Evaluating Will Tarpeh's Method of Producing Ammonia

Use the Wastewater Treatment Resources, the recorded information from the class's discussion, and information in the film to evaluate Will Tarpeh's method of producing ammonia.

You and a partner will decide whether your city should consider adopting this method in your wastewater treatment system. Use words, pictures, symbols, etc. to communicate your thinking.

1. Use scientific knowledge to explain how Will Tarpeh's method of producing ammonia meets humans' needs for ammonia.
    a. Why do humans need ammonia?
    b. How does this method meet that need?

2. **Cause and Effect:** Use scientific knowledge to address the effects on the environment of producing ammonia using the current method.

3. **Cause and Effect:** Use scientific knowledge to address the effects on the environment of producing ammonia using Will Tarpeh's method. How does this method minimize negative effects on the environment?

4. Describe the current wastewater treatment system in your city or town. At a minimum include the following information:
    a. An estimate of how many gallons are treated each day.
    b. An estimate of the cost of wastewater treatment each year.

5. Consider the costs of implementing Will Tarpeh's method
    a. How do you think the amount of wastewater treated affects the cost of implementing Will Tarpeh's method?
    b. Do you estimate the cost to implement this method will be low, medium, or high for the first 5-10 years?
    c. Do you estimate the cost to continue to run the system past the first 10 years will be low, medium, or high?
    d. How could using Will Tarpeh's method generate money? How do you think the amount of wastewater treated will affect the amount of money generated?

6. What limitations does Will Tarpeh's method have?

7. Overall, would you recommend your city use Will Tarpeh's method of producing ammonia? Explain your reasoning with science ideas and evidence from the film and wastewater treatment resources provided.