Online Ethics Center
FOR ENGINEERING AND SCIENCE

City of L'Acide Remediation Case

Author(s)

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Description

This case includes handouts for 4 teams, each with hidden agendas, to be used in class discussion. It is also accompanied by a companion presentation on "The Environmental Implications of Biotechnology." The case concerns the City of L'Acide that has contracted with an engineering firm to remediate a 3 hectare hazardous waste site from an old firing range.

Abstract

This case is included in the book *Environmental Biotechnology: A Biosystems Approach* by Dan Vallero, Academic Press, edition 1, 2010.

An annotated presentation entitled "The Environmental Implications of Biotechnology" serves as a companion presentation to this case. The presentation can be downloaded in either PDF or PowerPoint format.

The Environmental Implications of Biotechnology - PowerPoint format

The Environmental Implications of Biotechnology - PDF format

Body

Background

The City of L’Acide is located on the Gulf Coast of the U.S. with a population of 20,000. The main industry is the assembly of semiconductors (employment = 1523). The second largest industry, a battery manufacturer, closed last year, with an attendant layoff of 800 people. The City has two elementary schools and one middle school. Most high school students attend Bezique High School, which is 8 miles away.

The City has contracted with the engineering firm, Benebaction, Inc., to remediate a 3 hectare hazardous waste site from an old firing range that was deeded to the City by the military shortly after the Korean War. Part of the deed transfer included the stipulation that the transfer was “as is.” Bezique Creek runs through town and is about 200 m downstream from the site. The average water table depth is 3 m. In the 1990’s, a local college conducted soil and water sampling and found “traces” of trinitrotoluene (TNT).

The site is a *brownfield,* i.e. the City has already retained an architectural firm to design a combined residential and commercial center, including an elementary school, on the site. Benebaction has been asked to study the hazardous compounds found in the soil and ground water at the site and find the best way to render them nontoxic.

Instructions for Facilitator

This case is intended for use in a class discussion with a total of 4 teams. One of each of the following four scenarios should be given to each team, who will not know the others’ hidden agendas. Ideally each handout should be printed on a separate color paper. Students can then divide into teams based on the color of their handout. Each team should also be given a copy of the L’Acide Cleanup Recommendation Report. Do not share the Follow Up Questions until after each group reveals their hidden agendas.

Follow Up Questions

1. How can the engineer make the right decision in light of the various agendas in this case?

2. Is this a realistic case in terms of persistence in pushing for a single solution to a problem? If not, why not?
3. What can be done to be more open-minded while adhering to the most scientifically sound remediation approach?
4. Extra Credit (Environmental Engineering): Sometimes engineers and scientists are accused of looking for solutions to problems in a manner analogous to the person who loses his keys in the dark and only looks for them under the street light. Could that be going on here? For example, is there a linkage between the battery plant closing and potential pollution? If so, the pollutants would be very different from those being remediated here (e.g. heavy metals, low pH, etc.)? What is the responsibility of the engineer to consider possible problems other than those circumscribed by the client (e.g. asking about lead, sulfuric acid and other contaminants commonly found at abandoned battery facilities?
5. If Question 4 is true, how can an engineer balance specialization and a systematic viewpoint, i.e. being sufficiently competent in one's field and taking a comprehensive view?

Rights

Resource Type

Case Study / Scenario

Topics

Catastrophes, Hazards, Disasters
Corporate Social Responsibility
Environmental Justice
Public Health and Safety
Public Well-being
Safety
Social Responsibility
Sustainability

Discipline(s)

Engineering
Environmental Engineering