

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF PETROLEUM STORAGE SYSTEMS  
PETROLEUM CLEANUP PROGRAM

STANDARD OPERATING PROCEDURES PCS-003

COMPLETE STREAMLINED ASSESSMENT PROCEDURES  
FOR  
INLAND PROTECTION TRUST FUNDED SITES

HISTORY: New September 1, 2001

EXECUTIVE SUMMARY

Florida's Bureau of Petroleum Storage Systems (BPSS) has designed a new streamlined approach to assessments aimed at reducing paperwork and assessment time by enhancing field activities. Proposals and work orders are created to allow for more flexible scopes of work than have been allowed in the past, with the ultimate goal of completely assessing a site in one work order.

The present approach to assessing a site is a stepped, iterative approach, which results in determining the extent of petroleum contamination at a site, but is a time consuming process with many redundant activities. The BPSS has developed a new procedure to streamline the assessment process by allowing contractors more flexibility to plan field operations and determine the extent of petroleum contamination at a site in fewer mobilizations. This procedure also shifts BPSS site assessment procedures from a site management approach to a project management oversight approach. It allows contractors to invoice more frequently, thus reducing the need to borrow money or carry debt, and vastly increasing the potential to pay their subcontractors in a timely fashion. This procedure will significantly reduce the time it takes to complete an assessment and provide a report to the BPSS and/or local programs, thus speeding up the petroleum cleanup process.

The concept of the streamlined site assessment process is to allow the contractor to generate one proposal that encompasses file review to the submission of a complete site assessment report (SAR). To monitor the progress of the assessment, multiple advancement stages for the ongoing field effort are allowed. The invoicing points are tied to field events. It is very important to recognize that when conducting a streamlined site assessment, the site manager is in a project manager capacity and the contractor is the field expert. Communication between the site manager and the contractor is crucial. The site manager needs to guard against being too restrictive and must not override reasonable decisions by the consultant, and the contractors need to be conservative in their decisions, keep the site manager informed of field operations, and accept responsibility for those actions.

In short, work orders and proposals are established to allow for significantly increased operations than have been allowed in the past, with the ultimate goal of submission of the SAR in one work order while significantly reducing the time it has historically taken to delineate the extent of contamination at a site.

Effective September 1, 2001, all assessments for BPSS funded sites should utilize the Streamlined Assessment (StA) approach outlined in this document. Existing assessment work orders (with single field work invoices) should be completed as usual. However, in a few cases, an existing assessment work order may involve multiple field events stretched over many months. In these cases, the consultant and site manager should decide if it is necessary to find an appropriate point to close out the existing work order and create a new one to allow for a more timely invoicing schedule for the remaining work.

## OVERVIEW

Over the past few years there has been increasing attention given to a concept known as Streamlined (also called Rapid, Expedited, etc.) Assessments. There are a wide variety of definitions and policies dealing with the subject depending on the regulating authority (Federal or State) and the program (petroleum or hazardous waste). The BPSS is now encouraging the use of StAs, when appropriate, in our program. The BPSS strategy for StAs is different than for other programs because the approach for StAs is tied to the structure of the current Preapproval Program. This document is not a guide to technology choices; it describes the planning required to allow StAs to be a successful part of the Preapproval Program by minimizing the number of mobilizations, proposals, work orders, and reports. A general definition for complete Streamlined Assessments for petroleum contaminated sites eligible for Inland Protection Trust Fund (IPTF) monies managed by the BPSS is:

An assessment aimed at fully defining the horizontal and vertical extent of petroleum contamination with one work order in a cost-effective and timely manner.

Because StAs are site-specific, there can be no pre-determined or canned technical strategies. StAs can be performed on large plumes with deep water tables and complicated lithology and hydrology, and they can be performed on sites with shallow water tables and small plumes. In the BPSS Preapproval Program, the term StA is not synonymous with innovative assessment technologies, although some sites would benefit from utilizing them. StAs do not require spending thousands of dollars on high-tech drilling equipment with extensive down-hole tools, although use of these techniques may be appropriate for some sites. A StA can be accomplished with direct push technology (DPT) and state-of-the-art downhole tools for screening lithology and petroleum impacts, or it can be accomplished with a hand auger and an OVA meter. Each site is unique. For the purpose of IPTF funded sites, StAs simply strive to put more emphasis on field decisions while assessing a site in order to reduce mobilization and paperwork costs.

### ASSESSMENT OBJECTIVES

The biggest variables in deciding the scope of work for StAs are determining what you are assessing and how detailed the information needs to be. Although full delineation relative to receptors must also be evaluated, the main goal of a StA is to determine enough about a site to design an effective remedial strategy or decide whether natural attenuation monitoring or No Further Action (NFA) is warranted. Caution must be taken to not over-assess a site or to provide information that will not assist with remedial decisions.

Proper coordination of equipment and experienced field personnel for each field event will result in more cost-effective work. The key to StAs is to plan ahead and know what information you want to obtain in the field for each field event, determine what tools are required to accomplish that, and then place experienced professionals on-site during the field events who can modify the scope of work based on the field data being collected. Experienced professionals are often more important than the choice of assessment technology. If a consultant does not have the proper field experience, then it is not appropriate for a StA to be scoped into a work order.

### PROPOSALS, TEMPLATES, WORK ORDERS

StAs rely heavily on decisions made in the field, rather than the office. However, field decisions can be very subjective, especially when you consider that StAs are often performed with screening tools that can give false positives and misleading information with variable detection limits. Moreover, lithologic variations can result in complicated migration pathways. Because of this, and BPSS's previous experience with over-assessing and performing unnecessary work at a site, proposals and work orders for StAs should be set up in multiple levels or steps, with work associated with subsequent levels not being authorized until certain criteria associated with the previous levels are met. This requires planning ahead of time and having an appropriate level of communication with the BPSS site manager. Each level of the StA work order would represent what in the past may have involved a separate work order, field event, and report.

The following represent the steps that must be described in proposals and/or work orders to design a Preapproval StA:

Step 1: Estimate the extent of contamination based on data available, including but not limited to discharge reporting forms, previous site work, closure reports, discussions with the site owner, etc. The estimate is not expected to be highly accurate since the work has not been completed yet, but often there is enough information available to estimate whether the contamination is expected to be small-scale or widespread. In some cases, where no information is available concerning the source areas and site layout, a separate site reconnaissance (that includes limited intrusive work) may be required to collect enough site information to design a StA proposal. The proposal scope should be based on the scope of work required to assess the estimated extent of contamination. The proposal should document the estimated extent of contamination and the data used for the estimation.

Step 2: Define the goal of the proposal and the milestones used to measure it. The goal of a StA proposal and work order is to fully assess the horizontal and vertical extents of petroleum impacts to the sediment, groundwater, and surface water at a site. In most cases the milestones to meet this goal will be the soil and groundwater Cleanup Target Levels (CTLs) established in Chapter 62-777, Florida Administrative Code (F.A.C.). In some cases where the placement of monitoring wells and borings is not practical, delineation to CTLs can be derived from available data by demonstrating a concentration gradient that is adequate to provide groundwater or soil plume delineation utilizing appropriate contour techniques. Such delineation is acceptable provided the consultant submits proper justification based on factors such as:

- a) Physical constraints to install additional monitoring wells or soil borings in a particular direction (power lines, utilities, etc.).
- b) All receptors (private drinking water wells, surface water, etc.) are assessed and addressed.
- c) No potential for off-site impacts.

Step 3: Define the “baseline” component of the field event. A baseline field event consists of the least amount of work needed at a site to advance an assessment based on data available about the site. For example, a typical baseline field event might be to install borings/wells surrounding the tanks and dispensers to determine levels of contamination and the direction of groundwater flow, or to install monitoring wells downgradient of known contaminated wells. No matter what the outcome of one of the baseline borings/wells, all the other proposed baseline borings/wells will be installed to ensure the source areas are entirely investigated. This is the level at which many initial work orders historically stopped in the Preapproval Program. The proposal should include a description of the baseline work and a map with proposed locations of baseline borings/wells. Other baseline work typically includes obtaining offsite/right-of-way access, and/or performing an area survey and Professional Land Survey.

Step 4: Define the “conditional” component of the field event. Set up criteria and procedures for advancement of a field event beyond the baseline field event based on the estimated extent of contamination. This is where the streamlining of the assessment really comes into play. Based on the estimated extent of contamination, additional wells/borings should be proposed beyond the baseline field event scope of work to allow for “chasing the plume” while still in the field, if appropriate, based on data obtained from the baseline field event. If the scope of work of the baseline field event has been completed but the criteria for the field event and/or the milestones for this work order have not been reached, then this conditional field work may proceed (according to the communication schedule outlined for the work order, as discussed in Step 5). If the full scope of the original work order (including the conditional work) has been performed, but the criteria set up for that field event indicate that the field event is still not complete, the field event should be continued with verbal authorization forms for additional funding based on the communication schedule set up. This should continue until the milestones are met even if more field events must be scheduled. This procedure will allow for the most efficient

use of equipment and personnel while still in the field. The consultant and the FDEP and local program site manager need to make every effort to meet the goals and criteria of the field event before the consultant leaves the field. The time and costs for subcontractors and consultants to complete this work, and additional work if needed, should be included in the original proposal. If Preferred Vendors are not being utilized, then drilling, direct push, and mobile lab subcontractors must use the DEPs Subcontractor Quote Forms for the consultant to obtain comparable quotes. The cost of these quotes may be used for the life of the work order, even if additional work is added beyond the original scope of work.

It often takes more than one field event to fully assess a site. Initial field events are often designed with the equipment and personnel necessary for screening, while later field events are often set up for monitoring well installations. Because of this approach, it is necessary to set up criteria (different than the final assessment milestones of achieving CTLs) related to the field equipment being used for screening. A set of criteria should be designed to determine when the field event for that work order has been completed. The endpoint of a field event for any site is dependent on the equipment being used, the subcontractors on-site, and site-specific criteria. The following are some examples of the many possible suggested goals for a field event and the criteria used to evaluate progress for some of the tasks that are to be performed in the field:

- **Extent of Soil Contamination:** The goal of a field event may be in part to define the soil contamination to a certain value (e.g., 50, 100, or 500 ppm above background on the OVA) or to Soil Cleanup Target Levels (SCTLs) specified in Chapter 62-777, F.A.C., based on mobile or fixed lab data. If the soil contamination has not been defined in a field event to these criteria, then additional borings should be installed at an offset distance defined in the proposal (e.g., 15-20 foot spacing, to a depth of 2 feet into the water table).
- **Extent of Groundwater Contamination:** The goal of a field event may be in part to define the groundwater contamination to natural attenuation or Groundwater Cleanup Target Levels (GCTLs) specified in Chapter 62-777, F.A.C., based on mobile lab or portable GC data, or to screen for groundwater contamination based on a spike in OVA readings for saturated soil. If the groundwater contamination has not been defined in a field event to these criteria, then additional wells should be installed at an offset distance defined in the proposal (i.e., 30-50 foot spacing, with a well screen interval that will properly intersect the water table during the average annual high and low water levels).

There are many other variables that may need to be evaluated on a case-by-case basis. These examples are only a few of the many field event criteria that should be considered individually for each field event and are not intended to be standard policy. It is important to remember that StAs do not change any of the rules, policies, or CTLs

currently in effect, they simply allow a more efficient path to eventual assessment completion.

**Step 5: Set Up a Communication Schedule.** Communication and scheduling are a crucial part of StAs. The consultant must keep the site manager informed of the field event timetable so the site manager can be available during those times. Each proposal must contain a communication schedule that clearly states when any work beyond the baseline field event is authorized. Some site managers may want communication established between them and the consultant after the completion of the baseline work, while some site managers may allow the consultant to advance the field work beyond the baseline event if pre-determined criteria are met. This communication can be in the form of informal phone, FAX, or e-mail contact (including maps and information collected in the field when appropriate), but must be fully documented by both parties for their files. However, verbal authorization forms are required to extend work beyond the scope of the original work order to properly encumber funds.

**Step 6: Set Up an Invoicing Schedule.** An invoicing system has been set up to allow more frequent invoicing to accommodate the extended field work periods often associated with StAs. Due to the need for additional work at a site, availability of subcontractors, and/or off-site access problems, field activities may be spread across many months. For StAs, an invoice may be submitted for each separate field event, not just one upon completion of all field activities. An invoice does not have to be submitted after each field event unless there is anticipated to be a one month or greater time delay between events. Invoicing can be set up so that payment of individual field event costs may be authorized by submittal of copies of subcontractor invoices or copies of boring logs, field notes, and/or the field and/or lab results that the consultant used to make the decision to perform additional field work.

**Step 7: Submit Deliverable Report when the assessment is complete,** not simply every time data is collected. If the final assessment milestones stated in the work order have not been met after the originally scoped work has been performed, additional work should be authorized before the report is written. The BPSSs Templated Site Assessment Report will be the final deliverable for StAs (for sites that have had previous assessment work and reports completed, but still require a minimal amount of work to complete the assessment, the TSAR does not have to be used, but this must be justified in a proposal and approved by the DEP site manager). A separate Streamlined Assessment Report category has been created on the template to compensate for the large scope of work that must be reported in this single document.

The format of the new templates will accommodate StAs on a case-by-case basis. Consultant oversight time for borings and wells will be handled in the usual manner. Hand augered borings and “conventional” drilling will be allowed on the template in Section C under the boring and monitoring well categories. The use of DPT, mobile labs, portable GCs, etc., will be allowed

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under subcontracted costs (and the original quote must clearly break down the costs for additional work), and the consultant's time under field oversight based on the estimated time to complete the job.

ATTACHMENTS:

Attachment A: Summary of other issues and concerns in StA work

Attachment B: Work Order/Template/Invoice Example and Instructions

~~Attachment C: Subcontractor Quote Form — Drilling and Mobile Lab~~ **No longer appropriate.**

ATTACHMENT A:  
Other issues:



There are far too many site-specific factors affecting decisions about StAs to list. However, a discussion of some of the main variables is presented below:

- When evaluating whether to use hand augers, auger drilling, direct push and/or some other approach for advancing an assessment, a number of factors should be considered; the depth to water, lithology, and estimated extent of contamination are the main factors used to determine the best approach.

For sites with shallow water tables (i.e., less than 8' to 10' bls) where rock is not to be encountered, hand augers should be considered first. (Note: The first four feet of a boring need to be hand-extracted anyway so utilizing DPT for shallow water tables is usually impractical.) Hand-augered borings can also be converted to piezometers for collection of groundwater samples for land-based or mobile lab evaluation, and determination of the direction of groundwater flow.

If a small plume is expected, a separate DPT screening type investigation would not be cost-effective since surrounding the source area(s) with hand or rig auger borings and augered wells would probably define the extent of the plume without a separate DPT screening event. Also, DPT has some depth restrictions that would make other types of equipment, such as auger rigs, more practical.

DPT is best suited for screening sites with a deeper water table, complicated lithology, and/or an estimated large plume. At such sites, DPT screening of soil and groundwater will provide a cost-effective method to determine the best locations for shallow and deep monitoring wells. The monitoring wells may be installed using an auger rig (or possibly mud-rotary, rotosonic, etc.); however, there are many circumstances where DPT "microwells" may be appropriate. Microwells typically have a ½ to 1¼ inch inside diameter, are pre-packed with sand, and are pushed into place with the DPT rig. Placement of DPT microwells would eliminate the need for a separate mobilization of an auger rig. (Note: When evaluating quotes for installation of wells, make sure similar wells are being proposed. The cost and appropriateness of a 1" microwell are different than that for a 2" "conventional" well, just as the cost and appropriateness of a 2" "conventional" well with 2" of sand pack are different than that for a 2" "conventional" well with then less than 2" of sand pack. The quotes must be consistent.)

- Mobile labs or portable GCs should only be allowed if data collected from them will affect the placement of borings/wells during the field event. They should only be allowed if their results drive the assessment. If a consultant or subcontractor are not available to remain at the site to "chase the plume" delineated by a mobile lab, then a land-based lab would be a better choice.
- If there is a reasonable assumption that the contamination plume may extend off-site, obtain off-site/right-of-way access before the field screening event to make the best use of the personnel and equipment scheduled for the field event.

- There are many technologies available for assessing petroleum impacted sites. Advanced technologies are not often required; hand augers, OVAs, and drilling rigs can be quite effective. However, there are some circumstances where advanced technology, especially DPT downhole tools, may be appropriate. The most commonly used downhole tools are for screening for petroleum content, and for lithologic/hydrologic determinations. Most downhole tools utilized for lithologic determinations are based on similar technology. However, the technology of the downhole tools available for screening petroleum content varies greatly. Some have detection limits of 200-300 ppb but cannot qualify whether the contamination is BTEX, PAHs, or other chemical of concern. Some cannot detect contaminants below a few thousand ppb, but can differentiate the chemical composition. Some downhole tools can screen for petroleum content in vadose zone soils and some can screen in vadose zone and saturated soil. The technologies must be evaluated independently for each site and decisions must be made as to which is appropriate for each site. Some technologies are claimed to be sole-source, but other tools may be available to gather similar data (in such a case, consider quotes for similar services). The consultant must justify their technology choices, and when appropriate, obtain quotes for technologies that generate similar information.
- For sites where the general extent of contamination has already been determined in the past (such as at sites where funded assessment work was suspended in March 1995), it is usually not necessary to reassess the entire site. A sampling procedure should be designed to help determine if any redistribution or natural attenuation of petroleum has occurred.

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ATTACHMENT B:  
Work Order/Template/Invoice Example and Instructions

**Introduction:** The standard preapproval template has been revised to better support streamlined site assessments. The revised template is an Excel workbook of several linked sheets including the Work Order form, five copies of the template, the invoice form, the backup spreadsheet and a typical lab worksheet. DO NOT delete any of these worksheets from the workbook. These worksheets are interrelated and deleting any one of them will cause errors in the workbook. You also cannot insert a new copy of the template and expect it to work. The formulas for that template and the workbook would have to be adjusted (however, you can safely add other unlinked worksheets to the end of this workbook; (see Lab & Backup Spreadsheet below.) There is one version of this workbook for standard preapproval sites and a separate version for PUC sites. This new arrangement allows one time entry of identifying data (e.g., Facility ID, Work Order Number), and the convenience of a single file for the work order.

**Work Order:** The first tab of the new template is the standard work order form. This form has not been significantly modified and is filled out in accordance with established SOPs. Note that the Work Order Number, Facility ID, Site Name, Contractor Name, Site Manager Name and Contract Number (if applicable) are automatically entered onto the templates once they are entered on this form. Also, the deliverables and due dates are pulled from their respective templates.

**1<sup>st</sup> Event Template:** The first template form (1<sup>st</sup> Event) is based upon the existing standard template and it is used the same way. A second set of columns has been added to allow the entry of the change order information directly on the template. The sum of all verbal authorizations for this scope of work should be entered in this column. In some case these entries will be a change in the number of items, but in other cases (e.g. changes in subcontractor costs) a dollar amount should be entered. The change amount is then automatically entered on the invoice in the change order column for the first field event and in the appropriate summary information at the end of the worksheet (see below.) A summary for each row of the template is included in the rightmost column of the template. Note that the header information (Work Order Number, etc.) is pulled directly from the work order on the first tab.

A few minor changes deserve mention.

- 1) The entry of the cost share information has been moved to the top of the first page. Any cost share must be entered on the first event template and is automatically carried over to all subsequent event templates. The cost share value can only be edited on the first event template.
- 2) The Free Product Template activities have been incorporated onto the template (as section C1) in order to simplify free product recovery along with other program tasks.
- 3) A more significant change is the deletion of the level 1 through level 4 reports and their replacement with a default report cost. This report cost is automatically calculated based upon the field work to be performed (sections A -D). A multiplier is used to determine the actual value for the report. Note that you must select this report for it to be included in the total, but that you must only select one such report. This 'Generic / SA Report' is intended primarily to replace the existing level 1 through 4 reports for site assessment, but may also be

used for generic reporting on any program task. This report is not intended to be included in addition to one of the more specific reports still listed, unless the specific scope of work would require the submittal of multiple report types. It is not necessary (nor is it allowed) to select multiple copies of this report, even if more than one deliverable will be required, because the report cost is scaled to the scope of work and therefore should reflect the total cost for all reporting for the designated scope of work.

- 4) An area for brief comments has also been added to the right of each template name.

**Deliverable Block:** Another noticeable change in the template is that the invoicing block at the end of the sheet that has been removed and a Deliverable block has been added in order to support streamlined site assessments. The Deliverable block contains a space to enter the interim deliverable, which is the deliverable for just this scope of work. This block also has an area in which to specify the due date for the final comprehensive Site Assessment Report (SAR) or other final report. The period of service date is calculated based upon the final deliverable due date. The due date and deliverables are automatically entered on the work order form.

**Template and Invoice Totals Blocks:** The Template Totals block shows the overall summary for this template. The total amount of the template, subtotal amount, and retainage amount for the original scope of work, the sum of all changes, and the total for the template are shown in this block. The retainage percentage can be edited only on the first event template and is automatically updated on all subsequent event templates. The Invoice Totals block below the Template Totals block shows the amounts that will be added to the corresponding invoice lines on the invoice form. There is a separate invoice for the field work associated with each template. This value is calculated by summing all of the field work and subcontractor costs (sections A through G), applying any cost share and subtracting any retainage. (The cost share information block has been moved to the top of the first page and the summary information is listed below the Invoice Totals block, although this information is not displayed if the FDEP share is 100%). The Invoice Totals block also lists the contributions of the current template to the Remedial Systems, Office Activities and Retainage invoice amounts. The actual invoice amounts for these items are summed across all templates. The invoice amount for remedial equipment is the sum of the two remedial equipment amounts, adjusted for cost share and less any retainage. The Office Activities invoice amount is the sum of all reports in section H, adjusted for cost share and less retainage.

**Work Order Total Block:** The Work Order Total block has been modified to reflect the running total for the work order (for the first event only the current total is shown). There are separate totals for the sum of all field work and the running totals for Remedial Systems, Office Activities and Retainage. These last three totals will correspond to the invoice totals only on the last event template. All of these amounts are adjusted for retainage and cost share. The cost share information, if any, can be found below the Invoice Totals box.

**Subsequent Event Templates:** Beyond the first event template four subsequent event templates have been added (Events 2 through 5.) These templates are used in the same manner as the original template, but indicate subsequent field events or scopes of work. Each of these templates also has a Deliverable, Template Totals, Invoice Totals, and Work Order Totals box. Note that

the Work Order Totals box displays the running totals for the work order, including the sum of all previous field work events. By default the due date for the final deliverable entered on the 1<sup>st</sup> event is carried forward to the 2<sup>nd</sup> event. This date can be changed manually if appropriate. Note also that the retainage percentage and the cost share information are also carried forward from the 1<sup>st</sup> event template, but that these values cannot be edited on these templates. All the subsequent event spreadsheets are the same and function in a similar manner.

**Invoice:** The invoice form is next tab in the workbook. This form looks pretty much the same as the existing preapproval invoice but functions considerably differently. Each template has its own invoice line for field work (lines 1 through 5). The amounts on these lines match the amounts shown in the Invoice Totals box for each template and represent the sum of all of the field work and subcontractor costs (sections A - G) less any retainage and adjusted by any cost share. These amounts are dynamically updated as the templates change. In addition to each template having its own field work invoice, there are also separate invoice lines for the Office Activities, Remedial System purchase and Retainage. The lines are also populated directly from the template spreadsheets and represent the total across all templates. Any changes to the original scope of work are automatically included in the 'Change Amount' column using the same rules as for the original scope of work (i.e., field work and subcontractor costs (A-G) are entered on the corresponding field event line, Remedial Systems, Office Activities and Retainage are summed across all templates). The invoice otherwise functions exactly the same as the existing preapproval invoice.

**Lab & Backup Spreadsheet:** The lab and backup worksheets are included in the workbook as a convenience. The lab worksheet is a typical copy of this commonly used worksheet (there is no 'official' version). The backup spreadsheet is identical to the standard preapproval backup spreadsheet. Neither of these worksheets is not linked to any of the templates so you will have to manually copy any totals from these worksheets to the proper field event and template.

**Printing:** You will need to specify which pages of the work book you need printed with your work order. You can do this by either clicking on each tab and printing them separately or by clicking on the first tab and holding down the 'Ctrl' key while clicking on the other necessary tabs. You can then print only the selected worksheets. Note that printing the entire workbook will print all tabs regardless of whether there is any information on them. DO NOT delete any tabs from this workbook. The formulas on the templates are interdependent and deleting one of the templates will cause errors in other parts of the workbook.