

Corporate Environmental
Performance Report
2004

CEO message

Genentech’s aim is to improve the state of human health. We discover, develop, manufacture, and commercialize medicines that improve and extend people’s lives. Since our founding in 1976, we have brought to market therapies for a range of unmet medical needs, such as colorectal cancer, lung cancer, breast cancer, lymphoma, heart attack, asthma and psoriasis. And we have many more promising drugs in our pipeline.

So why should a company dedicated to advancing medicine care about environmental protection?

In answer, it is precisely because of Genentech’s core business purpose of improving health. There are immeasurable connections between human health and the environment, many of which researchers are investigating and trying to understand more thoroughly. With the two so closely linked, we see environmental protection as one more way that Genentech can help improve and extend lives.

In this report, Genentech is setting a challenge for itself – we are publicly committing to specific environmental goals. As with all of our corporate goals, I am confident that we will hit these targets with the support of Genentech’s many talented and committed employees.

We recognize that our environmental success depends on the contributions and ideas of a broad range of stakeholders. For our external stakeholders, please share your thoughts with us in the form at the end of this report.



Arthur D. Levinson, Ph. D.
Chairman and CEO

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environmental, health and safety (ehs) protection policy statement

Genentech is committed to conducting our business in a legal, ethical and environmentally responsible manner, and to be a leader in protecting the health and safety of our employees. Consistent with the company's mission to protect and improve the lives of our patients and employees and to improve the world around us, Genentech commits to the following policy objectives:

Workplace Safety: We conduct our business operations in a manner that fosters a safe and healthy work environment.

Environmental Protection: We employ prudent business practices to continuously improve our responsible and efficient use of natural resources, reduce our reliance on hazardous materials, and minimize the creation of waste.

Integration into Business Decisions: We commit to identifying, minimizing or eliminating risks by integrating EHS considerations into key business processes of the company.

Compliance: We conduct our business while efficiently and reliably complying with EHS regulations. We collaborate with legislative and regulatory authorities to assure narrow interests do not obscure EHS principles.

Emergency Preparedness: We implement and practice effective contingency plans, aligning with community contingency planning efforts.

Supply Chain Management: We encourage our suppliers, contractors, and partners to comply with all EHS regulations and minimize the use of toxic chemicals and the generation of hazardous wastes.

Industry Responsibility: We set high research and production standards to assure that biological agents do not adversely affect human health or the environment.

Continuous Improvement: We are committed to continuous improvement in our EHS record. We monitor, review and evaluate our EHS program on an ongoing basis and we will report aspects of our progress.

Employees: Our employees accept accountability for conforming to, and making decisions in line with, this policy.

introduction

Welcome to Genentech's first environmental performance report. Whether you are a current or potential employee, an investor, a neighbor, a government official, or an interested citizen, I hope that you find this report informative and valuable.

If you are not familiar with Genentech, or if you have not closely followed the company's developments recently, you can find an overview of the company in the *Company Profile* section of this report. For more detailed information, visit our corporate website, www.gene.com.

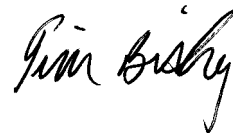
As a company dedicated to the improvement of human health, it only makes sense that Genentech would be conscientious about minimizing the environmental impact of our operations. Now that Genentech is a recognized leader in the biotherapeutics industry, we feel that we have an important role to play in further developing and reporting on our environmental performance. Accordingly, we have staked out two areas of focus for our environmental efforts going forward: water use and greenhouse gas emissions. You can read about why we have chosen these particular areas of focus and our goals and plans for each focus area in the *Environmental Commitment* section of the report.

Genentech has always recognized that its success depends upon the talent, creativity, and drive of its employees. That is why the company has taken so many measures to attract top talent and create an award-winning workplace that actively facilitates the free flow of ideas between all levels of the organization. In *Employee Involvement*, you can learn about the innovative relationship between Genentech's grassroots Green Genes Team and the management-level Sustainability Steering Committee.

Genentech is in the midst of a period of great growth as we continue to bring new biotherapeutics to market and find new indications for our existing therapies. We intend for this growth to be sustainable. We commit to reporting on the impact of our growth as well as other environmental metrics in future reports, as described in *Future Reporting*.

If you are interested in a quantitative assessment of our environmental impact and performance, we have provided data against a range of metrics, both for our company as a whole, and each of our production facilities in particular, in *Environmental Data*.

In closing, I realize that this report offers a limited picture of Genentech's environmental performance. If you have any questions or comments, please feel free to use the feedback form in *Invitation to Comment* to let me know what is important to you.



Tim Bishop beside Genentech's Building 32, the first in a complex of new office buildings that incorporate many innovative environmental design features.

company overview

Genentech, the founder of the biotechnology industry, is a company with a 29-year track record of delivering on the promise of biotechnology. Today, Genentech is among the world's leading biotechnology companies, with multiple protein-based products on the market for serious or life-threatening medical conditions and over 30 projects in the pipeline. With its strength in all areas of the drug development process — from research and development to manufacturing and commercialization — Genentech continues to transform the possibilities of biotechnology into improved realities for patients.

About Our Plants

Genentech's plants are located in the United States and Spain, as follows:

South San Francisco, California, (U.S.)

Since its founding in 1976, Genentech has made its headquarters in South San Francisco, California. Starting with one rented building and two staff members, the company's South San Francisco site has grown to 48 buildings and approximately 5,700 employees. Today, the South San Francisco site is home to a research center, manufacturing operations and various business functions.

Vacaville, California, (U.S.)

Genentech's Vacaville, California site is located on 100 acres in Solano County, approximately 50 miles northeast of San Francisco. Acquired in 1994, it was first licensed

to produce a biologic in 2000. With 720 employees, the site houses manufacturing operations as well as quality and administrative services. Currently, the Vacaville facility is undergoing a major expansion. When it is completed, the Vacaville operation will be the largest biotechnology manufacturing plant of its kind in the world.

Porriño, Spain

Located in the Pontevedra province of Galicia, in Spain's northwest corner, Genentech's Porriño facility was acquired in 2000. It is the first Genentech site outside the United States and the headquarters of Genentech España, Genentech's wholly-owned subsidiary company. Today, the facility manufactures Avastin™ (bevacizumab) for use in clinical trials and houses approximately 200 employees.

About Our Products

For the latest information about Genentech's products, please see our website at www.gene.com.

Financial Information

For the latest financial information about Genentech, please see our website at www.gene.com.



Genentech's environmental commitment

Genentech has grown rapidly over the past few years. Some of these changes include new focus areas for research, new product lines, a growing employee base, and expansions to our manufacturing capacity. Looking forward, the company is expecting to undergo even more changes and growth in the years ahead. You can read about our growth plans (Horizon 2010 Goals) on the company website (www.gene.com) and in our annual report.

At the same time, the world in which Genentech operates is evolving. Northern California, where we are headquartered, continues to experience enormous population growth and the environmental pressures associated with this growth. The science of biotechnology is evolving, as is public opinion and understanding. And governments around the world are crafting policies to address a wave of environmental issues, such as climate change.

Genentech's Sustainability Steering Committee examined these upcoming changes to our business and the world around us and asked some key questions: How will environmental developments affect the way that Genentech does business? And how will changes to Genentech's operations affect the natural world?

The result is that Genentech is committed to making appropriate efforts towards environmental sustainability in two major focus areas:

- Water use
- Greenhouse gas emissions

We believe that these commitments will help Genentech meet its business objectives while protecting the environment.

What About Toxics?

You might be surprised to see that Genentech's environmental commitments do not include a goal around toxics – a standard for most pharmaceutical companies. Why is that?

The fact is that biotechnology uses a very different – and much cleaner -- production method than most traditional pharmaceutical manufacturing. While traditional pharmaceutical manufacturing often involves toxins and solvents to make synthetic chemical compounds, biotechnology manufacturing uses micro-organisms, clean water, and nutrient media – similar to what you would find at a brewery -- to grow medicinal proteins.

For certain product lines, Genentech does use a material known as TMAC (tetramethylammonium chloride) to extract medicinal proteins out of the water at the end of the production process. TMAC is considered toxic in the State of California; other jurisdictions do not consider TMAC to be hazardous.

In California, TMAC is captured and treated at a special facility to render the material non-toxic after it is used. Genentech is exploring ways to eliminate the use of this material entirely from future production processes.

For more information on Genentech's TMAC usage, see the data table at the end of this report.

water

Water is the lifeblood of Genentech's manufacturing operations. We depend upon a bountiful supply of high-quality water to ensure that our manufacturing cells thrive and produce the proteins used in our medicines. Additionally, we use water to keep our manufacturing facilities clean and sterile and to wash out the manufacturing lines between runs of different products. Overall, manufacturing activities account for roughly 75 percent of the company's water consumption.

Water is critical to other Genentech operations as well. Water is used for experiments and assays in our research labs and quality control labs. Water-based cooling towers help maintain proper temperatures in our offices. Other water-utilizing activities include our cafeterias, sanitary facilities, and landscape irrigation.

Genentech is the largest industrial user of water in South San Francisco and the second-largest in Vacaville. In the years ahead, we expect our water use to increase as we ramp up production and build new labs and offices.

With the growth that we are facing, we realize that decreasing our total water use is not realistic. Therefore, we have set a goal of making our water use more efficient. Because production is our major driver for water use, we will measure this efficiency in terms of production volume:

Water Goal

Improve water efficiency* by 10% by the year 2010, compared to 2004.

** Water efficiency is measured as total water use divided by units of marketed product produced.*

This goal supports the "Environmental Protection" commitment in Genentech's Environmental, Health & Safety Protection Policy. For more information about this policy and commitment, see our Policy Statement at the beginning of this report.



water

How Will Genentech Meet This Goal?

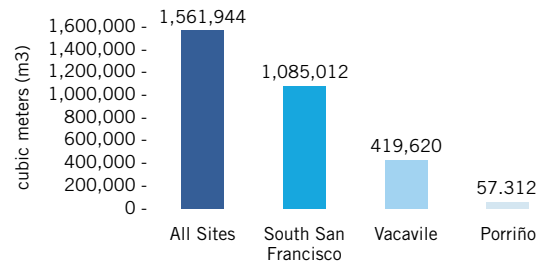
Genentech plans to meet this goal by improving water use in our manufacturing processes. Proposed projects include:

- Reducing the percentage of water that is rejected during the reverse osmosis (RO) purification process
- Recycling the RO reject water
- Improving water efficiency on the manufacturing floor

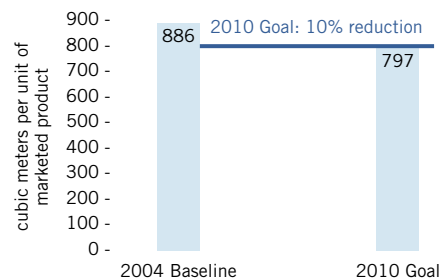
Additionally, because offices and labs represent a significant percentage of Genentech's overall water use, and because our office and lab space will be expanding substantially in the near term, we recognize that water-conserving building design will play an important role in meeting the water efficiency goal.

Water Graphs

2004 Water Use by Site



Genentech's Goal for Water Use per Unit of Marketed Product 2004 to 2010



water

Conserving Drinking Water in Vacaville

Genentech's Vacaville plant in Solano County is nestled between the Napa wine country and the agricultural Central Valley of California. Water resources in the region must be used in balance between the needs of a rapidly growing population and the agricultural operations that are integral to the region's economy.

Part of the solution to meeting the region's water needs is to provide the right grade of water for the right purposes. Genentech's Vacaville plant recognized this regional need. In 2000, the plant switched from high-quality drinking water to untreated water for irrigation and cooling purposes, which represent about 10 percent of the plant's overall water consumption. This change has allowed the region's water supplier to provide more drinking water to people who really need it. Since 2000, it is estimated that Genentech's Vacaville plant has saved over 62 million gallons of drinking water this way.

Protecting Natural Waters in Spain

Demonstrating our commitment to global environmental responsibility through local action, Genentech's newest manufacturing facility in Porriño, Spain incorporates a wastewater treatment plant that far exceeds local regulatory requirements. We included the treatment plant to minimize the adverse impacts of wastewater releases on the local river.



The Vacaville facility's cooling towers use lower-grade water, which means that high-grade drinking water is more available to the people who really need it.

greenhouse gases

Greenhouse gases have recently received a great deal of public attention. Although there is still debate on the matter in the political sphere, professional climatologists now overwhelmingly agree that climate change is occurring and is the result of man-made greenhouse gas emissions largely from fossil fuel combustion. Around the world, the majority of industrialized countries have signed the Kyoto Protocol international treaty on greenhouse gas reductions. Even as the political debate around greenhouse gases continues in the United States, Genentech recognizes the value of taking early action to prevent long-term harm.

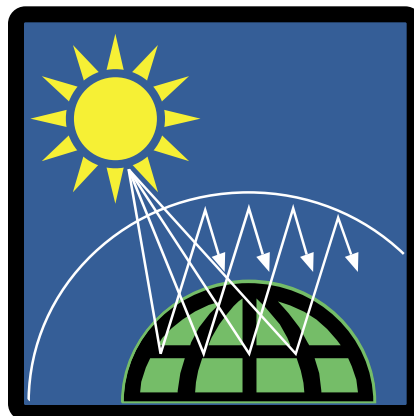
Energy use accounts for more than three-quarters of Genentech's total greenhouse gas emissions. The energy-related greenhouse gases come from three sources: electricity purchased from power suppliers, natural gas burned on campus for heating, and diesel fuel in on-site emergency generators.

Most of the remainder of the company's greenhouse gas emissions are related to transportation – business travel, employee commuting, and on-site vehicle fleets. A small proportion of Genentech's greenhouse gas emissions result from the use of HFC (hydroflourocarbon) gases in refrigerant and air conditioning systems.

About 60 percent of Genentech's energy-related greenhouse gases are associated with manufacturing operations. Our manufacturing processes have certain unique needs that drive energy consumption. For instance, fermentation and cell culture process water must be heated to an ideal temperature to ensure that the manufacturing cells thrive and produce the desired medicinal proteins. Also, in order to ensure the sterility of our manufacturing areas, the air pressure in manufacturing areas must be kept greater than ambient air pressure. Both of these special needs drive up the company's energy consumption.

The remaining 40 percent of Genentech's energy-related greenhouse gases are associated with non-manufacturing uses such as labs and offices. In labs, one of the main drivers of energy consumption is ventilation, which must run at a high rate in order to ensure the safety of our lab employees. In offices, lighting and climate control are the main drivers of energy use.

Over the next several years, Genentech will be significantly increasing production and constructing new offices and labs, all of which will increase the company's energy use. As with water use, we recognize that decreasing our total energy use is not feasible given this expected growth. Consequently, we have set a goal of making our energy use more efficient. Because production is our major driver for energy use, we will measure this efficiency in terms of production volume.



greenhouse gases

Greenhouse Gas Goal

Improve energy efficiency* by 10% by the year 2010, compared to 2004.

** Energy efficiency is measured as total weight of energy-related greenhouse gases (measured in tons CO₂ equivalents) divided by units of marketed product produced.*

This goal supports the “Environmental Protection” commitment in Genentech’s Environmental, Health & Safety Protection Policy. For more information about this policy and commitment, see our Policy Statement at the beginning of this report.

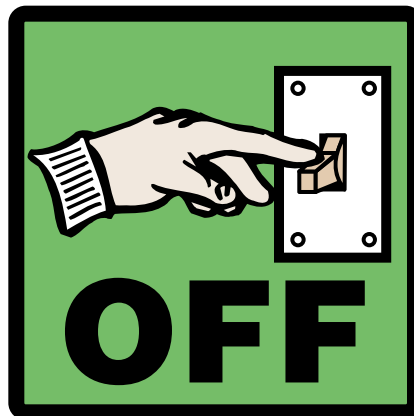
How Will Genentech Meet This Goal?

Manufacturing is a major driver for our energy use. Over time, Genentech has learned ways to optimize our manufacturing processes and plants. Our current Vacaville manufacturing plant is about twice as energy-efficient as our older South San Francisco plant, and the new expansion at our Vacaville plant will incorporate the latest state-of-the-art designs to further optimize production.

Given the new buildings that the company is planning to construct over the next few years, we recognize that energy-efficient building design will be crucial to our success in meeting our greenhouse gas goal. Therefore, the company is committing to a very high standard of energy performance for new buildings. Design conservation features include optimized building orientation and shape, high-efficiency lighting and climate control systems, and energy-efficient lab ventilation.

Facility operations are equally important to achieving the greenhouse gas goal. Specific measures slated include conditioning building controls and equipment to ensure optimal functioning, streamlining hours of operation for climate control systems, and raising employee awareness about basic conservation practices.

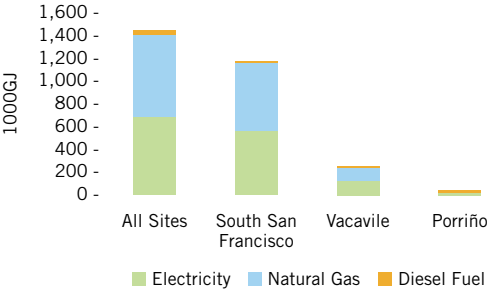
Retrofits to older buildings will also support our greenhouse gas goal, particularly in Genentech’s South San Francisco campus. Retrofit plans include replacing old lighting fixtures with more energy-efficient models and modernizing ventilation systems.



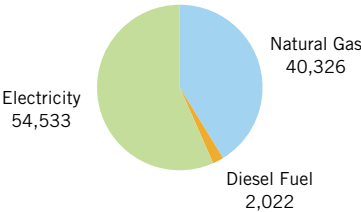
greenhouse gases

Greenhouse Gas Graphs

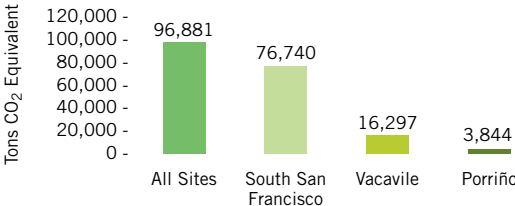
2004 Direct Energy Use by Site



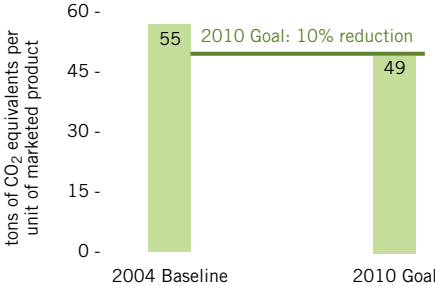
Energy Related GHG Emissions by Source (Tons CO₂ Equivalents)



2004 GHG Emissions per Site



Genentech's Goal for GHG Emissions per Unit of Marketed Product 2004 to 2010



greenhouse gases

Green Building Design in South San Francisco

Genentech included environmental sustainability as an important feature in the design of a new 125,000-square-foot office building that includes several environmentally friendly features, such as energy-efficient glass, the use of wall partitions, carpet and paving materials with recycled content, and abundant natural light. This building has since won an ENERGY STAR® award from the Environmental Protection Agency for superior energy performance. This was the first in a three-building complex that will include the above mentioned environmental features.



Employee Commuting in South San Francisco

In November 2004, Genentech qualified for the third annual list of "The Bay Area's Best Workplaces for Commuters," which spotlights employers that are committed to reducing traffic and air pollution and improving quality of life for commuters. The 139 Bay Area organizations on the list offer their employees key commuting benefits, such as employer-provided transit passes, vanpool subsidies, bike commuter facilities, onsite day care, and telework programs. The list was compiled by the Bay Area's Best Workplaces for Commuters Coalition and the U.S. Environmental Protection Agency.

Reducing Solvent Emissions in South San Francisco

To ensure the quality of our products, Genentech must maintain extremely clean manufacturing areas. One of our practices is to wipe down materials with alcohol moistened wipes when bringing them from the outside into a manufacturing area. This results in waste wipes that emit volatile organic compounds (VOCs) as the alcohol evaporates. In order to reduce these solvent emissions, in 2004 Genentech's South San Francisco facility began sending these non-hazardous waste wipes to a special facility. As an added benefit, the wipes are burned to generate energy..



biotechnology stewardship

The biotechnology industry was born in 1976, when venture capitalist Bob Swanson and biochemist Herb Boyer met to discuss the potential for a remarkable new field of science known as recombinant DNA technology. Early discussions soon turned to a business plan, and eventually the two men founded the world's first biotechnology company, Genentech.

During the last several decades, biotechnology has evolved into a diverse industry, with over 1,400 biotechnology companies in the United States using the new technology to develop a variety of different products. The environmental issues for biotherapeutics companies like Genentech are different from those of bioagricultural and other kinds of biotechnology companies. Continuing in our role as a pioneer in the industry, we are committed to playing a leadership role in identifying the environmental issues most relevant to our operations and addressing them constructively.

As we work to fulfill our mission to deliver biotherapeutic products that address significant unmet medical needs, we are committed to implement the measures necessary to ensure that we continue to operate our facilities in a safe and environmentally responsible manner. Our goal is not only to monitor and assure the integrity of our current safety and environmental risk controls, but to identify and implement measures to continually improve them. We have a program to assess proposed changes in operations and technologies prior to introducing them into our operations in order to minimize new safety or environmental risks.



employee involvement

Genentech's success has always depended on the talents and commitment of our employees. This principle holds true in the area of environmental protection as well.

To mobilize employees at all levels of the organization, Genentech has established two different groups: the management-level Sustainability Steering Committee and the grassroots Green Genes Team. These two groups work synergistically to drive environmental innovation at the company. Here is how it works:

Case Study – Buy-Recycled

In late 2003, the Green Genes Team voted on its top project priorities; one of these priorities was a switch to 30 percent recycled-content paper as the norm for copiers and printers.

The Green Genes Team evaluated the environmental benefits of recycled-content paper versus virgin paper. Then they searched for a low-cost provider and compared the costs of recycled-content paper against Genentech's standard paper at the time; to their surprise, the recycled-content paper was actually cheaper. The Green Genes Team pilot-tested the recycled-content paper on a number of copiers and printers, soliciting input from the users. Finally, the Green Genes Team brought the proposal to the Sustainability Steering Committee.

The Sustainability Steering Committee approved the proposal, and the Green Genes Team immediately rolled it out across the company. It is estimated that this switch to recycled paper saves 1,700 trees, 1.2 million gallons of water, and 120 tons of greenhouse gases each year.

In fact, this project was so successful that the company has now switched to many other recycled-content office products – one-quarter of the company's standard office supplies now have recycled content.

Sustainability Steering Committee

The Sustainability Steering Committee is a management-level team that plans and coordinates Genentech's environmental sustainability strategy. This Committee includes the heads of Engineering, Facilities, Human Resources, Environment, Health, Safety, Corporate Relations, and Legal. Among other responsibilities, the Committee establishes Genentech's environmental sustainability plan, recommends corporate environmental goals to Genentech's Executive Committee, monitors progress towards these goals, and selects Green Genes Team project proposals for implementation.

Green Genes Team

The Green Genes Team is a grassroots, science-based effort that brings employees together to protect the environment. The group partners with upper management, based on shared values and common interests to create innovative, industry-leading business policies and practices that seek to minimize and eliminate Genentech's environmental impact whenever possible. Since its founding in late 2003, the South San Francisco Green Genes Team has grown to over 200 volunteer members, and a Green Genes chapter has been founded at Genentech's Vacaville plant.

employee involvement

Interview with Environmental Leaders at Genentech

Clint Holdsworth is a charter member of Genentech’s Sustainability Steering Committee. He helped develop Genentech’s first-ever Sustainability Plan and has worked on such diverse issues as employee commuting, recycling, and virtual business travel. Clint is the Director of Facilities Services at Genentech’s Vacaville plant.

Rene Borbon was Genentech’s 2004 Green Employee of the Year. He has led an overhaul of the recycling program at Genentech’s South San Francisco plant that doubled recycling rates at the facility. He also introduced a successful buy-recycled program for office supplies (see the case study above). Rene is Project Coordinator in the Facilities Services Department of Genentech’s South San Francisco facility.

Below follow excerpts from a recent interview with Clint and Rene:

Q: How do the Sustainability Steering Committee and the Green Genes Team reflect Genentech’s unique culture?

Clint: Genentech is a great place where people can see a need and fill it. Over the years, I’ve seen people take initiative to fill opportunities that they saw. In terms of culture, that’s what these groups reflect.

Rene: I think what Clint is describing is a sense of entrepreneurship. The company doesn’t seem to have a lot of hard and fast rules, so there is room for people to take initiative and be innovative. This wasn’t a directive that came down from the highest levels of management.

Clint: Exactly. Many of these great ideas are largely the result of innovation on the part of employees, and they’re also a manifestation of the passion employees have for certain issues, like environmental sustainability.

Q: How do these two groups help Genentech with its core business objectives?

Rene: Looking at Genentech’s mission statement, we commit ourselves to high standards of integrity and operational excellence. I think that sustainability touches on several of those. Integrity means to me that we operate in a manner that does not impact the environment and that benefits the environment where possible. I think recycling is consistent with operational excellence in general.

Clint: While the environmental benefits of recycling are pretty clear, there have also been some economic and bottom-line benefits. For example, as we were looking at recycling, we did a more holistic analysis of waste streams overall. Even in cases when we were not able to recycle, we found ways to manage those waste streams in a more efficient and cost-effective way.



Clint Holdsworth in front of construction for the expanded production facility at the Vacaville plant. The water system at this facility is being designed with conservation in mind and is expected to save 20 million gallons per year.

employee involvement

Q: What advice would you have for others who are interested in environmental protection at work?

Clint: In no particular order:

- Don't wait for someone else to do it.
- Don't wait to be asked or invited.
- No good idea is too small or too big to consider.
- Be patient and reasonable. We might not have time or bandwidth to pursue all ideas, even if they appear to have merit.
- It's not enough to say "Here is a great idea." You have to also say "I've thought it through, and here are the pros, the cons, the business case, that we'll have to factor into our decision." A champion or an advocate has to provide more than just a concept.

Rene: I've seen a lot of bright people with ideas, but they weren't able to show a plan or financial model.

Clint: Exactly. They need to be willing to put time and effort into their idea.

Q: Any closing thoughts?

Clint: There's been a heightened effort within Genentech in the past five years to get employees to understand their role in our quality and safety programs, and now our environmental programs. In many ways it gets down to individual responsibility.

Rene: We want the employees on the front line to be thinking about these issues -- not just management.

Clint: Right, for safety, quality and environmental protection, employees should be asking "How do we each as individuals contribute to Genentech's success in each of these areas?"



Rene Borbon at a new cafeteria recycling center in Genentech's South San Francisco facility. Recycling rates at the facility have doubled under Rene's leadership.

data scope and profile

The 2004 Environmental Report is Genentech's first endeavor to publicly announce and describe our commitment to growing an environmentally sustainable business. This report focuses on what we consider to be the significant environmental impacts associated with Genentech's operations. We have given particular attention to our water and energy usage and associated greenhouse gas emissions, as these are the focus of our environmental improvement goals. In addition, we have provided information on other issues for which we have reliable data, such as emissions of volatile organic compounds, production, and incidents of non-compliance.

Unless otherwise stated, the data presented in this report are for our three production facilities in use in 2004 (South San Francisco and Vacaville, California, and Porriño, Spain), as well as the research, development, commercial and administrative offices at our South San Francisco headquarters.

In preparing this report, we have aimed to:

- Provide a clear context for the information presented – so that it is relevant and meaningful to our different stakeholders; and
- Align with the Global Reporting Initiative (GRI) principles of accuracy, clarity, comparability and transparency.

We intend to expand our future reporting in line with the GRI reporting principles, content guidance and environmental performance indicators. Please see the *Future Reporting* section of this report for more information on our intentions for upcoming reports.

data table

Inputs & Outputs	Units	Total	South San Francisco, USA	Vacaville, USA	Porriño, Spain
Inputs					
Total Water Use	m ³	1,561,944	1,085,012	419,620	57,312
Direct Energy Use	1000 GJ				
Electricity		680	542	116	22
Natural Gas		726	600	126	0
Diesel Fuel		28	2	0.82	25
<i>Total Direct Energy Use</i>		<i>1,434</i>	<i>1,144</i>	<i>243</i>	<i>47</i>
Outputs					
Energy-Related Greenhouse Gases	Metric tons CO ₂ equivalent				
Direct Emissions					
Natural Gas		40,326	33,316	7,010	0
Diesel Fuel		2,022	130	59	1,833
Indirect Emissions					
Electricity		54,533	43,294	9,228	2,011
<i>Total Energy-Related GHG Emissions</i>		<i>96,881</i>	<i>76,740</i>	<i>16,297</i>	<i>3,844</i>
Transportation-Related Greenhouse Gases	Metric tons CO ₂				
Business travel (road)		7,453			
Business travel (air)		13,855			
Company owned vehicles		303			
<i>Total Transportation-Related GHG Emissions</i>		<i>21,611</i>			
Volatile Organic Compound (VOC) Emissions	Metric tons	18.3	14	4	0.3
TMAC Hazardous Waste Production	Metric tons	1,246	329	917	N/A
Non-Hazardous Waste Production	Metric tons				
Incineration		0	0	0	0
Landfill		2,427	2,142	224	61
Recycled		766	633	128	5
<i>Total Non-Hazardous Waste Production</i>		<i>3,193</i>	<i>2,775</i>	<i>352</i>	<i>66</i>
Recycling Rate	%	24	23	36	7
Violations for Non-Compliance	#	6	4	2	0

data notes

Notes to Support the Data Table

1. All site-based data are presented for Genentech's three production facilities in use in 2004 (South San Francisco, Vacaville, and Porriño, Spain) during the period January 1 - December 31, 2004.
2. All figures above 100 are rounded up to the nearest whole number. Figures below 100 are shown to the nearest decimal point.
3. All electricity, natural gas and water data are based on meter readings, extracted from the utility suppliers' bills (using billing periods January – December 2004 inclusive). Data are presented for buildings owned and occupied by Genentech. No data are shown for buildings which Genentech owns and leases out to third parties.

The following notes relate to specific metrics presented in the data table.

Total Water Use

- The data include potable and non-potable water consumption. During 2004, Vacaville was the only facility to use non-potable water, sourced from Lake Berryessa and used primarily for irrigation use and cooling processes. This water supply represents 7.5 percent of Vacaville's total water consumption during 2004.

Energy-Related Greenhouse Gases (GHG)

- These data present direct greenhouse gas emissions associated with the use of natural gas and diesel fuel by Genentech's production facilities, and indirect greenhouse gas emissions associated with the use of electricity.
- The GHG data for the US facilities are shown as carbon dioxide (CO₂) equivalents, which includes carbon dioxide, nitrous oxide and methane emitted during the energy production activity.
- The emissions factors used to calculate the energy related greenhouse gases are shown in the tables below.

Natural Gas-Related CO₂ Emissions Factors (South San Francisco and Vacaville)

Emissions Factor (kg CO ₂ /kwh)	Description & Source
0.20	This is a United States-wide emission factor used in the current version of the California Climate Action Registry Protocol. California Energy Commission, <i>Inventory of California Greenhouse Gas Emissions and Sinks: 1990-1999 DRAFT</i> (December 2001), Tables 2-5 & 2 -6, pages 33-34; and Energy Information Administration, <i>Emissions of Greenhouse Gases in the United States 2000</i> (2001), Table B1, page 140, see http://www.eia.doe.gov/oiaf/1605/ggrpt .

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Diesel-Related CO₂ Emissions Factors (all sites)

Diesel Fuel	Emissions Factor	Source
kg CO ₂ /gal	10.05	California Energy Commission, <i>Inventory of California Greenhouse Gas Emissions and Sinks: 1990-1999</i> (December 2001), Tables 2-5 & 2 -6, pages 33-34; and Energy Information Administration, <i>Emissions of Greenhouse Gases in the United States 2000</i> (2001), Table B1, page 140, see http://www.eia.doe.gov/oiaf/1605/ggrpt . This is the emission factor used in the current version of the California Climate Action Registry Protocol
kg CH ₄ /gal	0.0014	<i>Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2000</i> Annex C Table C-2: CH ₄ and N ₂ O Emission Factors by Fuel Type and Sector and Annex W Table W -2: Conversion Factors to Energy Units (Heat Equivalents] (EPA, 2002. U.S. Environmental Protection Agency, Washington, D.C. April. EPA 236-R-02-003). These are the emission factors used in the current version of the California Climate Action Registry Protocol
kg N ₂ O/gal	0.0001	

Electricity-Related CO₂ Emissions Factors (by site)

Site	Emissions Factor (kg CO ₂ /kwh)	Source
South San Francisco	0.287	U.S. EPA Emissions & Generation Resource Integrated Database (E-grid) http://www.epa.gov/cleanenergy/egrid/index.htm
Vacaville	0.287	U.S. EPA Emissions & Generation Resource Integrated Database (E-grid) http://www.epa.gov/cleanenergy/egrid/index.htm
Porriño	0.32	Emission factor for Spain from Worldwide Emissions Factors, The GHG Indicator: UNEP Guidelines for Calculating Greenhouse Gas Emissions for Businesses and Non-Commercial Organizations, UNEP, 2000, http://www.uneptie.org/energy/tools/ghgin/docs/GHG_Indicator.doc

In accordance with the Californian Climate Action Registry Protocol, CO₂ equivalents for CH₄ and N₂O emissions arising from electricity generation were included in the overall electricity related CO₂ equivalent calculations for Vacaville and South San Francisco. The following emissions factors were used:

Electricity-Related CH₄ and N₂O Emissions Factors (South San Francisco and Vacaville)

Unit	Methane (CH ₄)	Nitrous Oxide (N ₂ O)	Source
Lbs CO ₂ /MWh	0.0067	0.0037	<i>Energy Information Administration, Updated State-and Regional-level Greenhouse Gas Emission Factors for Electricity (March 2002)</i> http://www.eia.doe.gov/oiaf/1605/e-factor.html .

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Global Warming Potential (GWP) Factors for conversion from tons CH₄ and N₂O to tons CO₂ equivalents (all sites and all sources)

Emission	GWP compared with GWP of CO ₂	Source
CH ₄	21	IPPC Second Assessment Report; Table 5-2 in Chapter 5, 1995
N ₂ O	310	

Transportation-Related Greenhouse Gases (GHG)

- Business travel:
 - The data present CO₂ emissions arising from U.S.-based road travel by Genentech employees for business purposes and CO₂ emissions arising from flights made by Genentech employees and which originated in the U.S.A. or were booked in the U.S.A.
 - The road travel emissions calculation was made using a conversion factor of 0.36 kg CO₂/mile for a medium-sized gasoline vehicle (taken from the World Resource Institute's Business Travel Emissions Tool (v1.0)). The calculation is based on a total of 20,703,450 miles traveled during 2004.
 - The air travel emissions calculation was made using a conversion factor of 0.20kg CO₂/mile for medium haul flights (taken from the World Resource Institute's Business Travel Emissions Tool (v1.0)). The calculation is based on a total of 68,329,210 miles traveled during 2004.
- Company-owned vehicles:
 - The data present CO₂ emissions arising from the use of Genentech's company-owned vehicles. The calculation was made using conversion factors of 8.781 kg CO₂/gallon for motor gasoline and 10.049 kg CO₂/gallon for diesel fuel, taken from the California Climate Action Registry's General Reporting Protocol (October 2002). The calculation is based on a total 2004 fuel consumption of 27,535.4 gallons (gasoline) and 5,179.5 gallons (diesel fuel). The data exclude the shuttle vehicles at South San Francisco and Vacaville, which are owned and operated by a contractor.

Volatile Organic Compound (VOC) Emissions

- The VOC data relate to the use of alcohol-based solvent products used by Genentech, primarily for production cleaning purposes. The products included in the data are alcohol wipes, solution (70 percent alcohol/30 percent water) and reagent alcohol. The solvent types represented are ethanol, methanol and iso-propanol.
- The data are based on an assumption that 100 percent of the solvent used by Genentech is emitted to air as VOCs. In practice, the actual VOC emissions are likely to be lower because some solvent will be retained on used wipes. See the sidebar on Reducing Solvent Emissions in South San Francisco in the Greenhouse Gas Emissions section of Genentech's Environmental Commitment, above.

TMAC Hazardous Waste Production

- The data are for the tetramethylammonium chloride (TMAC) waste stream, which is generated from the use of a chemical material to extract medicinal proteins from water at the end of the production process for certain product lines. TMAC is considered to be hazardous by the State of California, but not by other jurisdictions.
- In terms of weight, TMAC is the largest single hazardous waste stream produced by Genentech.
- TMAC is not regulated in Spain, so generation figures for TMAC at the Porriño plant are not available.
- Data for other hazardous waste streams produced by Genentech will be included in our 2006 Environmental Report.

Non-Hazardous Waste Production

- The data are for all waste types which are not classified as hazardous by local legislation or by Genentech's Corporate EHS Standards on Hazardous Chemical Waste and Regulated Biological Waste.
- The data are based on actual weights where these are available (e.g. compactors) and otherwise estimated weights using an average weight per container combined with the number of container pick-ups during 2004.

data notes

Recycling Rate

- Recycling rate (%) is the total weight of non-hazardous waste divided by the weight of recycled waste x 100.

Violations for Non-Compliance

- Genentech's South San Francisco facility received four Notices of Violation (NOVs) during 2004, as follows:
 - o One wastewater NOV was received for low pH in wastewater discharged to the sewer system. This exceedance was discovered during routine monitoring performed by Genentech. A root cause analysis was conducted, and the cause of the exceedance was determined to be improper operation of a particular piece of equipment. The users of that equipment were re-trained on proper operation and drain disposal.
 - o Two wastewater NOVs were received for exceeding sulfide limits in wastewater discharged to the sewer system. These exceedances were discovered during routine monitoring by the local government. A root cause analysis was conducted, and although several potential causes were ruled out, no exact cause was determined. The facility continues to monitor for potential recurrence.
 - o One air emissions NOV was received for exceedance of usage limits of solvent products in cleaning operations. The facility was permitted to use 23,820 lbs in 12 month period, and used 26,749 lbs in the period 4/1/2003 through 4/1/2004. This resulted in a fine of \$1,000. The facility evaluated its operations and concluded that the original permit limit was inadequate to meet recent expansions in production at the facility. The facility applied for and was granted a higher limit for solvent releases in its air permit. The facility also improved its system for tracking solvent usage, to prevent exceedances in the future.
- Genentech's Vacaville facility received two NOVs during 2004, as follows:
 - o One wastewater NOV was received for historic discharges of tetramethylammonium chloride (TMAC) to the sewer system prior to 2004. A root cause analysis was conducted, and the cause of the discharges was determined to be inadequate procedures and training. The facility's standard operating procedures and training were revised to address proper TMAC collection. Additionally, the facility voluntarily undertook a problem analysis of its TMAC operations, to identify risk mitigation measures to prevent future spills of TMAC.
 - o The second NOV was for the discharge of 4800 liters of TMAC mixed with water to the sewer system in January, 2004. A root cause analysis was conducted and the cause was determined to be inadequate automation systems and procedures. The system involved has now been equipped with an alarm to notify users when the cleaning sequence is initiated and TMAC is still present in the system, and the facility's standard operating procedures have been revised to require verification that the tank is empty of TMAC before initiating cleaning. Additionally, the facility voluntarily undertook a problem analysis of its TMAC operations, to identify risk mitigation measures to prevent future spills of TMAC.

glossary of terms

Biotechnology: Biotech medicines use the human body's own natural defense mechanisms to fight disease, including cells, genes, proteins, enzymes and antibodies. By harnessing natural mechanisms, scientists can find more accurate ways to solve medical problems while producing fewer side effects and unintended consequences for the individual patient.

Biotherapeutic: a drug derived from a living source (human, animal or unicellular). Most biotherapeutics are complex mixtures that are not easily identified or characterized, and many are manufactured using biotechnology.

CH₄: methane, a greenhouse gas.

CO₂: carbon dioxide, a greenhouse gas.

CO₂ Equivalent: the quantity of a given greenhouse gas multiplied by its total global warming potential. This is the standard unit for comparing the degree of harm which can be caused by different greenhouse gases.

Direct Emissions: emissions from sources that are owned or controlled by the reporting entity.

Global Reporting Initiative (GRI): a multi-stakeholder process and independent institution whose mission is to develop and disseminate globally applicable Sustainability Reporting Guidelines.

Global Warming Potential (GWP): a way to compare one type of greenhouse gas against another type of greenhouse gas, based on the amount of global warming that the particular greenhouse gas is expected to cause. The GWP is used for converting other types of greenhouse gas emissions into CO₂ equivalents.

Greenhouse Gas (GHG): a gas that absorbs and re-emits infrared radiation, warming the earth's surface and contributing to climate change.

Indirect Emissions: emissions that are a consequence of actions of the reporting entity, but are produced by sources owned or controlled by another entity.

N₂O: nitrous oxide, a greenhouse gas.

Recombinant DNA (rDNA) Molecules: (i) molecules that are constructed outside living cells by joining natural or synthetic DNA segments to DNA molecules that can replicate in a living cell, or (ii) molecules that result from the replication of those described in (i) above.

Stewardship: related to the environment, the concept of responsible caretaking based on the premise that we do not own resources, but are managers and are responsible to future generations for their condition.

Sustainability: meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Tetramethylammonium Chloride (TMAC): a material used to extract medicinal proteins from process water in manufacturing certain of Genentech's products. TMAC is considered toxic by the State of California, but not by other jurisdictions.

Volatile Organic Compounds (VOCs): organic compounds that evaporate readily to the atmosphere. VOCs contribute significantly to photochemical smog production and certain health problems.

invitation to comment

Shareholders, community members and non-profit organizations can provide feedback and comments 24 hours a day through our website at www.gene.com. Comments received through this channel are directed to subject matter experts within the company who can address the specific issues.

future reporting plans

It is our intention to publish our next environmental report in the first half of 2006. That publication will build on this report through an expanded set of environmental indicators and a broader data set. We will continue to use the Global Reporting Initiative (GRI) to inform our reporting.

We also recognize the importance of collecting and reporting information that is beneficial to our business or meaningful to our stakeholders. In light of this, we intend to expand our reporting next year to include hazardous waste tonnage data. In subsequent years we plan to include data on emissions of refrigerants (CFCs and HCFCs) and environmental incidents.

Next year's report will offer a more dynamic look at Genentech's environmental progress over time. Specifically, you can expect to see reporting on our initial progress towards meeting our environmental goals, trends of key metrics over time, and more information about the growth the company has experienced and the environmental impact of this growth.