

Environmental Engineering I: Ethics Assignment – Case 1 **Individual Effort (30 homework points)**

Assignment: Read about the environmentally related ethics case and answer the questions. Reference the NSPE Code of Ethics and identify which sections apply to your answer. Your answers should be typed and attached to this handout.

Background: The American Society for Engineering Education's (ASEE) Statement on Engineering Ethics Education sets a high bar for engineering education. Students should be educated "to cope with ethical problems. Students should be made aware of ethical problems and learn to recognize them. Students should also understand that their projects affect people for good or ill, and that, as "moral agents" they need to understand and anticipate these effects. Students should also see that, as moral agents, they are responsible for helping to develop solutions to the ethical problems they encounter..."

Case 1: Exceeding Pollution Limits

This case is one of thirty-two cases which address a wide range of ethical issues that can arise in engineering practice provided by the Center For the Study of Ethics in Society, Western Michigan University.

Facts: Marvin Johnson is an Environmental Engineer for Wolfog Manufacturing, one of several local plants whose water discharges flow into a lake in a flourishing tourist area. Included in Marvin's responsibilities is the monitoring of water and air discharges at his plant and the periodic preparation of reports to be submitted to the Department of Natural Resources. Marvin has just prepared a report that indicates that the level of pollution in the plant's water discharges slightly exceeds the legal limitations. However, there is little reason to believe that this excessive amount poses any danger to people in the area; at worst, it will endanger a small number of fish. On the other hand, solving the problem will cost the plant more than \$200,000. Marvin's supervisor, Plant Manager Edgar Owens, says the excess should be regarded as a mere "technicality," and he asks Marvin to "adjust" the data so that the plant appears to be in compliance. He explains: "We can't afford the \$200,000. It might even cost a few jobs. No doubt it would set us behind our competitors. Besides the bad publicity we'd get, it might scare off some of tourist industry, making it worse for everybody."

Questions:

1. How should Marvin respond to Edgar's request?
2. Who, besides Marvin Johnson and Edgar Owens have a stake in how Marvin responds to Edgar's request? [i.e. who are the stakeholders?]
3. Suppose there are several plants in the area whose emissions are, like Wolfog Manufacturing's, slightly in excess of the legal limitations. What if all the plants submitted reports like the one Edgar Owens wants Marvin Johnson to submit?

The NSPE Code of Ethics for Engineers can be found at:

<http://www.nspe.org/Ethics/CodeofEthics/index.html>

Also refer to the class handout on Ethics and the Environmental Engineer

Environmental Engineering I: Ethics Assignment – Case 2 **Individual Effort (30 homework points)**

Assignment: Read about the environmentally related ethics case and answer the questions. Reference the NSPE Code of Ethics and identify which sections apply to your answer. Your answers should be typed and attached to this handout.

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Case 2: Gifts and Marketing

Facts: Engineering Firm ABC has a continuing education department. The primary role of the department is to provide training for the staff that includes support for certain requirements of the state licensing board for professional engineers. The state licensing board for professional engineers requires 15 hours of continuing education to renew a professional engineering license, of which 1 hour must be an ethics course. As a service to the engineering profession, the continuing education department offers ethics courses to engineers who are not employees of the Firm. The course is open to any engineer who wishes to take the course. Attendees are from other firms, cities, districts, counties, state, and federal governments, etc. Many attendees are from clients of the Firm, but most are not. While the purpose of the course is not business development, it could result in a business contact potentially leading to future work for the Firm. No follow-up is made by the Firm to the attendees, except that a certificate is issued at the end of the course. A fee of \$25 is charged to cover the cost of the lunch and some administrative support services. It is not intended for Engineering Firm ABC to make a profit from the course.

Questions:

1. Is it ethical for Engineering Firm ABC to offer the ethics course as set forth above?
2. Is it ethical for Engineering Firm ABC to offer the ethics course without charging the \$25 fee?

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Environmental Engineering I: Ethics Assignment – Case 3 Individual Effort (30 homework points)

Assignment: Read about the environmentally related ethics case and answer the questions. Reference the NSPE Code of Ethics and identify which sections apply to your answer. Your answers should be typed and attached to this handout.

Background: The American Society for Engineering Education's (ASEE) Statement on Engineering Ethics Education sets a high bar for engineering education. Students should be educated "to cope with ethical problems. Students should be made aware of ethical problems and learn to recognize them. Students should also understand that their projects affect people for good or ill, and that, as "moral agents" they need to understand and anticipate these effects. Students should also see that, as moral agents, they are responsible for helping to develop solutions to the ethical problems they encounter..."

Case 3: Obligation to Former Employer & Former Client Following Acceptance of a New Job.

Facts: Engineer A worked for a private engineering company in the field of water rights. The firm was hired by a client to complete a water-rights analysis in which Engineer A participated. Engineer A, along with one other employee at the firm, stamped the final document. These types of analyses quantify water and provide terms and conditions for future use that must be approved by the local courts. Typically, the court process takes years to complete and, in short, it includes the following steps:

1. Application (proposal)
2. Engineering to support application
3. Objections from the public/other water users
4. Rebuttal of objector's comments
5. Mediation or trial

Engineer A worked on the project through step No. 2 and resigned from the firm to work for the State, who is an objector in this specific analysis (the State is typically an objector in most cases).

Engineer A feels that he can and should support the work he performed and which was included in the stamped report, but he is concerned about the remaining steps in the court process. In his current employment, he has been isolated from the State's case in the matter, and his current position does not include opposing this or other cases.

Questions:

1. What are Engineer A's ethical obligations under the circumstances?

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Also refer to the class handout on Ethics and the Environmental Engineer