

Questionnaire Results: Saturn Corporation

SATURN +5 ISO 14000 PILOT PROJECT MEMBER ORGANIZATION QUESTIONNAIRE

Summary for Saturn Corporation Spring Hill, Tennessee

FOCUS: *Uncover and compare means of managing environmental affairs of the respective member organizations*

Preliminary Issues

- 1. Briefly describe the company's industry and products (i.e., automobile manufacturer, etc.).**
Automobile manufacturer. Saturn began in 1982 as a project to innovatively design and manufacture small cars in the United States in order to successfully compete with foreign manufacturers.
- 2. Briefly describe the company's size and number of plant and corporate locations.**
Saturn Corporation was formed as a wholly owned subsidiary of General Motors in 1985. Saturn cars are built in a 6.2 million-square-foot manufacturing and assembly complex located in Spring Hill, Tennessee. Saturn sold more than 230,000 vehicles during 1998 U.S. Model Year Sales and has cumulative United States sales of nearly 2 million vehicles since October 1990. Saturn employs well over 8,000 persons through its Spring Hill operations, and over 9,500 when employees from Michigan and other GM/Saturn locations are included. Saturn has begun production of vehicles in its Wilmington, Delaware plant beginning this year.
- 3. Briefly describe the major environmental aspects of the company's operations.**
Saturn is an integrated automotive manufacturing facility that produces up to 360,000 automobiles per year at the Spring Hill, Tennessee manufacturing complex. The facility consists of four manufacturing areas (Powertrain, Body Systems, Vehicle Interior Systems, General Assembly) and three support operations (Central Utilities Complex, Service Parts Operation, Northfield.) Certain parts such as tires, glass for windshields and doors, electrical and electronic components, floor coverings, and some specialized plastic and metal parts are imported for assembly. However, major parts such as the space frame, exterior panels, engine and transmission, and major interior components are manufactured on-site, and the entire vehicle is assembled on-site.

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Major processes include plastic molding, metal stamping, welding, cleaning, painting, sealer/adhesive application, metal casting, machining, heat treating, component and vehicle assembly, vehicle fluid fill, and wastewater pretreatment. Over 170,000 tons of raw materials are used in site operations, including items such as steel, aluminum, plastic, paint, sealers, etc. Natural gas is used for heating, and electricity is provided by TVA. Water is supplied by the City of Columbia.

Saturn is a major source of air emissions under regulatory classifications. VOC air emissions are primarily related to painting and foundry operations.

Storm water is collected in a series of ponds and then directly discharged to a tributary of Carters Creek.

Industrial process, cooling tower blowdown waters, and sanitary wastewater receive on-site chemical and physical pretreatment and then is piped to the City of Columbia POTW for further treatment.

Product scrap and industrial process waste comprise more than 90% of all non-productive output, general trash, packaging waste, and hazardous waste comprise less than 10%. About 85% of scrap and waste is recycled (primarily metals), 13% landfilled (primarily paint sludge, wastewater treatment sludges), and general trash, 2% receiving other treatment such as incineration.

4. Briefly describe the company's strategic business plan. Are environmental issues a part of that plan and, if so, what part?

Saturn was initially created as a small car company. Saturn continues to concentrate its efforts on its small car line, but is also currently developing its upcoming mid-size car. In addition, Saturn is responsible for distributing and marketing General Motor's EV1 electric vehicle. Saturn also produces right-hand-drive models that are marketed in the United States as suited for rural postal and other types of delivery vehicles and which also are sold in Japan in direct competition with Japanese-based competitors.

Environmental issues are a part of Saturn's strategic business plan to the extent that environmental review is included as a part of plant or product expansion considerations. Given lead times necessary for acquiring new permits, early warning of business strategy changes is important. However, consideration of new permits or permit changes is not the only reason that environmental issues should be integrated into mid and long range business planning. In the view of Saturn's environmental managers, Saturn does an "average" job in this area.

EMS Issues

1. Does the company have what it considers a formal Environmental Management Systems (EMS) in place?

No. Saturn has what it considers an "informal" environmental management system in place.

2. If not, what is the status of company efforts to develop an EMS?

Saturn's environmental managers are proceeding under the assumption that the Spring Hill plant is going to become ISO 14000 certified which will put in place a formal EMS. Saturn is looking to complete the effort to become ISO 14000 certified within the next couple of years.

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3. *Does the company have a written EMS or a written policy statement on environmental management within the company?*

Saturn follows General Motors' statement of environmental principles which are as follows:

As a responsible corporate citizen, General Motors is dedicated to protecting human health, natural resources and the global environment. This dedication reaches further than compliance with the law to encompass the integration of sound environmental practices into our business decisions.

The following environmental principles provide guidance to General Motors personnel worldwide in the conduct of their daily business practices.

1. **We are committed to actions to restore and preserve the environment.**
 2. **We are committed to reducing waste and pollutants, conserving resources and recycling materials at every state of the product life cycle.**
 3. **We will continue to participate actively in educating the public regarding environmental conservation.**
 4. **We will continue to pursue vigorously the development and implementation of technologies for minimizing pollutant emissions.**
 5. **We will continue to work with all governmental entities for the development of technically sound and financially responsible environmental laws and regulations.**
 6. **We will continually assess the impact of our plants and products on the environment and the communities in which we live and operate with a goal of continuous improvement.**
4. *Would you prefer your EMS system to be integrated with your QM system or would you prefer them to run separately? Why or why not?*

It is best to develop both systems at the same time which is what Saturn is currently doing, although more emphasis is being placed upon completing QS 9000 certification than ISO 14000 certification at the present time. The rationale for co-development is to leverage resources and effectively use infrastructure. The systems track somewhat different things (although there is some overlap between quality and environment); if systems run separately, there will need to be some coordination to ensure they are consistent and compatible. Because the systems keep track of completely different things, the preference of Saturn environmental managers is that the systems run separately.

5. *What perceived level of value does the top/upper level management of the company place on EMS and environmental issues faced by the company?*

Saturn's leadership does not perceive environmental issues as being fundamental to Saturn's business. The percentage of what is spent on environmental issues at Saturn is not so great that the leadership at Saturn would consider such issues fundamental to building a car. The perception of leadership is, if we are not hearing about environmental issues, then there must be no problems.

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6. *What is the company's view of the utility of ISO 14000 certification?*

The highest utility is in more completely integrating environmental management into the core business and to make sure upper management is aware of environmental issues in business planning and strategy. Saturn's environmental managers do not believe that ISO 14000 certification will assist in Saturn's being more in compliance with environmental laws and regulations than they are already.

Saturn does not perceive any particular advantage to being ISO 14000 certified in the immediate future. Because of the current concern that QS 9000 certification is going to be taking up so much time and effort, ISO 14000 certification is to be delayed until such time as QS 9000 is completed. The current timetable for completing QS 9000 certification at Saturn is December 1999.

General Motors wants each of its plants to have an environmental management system in place by the year 2000, but it is up to each plant whether to pursue ISO 14000 certification. Any environmental system implemented is required to be 100 percent compatible with ISO 14001 even if ISO 14000 certification is not obtained.

7. *Does the company have any concerns about becoming ISO 14000 certified? If so, what are they? What potential downsides do the company feel ISO 14000 may bring?*

Saturn's main concern was the timing for obtaining ISO 14000 certification. Given the present emphasis upon obtaining QS 9000 certification and the resources devoted to that (over 200 employees have been working on QS 9000), Saturn is concerned about the impact of also devoting substantial resources to ISO 14000 certification at the same time.

8. *What is the status of ISO 14000 certification with the company today?*

Saturn had a gap analysis performed recently which demonstrated that the company was 60 percent compliant. Since then, Saturn has been working on completing parts of ISO 14001 that can be completed without impacting upon the resources of the company. Until QS 9000 is completed, pursuit of ISO 14000 will be at a slower pace.

Organizational Issues

1. *Is there a manager dedicated solely (or primarily) to overseeing environmental management issues in the company?*

Yes, Bill Miller is the Environmental Manager for Saturn's Spring Hill plant and devotes 100 percent of his time to environmental management. Lisa Caron, an Environmental Engineer, also devotes 100 percent of her time to environmental management. In addition, Jo Varga devotes a significant portion of her time to ISO 14000 certification issues.

2. *If not, what persons or departments in the company are considered "in charge" of overseeing and addressing environmental management issues faced by the company?*

Not applicable.

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3. *Is environmental management a distinct operating division within the firm, or are environmental tasks delegated to various members of different departments of the firm?*

Yes. Environmental Affairs is a distinct division of Saturn. In addition, environmental tasks are also delegated to various members of different departments.

4. *Are there cross-functional teams focusing specifically on environmental issues within the company?*

Yes. Examples include the Environmental Council that pulls people from across organizational lines to look at environmental issues that cross all lines. Another is the Hazardous Material Control Committee that reviews materials before purchase to determine and analyze chemical content. The Waste Management Team is comprised of representatives from each of Saturn's business units and its charge is to oversee how the Spring Hill plant handles waste.

5. *If some distinct environmental departments exist, how are the departments structured? What tasks are performed within that structure?*

The Environmental Affairs department (essentially Bill Miller and Lisa Caron) is a resource available to the various business units within Saturn as that resource is needed.

6. *Do environmental managers consider staffing to be adequate for the tasks that must be performed by the environmental structure of the firm? Does upper management consider staffing to be adequate for the same purpose?*

No to the first question; yes to the second. Environmental managers believe that balance of staffing can be improved to provide more focus in some areas. Environmental regulations have increased by a factor of 5 since Saturn started building cars in 1990, but staffing for environmental management has not increased (said another way, Bill Miller and Lisa Caron are essentially still it). However, upper management's view that staffing is adequate for the tasks that must be performed by Saturn's environmental management structure is a factor of the perception of environmental risk by upper management (i.e., that risk is low).

7. *What type of software systems does the company use to manage environmental information?*

Saturn utilizes a chemical management system called MANGUARD used for tracking waste, manifesting waste, generating SARA reports, etc. This is the basis for how Saturn maintains substantial environmental information. It is used to determine where chemicals are, where wastes have gone, where emissions come off the various processes, information included on Material Data Safety sheets, etc.

Saturn is considering utilization of Geographical Information Systems to track chemical use based upon location in the plant. Information would be coded spatially; a map of the plant would be utilized. Pointing and clicking upon a certain area of the plant would allow determination of what chemicals were being used in that particular area. This would allow specialized monitoring of information regarding waste streams.

8. *How does the company operationally track information such as material flow, purchasing, etc. that relates to environmental issues?*

See the response to question 7 (Organizational Issues) above. Information is manually input into MANGUARD, but an electronic "just-in-time" kanban ordering system for materials is how the information is tracked.

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9. *How does the company compile and disseminate critical information that affects the company's business and projects?*

The company disseminates environmental information in a number of ways. Information is disseminated in regular meetings. Information is disseminated by way of an internal Saturn newsletter called "Newslines." Corporate e-mail and a Saturn internal "Intranet" web-site are other ways of disseminating important information throughout the company. Saturn has also disseminated information through involvement in community groups, community tours and projects and participation with academic groups.

10. *Describe the chain of command within the environmental management structure of the company (including facility vs. corporate headquarters structure).*

Bill Miller and Lisa Caron are the environmental management structure and, therefore, the "chain of command" within that structure. Organizational design within Saturn contains a lot of "dotted-line" relationships. The Environmental Affairs department is more of a resource to individuals or business units within Saturn that have environmental issues or tasks as a part of their respective responsibilities.

11. *Describe any issues of concern regarding communication between facility and corporate offices on environmental management issues.*

Not applicable.

12. *Describe the chain of command from environmental management to top/upper level management of the company.*

Bill Miller and Lisa Caron report to the Manufacturing Technical Leader (head of the Manufacturing Group who oversees the 3 manufacturing buildings) who reports to the Vice President of Manufacturing.

13. *Generally, where does primary decision making authority over environmental issues reside within the firm? What type of decisions require approval outside of the environmental management structure (i.e., from top/upper level management)?*

Legally, the person ultimately responsible for environmental compliance at Saturn is the Vice President of Manufacturing. However, primary decision making authority for practical purposes often depends upon what the particular issue is and where the decision needs to go for approval. For example, many decisions regarding how the Spring Hill plant handles waste are made by the Waste Management Team. For many day-to-day decisions, either Bill Miller or Lisa Caron in Environmental Affairs or managers with environmental responsibility in the various business units make the decision. Depending upon the type of issue, it may go as high as the Vice President of Manufacturing, but normally he is brought into the day-to-day process only when a signature (such as for a permit) is needed.

14. *Are environmental management decisions often made at the facility level rather than corporate level? What type of facility level decisions require approval from corporate environmental managers?*

Yes. As a wholly owned subsidiary, Saturn is not a typical facility within the General Motors structure. It therefore operates more independently than would the typical General Motors plant.

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15. Describe the level of integration of environmental departments or personnel with the rest of the company.

Historically, Saturn environmental managers have a level of concern about this issue. The feeling is that the level of integration is not nearly as high as it should be.

16. In a related vein, what are the relationships between environmental departments/personnel and other departments within the company? (In other words, what links are in place to allow environmental personnel to effectively perform their jobs within the company?)

Saturn has good links established so that it is known when environmental issues come up. For example, the environmental engineer in body systems has strong linkages with personnel in paint systems. Saturn's basic framework is based upon teamwork concepts and, therefore, few barriers are erected between departments.

17. Describe any concerns with communication between environmental departments or cross-functional environmental employees and other departments with the firm.

There could be more communication that takes place with more frequency. However, although communication at Saturn is very informal, there is a large amount of communication that takes place. Although there is no formal system for communication established, frequent communication still takes place among individuals and departments with established environmental responsibilities.

18. Does the firm rely upon outside consultants to handle environmental tasks? How often?

Yes. The original concept was to avoid increasing the necessary number of full time Saturn personnel by reliance upon a commensurate number of consultants. Generally, Saturn spends on consultants the equivalent of 4 full time people per year. When the plant was being built and beginning initial operations, there was a large amount of environmental work necessary to be done and so the number of consultants utilized was closer to the equivalent of 20 full time people.

19. What factors are considered in determining whether to utilize consultants or handle an environmental matter in-house?

With outsourcing issues, Saturn is generally relying upon the expertise of the consultants selected. For example, Saturn relies heavily upon its own supplier, Waste Management of Tennessee.

20. How is the performance of the environmental management department evaluated within the firm?

Saturn is audited by General Motors every 2 years based upon environmental issues. A team of between 3 and 7 individuals audits Saturn against state, federal and General Motors guidelines. More generally, Saturn upper management relies upon "superficial" factors such as the fact that neighbors are not complaining about environmental concerns or that no non-compliance issues have been brought to their attention and assume that everything is as good as it could or needs to be.

21. Upon what criteria would departmental performance be judged?

See the response to question 20 (Organizational Issues) above.

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22. *Are individuals with environmental management responsibilities evaluated on their performance of those responsibilities?*

The more environmentally related an individual employee's job is, the more likely that environmental responsibilities are a part of their individual performance evaluations.

23. *Who conducts such evaluations and what criteria are used to do such evaluations?*

Each employee's evaluation would be conducted by their immediate supervisor. There are no particular environmental benchmarks or guideposts for conducting such evaluations.

“Perfect World” Issues

1. *Could the environmental management system of your company be better? How? What would you change if you could? Why?*

Yes. The environmental management system suffers from the position from which it reports within the organization. Environmental Affairs is not that far from the top of the organization, but it is still a part of the Manufacturing Division at the mid-level point of the organization. This tends to limit involvement to manufacturing and inhibits involvement in other parts of the organization, including in long term planning and strategy. Having one or more individuals in upper management with responsibility for environmental oversight would allow the environmental management system to have more impact on the overall vision and direction of the company. We would also like to have more experts within the environmental management structure rather than relying so much upon outside consultants and suppliers. Increased resources in this regard would allow environmental management to undertake more progressive activities rather than focusing primarily upon simple compliance.

2. *What degree of influence over corporate structure or policy does environmental management have? What degree do you think it should have? Why?*

Saturn's environmental managers rate the influence of environmental management as good but in need of improvement. It is hoped that the relatively new Environmental Council will assist in this regard. However, approximately 80 percent of this group will need significant education on how environmental relates to their particular business unit. Following this educational effort, it is hoped that the Council will collectively determine the manner in which the company should go forward in environmental management and how such issues should be addressed in the future.

3. *Are matters being handled by other departments in the firm that would be better served if they were handled by environmental?*

Chemical safety is an issue currently handled by Health and Safety that would be better handled within the environmental management structure of the company.

4. *Are there issues being handled by environmental that should be handled by other departments?*

Yes. Freeing up environmental management from reporting requirements would free up more time for environmental managers to undertake more important and progressive tasks.

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5. *When and to what extent is environmental consulted on issues of public relations, marketing, product development, etc. now? When and to what extent do you think it should?*

Public relations: Environmental is often (almost on a weekly basis) consulted on issues of public relations with corporate communications.

Marketing: Environmental is consulted perhaps once a year by marketing, generally when it is looking to incorporate environmental issues or themes in a particular marketing plan.

Product development: At this point, Environmental is attempting to increase the level of consideration of environmental issues in product development. Currently have a contract with the University of Tennessee to develop a life cycle analysis tool for Saturn which will allow the environmental plusses and minuses in utilizing various materials to be considered in product development.

6. *What meetings do environmental managers attend that are not run by environmental managers? Are there meetings that you think environmental should attend now but they are not?*

No environmental manager feels plugged in enough. Saturn's system is adept at identifying large questions and issues and avoiding major problems, but this is not the same as having been involved in original meetings when original ideas were discussed and developed. One factor working in Saturn's favor is that many people in mid to upper-level management positions in the business units are fairly environmentally aware. Is this to be preferred to individuals in such positions without any knowledge of environmental issues or concerns but who invite the environmental manager to all of the meetings?

Environmental managers would like to attend corporate leadership meetings. Or, at the very least, have the opportunity to provide quarterly updates to corporate leadership.

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MEMBER ORGANIZATION QUESTIONNAIRE**

**Summary for
Wheland Foundry
Chattanooga, Tennessee**

FOCUS: *Uncover and compare means of managing environmental affairs of the respective member organizations*

Preliminary Issues

- 1. Briefly describe the company's industry and products (i.e., automobile manufacturer, etc.).**
Iron castings manufacturing. Wheland manufactures automotive parts such as brake drums, rotors, hubs, calipers, suspension components, transmission components, etc. In all, Wheland makes over 150 different castings.
- 2. Briefly describe the company's size and number of plant and corporate locations.**
Wheland operates three separate plants (constituting five foundries). Two of the plants are located in Chattanooga (Broad Street Plant and Middle Street Plant) and one is located in Warrenton, Georgia. Wheland melts approximately 2000 tons of scrap metal per day at its Broad Street Plant, averaging from 100,000 to 120,000 castings per day. Approximately 600 tons of scrap metal per day is melted at each of Wheland's Middle Street and Warrenton Plants, with 60,000 to 100,000 castings per day made at the Middle Street Plant and 40,000 to 60,000 per day at Warrenton.
- 3. Briefly describe the major environmental aspects of the company's operations.**
Wheland is a large quantity hazardous waste generator, generating approximately six to ten thousand tons of hazardous waste a year. Wheland treats its hazardous waste on site and operates a recycle and disposal facility. Wheland also generates approximately 200,000 tons of non-hazardous waste a year. Wheland operates two landfills, a major beneficial reuse project involving foundry sand, and a large hauling operation related to these endeavors. Wheland is also a major source of air emissions (over 100 tons per year) under Title V of the Clean Air Act.
- 4. Briefly describe the company's strategic business plan. Are environmental issues a part of that plan and, if so, what part?**
Wheland is unique in its industry – a relatively small company but which has a substantial share of its market. Wheland casts approximately 43 million parts every year. Wheland makes over

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70 percent of all brake drums in the U.S. Wheland also makes approximately 60 percent of all rotors, and 60 percent of all calipers. Of all cars produced in the U.S., approximately 60 percent have at least two parts manufactured by Wheland. Many of Wheland's competitors are large conglomerates attempting to cut into Wheland's share of the market. In the light of this increased competition from larger companies, Wheland is in an expansion mode. Wheland is planning to diversify into new areas of casting and materials. The Warrenton Plant was opened just three years ago. This highly modernized and advanced foundry has significantly increased Wheland's production capacity. Wheland is also planning for a \$40 to \$50 million modernization of its Broad Street Plant.

Environmental issues are a significant part of Wheland's strategic business plan. The firm considers its environmental programs a significant competitive advantage that it holds over its industry competitors. As a whole, the iron casting industry is not at the forefront of environmental issues; the industry lacks environmental expertise, and because of its age much of the existing equipment is lacking in the area of incorporating environmentally efficient technological advancements. Wheland, however, has invested over \$12 million in major capital environmental equipment and expends over \$5 million annually in environmental operating costs. Wheland considers itself to have a more organized, advanced, deeper and proactive environmental program than any of its competitors. Because of this, Wheland's environmental costs are significantly lower than the industry average. Further, although one of the biggest challenges facing the industry involves dealing with solid waste disposal, Wheland currently has a 20 year + capacity to handle its solid waste disposal needs at all of its facilities. In addition, although the rest of the industry will experience difficulty in meeting the MACT (maximum available control technology) regulatory standards for the industry which are to take effect in 2003, Wheland is already prepared to meet those standards.

EMS Issues

1. *Does the company have what it considers a formal Environmental Management Systems (EMS) in place?*

Yes, although it is (and will continue to be) a work in progress.

2. *If not, what is the status of company efforts to develop an EMS?*

Wheland started the process of developing its EMS system prior to publication of the ISO 14000 standard. The goal was to design and develop a system that worked for Wheland and was close to what they predicted the ISO 14000 would be. The eventual strategy is to have an EMS that is ISO 14000 compliant, but not to go through the certification process until there is a reason to do so that Wheland believes is compelling.

3. *Does the company have a written EMS or a written policy statement on environmental management within the company?*

Wheland has developed a written Environmental Policy and Procedures notebook which contains its formal EMS. A copy of Wheland's written Environmental Policy Statement is attached to this summary as Exhibit "1".

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4. *Would you prefer your EMS system to be integrated with your QM system or would you prefer them to run separately? Why or why not?*

The preference is for the systems to be integrated, although they are not integrated at this time. All of Wheland's facilities are QM 9000 certified. Therefore, Wheland already has many necessary systems in place (i.e., document control) which can effectively be integrated into the formal EMS system. Wheland expects that the systems will eventually be integrated as Wheland moves closer to full ISO 14000 compliance.

5. *What perceived level of value does the top/upper level management of the company place on EMS and environmental issues faced by the company?*

Wheland's top level management and ownership place a very high level of value on EMS and environmental issues. Wheland is a small, family oriented, and privately held company in Chattanooga. The owners have lived in Chattanooga all of their lives and care deeply about the community and how environmental operations might affect the community. Because of a lean top management structure (essentially the owner and vice-president of the foundry division), Wheland is able to very easily translate this concern for the local community into policy for how the company is to operate with regard to environmental issues.

6. *What is the company's view of the utility of ISO 14000 certification?*

Wheland can see the utility of being ISO 14000 compliant but does not yet see a high utility in going through the process of formal ISO 14000 certification. The critical question in Wheland's view is "what would we gain from being ISO 14000 certified" that is not already obtained simply by being in substantial compliance with ISO 14000 and being a good environmental neighbor.

7. *Does the company have any concerns about becoming ISO 14000 certified? If so, what are they? What potential downsides do the company feel ISO 14000 may bring?*

Wheland does not perceive any downsides to the actual fact of being ISO 14000 certified (i.e., legal liability, confidentiality, auditing, etc.). However, Wheland perceives that it is easier to become certified than to maintain certification, especially in the area of employee training. Wheland has numerous practical concerns regarding the requirements concerning training which constitute its largest hesitation to becoming certified. At present, Wheland maintains existing training programs meeting the bare regulatory requirements. However, ISO 14000 certification goes well beyond regulatory requirements in terms of training. Wheland has a large, unionized workforce that is not highly educated. Training would be difficult in terms of logistics (perhaps as many as 9000 employees training at any one time) and effectiveness (having to address varying degrees of education among employees). Training would also be highly expensive in terms of overall man-hours involved. At present, Wheland is unsure exactly how it would go about addressing this issue.

8. *What is the status of ISO 14000 certification with the company today?*

Wheland had a gap analysis performed recently which demonstrated that the company was 65 percent compliant. Since then, the company has been continuously updating its written Environmental Policy and Procedures notebook to address voids in the gap analysis. Again, Wheland intends to continue to progress with its EMS until it is fully ISO 14000 compliant, but to defer going through the actual certification process until they have a compelling reason to do so. (One

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such reason would be if business considerations – such as customer requirements – compel ISO 14000 certification to remain competitive.)

Organizational Issues

- 1. *Is there a manager dedicated solely (or primarily) to overseeing environmental management issues in the company?***

Yes, Larry Bowers is the Environmental Manager for Wheland Foundry. (A second individual is the Environmental Manager for the Warrenton, Georgia facility; however, he reports to Larry Bowers.)

- 2. *If not, what persons or departments in the company are considered “in charge” of overseeing and addressing environmental management issues faced by the company?***

Not applicable.

- 3. *Is environmental management a distinct operating division within the firm, or are environmental tasks delegated to various members of different departments of the firm?***

Yes. Wheland has a separate Environmental Department with a staff of close to 50 employees (between Chattanooga and Warrenton). There is also an on-site construction crew that reports to the Environmental Department (with approximately 20 employees) and which operates the landfills, waste hauling operations, etc.

- 4. *Are there cross-functional teams focusing specifically on environmental issues within the company?***

Yes. Such teams are constituted on an as needed basis. One such team is currently in place considering plans for hazardous waste reduction (with the potential of eliminating as much as 10,000 tons annually of hazardous waste if successful).

- 5. *If some distinct environmental departments exist, how are the departments structured? What tasks are performed within that structure?***

A copy of a chart (October 1998) outlining the manner in which the Environmental Department for the Chattanooga facilities is structured is attached to this summary as Exhibit “2”. Responsibilities/tasks are categorized within the department along topics such as air, waste disposal, project management, training, maintenance, etc.

- 6. *Do environmental managers consider staffing to be adequate for the tasks that must be performed by the environmental structure of the firm? Does upper management consider staffing to be adequate for the same purpose?***

Yes to both questions. The Environmental Department is adequately staffed.

- 7. *What type of software systems does the company use to manage environmental information?***

Wheland has an extensive Information Systems (IS) department which has created customized software systems for Wheland to track materials, production, and purchasing. Wheland is in the process of designing a specific program to generate environmental reports from Wheland’s

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extensive information systems data base. Wheland's software systems are (with some exceptions such as Chemtox) generally created by Wheland, for Wheland. Canned software products do not generally work for the way Wheland operates (such systems are designed primarily for chemical companies who operate and purchase differently than Wheland).

8. *How does the company operationally track information such as material flow, purchasing, etc. that relates to environmental issues?*

See the response to question 7 (Organizational Issues) above. The system requires that any item/material not purchased previously (and thus not in the system) must have approval from the Environmental Department before purchase is possible.

9. *How does the company compile and disseminate critical information that affects the company's business and projects?*

The company disseminates environmental information in a number of ways. Wheland has an internal television system that carries daily announcements, including on safety and environmental issues, to employees on television sets located throughout the foundries. Wheland also periodically publishes a newsletter which performs much the same function. Though its Information Systems department, Wheland also maintains an extensive intranet computer system which employees may access on numerous computers throughout the foundries.

10. *Describe the chain of command within the environmental management structure of the company (including facility vs. corporate headquarters structure).*

See the responses to questions 1, 2 and 5 (Organizational Issues) above; ~~including the chart attached to this summary as Exhibit "2".~~

11. *Describe any issues of concern regarding communication between facility and corporate offices on environmental management issues.*

None. See the response to question 5 (EMS Issues) above.

12. *Describe the chain of command from environmental management to top/upper level management of the company.*

Environmental Manager to Vice President of Foundry Division to Owner.

13. *Generally, where does primary decision making authority over environmental issues reside within the firm? What type of decisions require approval outside of the environmental management structure (i.e., from top/upper level management)?*

The Environmental Manager has decision making authority with respect to any issue where an individual expenditure item will not exceed \$40,000. The Vice President of the Foundry Division has authority to approve any other realistic expenditure that environmental management may want to undertake. Owner approval is not needed.

14. *Are environmental management decisions often made at the facility level rather than corporate level? What type of facility level decisions require approval from corporate environmental managers?*

Not applicable.

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15. Describe the level of integration of environmental departments or personnel with the rest of the company.

The Environmental Department is not particularly well integrated into the rest of the company. The department's role tends to be that of a "consultant" on environmental issues to the overall management of Wheland. Instead of being involved in initial planning or decision making, the Environmental Department tends to be informed that a decision has been made and instructed to handle whatever environmental issues are implicated by the decision. The Environmental Department considers the lack of integration and the lack of a role in initial decision-making processes to be a continuing concern.

However, in the last year, very real progress has been made as demonstrated by how the new plant expansion has been coordinated. As an additional example of progress, Larry Bowers is now supervising the 10-year growth plan at the foundry.

16. In a related vein, what are the relationships between environmental departments/personnel and other departments within the company? (In other words, what links are in place to allow environmental personnel to effectively perform their jobs within the company?)

Formal links in place are as follows:

- purchasing is required to obtain environmental approval before materials are purchased
- environmental managers attend regularly scheduled project management meetings
- environmental managers attend weekly senior management meetings
- environmental department is notified of all proposed capital jobs before any work is performed or equipment purchased

17. Describe any concerns with communication between environmental departments or cross-functional environmental employees and other departments with the firm.

Communication is sometimes a problem with other departments. Safety, maintenance, or production departments are examples. However, the largest communication problem can be with the engineering departments. Engineering often makes design related decisions without integrating those decisions with consideration of potential environmental issues and concerns.

18. Does the firm rely upon outside consultants to handle environmental tasks? How often?

Yes, on an as needed basis for specific issues such as certain air permits requiring either specialized expertise and large amounts of work in a short time period, or for groundwater sampling, etc.

19. What factors are considered in determining whether to utilize consultants or handle an environmental matter in-house?

Wheland's Environmental Department uses consultants in situations where either in-house expertise is lacking for a particular task or (more often) where in-house personnel job responsibilities do not allow sufficient time to perform a particular task. Consultants can prevent having to take Wheland personnel out of their normal job routines for long periods to do one specific task. Plus, some tasks raise efficiency concerns, such as groundwater monitoring. If an individual does not perform this type of task every day, he or she will not be as efficient at the task as a consultant who performs such tasks on a more consistent basis.

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20. How is the performance of the environmental management department evaluated within the firm?

Wheland has developed a unique method of self-evaluation of the Environmental Department. Wheland conducts surveys of its general managers for the purpose of evaluating department performance. Wheland has also prepared questionnaires for personnel of various regulatory departments that oversee Wheland to evaluate specific issues (for example, air quality) with respect to Wheland's environmental performance. In addition, Wheland hires outside consultants to perform service evaluations of the Environmental Department.

21. Upon what criteria would departmental performance be judged?

Performance is judged according to the following broad criteria:

- Cost (low)
- Public relations/Press (good)
- Enforcement/Compliance issues (none)
- Happy neighbors

22. Are individuals with environmental management responsibilities evaluated on their performance of those responsibilities?

All personnel in the Environmental Department are evaluated on performance of their respective responsibilities. General managers are not evaluated solely on environmental issues, although such issues play a role in their evaluations. General employees are not evaluated on environmental issues.

23. Who conducts such evaluations and what criteria are used to do such evaluations?

The Environmental Manager conducts evaluations for Environmental Department personnel. The Vice President of the Foundry Division conducts evaluations of the general managers and the Environmental Manager.

“Perfect World” Issues

1. Could the environmental management system of your company be better? How? What would you change if you could? Why?

Yes. Possible changes could include:

- better document control, which integration of the EMS with QS 9000 should provide
- better training (more time for training and a more cooperative union stance on the issue)
- better communication between all departments and the Environmental Department
- the Environmental Department would move from the “consultant” role to an integrated part of the overall management of the company. The current system provides a “shield” around the company – the Environmental Department fixes problems or prevents the company from getting into trouble, but does not participate in strategic business planning or decisions.

Questionnaire Results: Wheland Foundry

2. *What degree of influence over corporate structure or policy does environmental management have? What degree do you think it should have? Why?*

The Environmental Department has influence over corporate policy to some degree, inasmuch as the department is heavily financed and well respected. However, the department is still used more as a tool of the company rather than as an integrated part of a company-wide management team. For example, the recent corporate decision to locate the new foundry in Warrenton, Georgia was made without any input by or consultation with the Environmental Department. The upper management view was that the Environmental Department would be able to handle whatever issues came up no matter what location was selected. A more team oriented approach would have been to involve environmental in the location decision during the planning stage so that problems could be anticipated and alternatives explored and considered rather than simply expecting that whatever problems the location decision might bring could be later “fixed” by the Environmental Department.

3. *Are matters being handled by other departments in the firm that would be better served if they were handled by environmental?*

No.

4. *Are there issues being handled by environmental that should be handled by other departments?*

Yes. There are a number of items that are assigned to environmental for no other reason than evolution or the fact that the department is known to be able to get things done efficiently and correctly. For example, maintenance issues such as repairs, pumps, water fountains are routinely dealt with by the Environmental Department. Other such items include custodial services, grounds maintenance, facilities maintenance, paving, and ordering toilet paper. Environmental has been asked to build parks, put up fences, and similar projects. The Environmental Department’s reputation for cooperation and an ability to get things done leads to general managers assigning things to environmental for matters of convenience more than for an environmentally related reason.

5. *When and to what extent is environmental consulted on issues of public relations, marketing, product development, etc. now? When and to what extent do you think it should?*

The Environmental Department is consulted and involved extensively on issues of public relations. The primary reason Larry Bowers was hired at Wheland was to assist the company in overcoming public perception with both the community and regulators stemming from some highly publicized environmental problems previously experienced by the company. Over the past five years, the Environmental Department has been very aggressive in this area on behalf of the company. The department has become very involved in the local community and has supported many local projects and entities. The department recently oversaw the building of a community park. The department is preparing to oversee the first major Brownfields project in Chattanooga from which Wheland will receive a large amount of positive public exposure. These efforts have been very successful in reinforcing a positive perception of Wheland in the neighboring communities and in Chattanooga as a whole.

With respect to marketing, product development and other issues, see the response to questions 15 (Organizational Issues) and 2 (“Perfect World” Issues) above and 6 below.

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6. *What meetings do environmental managers attend that are not run by environmental managers? Are there meetings that you think environmental should attend now but they are not?*

Environmental managers attend production meetings and senior staff meetings. However, meetings involving marketing or product development are not attended by environmental personnel. Further, when the Owner and Vice President get together to discuss the future of the company, environmental managers are not invited. As emphasized above, the historical practice has been to inform the environmental managers after a decision has been made with the expectation that environmental managers are to handle whatever needs to be handled. The Environmental Department believes that the better practice would be to involve environmental in the planning and initial decision-making processes. The Environmental Department is capable of spending money to resolve a problem, or to negotiate with regulators, or to come up with solutions, but what the department cannot do is “bend time.” In other words, the department cannot give itself more time to fix a problem than they are given when the problem is first put into their lap. An integrated approach would assist in avoiding serious problems which could be caused by such time constraints (such as, for example, if a construction start-up time is dependent upon first obtaining a certain permit).