2010

Property Assessment and Cleanup Plan (PACP) Guidelines

Alaska Department of Environmental Conservation
Reuse and Redevelopment Program

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This document provides guidelines for developing a *Property Assessment and Cleanup Plan* (PACP) to increase efficiency in Alaska Department of Environmental Conservation (DEC) term contract assessments and reporting, primarily on *Reuse and Redevelopment* (R&R) assessment projects. This format may also be used for other investigations for which a comprehensive analysis of historical information and environmental conditions is warranted before site assessment or corrective action plans are initiated. Understanding the end use of the PACP will help focus the level of effort and clarify the specific tasks involved.

1. Introduction

DEC may request the development of a PACP for projects where little is known about the historical use of a property or the potential for threats to human health or the environment, or where environmental concerns associated with a site may affect the current use, reuse, preservation, transfer, or development of resources. The issues may be associated with the single property in question, adjacent or multiple properties, or an entire community.

While most consultants are familiar with a Phase I Environmental Site Assessment as per ASTM Standard E1527-05 (Phase I), the Phase I is specific to a property transaction and is focused on the identification of environmental conditions that could represent a liability for the buyer. The intent of a PACP is to identify the same types of recognized environmental conditions at a site, but also to give the user a comprehensive understanding of how those conditions could affect the intended use or reuse of the site, and what would be required to mitigate or remediate those conditions in order to achieve the reuse goal. Information summarized in a PACP may include: demographic data about a community and available local resources; preexisting data regarding environmental conditions; proposed or planned future uses for the site; and the requirements and estimated costs for management or remediation of any environmental conditions in order to achieve those uses.

The PACP may also propose a vision of how best to move additional assessment and any necessary remediation or revitalization plan forward. Thus, many elements of the PACP overlap with a Phase I, but the intended end use of the PACP is to support the corrective action planning that may be necessary for property revitalization.

A PACP will generally incorporate research and data collection that exceed the requirements of a Phase I. Since a PACP may include collecting information about multiple properties, the final PACP probably would not meet the reporting requirements for a Phase I for each subject property. In some cases a PACP may be required to meet Phase I requirements as a prerequisite for future funding opportunities. If the scope of a PACP must also meet the Phase I standard for *All Appropriate Inquiry* for one or more subject properties, the specific sites for which this will be required should be identified and the reporting requirements clarified at the time of project scoping. In these cases the required Phase I elements can be planned for in the budgeting phase and incorporated into the final PACP, or included as an appendix.

2. Purpose

The PACP is intended to document known, potential, or suspected environmental conditions that could pose a threat to human health or the environment or hinder the safe use, reuse, or

redevelopment of a property. Within DEC's R&R Program, the PACP is typically part of the project scope for a DEC Brownfield Assessment (DBA). DBAs are nearly always done in response to a request from a community, or from another state agency, submitted during DEC's DBA request period. Thus, the intended audience for this type of environmental report is not regulatory agency staff, but rather members of the public or other, non-regulatory state agency staff. The final PACP report must be readable, easy to understand, and clear as to current site conditions and options for the next phases of the project. Therefore, the audience must be kept in mind during PACP development so that the most user-friendly tool can be provided to the requestor. The overall intent is to develop a clear picture of site conditions and any associated risks, and options for mitigation or management of those conditions to support the desired reuse or redevelopment, in one document, from a wide range of information sources.

The general nature and variability of this type of work leave the specific elements of a PACP subject to multiple potential approaches, all of which cannot be described in a generic request for proposal format. Therefore, a description of recommended areas of interest and a recommended report format are provided here for the contractor to use as a general guideline for PACP development. Not every area will be applicable to every project, and some areas of interest not identified below may be appropriate for some sites.

The consultant should identify topics and recommend information for evaluation as part of the PACP development. This process will naturally unfold during the research phase of the project. The consultant should also communicate their findings and project status to DEC and project stakeholders during the course of PACP development. Understanding where information is and is not available will help to direct resources where they can be used most efficiently to meet the project objectives.

3. PACP Content Requirements

Sites, areas, or communities will have varying amounts of information available to the contractor. Existing information may include previous audits, environmental assessments, interim removal actions, cleanup, or other projects that generate data or background information. In some cases no previous work may have been done on a site and the contractor will need to do all of the primary research using property records, agency databases or inquiries, historical aerial photographs, and interviews with people knowledgeable about the site. The contractor should gather information from other environmental programs, as appropriate, such as DEC's Drinking Water, Solid Waste, and Prevention and Emergency Response programs, to develop background on the historical and community context of the site. The final PACP should include sufficient site maps and photographs, current and historical aerial photographs, and other documentation to depict the site and clarify the reported information. The report should include a description of the anticipated distribution of contaminants or estimated quantity of contaminated material at each location across the site (based on existing information). If sampling is not part of the scope of the project, professional judgment and estimation can be used for these estimates, but this should be detailed in the report. If additional assessment is indicated, identify potential chemicals of concern and propose methods to characterize the site, including screening, sampling, and analytical testing. If the scope of work includes sampling, a data summary table and a map showing analytical results at sampling locations should also be provided in the main body of the report.

The PACP should include the following elements, as applicable to the project, described in detail below and shown in a recommended outline format in Section 4 of this document:

1. Introduction to the project, with general information about the site and its location and how the project came about. Reference the DBA request form, included in an appendix, if applicable. Describe the community's or requestor agency's concerns, reuse or redevelopment interests, and include general information on the site background. This section should provide the legal description of the property, its size, and its relation to other features in the community. Reference to a site map or maps should be included here.

    1.1. Purpose of the project: e.g., to summarize the site's background and regulatory history, investigate and report on environmental conditions that may affect the reuse or redevelopment of the site, and to provide recommendations for further assessment or remedial options to allow the site to be put back into productive use.

    1.2. Scope of services: describe the tasks completed to produce the PACP.

    1.3. Project objectives: the project objectives may be to develop a PACP that will provide the user with an understanding of the historical land use; environmental incidents and any response activities; current knowledge of environmental conditions, including nature and extent of contamination; an understanding of the proposed reuse of the properties; assessment of data gaps and how they might be filled in order to fully evaluate cleanup options; a qualitative understanding of potential risk to receptors; an understanding of the steps necessary to make the site suitable for the reuse objectives; and a listing of practical remediation approaches with general cost estimates.

2. Community overview: begin with a general introduction to the community, including brief historical orientation, local industries, whether the community is incorporated or not, taxing and zoning if relevant, and any other general introductory information.

    2.1. Location, climate, and geologic setting: potential for flooding is good to include.

    2.2. Community demographic data: include available information on the population, employment and income, median age, language, cultural background, etc.

    2.3. Community resources and infrastructure: describe general facilities and services available, including type of public water supply and distribution, schools, and landfill type (e.g., permitted or not).

        2.3.1. Public water supply information: include source and location, type of treatment system, and most recent drinking water monitoring results. If the community is served by a well, provide well log information if available, including depth to water, substrate, and groundwater flow direction. Check with DEC's Drinking Water Program.

        2.3.2. Landfill information: include the location, size, substrate, management, and information on any existing soil management activities, such as land farming, or availability of space for such activities. Check with DEC's Solid Waste Program.

        2.3.3. Current construction or infrastructure projects: identify any community development projects that may be planned or underway, such as new or upgraded water and sewer, new buildings, schools, or roads, which may allow work on the

site to take advantage of economies of scale. For example, heavy equipment may be temporarily available for use in soil excavation or building demolition.

2.4. Community involvement: describe the community's concerns with respect to the site and their general interests in reusing or redeveloping the site. Identify individual and organizational members of the project team within the community. Refer back to the DBA request form if applicable. Include reference to any resolutions that were drawn up to support the community's request for assessment.

2.4.1. Stakeholder meeting summary: briefly summarize the discussion at the meeting and reference the stakeholder meeting minutes, which can be provided as an appendix to the report.

2.4.2. Proposed community development and land reuse: describe the desired reuse in detail if known, including reference to any community comprehensive plans, economic development plans, business plans, or other documents if they exist. This section should also include information about any other funding sources or services that have already been explored, applied for, or planned to be applied for by the community to fund other phases of the project. For example, the community may have applied for, or may be planning to apply for, a Community Development Block Grant to pay for new construction.

2.4.3. Interviews and input: summarize the interviews conducted while on site in the community. Interviewees should be people knowledgeable about the site and its history, and may include past owners or operators, neighbors, and village elders. The person who submitted the DBA request is usually able to help identify these individuals and set up the interviews. The report should also include summaries of any other information obtained in telephone conversations or other contacts that may have taken place during PACP development.

3. Property or site overview: include general site information, such as acreage, location, and a general historical overview of the site, properties or community. For a community area-wide inventory project, discuss the general known environmental background for the community, to expand on the information in section 2.

3.1. Subsurface conditions: describe the rock and/or soil types, permafrost, wetlands, etc.

3.2. Current site use: describe current use of the site or property, and whether it is in use, partial use, occupied, or abandoned.

3.3. Historical site use: describe past development on the site, including when it was first developed, and include information available on past activities at the site and any past practices that may have led to contamination of the site. Describe the zoning of the site, if applicable, and any other information that may be pertinent to this and future efforts.

3.4. Ownership information: provide information about the site ownership and history of site transfer or conveyance. List past owners and other site affiliates, such as lien holders.

3.5. Records review: summarize information from the records that were reviewed for the project. Note that EDR data reports may not be relevant to a small rural Alaska community, but reference any documentation of records review found in an appendix.

3.6. Adjoining property use: describe the properties that are adjacent to the site, with a general summary of current and past uses of these properties. This information may come from site interviews, aerial photographs, or other records.

4. Site reconnaissance (and sampling *if applicable*): give the date of the site visit, weather conditions, logistics, and describe general site conditions.

   4.1. Deviations: summarize any changes or variances from the work plan.

   4.2. Methodology: describe the approach taken for site reconnaissance.

   4.3. Observations: describe in detail what was observed, and include site photographs and sketches *in the text*. Additional and/or a complete set of site photographs may be provided in an appendix. Tabled site information may be included, especially if the project is an inventory of landfill contents, a drum or barrel dump, or includes other such site characteristics.

   4.4. Site sampling (if applicable): since the focus of this report is not on sampling, the generic sections pertaining to sample collection, field methods, handling of investigation derived waste, quality control and quality assurance, etc., can be referenced to the work plan, or removed as an attachment or appendix, and referenced as such.

      4.4.1. Sampling rationale: provide a brief summary of sampling protocols, determining sample collection locations, screening methods, collection of duplicates, handling of blanks, etc.

      4.4.2. Analytical testing methods: describe the laboratory analytical methods and which samples were analyzed for various analytes in the sampling program.

   4.5. Analytical results and discussion (if applicable): provide the results of the sampling effort with a discussion of the field screening and analytical data. Include a tabled data summary and a map or maps of the results for the different sampling locations *in the text*. Complete data packages should be provided as an appendix. If more than one area was covered by the sampling program, include this information for each area in a separate section.

   4.6. Quality assurance summary: this should be concise, with reference to the laboratory QA package and the DEC laboratory data review checklist, which should be provided as an appendix.

5. Environmental review and summary of findings: summarize the environmental concerns.

   5.1. Historical environmental review: summarize historical releases and responses, previous assessment work, and corrective actions completed to date. Check with DEC's Prevention and Emergency Response and Contaminated Sites programs. Include all environmental data and information identified during the research phase of the project.

   5.2. Known or potential source areas: describe in detail the environmental concerns as informed by the current effort and include reference to the data summary as applicable.

   5.3. Known or perceived data gaps: summarize any identified data gaps and a proposed approach to fill them.

5.4. Conceptual site model: summarize the general CSM for the site and provide detail in subsequent sub-sections. Explain what is meant by the terms used, such as "exposure pathways" and "transport mechanisms." If applicable, describe both human and ecological receptors and what is meant by those terms. Refer to the CSM scoping and graphic forms, which should be provided in an appendix. Ensure agreement between the CSM discussion in the body of the report and the forms in the appendix.

5.4.1. Potential contaminants of concern and impacted media: list and describe the contaminants of concern and impacted media that were identified during the site investigation.

5.4.2. Exposure pathways discussion: describe the individual exposure pathways for the site or properties in question, to allow the reader a comprehensive understanding of the potential exposure pathways and risk to human *and ecological* receptors (the latter if applicable).

5.5. Cleanup criteria: describe which soil and/or water cleanup criteria and applicable cleanup levels should be used for the site.

5.5.1. Other regulated cleanup criteria: as applicable (not typically included).

5.5.2. Non-regulatory cleanup criteria: include requirements for solid waste or debris removal, as applicable, to facilitate preparation of the site for reuse.

5.6. General environmental overview: give the reader a general professional opinion or consensus as to the magnitude of the environmental conditions at the site, and the potential for significant exposure to human health and the environment in reasonable language that any reader will understand. This will likely be a key section to help identify whether action is imminent or not.

6. Recommended actions and opinion: provide general recommendations for eliminating or controlling completed exposure pathways for the intended or current use of the site(s) or properties, including cleanup or mitigation approaches. Also describe requirements for site preparation, if necessary, to make it ready for cleanup or reuse.

6.1. Recommended remedial actions by source area: (headings here could be the names of the different source areas) describe in detail recommendations for each area of concern identified in the PACP.

6.2. General remediation strategies or alternatives: it is important that this section include remedial options that are appropriate to the resources that may reasonably be available to the community or agency. This section is not meant to be an exhaustive assessment of alternatives, but a general discussion as to how this type of work is generally managed.

6.2.1. Soil management strategies: make recommendations for management of contaminated soil or other hazardous materials, including short-term and long-term stockpile design, and transport and off-site disposal. Identify potential locations within the community for long-term storage or treatment of any excavated contaminated soil. Include a general description of how potentially contaminated environmental media would be identified and segregated from non-contaminated material (as part of a remediation effort) and how confirmation or monitoring samples will be collected (a complete soil management work plan is

not required). The intent is to provide a conceptual understanding of the logistics involved with soil management

6.2.2. Water management strategies: if applicable, describe ways to manage contaminated water, such as monitored natural attenuation of groundwater contamination. If advanced remedial approaches are not feasible for the location, describe ways of controlling the associated exposure pathways.

6.2.3. Other materials management: if applicable, include means of disposal of any non-hazardous debris, tanks, drums, pipelines, structures, or other waste.

6.3. Community resources: if identified as necessary, include a summary of equipment and labor requirements and local or regional availability in order to complete the work (e.g., backhoe and a HAZWOPER-trained operator).

6.3.1. Resource leveraging opportunities: describe potential leveraging opportunities that may be available because of other large-scale construction projects or community infrastructure upgrades. This may include the presence of heavy equipment that could be used for soil excavation.

6.3.2. Potential funding sources: mention any identified grants or services for which the community is eligible; funding sources should be those the community could *reasonably* apply for and manage. Include reference to the Alaska funding spreadsheet developed by the Center for Creative Land Recycling and include it as an appendix, if relevant. This spreadsheet is available from the DEC project manager. (If included, credit CCLR and reference www.cclr.org.)

6.4. General outline of remedial requirements: a general summary and listing of potential remedial actions, best provided in table form.

6.5. General cost estimate: this is not an alternatives section, but meant to provide a general estimate of anticipated costs, can be in table format. This section could also give a brief summary cost estimate and refer to a more detailed set of costs located in an appendix, depending on different levels of activity, or if multiple source areas are involved.

7. Conclusions: summarize the findings and recommendations of the PACP, highlighting the main concerns.
8. Additional services: identify any amendments or tasks identified after work plan development, such as during a Triad investigation with a dynamic work plan approach.
9. Qualifications of qualified personnel: specific format varies from one contractor to another.
10. Limitations: this is often a canned statement.
11. References
12. Figures
13. Tables
14. Various appendices will be included depending on the project. A listing of some of the typical appendices to a PACP appears in the next section.

The next section includes a recommended outline format, or table of contents, that could be used for the PACP final report.

4. Reporting Format

The following general reporting format is recommended for the PACP, and can serve as a table of contents. Not a*ll elements of the following outline may be* applicable for each project, and some additional elements may be identified by the contractor or project manager during project scoping.

Cover with site photo *(cover format provided by DEC)*

Title Page

List of Acronyms and Abbreviations

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    - 14.9. Conceptual Site Model Scoping and Graphic Forms
    - 14.10. Cost Estimate Tables
    - 14.11. Alaska Funding Spreadsheet from the Center for Creative Land Recycling
    - 14.12. (as appropriate) SHPO/ESA letters requesting and agency responses documenting concurrence that no historic properties, nor endangered species, will be affected by the project, or documentation of SHPO evaluation, or steps taken to protect endangered species during project activities, if indicated.

Other notes:

1. Provide REASONABLE options, based on cost and logistics; e.g., to list air-sparging as a remedial option for contaminated groundwater is not feasible in most rural communities.
2. Do not refer back to previous sections for information. For example do not say information about adjacent sites is provided in section X. Then we go to section X and find it is the interview section. Then we tease out that one of the interviews mentions that an old BIA school tank farm used to be located next door. Instead, discuss the adjacent sites, and include information gleaned from other sources, and re-state that to the east is a vacant lot that was formerly a BIA school tank farm, which is evident in Figure X, a historical aerial photograph from 19XX, and so forth.