards, and it would help to expedite remedial actions at tank sites.

B. The Definition of "Contamination"

The CAP regulations do not define the word "contamination" or the phrase "contaminated soil." Nonetheless, the substantive provisions of the regulations discuss actions to be taken where contaminated soil or contamination exists. Although not defined, it has been understood by the regulated community that the term "contamination" referred to levels of constituents that exceeded the applicable SHS. However, earlier this year, DEP published for comment its draft Safe Fill Policy, which defined contamination as, among other things, the presence of any volatile organic compounds. Because the proposed Safe Fill Policy standards are much more stringent than the Tank Act soil use standards, significant confusion as to the levels of organic substances in soil that represent "contamination" may result and may cause the regulated community to incur significant additional costs in dealing with soils impacted with *de minimis* levels of petroleum. It is BP's position that the EQB should specify in the amendments to the CAP regulations that "contamination" refers to the presence of constituents exceeding the applicable Act 2 SHS levels.

C. Release Reporting

The proposed amendments revise the quantity of a release that requires reporting to the Department. Under the current regulation, a release of less than 25 gallons of petroleum to a containment area around an above ground tank or a release of less than 5 gallons of petroleum to an artificial surface are not included within the definition of "reportable release" provided such releases are under the control of the owner, completely contained and recovered immediately. The proposed amendment deletes these exclusions and requires reporting for any release of petroleum of 25 gallons or more *to the ground.* Proposed 25 Pa. Code § 245.1 (emphasis added). The proposed amendments do not define the phrase "to the ground." Furthermore, it is unclear whether a release of greater than 25 gallons of petroleum that is completely contained and under the control of the owner and that occurs to an artificial surface is reportable. The Department may want to clarify that a release report is required for all releases of 25 gallons or greater regardless of whether the release is contained or the release is to an artificial surface.

D. Definition of "Free Product"

"Free product" is defined under the proposed amendments as "a regulated substance that is present as a separate phase liquid; that is, liquid not dissolved in water." 25 Pa. Code §245.1. The EQB has not excluded from the definition any *de minimis* amounts of free product. Because of the nature of separate phase liquid, it may be possible to encounter *de minimis* amounts, especially associated with groundwater. Moreover, the accuracy of current methods being utilized to detect free product is limited (e.g., the Flexi-Dip Environmental Engineering Tape made by MMC International Corporation is only accurate to +/- $1/8^{th}$ inch). Because of the limitations of the technology available, BP recommends that the EQB establish a *de minimis* level of one-eighth (1/8) inch or less under the definition of "free product."

E. Procedures in Cases Where No Future Exposure Pathways Exist

Under proposed §245.311(c), the EQB is not requiring a RAP when the Act 2 site-specific standard is chosen and no current or future exposure pathways exist. The proposed amendments do not address the need for a RAP when the SHS is chosen and no current or future exposure pathways exist. In such a case, it is unclear whether a RAP will be required. Consistent with the approach taken under the site-specific standard, BP believes that when the SHS is selected, the EQB should only require a site characterization report demonstrating that no current or future exposure pathways exist. BP is requesting that the EQB provide clarification on this point in the final amendments to the CAP regulations.

F. Clarification of RAP Disapproval

Under proposed §245.311(b), the regulations discuss what the Department may do following submission of a completed RAP. One of the options available to the Department is to review and disapprove the RAP or require the responsible party

to undertake other tasks or modifications. Another option is to deny the RAP and prepare a new RAP or perform the remedial action in whole or in part. The regulations do not specify under what circumstances the Department can deny the RAP. BP is concerned that there are no standards for denial. As a result, the Department could, for example, reject RAPs that propose to attain Act 2 site-specific standards in favor of "clean closure." BP proposes that the RAP should only be rejected when a critical element specified in §245.311(a) is missing or deficient, and only after an opportunity is provided to the remediator to cure the problem. BP requests that the final amendments to the CAP regulations clarify the circumstances under which a RAP can be denied and prohibit the rejection of RAPs on the basis of remediation standard selected.

IV. Conclusions

BP has extensive experience with risk-based decision-making at petroleum-impacted sites. BP's experience involves cleanups under both the Act 2 program and under the tank program. The Act 2 program has created significant incentives for responsible parties in Pennsylvania to clean up impacted sites and has resulted in more expedient and efficient cleanups. The EQB must take this opportunity to harmonize the Act 2 program with the tank program so that the benefits of Act 2 may be realized by responsible parties under the tank program as well. BP encourages future discussions with the Department to address the issues raised in these comments and to evaluate other methods to coordinate these programs.

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COMMENTS ON THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S DECEMBER 1997 DRAFT ACT 2 TECHNICAL GUIDANCE MANUAL

Submitted by

Beazer East, Inc.
BP Oil Company
Duquesne Light Company
Pennsylvania Electric Association
USX Corporation

May 28, 1998

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June 23, 1998

James M. Seif, Secretary
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Harrisburg, Pennsylvania 17101-2301

RE: Comments on Act 2 Guidance Manual

Dear Jim:

As a follow up to our telephone conversation of last week, this note is just a reminder that the client group that our firm represents with respect to the comments on the Act 2 Guidance Manual is interested in meeting with Dave Hess, Terry Bossert and Denise Chamberlain in Harrisburg as soon as the meeting can be arranged. Thank you for agreeing to make an effort to organize the meeting. An additional copy of the comments by the client group is attached per your request. Thanks again, Jim, for your interest and I hope you can find the time to participate in the meeting as well.

Sincerely yours,

Dean

Dean A. Calland

DAC/tlf

cc: Donald C. Bluedorn II, Esq.
Kevin J. Garber, Esq.
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EXECUTIVE SUMMARY

Beazer East, Inc., BP Oil Company, Duquesne Light Company, Pennsylvania Electric Association, and USX Corporation (the "Commenters") support the Department of Environmental Protection's efforts to develop a guidance manual to help implement the Pennsylvania Land Recycling and Environmental Remediation Standards Act, 35 P.S. §6026.101, et seq. ("Act 2"). The Commenters believe that the December 1997 draft Technical Guidance Manual ("Manual") generally promotes the reuse of industrial properties and helps guide cleanups through the Act 2 process to obtain liability protection as provided in the statute. However, the Commenters have found several issues on which the Manual is not as helpful as it could be and on which the Manual is inconsistent with Act 2 and the regulations. The Commenters' principal concerns are summarized below. The Commenters have prepared specific recommendations to the Manual which they urge the Department to adopt when it finalizes the Manual.

Site Characterization - Characterizing a site is the most crucial part of the Act 2 process because it defines the precise area of a property and the regulated substances for which cleanup liability protection is sought. However, the Manual implies that the Department, rather than the remediator, controls the process and suggests that the Department may deny a Notice of Intent to Remediate if the NIR does not address the entire property or that the Department may disapprove a cleanup if all media on the entire property are not characterized. This implication contradicts the voluntary nature of the Act 2 program in which the remediator may choose the regulated substance(s), media and area of the property for which he wants cleanup liability protection. The Manual as presently written may drive the Act 2 process to a "command and control" regulatory program which will seriously undermine the intent of the Act 2 statute. The Commenters offer specific recommendations on these issues.

Solid Waste Management Act Interface - The Manual does not adequately address the interface between Act 2 and the Pennsylvania Solid Waste Management Act. The Commenters urge the Department to revise the Manual to allow structural fill (such as steel slag, fly ash, bottom ash, and similar materials) to be managed as Act 2 materials rather than as solid waste, and to allow, as a matter of policy, a remediator to move soil within a cleanup area during an Act 2 cleanup without being considered to be a generator of a regulated solid waste. The Department should also seek a memorandum of agreement with U.S. EPA Region III outlining the circumstances under which the Act 2 cleanup standards and liability protection can be used in federal cleanup programs such as Resource Conservation and Recovery Act corrective action or Superfund cleanups.

Underground Storage Tank Cleanups - The Commenters support the Department's acknowledgment in the Manual that a person conducting a cleanup of a storage tank regulated under the Storage Tank and Spill Prevention Act ("Tank Act") may select from any of the remediation standards available under Act 2. To that end, the Manual should be modified to

confirm that a remediator of storage tanks need not submit a Site Characterization Report or Remedial Action Plan under the Tank Act until sufficient data has been collected to develop a background standard or site specific standard under Act 2. The Commenters urge the Department to provide the same timely agency response to cleanup plans and reports submitted under the Tank Act as are presently afforded to all other types of cleanups under Act 2. Based upon a close review of the TGM, as well as the Department's Guidance Manual for Closure of Underground Storage Tank Systems, the Commenters have identified below specific concerns about a remediator's ability to use the petroleum "short list" as well as the implications associated with sampling for a different list of regulated substances than those referenced in the short list. Finally, the Commenters request that the Department confirm that a party demonstrating a successful cleanup under the Tank Act continues to be eligible to receive a "No Further Action" letter even if the remediator chooses not to comply with all of the procedural requirements necessary under Act 2 to obtain a release of liability from the Department.

Separate Phase Liquids - The Manual does not address how to demonstrate attainment when separate phase liquids are present. The Commenters urge the Department to revise the Manual to confirm that the evaluation of separate phase liquids ("SPLs") is a risk-based analysis and that the mere presence of SPLs is not fatal to the demonstration of attainment with any Act 2 standard. An SPL thickness of 0.01 foot or less should only be used to denote the presence of a measurable layer of free floating product. The Manual should provide that attainment with an Act 2 standard can be demonstrated even if SPLs are present so long as there are no risk exposure pathways and a fate and transport analysis shows that SPLs will not migrate off the property in concentrations in excess of the chosen Act 2 standards.

Ecological Risk Assessment - The eco-risk assessment guidance should be revised to confirm that a remediator's obligations under Act 2 are to assess potential impacts of releases of regulated substances to a defined class of ecological receptors (i.e., threatened or endangered species, exceptional value wetlands, species of concern or habitats of concern). If there are none, an ecological assessment of plants and/or animals which are not defined ecological receptors under the Act 2 regulations is unnecessary. The Manual should specifically state that any of the exemptions from the eco-risk analysis for statewide health standards (i.e., petroleum products, de minimis affected area, or no exposure pathway) may be used to end the analysis; the Manual currently suggests that all three exemptions must be met. The Manual also should provide a method to subtract out background constituents of potential ecological concern which are not related to the release of regulated substances being characterized.

Clean Streams Law Interface - The Commenters support the draft Manual insofar as it appears to recognize that it would be inappropriate to impose one set of sampling standards for remediators to use to confirm that regulated substances in groundwater are not causing exceedances of in-stream surface water quality criteria. Rivers and streams vary considerably in terms of flow, depth, use, water quality, drainage area, and many other ways, such that it is unworkable to describe a uniform sampling program for all circumstances. However, the Manual should be amended to confirm that, due to the unique nature of streams, the remediator

must have the flexibility to develop case specific sampling procedures consistent with an Act 2 remediation. The Commenters support the "90%/2x" rule in the Manual for determining compliance with surface water quality criteria but caution the Department not to require the same level of sampling which must be done to demonstrate attainment with Act 2 cleanup standards in groundwater.

Act 2 Forms - Some of the Department's present Act 2 forms, including the Notice of Intent to Remediate form and Act 2 approval letter, are confusing or unclear. The Commenters have attached suggested revised forms.

TABLE OF CONTENTS

I. INTRODUCTION

Each of the Commenters has a substantial presence in Pennsylvania and each has a keen interest in Act 2 cleanups. Each of the Commenters has been involved with properties which either are in the Act 2 process or have gone through the Act 2 process already. Each of the Commenters support the Ridge Administration's efforts to make the Act 2 program successful and believe that the final Manual will be a key component of the program.

The Commenters have had different experiences with different Department regional offices on similar Act 2 issues. Site characterization and the Act 2 - Solid Waste Management Act interface are two areas where the regional offices have differed most significantly. The Commenters recognize that the draft Manual only recently became available and anticipate that the Manual will promote uniformity throughout the state when it is finalized. However, the Commenters are concerned that the draft Manual is so vague on some important matters that the Department's position on an Act 2 issue may depend on the regional office reviewing the matter. The Commenters recommend specific changes to help standardize the program, hopefully without eliminating a regional office's ability to answer specific questions on a case-by-case basis.

The Commenters also want to ensure that the final Manual is as comprehensive as possible because the Act 2 regulations defer several key issues to the Act 2 Manual, the Underground Storage Tank Technical Manual, and other guidance manuals. These issues include sampling and analysis for metals in groundwater (25 Pa. Code §250.10(c) and (d)), risk assessment procedures (§250.602), and attainment demonstrations for regulated tank sites (§250.707). The Commenters want to minimize the disputes which might arise if the Act 2 Manual is not comprehensive or does not answer typical questions which arise during site characterization and cleanup.

The Commenters have identified seven principal areas of concern in the draft Manual: site characterization, Solid Waste Management Act issues, underground storage tank issues, separate phase liquids, ecological risk assessment, Clean Streams Law issues, and the forms used to implement the Act 2 process. Other specific concerns, including, e.g., practical quantification limits, establishing background conditions, and conceptual site models, are grouped together in an eighth category. The comments in the text of this document summarize the Commenters' concerns and recommended changes. We have then enclosed as attachments copies of pages from the draft Manual or other documents which provide the Commenters' recommended language changes.

II. SPECIFIC COMMENTS ON THE TECHNICAL GUIDANCE MANUAL

1. Site Characterization

The Commenters are concerned that the Manual does not provide appropriate guidance on how to characterize a site for purposes of the Act 2 process and final report. There are several places throughout the Manual (identified below) which can be read to suggest that the Department may require extensive site characterization, even beyond that which a remediator proposes as part of a voluntary cleanup, as a condition to approving a Notice of Intent to Remediate or a final report. This is obviously at odds with the statute and regulations which establish a voluntary program under which a remediator may choose as broad or as narrow of an investigation and cleanup liability release as desired. These references can also be read to suggest that the Department may disapprove a final report for inadequate site characterization rather than deny a final report which fails to demonstrate attainment with the remediator's chosen cleanup standard(s). If these provisions of the Manual are not corrected, the Act 2 program could fail because of the perception that it has reverted to a command and control regulatory program rather than the voluntary program established by the Ridge Administration to promote the cleanup of contaminated sites.

The Commenters request the Department to amend the draft Manual on the following points:

Scope of Site Characterization - Several pages of the Manual (*e.g.*, pages I-3, I-6, II-1, II-42, II-44 and II-55) suggest that the Department may require a site characterization to identify specific regulated substances in all media on a property (i.e., soil, groundwater, surface water and air). These pages are inconsistent with the Act 2 statute itself. These pages are also inconsistent with the Act 2 approval letters which should (as discussed below) convey an Act 2 release for the regulated substances in the identified media which meet the chosen cleanup standards. The Commenters urge the Department to recognize that the phrase "site characterization" as used in the Manual should be interpreted to mean characterization of the source of the release. The Commenters request that the Department revise the Manual as shown on Appendix A attached to this comment letter.

Unaffected Media - No Further Action ("NFA") determinations should be available from the Department where soil or groundwater have been characterized and found to be unaffected by a release of a regulated substance. The Commenters request that the Department revise the Manual to specifically state that NFA determinations may be obtained in these circumstances. An example of these circumstances relates to the closure of underground storage tank systems, as set forth in Section II.3. below.

Definition of "Site" - The Manual can be read to suggest that an entire facility or property must be characterized to obtain an Act 2 release (see pages I-3, I-6). The Manual confuses the concept of "source characterization" with "site characterization." The statute clearly

contemplates that a remediator define the source of a release of regulated substances in order to be eligible for cleanup liability protection. Act 2 does not require a remediator to investigate an entire site for other potential source areas where a release of liability is not being sought. A release of regulated substances may only have occurred on one part of the property and only to one affected media and so there is no reason to characterize or request liability protection for an entire site. The Department should not deny an Act 2 final report which characterizes and seeks liability protection for a specific release of regulated substances rather than the entire property. The Commenters request the Department to revise the Manual as shown in Appendix B.

Practical Quantification Limits - Although not stated in the Manual, Department representatives have stated in Act 2 workshops that a remediator will be required to meet Practical Quantification Limits ("PQLs") in order to define the vertical and horizontal extent of a release of a regulated substance. Department representatives have stated that a site characterization or remedial investigation under Act 2 will not be approved unless and until a remediator is able to delineate the outer boundary of a source area by soil sampling which reveals no regulated substance concentrations in excess of the applicable PQL. The Commenters oppose the notion that in all cases a site characterization or remedial investigation is incomplete unless the vertical and horizontal extent of a release of a regulated substance is defined by soil sampling at or below PQLs. Such a policy could require an excessive number of samples at a significant expense. Because PQLs are not risk based and may be much lower than the cleanup standards selected under Act 2, a remediator should not be required to incur significant expense to delineate regulated substance concentration to PQLs where other analytical tools will suffice when MSCs or risk-based standards are higher than PQLs. The Manual should be revised to acknowledge that a remediator is free under Act 2 to define the source area by reference to information which demonstrates the remediator's knowledge of the area of the release or to fate and transport analyses .

Site Characterization Sampling Guidance - The Manual offers little practical guidance on how to establish soil sampling grids, space groundwater wells and obtain similar data, presumably because the Department recognizes that these items must be addressed on a case-by-case basis. The Commenters support the Manual on the need to allow for a flexible approach. However, the Commenters caution the Department that, notwithstanding statements to the contrary by regional personnel, the sampling requirements needed to demonstrate attainment with an Act 2 standard (for example, eight quarters of groundwater data or 12 sample points for soil volumes up to 3,000 cubic yards as stated in §250.703) are attainment criteria only. They are not to be used for site characterization purposes. Site characterization must be developed using best professional judgment without necessarily setting a definite number of sampling requirements such as some definite number of soil samples per acre. The Commenters offer in Appendix C a list of considerations which the Department may choose to adopt as a new Attachment M in the TGM to address these concerns. The Commenters also request the Department to amend pages I-6 and II-48 as shown in Appendix C.

Notice of Intent to Remediate - The Manual suggests that separate Notice of Intent to Remediate ("NIR") forms may be necessary for individual areas of contamination (pages I-3, I-9), that site characterization must be complete before an NIR is submitted (page I-9), and that the Department may reject an NIR if it does not address all media known or suspected to be contaminated (pages I-10, II-20). These statements are inconsistent with the regulations and the goal of the Act 2 program. The Department should revise the Manual to state that a remediator may submit an NIR before site characterization begins, that the NIR will address the areas and media which the remediator chooses to address, and that the Department may not reject an NIR form unless it is not properly completed. The Commenters proposed changes are shown in Appendix D. These changes are intended to clarify the straightforward nature of the Act 2 process under which a submitted NIR form begins the process, a final report demonstrates attainment with the chosen cleanup standards for the media investigated, and the Department issues an Act 2 approval letter which conveys cleanup liability protection only for the regulated substances in the media which meet cleanup standards. These changes also highlight that a remediator may withdraw from a voluntary Act 2 process if it so decides and the Department may not compel the remediator to continue an investigation or remediation under Act 2.

2. <u>Relationship to the Solid Waste Management Act</u>

Pages III-1 to III-2 of the Manual essentially repeat section 250.9 of the Act 2 regulations without offering any specific guidance on significant points associated with Act 2 cleanups. This section of the Manual also distinguishes between "waste" and "releases of regulated substances" at disposal areas which were not used after 1980. The Manual does not address the question of how to demonstrate compliance for structural fill materials (such as steel slags, bottom ash, etc.) or whether a remediator will be deemed to have "generated" solid waste regulated under the Solid Waste Management Act as a result of the simple on-site movement of materials during an Act 2 remediation. These shortcomings will hinder Act 2 cleanups and potentially involve the Department and remediators in unnecessary disputes over site characterizations and the demonstration of compliance.

The Commenters believe that many of these issues can be addressed by revising pages II-9, III-1 and III-2, and by adding a "logic flow diagram" concept to Section "A" on page III-1 of the Manual, as shown on Appendix E. In concept, the Department and the remediator should ask, after a site is characterized, whether the remediation addresses the spill or release of a regulated substance. If it does, remediation may proceed according to Act 2 without the imposition of burdensome waste management requirements under the Solid Waste Management Act. If the remediation addresses conditions which are not associated with a spill or release of a regulated substance, the Department and remediator should first ask whether the material is "structural fill" <u>before</u> asking whether/when disposal of a waste occurred.

The Commenters urge the Department to recognize a class of materials known as " structural fill" which is and has been used throughout Pennsylvania at plant sites or other

areas to facilitate industrial and commercial activity. Examples of "structural fill" include steel slag, fly ash and bottom ash from coal fired boilers, furnace brick, used asphalt and construction rubble such as concrete and block. Making the Act 2 program available for management of structural fill, without application of cumbersome and expensive Solid Waste Management Act regulatory standards, will encourage remediators to undertake Act 2 cleanups at properties at which structural fill exists. The Manual should allow structural fill to be handled differently than intentionally disposed waste materials. The Commenters urge the Department to take the following steps to address this issue:

(1) Finalize the Department's draft clean fill policy, incorporate it into the Act 2 Manual, and have it provide that soils which do not contain regulated substances at greater than 10 percent of the relevant statewide health standard for residential soils be used on and off site without restriction.

(2) Amend the residual and municipal waste regulations to acknowledge that management of nonhazardous material classified as "structural fill" (*i.e.*, steel slag, foundry sand, fly ash, bottom ash, used asphalt, brick and block) historically deposited to bring an area to grade, which does not meet the clean fill criteria for unrestricted use, is not subject to the SWMA so long as its use is restricted to on-site structural fill or to the Act 2 standard achieved.

(3) Develop an approved "off-site use policy" under which soils from an Act 2 remedial site which meet the residential statewide health standards may be used for soil at residential settings and that soils from an Act 2 area which meet non-residential statewide health standards may be used at an industrial setting.

(4) Specifically state in the Act 2 Manual that remediation soils may be moved within an Act 2 cleanup site without that constituting the generation of waste; this is analogous to EPA's corrective action management unit concept.

(5) Provide language in the Manual confirming that management of materials deposited in a solid waste facility prior to 1980, which are moved within an Act 2 site, does not trigger waste management obligations so long as its use is restricted to the Act 2 standard achieved.

If the Act 2 Manual and regulations are revised as above, materials which meet the concept of "structural fill" would be addressed under Act 2 and the remediator would not be required to close structural fill areas pursuant to the Solid Waste Management Act. Materials which do not qualify as "structural fill" as set forth above would be generally evaluated as provided in Section 250.9 of the regulations.

Corrective Action Sites. The Manual does not address the circumstances in which a facility undergoing federal corrective action pursuant to the Resource Conservation and Recovery Act may use the Act 2 standards and procedures to obtain cleanup liability protection from the Commonwealth. The Commenters recognize that RCRA corrective action is a matter of federal law, but the Department should make every effort to reach a memorandum of agreement with EPA under which the Act 2 process can be dovetailed into RCRA corrective action. Alternatively, the Department should request authorization to manage the corrective action program under the Resource Conservation and Recovery Act. A third option would be for the Department to adopt a policy that a RCRA, Superfund or cleanup under another federal programs will merit Act 2 liability protection. Until these measures are taken, a remediator is placed in the untenable position of potentially having to comply with two sets of conflicting remediation standards.

3. Underground Storage Tank Cleanups

The Manual provides welcome confirmation that a person conducting a cleanup of a release from a regulated storage tank has the option of choosing from among the Act 2 standards (p. III-7). This position is consistent with section 904(c) of Act 2, which recognizes that the Act 2 standards apply to corrective actions under the Storage Tank and Spill Prevention Act ("Tank Act"). However, as set forth below, the Manual does not provide clear and consistent guidance on a number of important issues involving corrective action for regulated storage tanks.

Schedule for Submission and Review of Reports

The Manual provides that the mandatory review times and "deemed approved" provisions of Act 2 do not apply to reports submitted to the Department concerning regulated storage tank cleanups. Although the Commenters acknowledge that Act 2 does not impose mandatory review times on the Department, our experience with the submission of Remedial Action Plans to the regional offices indicates that a party may wait for months or even years for a response from the Department. The Commenters urge the Department to take this opportunity to expedite the review and approval of Remedial Action Plans by committing in the Manual to review and respond to such Plans within 90 days of receipt. This is consistent with the time frames set forth in Act 2 for the review of cleanup plans aimed at site specific standards.

The Manual notes that "(w)here Act 2 and the substantive CAP regulations are in conflict, the Act 2 requirements will apply" (p. III-6). Although it is unclear which specific corrective action requirements of the Tank Act are referenced, the Commenters do not believe that the Tank Act and Act 2 are in conflict. As noted previously, the Manual correctly notes that all Act 2 cleanup standards are available to corrective actions at a tank site. Section 904(c) of Act 2 acknowledges that the Tank Act procedures and reviews continue to apply. The Department should identify more clearly in the Manual what "substantive CAP regulations" from the Tank Act the Department considers to conflict with Act 2. If there are regulatory

provisions under the Tank Act which indeed conflict with Act 2, the proper remedy would be to amend the Tank Act regulations to conform with the Act 2 regulations.

The Commenters oppose the statement in the Manual (p. III-7) which suggests that Act 2 requires eight quarters of groundwater monitoring rather than the four quarters which are currently required under the Tank Act. Nothing in Act 2 or its regulations supports the abandonment of four quarters as the general standard for groundwater monitoring under the Tank Act. However, it is possible that a remediator may need more than four quarters to demonstrate attainment of an Act 2 standard. Consequently, the Commenters suggest that the Manual clarify that a person performing corrective action at a tank site may delay the submission of a Site Characterization Report and/or the submission (or implementation) of a Remedial Action Plan until sufficient data has been collected to support the chosen Act 2 cleanup standard.

Short List of Petroleum Products

Attachment C of the Manual provides that a "short list" of substances commonly found in petroleum may be sampled in lieu of analyzing for all regulated substances, and the short list will be accepted for Act 2 attainment purposes. The Manual further provides, however, that "there must be no free liquids left in the soil based upon visual inspection and the soil should not create any odor nuisance." In addition, the use of the short list is conditioned upon a finding that there is "no measurable free floating product (0.01 feet) at the point of compliance." (The Commenters address the free product issue at Section II.4. below.)

The Commenters object to the references in the Manual that there must be no free liquids left in soil based upon visual inspection and that there should be no odor nuisance. Neither of these criteria are able to be measured objectively and are likely to result in confusion and in the denial of cleanup reports which otherwise meet the Act 2 criteria. Existing standards under the Tank Act, as well as the risk-based standards under Act 2, are adequate to ensure that human health and the environment will be protected. The conditions noted on p. C-5 should be eliminated.

The Manual does not clearly address the implications associated with sampling for constituents not identified on the short list. Department personnel in the regions have provided conflicting comments about the impact of sampling which demonstrates attainment of the short list, but which shows that regulated substances other than those on the short list exceed statewide standards. The Commenters suggest that the Manual confirm that a person demonstrating attainment of the short list need not undertake additional actions to address other unlisted substances and is eligible for a release of liability for those substances on the short list. This approach is consistent with Act 2 insofar as the remediator is able to choose the scope of his release of liability.

The Manual (p. II-31) also refers to "light petroleum products" in the context of ecological screening and indicates that if other substances are present, then the screening process continues. The term "light petroleum products" is not defined in the Manual. It is unclear if the Department intended to define the term to include all of the substances noted in the petroleum "short list." The Manual should be amended to clarify this point.

No Further Action Letter - As noted above, the Commenters support the continued availability of NFA letters. In many instances, a remediator may wish to rely upon historic data, including total petroleum hydrocarbon measurements previously accepted by the Department, to demonstrate that a release of petroleum at a tank site has been adequately addressed. It is not always feasible or desirable to return to the site and collect the additional analytical data necessary to demonstrate compliance with the Act 2 standards for each of the regulated substances which may have been contained in the petroleum release. Resampling becomes particularly burdensome because analytical methods change over time. In order to allow parties to expeditiously resolve their obligations under the Tank Act, the Department should continue to issue NFA letters upon request, even though a party may not have sufficient data to obtain a release of liability under Act 2 or in cases where a party simply chooses not to pursue an Act 2 release of liability. (A form of NFA letter is attached as Appendix F.)

4. **Management of Separate Phase Liquids**

The Manual offers little guidance on how to demonstrate attainment with an Act 2 cleanup standard when separate phase liquids ("SPLs") are present at a site. Attachment C of the Manual states (at p. C-5) that "there must be no measurable free floating product (0.01 ft) at the point of compliance" but it is not clear whether this means that SPLs must always be removed to 0.01 foot to demonstrate attainment with any Act 2 standard or if this represents the Department's position concerning cleanups at regulated tank sites. The Manual's example in "Scenario #2" of the statewide health standards section (at p. II-24) refers to SPLs, but it does not state whether or to what extent SPLs must be removed to meet statewide health standards. Because Act 2 itself and the regulations are silent concerning SPLs, and because the Manual does not address SPLs to any meaningful degree, it is and will continue to be difficult for remediators to conduct an Act 2 cleanup where SPLs are present.

The Commenters believe the Department can address this problem by amending the Manual to specifically recognize the following principles. First, the Manual should state that the evaluation of SPLs is risk-based, just as is the evaluation of any other regulated substance which has been released into the environment. Neither Act 2 nor the regulations requires a remediator to remove SPLs to demonstrate attainment with the chosen Act 2 cleanup standard. Therefore, SPLs do not necessarily have to be removed unless they present an unacceptable risk to human health or the environment.

Second, a SPL thickness of 0.01 foot, as referenced in the Manual, should only be used to denote the presence of SPL. If regulated substances are present in a floating layer

with a thickness of 0.01 foot or less, they should not be considered to be measurable free floating product or SPL under Act 2 or the Tank Act. Any sheen or SPLs which may be observed in a groundwater monitoring well at the point of compliance should not defeat an attainment demonstration so long as the concentrations do not pose an unacceptable risk under Act 2.

Third, the Manual should expressly state that the Act 2 standards can be met, even if SPLs are present at greater than 0.01 foot, if the SPLs are not migrating and attainment with the chosen cleanup standard is demonstrated. As examples, a background standard can be met if the remediator shows that SPLs on the property result from an upgradient release or represent area-wide contamination. A site specific standard can be met even though SPLs are present in groundwater if the remediator shows that exposure pathways are not present or can be eliminated pursuant to section 304(j) of the statute. In neither of these cases is it necessary to remove SPLs to demonstrate attainment. The Manual should be revised to state that a remediator need not remove SPLs in order to demonstrate attainment with either the background or site specific standards where the remediator shows either that SPLs are present from an off-site source (the background standard) or that there are no exposure pathways (the site specific standard) and the remediator shows, through a fate and transport analysis, that there will be no migration of SPLs or regulated substances associated with the SPLs off site in excess of the chosen Act 2 standard.

Fourth, when the SPL layer does not contain any regulated substances and does not pose a risk to health or the environment, the site should be granted a release of liability without SPL removal. In the absence of regulated substances and any risk, the media affected by the SPL release would meet either statewide health or site-specific standards. When the SPLs are petroleum products, the remediator should only be required to sample and demonstrate attainment for the "short list" of petroleum constituents identified in Attachment C of the Manual.

The Manual should also provide a more precise definition of "zone of groundwater saturation."The Manual inconsistently uses the terms "saturated soils" (p. II-23) and "saturated zone" (p. II-46). The Commenters recommend that the Manual define "zone of groundwater saturation" as materials below the water table, which is synonymous with the defined hydrogeologic term "saturated zone" (Freeze and Cherry, 1979).

The evaluation of SPLs poses some practical problems. It is often not possible to recognize light SPLs (*i.e.*, LNAPLs) while drilling, so their presence may not be identified until the boring has been advanced past the water table, or even until the well is installed. In such cases, redrilling would be necessary to procure a sample of the soil in contact with the LNAPL. We suggest that evaluation of groundwater data be allowed in lieu of the soils data in such circumstances. If the water does not indicate the migration of regulated substances, there should be no reason to assess the soil further.

5. Ecological Risk Assessment

The Commenters believe that the Technical Guidance Manual's discussion on ecological risk assessments does not precisely follow the requirements of section 250.311 for statewide health standards. The Commenters have also identified deficiencies in Appendix E relating to site specific ecological risk assessment procedures. The Commenters hope to avoid problems implementing the eco-risk assessment procedures and therefore recommend that the Department make the following changes:

Statewide Health Standards, Ecological Screening Procedure

The introductory text to ecological screening on page II-29 of the Manual is misleading because it implies that a remediator must evaluate plants and animals which are not within the class of ecological receptors covered by Act 2. Section 250.311 of the regulations requires an eco-risk assessment only when "ecological receptors" (i.e., threatened or endangered species, exceptional value wetlands, habitats of concern or species of concern) are impacted by releases of regulated substances. Each of these classes of receptors are defined in the regulations to include only the most sensitive plants and animals. Statements in the Manual that endangered or threatened species and exceptional value wetlands are protected regardless of the percentage of change in their abundance or extent of diversity, as stated in the second paragraph on page II-29 of the Manual implies that only organisms which do not meet the definition of ecological receptors (e.g., non-threatened species) are subject to the screening process in section 250.311(c). The Commenters suggest that the Manual be amended to confirm that Act 2 does not require an ecological risk assessment for plants and animals which do not meet the regulatory criteria for ecological receptors. In addition, the fourth paragraph on this page could be read to suggest that, contrary to the regulations, all, rather than one, of the regulatory exemptions (petroleum products, affected area, or pathway elimination) must be met to avoid an ecological evaluation. The Commenters ask the Department to revise page II-29 as shown on Appendix G.

The Manual does not provide a way to subtract out the presence of CPECs at the site which did not result from the release being studied. This is a very important matter because many of the CPECs, including iron, copper, barium, manganese and zinc, are widely distributed in Pennsylvania native soils, unrelated to a release from operations on a site. The Commenters propose that pages II-32 , paragraph (d), and II-37 be revised as shown on Appendix G to account for naturally occurring background concentrations of CPECs or background CPECs otherwise from a source other than the Act 2 site.

Site Specific Standards, Ecological Risk Assessment

The second sentence of the second paragraph on page II-61 of the Manual (which states "a pathway is complete even if the current ecological receptors are not present as a result of the contamination") is inconsistent with accepted risk assessment practices and the

regulations. The Commenters assume that this statement refers to a situation where site contamination prevents the presence of receptors that the existing habitat on and around the site would be expected to support absent the contamination. The Manual should not suggest that an exposure pathway exists if receptors theoretically could be present and are not where the release of regulated substances is not responsible for the absence of those receptors. The Department should revise page II-61 are shown on Appendix G.

6. **Relationship to the Clean Streams Law**

Sections 250.309 and 250.406 of the Act 2 regulations provide that a remediator must "determine compliance" with surface water quality criteria resulting from a diffuse groundwater discharge using mass balance techniques followed by surface water sampling if necessary. The regulations then state that further remedial action is necessary if modeling and sampling indicate that the surface water quality standards are not being met. The regulations do not describe how to sample surface water nor how to "determine compliance" with water quality criteria in 25 Pa. Code Chapters 16 and 93.

The draft Manual states (at p. III-3) that stream sampling should be conducted at nodes on a stream transect above and below the diffuse groundwater discharge. Due to the unique nature of streams, it would be extremely difficult to propose sampling procedures in the Manual which would fit most cases. The Commenters suggest that the Manual be amended to note expressly that precise sampling locations and the appropriate number of horizontal and vertical surface water samples for a particular stream must be developed by the remediator on a case by case basis. Nevertheless, the Department may elect to include general advice concerning practices to avoid in stream sampling. For example, surface water samples should not be taken within 72 hours of a rainfall event and the remediator should not disturb bottom sediments during sample collection to avoid false positive results.

For purposes of "determining compliance" with water quality criteria as stated in the regulations, the Commenters generally support the 90%/2x rule set forth on Page III-3 of the Manual. However, the Manual should specifically state that, unlike groundwater monitoring, eight quarters of sampling data is not required to "demonstrate compliance" with water quality criteria. Rather, the data should be extrapolated to concentrations at design flow conditions, as stated in the regulations, and if the water quality criteria are met, the remediator will have demonstrated compliance with surface water quality criteria. When using a background standard, if the upstream transect is higher than the Chapters 16 or 93 standards, the 90%/2x rule is applied to the surface water background for comparison.

7. Act 2 Forms

In order to expedite the Act 2 process and eliminate potential confusion between the Department's regional offices, the Commenters have enclosed a revised Act 2 Notice of Intent to Remediate form, a revised Act 2 approval letter, and a new final report statewide health standard checklist for incorporation in the Manual. These forms are attached in Appendix H.

8. Other Comments

The remainder of the Commenters' concerns address the following areas of the draft Manual:

A. Practical Quantification Limits - Attachment D of Section V of the Manual, labeled Practical Quantification Limits, identifies analytical methodologies for establishing quantification limits for organic and inorganic regulated substances in groundwater and soils. The Commenters support the Department's efforts to provide guidance in the Manual concerning acceptable analytical methods for Act 2 remediations within the parameters set forth in the Act 2 regulations (Section 250.4). However, the Manual is likely to generate confusion because, as noted in the regulations, PQLs for the same compound will vary from method to method. It should also be noted that PQLs are media or matrix specific. The PQLs published in SW-846 are estimates for typical sample matrices but actual PQLs for a given sample could be higher. Advances in analytical chemistry could result in the development of lower PQLs associated with a certain method and parameter. It is unclear if and when the Manual will be updated to recognize the latest method and what effect a change will have to a remediation already in progress.

Furthermore, the Department has published a list of preferred analytical methods in its April 1998 Underground Storage Tank Closure Guidance document which is different than the methods in the Manual (e.g., the Manual provides that EPA Method 8270B is preferred for Naphthalene whereas the Tank Closure Guidance refers to 8260B). In addition, the Manual does not provide any analytical methods for inorganic compounds in soil with the exception of mercury. The Commenters suggest that the Department provide one consistent set of recommended analytical methods in the Manual to address all remediations in Pennsylvania, including releases from storage tanks. The Commenters also suggest that the Department include a statement in the Manual which allows a remediator to continue to use the same analytical method throughout an Act 2 investigation in order to avoid the unnecessary expense and confusion associated with a change in methods. The analytical methods listed as acceptable for Act 2 remediations include for groundwater the USEPA 500 series methods (EPA method 524.2, 525.2). These methods were developed to analyze finished drinking water. Consequently, they may have lower PQLs because of the nature of the sample matrix and therefore should not be used to analyze untreated groundwater or surface water. The 500 series methods should be omitted from the list of acceptable methods for groundwater and soil.

B. Conceptual Site Model - Throughout the Manual, the Department requires a conceptual site model as part of the attainment demonstration. The Commenters do not necessarily object to a conceptual site model as long as the Department, in implementing the program, recognizes that such a model is really just a summary of the basic understanding of the site which is used as a starting point to characterize a contaminant source/area. A conceptual model can be something as simple as a schematic cross-section or a description of the shape and nature of the contaminated zone.

C. Establishing Background - The Commenters believe that background groundwater quality may be established in fewer than 8 or 12 samples (as now suggested by page II-8) under appropriate circumstances. This page should be revised as shown in Appendix I. Similarly, page II-15 should be revised to allow fewer than ten soil samples from the background reference area to determine background concentrations under appropriate circumstances. Alternatively, the Manual should be modified to acknowledge that the remediator is able to satisfy the minimum numbers by taking multiple samples from single soil boring(s) at appropriate locations.

The Technical Guidance Manual provides (at p. II-2) that a remediator should obtain a written determination from the Department that a site is in an area of widespread contamination prior to the submission of an NIR for remediation to a background standard. Neither Act 2 nor the regulations require such a procedure. The Commenters request that, in order to avoid unnecessary delays in the Act 2 process and uncertainties concerning final agency actions, the Manual be amended as shown in Appendix I to clarify that the submission of such a written request is not required as a precondition to the filing of an NIR or a Final Report.

D. Contents of a Final Report - The Technical Guidance Manual provides an outline of what materials should be in a final report, but certain items are listed as "optional" which suggests that the other items are mandatory (see, e.g., page II- 43.) These sections should be revised as shown in Appendix J so that the Department reviewer does not require a document inappropriate for the site or demand data that is unnecessary to satisfy the requirements of Act 2.

E. Residual Risk Assessment - The Manual provides (at p. II-76) that a "residual risk assessment" may be provided as part of an attainment demonstration for a site specific standard. However, it is unclear from the Manual whether the Department could require such an assessment and what would have to be included in a residual risk assessment. The Commenters support a flexible approach to attainment demonstrations under Act 2, but request that the Manual be amended to confirm that a remediator may not be required to perform a residual risk assessment. Furthermore, the Department should consider defining in the Manual what a remediator would have to address in a residual risk assessment in order to demonstrate attainment under Act 2.

F. Financial Assurance - The Manual asserts that the Department may require financial assurance in the context of post-remediation care plans (e.g., p. II-50). Neither Act 2 nor its implementing regulations authorizes the Department to require a remediator to document financial ability to implement a remedy. A remediator simply must maintain any post-remediation care plans in order to preserve the release of liability afforded by Act 2. Consequently, the Department should modify the Manual as set forth in Appendix K.

G. Wastewater Discharge Guidance - Attachment L of the Manual is a guidance document captioned "Implementation Guidance for Evaluating Wastewater Discharges to Drainage Ditches and Swales." It is unclear why this guidance has been inserted into the Manual because it does not track the standards set forth in Act 2. Furthermore, it is unclear what types of discharges are intended to fit within the scope of "wastewaters." The Commenters suggest that this document should be eliminated from the Manual.

H. Immediate, Direct or Imminent Threats - The Manual (p. II-85) asserts that soil which exceeds the statewide direct contact standard constitutes an "immediate, direct or imminent threat." This unsupported assertion is found in a section of the Manual addressing Special Industrial Areas. Based upon a review of section 502 of Act 2, the Commenters do not believe that the simple exceedance of a statewide soil standard is sufficient to constitute an immediate, direct or imminent threat. The references to exceedances of statewide soil standards constituting an immediate, direct or imminent threat should be deleted from the Manual.

I. Fate and Transport General Guidance - Section IV.A. of the Manual provides general guidance on the use of fate and transport analysis for unsaturated and saturated zones in the context of Act 2 remediations. The Commenters support the Department's position that a remediator may choose the analytical tool which is most appropriate to the circumstances at the site. (see p. IV-2.) Furthermore, the Commenters agree with the statements in the Manual that "fate and transport analysis is not necessarily a highly complex computer simulation," but may range from the simple to the complex depending upon the characteristics of the site and the remediation standard selected. (See p. IV-6.) The Commenters also support references in the Manual to ASTM D5447 as an appropriate potential analytical tool for fate and transport analysis. The Commenters recommend that the Manual provide flexibility to use new fate and transport models currently under development for all environmental media.

J. Site-Specific Human Health Guidance - Section E.1 of the Manual provides general guidance concerning site-specific human health risk assessment procedures to be used in Act 2 remediations. The Commenters support the references in the Manual which acknowledge that under Act 2 no risk assessment report or cleanup plan is required if there are no complete exposure pathways. However, the Commenters oppose the suggestions in the Manual that the Department may require a remediator to submit a "baseline" risk assessment unless certain criteria are met. (see p. E. 1-2.) The remediator should be free to determine in each case whether a baseline risk assessment is necessary in order to demonstrate compliance with a site-specific standard under Act 2. Furthermore, the Commenters question references in the Manual to a

"regulatory risk manager" who must be consulted prior to performing a risk assessment (see p. E. 1-5). The Manual does not define who within the Department is tasked with this obligation.

III. CONCLUSION

The Commenters support the Ridge Administration's efforts to encourage voluntary remediations in the Commonwealth to reasonable risk-based standards. The companies who have developed these comments and proposed revisions to the Manual have considerable experience with Act 2 remediations in all of the Department's regional offices. The Commenters urge the Department to consider the proposed revisions to the Manual in order to preserve the flexibility in the Act 2 program, improve consistency among the regions and guarantee the continued success of the Act 2 program.

Submitted by:

Beazer East, Inc.
BP Oil Company
Duquesne Light Company
Pennsylvania Electric Association
USX Corporation

LIST OF APPENDICES

A

B. Applying Land Recycling to Your Property

1. Classifying your Site and Considering Options for Remediation

Act 2 establishes environmental remediation standards for cleanups. In order to select a standard for your site, a site assessment is needed to determine site conditions which may require remediation. This site characterization includes the identification of specific contaminant concentrations throughout soil and groundwater media, discharges to surface water and air, and any other conditions which may pose a risk to human health and the environment. The site characterization may reveal that the remediator needs to interface with other environmental laws and/or Act 2. Under Act 2, the appropriate standard or combination of standards (*i.e.*, background, Statewide health or site-specific) must be determined. A person with a property which has multiple distinct areas of contamination may submit a Notice of Intent to Remediate (NIR) for a single area, or multiple areas individually; with the Department's concurrence the individual areas are appropriate for separate NIRs. A "distinct area of contamination" includes the volume of all media affected by the release causing the contamination. For example, if soils were contaminated and that contamination migrated to groundwater, both the contaminated soil and groundwater would be part of the distinct area of contamination. In some cases, the Department may agree that including both the soil and groundwater as a distinct area is not practical and therefore they may be considered separately. The Department will accept NIRs for properties on which a release of regulated substances can be documented, or for properties affected by off-property releases of regulated substances for which the remediator is not responsible. The background, Statewide health and site-specific standards may be used at any site. Only certain sites qualify as special industrial areas.

for those areas of a property for which the remediator is seeking an Act 2 release of liability.

a) Background

A person cleaning up a site to the background standard must document that the concentration of any contaminants remaining are at a level not related to any release of contaminants at the site. Samples are required both in the area shown to be contaminated by onsite releases (*e.g.*, the "site") and in an appropriate background reference area to demonstrate attainment of the background standard. This standard is useful in cases of releases migrating from off-property, widespread and naturally occurring contamination.

b) Statewide Health

The regulations, Chapter 250, establish Statewide health standards for contaminants in each environmental medium. These standards are referred to as medium specific concentrations (MSCs) that must be achieved in order to demonstrate attainment of the Statewide health standard. In addition to demonstrating that a site is protective of human health, an ecological screen is part of the Statewide health standard to provide protection of ecological receptors.

c) Site-specific

Cleanup levels may be developed which pertain specifically to the unique exposure pathways at a site. This is a more detailed process, both technically and administratively. The human and ecological receptors at the site need to be addressed either through the elimination of the exposure pathways or a risk assessment. A site-specific cleanup also provides an opportunity for public participation.

d) Combination of Standards

A cleanup may be performed by using any combination of the three standards. The remediator may select any one or a combination of standards by regulated substance, by medium of concern, or by distinct area of contamination (see Section I.B.1). Combinations must satisfy the requirements of each standard used. For example, in using any combination of standards which includes the site-specific standard, the risk assessment should include only those regulated substances for which site-specific numeric standards are being developed, and for these substances, the cumulative risk requirements of Section 304 of Act 2 must be met. Attainment of these site-specific numeric standards must be demonstrated in the final report. In addition, all of the requirements of the site-specific standard, including the reporting requirements, apply. All of the regulated substances, media, or distinct areas of contamination meeting another standard (*e.g.*, the Statewide health standard) must meet the requirements of that standard. Therefore, in addition to a combination of numerical standards there will be combinations of requirements for reporting, attainment tests, and points of compliance.

e) Special Industrial Areas

The special industrial area designation was created by Act 2 to provide special remediation requirements for a distinct set of sites which were used for industrial activity. These sites are properties where there is no financially viable responsible party, or where the property is located within an enterprise zone. Enterprise zones are designated by the Department of Community and Economic Development. The remediator afforded these special requirements must demonstrate that he/she did not cause or contribute to releases of regulated substances at the property. In order to make use of the special industrial area designation, the remediator must enter into a consent order and agreement with the Department.

2. Immediate Response

If an immediate hazard exists or is discovered at a site, prompt action is necessary to abate the hazardous condition and prevent future or further release of contamination. Leaking tanks or drums, conditions presenting a fire or explosion threat, or a situation involving a threat to human health or the environment warrant a prompt response. Act 2 does not prevent or impede an immediate response to such emergencies. Section 307 of Act 2 provides that the provisions under Chapter 3 of the statute, relating to remediation standards and

Act 2 and Act 32. It should be submitted on a time frame that meets both statutes; thus if there is no specified time required to submit the remedial investigation report under Act 2, but a site characterization report under Act 32 is required within 180 days of reporting the release, the site characterization/remedial investigation report should be submitted within 180 days. Compliance with Act 2 notice and public participation requirements will be necessary for liability protection for tanks governed by Act 2.

4. Solid Waste Facilities

If your site includes a solid waste facility see Section III.A of this manual.

5. HSCA/CERCLA Sites

The Hazardous Sites Cleanup Act (HSCA) is the state cleanup law that provides for the remediation of sites contaminated with hazardous substances. Certain sites are designated by the Department as HSCA sites. This is a limited set of sites that has been officially designated by the Department as meeting the criteria for response action under HSCA. Before any site is designated as a HSCA site, the site undergoes a review and approval process that officially documents senior management approval of the HSCA designation. The Department notifies all known responsible parties associated with a site prior to listing it on the Pennsylvania Priority List (PPL). To determine if the site under Act 2 consideration has been designated by the Department as a HSCA site, contact the Environmental Cleanup Program Manager in the Department's regional office where the site is located. Additional information about the relationship between Act 2 and HSCA is included in Section III of this manual.

The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) is the federal Superfund law. Sites may come under the jurisdiction of the EPA CERCLA program. To determine if the site under consideration is a CERCLA site, contact the EPA regional office in Philadelphia, Office of Superfund Programs, at 215-566-3120. Additional information about the relationship between Act 2 and CERCLA is included in this document in Section III.

6. Site Characterization

The goal of the site characterization is to define the extent of contamination by regulated substances. The activities conducted must result in a thorough investigation which meets the requirements of the selected Act 2 standard. **A complete and accurate site characterization and its documentation in the final report is very important, as it is the basis for determining remediation and attainment. Without a proper site characterization, attainment requirements cannot be met and the final report will be disapproved by the Department.** DEP Regional Office staff are a valuable resource and want to assist as needed in evaluating your site characterization information. Although not required, working with the Department in many cases can help to facilitate approval of the submitted reports. Always feel free to contact the Department's Regional Environmental Cleanup Program staff when you have a question about the

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haracterization of each site or source area within a site depends on sf rs which are unique to each location. Attachment M to this al lists factors to consider when characterizi...

SECTION II. REMEDIATION STANDARDS

A. Background Standard

1. Introduction

This chapter presents procedures to be used in assessing site contamination and demonstrating attainment of the background standard. Use of this guidance and data submission formats should simplify reporting on the site and reduce delays in obtaining final report approval by the Department. This chapter is designed to help those involved understand and meet the requirement of the background standard under Act 2 and the regulations in Chapter 250. DEP Environmental Cleanup Program staff in the Regional Offices are a valuable resource and will assist in answering questions on the background standard.

Background is the concentration of a regulated substance that is present at a site, but is not related to the release of regulated substances at the property. Attainment of the background standard for a regulated substance may be demonstrated by an analysis of environmental media within and around the site (Act 2 Section 302). Establishing the background concentration is discussed in Subsection II.A.4 of this manual. In addition to Act 2, Section 302, Subchapter B under Chapter 250 of the regulations discusses the background standard requirements.

In order to demonstrate compliance with the background standard, persons should demonstrate that on-site media do not exceed the background standard for a regulated substance(s) by statistically developing representative contaminant concentrations through on-site and background reference samples of the environmental media (mainly soils and water). Subchapter G Chapter 250 of the regulations establishes statistical tests (methods) recognized by the Department for the demonstration of attainment. Background statistical attainment requirements are in Section 250.707(a)(1)of the regulations for background soils and Section 250.707(a)(2)or(3) of the regulations for background groundwater. Demonstration of attainment for background is discussed in Subsection II.A.5.f of this manual.

In reporting the completion of a remediation to the Department, a final report is required which contains a detailed description of the process taken to reach the background standard and the reasoning for choosing media for testing, such as soil and groundwater. Section 250.204 in the regulations discusses the requirements for a final report. Also below in Section II.A.5 of this manual is a discussion on the final report requirements for the background standard. Summaries of sampling methodology and analytical results showing attainment should be included with the report (Act 2, Section 302(b)(2)).

Institutional controls such as fencing and future land use restrictions on a site may not be used to attain the background standard. Institutional controls may be used to maintain the background standard after remediation occurs, however (Act 2, Section 302(b)(4)).

If the initial remediation chosen by the person fails to attain the background standard, that person may choose instead to meet the Statewide health or site-specific standards (Act 2, Section 302(c)). Sites attaining and demonstrating compliance with the background standard are not required to meet the deed acknowledgment requirements of the SWMA or the HSCA (Act 2, Section 302(d)). An existing acknowledgment contained in a deed prior to demonstrating compliance with the background standard may be removed.

2. Process Checklist for the Background Standard

- ☐ Review the historic and current information and present use of regulated substances at the property.
- ☐ Begin the site investigation/characterization and gathering information about the area on and around the property.
- ☐ Determine if property/site is affected by regulated substances not from the property.
- ☐ For the groundwater background concentration, establish if it is naturally occurring/areawide or from an upgradient source. Section 250.707 of the regulations.
- ☐ For the soils background concentration, establish if it is a naturally occurring or areawide problem.
- ☐ If using the naturally occurring/areawide background distinction - Request in writing and receive back in writing the Department's approval that the site is indeed in an area of wide spread contamination for the regulated substance on your property/site before submitting the Notice of Intent to Remediate. Section 250.707(a)(3)(I) of the regulations.
- ☐ Continue with the site characterization and required activities needed to complete the final report . Section 250.204 of the regulations.
- ☐ Submit Notice of Intent to Remediate for the background standard. Also notice the municipality, publish a notice in a local newspaper, and obtain proof of publication for inclusion with the final report to the Department. Act 2 Section 302(e)(1). Procedures for submittal of notifications are contained in Section I.B.7 of this manual, with sample forms contained in Attachment V.J.
- ☐ Remediate the site to the background standard
- ☐ Demonstrate attainment of the background standard. Act 2 Section 302(b).
- ☐ Prepare and Submit final report to DEP Regional Office. See Act 2 Section 302(b)(2), Section 250.204 of the regulations, and Section II.A.5 of this manual.
- ☐ If final report is approved, the liability protection set forth in Act 2, Chapter 5 automatically applies.

a) Summary

Provide a summary which will give the reviewer an overview of the site. This will serve to highlight the important issues and conclusions which are presented in the report.

b) Site Description

Provide a description of the site in sufficient detail to give the reviewer an overall idea of the site and its location, and the types of operations that are currently and were formerly conducted on the site. As appropriate to the site, the description should include: location, physical description of the property, ownership history, site use history, and regulatory action history(past cleanups). Examples of the types of information typically included are:

c) Site Characterization

The site characterization provides important information documenting the current conditions at the site, information required by Section 250.312 of the regulations, and information required for the proper demonstration of attainment. Information developed during the site characterization is primarily intended to describe the nature, extent and potential for movement of ~~all~~ those contaminants present on the site, or that may have migrated from the site and as input for developing a site conceptual model and for the fate and transport analysis. For sites where there are multiple distinct areas of contamination, the site characterization process should be applied to each area individually.

or which the remediator is seeking an Act 2 release of liability.

Along with a narrative, the results from the site characterization and all sampling and analysis work should be provided on map(s) illustrating to the extent possible, the interrelationship of the following:

- All physical site characteristics.
- All groundwater, soil, sediment and other sample locations; including sample depth and contaminant concentration.
- The surveyed locations for all assessment structures (monitoring wells, soil borings, test pits, etc.). All elevations should be reported in reference to mean sea level (msl), where practical.
- Appropriate number of stratigraphic cross sections that adequately depict site stratigraphy, well locations, well depths, groundwater flow directions, equipotential lines, flow lines, hydraulic conductivity intervals and values, sampling intervals and concentrations. All elevations should be reported in reference to msl, where practical.
- Variation in potentiometric surfaces(s), potentiometric surface map(s), hydraulic gradients, and groundwater flow directions.
- All identified sources of releases.
- The extent and concentrations of contaminant plumes in all media. The horizontal and vertical extent of contaminant plumes including density and thickness of any Separate Phase Liquids(SPLs) present.

Table II-3
Suggested Outline for a Final Report under the Statewide Health Standard

I. Summary

Provide a summary which will give an overview of the site. (Section II.B.6.a)

II. Site Description

Provide a description of the site in sufficient detail to give an overall view of the site (Section II.B.6.b)

III. Site Characterization

Document current conditions at the site (Section 250.204 of the regulations and Section II.B.6.c)

IV. Statewide Health Standard

How the Statewide health standard was established (Section II.B.6.d)

V. Ecological Screening

Provide the results of the Ecological Screen described in Section 250.311 of the regulations and Section II.B.5.

VI. Remediation

Description of the remedial methodologies used to attain the selected standard (Section II.B.6.f)

VII. Attainment

A. Soil Statewide health standard
B. Groundwater Statewide health standard
C. Spring flow into Surface Water
Sections A, B, and C describe the statistical methods used demonstrate attainment of the standard (Section II.B.6.g)

VIII. Fate and Transport Analysis

Description of Fate and Transport analyses used and results and conclusions. (Section II.B.6.h)

IX. Post-Remediation Care Plan

This section is included only if necessary. It describes the engineering and institutional controls necessary to attain or maintain the standard. (Section II.B.6.i)

X. References

(Section II.B.6.j)

XI. Attachments

(Section II.B.6.k)

XII. Signatures

(Section II.B.6.l)

- That all downgradient properties are connected to a community water system.
- That the nonuse area does not intersect a radius of ½ mile from a community water supply well or does not intersect an area designated by the Department as a zone 2 wellhead protection area under Chapter 109.
- Results of the fate and transport analysis used to establish the nonuse area.
- A copy of the letter from the Department approving the use of the nonuse aquifer MSCs, as described in Section II.B.4 of this manual.

If the soil buffer option is used to meet the requirements of the soil to groundwater numeric value, submit the following:

- Information demonstrating that the actual site soil column thickness below the contaminated soil is at least the thickness identified in Tables 3B and 4B of Appendix A to the regulations. This information should be taken from soil sample borings conducted during the site characterization.
- Laboratory analyses demonstrating that the contaminant concentrations in the entire soil column below the contaminated zone do not exceed either the limit related to the PQL or background.
- The boring logs and all other data presented in appropriate maps, cross sections, figures, and tables.

If an equivalency demonstration is used to meet the requirements of the soil-to-groundwater numeric value, submit the following:

- Information describing the actual site soil column below the contaminated soil. This information should be taken from soil sample borings conducted during the site characterization.
- Information, including laboratory analyses, gathered during the site characterization that demonstrates that the groundwater is not impacted at levels exceeding either the groundwater MSC or background.
- The boring logs and all other data presented in appropriate maps, cross sections, figures, and tables.
- Sampling data, in a tabular format, that shows no exceedance for eight quarters of groundwater MSCs or the Background Standard, in accordance with Section 250.308(d)(2) of the regulations.
- Results of the fate and transport analysis that demonstrates that the regulated substance(s) will not migrate to bedrock or the groundwater within thirty years at concentrations exceeding the greater of the groundwater MSC or background in groundwater as the end point in soil pore water directly under the site.

e) Ecological Screening

Provide documentation of the implementation of the ecological screen described in Section 250.311 of the regulations, and Section II.B.6 of this manual.

- Top of bedrock contour (if encountered).

A conceptual site model should be developed and refined as information is gathered during the site characterization. The conceptual site model provides a description of the site and extent of contamination. Some of the information and data used to develop the site model would include:

- The type, estimated volume, composition, and nature of the released materials, chemicals or chemical compounds (Include all calculations and assumptions.)
- Source(s) and extent of release(s).
- Background concentrations for constituents of concern (optional).
- The horizontal and vertical extent of contamination.
- The portion of the horizontal and vertical extent of contamination which exceeds the selected standard.
- Affected aquifer(s) or water bearing formation(s)/member(s), hydrostratigraphic units.
- All existing and potential migration pathways.
- The estimated volume of contaminated soil and water (include all calculations and any assumptions.)

For soils, include information on samples and measurements used to characterize the horizontal and vertical extent of contamination, and direction and rate of contaminant movement based on factors in the soil and the contaminant which affect migration. Soil and boring descriptions should be included as an attachment.

For groundwater, include information on samples and measurements used to characterize the horizontal and vertical extent of contamination and direction and velocity of contaminant movement based on factors of the groundwater and the contaminant(s) which affect migration. Geologic boring descriptions and as built drawings of wells should be included as an attachment. Text, tables, graphics, figures, maps and cross sections, as appropriate, can be utilized to describe the nature, location, and composition of the regulated substances at the site. Providing the data in an appropriate format will expedite the review of the report.

d) Selection of the Applicable Statewide Health Standard

Documentation of the basis for selecting residential or nonresidential standards and for selecting the applicable MSCs according to the procedure in Section II.B.3 of this manual.

If the site is in an area where groundwater is not used or planned to be used for drinking water or agricultural purposes, provide the following documentation:

- That no groundwater derived from wells or springs is used or currently planned to be used for drinking water or agricultural purposes.

- ☐ Establish attainment of the site-specific standard in accordance with the requirements in Subchapter G of the regulations. Guidances are provided in Sections II.C.6 and IV.B of this manual.
- ☐ Submit final report and a fee of $500 to the Department. Include information in Sections 250.411 and 250.204(f)(1)-(5) of the regulations. Include post-remediation care plan in accordance with Section 250.204(g) as appropriate. Document cooperation of third parties where access is needed for remediation or monitoring. Reporting requirements for the final report are described in Section II.C.7.d of this manual.
- ☐ Upon the Department's approval of the final report demonstrating compliance with substantive and procedural requirements of the site-specific standard, the site is automatically afforded the liability protection as outlined in Chapter 5 of Act 2.
- ☐ If engineering controls are used and post-remediation care is needed to maintain the standard, if fate and transport analysis indicates standard may be exceeded at the point of compliance in the future, if remediation relies on natural attenuation, if mitigation measures are implemented in accordance with section 250.311(f) continue with the post-remediation care program detailed in the final report
- ☐ When the site-specific standard can be maintained without engineering controls operating and mitigation measures have been successfully sustained, document this to the Department and receive approval to end the post-remediation care program.

3. Site Investigation

The principal objectives of an investigation under the site-specific standard are to characterize the nature, extent, direction, volume and composition of regulated substances that have been released, and to obtain detailed site information, including identification of exposure pathways, in order to develop a protective cleanup standard unique to that site.

Important tasks during the site investigation include site characterization, ecological screening, and pathway identification. The development of a site conceptual model and identification of contaminants of concern are also important steps in the site investigation process. This section provides specific information and procedures regarding site characterization, ecological screening, and pathway identification. At the conclusion of the site investigation, a remedial investigation report should be submitted to the Department for review and approval [Act 2, Section 304(l)(1)]. Section II.C.7.a of this manual describes specific information required to be included in the remedial investigation report.

a) Site Characterization

The site characterization must be conducted in accordance with scientifically recognized principles, standards, and procedures. The level of detail in the investigation and the methods selected shall sufficiently characterize the nature,

If the property or area(s) of the property for which the remediator is seeking an Act 2 release of liability,

present and future extent, direction, volume, and composition of regulated substances that have been released. The determination of the site conditions will be used to select the remedy alternative used to clean up the site. All interpretations of geologic and hydrogeologic data shall be prepared by a professional geologist licensed in Pennsylvania.

Methodologies presented in Section I.B.6 of this manual should be followed while conducting the site investigation. When evaluating the nonpoint source groundwater discharge to surface water, a person may consult EPA guidances in "A Review of Methods for Assessing Nonpoint Source Contaminated Ground-Water Discharge to Surface Water, EPA 570/9-91-010, April 1991," and "Handbook: Stream Sampling for Waste Load Allocation Application. EPA/625/6-80/013." Section IV.A.3 of this manual provides guidance to evaluate impacts on surface water from diffuse flow of contaminated groundwater.

As directed from specific knowledge of the subject property, historic use of the subject property, or chemical usage information regarding the subject property, and based upon the guidance in Section I.B.6 of this manual, an appropriate number of sample locations should be investigated from the identified media of concern in order to characterize the nature and composition of the contaminants, including the characterization of the source of the regulated substances and development of a conceptual site model, the vertical and horizontal extent of contamination with each medium of concern, the direction, rate, extent and fate of contaminant movement within each medium of concern, and to identify the appropriate remedial technology options for each medium of concern.

When determining the relative location of soil or groundwater samples necessary to characterize the horizontal and vertical extent of contamination, factors such as hydraulic conductivity of the soils, heterogeneity of the soils, and the nature of the contaminants should be considered.

If groundwater is determined to be a medium of concern, adequate characterization of the effects of a release on groundwater will require a hydrogeologic study to determine how naturally occurring physical and geochemical characteristics define the hydrostratigraphy (position of aquifers, aquitards, and aquicludes) where appropriate, an assessment of the homogeneity and isotropy of aquifer materials based on hydraulic conductivity values (measured or published), and an assessment of local and regional groundwater flow directions and any influence from pumping centers. Characterizing the horizontal extent of contamination of regulated substance(s) will be defined by a minimum of two rounds of groundwater sampling from properly constructed and developed monitoring wells. The initial sampling event should be conducted no less than fourteen days from the date of the most recent well development, or a shorter time frame is permissible if it is demonstrated that, through development, pH and conductivity of the groundwater has stabilized. The second and subsequent sampling events should occur no less than fourteen days from the preceding sampling event. When characterizing the vertical extent of groundwater contamination, consider the specific gravity of the regulated substances identified in the site's groundwater,

B

The point of compliance for the background in soil is throughout the area of the soil that has been contaminated (See Section 250.203(b) of the regulations).

For surface water, point source discharges shall be measured at the point of discharge in accordance with limits in the National Pollutant Discharge Elimination System (NPDES) permit (See Section 250.203(c) of the regulations). Under the background standard, for spring or diffuse groundwater flow to surface waters, the attainment of the background standard for groundwater, which is the source of the diffuse groundwater flow, satisfies Act 2.

The background standard may allow a higher than health based level of cleanup, since the standard is established by the contamination moving to the property from an adjacent property or constituents that are naturally occurring. Background quality is the concentration of substances that have moved onto the property and which are unrelated to the release of regulated substances on the site.

area(s) of the

4. Establishing Background Concentration(s)

the release which is the subject of the Act 2 investigation.

The background concentrations will be determined using analysis of samples of regulated substances present at the property under investigation but not related to ~~any release at the property.~~ If all areas on the property are affected by a release at the property, then background samples will be taken in an area free of contamination from any release at the site including representative off-property areas. Persons may not obtain Chapter 5 relief by using a contaminated area as a background reference area when they are responsible for the contamination.

Background soil sampling locations must be representative of background conditions for the site, including soil type; physical, chemical, or biological characteristics; and depth below ground surface. Randomization of sampling at background and on-site location must be comparable (See Section 250.204(f)(7) of the regulations).

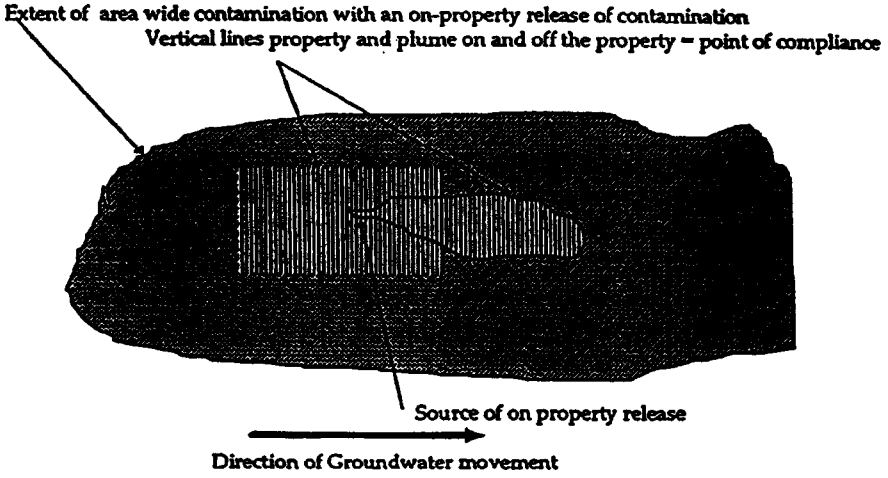
Any wells that are used to establish groundwater concentration(s) must be hydrogeologically upgradient or otherwise justified from the groundwater onsite that is affected by any release at the property and that characterizes the flow onto the site. Upgradient wells may not be appropriate to detect movement of a dense non aqueous phase liquid (DNAPL) since geologic structure rather than hydrogeologic gradient may influence DNAPL movement.

Background concentrations determination will be by a statistically valid method that is consistent with the methods used to demonstrate attainment. Statistical methods are included in Section 250.707 of the regulations and in Section II.A.5.f.i of this manual.

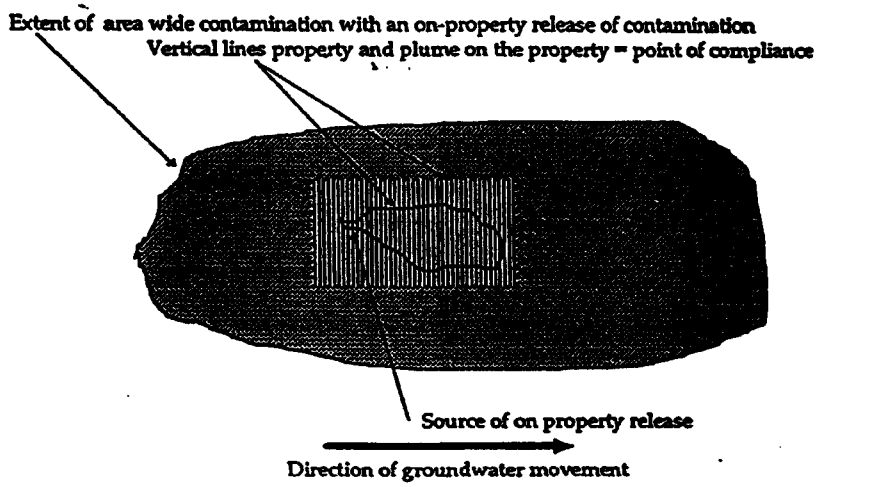
For non-naturally occurring regulated substances (primarily organic compounds) the affected area shall be shown to be related to sources other than the release of regulated substance on the site. This may include transport of regulated substances onto the property in the gaseous, liquid or solid phases and associated mixing with or partitioning to on-site gaseous- liquid- or solid-phase media. For background conditions which are related to ongoing flux onto the site (*e.g.*, regulated substances dissolved in groundwater flowing onto the

Figure II-2
Areawide Contamination

Area wide contamination with release above the area wide background concentration on site that extends off property. The property and plume off the property must pass the comparison test.



Area wide contamination with release on site that stays on site. The entire plume and property must pass the comparison test.



C

Act 2 and Act 32. It should be submitted on a time frame that meets both statutes; thus if there is no specified time required to submit the remedial investigation report under Act 2, but a site characterization report under Act 32 is required within 180 days of reporting the release, the site characterization/remedial investigation report should be submitted within 180 days. Compliance with Act 2 notice and public participation requirements will be necessary for liability protection for tanks governed by Act 2.

4. Solid Waste Facilities

If your site includes a solid waste facility see Section III.A of this manual.

5. HSCA/CERCLA Sites

The Hazardous Sites Cleanup Act (HSCA) is the state cleanup law that provides for the remediation of sites contaminated with hazardous substances. Certain sites are designated by the Department as HSCA sites. This is a limited set of sites that has been officially designated by the Department as meeting the criteria for response action under HSCA. Before any site is designated as a HSCA site, the site undergoes a review and approval process that officially documents senior management approval of the HSCA designation. The Department notifies all known responsible parties associated with a site prior to listing it on the Pennsylvania Priority List (PPL). To determine if the site under Act 2 consideration has been designated by the Department as a HSCA site, contact the Environmental Cleanup Program Manager in the Department's regional office where the site is located. Additional information about the relationship between Act 2 and HSCA is included in Section III of this manual.

The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) is the federal Superfund law. Sites may come under the jurisdiction of the EPA CERCLA program. To determine if the site under consideration is a CERCLA site, contact the EPA regional office in Philadelphia, Office of Superfund Programs, at 215-566-3120. Additional information about the relationship between Act 2 and CERCLA is included in this document in Section III.

6. Site Characterization

The goal of the site characterization is to define the extent of contamination by regulated substances. The activities conducted must result in a thorough investigation which meets the requirements of the selected Act 2 standard. **A complete and accurate site characterization and its documentation in the final report is very important, as it is the basis for determining remediation and attainment. Without a proper site characterization, attainment requirements cannot be met and the final report will be disapproved by the Department.** DEP Regional Office staff are a valuable resource and want to assist as needed in evaluating your site characterization information. Although not required, working with the Department in many cases can help to facilitate approval of the submitted reports. Always feel free to contact the Department's Regional Environmental Cleanup Program staff when you have a question about the

for the property r area(s) of the roperty for which the remediator is eeking a release ran liability under Act 2.

the characterization of each site or source area within a site depends on specific factors which are unique to each location. Attachment M to this Manual lists factors to consider when characterizing a site or source area

- An interpretation and conclusion of the statistical test.

In addition to the attainment tests described above, the remediator must demonstrate, for groundwater remediated to the Statewide health standard, that the standard has been attained and that it will continue to be attained in the future, as indicated by a fate and transport analysis .

In demonstrating attainment of the Statewide health standard, concentrations of regulated substances are not required to be less than the limit related to the Practical Quantitation Limit (PQL) for that substance as provided for in Sections 250.4 and 250.701(c), and as listed in Section V.D of this manual. Where the plume of contamination currently impacts or may impact properties with different land use categories (*i.e.*, residential and nonresidential), the Statewide health standard appropriate for the impacted property must be attained and maintained. For example, where a plume of contamination emanating from a nonresidential property adjoins a residential property that will be impacted by the plume, the nonresidential Statewide health standard must be attained and maintained at the downgradient boundary of the nonresidential property (See Section 250.702) and the residential Statewide health standard applies at the residential property. Demonstration that the appropriate standard will be attained and maintained must be demonstrated by a combination of sampling and fate and transport analysis.

In demonstrating attainment of the Statewide health standard in groundwater in aquifers not currently used or planned to be used, the remediator must show that the non-use MSC has been met at the point of compliance using the appropriate tests for demonstrating attainment in Chapter 250.707(b)(2), and further described in Section IV.B of this manual. In addition, the requirements of Chapter 250.705 must be met regarding the use of a fate and transport analysis to show that the MSC for groundwater in aquifers used or currently planned to be used will not be exceeded at and beyond all points on a radius of 1000 ft downgradient from the property boundary within 30 years. This fate and transport analysis should meet the requirements specified in Section IV.A of this manual.

(a) 75%/10x Rule

The 75%/10X rule is a statistical ad hoc rule that determines if the true site median concentration is below the cleanup standard. This rule requires that 75% of the samples collected for demonstration of attainment be equal to or below the bright line cleanup standard and that no single sample result exceeds the bright line standard by more than ten times.

which is to be used for attainment rather than site characterization purposes,

For the 75%/10X rule , the number of soil sample points required for each distinct area of contamination is specified in the Act 2 regulations and is as follows:

- For soil volumes equal to or less than 125 cubic yards, at least eight samples.
- For soil volumes up to 3,000 cubic yards, at least 12 sample points.

(c) Spring Flow into Surface Water

Except if an NPDES permit is required for purposes of complying with surface water quality in a spring, the point of compliance is the point of first designated or existing use as defined in 25 Pa Code 93.1, 93.4, and 93.9. This could mean right by the spring itself or some point downstream from the spring discharge. Determining the point of first designated use is necessary because it establishes the point where Chapter 93 water quality standards apply.

Technical guidance to determine point of first use is found in *Implementation Guidance for Evaluating Wastewater Discharges to Drainage Swales and Ditches,* revised May, 1987 (Attachment V.L). In essence this guidance relies on biological techniques to determine the first downstream point where aquatic life can be documented. It applies to both perennial and intermittent streams with definable bed and banks, but not to ephemeral streams, that is, areas of overland runoff which occur only during or immediately following rainfall events and where there is no defined stream channel and stream substrate.

ii) Statistical Tests

Attainment tests appropriate for the Statewide health standard are described in Section 250.707(b) of the regulations, and in Section IV.B of this manual, and include:

- the 75%/10x rule for soil and groundwater at the point of compliance, and the 75%/2x rule for groundwater off the property.
- for groundwater, no exceedance of the Statewide health standard.
- the 95% UCL test.
- for sites with localized soil contamination as defined by the Closure Guidance for Underground Storage Tank Systems (No. 2530-BK-DEP-2008), a "no exceedance" of the Statewide health standard.
- a method that meets the performance requirements of Section 250.707(d) of the regulations.

If the 75%/10X rule is not used, appropriate statistical tests must be employed to demonstrate attainment of the Statewide health standard. The following information should be documented in a final report:

- Description of the statistical method, and the underlying assumptions of the method.
- Documentation showing that the sample data set meets the underlying assumptions of the method and explaining why the method is appropriate to apply to the data.
- Specification of false positive rates.
- Documentation of input and output data for the statistical test, presented in table and figures, or both, as appropriate; and identify, by media, contamination levels remaining onsite.

[PROPOSED ATTACHMENT M]

The following sets forth criteria to determine the number and location of soil borings and groundwater wells which are necessary to characterize an area for which a remediator is seeking a release of liability under Act 2:

A remediator should consider the following variables in selecting the number and locations of soil samples required to characterize a source area:

- The magnitude, nature and level of existing knowledge about the contaminant source

  The number of samples per volume of impacted material should decrease as the volume of material decreases. If the sources of regulated substances are well understood and documented, the level of investigation can be limited.

- The level of heterogeneity in the soil texture and composition

  Because regulated substances may move through and be retained differently by differing materials, homogeneous deposits require fewer samples than heterogeneous media.

- The applicability of non-invasive methods to the site conditions

  When non-invasive methods - such as soil-gas surveying or geophysics - may be reliably employed at a site, these may be used to limit the number of soil samples.

- The environmental mobility of the regulated substances involved

  Regulated substances which migrate readily in the soil zone may require more effort to delineate than highly attenuated contaminants. For example, vinyl chloride - which does not readily adsorb to soil - may affect a far larger volume of soil that PCB, which is highly adsorbed.

- The soil texture and permeability

  Regulated substances released to sands or gravels will likely impact a larger area than those released to clays.

- The location of potential receptors and knowledge concerning transport mechanisms and exposure pathways for regulated substances.

The number of samples may decrease as potential exposure pathways decrease and the number of receptors decreases. In addition, the number of samples per volume of impacted material should decrease as fate and transport mechanisms at a site become better understood.

The number and placement of monitoring wells required to characterize a source area varies according to the following factors:

- The number of aquifers or permeable zones potentially affected

  If multiple aquifers are present, the assessment of water quality should be phased to allow sequential evaluation of deeper aquifers, if necessary.

- The topographic setting of the impacted area

  Plumes of regulated substances from sites which occur in valleys are controlled in extent by convergent groundwater flow patterns, limiting the number of wells required. When a site is located on a hilltop or results in groundwater mounding, flow in multiple directions may occur, increasing the required number of wells. Also, groundwater flow may be predominantly downward from a hilltop site, resulting in a vertically extensive plume which may not extent far laterally. Upward flow at groundwater discharge areas will limit the vertical extent of the plume.

- The groundwater flow velocity and the age of the source

  The distance from the source to the monitoring wells should consider the groundwater flow velocity and the expected migration distances since the source became active. When flow velocities are very low or the source is recent, wells should be installed closer to the source than in more permeable areas or older plumes.

- The presence of DNAPLs

  Assessment of DNAPLS may require a greater number of monitoring wells than evaluation of dissolved-phase constituents or LNAPLs depending on the mobility of the regulated substances and the potential risks posed by the regulated substances.

- Fracture traces

  Preferential and very rapid groundwater flow may occur in fracture traces, necessitating additional wells or modifying well placement to assess these features.

- Migration of regulated substances in fill materials

  Sites with irregular placement of fill materials may experience regulated substance migration in these materials which does not follow the overall groundwater flow pattern.

- The location of receptors and potential exposure pathways

  As noted above with regard to soil samples, the number of groundwater monitoring wells should decrease as fate and transport models are better able to predict groundwater conditions at a site. In addition, the number of wells is likely to decrease as the number of potential receptors and exposure pathways decrease.

- The applicability of non-invasive methods to the site conditions

  When non-invasive methods - such as soil-gas surveying or geophysics - may be reliably employed at a site, these may be used to limit the number of wells.

In addition, the use of springs and seeps should be allowed to augment a groundwater monitoring network when appropriate.

D

7. Notice Requirements and Procedures

a) Notice of Intent to Remediate

Performance of a site remediation under the provisions of Act 2 requires municipal, public, and Department notification. The intent of notification is to make the municipality, public, and Department aware that a person intends to remediate a site. The formal process for conducting remediation under Act 2 is initiated with submission of the Notice of Intent to Remediate (NIR) to the Department. An NIR and instructions are included in Attachment V.J to this manual. Submission of the NIR will initiate the notification procedures.

The Act provides that any person, firm, corporation, or other entity who proposes, or is required, to respond to the release of a regulated substance at a site, shall comply with public notification requirements in order to qualify for liability protection under Act 2. All remediation activities are conducted to attain compliance with one or more of the three remediation standards or special industrial area criteria.

The NIR shall provide basic information on the applicant and the site. The NIR shall provide a brief description of the site, ownership information, a listing of the contaminants involved and media affected, proposed remediation (if applicable), and proposed future use of the site. The NIR ~~should~~ may be submitted to the Department's regional office where the site is located ~~following~~ before or after site characterization when the remediation standard(s) have been ~~selected~~. Communication with the Department's regional staff, where the site is located, to discuss the NIR and any remediation aspects is encouraged. The following are the procedures for a Notice of Intent to Remediate:

- Complete the NIR and submit it in duplicate to the Department's Regional Environmental Cleanup Program (ECP) office in the region where the site is located. Submission of site characterization reports with the NIR is encouraged. Provide the name and address of a contact person to which correspondence or communication can be addressed. Include the newspaper name and anticipated date that the NIR submission notice will appear. Provide a copy of the NIR to the owner of the property if the NIR is being prepared and/or submitted by someone other than the property owner.
- At the same time the NIR is submitted to the Department, provide notice of submission of the NIR to the municipality and to the public. Municipal notice is accomplished by:
  - Sending a copy of the NIR to the municipality, or municipalities, where the site is located. Submit a copy of the NIR to the municipality with an accompanying cover letter.
  - Publish a summary of the NIR in a newspaper of general circulation in the area of the site. This summary should be a legal notice and developed following the model format in this manual.

- Provide the Department proof of the public and municipal notification of the NIR by submitting a copy of the newspaper proof of publication document (or a photocopy of the published notification showing the publication date) and a copy of both the municipality certified mail receipt card and cover letter. These are required to be submitted with the plan and reports required for remediation.

- If remediation is pursued by use of a site-specific standard or at a special industrial area, a 30-day period following submission of the NIR is required during which the municipality can request to be involved in the development of remediation and reuse plans for the site [Act 2, Section 304(n) and 305(c)]. The applicant shall inform the municipality of the 30-day comment period when submitting the NIR above. Also inform the municipality of the provision of Act 2 for requesting a public involvement plan. If the municipality requests involvement in the remediation, the person seeking remediation must implement a public involvement plan. The newspaper notice shall also provide a statement about the 30-day comment period and the right of a municipality to request involvement in the development of the remediation and reuse plan for the site. The municipality will have received notice prior to publication. The publication date of the NIR notice in the newspaper starts the 30-day comment period. If the model format previously mentioned is used, it will ensure the 30-day comment period and public involvement plan information has been provided. The DEP will not accept reports until after the 30-day comment period. Comments received from the public or a public involvement plan, along with the remediator's responses to the comments must be submitted with the appropriate final report. A public involvement plan is described below in Section I.B.7.b.

- If an NIR is submitted for a combination of standards, the municipal and public notification requirements of each standard used apply.

- Persons submitting an NIR for background, Statewide health, or a combination of these standards, who later decide to pursue cleanup to a site-specific standard or as a special industrial area, must renotice the cleanup according to the appropriate notice provisions.

- The Department Regional ECP office may acknowledge receipt of the NIR and will publish acknowledgment of receipt of the NIR in the *Pennsylvania Bulletin*.

the form is incomplete.

The Department may comment on the content of the NIR if ~~significant concerns are raised by the review of information contained in the NIR. An NIR is defective if it does not indicate that it will remediate or effectively address all media known or suspected to be contaminated.~~ An ~~inadequate~~ NIR does not serve to initiate the Act 2 process for permit waiver purposes.

Public notification of submission of the NIR to the Department, the municipality, the public via the newspaper notice, and publication in the Pennsylvania Bulletin is not required for background or Statewide health standard

incomplete

7. Notice Requirements and Procedures

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Performance of a site remediation under the provisions of Act 2 requires municipal, public, and Department notification. The intent of notification is to make the municipality, public, and Department aware that a person intends to remediate a site. The formal process for conducting remediation under Act 2 is initiated with submission of the Notice of Intent to Remediate (NIR) to the Department. An NIR and instructions are included in Attachment V.J to this manual. Submission of the NIR will initiate the notification procedures.

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The NIR shall provide basic information on the applicant and the site. The NIR shall provide a brief description of the site, ownership information, a listing of the contaminants involved and media affected, proposed remediation (if applicable), and proposed future use of the site. The NIR should be submitted to the Department's regional office where the site is located following site characterization when the remediation standard(s) have been selected. Communication with the Department's regional staff, where the site is located, to discuss the NIR and any remediation aspects is encouraged. The following are the procedures for a Notice of Intent to Remediate:

- Complete the NIR and submit it in duplicate to the Department's Regional Environmental Cleanup Program (ECP) office in the region where the site is located. Submission of site characterization reports with the NIR is encouraged. Provide the name and address of a contact person to which correspondence or communication can be addressed. Include the newspaper name and anticipated date that the NIR submission notice will appear. Provide a copy of the NIR to the owner of the property if the NIR is being prepared and/or submitted by someone other than the property owner.
- At the same time the NIR is submitted to the Department, provide notice of submission of the NIR to the municipality and to the public. Municipal notice is accomplished by:
  - Sending a copy of the NIR to the municipality, or municipalities, where the site is located. Submit a copy of the NIR to the municipality with an accompanying cover letter.
  - Publish a summary of the NIR in a newspaper of general circulation in the area of the site. This summary should be a legal notice and developed following the model format in this manual.

B. Statewide Health Standard

1. Introduction

The Statewide health standards are established by Act 2, Section 303, and are referred to as medium-specific concentrations (MSCs) that must be attained in order to achieve the liability protection provided for in the Act. The medium-specific concentrations calculated according to the methodologies in Sections 250.304 through 250.310 are those that establish the level that must be attained under the Statewide health standard to be eligible for liability protection as set forth in Act 2, Chapter 5.

The medium-specific concentrations are contained in Appendix A to Chapter 250, Tables 1 through 6. These tables are included with the regulations attached to this manual in Section V.B. Cleanup liability protection provided under Act 2 is contingent upon the attainment of the appropriate MSCs determined using the procedure described in Part 3 below.

This guidance presents the procedures to be used in assessing site contamination and demonstrating attainment of the Statewide health standard. Use of this guidance and data submission formats should simplify reporting on the site and reduce delays in obtaining final report approval by the Department. This guidance is designed to help understand and meet the requirements of the Statewide health standard under Act 2 and the regulations in Chapter 250. DEP Environmental Cleanup Program staff in the Regional Office are a valuable resource and will assist as requested in answering questions on the Statewide health standard.

Failure to demonstrate attainment of the Statewide health standard may result in the Department ~~requiring that additional remediation measures be taken to meet the Statewide health standard~~ disapproving the report or the person may elect to attain one of the other standards.

2. Process Checklist for Remediations under the Statewide Health Standard

- ☐ Review the historical information and present use of regulated substances at the property.
- ☐ Begin the site investigation/characterization and gathering information about the area on and around the property.
- ☐ Optionally, determine if the property/site is affected by regulated substances not from the property in order to determine if the background standard may be appropriate. Contact DEP Regional Office for information.
- ☐ Submit Notice of Intent to Remediate for the Statewide health standard. Also Notice the Municipality, publish a notice in a local newspaper, and obtain proof of publication for inclusion with the final report. Procedures for submittal of notifications are contained in Section I.B.7 of this manual.

As-built well construction details, boring logs, cross sections, stratigraphic logs, include soil/rock characteristics and field instrument readings, and as-built drawings

Proofs required such as municipal and newspaper notices, proof of publication and Department acknowledgment of natural or areawide contamination.

Before and after remediation photographs

k) Signatures

The name, address, and signature of all those who participated in the remediation who are seeking a release of liability.

E

The Department needs to agree in writing that the site is in an area of wide spread groundwater contamination. This decision will be based on evidence presented to the Department in writing by the person seeking the determination.

Soils exhibiting the presence of naturally occurring regulated substances or soils where a large area was affected by a release of regulated substances off-property do not typically move from one location to another in comparison with the movement of groundwater. Natural movement of soil in Pennsylvania normally involves surface water transporting sediment, landslides or airborne transport of soil or contaminants.

Some sites may be located in an area where there has been widespread use of fill (Figure II-3). This fill may contain regulated substances. If a spill or discharge of a regulated substance occurs on a site that received fill long ago, the remediator can limit his remediation to the discharge that ~~he~~ has recently ~~caused.~~ In this case, the remediator would obtain relief from liability only for cleaning up what ~~he has~~ recently spilled. This includes contamination resulting from the onsite release in the soil and groundwater. Persons ~~who wish to~~ limit their cleanup to the levels that were already present in the fill ~~should provide information to the Department indicating that the fill was historical, not placed at their direction, widespread, and involved more than the subject site.~~

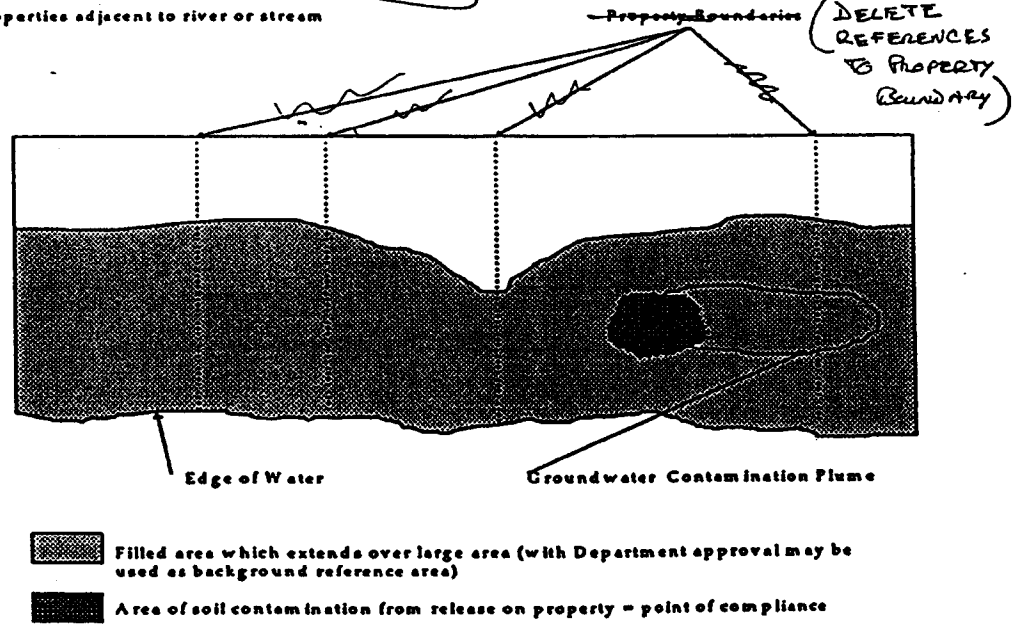


Figure II-3
Background Standard ~~Areawide Fill~~

SECTION III. RELATIONSHIP TO OTHER ENVIRONMENTAL STATUTES

Remediation under Act 2 sometimes involves relationships to other environmental statutes (*e.g.*, groundwater pump and treat systems require NPDES permits). Although other Department programs (*e.g.*, Water Quality Management) will be involved in requests and approvals, the regional Environmental Cleanup Program Manager will coordinate these activities. All paperwork should be sent to the regional Environmental Cleanup Program Manager.

A. Solid Waste Facilities

Solid waste management facilities, including those facilities that manage municipal, residual, or hazardous waste are principally regulated under the Solid Waste Management Act of 1980 (Act 97).

The Department implements the requirements of Act 97 through regulations adopted for hazardous waste Chapters 261 through 270, for municipal waste Chapters 271 through 285, and for residual waste Chapters 287 through 299.

1. Disposal Prior to 1980

Solid waste management facilities that were permitted under the Pennsylvania Solid Waste Management Act of 1968, Act 241, and ceased disposal activities prior to September 7, 1980, are subject to the terms and conditions of their original permit relating to closure. The remediation of any release of a regulated substance from these facilities is subject to Act 2 and the regulations adopted thereunder.

Solid waste management facilities that did not have a solid waste management permit or did not have any specific closure provisions incorporated into their permit ~~are required to~~ remediate any release under the provisions of Act 2. The covering, grading, revegetation, and related closure activities of any waste in place is subject to best management practices, designed to prevent pollution, odors, and other nuisances.

~~Consideration of a release of liability for waste left in place~~ will be largely dependent upon the ability of the remediator to fully, comprehensively, and accurately characterize the ~~waste~~. ~~Wastes~~ that are homogenous in nature, such as sludges, ash, slags, sands, will typically be easier to characterize than old landfills, waste piles, etc. Leaving ~~waste~~ in place may raise the need to consider deed restrictions in association with the remediation project.

~~If a facility decides to implement clean closure, where waste is removed, the soil and groundwater left on site must meet an Act 2 standard.~~

2. Post 1980 Disposal Activities

Solid Waste facilities that were permitted under Act 97 and ceased disposal activities prior to July 4, 1992, (for residual waste) or April 8, 1988, (for

may be remediated under any Act 2 standard or combination of standards.

municipal waste), are subject to the terms and conditions of their original permit relating to closure, unless the Department requires the submission of a closure plan under Section 287.117 (relating to residual waste) or under Section 271.113 (relating to municipal waste). The remediation of any release of a regulated substance from these facilities ~~is subject to Act 2 and regulations promulgated thereunder.~~

Permitted solid waste management facilities that received waste after September 7, 1980, and are continuing to operate must continue to comply with the permitting, operation, design, and closure requirements prescribed by the regulations adopted under Act 97 and other relevant environmental protection Acts and regulations. Any release of a regulated substance from a municipal or residual waste disposal or processing unit must be addressed in accordance with an approved assessment and abatement plan, during the operational life of the facility. The abatement of a regulated substance shall meet either the applicable Statewide health or background standards of Act 2. If a release occurs after closure, any of the three remediation standards of Act 2 would apply.

It should be noted, however, that a spill or release at operating, permitted facilities that occurs outside of a disposal or processing unit, including surface impoundments, waste storage areas, can be remediated under Act 2. For example, a leaking fuel tank, or a truck spill on an access road, can be remediated under Act 2 even if the permitted area includes the entire property.

Remediation performed at any hazardous waste facilities must comply with the requirements of the federal Resource Conservation and Recovery Act. Consultation with DEP is advised.

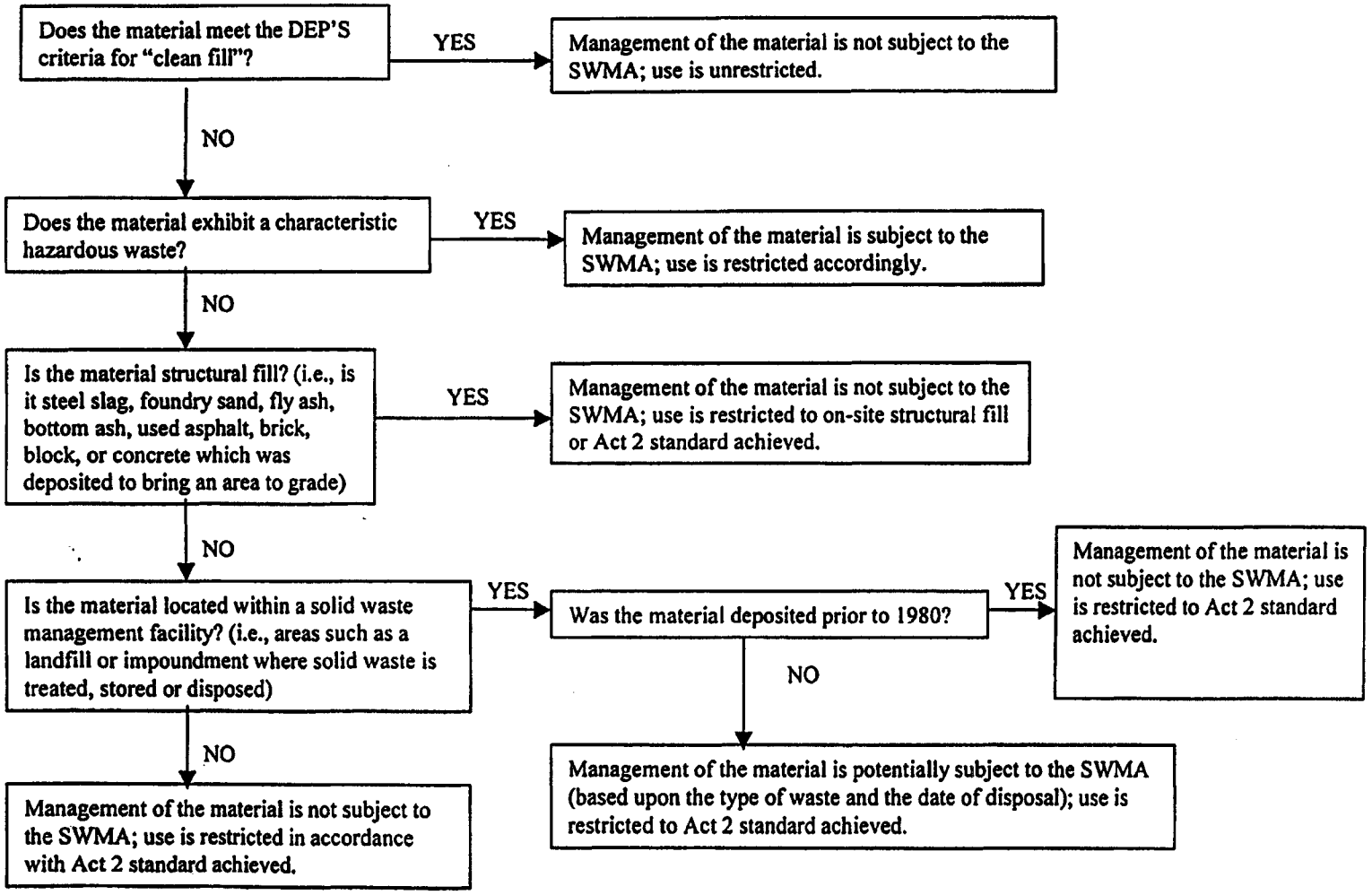
The infusion of some of the Act 2 principles, concepts, standards, and regulations are being considered for inclusion into the assessment and abatement sections of the municipal and residual waste regulations. These proposed regulatory changes permit the application of the background or Statewide health standards to the release(s) of regulated substances during the operation of a facility. The proposed regulations include a risk-based numerical standard option, the alternative groundwater protection standard, that is consistent with Subtitle D of federal waste regulations. These revisions also address a release of a regulated substance after the closure of a facility and propose to authorize the use of any of the Act 2 standards to address the release.

The illegal disposal of solid waste after September 7, 1980, may require clean closure of the site in conjunction with Act 97. The Department, as a matter of enforcement discretion, may authorize closure in place under applicable closure standards and procedures described above in conjunction with an Act 2 remedy, as part of an approved closure plan.

3. Product Spills

The spillage of commercial chemicals into the environment may be remediated under any one or a combination of the Act 2 standards for soils and groundwater. Contaminated media removed from the ground and moved off the site of contamination will be considered the generation of solid waste.

MANAGEMENT OF MATERIALS DISTURBED AS PART OF AN ACT 2 REMEDIATION



F

[Draft NFA Letter (where no Act 2 release is being sought)]

Dear Sir/Madam:

The Department is in receipt of the **[Type of Report]** Report submitted by **[Person submitting report]** regarding the **[Facility Name]** located in **[Township Name]** Township, **[County]** County, Pennsylvania, pursuant to the provisions of the **[Act Name]**. Pursuant to such Report and the provisions of the **[Act Name]**, the Department has concluded that **[Person submitting report]** has remediated the site in accordance with all applicable regulatory requirements, and as such, no further action is required at the site at this time.

The **[Type of Report]** Report demonstrates that the site has been remediated in accordance with the requirements of the **[Act Name]**. If you have any questions or require any additional information, please do not hesitate to contact me.

Sincerely,

Regional Manager
Environmental Cleanup Program

G

5. Ecological Screening

All sites remediated to the Statewide health standard must be screened for impacts to ecological receptors. The person conducting the remediation should use the ecological screening process described in Section 250.311 of the regulations and illustrated in Figure II-6. If the site is remediated to levels equal to one-tenth of the values listed in Tables 3 and 4 of Appendix A to the regulations, except for CPECs identified in Table 8 of Appendix A, no additional evaluation is required. This should be documented in the final report.

The objective of the ecological screening procedure is to quickly evaluate whether surface soils or sediments at a site have the potential to pose substantial ecological impact or impacts requiring further evaluation. The site screening procedure defines substantial impact as the potential for constituents detected onsite to cause a greater than 20% change in abundance of species of concern compared to an appropriate reference area, or a greater than 50% change in the extent or diversity of a habitat of concern compared to an appropriate reference area (Suter, 1993; Suter et al., 1995; U.S. EPA, 1989). ~~Individuals of endangered or threatened species, and exceptional value wetlands are protected regardless of the percentage of change in the abundance of species or in the extent or diversity of habitat.~~ The goal of the screening procedure is to minimize, to the extent practicable, the number of sites which require detailed ecological risk assessment, while remaining protective of the environment.

The key elements of the screening procedure include the presence of light petroleum product constituents; the size of the site; the presence or absence of Constituents of Potential Ecological Concern (CPECs) on the site; the presence or absence of species of concern or habitats of concern; and the presence or absence of completed exposure pathways, taking into account the current or planned future use of the site. The ecological screening process is described in this manual as part of the site characterization process because the information required to evaluate a site for ecological receptors is most efficiently collected at the same time as other site characterization data.

Regardless of the outcome of the ecological screening, the results are documented in a written report. It is important to note that if any of the first three steps are not met, *i.e.*, there is contamination other than light petroleum products; the impacted area of surface soil is equal to or greater than 2 acres, or the impacted area of sediments is greater than or equal to 1000 square feet; or all pathways are not obviously eliminated, completion of the site ecological screening process requires an onsite evaluation. Using a streamlined set of guidelines, this onsite evaluation is a critical component of the means of identifying those sites that may pose substantial ecological impacts, and of documenting the lack of ecological impacts at other sites. Without such a site evaluation, a weight of evidence-based evaluation cannot be achieved, as required by EPA guidance (*e.g.*, EPA's *Framework for Ecological Risk Assessment*, 1992) and ASTM standards (ASTM Designation: E1706-95). In addition, this screening procedure is consistent with the initial steps of EPA's ecological risk assessment guidelines for contaminated sites (U.S. EPA, 1997). The remainder of this section discusses each of the steps of the ecological screening procedure in more detail.

which are the subject of the release under investigation,

d) Step 4 - Presence of Constituents of Potential Ecological Concern

The fourth step in the ecological screening process is the determination of whether any of the constituents detected at the site are considered to be constituents of potential ecological concern (CPECs). CPECs are identified on Table II-2.

In this and the following step, available site information would be reviewed to determine if CPECs are likely to have been released into the environment. If CPECs are not detected at the site, then the screening process continues to Step 5 (Preliminary Onsite Evaluation). If one or more CPECs, either individually or in combination, are detected at the site, then the screening process moves to Step 6 (Detailed Onsite Evaluation and Identification of Species and Habitats of Concern).

The ecological evaluation process that has been developed includes additional evaluation criteria for sites where CPECs are not found. Step 5 (Preliminary Onsite Evaluation) is an evaluation of adverse chemical effects that may result from regulated substances other than CPECs and as such, reduces the probability that substantive adverse environmental impacts will go undetected. Also, surface water regulations and standards will remain applicable to those sites, adding to the overall protection of the environment at any site, as will other regulations applicable to species of concern, such as the Endangered Species Act.

e) Step 5 - Preliminary Onsite Evaluation

The fifth step of the site ecological screening process is a preliminary onsite evaluation, to be conducted by a qualified environmental scientist (common practice would use a person with a bachelor's degree in an environmental science field and 5 years of experience in an environmental field), using the criteria presented in this guidance. If, after conducting the preliminary onsite evaluation, the qualified environmental scientist determines that substantial ecological impacts are not probable or evident based on the weight of evidence available for the site, the screening process moves to Step 9 (Final Report: No Further Ecological Evaluation Required). It must also document the presence of any endangered or threatened species within a radius of 2500 ft of the site, or exceptional value wetlands onsite. If after conducting the preliminary onsite evaluation, the qualified environmental scientist determines that substantial ecological impacts or impacts requiring further evaluation are or may be present, the screening process continues to Step 6 (Detailed Onsite Evaluation and Identification of Species and Habitats of Concern).

The objective of the ecological evaluation conducted during the preliminary onsite evaluation is to ensure that ecological impacts resulting from regulated substances which are not CPECs are detected. The preliminary onsite evaluation involves three steps:

a) Step 1: Presence of Light Petroleum Product Constituents

The first step in the site ecological screening process is to determine whether the constituents present in surface soils (soils at a depth of up to two feet) or sediments are related only to light petroleum products (*i.e.*, gasoline, jet fuel A, kerosene, #2 fuel oil/diesel fuel), which have relatively low PAH content (ASTM Designation: E1739-95). If light petroleum product constituents (including BTEX) are the only constituents detected onsite, then the screening process moves to Step 9 (final report: No Further Ecological Evaluation Required). If constituents in addition to, or other than, light petroleum product constituents are present, the screening process continues to Step 2 (Site Size).

The purpose of this step is to eliminate from further evaluation those sites at which the only detected constituents are residual compounds from a release of light petroleum products. In general, remediation of light petroleum product release sites to prevent substantial ecological impacts is not required because the Statewide health standards for these compounds are generally protective of ecological receptors.

b) Step 2: Site Size

The second step in the ecological screening process is determining the area of exposed and contaminated surface soil (soils at a depth of up to two feet) and sediments that are of potential ecological concern. The minimum areas are 2 acres of exposed and contaminated surface soil, and 1,000 square feet of contaminated sediment.

Sediments are those mineral and organic materials situated beneath an aqueous layer for durations sufficient to permit development of benthic assemblages. Indicators of benthic assemblages would include macroscopic algae, aquatic invertebrates, or aquatic plants. The aqueous layer may be static, as in lakes, ponds, or other water covered surface depressions greater than or equal to 1,000 square feet but necessarily contiguous (excluding permitted open water management units), or flowing, as in rivers and streams located on a site. (U.S. EPA, 1993b; U.S. EPA, 1991a).

If a site exceeds these specified minimum areas, then the screening process continues to Step 3 (Obvious elimination of pathways). If the area of the site is smaller than the specified minimum areas, then the screening process moves to Step 9 (Final Report: No Further Ecological Evaluation Required).

c) Step 3 - Obvious Pathway Elimination

The third step accounts for those sites where features such as buildings, paving, or other development of the site are sufficiently extensive as to eliminate specific exposure pathways to ecological receptors. This primarily applies to sites in heavily industrialized or otherwise developed areas such that habitats or species of concern could not occur onsite or within a reasonable distance. Any site with features that obviously eliminate exposure pathways will drop out of the screening process at this point and proceed to Step 9, Final Report - No Further Ecological Evaluation Required.

or Pennsylvania Fish & Boat Commission for the most recent listing.

5. The ecological screening process defines as habitats of concern:

   - typical wetlands with identifiable function and value, except for exceptional value wetlands, as defined by DCNR,
   - breeding areas for species of concern,
   - migratory stopover areas for species of concern (*e.g.*, migrant shorebirds, raptors or passerines),
   - wintering areas for species of concern,
   - habitat for State endangered plant and animal species,
   - Federal, State, and Local parks and wilderness areas,
   - areas designated[2] as wild, scenic, recreational; and,
   - areas otherwise designated as critical or of concern by the Pennsylvania Game Commission, Pennsylvania Fish & Boat Commission, and the DCNR.

g) Step 7 - Identification of Completed Exposure Pathways

The seventh step in the ecological screening process is a determination of whether a completed exposure pathway from CPECs to species or habitats of concern exists at the site in its current or intended use. The existence of a completed exposure pathway[3] is determined during the detailed onsite evaluation, as described above for Step 6. Note that the CPECs in soil beneath a paved parking lot or below the root zone (top two feet) are not accessible to most species and habitats of concern and therefore, this pathway is classified as incomplete. If a complete pathway exists at the site, then the screening process moves to Step 8 (Attainment of Standard and Mitigative Measures). If no complete exposure pathways are identified during the detailed site evaluation, then the screening process continues to Step 9 (Final Report: No Further Ecological Evaluation Required).

which are the subject of the release under investigation,

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[2] as defined by guidance.

[3] Exposure pathway - the course a regulated substance(s) takes from the source area(s) to an exposed organism of a species of concern including absorption or intake into the organism. Each complete exposure pathway must include a source or release from a source, a point of exposure, and an exposure route into the organism. The mere presence of a regulated substance in the proximity of a receptor does not constitute a completed pathway. The receptor of concern must be capable of contacting the regulated substance in such a way that there is high probability that the chemical is absorbed into the organism (ASTM. E1739-95; modified to accommodate provisions of Act 2).

h) Step 8 - Attainment of Standard and Mitigative Measures

If the results of Steps 1 through 7 above do not result in the site being eliminated from further ecological consideration, the person conducting the remediation must demonstrate one of the following:

- attainment of the Statewide health standard is protective of ecological receptors,
- if the person cannot demonstrate that the Statewide health standard MSCs are protective of ecological receptors, the person shall demonstrate either that the post-remedy use will result in the elimination of all complete exposure pathways at the time of the final report, or in accordance with a post-remediation care plan, or that mitigative measures have been implemented and a post-remediation care program has been instituted,
- attainment of the background standard, or
- that the procedures of Section 250.402 (c) and 250.409 of the regulations and Sections II.C and V.E.2. of this manual have been followed to demonstrate attainment of a site-specific standard for protection of ecological receptors.

Mitigative measures that may be used to demonstrate attainment of the Statewide health standard are identified in Chapter 250.311(f). These mitigative measures may only be used if no exceptional value wetlands have been identified by the screening process, and no state or federal laws or regulations prohibit the destruction of the habitats or species identified in the screening process.

The following mitigative measures may be used, and in the indicated order of preference:

- restoration onsite of species and habitats identified in the screening process.
- replacement onsite of species and habitats identified in the screening process.
- replacement on an area adjacent to the site of species and habitats identified in the screening process.
- replacement at a location within the municipality where the site is located of species and habitats identified in the screening process.

The Department shall review and approve any proposed mitigative measures prior to implementation to ensure that the intended use of the site minimizes the impact to ecological receptors identified in the screening process. In addition,

which will define the exposure pathways, must be based on site–specific land use considerations. The pathways, which describe the mechanism by which receptors may be exposed to a source, are also site-specific. Engineering or institutional controls that are to be implemented which will eliminate exposure pathways must be incorporated into the conceptual model. Then, a risk assessment only needs to be performed if complete exposure pathways for humans and/or ecological receptors exist under current or future planned conditions.

ssuming that the habitat ould support receptors in he absence of release of regulated substances, a

A complete exposure pathway exists if there is a receptor to be exposed through an exposure route. For ecological receptors,, a pathway is complete even if the current ecological receptors are not present as a result of the contamination. A pathway is not complete if there is no reasonable route; *i.e.*, the contaminant is not in an available form to affect the receptors.

However, before getting into the mechanics of performing the risk assessment, it is important to clearly define the problem that is to be addressed, the objectives of the study and how the results will be used to meet these objectives. This initial step is critical to ensure a successful outcome (accurate, protective, timely, cost-effective evaluation) and that the level of effort is commensurate with the scope of the problem.

Under Act 2, a risk assessment report may include the following:

- a baseline risk assessment report that describes the potential adverse effects, including the evaluation of ecological receptors, under both current and planned future conditions caused by the presence of regulated substances in the absence of any further control, remediation or mitigation measures;
- a risk assessment report that documents which exposure pathways will be eliminated by a pathway elimination measure so that any substantial present or probable future risk to human health or the environment is eliminated;
- a risk assessment report that describes the methods used to develop a concentration levels at which human health and the environment are protected; and
- the comments obtained as a result of a public comment period, if any, and the responses to those public comments.

If an unacceptable risk is identified at a site, a person may develop site-specific standards based on a site-specific risk assessment. A baseline risk assessment report is not required if the Department, in its remedial investigation report or cleanup plan approval, determines that a specific remediation measure, other than a no-action remedial alternative, can be implemented to attain the site-specific standard [Act 2, Section 304(l)(2) and Section 250.405(c) of the regulations]. A baseline risk assessment is that portion of a risk assessment that evaluates a risk in the absence of the proposed site-specific measure.

As an alternative to developing site-specific numerical cleanup standards and remediation, individuals may choose to perform a combination of engineering and institutional controls to achieve pathway elimination for regulated

substances of concern. Common methodologies used to eliminate exposure pathways include permanent capping of non-volatile contaminated soils with parking lots or building slab construction, deed restrictions, slurry or cutoff walls, or liner systems.

Use of pathway elimination may require interface with the Solid Waste Management Act, particularly for off-site removal of contaminated media or management of existing waste onsite.

To prepare the development of the site-specific standards risk assessment report, all current and probable future complete exposure pathways as identified in the fate and transport analysis should be addressed. When pathway elimination measures are planned and preapproved, the remaining pathways and the eliminated pathways under the post-remedial conditions should be identified in the site-specific standard risk assessment report. Site-specific cleanup levels should be developed to address the risks associated with these remaining pathways. Where all pathways have not been eliminated, a risk assessment report is required.

In addition to human health protection, the risk assessment must evaluate ecological receptors. An ecological risk assessment should be conducted with considerations of the site-specific ecological risk assessment procedure provided in Attachment V.E.2 of this manual and the most recent U.S. EPA or ASTM guidances, including those listed in Table II-4, to determine whether an impact has occurred or will occur if a release goes unabated, to establish acceptable remediation levels or alternative remedies based on current or intended future land use that are protective of the ecological receptors.

Ecological receptors include:

- individuals of threatened or endangered species as designated by the U.S. Fish and Wildlife Service under the Endangered Species Act;
- exceptional value wetlands as defined in 25 Pa. Code Section 105.17 (relating to wetlands);
- habitats of concern as defined in Section 250.1 of the regulations; and
- species of concern as identified in Section V.I of this manual.

At the conclusion of the risk assessment, a risk assessment report should be submitted to the Department for review and approval. Section II.C.7.b of this manual describes specific information required to be included in the risk assessment report.

5. Cleanup Plan

Section II.C.7.c of this manual describes specific information required to be included in the cleanup plan. A cleanup plan is not required and no remedy is required to be proposed or completed if neither current nor future exposure pathways exist. The future exposure pathways should be based on currently planned future land use. Subject to the Department's approval of the baseline risk assessment report, a cleanup plan is also not required, if the baseline risk

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

NOTICE OF INTENT TO REMEDIATE

Name _____

Site Address _____

Municipality _____ **County** _____

Latitude _____° _____' _____" **Longitude** _____° _____' _____"

Regulated Substances - Identify those regulated substances to be addressed in the Act 2 reports:

A. Organic Compound(s)

B. Inorganic Compound(s)

Act 2 Cleanup Standard: Use the appropriate cleanup standard abbreviation for each regulated substance and media. The abbreviations are: Background - BKG, Statewide Health - SHS, Site Specific - SSS.

Regulated Substance	Soil	Groundwater	Surface Water	Sediment

Are you requesting Special Industrial Area designation?: ☐ Yes ☐ No

Are you requesting Non-Use Aquifer designation?: ☐ Yes ☐ No

Anticipated Future Use: Residential ____ Non-Residential ____

Anticipated Date of Submission of Plan or Final Report (if known) _____

Name of newspaper and date of publication of NIR Summary. Newspaper _____

Date of publication _____

For Special Industrial Areas only:

A. Identify Enterprise Zone (if applicable) or

B. Ownership History (as required by 25 Pa. Code § 250.502(3))

Proposed Remediation Measures:

Property Owner Name _____ **Address** _____

Remediator Name _____ **Address** _____

Preparer of Notice of Intent to Remediate:

Name _____ **Title** _____

Address _____

Signature _____ **Date** _____ **Telephone** _____

[Draft Act 2 Approval Letter]

Dear Sir/Madam:

The Department has reviewed the Final Report submitted by **[Person submitting report]** regarding the **[Facility Name]** located in **[Township Name]** Township, **[County]** County, Pennsylvania, which was submitted pursuant to the provisions of the Pennsylvania Land Recycling and Environmental Standards Act ("Act 2"), 35 P.S. § 6026.101 et seq. Pursuant to Act 2, **[Person submitting report]** has demonstrated attainment of the applicable standard for each of the regulated substances identified in the Final Report. As such, the Department hereby approves such Final Report, and no further action is required at the site at this time. **[OPTIONAL: This approval is subject to Section 303(g)/ 304(m)/305(g) of Act 2 which requires an acknowledgment in the property deed.]**

As of the date of this approval, **[Person submitting report and any other person receiving liability protection]** is hereby provided with the cleanup liability protection of Section 501(a) of Act 2 which provides that:

> [a]ny person demonstrating compliance with the environmental remediation standards established in Chapter 3 shall be relieved of further liability for the remediation of the site under the statutes outlined in Section 106 [the Clean Streams Law, 35 P.S. 691.1 § et seq., the Air Pollution Control Act, 35 P.S. § 4000.1 et seq., the Solid Waste Management Act, 35 P.S. §6018.101 et seq., the Infectious and Chemotherapeutic Waste Law, 35 P.S. § 6019.1 et seq., the Hazardous Sites Cleanup Act, 35 P.S. § 6020.101 et seq., and the Storage Tank and Spill Prevention Act, 35 P.S. §6021.101 et seq.] for any contamination identified in reports submitted to and approved by the Department to demonstrate compliance with these standards and shall not be subject to citizen suits or other contribution actions brought by responsible persons. The cleanup liability protection provided by this chapter applies to the following persons:
>
> (1) The current or future owner of the identified property or any other person who participated in the remediation of the site.
>
> (2) A person who develops or otherwise occupies the identified site.

(3) A successor or assign of any person to whom liability protection applies.

(4) A public utility to the extent the public utility performs activities on the identified site.

35 P.S. § 6026.501(a).

The Department thanks you for your cooperation in working with it to achieve this Act 2 cleanup. If you have any questions, please feel free to contact the Environmental Cleanup Program.

Sincerely,

Regional Manager
Environmental Cleanup

FINAL REPORT
STATEWIDE HEALTH STANDARD
CHECKLIST

- ☐ Did you include all of the necessary Site Characterization Information as required by 25 Pa. Code § 250.204 (b) - (e)?
  - ☐ A description of the site.
  - ☐ Source characterization or development of a conceptual model.
  - ☐ Characterize the vertical and horizontal extent of contamination for each contaminant of concern.
  - ☐ Determine the direction and rate of contaminant movement and fate and transport of all contaminants within each media of concern.
  - ☐ Determine the appropriate remedial technology for each media of concern.
  - ☐ Complete a Sampling and Analysis Plan and Quality Assurance Plan (including copies of soil and geologic boring descriptions and as-built construction drawings of wells and all laboratory analytical results).
  - ☐ Determine the location of any necessary soil sample locations and/or groundwater monitoring wells.
  - ☐ Use a professional geologist licensed in the Commonwealth for all interpretations of geologic and hydrogeologic data.
- ☐ Did you include the results of the evaluation of ecologic receptors?
  - ☐ Include a postremediation care plan to document that the postremedy use is implemented within one year from the date of the approval of the Final Report or to demonstrate the progress of mitigation measures.
- ☐ Did you include the basis for selecting residential or nonresidential standards?
- ☐ Did you include the additional information required by 25 Pa. Code § 250.204(f)(1) - (5)?
  - ☐ Descriptions of the treatment, removal, or decontamination procedures performed in remediation.

- ☐ Descriptions of the sampling methodology and analytical results, include the statistical methodologies used to demonstrate attainment of compliance with the Statewide Health Standard.
- ☐ Documentation of compliance with postremediation care requirements, if necessary.
- ☐ Include all sampling data.
- ☐ Include appropriate information regarding the fate and transport analysis (including the organization that developed the model, and all documentation of the results of the analysis).

☐ If you used the soil-to-groundwater pathway soil buffer distance, did you include the proper information?

- ☐ Information concerning the actual site soil column thickness below the contaminated soil.
- ☐ Information gathered during the field investigation phase and the laboratory analysis conducted on the soil samples.
- ☐ Boring logs and all other necessary data.

☐ If you are using an equivalency determination, did you include all of the necessary information?

- ☐ Information describing the actual site soil column below the contaminated soil.
- ☐ Information gathered during the field investigation phase and the laboratory analyses conducted on groundwater samples beneath the contaminated soil.
- ☐ Boring logs and all other necessary data.
- ☐ Sampling data, in tabular format, that shows no exceedances of groundwater MSCs or the background standard.
- ☐ A demonstration that sampling data indicates no increasing trend of concentration over time that may exceed the selected standard.

☐ Did you submit two copies of the Final Report to the DEP?

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of the statistical requirements for groundwater attainment in the background standard.

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~~If a~~ person remediating a site ~~believes that it meets the following conditions and has eight or more samples, the person~~ may request that the Department accept fewer than the eight quarters of samples. The conditions for reducing the number of sampling events are found in Section 250.707(a)(2)(x) of the regulations .The request may be sent along with supporting information , to the Regional Environmental Cleanup Program Manager. If the Department is not satisfied that these conditions are met, the person can continue to monitor for the remainder of the eight quarters.

The time frame for taking the background samples when remediation is not undertaken may start before the site characterization is completed. This will allow a user who has existing data to establish background without the need to monitor for an additional four or eight quarters as long as all the consecutive quarterly data total four or eight quarters, as applicable to that background condition.

If remediation action is undertaken, the attainment sampling is done after remediation is completed.

b) Background from Naturally Occurring or Areawide Contamination.

Some areas of the Commonwealth have naturally occurring or wide spread groundwater contamination. The Department will make the final determination on the existence of areawide contamination. After the responsible party has sent a written request with supporting data to the Department and provided documentation that areawide contamination exists, the Department will review the submitted data. When the Department agrees, through written acknowledgment to the responsible party that the property under investigation is within a location of areawide contamination, the following approach for establishing background is allowed.

When the background groundwater condition is due to naturally occurring or areawide contamination, a minimum of twelve samples should be ~~taken offsite and twelve samples taken onsite. The number of wells sampled onsite and offsite must be the same in each round of sampling. For example, if three wells are sampled offsite, three wells must be sampled onsite. In this example each of the wells must be sampled four times at a minimum.~~ The samples must be independent of one another. The onsite and offsite samples must be taken at the same time. The time frame for establishing this condition is not predetermined, as it is in the upgradient release. By increasing the number of wells onsite and offsite, the number of sampling events necessary to meet the minimum of twelve samples can be reduced (two wells will require six sampling events, six wells will require two sampling events). The offsite wells must be located upgradient of the site. The number and horizontal and vertical location of the wells onsite must be adequate to characterize any release of regulated substance at each site. All sampling data must be reported to the Department.

collected from any combination of monitoring wells, including upgradient locations, as stated in Section 250.707(a)(3)(ii).

site or soil vapor transport onto the site), the background concentrations shall be determined by monitoring the concentrations of regulated substances associated with this flux where it enters the property. For background conditions which are not related to a continuing source of chemical flux onto the property (*e.g.*, historical accumulation of airborne contaminants including particulate and associated deposition in surficial soils), the determination of background concentrations shall include the identification of the source(s), if possible, and a demonstration that the areal distribution of the background conditions extends beyond the limits of the property.

These same determinations should be made for naturally occurring regulated substances. However, an additional determination should be made as to the naturally occurring concentrations of these regulated substances independent of impacts from the release(s) or other background sources. Therefore, for naturally occurring regulated substances, the background standard would include the naturally occurring concentration plus contributions from sources not on the property.

Use of breakdown products of a regulated substance from off site which form on the site undergoing remediation can be included in the assessment of attainment of the background standard. The Department is willing to consider breakdown products of substances released upgradient of the property. The remediator should submit historical information and fate and transport analyses to demonstrate that the substances onsite are a result of chemical breakdown and not a result of a release on the property.

The establishment of the groundwater background concentrations for a site using sampling and analysis allows for two different background conditions, as described in Section 250.707(a)of the regulations:

1) Background from a known upgradient release of regulated substance.

2) Background from naturally occurring or areawide contamination.

The Department provides different procedures to establish the background groundwater concentration depending on which background condition is present upgradient and adjacent to the property. The method used when establishing background and determining attainment of the background standard for a site must be the same.

a) Background from a Known Upgradient Release of a Regulated Substance

This groundwater distinction occurs when an adjacent or nearby property has had a release of the same regulated substance that flows onto the property under consideration for an Act 2 remediation. One option for determining background conditions is through the use of monitoring wells sampled during the site characterization to establish the well with the highest concentration of the groundwater migrating onto the site. Another option is to compare the statistical distribution of the background area with the impacted area onsite. Section 250.707(a)(2) in the regulations, Section II.A.5.f in this Section, and also the statistical requirements in Section IV.B of this manual discuss the handling

topography, geology, depth of bedrock, potentiometric surfaces, and the existence of utilities.

- All other site information relevant to the conceptual design, construction, or operation of the remedial action.

f) Attainment

Appropriate statistical methods, discussed in Section IV.C, will confirm the attainment of cleanup under the background standard. Not all the statistical tests discussed in the manual are appropriate for the background standard attainment tests. Section 250.707(a) of the regulations covers statistical tests for the background standard. The following information shall be documented in a final report when a statistical method is applied except the highest measurement comparison test described in Section 250.707(a)(1)(i) of the regulations:

- Description of the statistical method, and the underlying assumptions of the method.
- A clear statement of the applicable decision rule in the form of a statistical hypothesis for each spatial unit and temporal boundary including the applicable statistical parameter of interest and the specific cleanup standard.
- Documentation showing that the sample data set meets the underlying assumptions of the method and explaining why the method is appropriate to apply to the data.
- Specification of false positive and false negative rates.
- Documentation of input and output data for the statistical test, presented in table and figures, or both, as appropriate; and identify, by medium, contamination levels remaining onsite.
- An interpretation and conclusion of the statistical test.

In demonstrating attainment of the background standard, concentrations of regulated substances are not required to be less than the limit related to the Practical Quantitation Limit (PQL) for that substance as provided for in Section 250.701(c) and as listed in Section V.D of this manual.

i) Soil Background Standards

The determination of attainment of soil background standards will be based on a comparison of the distributions of the background concentrations of a regulated substance with the concentrations in an impacted area. Act 2 regulations allow a person to use highest measurement comparison, combination of Wilcoxon Rank Sum test and Quantile test, or other appropriate methods to demonstrate attainment of background standards. No matter which method is used, Act 2 regulations require that the minimum number of soil samples to be collected is ten from the background reference area and ten from each cleanup unit. This requirement of ten samples is to ensure that any selected statistical test has sufficient power to detect contamination. The regulations do not specify the false negative rate because it is more appropriate to determine the false negative rate

The remediator may take multiple samples from the same soil boring

on a site-specific basis. For the background standard, the false negative rate is the probability of mistakenly concluding that the site is clean when it is contaminated. It is the probability of making a Type II error.

ii) Groundwater Background Standards

There are two general categories of background conditions for groundwater. The first is naturally occurring background or areawide contamination, neither of which is expected to exhibit seasonal patterns or trends. The second is background associated with a release of regulated substances at a location upgradient from the site that may be subject to such patterns and trends.

For naturally occurring background or areawide contamination, it is recommended that a minimum of twelve samples be collected from any combination of upgradient monitoring wells, provided that all data collected are used in determination of background concentrations. This same number of samples must then be collected from monitoring wells impacted by a release on the site during the same sampling event. In both cases, this sampling may be accelerated such that all samples be collected as quickly as possible so long as the frequency does not result in serial correlation in the data. The resulting values may be compared using nonparametric or parametric methods to compare the two populations, such as using the combination of the Mann-Wilcoxon Rank Sum test and the Quantile test. When comparing with the background results, the sampling results in the plume onsite should not exceed the sum of the arithmetic average and three times standard deviation calculated for the background reference area [Section 250.708(a)(3)(vii)].

For background associated with a release of regulated substances at a location upgradient from a property, the background groundwater concentrations will be determined at the hydrogeologically upgradient property line of the property, or a point hydrogeologically upgradient from the upgradient property line that is unaffected by the release.

Attainment of the background standard must be demonstrated wherever the contamination occurs. There may be some mass of a particular contaminant added to groundwater on the property. However, that additional mass cannot result in concentrations which exceed the concentration measured at the property line, nor can it be used to allow releases on the property. Background concentrations are not related to a release at the site (Section 103 of Act 2).

In the event contamination migrates offsite, concentrations at the downgradient property boundary must be equal to or less than the background concentrations measured where groundwater enters the property. If there has been a release on the property, the plume migrating beyond the property boundary must be remediated.

For background associated with an upgradient release of regulated substances, Section 250.707(a)(2) of the regulations allows the use of the nonparametric tolerance limit procedure. The nonparametric tolerance limit procedure requires at least eight samples from each well over eight quarters have sufficient power to detect contamination. Once the nonparametric upper tolerance limit is

If the initial remediation chosen by the person fails to attain the background standard, that person may choose instead to meet the Statewide health or site-specific standards (Act 2, Section 302(c)). Sites attaining and demonstrating compliance with the background standard are not required to meet the deed acknowledgment requirements of the SWMA or the HSCA (Act 2, Section 302(d)). An existing acknowledgment contained in a deed prior to demonstrating compliance with the background standard may be removed.

2. Process Checklist for the Background Standard

- ☐ Review the historic and current information and present use of regulated substances at the property.
- ☐ Begin the site investigation/characterization and gathering information about the area on and around the property.
- ☐ Determine if property/site is affected by regulated substances not from the property.
- ☐ For the groundwater background concentration, establish if it is naturally occurring/areawide or from an upgradient source. Section 250.707 of the regulations.
- ☐ For the soils background concentration, establish if it is a naturally occurring or areawide problem.
- ☐ If using the naturally occurring/areawide background distinction - ~~Request in writing and receive back in writing the Department's approval that the site is indeed~~ in an area of wide spread contamination for the regulated substance ~~on your property/site before submitting the Notice of Intent to Remediate~~. Section 250.707(a)(3)(I) of the regulations.
- ☐ Continue with the site characterization and required activities needed to complete the final report . Section 250.204 of the regulations.
- ☐ Submit Notice of Intent to Remediate for the background standard. Also notice the municipality, publish a notice in a local newspaper, and obtain proof of publication for inclusion with the final report to the Department. Act 2 Section 302(e)(1). Procedures for submittal of notifications are contained in Section I.B.7 of this manual, with sample forms contained in Attachment V.J.
- ☐ Remediate the site to the background standard
- ☐ Demonstrate attainment of the background standard. Act 2 Section 302(b).
- ☐ Prepare and Submit final report to DEP Regional Office. See Act 2 Section 302(b)(2), Section 250.204 of the regulations, and Section II.A.5 of this manual.
- ☐ If final report is approved, the liability protection set forth in Act 2, Chapter 5 automatically applies.

Remember that the Department's approval that the site is needed as part of the attainment demonstration.

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- Top of bedrock contour (if encountered).

A conceptual site model should be developed and refined as information is gathered during the site characterization. The conceptual site model provides a description of the site and extent of contamination. Some of the information and data used to develop the site model would include:

- The type, estimated volume, composition, and nature of the released materials, chemicals or chemical compounds (Include all calculations and assumptions.)
- Source(s) and extent of release(s).
- Background concentrations for constituents of concern (optional).
- The horizontal and vertical extent of contamination.
- The portion of the horizontal and vertical extent of contamination which exceeds the selected standard.
- Affected aquifer(s) or water bearing formation(s)/member(s), hydrostratigraphic units.
- All existing and potential migration pathways.
- The estimated volume of contaminated soil and water (include all calculations and any assumptions.)

For soils, include information on samples and measurements used to characterize the horizontal and vertical extent of contamination, and direction and rate of contaminant movement based on factors in the soil and the contaminant which affect migration. Soil and boring descriptions should be included as an attachment.

For groundwater, include information on samples and measurements used to characterize the horizontal and vertical extent of contamination and direction and velocity of contaminant movement based on factors of the groundwater and the contaminant(s) which affect migration. Geologic boring descriptions and as built drawings of wells should be included as an attachment. Text, tables, graphics, figures, maps and cross sections, as appropriate, can be utilized to describe the nature, location, and composition of the regulated substances at the site. Providing the data in an appropriate format will expedite the review of the report.

d) Selection of the Applicable Statewide Health Standard

Documentation of the basis for selecting residential or nonresidential standards and for selecting the applicable MSCs according to the procedure in Section II.B.3 of this manual.

If the site is in an area where groundwater is not used or planned to be used for drinking water or agricultural purposes, provide the following documentation:

- That no groundwater derived from wells or springs is used or currently planned to be used for drinking water or agricultural purposes.

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remediated to the direct contact numeric value will not result in regulated substances migrating to groundwater at concentrations exceeding either the groundwater MSC or background.

i) Post-remediation Care Plan (if applicable)

If engineering controls are needed to attain or maintain the Statewide health standard; if institutional controls are needed to maintain the standard; if the fate and transport analysis indicates that the remediation standard, including the solubility limitation, may be exceeded at the point of compliance in the future; if the remediation relies on natural attenuation; if a post-remedy use is relied upon but is not implemented to eliminate complete exposure pathways to ecological receptors; or, if mitigative measures are used, a post-remediation care program, which includes the information required by Chapter 250.204(g), must be documented in the final report in accordance with Section 250.204(g). The plan shall include:

- reporting of any instance of nonattainment;
- reporting of any measures to correct nonattainment conditions;
- periodic reporting of monitoring, sampling and analysis as required by the Department;
- maintenance of records at the property where the remediation is being conducted for monitoring, sampling and analysis; and
- a schedule for operation and maintenance of the controls and submission of any proposed changes.

The remediator is responsible

~~The Department may ask for documentation of financial ability~~ to implement the remedy and to maintain the post-remediation care controls. When the standard can be maintained without the controls operating, and the fate and transport analysis shows that the standard will not be exceeded in the future, the Department will approve shutdown of the post-remediation care.

j) References

Any references cited in the final report.

k) Attachments

Laboratory sheets and historical sampling data results

All raw data and summary of data

Quality Assurance and Quality Control Plan

Calculations and formulas

Methods of data analysis

Health and Safety Plan

Sampling and Analysis Plan

- For each additional volume of up to 3,000 cubic yards, an additional 12 sample points.
- Additional sampling points may be required based on site--specific conditions.

These soil volumes may be comprised of zones where different MSCs apply (*e.g.*, depths of 0-15 ft and greater than 15 ft). For purposes of demonstrating attainment, the analysis of samples, based on their physical location by the systematic random sampling method (Section IV.B), must be compared to the applicable MSC for that physical location.

To use this rule for demonstrating attainment of groundwater MSCs, eight samples from each compliance well must be obtained during eight consecutive quarters. If a shorter sampling period is then used, the no exceedance rule (Section 250.704(d)(3) of the Act 2 regulations) must be used rather than the 75%/10X rule.

In groundwater monitoring wells beyond the property boundary, the rule is slightly modified. The attainment criteria are that 75% of the sampling results must be below the standard, with no individual value being more than 2 times the standard (CSSAB 75%/2X rule). This rule would have to be met in each individual monitoring well.

(b) 95% UCL Rule

The minimum number of samples is as specified in Section IV. B of this manual.

h) Fate and Transport Analysis

The Fate and Transport Section (Section IV.A of this manual) provides a discussion on fate and transport analysis. The amount of detail in the fate and transport analysis may vary from a description to a very extensive detailed model with quantitative modeling. Whenever a model is used the Department must be provided with the assumptions, data, and information on the model necessary for Department staff to evaluate and run the model. Any parameters used in the analysis or models used should use data from the site obtained during the site characterization.

Following are examples of situations when the Statewide health standard will require fate and transport analysis/model:

- The demonstration of attainment of a standard at the POC includes a fate and transport analysis to show that the standard will not be violated in the future.
- In an area where the groundwater is not used for drinking water or agricultural purposes, a fate and transport analysis is required to show that the used aquifer MSC is not exceeded at and beyond a radius of 1,000 ft downgradient from the property boundary within 30 years.
- In using the equivalency demonstration to meet the soil-to-groundwater numeric value, a fate and transport analysis is required to show that soils

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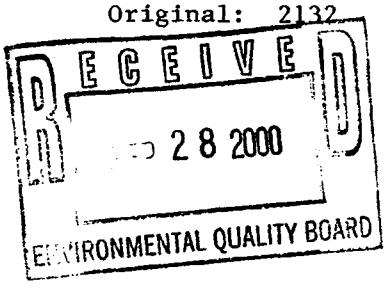

Dan Regan (dregan@pagas.org)
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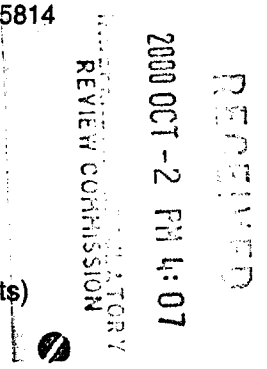

September 27, 2000

Environmental Quality Board
P.O. Box 8477
Harrisburg, PA 17105-8477

Re: Board Regulation No. 7-355: Storage Tank Program (Amendments)

VIA ELECTRONIC MAIL

Good afternoon:

Pursuant to Part J of the notice appearing in the July 29, 2000 issue of the *Pennsylvania Bulletin* (Page 3897, *et seq.*), the Pennsylvania Gas Association ("PGA"), acting on behalf of its members, submits the following comments via electronic mail.

General Comments

PGA commends the Board for proposing to amend its storage tank corrective action program ("CAP") requirements. In many cases, the proposed changes will better harmonize the CAP requirements with current federal standards and state regulations promulgated under the Land Recycling and Environmental Remediation Standards Act ("Act 2"). For example, PGA strongly supports modifying the definition of "reportable release" to match current Federal requirements.

In general, the proposed changes also show an important sense of balance, maintaining separate CAP standards where it makes sense to do so. Nevertheless, PGA raises two overarching issues. First, PGA questions the need for requiring interim site characterization reports under 25 Pa. Code § 245.310(a). A report might be appropriate once all remedial action is completed (*see generally*, 25 Pa. Code § 245.310(b)) or, in those few cases where applicable, in conjunction with remedial action progress reports (*see generally*, 25 Pa. Code § 245.312(c)), but these are special cases and should be handled as such. PGA therefore urges deletion or amendment of 25 Pa. Code § 245.310(a) as necessary to eliminate interim site characterization reports as a generic requirement.

Second, and on a somewhat related note, PGA submits that site characterization reports and remedial action plans can and should be combined into a single report subject to a single Department review. The current, separated structure unnecessarily delays the start and end of remediation process, and imposes unnecessary costs on the regulated community and the Department alike. Efficiency demands an integrated approach. (Similarly, the final remediation action progress report should be consolidated into the remedial action completion report.)

Even as we raise these two general issues and the specific issues set out below, PGA underscores that it intends no criticism of the general thrust of the Board's thinking or initiative.

Specific Comments

1 *The Board should specify that its new reporting requirement (Proposed Section 245.305(a)), will govern all discharges, including those subject to the Clean Streams Law.*

Under Proposed Section 245.305(a), in the event of a reportable release the owner-operator must notify the Department within 24 hours. It is not clear how this requirement dovetails with regulations implementing the Clean Streams Law (specifically, 25 Pa. Code § 91.34), which calls for **immediate** notification of all discharges **no matter how small**. The workable, reasonable standards proposed in this docket should be applied to all releases, including those otherwise governed by 25 Pa. Code § 91.34. We urge the Board to make this clarification. Separately, PGA suggests inserting "regulated" before "storage tanks" to better clarify the intent and scope of the provision.

2 *Proposed Paragraph 245.309(b)(5) is not necessary and should be rejected.*

Under this proposal, one of the objectives of site characterization would be to "determine, from measurements at the site, values for input parameters including hydraulic conductivity, source dimensions, hydraulic gradient, water table fluctuation and fraction organic carbon necessary for fate and transport analysis." The sole basis for this new regulation is the **possibility** that a party **might** rely on fate and transport analysis to demonstrate that Act 2 standards have been attained.

The mere possibility that someone might use fate and transport analysis is not a sufficient basis for the level of detail being proposed. Moreover, the highly technical information identified in Proposed Paragraph 245.309(b)(5) may not be available in all cases. Current regulations, particularly 25 Pa. Code §§ 245.309(b)(5) and (6), are adequate for the Department's purposes, and Proposed Paragraph 245.309(b)(5) should therefore be rejected as excessive.

3 *Consistent with harmonizing these regulations with Act 2, 25 Pa. Code § 245.309(c)(18) should not be amended (as proposed), but should be deleted in its entirety.*

Under the current proposal, 25 Pa. Code § 245.309(c)(18) would be amended to limit the scope of "available remedial action options" to those pertinent to remediating. This change would be constructive, as far as it goes, but Act 2 does not require the submittal of **any** comparative evaluation of remedial action options. The purpose of these amendments would thus be better served if § 245.309(c)(18) were eliminated in its entirety.

4 *Given the number of changes being made to the substance of the site characterization reports, these changes should be effective only on a going forward basis, and the regulations should fix the period for Department review.*

By any reasonable measure, the number of proposed changes to the site characterization reports is extensive. As a matter of fairness, those who completed reports under the old requirements should not be required to refile, and the Board should specify accordingly. Whether a report is filed under the old requirements or the new ones, the filing parties are entitled to regulatory closure within a reasonable time. These regulations should therefore establish a fixed

period for Department review, and establish that a report is deemed approved as filed if the Department does not act with in the time specified.

5 *Because Act 2 leaves the choice of remedial action to the responsible party, not to Department approval, Proposed Section 245.311(a)(5) should be discarded from further consideration, and Current Section 245.311(a)(5) should be deleted in its entirety.*

Under current regulations, remedial action plans must contain "[d]esign and construction details for the remedial action, including expected effectiveness" (25 Pa. Code § 245.311). At best, this requirement is a vestige from the days before Act 2, when the Department was required to approve every proposed remedial action. With the choice of remedial action now resting solely with the responsible party, the level of detail implied in 25 Pa. Code 245.311(a)(5) is unnecessary. (In the alternative, the burden should be on the Department to demonstrate why current regulations (specifically, 25 Pa. Code § 245.311(a)(4)) are not sufficient for the Department's purposes.)

The same logic applies to Proposed Section 245.311(a)(5), which would further inject the Department into the selection process by requiring responsible parties to file "[t]he results of treatability, bench scale or pilot scale studies or other data collected to support the remedial action."

6 *The proposed amendments to 25 Pa. Code §§ 245.312(e) and (f) should be clarified to allow for the possibility of a change in remediation method without a change in the remediation standard.*

As proposed, when a responsible party notifies the Department of a mid-course change in a remediation action plan, the notice would have to include "selection of a new remediation standard." One might change a remediation method without changing the remediation standard, and the amended regulations should accommodate this possibility.

7 *Proposed Section 245.312(e) should be further amended to fix a period for the Department to respond to a request to terminate a remedial action plan.*

As noted in Specific Comment 4 above, regulations should provide for closure wherever possible. Consistent with this objective, 25 Pa. Code § 245.312(e) should be amended to establish a fixed period for Department review – we suggest 30 days – and specify that a request to terminate shall be deemed approved if the Department does not act with in the time specified.

8 *Proposed Section 245.312(f) should be further amended to establish the starting point for the 24-hour reporting deadline.*

The proposed regulation maintains the 24-hour reporting deadline for cases where continued activity under a remedial action plan will cause additional environmental harm, but the regulations do not specify when the 24 hours begin to run. Clarification would be useful to all parties concerned.

PGA appreciates this opportunity to comment, and urges the Board to consider the points detailed above as it continues its deliberations. Please let me know if you require any further information.

Respectfully submitted,

/s/

Dan Regan
President

cc: PGA Environmental Committee (VIA ELECTRONIC MAIL)