

Swamp Gas Collection

Purpose: To collect Swamp Gas from the Okefenokee Swamp and test the combustibility of the gas collected.

Safety Precautions:



Materials:

- swamp gas collection apparatus (basically a giant funnel with an eight ft. hose attached to it see *photos below*)
- quart sized mason jar with lid
- long pole (about 12' – 15' long)
- grill lighter
- gallon jug filled with water
- swamp gas combustion apparatus



Procedure: (This lab will require at least 3 people in a group)

Swamp Gas Collection

1. Carry the swamp gas collection apparatus, the pole, and the mason jar with lid to an area at the dock or off of the side of a boat where there is peat at the bottom of the canal and where collection will be the easiest.
2. Designate three people for the next step:

- a. Person 1 will hold the mason jar
 - b. Person 2 will manage the swamp gas collection apparatus.
 - c. Person 3 will manage the pole
3. Person 1: Fill the mason jar with water and invert it under water. Be sure that there is no air in the jar. Take the hose from the gas collection apparatus and hold it in the jar.
Person 2: Place the gas collection apparatus in the water and balance it so that the entire apparatus is filled with water.
Person 3: Take the long pole and poke around in the peat under the collection apparatus so that the apparatus traps the swamp gas.
4. When the swamp gas has been collected under the apparatus, Person 2 will push down on the apparatus so that the gas is forced through the hose and into the mason jar. Person 1 will put the lid on the mason jar trapping the swamp gas (*note: it is helpful to keep a little water in the jar and to carry the jar upside down to ensure that the gas stays in the mason jar*).

See photos below:

Gas collection apparatus



Person 1 is on the left and person 2 is on the right with the gas collection apparatus:



Person 3 is on the far right poking around in the peat releasing the swamp gas



Person 2 pushes down on the apparatus forcing the swamp gas into the mason jar



Person 1 screws the lid on the mason jar trapping the gas inside



Collected swamp gas



Swamp Gas Combustion

1. Place the jar with the collected gas on a table in an upright position. Have the combustion apparatus ready to be placed on the jar. Unscrew the band and leave the lid on the jar. (*this next step must be done quickly so that the gas does not all leave the jar*) Have one person take the lid off of the jar and another person put the combustion apparatus on the jar and screw down the band.
2. (*This step requires 3 people*) Have one person light the grill lighter and hold it in front of the bent glass tube. A second person needs to hold the funnel up high so that the hose is relatively straight, but not taunt. The third person needs to slowly pour the water into the funnel.
3. Observe the flame.
4. Be sure to clean up all water and place the materials neatly back in their designated storage area.

Students using the combustion apparatus



