



Ashland Oil Inc.: Trouble at Floreffe (A)

On Saturday, January 2, 1988 at 5:02 p.m., a 4-million-gallon storage tank at the Floreffe terminal outside of Pittsburgh, Pennsylvania, collapsed while being filled, releasing a 3.9-million-gallon wave of diesel fuel. As the fuel gushed, it slammed into an empty tank nearby and surged over containment dikes onto the surrounding properties creating the first major oil pollution accident for Ashland Oil, Inc., (AOI) in its 64-year history. By nightfall, nearly three quarters of a million gallons of oil had spilled into the Monongahela River, threatening the drinking water supply of communities in Pennsylvania, Ohio, and West Virginia, as well as the safety of nearby residents.

Over the next three days nearly 200 people participated in the clean-up including AOI employees; the Coast Guard and its Gulf Coast emergency strike force; O.H. Materials Co. of Ohio, a professional hazardous material clean-up company hired by AOI; AOI employees; the Red Cross; and the Audubon Society.

On Tuesday, January 5, at 10:00 a.m, John Hall, CEO and chairman of the board of AOI, as well as other officers and executives boarded two of six corporate Cessna aircraft to address the media in Pittsburgh at a press conference scheduled for 2:00 p.m that afternoon. Accompanying Hall were Robert Yancey, Jr., president of Ashland Petroleum Company (APC), H.M. Zachem, senior vice president, External Affairs, and J. Dan Lacy vice president, Corporate Communications, AOI. For security reasons Charles J. Luellen president, AOI, flew to Pittsburgh on a separate plane. With him were Richard W. Spears, senior vice president, Human Resources and Law; and metallurgist Vern Ragle. (See Exhibits 1 and 2 for organizational charts.) During the past three days the circumstances surrounding the spill had gone from bad to worse. Initial reports, which indicated no oil had entered the river, had soon proved false, and a number of discrepancies concerning the construction of the tank were making headlines in the local and national press. As Hall entered the aircraft he reflected on the events that had transpired over the last few days and thought about how he should respond to the issues that would confront him at Floreffe. The news conference would be the first time Hall had spoken publicly on the disaster, and he knew his every word would be intensely scrutinized.

Company Background

Ashland Oil, Inc. with revenues exceeding \$7 billion in FY 1987, was the sixtieth largest company in the country and the nation's largest independent oil refiner. The company employed over 42,000 people worldwide and had refining capacity of 346,000 barrels of oil per day. Key oil supplies came from the Middle East and Nigeria, where Ashland Oil had a long-term production contract. To reduce its dependence on the volatile refining industry, AOI had diversified into other energy-related activities such as petroleum product transportation and marketing; chemicals; coal;

Anne K. Delehunt MBA 1988 prepared this case under the supervision of Professor Kenneth E. Goodpaster as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administration situation.

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engineering and highway construction services; as well as oil and gas exploration and production operations. Oil refining remained the backbone of the business, however, with Ashland Petroleum Company (APC) representing about 30% of sales in 1987. (See Exhibit 3 for sales and profit information of key business units.)

Sales of \$7,189,000,000 in 1987 reflected a modest decline from sales of \$7,283,000,000 in 1986. However, margins and profitability were even more volatile. A severe crude oil margin squeeze in 1987 caused APC's record high operating income of \$252 million in 1986 to drop to only \$10 million. Record profits occurred in 1986 because crude oil prices declined, widening the gap between crude oil and product prices. In 1987, however, the table turned. As APC's refineries and other refineries throughout the industry built product inventories, OPEC returned to its official pricing system, increasing crude oil prices. Unable to pass through the price increases due to its high inventory levels, APC margins suffered serious erosion. In fact, Ashland's average margin on a barrel of oil dropped by \$2.17.

Ashland Oil, Inc. produced a range of petroleum products which it sold primarily to resellers and consumers in the East, South, and Upper Midwest. In addition to its refining business, key business units included: SuperAmerica, a chain of more than 450 combined gasoline and convenience stores; Valvoline, the number three marketer of branded motor oil and related automotive chemicals such as coolants and rust preventatives, and an operator of 100 quick-lube outlets; Ashland Chemical, a growing division in chemical distribution and specialty chemical products; Engineering and Construction Division, whose APAC group, was a leading highway contractor in the South and Southwest; as well as several other coal, oil and gas interests.

The SuperAmerica stores and Valvoline Division represented cornerstones of AOI's strategy, which relied on key distribution channels and specialty products as well as large volume fuel production to provide earnings strength and stability. In addition to its SuperAmerica outlets, Ashland sold gasoline products to over 1,500 other company or dealer-operated outlets. As part of its terminal/distribution infrastructure, Ashland Oil operated the largest private tank barge fleet on the inland waterways and had recently expanded this system by acquiring terminal locations at Cincinnati, Ohio, and Midland, Pennsylvania. At the time of the spill, Ashland operated 32 terminals in nine states. At these terminals the various products resulting from the oil refining process—like diesel fuel—were stored in holding tanks, awaiting further distribution.

Recent Events

Ashland Oil grew from a relatively small \$448 million company in 1965 to a \$9.5 billion conglomerate in 1981, enabling the company to compete more effectively with major oil companies. Growth was achieved primarily through acquisitions under the "wheeling and dealing"¹ guidance of former chief executive Orin Atkins. As one former officer described him, "For a number of years, Atkins was just God around [the] company."² However, some executives felt that Atkins' aggressive acquisition strategy and loose deal-making style strained other corporate resources. As a result, some business units were sold when new management took power in the early 1980s.

Ashland's rapid growth and diversification was not without a few adverse moments in the public eye. Ashland received its first public reprimand in 1975, when the Securities and Exchange Commission (SEC) fined AOI for making \$717,000 in illegal political contributions. Ashland, along with several other companies, was also cited by the Justice Department for rigging construction bids in the Southeast.

¹ "Ashland Just Can't Seem to Leave Its Checkered Past Behind," Zachary Schiller. *Business Week*, October 31, 1988, p. 122.

² *Ibid*, p. 123.

From 1979–1981, senior executives became divided over a series of questionable payments to Middle Eastern middlemen, some of whom were foreign government officials. (The Foreign Corrupt Practices Act barred U.S. firms from bribing foreign officials.) While Ashland wasn't publicly reprimanded, the eventual shake-up changed the management team at Ashland and brought in John Hall as CEO. These difficulties aside, Ashland Oil fended off a takeover bid by the Canadian-based Belzberg family in 1986. The Belzbergs were later charged with violating federal disclosure laws.

As management entered the latter part of the decade, it was optimistic over the core strengths and capabilities of the firm, feeling it was well positioned to deal with the uncertainties and instability inherent in global petroleum and financial markets. It also embarked on a large-scale technology systems program to improve the quality, safety, and efficiency of its operations and renewed its commitment to employee involvement and innovation programs.

The Floreffe Spill

Saturday. Within seconds, storage tank No. 1338 ripped open after being filled to 45 ft. 10⁻¹/₄ inches with diesel fuel at 5:02 p.m., January 2, 1988. Immediately Ashland personnel shut off all pumps, called the National Response Center as required by the Clean Water Act, and turned off all electrical power in the terminal.

In a second call from the Floreffe terminal manager to the National Response Center, at about 7:00 p.m., the agency informed him that the U.S. Coast Guard and the U.S. Environmental Protection Agency (EPA) had also been notified of the accident. By this time, local authorities including the Floreffe fire department, Jefferson Borough police, and various hazardous materials teams had already arrived on the scene.

By late evening, the confusion, darkness, and lack of electrical power made it difficult to assess the full scope of the spill. However, fire officials at the scene eventually discovered that the spilled oil had crossed Ashland property lines onto nearby highway 837 and surrounding wetlands, as well as flowed onto the adjoining property of Duquesne Light Company. Upon entering the utility property, the oil seeped into an open storm sewer, which then carried over 700,000 gallons of oil undetected into the Monongahela River.

Clean-up of the spill began around 9:00 p.m. when the Coast Guard and hazardous materials removal experts stretched booms, absorbent pads, and air filled fire hoses across the river to contain and absorb the oil. Since oil is lighter than water, officials hoped to skim the oil off the river's surface. To help clean-up efforts the Coast Guard closed river traffic on the Monongahela from the spill site to the Lock and Dam No. 2 in Braddock, a few miles downstream. By 10:00 p.m. the West Pennsylvania Water Co. and the West View Water Co., the nearest water companies downstream of the spill, were notified of the accident.

Clean-up efforts were halted later Saturday night due to unusually swift river currents (moving at twice their normal speed), and sub-zero temperatures. To avoid any injuries the Coast Guard recalled clean-up crews from the river until daylight the next morning.

As these activities transpired, AOI management tried to assess the severity of the situation. Bob West, director of Surface Transportation and Facilities at Floreffe, walked down to the dock where oil had been pumped from barges to the storage tanks to determine if any oil had spilled into the river. Shining his flashlight onto the river to detect any sheen that would indicate oil on the surface and checking the aroma in the air, he decided no oil had reached the river. At 6:30 p.m. he communicated this information initially to his boss Bob Kiefer, group vice president, Supply and Transportation for APC. However, unbeknownst to West, oil was pouring into the river at the rate of 250 gallons per minute from a storm drain on the adjacent utility property. In addition, as the oil moved downstream through the series of locks and dams it began emulsifying. By 8:30 Keifer

received a second telephone call from West confirming that oil was definitely in the river. At that time Bob Yancey, Jr., Richard Thomas, then vice president and division counsel of APC, and Roger Schrum, manager of Corporate Media Relations, at corporate headquarters in Ashland, Kentucky were informed of the spill. At headquarters, management began forming a crisis team to fly to Floreffe first thing Sunday morning. The task force included Thomas, Schrum, Bob Keifer, as well as an environmental engineer, a metallurgist, and the project engineer who had constructed the tank.

By 11:00 p.m. Saturday night, Ashland employees living near Pittsburgh had set up a command post at the spill site to delegate action and organize activities. But with the EPA, fire department, Coast Guard, and the Pennsylvania Department of Environmental Resources (DER) as well as other agencies trying to direct activities, the situation was more chaotic than organized.

During the night (around 1:00 a.m.) emergency personnel believed that an undisclosed amount of gasoline had leaked from a pipeline connected to a storage tank near the spill area. Unsure of the amount of gasoline spilled and concerned over the resulting risk of fire and explosion, local emergency personnel evacuated 1,200 people from communities surrounding the Floreffe terminal. The evacuation order was eventually lifted by 12 noon once authorities plugged the leak and closed the sewer drain from which the oil was leaking.

Ashland's Response

Sunday Morning. On the way to Floreffe, the crisis management team asked their pilot to fly over the Floreffe terminal facility so they could get a better view of the spill. Roger Schrum recalled that as the pilot made several passes over the facility, everyone in the plane fell deadly silent:

We could see the spill in the river. We could see the collapsed tank. Our first impression was, "Oh, my God! This is absolutely beyond what we ever dreamed had happened." We thought maybe the tank was still upright, and had just split or something. The tank was ripped open and thrown back a hundred yards from where it had been sitting. (See Exhibit 4 for a picture of the collapsed tank.)

The AOI crisis management team was greeted by police when it arrived at the terminal gates and escorted to the volunteer fire station being used as the command center. According to Schrum:

There were literally hundreds of emergency people all over the place. Some were sleeping; some were doing television interviews; complete bedlam . . . I got ushered into a meeting with the head of Allegheny County's disaster emergency service. I was worried for a while. We had a lot of police around us, and I thought they were going to arrest us or something. Police were literally circling us. Finally, they let us into the terminal. We had one or two hours to understand the nature of the situation before waves of press and politicians began showing up.

About noon, U.S. Senator Arlen Specter arrived from Philadelphia with an entourage of press and cameramen to examine the spill site. Diesel fuel was in pools waist deep. Concerned about safety, Schrum offered to guide Senator Specter on a tour of the facility and discussed what had occurred. Schrum then offered to join the Senator in a meeting with the press following the tour. During the half-hour tour, the Senator met with AOI personnel, the EPA representative, and the Coast Guard representative. Similar situations occurred with Lt. Governor Mark Singel, who flew in by helicopter, and local Congressman Doug Walgren. Meanwhile, AOI employees continued the clean-up effort, siphoning the oil from the retention dike to prevent ground water contamination.

Later that afternoon, the first of an ongoing series of joint news conferences took place. The news conference panel, moderated by a representative of the EPA, included representatives from

AOI and all other participating agencies. These panel-like news conferences continued to be held twice daily over the next several days.

Initially, authorities felt that the residential and commercial water supplies would not be adversely affected since the river intakes were from 16 to 20 feet below the river's surface. With the oil floating on top, it was not expected to enter the water supply system.

2:00 P.M. When John Hall was first informed of the spill at about 9:00 Sunday morning, he knew he had a major environmental problem on his hands. However, he believed the immediate logistical problems could be controlled by on-site AOI personnel. As a result, he decided not to go to the site. Rather, Hall spent early Sunday morning in his office with Charles Luellen keeping in touch with his people at the site via speaker phone, gathering information, and authorizing expenditures to hasten clean-up activities. His immediate goal was to determine an overall company response that would minimize the spill's impact.

At Floreffe, however, the situation continued to worsen. Authorities estimated that the slick was nearly 33 miles long and moving downriver at 10 to 20 miles per hour. Emergency crews continued to place containment booms around the perimeter of the spill to control the floating oil. Vacuum trucks, pumper trucks, and skimming barges stationed offshore attempted to skim the oil off the water as the slick moved downriver. However, as the fuel oil emulsified with water, it flowed past the booms, making containment and clean-up extremely difficult.

Hall soon learned that the Western Pennsylvania Water Co., which supplied part of suburban Pittsburgh, had shut down one of its facilities whose water intake was downriver from the spill. Suddenly the problem took on a whole new dimension: water shortages. To prevent a threat to the water supply of greater Pittsburgh, Hall directed AOI to pay for a temporary pipe to be laid across the affected area to secure fresh water from the Allegheny River. (The Allegheny and Monongahela Rivers merged downriver from the terminal, forming the Ohio River. See Exhibit 5 for map.) To expedite clean-up Hall authorized flying in the Coast Guard Strike Force on TC5A planes. Attention at Floreffe focused more sharply on working with various agencies to offset water shortages.

That evening Hall telephoned Governor Casey of Pennsylvania and Governor Moore of West Virginia to apologize for the situation and to assure them that the company was making every possible effort to improve it.

Monday Morning 6:30 A.M. Hall arrived at his office a half hour earlier than usual. Believing the crisis management team at the terminal and other Ashland management at headquarters were controlling problems associated with the spill, Hall took advantage of his three-hour Monday morning meeting with his top executives to discuss other business issues in addition to the spill. However, by mid-morning the situation had seriously escalated.

At a Monday morning news conference at the terminal, the national press began increasing its coverage and investigation of the spill. The media expanded its original story from the details of the collapsed tank and began investigating the potential water crisis and issues related to the tank construction, quality, and testing. The press began quizzing AOI representatives on such matters as the age of the tank, whether it had been properly tested before it was filled, and whether the company had received a proper permit allowing its construction.

Unable to respond immediately, Ashland representatives began investigating these issues. Sources at Floreffe indicated that Ashland had indeed followed proper procedures. At the time, the project engineer and his staff produced a document at the spill site as proof of a permit for the tank. Other crew members stated that the tank was newly constructed in 1986 and that it had been tested before it was filled.

By early afternoon, however, as the press' questions continued, it became clear to the media, Ashland management, and Hall that the information AOI provided was inaccurate. One member of the press contacted the local Fire Marshal's office where a written permit would have been filed. No permit or request for a permit was on file for the tank in question. Further investigation revealed that the documentation provided by Ashland personnel was actually a statement from a different agency acknowledging that construction was underway.

Another member of the press, armed with a copy of American Petroleum Industry (API) standard 650 (the industry guideline for proper testing of oil tanks) began asking whether the tank had been properly tested by the hydrostatic (water) method specified by API 650. (Hydrostatic testing was a process that required new tanks be filled with water in order to settle their foundations and test their welds for strength.)

2:00 P.M. As Hall dug deeper into the situation discrepancies became greater. He found that the tank had not been hydrostatically tested as directed by API 650, but was tested by an alternative method. Oil was sprayed on the welds inside the tank and then vacuum suction was applied from the outside to determine if any oil could be pulled through possible leaks in the welds. Additionally, the tank had been filled with only three feet of water to settle the foundation. Apparently, this alternative testing method, while specified by API 650, was intended for desolate locations where water was scarce.

As to the age of the tank, Hall learned that it was indeed newly constructed, but that it had been rebuilt from 40-year old steel, which was moved from a tank at Cleveland terminal. Reconstructing tanks from used steel was not uncommon within the industry, since steel did not deteriorate with age, but to Hall this had the ring of a bad decision.

As Hall forced a deeper investigation into the issues the press was probing, he continued to uncover "bad facts." Apparently, employees closely involved with construction of the collapsed tank had wrongly communicated to management that AOI had received a construction permit for the tank. What became clear was that while an application for a permit had been made, construction started based on verbal communication only. Furthermore, the permit application did not mention that the tank would be constructed of used steel.

Meanwhile, 15,000 residents of Pittsburgh were without water and authorities asked the remainder of the city to ration water supplies. That evening, Hall watched TV network news anchors describe to the nation the effects of Ashland's oil spill.

The print press also continued to push the tank construction issue. News stories reported discrepancies between what AOI was claiming as fact and what other sources were claiming as fact. For example:

Ashland spokesmen, in discussing the accident made no mention of the tank's age until asked by *The Pittsburgh Press*. . . . "The tank's supposed to be brand new. That's what we were told . . . [on] Sunday," [claimed Jacobs, Allegheny County Fire Marshal, in a live interview] . . . Jacobs [added that] the age of the tank was likely to become a factor in a joint local, state and federal investigation into what caused the tank to burst Saturday night.³

As the climate intensified, the growing sentiment among Ashland's crisis management team was that Hall needed to come to Floreffe.

³ "Failed Storage Tank Was Used in Ohio," Dennis B. Roddy, *The Pittsburgh Press*, January 4, 1988.

Later that night Hall himself began thinking he should go to the site to survey the situation, see how things were going, and be visible there:

By this time we had part of the city of Pittsburgh with no water. We've got everybody downriver wondering whether they will have water or not. We don't know if it will cause the water problems for Ashland, Kentucky next week. We have the press all over us, we don't have a permit for the tank. It's old steel. What's the long term environmental impact going to be? Who's going to pay for all this? What's the financial impact on the company going to be? All of this is brewing.

Repercussions from the financial community also concerned Hall. Monday morning, AOI stock fell one point to 57-³/₄ "amid nervous speculation about Ashland's financial liability resulting from . . . [the] massive oil spill."⁴ News sources quoted William Hyler of Oppenheimer and Co. as saying, "Whenever you hear about a spill, investors get a little scared."⁵ To protect against speculators taking advantage of the adverse circumstances and buying undervalued AOI stock, management initiated an immediate buy-back strategy through an existing board resolution.

To get an outside impression of the situation, that night Hall telephoned a close personal friend, a fellow CEO who lived in Pittsburgh. After asking him what he was hearing about the accident, Hall's friend replied, "It's pretty damn bad . . . Ashland is not getting its story through." That conversation convinced Hall to go to Pittsburgh.

Candor vs. Liability

Monday Evening—Pittsburgh. Members of the crisis management team met with AOI's outside legal counsel in Pittsburgh. They knew that legal action would result from the spill, but tensions heightened amid growing concern that communicating inaccurate information—although unknowingly—could have legal implications as well. To minimize future litigation, AOI lawyers advised caution and prudence in responses to future questions by the press. They advised Ashland to respond to inquiries by replying that the company was trying to investigate the matter as quickly as possible and that the firm would cooperate with all authorities.

Tuesday Morning—Ashland. Hall announced he was going to make a public statement at the accident site. Dan Lacy initially made arrangements to hold the news conference at 11:00 a.m. at the Pittsburgh press club. However, Lacy later learned that Governor Casey planned to give his assessment of the accident in another news conference in downtown Pittsburgh at noon. Knowing that competing news conferences would not work in AOI's favor, Lacy postponed the news conference until 2:00 p.m.

Drafting the company's statement became the next challenge. Many people contributed ideas and concerns for the statement including Hall, Lacy, Luellen, Yancey, and Spears. As Lacy related:

That statement was very important on a lot of different levels. Obviously there were legal ramifications but additionally we knew that this was the first time the Boss had spoken directly. So what he said was critical. The tone was critical and we felt the statement would position all future actions for the company. We also wanted it to come across as factual as possible. We knew it would be the basis for a lot of responses to press inquiries during the next few days. So it was important from a communications point of view as well.

⁴ Reuters New Service, January 4, 1988.

⁵ Ibid.

When Spears learned from Luellen that the tank had been built without a written permit, he knew that whether or not it turned out to be a violation of law, the press and the public would interpret it as such. As a result, Spears believed Hall needed to address the issue. On the other hand, Spears was keenly aware that an openly admmissive statement by Hall could have far-reaching legal implications.

Paramount on Spears' mind was the risk of jeopardizing the attorney-client privilege. The privilege protected clients, and of course lawyers, from revealing conversations, documents or other forms of communication from open courtroom proceedings in both civil and criminal cases. Trial and practice lawyers zealously guarded the privilege. Once an issue, which might be privileged, was revealed, every matter associated with it was open to inquiry. If Hall, as CEO and spokesman for the company, publicly admitted any wrongdoing, including whether AOI had a permit, he could open the issue to further public scrutiny and possibly risk the privilege. The client privilege in this situation applied to AOI as a corporation as well as to individuals in the company.

Spears was also aware of other issues that might hover over the company. Class action law suits were likely, as well as possible criminal exposure. The increasingly nasty situation regarding the lack of a permit and reconstruction of the tank out of 40-year-old steel could also leave individuals open to criminal indictment. Ashland's legal staff was deeply concerned that whatever was said in the press conference would have legal—if not criminal—repercussions.

Tuesday 10:00—The Trip to Pittsburgh

After spending the morning discussing latest developments with staff, Hall drafted a public statement for the afternoon news conference. But, from the time Hall wrote the draft until he addressed the media, the statement was in perpetual change. As Lacy recalled,

I remember taking with me scotch tape, scissors, and a black marker. On the flight up to Pittsburgh, on the way to the terminal so Mr. Hall could survey the damage and speak to our team, and in the car on the way to the press conference, I was cutting and pasting and changing it.

Throughout the flight, the pros and cons of the various responses to issues resulting from the spill were debated. To prepare Hall for any questions the press might ask, Yancey and Lacy frequently played devil's advocates, ferreting out any angles they had not considered.

Once everyone reached Floreffe, they received word that Governor Casey's news conference had been postponed until 2:00 p.m. In response, Lacy rescheduled Hall's press conference for 4:00 p.m.

As Hall toured the terminal he expressed genuine thanks to everyone who had been working 18-hour days in cold, wet, and miserable conditions to clean up the spill. During the entire week temperatures never reached above ten degrees and the wind chill factor frequently pushed temperatures below zero. As the Ashland team surveyed the terminal, they met with EPA officials from Philadelphia and various emergency clean-up crews. They attempted to get current on new developments, particularly the water shortages, and to demonstrate the company's responsiveness to do whatever they could to improve the situation. One representative from a local agency informed Luellen that in the next day or so they would need towboats and barges to go upriver to bring fresh water to communities whose water supplies were in danger of contamination. Concerned that time was of the essence, Luellen ordered the vessels to be sent immediately.

Climbing into the car that would take him and his group to the press conference, Hall pondered the situation confronting him. Regardless of which course he took in his statement—publicly admitting "wrongdoing" or being somewhat circumspect on issues like the permit and the

used steel—he was in for tough questioning by the press. Furthermore, he would undoubtedly be queried on the wisdom of the actions the company had taken so far. He himself was unsure about this. Should others who had been more closely associated with the clean-up also participate in the press conference? The trip from the terminal to the press conference site was short, and Hall knew he had to resolve his mind finally on these points before he met reporters.

Exhibit 1 Ashland Oil, Inc. January 2, 1988

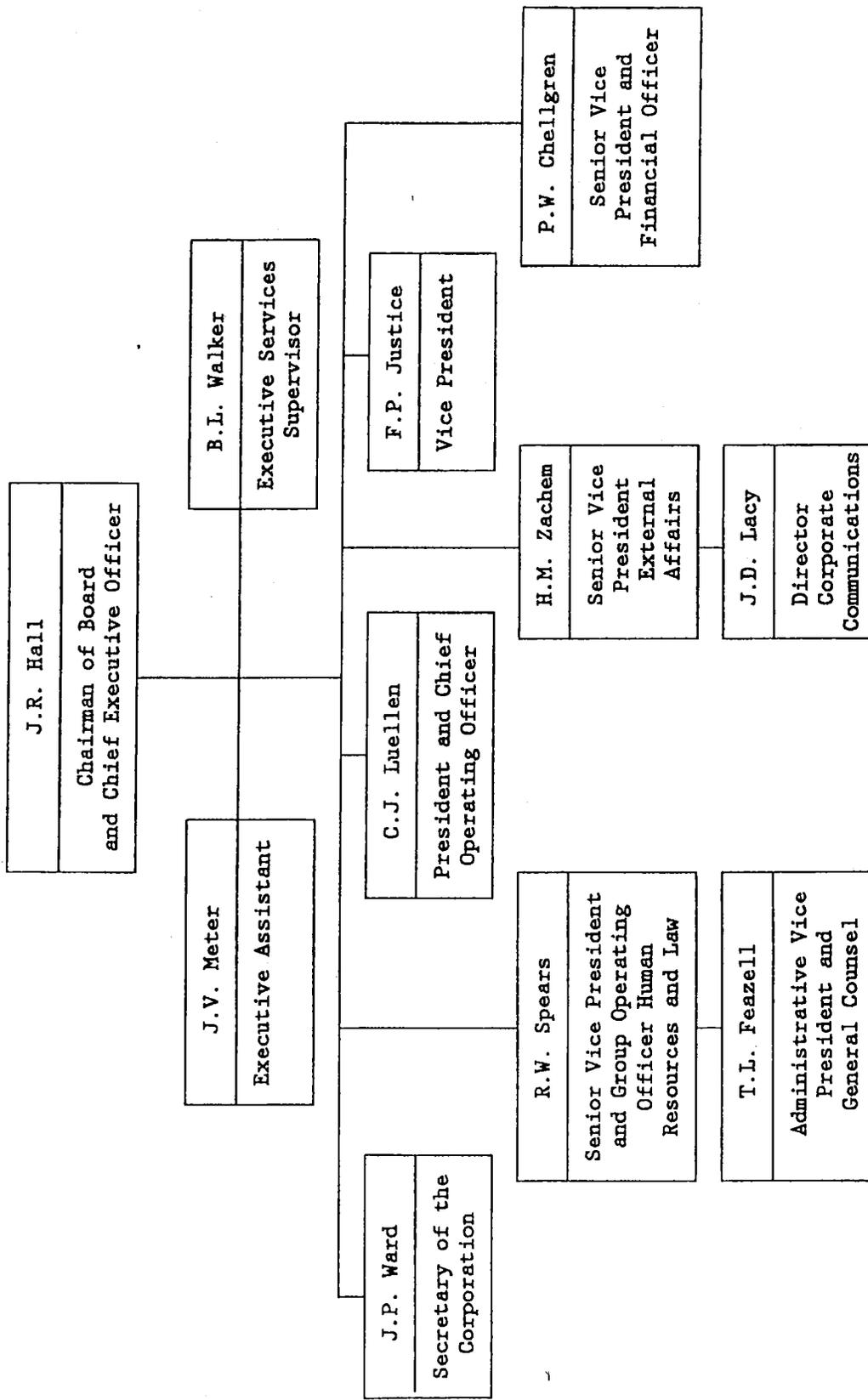


Exhibit 2 Ashland Petroleum Company, January 2, 1988

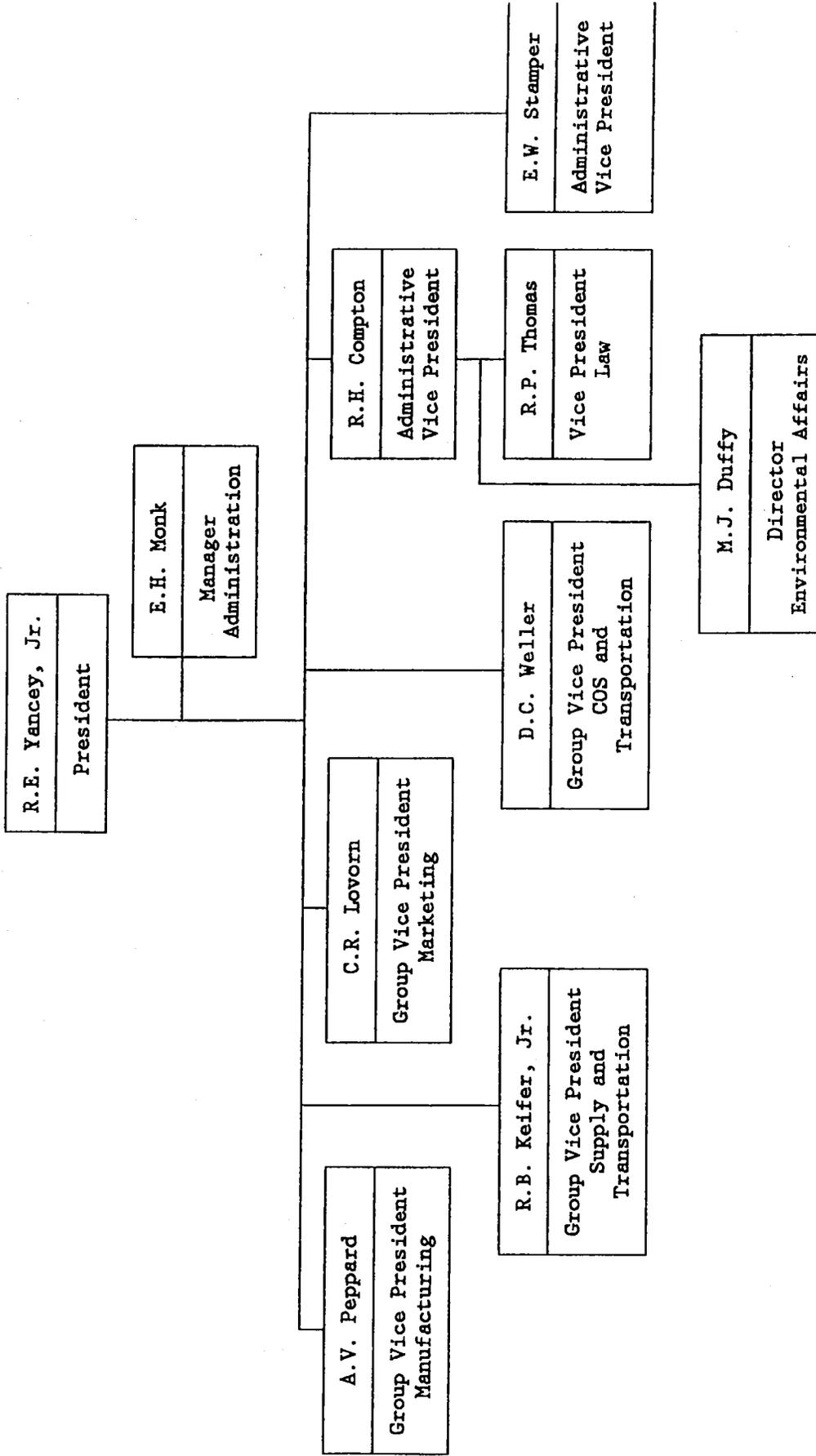


Exhibit 3 Ashland Oil, Inc.—Key Business Units (FY revenue and income, \$000,000s)

	<u>1987</u>	<u>1986</u>
Petroleum		
Sales and operating revenues	\$2,919	\$3,366
Operating income	10	252
SuperAmerica	1,364	1,365
	16	37
Valvoline	552	529
	48	37
Chemical	1,643	1,477
	90	71
Coal	199	190
	31	14
Engineer construction	1,317	1,185
	72	86
Exploration	248	232
	1	(23)
Intersegment sales		
Ashland Petroleum	(813)	(851)
Exploration	(213)	(184)
Other	(27)	(26)

Source: 1987 company annual report

Exhibit 4 Collapsed Storage Tank No. 1338



Exhibit 5 Map of Spill Area

