

Environmental Compliance

Genzyme Corporation is committed to full compliance with all environmental laws, regulations, and permits that apply to our facilities and operations. Each site monitors and reports on compliance history including regulatory noncompliance events in which there is written correspondence to, or from, an agency. Noncompliance events can include notice of violation (NOV), enforcement action, fine, penalty, and/or accidental releases of chemicals to the environment.

The following table summarizes Genzyme's compliance over the past seven years. For each item, corrective action has taken place to the satisfaction of the regulatory agency.

	2003	2004	2005	2006	2007	2008	2009	2010
Regulatory non-compliance events	19	15	12	19	48*	32*	7	4
Resulting Fines and Penalties	\$100	--	--	\$1,000	--	--	--	--

* 2007 and 2008 include 33 and 15 incidents respectively related to one site's wastewater discharge permit. Self-monitoring samples indicated exceedance of permit limitations. A new permit was issued in May 2008 with new limits that match process changes at the site.

2010 Regulatory Non Compliance Events	Remarks
1	<u>Reporting</u> <ul style="list-style-type: none"> ▪ 1 failure to report under import regulations regarding hazardous component.
3	<u>Wastewater</u> <ul style="list-style-type: none"> ▪ 1 exceedance of pH limit ▪ 1 exceedance of Ammonia limit ▪ 1 exceedance of (new) cyanide limit

2009 Regulatory Non Compliance Events	Remarks
1	<u>Reporting</u> <ul style="list-style-type: none"> ▪ 1 potential environmental issue associated with an operations incident was reported to the local authorities. There was no impact on the environment or neighboring facilities.
6	<u>Wastewater</u> <ul style="list-style-type: none"> ▪ 1 reporting error caused by the external analytical laboratory ▪ 1 exceedance of phosphorus limit ▪ 1 exceedance of discharge volume limit ▪ 1 exceedance of "Fats-Oils-Grease" (FOG) limit ▪ 1 pH exceedance ▪ 1 treatment (dephosphorization) failure

2008 Regulatory Non Compliance Events	Remarks
1	<u>Spill or Release</u> <ul style="list-style-type: none"> ▪ 1 discharge of salt to surface water – cause unknown
31	<u>Wastewater</u> <ul style="list-style-type: none"> ▪ 2 reporting errors caused by the external analytical laboratory ▪ 9 exceedances of daily flow rate limit, 2 exceedance of nitrogen concentration limit, 2 exceedances of phosphorus concentration limit, and 1 exceedance of biological oxygen demand concentration limit ▪ 3 ph excursions caused by inadvertent discharge of unauthorized compounds to wastewater ▪ 1 ph excursion due to tubing malfunction and low wastewater volume ▪ 1 detection of oil and grease – cause unknown ▪ 1 not testing for required metals caused by Genzyme omission ▪ 1 exceedance of Diethyl Phthalate caused by wastewater discharge from equipment that shreds and sterilizes bags of waste that can contain plastics ▪ 5 exceedances of zinc caused by discharge of zinc containing surfactant ▪ 2 exceedances of chloride – cause unknown ▪ 1 deviation from official testing protocol caused by the external testing laboratory

2007 Regulatory Non Compliance Events	Remarks
<p>3</p> <p>42</p> <p>1</p>	<p><u>Spill or Release</u></p> <ul style="list-style-type: none"> ▪ Diesel oil spill caused due to incorrect installation of fuel tank ▪ Chemical spill due to clogged pipe ▪ Release of treated wastewater to soil caused by blocked outflow pipe <p><u>Wastewater</u></p> <ul style="list-style-type: none"> ▪ Discharge of zinc acetate to publically owned treatment works (POTW) caused by manufacturing operator error ▪ Zinc exceedance due to release of zinc containing cell culture media ▪ pH exceedance due to faulty pH probe ▪ Chromium exceedance from failed chiller valve, which caused leak of chromium inhibited lithium bromide solution ▪ pH exceedance of water discharged to local river due to high pH of incoming water ▪ 18 exceedances of daily flow rate limit caused by wastewater treatment plant still under construction ▪ 10 exceedances of hourly flow rate limit caused by wastewater treatment plant still under construction ▪ 1 exceedance of nitrogen concentration limit caused by wastewater treatment plant still under construction ▪ 4 exceedances of nitrogen concentration limit caused by wastewater treatment plant still under construction ▪ Missed reporting deadline due to misinterpretation of permit language ▪ Mercury exceedance due to improper disposal of material that contains thimerosal as a preservative ▪ Zinc exceedance due to initial leaching of zinc from a new galvanized pipe ▪ Chemical oxygen demand (COD) discharge limit was exceeded due to improper operation of wastewater treatment plant <p><u>Hazardous Waste</u></p> <ul style="list-style-type: none"> ▪ Incorrect waste code listed on hazardous waste manifests
2	<p><u>Reporting Error</u></p> <ul style="list-style-type: none"> ▪ Inadvertent omission of 2 chemicals in a mandatory state report.

2006 Regulatory Non Compliance Events	Remarks
<p>1</p> <p>14</p> <p>3</p>	<p><u>Spill or Release</u></p> <ul style="list-style-type: none"> ▪ Chemical spill caused by supplier error <p><u>Wastewater</u></p> <ul style="list-style-type: none"> ▪ pH excursion due to caustic pump hose failure ▪ 4 separate pH exceedances of water purification discharge cause by high pH of incoming city water ▪ Zinc exceedance from discharge of zinc acetate buffer caused by operator error ▪ Phosphorus exceedance in wastewater caused by discharge of cleaning chemicals and buffers ▪ COD (chemical oxygen demand) exceedance caused by improper nutrient balance in wastewater treatment plant ▪ Methylene chloride exceedance caused by operator error during cleaning of production equipment ▪ One time mercury exceedance in wastewater. Unknown cause ▪ pH excursion due to unauthorized discharge of strong acid to laboratory sink, which temporarily overloaded the neutralization capability of pH system ▪ Silver and copper permit exceedance due to contaminated lift station and neutralization tanks ▪ One time copper exceedance in laboratory wastewater. Unknown cause ▪ One time zinc exceedance in laboratory wastewater. Unknown cause. <p><u>Miscellaneous</u></p> <ul style="list-style-type: none"> ▪ Reporting deadline missed due to external analytical laboratory error ▪ \$1,000 fine issued by local conservation commission due to contractors not maintaining erosion control for construction project ▪ Reporting deadline missed due to lack of effective internal regulatory review process.
<p>1</p>	<p><u>Reporting Error</u></p> <ul style="list-style-type: none"> ▪ Inadvertent omission of 1 chemical in a mandatory state report.

2005 Regulatory Non Compliance Events	Remarks
2	<p><u>Spill or Release</u></p> <ul style="list-style-type: none"> ▪ Spill of propylene glycol to surface water due to equipment leak. ▪ Release of non-PCB transformer oil to soil during construction activity. <p><u>Wastewater</u></p>
9	<ul style="list-style-type: none"> ▪ pH excursion of reverse osmosis (RO) reject water that is discharged to surface water. Exceedance caused by ineffective discharge procedures. ▪ pH excursion due to operator error. ▪ pH excursion due to malfunctioning acid pump ▪ pH excursion due to acid pump failure ▪ pH excursion due to electrical failure on the pH controller ▪ Mercury exceedance likely due to inadvertent discharge from thimerosal containing test kits. ▪ pH excursion due to a failed pH transmitter ▪ Discharge of copper acetate waste to wastewater treatment. ▪ Discharge of xylene to a laboratory sink. Exceeded discharge permit limit of 1 ppm for a toxic organic.
1	<p><u>Reporting Error</u></p> <ul style="list-style-type: none"> ▪ Inadvertent omission of 1 chemical in a mandatory state report.

2004 Regulatory Non Compliance Events	Remarks
2	<p><u>Spill or Release</u></p> <ul style="list-style-type: none"> ▪ Spill of aqueous copper acetate waste to process drain and sewer ▪ Spill of sodium chloride solution to surface water drain
7	<p><u>Wastewater</u></p> <ul style="list-style-type: none"> ▪ Six separate events at three different sites where the pH of wastewater being discharged to local sewer authorities exceeded the limit ▪ The concentration of methylene chloride in wastewater discharged to the local sewer authority exceeded the limit
3	<p><u>Air Quality</u></p> <ul style="list-style-type: none"> ▪ Two occasions when the concentration of particulates emitted from a spray dryer stack exceeded the limit. This reported exceedance was the result of incorrect sampling methodology. ▪ State environmental agency issued a consent order officially terminating the air permit for a medical waste incinerator
2	<p><u>Hazardous Waste</u></p> <ul style="list-style-type: none"> ▪ Notice of violation issued by state environmental agency based on hazardous waste violations noted during an unannounced inspection ▪ Notice of violation issued by federal environmental agency based on hazardous waste violations noted during an unannounced inspection at another location
1	<p><u>Reporting Error</u></p> <ul style="list-style-type: none"> ▪ Inadvertent omission of 1 chemical in a mandatory state report.

2003 Regulatory Non Compliance Events	Remarks
1	<u>Spill or Release</u> <ul style="list-style-type: none"> ▪ Spill of hydrogen peroxide
9	<u>Wastewater</u> <ul style="list-style-type: none"> ▪ Four separate events at two different sites where the pH of wastewater being discharged to local sewer authorities exceeded the limit ▪ Two separate events where the concentration of biochemical oxygen demand (BOD) discharged to local sewer authorities exceeded the limit ▪ The concentration of chloride discharged to local sewer authorities exceeded the limit ▪ The concentration of diethylamine discharged to local sewer authorities exceeded the limit ▪ The concentration of mercury discharged to local sewer authorities exceeded the limit
1	<u>Water</u> <ul style="list-style-type: none"> ▪ A \$100 fine was issued for equipment that did not meet local water conservation standards
4	<u>Air Quality</u> <ul style="list-style-type: none"> ▪ The concentration of dichloromethane exceeded the limit ▪ The concentration of allylamine exceeded the limit ▪ The concentration of particulate matter exceeded the limit ▪ The concentration of hydrochloric acid exceeded the limit
4	<u>Reporting Error</u> <ul style="list-style-type: none"> ▪ Toxics reporting error ▪ Missing signature on Toxics Release Inventory submittal ▪ Corrected the generator status for waste oil ▪ Late submittal of Tier II inventory report for waste oil