

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
PETROLEUM STORAGE TANK PROGRAM
CAP WORKSHEETS**

Date Prepared:

AIR SPARGING (AS)

Facility Name:	LPST ID No.:
Facility Address/City:	CAPM:
Facility County:	RCAS:
Facility ID No.:	P.E.:
TCEQ Region:	Prepared By:

Please refer to the appropriate section in the EPA CAP Manual for definitions, equations, and tables to assist you when completing these worksheets. When supplying the information requested below, please make certain that any calculations and methodology used to arrive at the value or conclusion you have entered is included in the CAP. This document must not be altered in any manner.

If non-aqueous phase liquid (NAPL) exists, AS should not be implemented independently.

SOIL CHARACTERISTICS

Hydraulic conductivity K (m/sec) obtained by:

Feasibility Test	Laboratory Analysis	Other:
Check one:	$K > 10^{-6}$	(effective)
	$10^{-6} \geq K \geq 10^{-7}$	(needs evaluation)
	$K < 10^{-7}$	(not effective)

GROUNDWATER CHARACTERISTICS

Fe⁺² concentration (mg/L) obtained by:

Field Screening	Laboratory Analysis	
Check one:	Fe ⁺² < 10	(effective)
	10 ≤ Fe ⁺² ≤ 20	(needs evaluation)
	Fe ⁺² > 20	(not effective)

CONSTITUENT CHARACTERISTICS

Do any of the target COCs present have a vapor pressure < 0.5 mm Hg?	YES	NO
Do any of the target COCs present have a boiling temperature > 250° – 300°C?	YES	NO
Do any of the target COCs present have a Henry's Law constant < 100 atm?	YES	NO

If the answer to any of the questions above is **yes**, air sparging is not likely to be effective.

FEASIBILITY TEST

Will SVE or DPE system be used in conjunction with the air sparging system?		YES	NO
If no, how will potential vapor migration be monitored and controlled?			
SVE or DPE feasibility test duration (hrs):		Air sparging test duration (hrs):	
SVE or DPE combined with air sparging feasibility test duration (hrs):			
If air sparging is an addition to the existing remediation system, sparging test duration (hrs):			
Sparging test well construction			
Diameter:	Total Depth:	Screen Interval:	Depth to Water: Sparging Depth:
Observation well construction			
Diameter:	Total Depth:	Screen Interval:	Depth to Water:
Number of monitoring points:		Distance from sparging point (ft):	
Sampling interval:		Sparging radius of influence (ft):	
Soil gas concentrations at SVE, DPE, or soil gas monitoring point* (mg/m ³)			
*Use this format for data entry: XXX mg/m ³ (MW-1), XXX mg/m ³ (MW-2), XXX mg/m ³ (MW-3), etc.			
Prior to test		After test	
Benzene:		Benzene:	
Ethylbenzene:		Ethylbenzene:	
Toluene:		Toluene:	
Xylenes:		Xylenes:	
TPH:		TPH:	
MTBE:		MTBE:	
O ₂ :		O ₂ :	
CO ₂ :		CO ₂ :	
Sparging airflow rate during test (scfm):		Sparging air pressure during test (psig):	
Groundwater concentrations within the test area* (mg/L)			
*Use this format for data entry: XXX mg/L (MW-1), XXX mg/L (MW-2), XXX mg/L (MW-3), etc.			
Prior to test		After test	
Benzene:		Benzene:	
Ethylbenzene:		Ethylbenzene:	
Toluene:		Toluene:	
Xylenes:		Xylenes:	
TPH:		TPH:	

FEASIBILITY TEST (cont.)

MTBE:	MTBE:
D.O.:	D.O.:
CO ₂ :	CO ₂ :
Groundwater Recovery Rate from SVE (lbs/hr):	

REMEDIATION SYSTEM DESIGN

Target concentrations:				
Orientation of the air sparging wells:		Horizontal	Vertical	
Vertical sparging well construction				
Diameter:	Total Depth:	Screen Interval:	Depth to Water:	Sparging Depth:
Horizontal sparging well construction				
Diameter:	Total Depth:	Screen Interval:	Depth to Water:	Sparging/Screen Length:
Designed sparging pressure (psig):		Designed radius of influence (ft):		
Area of the plume above target concentrations (ft ²):		Number of air sparging wells:		
Designed sparging airflow rate (scfm):		Total design sparging flow rate (scfm):		
Total recovery rate at startup (lbs/hr):		Estimated hydrocarbon mass at startup (lbs):		
Estimated cleanup time (years):		Estimated total recovery rate in final year (lbs/hr):		
Estimated final mass remaining (lbs):				
Are there site construction limitations, such as buildings, utilities, buried objects, or residences which must be included in the design process?			YES	NO
Which of following system(s) will be operated concurrently with air sparging?				
<input type="checkbox"/>	Dual Phase Extraction System	<input type="checkbox"/>	Groundwater Pump & Treat System	<input type="checkbox"/>
<input type="checkbox"/>		<input type="checkbox"/>	Soil Vapor Extraction System	<input type="checkbox"/>
<input type="checkbox"/>		<input type="checkbox"/>		Enhanced Aerobic Bioremediation System
Is a telemetry unit included?			YES	NO
Permit requirements:				

OPERATION, MONITORING AND PERFORMANCE (OMP) PLAN

Does OMP Plan include daily monitoring for the start-up phase (up to 7 days)?			YES	NO
What is the scheduled frequency of long term monitoring?		Weekly	Monthly	Other:
Which of the following will be included in the OMP Plan?				
<input type="checkbox"/>	BTEX	<input type="checkbox"/>	TPH	<input type="checkbox"/>
<input type="checkbox"/>		<input type="checkbox"/>	D.O.	<input type="checkbox"/>
<input type="checkbox"/>		<input type="checkbox"/>	Redox	<input type="checkbox"/>
<input type="checkbox"/>		<input type="checkbox"/>		Other:

CLOSURE PLAN

Does the closure plan include the following?

	Confirmation of target concentrations	Submission of site closure request	Removal of equipment
	Plugging of wells	Waste disposal	Paving/resurfacing
	Deed Recordation	Institutional Controls	