EPA Region 5 Records Ctr.
264475

ROSAURO DELROSARIO/R5/USEPA/US
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To

Subject Request for Review - Draft RI/FS Statement of Work (SOW) for Ellsworht Industrial Park

Dear Mr. White & Mr. Heinrich,

Attached you will find U.S. EPA's draft RI/FS Statement of Work (SOW) for the source area of the Ellsworth Industrial Park site. Tom Krueger has asked me to send this to you for your review/comment. In the interest of trying to move this forward expeditiously, we would appreciate whatever comments/suggestions you may have no later than December 10th.

While the draft document follows the general outline of standard RI/FS SOWs prepared by EPA in other projects, I've incorporated the general principles of the agency's current approach to conducting environmental investigations - the Triad Approach. The Triad Approach is a culmination of the agency's experience with conducting such investigations, recent advances in sampling and instrumentation (particularly field-based screening analysis), and our emphasis on finding quicker, better, and cheaper ways to conduct our investigations. Results of previous investigations concluded using this approach indicated not only a significant savings in cost, but also of time. We will provide this guidance to you, if requested.

The Triad Approach,as the name implies, has 3 major parts:

1. Systematic Project Planning: The Triad Approach emphasizes that those involved in the investigation spend considerable amount of time planning the work. While it is expected to be more resource intensive than the customary way of conducting the investigation, the guidance and field experience suggests it would lead to significant savings and better results. Emphasis will be placed on development of a preliminary conceptual site model (CSM) and remedial action objectives (RAOs) right from the start. The CSM and RAOs will be continously updated as more information is gathered during the investigation, culminating with a finely-detailed CSM/RAO picture that will be of valuable help in selecting the remedy . This is akin to blurred vision getting clearer as ;

2. Dynamic work strategies/work plan: This would provide the necessary flexibility if something expected is found in the sampling results, saving time and resources. Also, the dynamic nature of the work plan should allow the investigation team to change sampling plans/strategies relatively easy, compared to a static work strategy.

3. Field-based measurement technology: This will speed up the data gathering efforts and, coupled with a dynamic work plan, provide the necessary flexibility to make necessary adjustments to sampling onsite.

Your feedback's appreciated.

Sincerely,

Ross del Rosario
RPM

SOW tkcommentsrev.wpd.:

STATEMENT OF WORK
FOR A REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
AT THE ELLSWORTH INDUSTRIAL PARK SITE
SOURCE AREA OPERABLE UNIT
IN THE VILLAGE OF DOWNERS GROVE, DuPAGE COUNTY, ILLINOIS

PURPOSE:

The purpose of this Statement of Work (SOW) is to set forth requirements for conducting a Remedial Investigation and Feasibility Study (RI/FS) at the industrial park portion of the Ellsworth Industrial Park Site (the "Site"). The RI/FS shall be limited to the area of the site designated as the Source Area (OU1). The RI shall evaluate the nature and extent of hazardous substances or contaminants at the industrial park or from past operations at the industrial park Source Area. The RI shall also assess the risk which these hazardous substances or contaminants may present for human health and the environment. The FS Report shall evaluate remedy alternatives for addressing the impact to human health and the environment from hazardous substances or contaminants at the Source Area. It is expected that this RI/FS can be expedited and streamlined due to existence of a substantial data set and knowledge gathered by the Illinois EPA (IEPA) and United States Environmental Protection Agency (USEPA) from site investigations, sampling surveys, and other field work performed since 1991. Given this situation and the desire to complete the work as soon as practicable, the RI/FS shall be performed using the Triad approach for conducting site investigations. A copy of the guidance on the Triad approach is enclosed (see *Technical and Regulatory Guidance for the Triad Approach: A New Paradigm for Environmental Project Management*, December 2003).

The RI/FS shall also be consistent with the relevant portions of the *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA, Office of Emergency and Remedial Response, October, 1988) and any other guidance that USEPA uses to conduct an RI/FS, as well as any additional requirements in the AOC.

All documents or deliverables required as part of this SOW shall be submitted to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. Respondents shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RI/FS for the Source Area operable unit, except as otherwise specified herein. USEPA, after reasonable opportunity for review and comment by IEPA, may:

1. Approve, in whole or in part, the submission;
2. Require revisions to the submission;
3. Modify the submission;
4. Disapprove, in whole or in part, the submission; or
5. Any combination of the above to conform with the requirements of the AOC, SOW, NCP, or applicable USEPA guidance.

As specified in CERCLA Section 104(a)(1), as amended by SARA, USEPA will provide oversight of the Respondents' activities throughout the RI/FS, including all field sampling activities. The Respondents will support USEPA's initiation and conduct of activities related to the implementation of oversight activities.

At the completion of the RI/FS, USEPA, in consultation with IEPA, will be responsible for the selection of a remedy or remedies for the Source Area and will document this remedy selection in a Record of Decision (ROD). The remedial actions selected by USEPA will meet the cleanup standards specified in CERCLA Section 121. That is, the selected remedial actions will be protective of human health and the environment, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements of other laws, will be cost-effective, will use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable, and will address the statutory preference for treatment as a principal element. The final RI and FS Reports as adopted by USEPA will, with the administrative record, form the basis for the selection of the remedies and will provide the information necessary to support the development of the ROD for the Source Area.

SCOPE:

Respondents shall complete the following tasks as part of this RI/FS:

Task 1: Project Scoping and RI/FS Planning Documents
Task 2: Community Involvement Plan
Task 3: Site Characterization and Risk Assessment
Task 4: Remedial Investigation (RI) Report
Task 5: Treatability Studies
Task 6: Development and Screening of Alternatives (Technical Memorandum)
Task 7: Detailed Analysis of Alternatives (FS Report)
Task 8: Progress Reports

TASK 1: PROJECT SCOPING AND RI/FS PLANNING DOCUMENTS

Project Scoping

Scoping is the initial planning phase of the RI/FS process and many of the planning steps begun here are continued and refined in later phases of the RI/FS. For the Ellsworth Industrial Park Source Area (OU1), Respondents shall perform the following scoping activities:

- Meeting with USEPA and IEPA
- Collect and Analyze Existing Data
- Identify Data Gaps
- Identify Preliminary ARARs
- Identify Initial Data Quality Objectives
- Preliminary Planning Report

Meeting: Within thirty (30) days of effective date of this AOC, Respondents shall meet with USEPA/IEPA representatives to discuss all project planning decisions and special concerns associated with the site. The parties shall discuss, among other things, the boundaries of the study area and if a site visit is necessary. The parties shall also discuss the contents of the preliminary planning report described below, which the Respondents will prepare and submit to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA.

Collect and Analyze Existing Data: Respondents shall collect and analyze existing data for the site and develop an initial conceptual site model (CSM) for OU1 from the data collected/analyzed. From this initial CSM, Respondents shall identify the initial remedial action objectives (RAOs) for each actually and potentially affected medium. Respondents shall then identify a preliminary range of broadly defined potential remedial alternatives and associated technology relevant to the known site characteristics. The range of potential alternatives shall encompass, where appropriate, alternatives in which treatment significantly reduces the toxicity, mobility, or volume of the waste, alternatives that involve containment with little or no treatment, and a no-action alternative.

Identify Data Gaps: After analyzing existing data and preparing the initial CSM and RAOs, Respondents shall identify what additional data must be collected in and around the Source Area. These additional data will be used to further refine the CSM, continously as the new data is generated, and assist in modifying the initial set of RAOs. The continous refinement of the CSM and RAOs provides a cost-effective way to ensure confidence in the project outcome, despite the persistence of uncertainties with some of the decision inputs.

Identify Preliminary ARARs: With assistance from USEPA and IEPA, Respondents shall prepare a list of preliminary state and federal applicable or relevant and appropriate requirements (ARARs) for the Source Area.

Data Quality Objectives: Respondents shall identify data quality objectives (DQOs) appropriate for the work at the site. DQOs are statements that specify the type and quality of data to support decisions that have to be made on all remedial response activities at the site. For this project, Respondents shall employ, to the extent possible, real-time measurement technologies (e.g., field-based analysis, high-density sampling, non-specific screening methods, etc.) to support principles of data gathering under the Triad Approach.

Preliminary Planning Report: Within 90 days of effective date of the AOC, Respondents shall submit a preliminary planning report (PPR) to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA The PPR shall: 1) summarize efforts on collecting and analyzing existing data; 2) provide narrative and graphical representations of preliminary CSM and RAOs based on analysis of existing data; 3) describe what additional data is needed to refine the preliminary CSM and RAOs, minimizing uncertainties in decision-making; 4) identify a preliminary set of state and federal ARARs that apply to the Source Area operable unit; and 5) provide a preliminary set of DQO's for all data gathering efforts, including field-based or real-time measurements discussed under the Triad Approach.

RI/FS Planning Documents

Within 30 days of approval of the PPR, Respondents shall submit draft RI/FS planning documents to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. The draft RI/FS planning documents shall include a 1) draft RI/FS Work Plan and 2) draft Sampling and Analysis Plan (SAP) consisting of a draft Field Sampling Plan (FSP) and a draft Quality Assurance Project Plan (QAPP). Respondents shall submit the final RI/FS planning documents to USEPA and IEPA within twenty-one (21) days of receipt of USEPA's comments. The Respondents shall submit any subsequent revisions, if required, to USEPA and IEPA, within fifteen (15) days of receipt of USEPA's comments on the final document. In its response to USEPA's comments, Respondents shall identify all revisions it has made to previous-version RI/FS planning documents and shall not make any changes to the RI/FS planning documents that are not a direct result of addressing comments. In addition to the above documents, Respondents shall also submit to USEPA a site-specific Health and Safety Plan (HASP) and other site-specific plans as described below.

RI/FS Work Plan: Respondents shall use information from the scoping efforts discussed above, including information contained in the PPR, appropriate USEPA guidance, and technical direction provided by the USEPA Remedial Project Manager (RPM), as the basis for preparing the RI/FS Work Plan. For the purposes of formatting, Respondents

shall refer to Appendix B of the RI/FS Guidance for a comprehensive description of the contents of the RI/FS Work Plan. The document should include, at a minimum, the following items related to the Source Area:

- A summary of the information collected during the project scoping phase, including site history/location, description, known site hydrology/geology, demographics, ecological and natural resource features, locations of existing monitoring wells, areas previously sampled by federal, state, and local agencies, etc.;

- A summary description of available data and identify areas where hazardous substances or contaminants were detected and the detected levels;

- A detailed description of the tasks Respondents will undertake to fill in the data gaps determined during scoping activities, with the primary objective of reducing decision uncertainty by refining and/or fine-tuning the CSM and RAOs previously developed for the site;

- A process for and manner of refining and/or identifying additional state and federal ARARs;

- A process for preparing the human health and ecological risk assessments and the Feasibility Study (FS);

- A detailed description of the information the Respondents will produce during and at the conclusion of each task;

- A description of work products/deliverables Respondents will submit to USEPA and IEPA, including deliverables required by this SOW;

- A schedule for starting and completing each of the required activities and submissions, consistent with the RI/FS guidance and other relevant guidance; and

- A project management plan, including a data management plan (e.g., requirements for project management systems and software, minimum data requirments, data format, and backup data management), monthly reports to USEPA and IEPA, and any presentations to USEPA and IEPA at the conclusion of each major phase of the RI/FS.

- A list of key personnel providing support on the RI.

Sampling and Analysis Plan: Within 30 days after approval of the PPR, Respondents shall prepare a draft sampling and analysis plan (SAP) consisting of the Quality Assurance Project Plan (QAPP) and the Field Sampling Plan (FSP). All sampling and analyses performed at the site, including field-based or real-time measurements advocated

in the Triad Approach, shall conform to USEPA direction, approval, and guidance. Respondents shall also ensure that all laboratories used to perform sample analysis participate in a QA/QC program that complies with USEPA guidance. Respondents shall submit a final SAP within 21 days after receipt of comments on the draft version from USEPA.

Upon request by USEPA, Respondents shall have its laboratory analyze samples submitted by USEPA for quality assurance monitoring. The Respondents shall provide USEPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis. The Respondents shall also ensure the provision of analytical tracking information consistent with OSWER Directive No. 9240.0-2B, *Extending the Tracking of Analytical Services to PRP-lead Superfund Sites.*

Respondents shall notify USEPA not less than fourteen (14) days in advance of any sample collection activity. USEPA reserves the right to take any additional samples that it deems necessary. Upon request by USEPA, Respondents shall allow USEPA or its authorized representatives to take split and/or duplicate samples of any samples collected by Respondents, its contractors, or its agents.

Quality Assurance Project Plan (QAPP). Respondents shall prepare a site-specific QAPP covering sample analysis and data handling for the samples and data collected during the RI. The QAPP shall be prepared in accordance with the *Region 5 Instructions on the Preparation of a Superfund Division Quality Assurance Project Plan Based on EPA QA/R-5* (Revision 0, June 2000); *EPA Requirements for Quality Assurance Project Plans (QA/R-5)* (EPA/240/B-01/003, March 2001); and *EPA Guidance for Quality Assurance Project Plans (QA/G-5)* (EPA/600/R-98/018, February 1998). The QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols the Respondents shall use to achieve the desired DQOs. The DQOs shall at a minimum reflect use of analytic methods to identify contamination and remediate contamination consistent with the levels for remedial action objectives identified in the National Contingency Plan, 40 C.F.R. Part 300. In addition, the QAPP shall address sampling procedures, sample custody, analytical procedures, and data reduction, validation, reporting and personnel qualifications. The Respondents shall also ensure the provision of analytical tracking information consistent with USEPA's Office of Solid Waste and Emergency Response (OSWER) Directive No. 9240.0-2B *Extending the Tracking of Analytical Services to PRP-Lead Superfund Sites.* Field personnel shall be available for USEPA QA/QC training and orientation where applicable.

The Respondents shall demonstrate, in advance, to USEPA's satisfaction, that each laboratory they may use is qualified to conduct the proposed work. This includes the use of methods and analytical protocols for the chemicals of concern in the media of interest within detection and quantification limits consistent with both QA/QC procedures and the

DQOs in the USEPA-approved QAPP for the Site. The laboratory must have and follow an approved QA program.

If the Respondents select a laboratory that is not in the Contract Laboratory Program (CLP), the laboratory must use methods consistent with the CLP methods that would be used at this Site for the purposes proposed and the QA/QC procedures approved by USEPA. The laboratory must be accredited under the National Environmental Laboratory Accreditation Program (NELAP) to meet the quality system requirements. Each laboratory and contractor who performs work involving environmental data operation activities for the Respondents under this SOW shall submit a Quality Management Plan (QMP) to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. The contractors' QMPs shall provide information on how the contractor's management will plan, implement, and assess its Quality System that complies with ANSI/ASQC E4-1994, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs*. The Respondents shall prepare the QMPs according to *EPA Requirements for Quality Management Plans*, EPA QA/R-2, March 2001, or equivalent documentation. The Respondents may submit the QMPs as part of the QAPP or as separate documents. USEPA may also require the Respondents to submit detailed information to demonstrate that a laboratory is qualified to conduct the work, including information on personnel qualifications, equipment and material specifications. The Respondents shall provide assurances that USEPA and IEPA have access to laboratory personnel, equipment and records for sample collection, transportation and analysis.
Upon request by U.S. EPA, Respondents shall have such a laboratory analyze samples submitted by U.S. EPA for quality assurance monitoring. Respondents shall provide to U.S. EPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis. Respondents shall also ensure provision of analytical tracking information consistent with, at a minimum, OSWER Directive No. 9240.0-2B, *Extending the Tracking of Analytical Services to PRP-Lead Superfund Sites*.

The Respondents shall participate in a pre-QAPP meeting or conference call with USEPA. The purpose of this meeting or conference call is to discuss the QAPP requirements and to obtain any clarification needed to prepare the QAPP.

Field Sampling Plan (FSP): Respondents shall submit a FSP that defines in detail the sampling and data-gathering methods that will be used to collect data for this project. The FSP shall discuss how the specific tasks outlined in the FSP meet the Site-specific objectives of the RI/FS, the detailed objectives of each investigation, and the DQOs.

For each investigation (e.g., waste characterization, etc.), the FSP shall present a statement of the problems and the potential problems posed by the Site; discuss previous sampling locations, analytical results and other relevant information (e.g., visual

observations, historical records, air photo analyses); discuss the detailed objectives of each investigation, including the DQOs; and discuss and explain in detail how the specific work and activities the Respondents shall perform as part of each investigation will meet the objectives of the investigation and be used in the remedial investigation, the human health and ecological risk assessments and the feasibility study.

For each investigation, the FSP shall include a detailed description of the sampling objectives; sample locations, depths and frequency; sampling equipment and procedures; field measurements, analyses and procedures; sample preservation and handling; the field notes that the Respondents shall collect; field quality assurance; planned analyses; standard operating procedures; and decontamination procedures. The FSP shall include step-by-step instructions and be written so that a field sampling team unfamiliar with the Site would be able to gather the samples and the required field information according to the approved protocols. The FSP shall explain and justify why specific equipment and sampling procedures were selected and how they are appropriate for the work being performed and the objectives of this investigation. The FSP shall also include one or more figures that show all previous sampling locations with notes for any significant findings including groundwater elevation contours and the planned RI sample locations on the same map. The FSP shall also include a schedule which identifies the timing for the initiation and completion of all tasks the Respondents shall complete as a part of the FSP. If the Respondents plan to collect data from existing monitoring wells, they must collect additional data and/or demonstrate to USEPA's satisfaction that the wells are appropriately located and screened to meet the sampling objectives (e.g., most existing wells are screened 5 to 10 or more feet below the water table).

Respondents shall notify USEPA and IEPA not less than 14 calendar days in advance of any sample collection activity. USEPA and IEPA shall have the right to take any additional samples that they deem necessary, including split and/or duplicate samples of any samples collected by Respondents or their contractors or agents performing work under this AOC..

Health and Safety Plan. Respondents shall prepare a site-specific Health and Safety Plan (HASP) that complies with applicable Occupational Safety and Health Administration (OSHA) regulations found at 29 CFR Part 1910. At a minimum, the HASP must follow USEPA's guidance document, *Standard Operating Safety Guides* (Publication 9285.1-03, PB92-963414, June 1992). The HASP shall include the eleven (11) elements described in the RI/FS Guidance, such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and site control.

USEPA does not approve the Respondents' HASP, but reviews it to ensure that all necessary elements are included and that the plan provides for the protection of human health and environment. After its review, USEPA may provide comment as may be necessary and appropriate.

Other Plans: Within thirty days after USEPA approval of the RI/FS Work Plan, the Respondents shall prepare the following for review and approval by USEPA (in consultation with IEPA):

1. A *Site Management Plan (SMP)* that provides USEPA with a written understanding of how access, security, contingency procedures, management responsibilities, and waste disposal are to be handled;

2. A *Pollution Control & Mitigation Plan* that outlines the process, procedures, and safeguards that will be used to ensure contaminants or pollutants are not released off-site during the implementation of the RI;

3. A *Transportation & Disposal Plan* that outlines how wastes that are encountered during the RI will be managed and disposed of. Respondents shall specify the procedures that will be followed when wastes will be transported off-site for storage, treatment, and/or disposal; and

4. Other plans, as necessary, to implement the RI.

TASK 2: COMMUNITY RELATIONS SUPPORT

USEPA has responsibility for developing and implementing community relations activities for the Site, including conducting community interviews and developing a community involvement plan (CIP). Although implementing the CIP is USEPA's responsibility, the Respondents, if directed by USEPA, shall assist by 1) providing information regarding site history 2) participating in public meetings 3) assisting in preparing fact sheets for distribution to the general public and 4) conducting other activities as approved by USEPA.

TASK 3: SITE CHARACTERIZATION AND RISK ASSESSMENT

Site Characterization

Within 21 days after approval of all RI/FS Planning Documents under Task 1 of this SOW (except for the HASP), Respondents shall begin conducting site characterization work at OU1. This work shall be performed according to the approved RI/FS Work Plan, FSP, and QAPP. All field work and observations performed by the Respondents shall be documented in detailed field logs and/or standard format information sheets. Also, Respondents shall notify USEPA of any field activity at least fourteen (14) days prior to mobilization. Progress reports described in Task 8 of this SOW shall summarize progress with said field activity. In addition, Respondents shall provide USEPA and IEPA with a paper and electronic copy of laboratory data within the monthly progress reports, no later than ninety (90) days after samples are shipped for analysis.

Site characterization shall include, but not limited to, the following major areas of study:

Investigate and Define Site Physical and Biological Characteristics:

Respondents shall collect data on the physical and biological characteristics of the Source Area and its vicinity, including physical physiography, geology, and hydrology, and specific physical characteristics identified in the approved Work Plan. The results of this work will be used to define potential transport pathways and human/ecological receptor populations and to identify potential impacts on natural resources. In the event the site's physical characteristics prove insufficient for an engineering evaluation, Respondents will also obtain adequate engineering data (e.g., pumping characteristics) for the projection of contaminant fate and transport and development/screening of remedial action alternatives, including information necessary to assess treatment alternatives.

Define Sources of Contamination:

Respondents shall characterize the media in and around the Source Area (i.e., soil, groundwater, surface water) for sources of contamination. The areal extent and depth of contamination shall be determined by sampling at incremental depths on a specified sampling grid or as otherwise defined in the approved Work Plan. The physical characteristics and chemical constituents, including their associated concentrations, shall be determined for all known and discovered contaminant sources at the site. Work on defining the source(s) of the contamination will include analyzing the potential for contaminant release, contaminant mobility and persistence, and other characteristics important for evaluating remedial actions and assessing treatment technologies.

To the extent possible, Respondents shall incorporate sampling strategies described in the Triad Approach for conducting this work (i.e., real-time measurements).

Describe Nature and Extent of Contamination:

Respondents shall gather information to describe the nature and extent of contamination as the final step in the field investigation. To accomplish this, the information about the site's physical and biological characteristics and sources of contamination will be used to give a preliminary estimate of the contaminants that may be present and may have migrated. Respondents will then implement an iterative and dynamic sampling plan sufficient to detect and quantify the contaminant concentrations and enable Respondents to determine fate and transport mechanisms at the site. This information, in turn, shall be used by Respondents to periodically refine the preliminary CSM and RAOs developed during the scoping phase of the project. This process is continued until the area and depth of contamination are known to the level of contamination established in the QAPP and DQOs.

Evaluate Site Characteristics:

Respondents shall analyze and evaluate the data collected under this task to describe: 1) Site physical and biological characteristics, 2) contaminant source characteristics, 3) nature and extent of contamination, including impacts on natural resources, and 4) contaminant fate and transport, and to refine preliminary CSM and RAOs developed earlier in this project. The format for presenting this information is described in Task 4 below.

Human Health Risk Assessment:

Respondents shall conduct a baseline human health risk assessment to determine whether Source Area contaminants pose a current or potential risk to human health and environment, in the absence of any remedial action. The risk assessment shall be conducted in accordance with USEPA guidance, including at a minimum: 1) *Risk Assessment Guidance for Superfund (RAGS), Volume 1-Human Health Evaluation Manual (Part A), Interim Final (EPA-540-1-89-002, OSWER Directive 9285.7-01A, 12/1/89;* and 2) *Risk Assessment Guidance for Superfund (RAGS), Volume 1 - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments), Final (EPA 540-R-97-033, OSWER 9285.7-01D, December 2001).* The risk assessment shall include discussions on the following areas: 1) Hazard Identification; 2) Dose-Response Assessment; 3) Exposure/Pathway Analysis; 4) Characterization of Site and Potential Receptors; 5) Exposure Assessment; 6) Risk Characterization; and 7) Identification of Limitations/Uncertainties.

The human health risk assessment shall use data from the site and nearby areas to identify the contaminants of concern (COCs), provide an estimate of how and to what extent human receptors might be exposed to these COCs currently and into the future, and provide an assessment of the health effects associated with these COCs. This risk assessment shall project the potential risk of health problems occurring if no cleanup action is taken at the Source Area and/or near vicinity and establish target action levels for COCs (carcinogenic and non-carcinogenic). The assessment shall define central tendency and reasonable maximum estimates of exposure for current and reasonably anticipated future land use considerations.

Ecological Risk Assessment:

Respondents shall conduct an Ecological Risk Assessment in accordance with USEPA guidance, including the following: *Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments, (EPA-540-R-97-006, June 1997, OSWER Directive 9287.7-25).* This assessment shall evaluate current and potential future risks to ecosystems posed by Source Area contaminants and addresses the following areas: 1) Hazard Identification; 2) Dose-Response Assessment; 3) Exposure/Pathway Analysis; 4) Characterization of Site and Potential Receptors; 5) Selection of Chemicals, Indicator Species, and End Points; 6) Exposure Assessment; 7) Toxicity Assessment/Ecological Effects Assessment; 8) Risk Characterization; and 9) Identification of Limitations/Uncertainties.

TASK 4: REMEDIAL INVESTIGATION (RI) REPORT

Respondents shall prepare the RI Report in three phases: 1) Site Characterization Technical Memorandum, 2) Risk Assessment Technical Memorandum, and 3) RI Report. All 3 reports shall be shall be submitted in draft versions to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. These documents shall include, but not limited to, the following elements:

4.1 Site Characterization Technical Memorandum

Within 60 days after completing site characterization work described under Task 3, Respondents shall submit a draft Site Characterization Technical Memorandum for the Source Area operable unit to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. The document shall include, but not limited to, the following elements:

1. Introduction
    - Purpose of Report
    - Site Description and Background
        - Site Location and Physical Setting including General Geology, Hydrology, Hydrogeology, Surrounding Land Use and Populations, Groundwater Use, Surface Water Bodies, Ecological Areas including Sensitive Ecosystems and Meteorology/Climatology
        - Past and Present Facility Operations/Site Usage and Disposal Practices, Including Waste Disposal/Operations Areas based on Historical Air Photos
        - Previous Investigations and Results
    - Report Organization

2. Study Area Investigations, Procedures and Methodologies, including a Detailed Description of All Field Activities Associated with Site Characterization and Any Deviations from Approved Planning Documents (i.e., Describe How the RI Was Conducted)
    - Detailed Sampling and Data Gathering Objectives; Data Gaps and Data Needs Identified During Project Scoping and Course of RI
    - Surface Features Inventory, including Topographic Mapping, etc.
    - Surrounding Land Use and Population Inventories/Surveys
    - Meteorology/Climate Data Collection
    - Waste Characterization Activities
    - Surface and Subsurface Soils Investigations
    - Hydrogeologic Investigations and Groundwater Use Inventories
    - Surface Water, Sediment and Floodplain Investigations
    - Ecological Investigations
    - Treatability Studies

3. Physical Characteristics of the Study Area, Analytical Results and Modeling
    - Surface Features (Natural and Manmade) and Topography
    - Surrounding Land Use and Populations
    - Meteorology/Climate
    - Geology, Contaminant Source Areas, Waste Characterizations, Surface and Subsurface Soils, Hot Spots, and Analytical Data
    - Hydrogeology, Groundwater Conditions, Analytical Data, Contaminant Trends
    - Surface Water Hydrology and Surface Water, Sediment and Floodplain Characterizations, Analytical Data
    - Ecological Characterization and Sensitive Ecosystems

4. Summary of the Nature and Extent of Contamination, Contaminant Fate and Transport and Modeling Results
    - Contaminant Source/Waste Areas, Surface and Subsurface Soil Contamination and Hot Spots
        - Contaminant Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport Processes; Migration to Other Areas and Media; Modeling; Detected and Modeled Concentrations in Other Areas and Media
    - Groundwater Contaminants
        - Contaminant Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Groundwater Use; Fate and Transport Processes; Migration to Other Areas and Media; Modeling; Detected and Modeled Concentrations in Other Areas and Media
    - Surface Water and Sediments
        - Contaminants and Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport Processes; Migration to Other Areas and Media; Modeling; Detected and Modeled Concentrations

5. Summary and Conclusions

    - Summary
        - Nature and Extent of Contamination
        - Fate and Transport

    - Conclusions
        - Data Limitations and Recommendations for Future Work

6. References

7. Tables and Figures
   (at least one set of figures shall be no larger than 11" x 17")

8. Appendices
   - Log Books
   - Soil Boring Logs
   - Test Pit/Trenching Logs
   - Direct Soil Solute Sampling Construction Diagrams
   - Monitoring Well Construction Diagrams
   - Sample Collection Logs
   - Private and Public Well Records
   - Analytical Data and Data Validation Reports
   - Detailed Modeling Reports

4.2 Risk Assessment Technical Memorandum

Within 30 days after USEPA approval of the Site Characterization Technical Memorandum above, Respondents shall submit a draft Human Health Risk Assessment Report and a draft Ecological Risk Assessment Report for the Source Area operable unit to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. Each report shall contain, but not limited to, the following elements:

1) Introduction
2) Summary and Conclusions
3) Hazard Identification
4) Dose-Response Assessment
5) Exposure/Pathway Analysis
6) Characterization of Site and Potential Receptors
7) Exposure Assessment
8) Risk Characterization
9) Identification of Limitations/Uncertainties
10) Figures and Attachments; and
11) References.

4.3 RI Report

Within 30 days following USEPA's approval of the Risk Assessment Technical Memorandum described above, Respondents shall submit a draft RI Report for the Source Area operable unit to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. The report shall fully address and incorporate USEPA's comments on the Site Characterization Technical Memorandum and Risk Assessment Technical Memorandum. In addition, the RI Report shall

also include the information USEPA will need to prepare the Record of Decision (ROD) for the Source Area, as described in Chapters 6 and 9 of USEPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Documents* (EPA 540-R-98-031, July 1999).

The RI Report shall include, but not limited to, the following elements:

1. Executive Summary

2. Introduction
    - Purpose of Report
    - Site Description and Background
        - Site Location and Physical Setting Including General Geology, Hydrology, Hydrogeology, Surrounding Land Use and Populations, Groundwater Use, Surface Water Bodies, Ecological Areas including Sensitive Ecosystems and Meteorology/Climatology
        - Past and Present Facility Operations/Site Usage and Disposal Practices, Including Waste Disposal/Operations Areas Based on Historical Air Photos
        - Previous Investigations and Results
    - Report Organization

3. Study Area Investigations, Procedures and Methodologies, including a Detailed Description of All Field Activities Associated with Site Characterization and Any Deviations from Approved Planning Documents (i.e., Describe How the RI Was Conducted)
    1. Detailed Sampling and Data Gathering Objectives; Data Gaps and Data Needs Identified During Project Scoping and Course of RI
    2. Surface Features Inventory, Including Topographic Mapping, etc.
    3. Surrounding Land Use and Population Inventories/Surveys
    4. Meteorology/Climate Data Collection
    5. Waste Characterization Activities
    6. Surface and Subsurface Soils Investigations
    7. Hydrogeologic Investigations and Groundwater Use Inventories
    8. Surface Water, Sediment and Floodplain Investigations
    9. Ecological Investigations
    10. Treatability Studies

4. Physical Characteristics of the Study Area, Analytical Results and Modeling Surface Features (Natural and Manmade) and Topography
    1. Surrounding Land Use and Populations
    2. Meteorology/Climate

3. Geology, Contaminant Source Areas, Waste Characterizations, Surface and Subsurface Soils, Hot Spots, and Analytical Data
4. Hydrogeology, Groundwater Conditions, Analytical Data, Contaminant Trends
5. Surface Water Hydrology and Surface Water, Sediment and Floodplain Characterizations, Analytical Data
6. Ecological Characterization and Sensitive Ecosystems

7. Summary of the Nature and Extent of Contamination, Contaminant Fate and Transport and Modeling Results
   - Contaminant Source/Waste Areas, Surface and Subsurface Soil Contamination, and Hot Spots
     - Contaminant Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport Processes; Migration to Other Areas and Media; Modeling, Detected and Modeled Concentrations in Other Areas and Media
   - Groundwater Contaminants
     - Contaminant Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Groundwater Use; Fate and Transport Processes; Migration to Other Areas and Media; Modeling; Detected and Modeled Concentrations in Other Areas and Media
   - Surface Water and Sediments
     - Contaminants and Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport Processes; Migration to Other Areas and Media; Modeling; Detected and Modeled Concentrations in Other Areas and Media

6. Human Health Risk Assessment Summary

7. Ecological Risk Assessment Summary

8. Summary and Conclusions
   - Summary
     - Nature and Extent of Contamination
     - Fate and Transport
     - Risk Assessment
   - Conclusions
     - Data Limitations and Recommendations for Future Work

- Recommended Remedial Action Objectives

9. References

10. Tables and Figures
    (at least one set of figures shall be no larger than 11" x 17")

11. Appendices
    - Log Books
    - Soil Boring Logs
    - Test Pit/Trenching Logs
    - Direct Soil Solute Sampling Construction Diagrams
    - Monitoring Well Construction Diagrams
    - Sample Collection Logs
    - Private and Public Well Records
    - Analytical Data and Data Validation Reports
    - Detailed Modeling Reports

Respondents shall submit draft, final, and revised final versions of the RI Report in the same manner as the planning documents submitted under Task 1 of this SOW. The final RI Report shall also include a response to comments, explaining how each of USEPA's comments in the draft RI have been satisfactorily addressed.

TASK 5: TREATABILITY STUDIES

Respondents shall conduct treatability studies, except where Respondents can demonstrate to US EPA's satisfaction that they are not needed. Major components of the treatability studies include determination of the need for and scope of studies, the design of the studies, and the completion of the studies, as described in the SOW. During treatability studies, Respondents shall provide USEPA with the following deliverables:

5.1 *Identification of Candidate Technologies Memorandum.* This memorandum shall be submitted within 30 days after completion of field investigations [is this Site Characterization field investigations, or might there be other supplemental field investigations?]. If USEPA disapproves of or requires revisions to the technical memorandum identifying candidate technologies, in whole or in part, Respondents shall amend and submit to USEPA a revised technical memorandum identifying candidate technologies which is responsive to the directions in all USEPA comments, within 21 days of receiving USEPA's comments.

5.2 *Treatability Testing Statement of Work.* If USEPA determines that treatability testing is required, within 30 days thereafter [or as specified by USEPA], Respondents shall submit a treatability testing Statement of Work.

5.3 *Treatability Testing Work Plan.* Within 30 days of submission of the treatability testing Statement of Work, Respondents shall submit a treatability testing Work Plan, including a schedule. If USEPA disapproves of or requires revisions to the treatability testing Work Plan, in whole or in part, Respondents shall amend and submit to USEPA a revised treatability testing Work Plan which is responsive to the directions in all USEPA comments, within 21 days of receiving USEPA's comments.

5.4 *Treatability Study Sampling and Analysis Plan.* Within 30 days of the identification of the need for a separate or revised QAPP or FSP, Respondents shall submit a treatability study sampling and analysis plan. If USEPA disapproves of or requires revisions to the treatability study sampling and analysis plan, in whole or in part, Respondents shall amend and submit to USEPA a revised treatability study sampling and analysis plan which is responsive to the directions in all USEPA comments, within 21 days of receiving USEPA's comments.

5.5 *Treatability Study Site Health and Safety Plan.* Within 30 days of the identification of the need for a revised health and safety plan, Respondents shall submit a treatability study site health and safety plan.

5.6 *Treatability Study Evaluation Report.* Within 30 days of completion of any treatability testing, Respondents shall submit a treatability study evaluation report as provided in the Statement of Work and Work Plan. If USEPA disapproves of or requires revisions to the treatability study report, in whole or in part, Respondents shall amend and submit to USEPA a revised treatability study report which is

TASK 6: DEVELOPMENT AND SCREENING OF ALTERNATIVES

Respondents shall develop and screen remedial alternatives to determine an appropriate range of waste management options that the Respondents shall evaluate for the Source Area operable unit. This range of alternatives shall include, as appropriate, options in which treatment is used to reduce the toxicity, mobility, or volume of wastes, but which vary in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; options involving containment with little or no treatment; options involving both treatment and containment; and a no-action alternative.

The Respondents may perform a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for a detailed analysis. If necessary, the Respondents shall conduct the screening of alternatives to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis. As appropriate, the screening shall preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives shall include options that use treatment technologies and permanent solutions to the maximum extent practicable. The Respondents shall prepare an Alternatives Screening Technical Memorandum

that summarizes the results and reasoning employed in screening; arrays the alternatives that remain after screening; and identifies the action-specific ARARs for the alternatives that remain after screening.

6.1 Alternatives Development and Screening Deliverables

The Respondents shall prepare and submit three technical memoranda for this task: a Remedial Action Objectives Technical Memorandum, an Alternatives Screening Technical Memorandum and a Comparative Analysis of Alternatives Memorandum.

6.1.1 *Remedial Action Objectives (RAO) Technical Memorandum*

Within 30 days after submitting the draft RI Report, Respondents shall submit a RAO Technical Memorandum to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. Based on evaluation of existing and new information (e.g., human health and ecological risk assessment, site characterization data, etc.), the RAO Technical Memorandum shall represent a refinement of the preliminary remedial action objectives that were established under Task 1 of this SOW. This technical memorandum shall specify the constituents of concern and the media of interest; actual and potential exposure pathways and receptors; and an acceptable contaminant level or range of levels (at particular locations for each exposure route).

6.1.2 *Alternatives Screening Technical Memorandum*

Within 30 days after receipt of USEPA's comments on the RAO Technical Memorandum, Respondents shall submit an Alternatives Screening Technical Memorandum to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. The Alternatives Screening Technical Memorandum shall summarize the work performed during and the results of each of the above tasks, and shall include an alternatives array summary. If required by USEPA, the Respondents shall modify the alternatives array to assure that the array identifies a complete and appropriate range of viable alternatives to be considered in the detailed analysis. The Alternatives Screening Technical Memorandum shall document the methods, the rationale and the results of the alternatives screening process. Also, the memorandum shall include sections dealing with the following:

Develop General Response Actions: In the Alternatives Technical Memorandum, Respondents shall develop general response actions for each medium of interest including containment, treatment, excavation, pumping, or other actions, singly or in combination, to satisfy the EPA-approved remedial action objectives.

Identify Areas or Volumes of Media: In the Alternatives Technical Memorandum, Respondents shall identify areas or volumes of media to which the general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. Respondents shall also take into account the chemical and physical characterization of the Site.

Identify, Screen, and Document Remedial Technologies: In the Alternatives Technical Memorandum, Respondents shall identify and evaluate technologies applicable to each general response action to eliminate those that cannot be implemented at the Site. Respondents shall refine applicable general response actions to specify remedial technology types. Respondents shall identify technology process options for each of the technology types concurrently with the identification of such technology types or following the screening of considered technology types. Respondents shall evaluate process options on the basis of effectiveness, implementability, and cost factors to select and retain one or, if necessary, more representative processes for each technology type. Respondents shall summarize and include the technology types and process options in the Alternatives Screening Technical Memorandum. Whenever practicable, the alternatives shall also consider the CERCLA preference for treatment over conventional containment or land disposal approaches.

In the Alternatives Technical Memorandum, Respondents shall provide a preliminary list of alternatives to address contaminated soil, sediments, surface water, groundwater, and air contamination related to the Source Area that shall consist of, but is not limited to, treatment technologies, removal and off-Site treatment/disposal, removal and on-Site disposal, and in-place containment for soils, sediments, and wastes. See 40 CFR 300.430(e)(1)-(7). Also, the Respondents shall specify the reasons for eliminating any alternatives.

Assemble and Document Alternatives: Respondents shall assemble the selected representative technologies into alternatives for each affected medium or discrete source area. Together, all of the alternatives shall represent a range of treatment and containment combinations that shall address either the Site or the operable unit as a whole. Respondents shall prepare a summary of the assembled alternatives and their related action-specific ARARs for the Alternatives Screening Technical Memorandum. Respondents shall specify the reasons for eliminating alternatives during the preliminary screening process. Respondents shall also include a "no action" alternative for comparison purposes.

Refine Alternatives: Respondents shall refine the remedial alternatives to identify the volumes of contaminated media addressed by the proposed processes and size critical unit operations as necessary. Respondents shall collect sufficient information for an adequate comparison of alternatives. Respondents shall also modify the remedial action objectives for each chemical in each medium as

necessary to incorporate any new human health and ecological risk assessment information presented in the Respondents' baseline human health and ecological risk assessment reports. Additionally, Respondents shall update action-specific ARARs as the remedial alternatives are refined.

TASK 7: DETAILED ANALYSIS OF ALTERNATIVES (FS Report)

Respondents shall conduct and present a detailed analysis of remedial alternatives to provide EPA with the information needed to select a remedy for the Source Area.

(A) *Detailed Analysis of Alternatives*

Respondents shall conduct a detailed analysis of the remedial alternatives for the Source Area. The detailed analysis shall include an analysis of each remedial option against a set of nine evaluation criteria, and a comparative analysis of all options using the same nine criteria as a basis for comparison.

1. Apply Nine Criteria and Document Analysis

The Respondents shall apply the nine evaluation criteria to the assembled remedial alternatives to ensure that the selected remedial alternative will protect human health and the environment and meet remedial action objectives; will comply with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria include: (1) overall protection of human health and the environment and how the alternative meets each of the remedial action objectives; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) state (or support agency) acceptance; and (9) community acceptance. (Note: criteria 8 and 9 are considered after the RI/FS report has been released to the general public.) For each alternative the Respondents shall provide: (1) A description of the alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative, and (2) A discussion of the individual criterion assessment. If the Respondents do not have direct input on criteria (8) state (or support agency) acceptance and (9) community acceptance, EPA will address these criteria.

2. Compare Alternatives Against Each Other and Document the Comparison of Alternatives

Respondents shall perform a comparative analysis between the remedial alternatives. That is, Respondents shall compare each alternative against the other alternatives using the evaluation criteria as a basis of comparison. EPA will then identify and select the preferred alternative. Respondents shall prepare a Comparative Analysis of Alternatives Technical Memorandum which summarizes the results of the comparative analysis and fully and satisfactorily addresses

and incorporates EPA's comments on the Alternatives Screening Technical Memorandum. Respondents shall incorporate EPA's comments on the Comparative Analysis of Alternatives Technical Memorandum in the draft FS Report. Respondents shall submit the Comparative Analysis of Alternatives Memorandum within twenty-one (21) calendar days after receipt of EPA's comments on the Alternatives Screening Technical Memorandum.

(B) *Feasibility Study (FS) Report*

Within twenty-one (21) days after USEPA's approval of the Comparative Analysis of Alternatives Technical Memorandum, Respondents shall prepare and submit a draft FS Report to USEPA and IEPA, for review and approval by USEPA in consultation with IEPA. The FS report shall summarize the development and screening of the remedial alternatives and present the detailed analysis of remedial alternatives. In addition, the FS Report shall also include the information USEPA will need to prepare relevant sections of the Record of Decision (ROD) for the Source Area [see Chapters 6 and 9 of USEPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (EPA 540-R-98-031, July 1999) for the information that is needed].

TASK 8: MONTHLY PROGRESS REPORTS

Respondents shall submit monthly written progress reports to USEPA and IEPA concerning actions undertaken pursuant to the AOC and this SOW, beginning 30 calendar days after the effective date of the AOC, until termination of the AOC, unless otherwise directed in writing by the RPM. These reports shall include, but not limited to, a description of all significant developments during the preceding period, including the work performed and problems encountered; all analytical data received during the reporting period; a description of all developments anticipated during the next reporting period, including a schedule of work to be performed; and a description of all anticipated problems, and actual or planned resolutions of past or anticipated problems. The monthly progress reports will summarize the field activities conducted each month, including, but not limited to, drilling and sample locations, depths and descriptions; boring logs; sample collection logs; field notes; problems encountered; solutions to problems; a description of any modifications to the procedures outlined in the RI/FS Work Plan, FSP, QAPP, or HASP, with justifications for the modifications; and upcoming field events.

ATTACHMENT A

Summary of Major Submittals for the Remedial Investigation/Feasibility (RI/FS) Study Ellsworth Industrial Park Downers Grove, DuPage County, Illinois		
DELIVERABLE	**COPIES**	**SUBMITTAL DATE**
Preliminary Planning Report (PPR)	3	Within 90 after effective date of AOC
Draft RI/FS Work Plan	3	Within 30 days after approval of PPR
Final RI/FS Work Plan	3	Within 21 days of receipt of USEPA comments
Modifications, if any, to Final RI/FS Work Plan	3	Within 15 days after receipt of USEPA comments
Draft Sampling and Analysis Plan (SAP)	3	Within 30 days after approval of PPR
Final SAP	3	Within 21 days after receipt of USEPA comments
Modifications, if any, to Final SAP	3	Within 15 days of receipt of USEPA comments
Health and Safety Plan (HASP)	3	Within 30 days after approval of PPR
Other Plans	3	Within 30 days after RI/FS Work Plan approval
Draft Site Characterization Technical Memorandum	3	Within 60 days after completing site characterization work under Task 3
Final Site Characterization Technical Memorandum	3	Within 21 days after receipt of USEPA comments
Draft Risk Assessment Technical Memorandum	3	Within 30 days after approval of Site Characterization Technical Memorandum
Final Risk Assessment Technical Memorandum	3	Within 21 days after receipt of USEPA comments on draft Risk Assessment Technical Memorandum
Draft Remedial Investigation (RI) Report	3	Within 30 days after approval of Risk Assessment Technical Memorandum

Summary of Major Submittals for the Remedial Investigation/Feasibility (RI/FS) Study Ellsworth Industrial Park Downers Grove, DuPage County, Illinois		
DELIVERABLE	**COPIES**	**SUBMITTAL DATE**
Final RI Report	3	Within 21 days after receipt of USEPA comments on draft RI Report
Identification of Candidate Technologies Memorandum (if needed)	3	Within 30 days after completion of field investigations
Treatability Testing Statement of Work (if needed)	3	Within 30 days of USEPA determination that a treatability study is needed
Treatability Study Work Plan (if needed)	3	Within 30 days after receipt of Treatability Testing Statement of Work
Treatability Study Sampling and Analysis Plan (if needed)	3	Within 30 days after determining need for a separate or revised QAPP or FSP
Treatability Study Health and Safety Plan (if needed)	3	Within 30 days after determining need for a revised HASP
Treatability Study Evaluation Report (if needed)	3	Within 30 days after completion of treatability study
Draft Remedial Action Objectives (RAO) Technical Memorandum	3	Within 30 days after submission of draft RI Report
Final RAO Technical Memorandum	3	Within 21 days after receipt of USEPA comments on draft RAO Technical Memorandum
Draft Alternatives Screening Technical Memorandum	3	Within 30 days of receipt of USEPA comments on draft RAO Technical Memorandum
Final Alternatives Screening Technical Memorandum	3	Within 21 days after receipt of USEPA comments on draft Alternatives Screening Technical Memorandum

Summary of Major Submittals for the Remedial Investigation/Feasibility (RI/FS) Study Ellsworth Industrial Park Downers Grove, DuPage County, Illinois		
DELIVERABLE	**COPIES**	**SUBMITTAL DATE**
Draft Comparative Analysis of Alternatives Technical Memorandum	3	Within 30 days after receipt of USEPA comments on draft Alternatives Screening Technical Memorandum
Final Comparative Analysis of Alteratives Technical Memorandum	3	Within 21 days after receipt of USEPA comments on draft Comparative Analysis of Alternatives Memorandum
Draft Feasibility Study (FS) Report	3	Within 21 days after approval of Comparative Analysis of Alternatives Technical Memorandum
Final FS Report	3	Within 21 days after receipt of USEPA comments on draft FS Report
Monthly Progress Reports	3	monthly, commencing 30 calendar days after effective date of AOC

EXHIBIT B
PARTIAL LIST OF GUIDANCE

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RI/FS process. The majority of these guidance documents, and additional applicable guidance documents, may be downloaded from the following websites:

http://www.epa.gov/superfund/pubs.htm (General Superfund)
http://cluin.org (Site Characterization, Monitoring and Remediation)
http://www.epa.gov/ORD/NRMRL/Pubs (Site Characterization and Monitoring)
http://www.epa.gov/quality/qa_docs.html#guidance (Quality Assurance)
http://www.epa.gov/superfund/programs/risk/toolthh.htm (Risk Assessment - Human)
http://www.epa.gov/superfund/programs/risk/tooleco.htm (Ecological Risk Assessment)
http://www.epa.gov/superfund/programs/lead (Risk Assessment - Lead)
http://cfpub.epa.gov/ncea (Risk Assessment - Exposure Factors/Other)
http://www.epa.gov/nepis/srch.htm (General Publications Clearinghouse)
http://www.epa.gov/clariton/clhtml/pubtitle.html (General Publications Clearinghouse)

1. The (revised) National Contingency Plan;

2. *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, U.S. EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9355.3-01, EPA/540/G-89/004, October 1988.

3. *Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites*, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-91/001, February 1991.

4. *Implementing Presumptive Remedies*, U.S. EPA, Office of Emergency and Remedial Response, EPA-540-R-97-029, October 1997.

5. *Presumptive Remedy for CERCLA Municipal Landfill Sites*, U.S. EPA, OSWER Directive No. 9355.0-49FS, EPA-540-F-93-035, September 1993.

6. *Presumptive Remedies: CERCLA Landfill Caps RI/FS Data Collection Guide*, U.S. EPA, OSWER 9355.3-18FS, EPA/540/F-95/009, August 1995.

7. *Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Ground Water at CERCLA Sites*, OSWER 9283.1-12, EPA-540-R-96-023, October 1996.

8. *Field Analytical and Site Characterization Technologies Summary of Applications*, U.S. EPA, EPA-542-F-97-024, November 1997.

9. *CLU-IN Hazardous Waste Clean-Up Information World Wide Web Site*, U.S. EPA, EPA-542-F-99-002, February 1999.

10. *Field Sampling and Analysis Technology Matrix and Reference Guide*, U.S. EPA, EPA-542-F-98-013, July 1998.

11. *Subsurface Characterization and Monitoring Techniques: A Desk Reference Guide, Volumes 1 and 2*, U.S. EPA, EPA/625/R-93/003, May 1993.

12. *Use of Airborne, Surface, and Borehole Geophysical Techniques at Contaminated Sites: A Reference Guide*, U.S. EPA, EPA/625/R-92/007(a,b), September 1993.

13. *Innovations in Site Characterization: Geophysical Investigation at Hazardous Waste Sites*, U.S. EPA, EPA-542-R-00-003, August 2000.

14. *Innovative Remediation and Site Characterization Technology Resources*, U.S. EPA, OSWER, EPA-542-F-01-026b, January 2001.

15. *Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells*, U.S. EPA, EPA/600/4-89/034, 1991.

16. *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers*, U.S. EPA, EPA-542-S-02-001, May 2002.

17. *Ground Water Issue: Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, U.S. EPA, EPA/540/S-95/504, April 1996.

18. *Superfund Ground Water Issue: Ground Water Sampling for Metals Analysis*, U.S. EPA, EPA/540/4-89/001, March 1989.

19. *Resources for Strategic Site Investigation and Monitoring*, U.S. EPA, OSWER, EPA-542-F-010030b, September 2001.

20. *Region 5 Framework for Monitored Natural Attenuation Decisions for Groundwater*, U.S. EPA Region 5, September 2000.

21. *Ground Water Issue: Suggested Operating Procedures for Aquifer Pumping Tests*, U.S. EPA, OSWER, EPA/540/S-93/503, February 1993.

22. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*, U.S. EPA, EPA/600/R-98/128, September 1998.

23. *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action and Underground Storage Tank Sites,* U.S. EPA, OSWER Directive 9200.4-17P, April 21, 1999.

24. *Ground Water Issue: Fundamentals of Ground-Water Modeling*, U.S. EPA, OSWER, EPA/540/S-92/005, April 1992.

25. *Assessment Framework for Ground-Water Model Applications*, U.S. EPA, OSWER Directive #9029.00, EPA-500-B-94-003, July 1994.

26. *Ground-Water Modeling Compendium - Second Edition: Model Fact Sheets, Descriptions, Applications and Cost Guidelines*, U.S. EPA, EPA-500-B-94-004, July 1994.

27. *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*, U.S. EPA, Office of Solid Waste and Emergency Response, OSWER Directive No. 9200.1-23P, EPA 540-R-98-031, July 1999.

28. *Region 5 Instructions on the Preparation of A Superfund Division Quality Assurance Project Plan Based on EPA QA/R-5, Revision 0*, U.S. EPA Region 5, June 2000.

29. *Guidance for the Data Quality Objectives Process (QA-G-4)*, U.S. EPA, EPA/600/R-96/055, August 2000.

30. *Guidance for the Data Quality Objectives Process for Hazardous Waste Sites (QA/G-4HW)*, U.S. EPA, EPA/600/R-00/007, January 2000.

31. *Guidance for the Preparation of Standard Operating Procedures (QA-G-6)*, U.S. EPA, EPA/240/B-01/004, March 2001.

32. *EPA Requirements for Quality Management Plans (QA/R-2)*, U.S. EPA, EPA/240/B-01/002, March 2001.

33. *EPA Requirements for QA Project Plans (QA/R-5)*, U.S. EPA, EPA/240/B-01/003, March 2001.

34. *Guidance for Quality Assurance Project Plans (QA/G-5)*, U.S. EPA, EPA/600/R-98/018, February 1998.

35. *Users Guide to the EPA Contract Laboratory Program*, U.S. EPA, Sample Management Office, OSWER Directive No. 9240.0-01D, January 1991.

36. *Technical Guidance Document: Quality Assurance and Quality Control for Waste Containment Facilities*, U.S. EPA, EPA/600/R-93/182, 1993.

37. *Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part A),* U.S. EPA, EPA/540/1-89/002, December 1989.

38. *Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals)*, U.S. EPA, EPA/540/R-92/003, OSWER Publication 9285.7-01B, December 1991.

39. *Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part C - Risk Evaluation of Remedial Alternatives)*, U.S. EPA, Office of Emergency and Remedial Response, Publication 9285.7-01C, October, 1991.

40. *Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part D - Standardized Planning, Reporting, and Review of Superfund Risk Assessments),* U.S. EPA, Office of Emergency and Remedial Response, Publication 9285.7-47, December 2001.

41. *Risk Assessment Guidance for Superfund: Volume III - Part A, Process for Conducting Probabilistic Risk Assessment*, U.S. EPA, OSWER Publication 9285.7-45, EPA-540-R-02-002, December 2001.

42. *Policy for Use of Probabilistic in Risk Assessment at the U.S. Environmental Protection Agency*, U.S. EPA, Office of Research and Development, 1997.

43. *Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors*, U.S. EPA, OSWER Directive 9285.6-03, March 25, 1991.

44. *Exposure Factors Handbook*, Volumes I, II, and III, U.S. EPA, EPA/600/P-95/002Fa,b,c, August 1997.

45. *Supplemental Guidance to RAGS: Calculating the Concentration Term*, U.S. EPA, OSWER Publication 9285.7-08I, May 1992.

46. *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, U.S. EPA, OSWER Directive 9355.4-12, EPA/540/F-94/043, July 14, 1994.

47. *Clarification to the 1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, U.S. EPA, OSWER Directive 9200.4-27, EPA/540/F-98/030, August 1998.

48. *Guidance Manual for the Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children*, U.S. EPA, OSWER Publication 9285.7-15-1, February 1994; and associated, clarifying Short Sheets on IEUBK Model inputs, including but not limited to OSWER

9285.7-32 through 34, as listed on the OSWER lead internet site at www.epa.gov/superfund/programs/lead/prods.htm,

49. *Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children*, Version 0.99D, NTIS PB94-501517, 1994 or *Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children*, Windows© version, 2001,

50. *Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions*, U.S. EPA, OSWER Directive 9355.0-30, April 22, 1991.

51. *Performance of Risk Assessments in Remedial Investigation /Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs)*, OSWER Directive No. 9835.15, August 28, 1990.

52. *Supplemental Guidance on Performing Risk Assessments in Remedial Investigation Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs)*, OSWER Directive No. 9835.15(a), July 2, 1991.

53. *Role of Background in the CERCLA Cleanup Program*, U.S. EPA, OSWER 9285.6-07P, April 26, 2002.

54. *Soil Screening Guidance: User's Guide*, U.S. EPA, OSWER Publication 9355.4-23, July 1996.

55. *Soil Screening Guidance: Technical Background Document*, U.S. EPA, EPA/540/R95/128, May 1996.

56. *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (Peer Review Draft), U.S. EPA, OSWER Publication 9355.4-24, March 2001.

57. *Ecological Risk Assessment Guidance for Superfund: Process for Designing & Conducting Ecological Risk Assessments*, U.S. EPA, OSWER Directive 9285.7-25, EPA-540-R-97-006, February 1997.

58. *Guidelines for Ecological Risk Assessment*, U.S. EPA, EPA/630/R-95/002F, April 1998.

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