U.S. EPA Region 2 **EPA/xxx/x-xx/xxx**
Division of Environmental Science & Assessment **May 2000**
Hazardous Waste Support Branch **Final**

U.S. EPA REGION 2
BROWNFIELDS PROJECT PLANNING GUIDANCE

Volume 2: Generic Brownfields QAPP Boilerplate

EPA/xxx/x-xx/xxx
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ACKNOWLEDGMENTS

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DISCLAIMER

The ***"U.S. EPA Region 2 Brownfields Project Planning Guidance"*** is a tool for streamlining the planning of a Brownfields Assessment and preparing supporting Quality Assurance (QA) documentation. This guidance presents an overview of the U.S. EPA Region 2 Brownfields Assessment process and a compendium of supplemental reference materials. In addition, it provides U.S. EPA Region 2 Brownfields grant recipients with an approved generic Quality Assurance Project Plan (QAPP) boilerplate, and a template for creating site-specific Sampling, Analysis, and Monitoring Plans (SAMPs). This guidance is ***not*** intended to be used as a project planning tool for performing Superfund National Priority List (NPL) investigations. The technical specifications outlined herein do ***not*** supercede state, local, and site-specific Applicable or Relevant and Appropriate Requirements (ARARs) and/or site-specific To Be Considereds (TBCs) and *New Jersey Technical Requirements for Site Remediation, N.J.A.C. 7:26E* which takes precedence for Brownfields sites in New Jersey.. The procedures set forth in this document are intended entirely as guidance for U.S. EPA Region 2 Brownfields grant recipients and do not constitute rule-making or policy. These guidelines describe the principles and best practices for establishing Brownfields Assessment Quality Assurance/Quality Control (QA/QC) protocols based upon program experience.

FOREWORD

When undertaking a Brownfields Assessment, matrices of unknown composition, such as potentially contaminated soil and water, are sampled to determine the need for remediation. This environmental monitoring process focuses on identifying, locating, and characterizing the nature and extent of contamination at a particular site. These sampling efforts are essential for accurately identifying hazardous wastes and contaminated aquifers to protect human health and the environment.

To facilitate this process the U.S. EPA created the Brownfields Economic Redevelopment Initiative in 1993. This initiative provides funding and support to local municipalities to assess and safely clean up Brownfields sites to promote their reuse. 40 CFR 31.45 Subpart C establishes uniform administrative rules for federal grants, cooperative agreements, and sub-awards to state, local, and Indian tribal governments.

> ***40 CFR 31.45 Quality Assurance***
>
> *If the grantee's project involves environmentally related measurements or data generation, the grantee shall develop and implement quality assurance practices consisting of policies, procedures, specifications, standards, and documentation sufficient to produce data of quality adequate to meet project objectives and to minimize loss of data due to out-of-control conditions or malfunctions. [53 FR8076, Mar. 11, 1988]*

40 CFR 31.45 Subpart C requires U.S. EPA Brownfields grant recipients undertaking environmental monitoring initiatives to develop and implement Quality Assurance (QA) procedures to ensure resulting data are adequate for their intended use. To facilitate these efforts the ***"U.S. EPA Region 2 Brownfields Project Planning Guidance"*** was prepared to assist our stakeholders in planning a Brownfields project and preparing supporting QA documentation. Therefore, we are pleased to provide this publication and believe that it will be of considerable value to any interested party wishing to undertake a Brownfields Assessment.

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ABSTRACT

The ***"U.S. EPA Region 2 Brownfields Project Planning Guidance"*** is a two volume reference document which defines the Quality Assurance (QA) requirements for U.S. EPA Region 2 Brownfields pilot projects. It is a tool for streamlining the planning of a Brownfields Assessment and preparing supporting QA documentation. The first volume presents an overview of the U.S. EPA Region 2 Brownfields Assessment process and a compendium of supplemental reference materials. The second volume provides U.S. EPA Region 2 Brownfields grant recipients with an approved generic Quality Assurance Project Plan (QAPP) boilerplate, and a template for creating site-specific Sampling, Analysis, and Monitoring Plans (SAMPs) to document the investigation of individual properties.

This project planning guidance is derived from the ***U.S. EPA Region 2 CERCLA Quality Assurance Manual***, the ***U.S. EPA Quality Assurance Guidance for Conducting Brownfields Site Assessments***, the ***Superfund Program Representative Sampling Guidance***, and the ***Sampler's Guide to the Contract Laboratory Program (CLP)***. The issuance of this quality assurance manual serves as an update of the initial U.S. EPA Region 2 Brownfields project planning guidance issued in 1997. It does not supercede any previously approved generic QAPP currently in place with any local municipality initiating a U.S. EPA Region 2 Brownfields pilot project.

The significance of this project planning guidance is that utilization of the accompanying generic QAPP boilerplate enables U.S. EPA Region 2 Brownfields grantees to comply with the QA provisions set forth in 40 CFR 31.45 Subpart C. It contains all of the pertinent technical information an environmental professional would require to plan and initiate a Brownfields Assessment. In addition, it discusses the development of viable remedial alternatives for the design and implementation of an appropriate cleanup strategy to prepare Brownfields properties for reuse. It is important to understand that there is no single correct way to perform a Brownfields investigation. Rather, this guidance provides the environmental professional with a means to design a Brownfields investigation taking into account the needs of the client, site, and other non-standard factors (community, property marketability, etc.).

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INTRODUCTION

The United States Environmental Protection Agency (U.S.EPA) defines Brownfields sites as "abandoned, idled, or under-utilized industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination." To facilitate the revitalization of these properties, the U.S.EPA established its Brownfields Economic Redevelopment Initiative in 1993. This initiative provides funding and support to our states, tribes, commonwealths, local communities, and other stakeholders to work together in redeveloping Brownfields properties. To further this process, many states and local jurisdictions are also introducing initiatives to help businesses and communities adapt environmental cleanup programs to the special needs of Brownfields sites.

Consequently, preparing a Brownfields site for a productive reuse requires the integration of many diverse elements. These elements which the environmental professional must contend with include financial issues, community involvement, liability considerations, site assessment and cleanup, and regulatory requirements. To adequately address these issues necessitates the careful coordination among many groups of stakeholders. Therefore, the success of a Brownfields revitalization project requires the assessment and cleanup of a site be carried out in a manner which integrates all of these critical factors into the overall redevelopment process.

The process of revitalizing abandoned or under utilized commercial facilities where redevelopment is complicated by real or perceived environmental contamination is referred to as a " Brownfields Assessment." This process typically involves the coordination of one or more site investigations and clean up activities. For instance, to determine the likelihood of contamination, a screening (Phase I) assessment consisting of a historical/background review and a preliminary site inspection may be initiated. Subsequently, to identify the types and concentrations of contamination, including the areas requiring remediation, may necessitate a full (Phase II) site investigation where sampling activities are performed. In accordance, the establishment of viable clean up options with corresponding cost estimates based on future uses and property redevelopment plans are other factors requiring consideration.

When undertaking a Brownfields revitalization project it is important to recognize that each property may offer a unique set of site-specific characteristics and circumstances which merit consideration. This necessitates the environmental professional to make allowances for property size/topography, prior use, contaminants of concern, matrices of concern, and anticipated reuse. As a result, cleanup strategies will almost always vary from site to site. At some sites, cleanups may be completed before a property is transferred to its new owners. At other sites, cleanups may take place simultaneously with construction and redevelopment activities. Regardless of when and how a cleanup is accomplished, the challenge to any Brownfields program is to remediate sites quickly and redevelop these properties in ways which benefit both the community and it's local economy.

To gain insight into the many tasks necessary for securing the revitalization and redevelopment of a Brownfields property, it is advantageous to follow an accepted guide when planning these activities. To facilitate these efforts, the ***U.S. EPA Road Map to Understanding Innovative Technology Options for Brownfields Investigation and Cleanup*** and the ***U.S. EPA Tool Kit of Information Resources for Brownfields Investigation and Cleanup*** are provided as appendices to Volume 1 of this guidance. These guidance documents discuss Brownfields project planning requirements, historical/background review protocols, site investigation techniques, remedial alternatives, and procedures for evaluating and reporting collected information. In addition, these guides also provide a compendium of information resources which can assist an

environmental professional with conducting Brownfields Assessments.

CHAPTER 1

1.0 DESIGNING A BROWNFIELDS ASSESSMENT PROJECT

In all too many instances environmental samples are collected and analyzed without appropriate preparation. This can result in the acquisition of environmental measurement data which may not allow accurate decisions to be made. It is important to recognize that planning an environmental monitoring project prior to the commencement of sampling and analysis promotes successful implementation. The conclusion of any project planning initiative should always result in the development of an efficient sampling and analysis network which allows for the collection of an appropriate quantity and quality of environmental measurement data. Therefore, it is essential to employ a project planning process to facilitate the clear definition of the decisions to be made and the data required to make these decisions.

1.1 Establishing Brownfields Assessment Project Objectives

When performing a Brownfields Assessment, matrices of unknown composition, such as potentially contaminated soil and water, are sampled to determine the need for remediation. This type of sampling is done to identify, locate, and characterize the nature and extent of contamination (if present) inherent to a Brownfields property. A detailed study must be performed to accurately identify hazardous wastes and contaminated aquifers in order to protect human health and the environment. This process will result in the acquisition of extensive amounts of physical and chemical data which will form the basis for characterizing a Brownfields property.

To enable Brownfields stakeholders to render environmental decisions concerning the condition of a property, they will need to draw their conclusions from the strength of the evidence depicted by the collected measurement data. The environmental measurement data resulting from a Brownfields Assessment must be of an appropriate quality to be adequate for this application. If a Brownfields site investigation does not employ proper Quality Assurance (QA) procedures when sampling potentially contaminated matrices, some hazardous wastes and contaminated aquifers may not be accurately identified. The following analogy, taken from Barbara Metzger's opening remarks at the 1992 conference on "Environmental Data Use - Meeting the Customer's Need", depicts the complexity of abstract decision making:

> *Your new job requires driving to work and purchasing a new car. Arranging your family's relocation, and attending night school classes precludes new car shopping. Good old mom comes to the rescue. She will shop around, and when you come to dinner next week, she will select the perfect car for you. At dinner next week, she tells the whole family that you should buy the new little Corvette. It is powerful, quick, sporty, and absolutely gorgeous, and, of course, it is a Corvette.*
> *You then ask, "But Mom, doesn't that cost an awful lot? Does it have room for two kid seats? I forgot to tell you that we are expecting twins. Can it pull a trailer filled with camping gear? Does it have two air bags? How about gas milage, reliability, and crash test data?" When Mom cannot answer these questions, you start yelling, "I need a car and you ought to know what I need."*
> *Finally, your brother, Quincy Adams Ogilvy, or "QAO," interrupts. Hold it, hold it," he says, "It is not her fault. How could she know what you need, what is important to you, or when you need the information? You did not give her any information about your needs. You should prepare a Quality Assurance Plan that clearly characterizes your needs (an inexpensive, efficient, and safe car that can pull a trailer, etc.) and your mother's evaluation procedures (Consumer Reports, test drives, etc.). Obviously, the Plan should be prepared before your mother evaluates any automobiles."*

CHAPTER 2

2.0 THE SYSTEMATIC PLANNING OF A BROWNFIELDS ASSESSMENT

When evaluating the results of a Brownfields Assessment it is insightful to contemplate how reliable are environmental measurement data. Unfortunately, the only conclusive thing about environmental measurement data is the uncertainty. The only approach to limit uncertainty is to collect and analyze an infinite amount of samples. However, it is impractical to follow such an approach because no one has the time and resources to employ such an exhaustive sampling network. Therefore, everyone has to accept some degree of uncertainty when undertaking a Brownfields site investigation.

In this respect, is there a proper amount of uncertainty appropriate for undertaking a Brownfields site investigation? To establish parameters which consider uncertainty, the Systematic Planning Process is a technique that can assist the environmental professional with answering this question. The Systematic Planning Process is a common sense graded approach for assuring the level of detail in planning is commensurate with the objectives of a Brownfields site investigation. This process is useful in facilitating the development of "acceptance or performance criteria" for gauging the collection, evaluation, and use of the resulting environmental measurement data.

2.1 Elements of The Systematic Planning Process

When considering a Brownfields site investigation, it is the goal of all those involved to minimize expenditures related to environmental measurement data collection by eliminating unnecessary, duplicative, or overly precise data. However, at the same time it is crucial to collect data which are of sufficient quantity and quality to support accurate decision making. The most effective way to accomplish these objectives is to begin by determining the type, quantity, and quality of environmental measurement data are necessary to achieve monitoring goals prior to the commencement of sampling.

The Systematic Planning Process was developed by the U.S. EPA to assist in the design of operations which assure the collection of environmental measurement data that are important to facilitate decision making. This process enables an environmental professional to define the data requirements and acceptance criteria during planning before any samples are collected. This process is preeminent since data credibility is one of the most significant challenges facing Brownfields stakeholders managing a site investigation. In practice there are eight elements which comprise the Systematic Planning Process. These elements are as follows:

- Identification and involvement of the project manager, sponsoring organization and responsible official, project personnel, and stakeholders, as well as, all customers and suppliers.

- Description of the project goals, objectives, and questions and issues to be addressed.

- Designation of a project schedule, resources (including budget), milestones, and any applicable requirements (regulatory requirements, contractual prerequisites, etc.).

- Determination of the type of data needed and how the data will be used to support the project's objectives.

- Determination of the quantity of data needed and specification of performance or acceptance criteria for measuring quality.

- Description of how, when, and where the data will be obtained (including existing data), and the identification of any constraints on data collection.

- Delineation of the appropriate Quality Assurance/Quality Control (QA/QC) activities for assessing specified performance or acceptance criteria (QC samples for evaluating field and laboratory activities, audits, technical assessments, performance evaluations, etc.).

- Description of how the acquired data will be analyzed (either in the field and/or laboratory), evaluated (QA review, validation, verification, etc.), and assessed against the intended use and the specified performance or acceptance criteria.

The eight elements of the Systematic Planning Process are followed to document the design of a Brownfields site investigation to ensure that field operations, data collection activities, and subsequent results meet specified project objectives. It is important to recognize that this planning technique is an iterative process because the output of any one step will affect another. This can necessitate the environmental professional to revisit some previous steps in the process which may lead to the planning of a more efficient data collection program. The application of this process is an approach which in actuality translates broad "consensus-based" goals into specific tasks. This enables the environmental professional to prepare a guide which directs a site investigation, informs the public, and solicits the involvement of interested parties to promote the success of a Brownfields Assessment project.

2.2 Fundamental Components of a Quality Assurance Project Plan

A Quality Assurance Project Plan (QAPP) is the key component of an environmental monitoring quality system responsible for ensuring resulting data are adequate for their intended use. It is the principal product of the Systematic Planning Process for documenting environmental data operations. It integrates all of the technical and quality components for initiating a Brownfields site investigation project, including planning, implementation, and assessment. The purpose of any QAPP is to furnish a project specific "blueprint" for acquiring the type, quantity, and quality of environmental measurement data needed to support decision making. Subsequently, the implementation of an approved QAPP is expected to ensure Brownfields site investigations are undertaken in a correct and cost effective manner.

The ultimate success of any Brownfields site investigation project will predominately depend on the quality of the resulting environmental measurement data. This will invariably rely upon the adequacy of the project specific QAPP and its effective implementation. The Brownfields environmental measurement data collection efforts will consist of the following five generic phases: (a) Planning, (b) Sample Collection, (c) Laboratory Analysis, (d) Data Review/Validation, and (e) Data Assessment. This will involve integrating the contributions/requirements of everyone involved into a concise outline of what is to be accomplished, how it will be done, and by whom. To meet these perquisites, a QAPP must delineate why the data are being collected,

what the user's needs are, and what the consequences of an incorrect decision are. There are four components which comprise a QAPP. These components are as follows:

- Project Management.
- Measurement/Data Acquisition.
- Assessment/Oversight.
- Data Validation and Usability.

2.2.1 Project management

This component of a QAPP is useful in ensuring that a Brownfields site investigation has defined goals and that all participants are fully understanding of these goals. It also serves as a means to describe the approach for accomplishing the specified project objectives while providing a forum for the documentation of planning outputs. This embodies the fundamental aspects of project management by detailing a project's history and objectives, as well as, the roles and responsibilities of all participants. The planning elements for detailing project management criteria in a QAPP include:

- Title and Approval Sheet for delineating the name of the QAPP, the organization implementing the project, and the names and signatures of the appropriate approving officials.

- Table of Contents to outline the sections, figures, tables, references, and appendices comprising a QAPP.

- Distribution List to indicate the individuals and their organizations who will receive copies of the approved QAPP.

- Project/Task Organization which identifies the individuals or organizations participating in the project along with a discussion of their specific roles and responsibilities.

- Problem Definition/Background for detailing the specific problems to be solved or decisions to be made.

- Project/Task Description and Schedule which provides an outline of the work to be performed along with a corresponding schedule for its completion.

- Quality Objectives and Criteria for Measurement Data for describing the project quality objectives and measurement performance or acceptance criteria.

- Special Training Requirements/Certification for identifying any specialized certifications required by personnel to ensure the successful completion of a project task.

- Documentation and Records detailing an itemized list for formatting the information comprising data report packages for the project.

2.2.2 Measurement/Data acquisition

This component of a QAPP is useful in ensuring that a Brownfields site investigation will employ appropriate methods for sampling, analysis, data handling, and QC audits. It also serves as a means to describe the approach for accomplishing these tasks while providing a forum for the documentation of planning outputs. This embodies the fundamental aspects for constructing an effective measurement/data acquisition program. The planning elements for detailing measurement/data acquisition criteria in a QAPP include:

- Sampling Process Design is a concise description of the sampling network and rationale which includes a listing of matrices, parameters and their frequency of collection.

- Sampling Methods Requirements is a concise description of the procedures for the collection of environmental samples. This summation is to include an outline of the sampling methods, equipment, implementation perquisites, sample preservation instructions, decontamination protocols, and materials needed.

- Sample Handling and Custody Requirements is an outline of the perquisites and provisions for sample handling and custody in the field, laboratory, and during transport.

- Analytical Methods Requirements summarizes the methods and equipment for the acquisition of environmental measurement data. This summation is to include all pertinent sub-sampling, sample preparation, laboratory decontamination procedures, waste disposal protocols, and specific method performance criteria.

- Quality Control Requirements summarizes the QC procedures to be performed for each pertinent sampling, analysis, and measurement technique.

- Instrument/Equipment Testing, Inspection and Maintenance Requirements is a description of the inspections and acceptance testing of the pertinent environmental sampling and measurement systems.

- Instrument Calibration and Frequency specifies the tools, gauges, instruments, and other sampling, measurement, and testing equipment used for data collection which must be controlled and calibrated to maintain performance.

- Inspection/Acceptance Requirements for Supplies and Consumables is an explanation of how and by whom material stores will be certified for use in the project.

- Data Acquisition Requirements specifies the types of data needed for project implementation or decision making which are obtained from non-measurement sources (computer data bases, programs, literature, historical records, etc.).

- Data Management is an explanation of the project data management scheme depicting the path of data from their generation in the field or laboratory to its final use and storage.

2.2.3 Assessment/Oversight

This component of a QAPP is useful in ensuring that the implementation of a Brownfields site investigation is undertaken as prescribed. It serves as a means to delineate the type of assessment activities for determining the effectiveness of the project and specified QA/QC protocols. This embodies the fundamental aspects for constructing an effective assessment/oversight program. The planning elements for detailing assessment/oversight criteria in a QAPP include:

- Assessments and Response Actions specifies the number, frequency, and type of assessment activities

needed for ensuring the effectiveness of a project. Assessment techniques include surveillance, management systems review, readiness review, technical systems audit, performance evaluation, data quality audit, and data quality assessment.

- Reports to Management describes the frequency and distribution of reports issued to inform management of the status of the project, assessment results, and subsequent recommendations.

2.2.4 Data validation and usability

This component of a QAPP is useful in ensuring that the environmental measurement data resulting from a Brownfields site investigation conform to specified performance criteria. It serves as the means to describe the approach for accomplishing these tasks which are essential to determine if the data acquired are adequate for their intended use. This embodies the fundamental aspects for constructing an effective data validation and usability assessment program. The planning elements for detailing pertinent data validation and usability criteria in a QAPP include:

- Data Review, Validation, and Verification Requirements specify the criteria for performing an objective review and validation of data. This will include delineating any forms and/or checklists required to perform these tasks.

- Validation and Verification Methods describe the processes for validating and verifying data, as well as, how these findings will be reported.

- Reconciliation with User Requirements is an explanation of how the results will be reconciled with the criteria defined by the data user or decision maker.

CHAPTER 3

3.0 QUALITY ASSURANCE PROJECT PLANNING

It is the policy of the U.S. EPA that all federally funded environmental monitoring and measurement programs shall be supported by a centrally managed quality system. Consequently, any Brownfields Assessment project funded through a U.S. EPA Region 2 grant has the responsibility to implement minimum procedures to ensure the acquisition of data are adequate for their intended use. To ensure this responsibility is uniformly met, each U.S. EPA Region 2 Brownfields grant recipient shall prepare a generic QAPP to document environmental monitoring initiatives.

The QAPP is a formal document which describes in detail the implementation of appropriate QA/QC protocols, and other technical activities to ensure that site investigation efforts will satisfy specified performance criteria. The QAPP serves as the primary means for documenting the overall planning of project objectives and performance/acceptance criteria (Systematic Planning Process). It enables U.S. EPA Region 2 Brownfields grant recipients to ensure that the Precision, Accuracy, Representativeness, Comparability and Completeness (PARCC) of the data they acquire are known and documented. This will enhance the credibility of sampling results while saving resources by reducing errors and the time and money spent correcting them.

3.1 U.S. EPA Region 2 Brownfields Quality Assurance Project Plan Requirements

The U.S. EPA Region 2 Brownfields QA program follows 40 CFR 31.45 Subpart C which establishes uniform administrative rules for federal grants, cooperative agreements, and sub-awards to state, local and Indian tribal governments. It requires U.S. EPA Brownfields grant recipients performing environmental related measurements to develop and implement QA procedures to ensure they produce data which are adequate for their intended use. To promote U.S. EPA Region 2 Brownfields grant recipient efforts for acquiring environmental measurement data compliant with the quality requirements of 40 CFR 31.45 Subpart C, they are to prepare and follow an approved QAPP. Two QA project planning documents are required for U.S. EPA Region 2 Brownfields pilot projects. They are a ***Generic Brownfields Quality Assurance Project Plan (QAPP)***, and a ***Site-Specific Brownfields Sampling, Analysis, and Monitoring Plan (SAMP)***. To facilitate these efforts this guidance contains an approved Generic Brownfields QAPP boilerplate, and a template for creating Site-Specific Brownfields SAMPs to document the investigation of individual Brownfields properties. Therefore, the utilization of the accompanying Generic Brownfields QAPP boilerplate will enable U.S. EPA Region 2 Brownfields grantees to be in immediate compliance with the quality requirements set forth in 40 CFR 31.45 Subpart C.

3.2 U.S. EPA Region 2 Generic Brownfields Quality Assurance Project Plan

The U.S. EPA Region 2 QA office has prepared a Generic Brownfields QAPP boilerplate for use by our Brownfields grant recipients. It was developed to facilitate consistency with U.S. EPA and State Voluntary Clean-up Program (VCP) QA requirements, and to reduce the expenditures of time and resources spent in preparation and review. The U.S. EPA Region 2 Generic Brownfields QAPP boilerplate is based upon regional Superfund site investigation environmental data collection, analysis, and assessment procedures. It is consistent with the **U.S. EPA Region 2 CERCLA Quality Assurance Manual**, and the **U.S. EPA Quality Assurance Guidance for Conducting Brownfields Site Assessments**. It delineates generic QA requirements for performing Brownfields Assessment projects, and procedures for preparing site-specific

SAMPs.

3.3 U.S. EPA Region 2 Site-Specific Sampling, Analysis, and Monitoring Plan

To document the investigation of individual properties within a municipality, a site-specific SAMP is to be developed by our U.S. EPA Region 2 Brownfields grant recipients. This is done by following the Region 2 Generic Brownfields QAPP boilerplate protocol and designating the appropriate site-specific methods/procedures. It is completed to delineate the technical specifications explicit to undertaking the investigation of individual Brownfields sites. To facilitate this effort, the companion document to the U.S. EPA Region 2 Generic Brownfields QAPP boilerplate is an accompanying Site-Specific Brownfields SAMP template. The SAMP template is a supplement to be used by U.S. EPA Region 2 Brownfields grant recipients to describe in detail how they will go about performing a site-specific comprehensive Brownfields Assessment. It is to be used for summarizing previous results, subsequent field activities, pertinent field methodologies for implementation, and data reporting requirements inherent to the investigation of individual Brownfields properties.

3.4 Utilizing the U.S. EPA Region 2 Brownfields Project Planning Paradigms

To ensure that environmental measurement data are adequate for their intended use, the U.S. EPA has established specific requirements for the development of QAPP documentation. The completion of QAPPs are required whenever environmental measurement activities are undertaken within the U.S. EPA or by its contractors and grantees. In accordance, U.S. EPA Region 2 Brownfields grantees are obligated to develop a generic QAPP prior to initiating field work. In addition, for pilot projects conducting more than minimal environmental sampling on a number different properties, the preparation of a site-specific SAMP is also required to document the investigation of individual Brownfields sites.

To facilitate these efforts, U.S. EPA Region 2 has developed a Generic Brownfields QAPP boilerplate, and a Site-Specific Brownfields SAMP template to document the investigation of individual properties. These paradigms were prepared to expedite the preparation of QAPP documentation which will assuredly promote practical, cost effective data acquisition and use. These paradigms are designed to eliminate the necessity for preparing repetitive QA documentation by formatting the approach to perform a Phase II Brownfields Site Investigation. Although the technical specifications delineated in these paradigms are explicit to undertaking a Phase II site investigation, they can be utilized for documenting subsequent Brownfields environmental monitoring operations.

The effective utilization of the U.S. EPA Region 2 Brownfields project planning paradigms can have an important number of beneficial outcomes. For instance, these project planning paradigms will eliminate the duplication of effort resulting from each Brownfields grantee developing their own QAPP formats and procedures. This will enable our pilot projects to conserve their grant resources spent on completing comprehensive QAPPs and apply them towards the actual revitalization of Brownfields properties. Another benefit will be that the standardization of Brownfields project planning documentation will invariably expedite the time regulatory agencies will take to provide a review and approval. But most importantly, following the U.S. EPA Region 2 Brownfields project planning paradigms will limit the acquisition of unreliable environmental measurement data.

3.5 Implementing the U.S. EPA Region 2 Generic Brownfields QAPP Boilerplate

The U.S. EPA Region 2 Generic Brownfields QAPP boilerplate outlines a sampling and analytical scheme for undertaking a Phase II site investigation. It recommends that a minimum of 20% of all applicable samples collected during a Brownfields site investigation undergo fixed laboratory U.S. EPA CLP Target Analyte List (TAL) and Target Contaminant List (TCL) confirmatory analyses. In conjunction, it specifies that approximately 50% of all background or "presumed clean" reference samples also undergo fixed laboratory U.S. EPA CLP TAL and TCL confirmatory analyses.

The purpose of the U.S. EPA Region 2 Generic Brownfields QAPP boilerplate is to facilitate the application of sound and useful QA/QC practices into environmental measurement tasks performed with agency financial assistance. It presents the technical specifications fundamental to administering the outlined confirmatory sampling and analytical scheme recommended to complete a Phase II Brownfields Site Investigation. This involves detailing the four essential components and information resources necessary to form a comprehensive generic Brownfields QAPP (Project Management, Measurement/Data Acquisition, Assessment/Oversight & Data Validation and Usability).

The U.S. EPA Region 2 Generic Brownfields QAPP boilerplate outlines the technical criteria which are to be followed when conducting similar environmental measurement data collection activities. The scripted text in the QAPP boilerplate delineates the standard operations and QA/QC practices which are to be employed when conducting a Brownfields site investigation effort. Alternately, the italicized text explains the pertinent technical information which must be presented in a site-specific SAMP necessary to document the investigation of an individual Brownfields property.

In essence, the U.S. EPA Region 2 Generic Brownfields QAPP boilerplate is a site investigation blueprint to assist our grantees with their efforts to plan a Brownfields Assessment and prepare supporting QA documentation. To implement the Region 2 Generic Brownfields QAPP boilerplate, all that is required is that the U.S. EPA Region 2 Brownfields grantee endorse the Form A Title and Approval Page and submit it to their subject environmental regulatory authorities for concurrence. In doing so, U.S. EPA Region 2 Brownfields grantees will be in compliance with the QA provisions set forth in 40 CFR 31.45 Subpart C. It is import to note, that the Region 2 Generic Brownfields QAPP boilerplate requires no modification, but rather, only an endorsement from the U.S. EPA Region 2 Brownfields grantee that they agree to administer the fundamental QA protocols it prescribes.

3.6 Implementing the U.S. EPA Region 2 Site-Specific Brownfields SAMP Template

Good professional practice mandates that environmental measurement activities be properly conceived, documented, and carried out so that the resulting data can be utilized with a definable degree of confidence. This necessitates the formalization of pertinent QA/QC practices to control and document data quality. To ensure QA/QC protocols are relevant and appropriate, they should be thought out on a case-by-case basis. Therefore, it is recommended that QAPP documentation be developed for each specific environmental monitoring project or continuing operation.

In most instances the envisioned scope of work will involve undertaking a number of site-specific comprehensive Brownfields Assessments within a particular municipality. Unfortunately, the exclusive utilization of the U.S. EPA Region 2 Generic Brownfields QAPP boilerplate will not be sufficient in these situations.

Consequently, to delineate the technical specifications explicit to undertaking the investigation of an individual Brownfields property, the development of a supplemental site-specific SAMP is required.

To fulfill this need, the companion document to the U.S. EPA Region 2 Generic Brownfields QAPP boilerplate is an accompanying Site-Specific Brownfields SAMP template. The SAMP template is a supplement to be used by U.S. A Region 2 Brownfields grant recipients to describe in detail how they will go about performing a site-specific Brownfields Assessment. The scripted text in the SAMP template delineates that the standard operations and QA/QC practices depicted in the Region 2 Generic Brownfields QAPP boilerplate will be employed when conducting a Brownfields site investigation effort . Alternately, the italicized text indicates the corresponding relevant information concerning a summation of previous results, subsequent field activities, pertinent field methodologies, and data reporting requirements which must be described.

To implement the Site-Specific Brownfields SAMP template, the U.S. EPA Region 2 Brownfields grantee must outline the required technical specifications, endorse the Form A Title and Approval Page, and submit it to their subject environmental regulatory authorities for concurrence. To facilitate these efforts, a diskette copy in WordPerfect format of the Site-Specific Brownfields SAMP template is included in this guidance. In addition, all of the necessary information resources needed to complete a Site-Specific Brownfields SAMP are also included as attachments to the U.S. EPA Region 2 Generic Brownfields QAPP boilerplate. It is important to note that a Site-Specific Brownfields SAMP must be completed whenever U.S. EPA pilot funds will be used by a grantee to conduct site-specific environmental sampling activities.

For an overview of the U.S. PA Region 2 Brownfields QAPP preparation process, refer to Figure 2, found on page 12 of this guidance, which illustrates the sequence of tasks required to revitalize and redevelop a Brownfields property.

APPENDIX A

U.S. EPA Region 2 Generic Brownfields Quality Assurance Project Plan Boilerplate

APPENDIX B

U.S. EPA Region 2 Site-Specific Brownfields Sampling, Analysis, and Monitoring Plan Template

with

Diskette Copy in WordPerfect Format