EMISSION SOURCE (Liquid Storage Tank) Instructions for Form B7

Form B7 should be completed for each non-exempt storage tank that may store a liquid that results in emissions of regulated air pollutants. MCAPCO 1.5211 – "Applicability" specifies exemptions for storage tanks. Make as many copies of the form as necessary. Attach all calculations and assumptions used in determining the numbers entered on this form.

*Note: An **EMISSION SOURCE** is defined as any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants are emitted, either directly or indirectly.*

PRIMARY OR ALTERNATIVE OPERATING SCENARIO – A Section B7 form must be submitted for each scenario that the emission source may operate under. In addition to operating under a primary operating scenario, an emission source may operate under one or more alternative operating scenarios. Examples of operating scenarios are as follows:

1. For boilers that combust different types of fuels, the combustion of each fuel is classified as an operating scenario. Many boilers combust both natural gas and No. 6 fuel oil. Each of these fuels constitutes a separate operating scenario.
2. For reaction vessels that produce different products from different formulations, production of each product is classified as an operating scenario.
3. For a storage silo that stores different materials, the storage of each material is classified as an operating scenario.
4. For control devices that are used to control emissions from different emission streams at separate times, each emission stream that is controlled is classified as an operating scenario.
5. A spray booth may coat wood furniture and be subject to MCAPCO Regulation 2.0958, but it may also coat metal furniture and be subject to NSPS Subpart EE.

Note: Some emission sources that emit volatile organic compounds (VOCs) are considered unique in that only the product/solvent formulations that produce the worst-case VOC emissions need to be included in the permit application even though different solvents will be utilized at the emission source.

PRIMARY OPERATING SCENARIO - Select this scenario if information is being entered for the conditions under which the emission source operates the majority of the time. A separate B7 form must be completed for each scenario.

ALTERNATIVE OPERATING SCENARIO - Select this scenario if information is being entered for any secondary conditions under which the emission source operates.

AOS # (Alternative Operating Scenario ID No.) – Include a unique ID No. for each alternative operating scenario. A separate B7 form must be completed for each scenario.

EMISSION SOURCE DESCRIPTION – Describe each emission source for which application is made. Emission source is defined as any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants emanate or are emitted, either directly or indirectly. Groups of equipment that are interconnected as a single continuous process can be labeled a single emission source (e.g., a chain of reaction vessels). However, this description should specify the number of individual pieces of equipment that make up this emission source.

EMISSION SOURCE ID No. - Enter the emission source ID No. for the emission source being described on this form. Fugitive emissions must also be assigned an ID No. (e.g., valves, pumps, compressors = ID No. F195).

Note: The choice of ID Nos. is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES___, control device ID No. CD___ and emission point ID No. EP___.

CONTROL DEVICE ID No. - Enter the ID No. for the control device associated with this emission source. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point). For different emission sources with a common control device, use the same control device ID No. for each emission source.

MANUFACTURER - Enter the manufacturer of the emission source.

MODEL No. - Enter the model number of the emission source as defined by the manufacturer. If the source was custom designed, a PE seal may be required pursuant to MCAPCO 1.5233.

RELEASE POINT TYPE – Enter or select one of the following stack/emission point release orientation: downward facing vent, fugitive, goose neck, horizontal, vertical or vertical with rain cap.

HEIGHT – Enter the height of the stack in units of feet.

INSIDE DIAMETER – Enter the inside diameter of the stack in units of feet.

EMISSION POINT (Stack) ID No. - Enter the ID No. for the emission point (e.g., stack, vent, etc.) associated with this emission source. Emission sources with a common emission point will have the same emission point ID No. For fugitive emissions enter "FUGITIVE".

FENCE LINE DISTANCE – Enter the distance to the fence line of the property
X-Coordinate – Enter the latitude coordinates
Y-Coordinate – Enter the longitude coordinates

EXIT GAS TEMPERATURE – Enter the temperature of the gas exiting the stack in degrees Fahrenheit (˚F).

EXIT GAS FLOW RATE – Enter the flow rate of the gas exiting the stack in cubic feet per min (cfm).

EXIT GAS VELOCITY – Enter the velocity of the gas exiting the stack in feet per seconds (ft/s).

SAMPLING PORTS, COMPLIANT WITH EPA METHOD 1 – Answer Yes or No. Additional information about EPA Method 1 can be found at the following website http://www.epa.gov/ttn/emc/

TYPE OF TANK - Select the type of tank for which this application form is being completed. Enter if the tank is heated, the shell color and the roof color.

LIQUID STORED -Enter the type of liquid being stored in the tank (i.e., name(s) of organic or volatile organic liquids).

NOMINAL TANK CAPACITY (gallons) – Enter the nominal fill capacity of the tank.

MAXIMUM DESIGN CAPACITY (gallons) - Enter the maximum design fill capacity of the tank.

LIQUID MOLECULAR WEIGHT (lb/lb mole) -Enter the molecular weight of the liquid expressed in pound per pound mole. This can be determined from reference materials which list physical properties of select liquids or by analyzing liquid samples.

VAPOR MOLECULAR WEIGHT (lb/lb mole) -Enter the molecular weight of the vapor expressed in pound per pound mole. This can be determined from reference materials which list physical properties of select vapors or by analyzing vapor samples.

MINIMUM LIQUID SURFACE TEMPERATURE (F) – Enter the minimum liquid surface temperature in degrees Fahrenheit (F).

AVERAGE LIQUID SURFACE TEMPERATURE (F) – Enter the average liquid surface temperature in degrees Fahrenheit (F). The average liquid surface temperature may be based on liquid surface temperature measurements from the tank.

MAXIMUM LIQUID SURFACE TEMPERATURE (F) – Enter the maximum liquid surface temperature in degrees Fahrenheit (F).

BULK LIQUID SURFACE TEMPERATURE (F) – Enter the bulk liquid surface temperature in degrees Fahrenheit (F).

MINIMUM VAPOR PRESSURE (psia) –Enter the minimum vapor pressure in pounds per square inch absolute (i.e., the vapor pressure of the liquid at the minimum liquid surface temperature).

AVERAGE VAPOR PRESSURE (psia) –Enter the average vapor pressure in pounds per square inch absolute (i.e., the vapor pressure of the liquid at the average liquid surface temperature).

MAXIMUM VAPOR PRESSURE (PSIA) – Enter the maximum vapor pressure in pounds per square inch absolute (i.e., the vapor pressure of the liquid at the maximum liquid surface temperature).

TRUE VAPOR PRESSURE (psia) –Enter the true vapor pressure in pounds per square inch absolute (i.e., the equilibrium partial pressure exerted by the liquid).

BREATHER VENT SETTINGS (PSIG)

- VACUUM – Enter the storage tank vacuum setting in pounds per square inch gauge (psig).
- PRESSURE – Enter the storage tank pressure setting in psig .

IS TANK HEATED? – Check yes or no

SHELL DIAMETER (Ft) – Enter the tank diameter in feet

SHELL CONDITION – Check the applicable tank/shell condition

SHELL COLOR – Enter the paint color of the tank

WORKING VOLUME (GAL) – Enter the working volume of the liquid

MAXIMUM FILLS PER DAY – Enter the number of times per 24 hour day tank filling activities occurs.

MINIMUM DURATION OF FILL (Hr/FILL) – Enter the minimum duration of fill in hours per fill.

MAXIMUM FILLING RATE (GAL/MIN) – Enter the maximum filling rate in gallons per minute.

ACTUAL THROUGHPUT (Gal/Yr) – Enter the net throughput per year in gallons.

MAXIMUM THROUGHPUT (Gal/Yr) - Enter the maximum annual throughput when the process is operating at maximum capacity.

ACTUAL TURNOVERS PER YEAR – List number of turnovers per year (dimensionless). Number of turnovers per year is derived by dividing total actual throughput per year in gallons by tank capacity in gallons.

MAXIMUM TURNOVERS PER YEAR – List number of turnovers per year (dimensionless). Maximum number of turnovers per year is derived by dividing total maximum throughput per year in gallons by tank capacity in gallons.

VERTICAL FIXED ROOF TANK

SHELL HEIGHT (FT) – Enter the actual height of the tank.

ROOF HEIGHT (FT) – Enter the actual height of the roof (i.e., the vertical distance from the top of the shell to the top of the roof).

ROOF TYPE – Check the applicable roof type.

ROOF CONDITION – Check the applicable roof condition.

ROOF COLOR – Enter the color and shade of the paint on the roof.

AVERAGE LIQUID HEIGHT (FT) – Enter the average height in feet of the liquid within the tank shell. This must be less than or equal to the maximum liquid height.

MAXIMUM LIQUID HEIGHT (FT) – Enter the maximum height in feet of the liquid within the tank shell. This must be less than or equal to the shell height.

HORIZONTAL TANK

SHELL LENGTH (FT) – Enter the total length of the tank shell in feet. The length of tank should be less than six times the diameter to ensure structural integrity.

IS TANK UNDERGROUND? – Check the appropriate answer.

FLOATING ROOF TANK

TYPE OF FLOATING ROOF TANK? – Check the appropriate answer.

- External – A cylindrical steel shell equipped with a roof that floats on the surface of the liquid
- Internal – A tank which has both a permanent fixed roof and a floating deck.

- Domed External – A tank that is an external floating roof tank that has been retrofitted with a domed fixed roof.

DESCRIBE PERTINENT TANK DATA – Enter the appropriate information for each above specified tank such as decks, seal (primary and secondary), and fitting types, as well as the density of the liquid at 60 degrees Fahrenheit (F).

FOR PETROLEUM LIQUID STORAGE TANKS ONLY: ATTACH DOCUMENTATION OF COMPLIANCE WITH THE FOLLOWING REGULATIONS:

1. MCAPCO Reg. 2.0925 – "Petroleum Liquid Storage in Fixed Roof Tanks"
2. MCAPCO Reg. 2.0926 – "Bulk Gasoline Plants"
3. MCAPCO Reg. 2.0927 – "Bulk Gasoline Terminals"
4. MCAPCO Reg. 2.0933 – "Petroleum Liquid Storage in External Floating Roof Tanks"

FUEL USAGE (INCLUDE STARTUP FUEL) –

FUEL TYPE – List the fuel to be combusted and the startup fuel.

UNITS – List fuel units for the amounts listed (e.g., pounds, tons, gallons, cubic feet, etc.).

MAXIMUM DESIGN CAPACITY (UNIT/HR) – List the maximum amount of fuel capable of being burned per hour.

FUEL CHARACTERISTICS (COMPLETE ALL THAT ARE APPLICABLE) –

BTU CONTENT – List heat content of fuel expressed in Btu.

UNITS – List units for applicable fuel type (e.g., Btu per gallon-oil, Btu per pound-coal, Btu per cubic foot-natural gas).

SULFUR CONTENT (% BY WEIGHT) – Enter the sulfur content of both the start-up and operating fuel expressed as a percentage. *Note: Attach a Fuel Supplier Certification for this information.*

ASH CONTENT (% BY WEIGHT) – Enter the ash content of both the start-up and operating fuel expressed as a percentage.

DESCRIBE FUEL BURNING EQUIPMENT – If fuel is consumed in the process, describe the fuel burning equipment (i.e., dryer, oven, process heater).

DIRECT-FIRED OR INDIRECT-FIRED – Select Direct-Fired if the material being heated comes in contact with and/or adds substance to the products of combustion. Select Indirect-Fired if the material being heated is not contacted by and adds no substance to the products of combustion.

REGULATORY ANALYSIS –

1. FEDERAL REGULATIONS –
   a. Determine applicability or inapplicability of the emission source to each listed federal regulation. Provide explanation of determination.

      Title V (MCAPCO 1.5500, 40 CFR 70)
      NSPS = New Source Performance Standards (40 CFR 60, Specify Subpart)
      NESHAP = National Emission Standards for Hazardous Air Pollutants (MCAPCO 2.1110, 40 CFR 61)
      MACT/GACT = Maximum Achievable/Generally Available Control Technology (40 CFR 63, Specify Subpart)
      PSD = Prevention of Significant Deterioration, Attainment Area (MCAPCO 2.0530, 40 CFR 51)
      NSR = New Source Review, Non-attainment Area (MCAPCO 2.0531, 40 CFR 51)

   b. List all other applicable federal regulations. Provide explanation of determination.

2. LOCAL REGULATIONS – List all applicable local regulations, including but not limited to MCAPCO Sections 2.0900, 1.5700, 2.0500, and 2.1100. Provide explanation of determination.

LIMIT(s) REQUEST – List all locally and federally enforceable permit limits and/or any additional limits that currently exist or are requested by this application. By requesting a permit limit (e.g., hours of operation, material usage rates, emission rates) a facility may avoid applicability to certain regulations (e.g., Title V, Prevention of Significant Deterioration, etc.). List the motivating regulation for which applicability is to be avoided. Describe how these limits are or will be monitored and at what frequency.

SECTION B

EMISSION SOURCE (LIQUID STORAGE TANK)

B7

Operating Scenario: ☐ Primary Operating Scenario ☐ Alternative Operating Scenario			AOS #:
Emission Source Description:			Emission Source ID No.:
			Control Device ID No.:
Manufacturer:			Model No.:
STACK PARAMETERS			
Release Point Type:	Height:	Inside Diameter:	Emission Point (Stack) ID No.:
Fence Line Distance:	X-Coordinate:	Y-Coordinate:	
Exit Gas Temperature:	Exit Gas Flow Rate:		Exit Gas Velocity:
Sampling Ports, Compliant With EPA Method 1 Will Be Installed On The Stacks: ☐ Yes ☐ No			
STORAGE TANK DESCRIPTION			
Liquid Stored:		Nominal Tank Capacity (Gal):	Max. Design Capacity (Gal):
Liquid Molecular Weight (lb/lb-mole):		Vapor Molecular Weight (lb/lb-mole):	
Min. Liquid Surface Temp. (F):	Average Liquid Surface Temperature (F):	Max. Liq. Surface Temp. (F):	Bulk Liq. Surface Temp. (F):
Min. Vapor Pressure (psia):	Vapor Press. at Avg. Liq. Surface Temp. (psia):	Max. Vapor Press. (psia):	True Vapor Pressure (psia):
Breather Vent Settings (psig): Vacuum Pressure		Is Tank Heated? ☐ Yes ☐ No	
Shell Diameter (Ft):	Shell Condition: ☐ Good ☐ Poor		Shell Color:
Working Volume (Gal):		Maximum Fills Per Day:	
Minimum Duration of Fill (Hr/Fill):		Maximum Filling Rate (Gal/Min):	
Actual Throughput (Gal/Yr):		Maximum Throughput (Gal/Yr):	
Actual Turnovers Per Year:		Maximum Turnovers Per Year:	
VERTICAL FIXED ROOF TANK			
Shell Height (Ft):	Roof Height (Ft):	Roof Type: ☐ Cone ☐ Dome	
Roof Condition: ☐ Good ☐ Poor		Roof Color/Shade:	
Average Liquid Height (Ft):		Maximum Liquid Height (Ft):	
HORIZONTAL TANK			
Shell Length (Ft):		Is Tank underground? ☐ Yes ☐ No	
FLOATING ROOF TANK			
Type of Floating Roof tank? ☐ External ☐ Internal ☐ Domed External Describe Pertinent Tank Data such as Decks, Rim-Seals, Liquid Density (lb/gal @ 60 Deg F):			

For Petroleum Liquid Storage Tanks Only: ***(attach documentation of compliance with the following regulations)***

- MCAPCO Regulation 2.0925 – "Petroleum Liquid Storage in Fixed Roof Tanks"
- MCAPCO Regulation 2.0926 – "Bulk Gasoline Plants"
- MCAPCO Regulation 2.0927 – "Bulk Gasoline Terminals"
- MCAPCO Regulation 2.0933 – "Petroleum Liquid Storage in External Floating Roof Tanks"

FUEL USAGE (Include Start-up Fuels)

Fuel Type	Units	Maximum Design Capacity (Unit/Hr)	BTU Content	Units	Sulfur Content (% By Weight)	Ash Content (% By Weight)

Describe Fuel Burning Equipment:	Is The Fuel Burning Equipment: ☐ Direct-Fired ☐ Indirect-Fired
Comments:	

Attach Additional Sheets As Necessary

EMISSION SOURCE (LIQUID STORAGE TANK)

B7

REGULATORY ANALYSIS:
Identify all federal and local (MCAPCO) regulations (including, but not limited to, the six regulations already listed below) to which the process may be subject, and provide an explanation of applicability.

Regulation Name (MCAPCO & CFR citations, as applicable)		Applicable?		Explanation of Applicability (provide an explanation of applicability or inapplicability)
Examples:	MCAPCO Reg. 2.0515 – "Particles from Miscellaneous Industrial Processes"	☒ Yes	☐ No	This regulation is applicable to this particulate emission source (no other particulate emission standards apply).
	MCAPCO Reg. 2.0958 –" Work Practices for Sources of Volatile Organic Compounds"	☒ Yes	☐ No	This regulation is applicable to this volatile organic compound emission source (no NSPS, NESHAP, MACT/GACT, RACT, or other volatile organic compound emission standards apply).
Federal Regulations:				
Title V	MCAPCO Section 1.5500, 40 CFR 70	☐ Yes	☐ No	
NSPS	40 CFR 60 (specify Subpart)	☐ Yes	☐ No	Subpart:
NESHAP	MCAPCO Reg. 2.1110, 40 CFR 61	☐ Yes	☐ No	
MACT/GACT	40 CFR 63 (specify Subpart)	☐ Yes	☐ No	Subpart:
PSD	MCAPCO Reg. 2.0530, 40 CFR 51	☐ Yes	☐ No	
NSR	MCAPCO Reg. 2.0531, 40 CFR 51	☐ Yes	☐ No	
		☐ Yes	☐ No	
		☐ Yes	☐ No	
		☐ Yes	☐ No	
		☐ Yes	☐ No	
		☐ Yes	☐ No	
Local Regulations:				
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	

LIMIT(s) REQUEST:
Indicate all existing and requested local and federally enforceable limits (e.g., hours of operation, material usage, emission rates, etc.) and describe how these limits are or will be monitored and at what frequency).

Existing or Requested Limit	Motivating Regulation	Monitoring Method (parameters, method, frequency)

Comments: