

ADEQ, Office of Land Resources
Regulated Storage Tanks – Remediation Program
Guidance Document on Preparing Site Assessment Work Plans [9/7/2017]

For all work ordered by the Regulated Storage Tanks – Remediation Program (RST-RP), a work plan must be submitted for review and approval before the work is conducted. Work plans are requested for the following program uses:

- ✓ **Consensus:** Work plans are an integral part of the RST-RP corrective action program. An approved work plan ensures that the Owner/Operator, consultant, and regulator agree on the scope of work to be delivered.
- ✓ **Cost Approval:** Participation in the Arkansas Petroleum Storage Tank Trust Fund requires approval of costs, and work plans provide a mechanism to meet this requirement. Work Plans must be pre-approved prior to implementation.
- ✓ **Site Specific Planning:** Much of the work required by the RST-RP is site-specific and/or of a complex nature, and systematic planning is critical to achieving satisfactory results. Work plans provide a way to document the planning process.

The purpose of this document is to provide check-off guidance to consultants and ADEQ staff about what constitutes an adequate site investigation work plan, and to bring some consistency, completeness, and discipline to the review process for these important submittals

Work Plan and Report Format: One (1) paper copy and one (1) electronic copy (in CD format) of each work plan or report must be submitted for review. The scanned, electronic document should be searchable (Run OCR) and PDF/A-1b compliant and must be a scan of the final document and contain all professional seals and signatures.

Seal of Arkansas-licensed Professionals: All work plans and reports must be sealed by an Arkansas-licensed professional. Work plans constitute the planning and/or design phase of a project or portion of a project, and are the result of the public practice of geology or engineering. The submitted plan **must** bear the seal and signature of the appropriate **Arkansas**-licensed professional, as required by Arkansas Code Annotated, (A.C.A.) 17-30-301 for Engineers and A.C.A.17-32-301 for Geologists.

Sections to be included in all work plans:

SECTION 1 - INTRODUCTION

A general explanation of the background reasons for the assessment work to be performed, and the expected goals or results of the work are presented in this section. This information should be provided by ADEQ when the work plan is ordered, although it may be necessary to fill in some details.

SECTION 2 - DATA REQUIREMENTS FOR THE INVESTIGATION

Data needs/gaps to accomplish the goals of the investigation are identified/listed/described in this section, and the following information must be provided for each data item/type.

- The purpose for the data. What will the data be used for, and what characteristics must it have to meet that use?
- Data Quality Objectives (DQOs). Functionally, these are the specifications for each data item/type, and are expressed in terms of Method Detection Limit (or Reporting Limit), precision, accuracy, and completeness.
- The Quality Assurance (QA) measures necessary to produce the required data, according to the specifications. Standard Operating Procedures for performing each measurement must be provided, preferably as stand-alone attachments. USEPA standards for SOPs may be down-loaded from <https://www.epa.gov/quality/guidance-preparing-standard-operating-procedures>. Media-specific USEPA SOPs may be accessed from https://www.epaossc.org/site/doc_list.aspx?site_id=2107
- The Quality Control (QC) measures necessary to determine whether the data generated met the specification. Include both the control measurements and the calculations required to evaluate the resulting control data. Analyses must be performed by an ADEQ-certified lab.
- The specific Corrective Action (CA) to be used to remedy each data quality deficiency.
- The Data Records (DR) which will be submitted with each environmental measurement to verify compliance with this section.

SECTION 3 - DELIVERABLES FROM THE WORK PLAN

A detailed description/specification of the deliverables from the work plan (items to be included in the report) is presented in this section. Deliverables may include, but not be limited to, the following:

- Site survey
- Interpretive maps
- Data tables
- Field data sheets
- Progress reports (if completion of activities is delayed)
- Waste manifests
- Boring logs
- Monitoring well construction diagrams
- Laboratory Reports

SECTION 4 - WORK PLAN TASKS

This section outlines and describes in detail the activities proposed by the work plan, in a task-oriented format. For program management reasons, all work plans for site investigation reviewed by the RST-RP must use the following standardized suite of tasks. For example, subtasks may be described as needed. If a task is not applicable for a particular work plan, a placeholder for the task must be listed in the work plan, and an explanation provided.

Task 1 – Work Plan Preparation

This task begins when the work plan is ordered by ADEQ, and includes all efforts leading up to the submittal of the work plan for ADEQ review. ADEQ recommends that planning be conducted in three phases:

- Collection/Evaluation of Existing Data, including a site reconnaissance visit (if needed), development of a Conceptual Site Model, and preliminary identification of data needs/gaps
- Scoping Meeting with ADEQ
- Final Work Plan Design, and preparation of the work plan and attachments (e.g. design reports)

Names, relevant functions and, where applicable, qualifications of prime contractor personnel who will implement the work plan should be provided along with the wage rate and loaded rate for each participant. The Health and Safety Plan (HASP) is an OSHA requirement and need not be included in the work plan.

Task 2 - Field Investigation

Although limited data may be generated during the project planning task, the bulk of the data collection efforts will be completed during this task. Field Investigation begins when the work plan is approved by ADEQ, and is completed when the data generated have been validated to meet the specified DQOs. Example subtasks might include:

- Site physical measurements, such as surveying, mapping, and sample location
- Site construction, such as installation of soil borings and monitor wells
- Media sampling/sample management/field analysis
- Site restoration activities, such as abandonment of boreholes

Task 3 - Sample Analysis

This task includes all efforts to analyze media samples after they leave the site. It ends when the data generated have been validated to meet the specified DQOs.

Task 4 - Investigation-derived Waste Management

The work plan will not be considered completed until all wastes resulting from the investigation are managed to proper disposal. This task begins when the wastes are generated, and ends when final disposition is reported/ documented to ADEQ.

Task 5 - Data Evaluation/Report Preparation

This task begins when the data from the field investigation has been validated to meet the specified DQOs and ends when the results of the investigation are reported to ADEQ. It includes efforts related to the analysis and reduction of data, and production of the reports specified in **Section 3**. The report should discuss all activities completed, by whom and when, and any excursions from the approved work plan.

SECTION 5 - SCHEDULE FOR WORK PLAN PERFORMANCE

Each work plan task must have a starting and ending day. The starting day for Task 1 is fixed by the date of the ADEQ order; the ending day for Task 1 is fixed by the date of work plan submittal. All other task performance days must be relative, with the day of the work plan approval by ADEQ as Day 0.

SECTION 6 - ESTIMATED COSTS

You and your consultant must follow the Arkansas Petroleum Storage Tank Trust Fund requirements of APC&EC Regulation 12 and all applicable ADEQ cost control guidance documents when preparing the cost estimate for the requested work plan, if participation in the Petroleum Storage Tank Trust Fund is expected. A tabular cost schedule must be included for each task of the work plan, broken into the following categories. An example of the mandatory task/cost schedule format is found on the previous page. The task/sub-task format should correspond precisely with the task/sub-task format in the work plan. A detailed list of items to be provided for each task, including the unit cost and number of units, is required to support this estimate.

- **Office/Admin Costs**

This category is for all personnel costs not being incurred at, or on the way to or from, the corrective action site itself. Included are costs for work such as file research, planning, project management, drafting reports, scheduling contractors, purchasing materials/supplies, preparation for fieldwork, transporting samples to the laboratory, meeting with ADEQ, and so forth. The loaded rate for personnel costs is calculated by multiplying the actual hourly wage rate (W-2 wage) by 3. No additional markup to personnel costs is allowed. Office/Admin costs that exceed 25% of the total work plan may be considered excessive and will require additional justification. Do not create additional categories with additional columns, such as “Professional Services”, to obscure the fact the Office/Admin cost exceeded 25%.

- **Field Personnel Costs**

This category is for personnel costs only, incurred at, or on the way to or from, the corrective action site itself. The loaded rate for personnel costs is calculated by multiplying the actual hourly wage rate (W-2 wage) by 3. No additional markup to personnel costs is allowed.

- **Equipment Costs.**

Rental fees may be reimbursed for consultant-owned equipment or for equipment obtained from a third-party vendor. Field equipment purchases are not reimbursable. Rental fee rates must be based comparatively to the most cost effective rental timeframe for the expected duration of use for the equipment, i.e., hourly, daily, weekly, monthly, etc. Rental fees must not exceed a competitive rate. Competitive rates may be established by no less than three (3) independent bids or quotes. For consultant-owned equipment, each

consultant must provide a list of rental rates with justification supporting that each rental rate is a competitive rate. All rental rates must be reviewed and approved by ADEQ. *Consultant owned equipment rental rates may be approved by ADEQ on an annual basis. If the consultant has a list of ADEQ approved equipment with rates, the same rate may be used on multiple jobs with no need to re-establish the rates in each work plan. The equipment should be charged at the approved rate in the cost estimate with a note that the rate was pre-established.* Equipment covered by this subsection include: air compressors, generators, concrete saws, jack hammers, interface probes, PIDs, FIDs, and OVAs, infrared analyzers, portable gas chromatographs, data loggers, soil gas probes, portable groundwater sampling pumps, water quality sampling meters, air flow meters, and decibel meters. Rental costs for field equipment not listed here may be allowed upon approval by ADEQ. An approved competitive rental rate is considered a loaded flat rate. Not to be included in this category are “tools of the trade,” as defined in the “Cost Guide”. **Field Equipment rental rates are considered loaded rates, no additional markup is allowed whether contractor owned or rented.**

Rental costs for rolling equipment owned by the prime contractor and used on the site are listed in this category. Examples are; dump trucks, earth moving equipment, drilling equipment, etc. Rental fees must not exceed a competitive rate. Competitive rates must be established by no less than three (3) independent bids or quotes. The quotes must be for rental of equipment that substantially coincides with the equipment owned by the consultant, i.e., the specifications of the equipment quoted should match the size, capacity, age, and condition of the equipment to be used. All rental rates must be reviewed and approved by ADEQ. Consultant owned rolling equipment rental rates are considered loaded rates, no additional markup is allowed. Rolling equipment rented from a third-party vendor should be listed under Third-Party Invoiced Costs.

- **Costs for Supplies**

“Supplies” are items which are consumed or expended in the course of corrective action for a specific site. Some examples are; sample containers and bailers, ice used for sample preservation, disposable gloves, storage bags used for sampling, deionized water used for decontamination, wear parts such as saw blades and hand drill bits (if broken or otherwise expended on a specific project). Actual costs of field supplies are allowed a markup not to exceed 20%.

- **Travel and Per Diem Costs**

Mileage, regardless of vehicle class/size, is limited to a loaded rate of seventy cents (\$.70) per mile. Mileage rates will be reviewed annually by ADEQ. No additional markup is allowed.

Per diem costs for meals are limited to \$41.00 for each day that included an overnight stay. This is a loaded rate based on the State allowance rate, no additional markup is allowed.

Actual hotel receipts will be required for reimbursement from the Trust Fund. In the work plan, hotel expenses should be based on estimated room costs and may include markup not to exceed 20%.

- **Third-Party Invoiced Costs**

Costs for all items and non-professional services not owned or directly provided by the prime contractor and for which an invoice from a third-party vendor can be submitted are listed in this category. Examples would be laboratory services, drilling/sampling services, geophysical services, remediation equipment, construction materials, waste disposal, haul-water contracts, and so forth.

Subcontractors hired should be asked to submit written price proposals for non-emergency work in amounts between \$500.00 and \$5,000.00. On work estimated to be \$5,000.00 or more, three bids on a unit cost basis should be obtained. All three bids should include all items of necessary work to be considered responsive and eligible for consideration. Identify the company selected to do the work; if the low bidder is not selected, an explanation of the reason another bidder was selected must be included in the work plan submittal. The quotes and bids are included to assist the PTP in determining that the costs are reasonable in accordance with Reg. 12.311. The PTP may ask for bids on work less than \$5,000.00, if deemed necessary. Third-party invoiced costs are allowed a markup not to exceed 20%.

- **Supporting Cost Breakdowns**

Provide on additional, supporting pages a breakdown for costs per task/ subtask that details all costs associated with the task such as employees scheduled to do the work with the function of the employee, i.e., project manager, professional geologist, CADD operator, etc., along with the estimated hours projected and the loaded wage rate. Include all other costs associated with the task, such as equipment, supplies, travel, subcontractor costs, mailing, etc., such that the task totals on the cost schedule match the task totals in the breakdown.

Figure 1
Example Task/Cost Schedule

Example: Site Assessment Cost Estimate									
Project Name, LUST#, Facility #s	Task Description	Prime Contractor Office/Admin.	Prime Contractor Field Personnel	Prime Contractor Equip. & Supplies	Prime Contractor Travel & Per Diem	3rd-Party Invoice	Task	Task	Total Cost
1	Work Plan Preparation								
	Development of work plan & cost estimate	\$2,940.00	\$0.00	\$0.00	\$0.00	\$125.00			
	Scoping meeting	\$340.00	\$0.00	\$0.00	\$70.00	\$0.00			\$3,475.00
2	Field Investigation								
	Soil & Ground Water Investigation	\$120.00	\$6,840.00	\$450.00	\$884.00	\$7,698.00			
	Survey	\$120.00	\$0.00	\$0.00	\$0.00	\$1,250.00			\$17,362.00
3	Sample Analyses								
	Soil & ground water analyses	\$100.00	\$0.00	\$0.00	\$0.00	\$6,254.00			
	Mechanical soil tests	\$100.00	\$0.00	\$0.00	\$0.00	\$650.00			
	Waste characterization	\$100.00	\$0.00	\$0.00	\$0.00	\$160.00			\$7,364.00
4	Investigation-Derived Waste Management								
	Solid & Liquid Waste	\$100.00	\$960.00	\$0.00	\$140.00	\$715.00			
5	Data Evaluation/Reporting								
		\$3,580.00	\$0.00	\$0.00	\$0.00	\$135.00			\$3,715.00
	Approved Totals	\$7,500.00	\$7,800.00	\$450.00	\$1,094.00	\$16,987.00			\$33,831.00
	Category as a percent of Total	22.17%	23.06%	1.33%	3.23%	50.21%			100.00%

Figure 2
Example Task/Cost Detail

<u>Description</u>	<u>Units</u>	<u>Rate</u>	<u>Estimated Cost</u>
Task 1: Work Plan Preparation			
<u>Scoping Meeting</u>			
Project Manager	4 hours	\$85.00 /hr.	\$340.00
Mileage	100 miles	\$0.70 /mile	\$70.00
<u>Work Plan Development</u>			
Project Manager	2 hours	\$120.00 /hr.	\$240.00
Professional Geologist	24 hours	\$100.00 /hr.	\$2,400.00
CADD/Drafting	3 hours	\$60.00 /hr.	\$180.00
Technical Writer	2 hours	\$60.00 /hr.	\$120.00
Copy services (3rd party)	Lump sum		\$100.00
Shipping (3rd party)	Lump sum		\$25.00
Task 1 Total Estimated Cost			\$3,475.00

<u>Description</u>	<u>Units</u>	<u>Rate</u>	<u>Estimated Cost</u>
Task 2: Field Investigation			
<u>Soil Boring & Monitoring Well Installation</u>			
Project Manager	1 hours	\$120.00 /hr.	\$120.00
Professional Geologist	30 hours	\$100.00 /hr.	\$3,000.00
Mileage	200 miles	\$0.70 /mi.	\$140.00
Per Diem (1 person)	2 nights	\$151.00 /night	\$302.00
Drilling Subcontractor	Lump sum		\$7,698.00
<u>M.W. Development, gauging & sampling</u>			
Professional Geologist	24 hours	\$100.00 /hr.	\$2,400.00
Environmental Technician	24 hours	\$60.00 /hr.	\$1,440.00
Mileage	200 miles	\$0.70 /mi.	\$140.00
Per Diem (2 persons)	1 night	\$302.00 /night	\$302.00
Sampling Equipment Rental	2 days	\$150.00 /day	\$300.00
Expendable Sampling Supplies	Lump sum		\$150.00
<u>Professional Survey</u>			
Project Manager	1 hour	\$120.00 /hr.	\$120.00
Subcontractor	Lump sum		\$1,250.00
Task 2 Total Estimated Cost			\$17,362.00

<u>Description</u>	<u>Units</u>	<u>Rate</u>	<u>Estimated Cost</u>
Task 3: Sample Analyses			
<u>Soil & Ground Water Analyses</u>			
Professional Geologist	1 hr.	\$100 /hr.	\$100.00
Laboratory Subcontractor	Lump sum		\$6,254.00
<u>Mechanical Properties Analyses</u>			
Professional Geologist	1 hr.	\$100 /hr.	\$100.00
Laboratory Subcontractor	Lump sum		\$650.00
<u>Waste Characterization Analysis</u>			
Professional Geologist	1 hr.	\$100 /hr.	\$100.00
Laboratory Subcontractor	Lump sum		\$160.00
Task 3 Total Estimated Cost			\$7,364.00

<u>Description</u>	<u>Units</u>	<u>Rate</u>	<u>Estimated Cost</u>
Task 4: Investigation-Derived Waste Management			
<u>Solid Waste Management</u>			
Professional Geologist	1 hr.	\$100 /hr.	\$100.00
Environmental Technicians (2)	8 hrs.	\$120.00 /hr.	\$960.00
Mileage	200 miles	\$0.70 /mi.	\$140.00
Permitted Waste Facility (3rd Party)	8 drums	\$86.00 /drum	\$688.00
Permitted Recycling Facility (3rd Party)	54 gal.	\$0.50 /gal.	\$27.00
Task 4 Total Estimated Cost			\$1,915.00

<u>Description</u>	<u>Units</u>	<u>Rate</u>	<u>Estimated Cost</u>
Task 5: Data Evaluation/Reporting			
Project Manager	2 hours	\$85.00 /hr.	\$170.00
Professional Geologist	40 hours	\$65.00 /hr.	\$2,600.00
CADD/Drafting	14 hours	\$45.00 /hr.	\$630.00
Technical Writer	4 hours	\$45.00 /hr.	\$180.00
Copy services (3rd party)	Lump sum		\$100.00
Shipping (3rd party)	Lump sum		\$35.00
Task 5 Total Estimated Cost			\$3,715.00
All Tasks: Total Estimated Cost			\$33,831.00

Figure 3
Example Bid Sheet Summary

EXAMPLE

Bid/Quote Summary
Site Assessment Work Plan & Cost Estimate for LUST#

Work Plan Task/Description	Bidder	Bid Amount (before markup)	Sub-Contractor Selected	Reason Bidder Not Selected
Task 2: Drill borings/Install M.W.s	ABC Drilling	\$7,250.00		Not lowest bid
	John Q & Co.	N/A		No response
	Smith Drilling	\$6,167.00		*
	XYZ Co.	\$6,415.00	X	Lowest acceptable bid
Task 2: Professional Survey	PLS Inc.	\$1,042.00	X	Competitive bids not solicited
Task 3: Soil & Ground Water Analyses	At-Your-Service	\$5,785.00		Not lowest bid
	Northside Labs	\$5,582.00		Not lowest bid
	Spot-On Laboratory	\$5,212.00	X	
Task 4: Waste Disposal	County Landfill	\$573.00	X	Competitive bids not solicited

* Provide additional information as necessary to justify not accepting lowest bidder.