

Vitens is an organisation that assumes responsibility for people, the environment and society. We have raised concern for the environment as the spearhead of our policy and want to make a contribution to further prevention of changes in the climate. We strive to be an entirely climate-neutral enterprise as soon as possible. Vitens translates this ambitious objective into investments in new technology, among other things. A summary of our activities in 2009 is presented below.

Climate-neutral enterprise

• Climate footprint

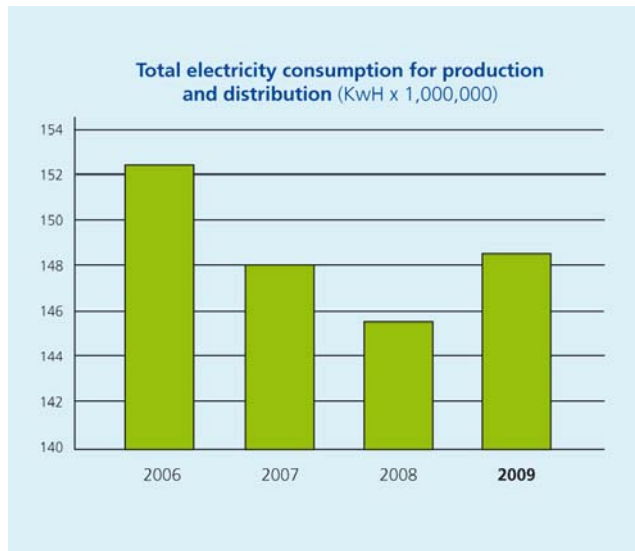
In 2008 Vitens presented its CO₂ emissions in a Climate footprint, which showed that we meet the international objectives for CO₂ reduction. Our objective is to reduce our CO₂ emission by another 5% in 2010 in comparison to 2008. A project was started in this connection in order to virtually entirely eliminate the methane emissions from our Spannenburg production location in Tjerkgaast (Province of Friesland) by capturing the methane and using it as natural gas. The methane content of the ground water extracted there is exceptionally high. Up till now, this methane that accompanies the water-extraction has been escaping into the atmosphere. By capturing it using a vacuum degassing installation, the methane emissions, expressed in CO₂ equivalents, are reduced by about 23 million kilos, comparable to the emissions of 7,500 cars. The yield in the form of natural gas is expected to be around 1.5 million m³ per year. To accomplish this, we have decided in this year under review to build a vacuum degassing installation so that it can be put into operation at the end of 2011.

• Energy reduction

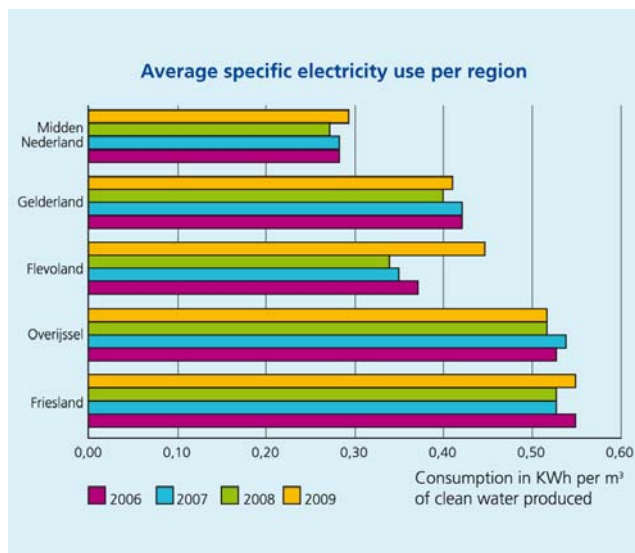
A great deal of energy is required for pumping, purifying and distributing drinking water. Vitens provides for its entire energy requirement, both for production locations and offices, by using naturally generated "green" power. Saving energy is a constant point of attention in our operational management, but our eventual energy consumption is chiefly decided by our customers. Our distribution pumps start running when they open their taps.

The results of a study in 2008 prompted us to take energy-saving measures in this year under review at virtually all production companies. Energy-reduction measures started being implemented in 2009. The following actions were carried out in 2009:

- Energy-saving measures introduced into design standards
- Uniform energy data; monitoring and registration
- Investigation carried out and measures taken regarding performance of pump installations
- Uniform policy for preheating installations and air dryers
- Optimisation of heating at production locations (insulation, settings and alternatives)
- Cooling of electrical rooms using cold air circulated from adjacent rooms.



The energy consumption slightly increased in 2009 due to higher investments in colour removal and hardness reduction. The following diagram provides an overview and explanation of the average specific electricity consumption per region and the energy and water consumption of our offices and buildings.



*) *Specific electricity consumption is the number of KWh needed to produce 1000 litres of drinking water.*

In spite of the many savings measures taken there was a small increase in specific energy consumption. This was due to changes to the installations to optimise the water quality (water softening and removal of colour).

The increased specific energy consumption in Flevoland was due to the energy data from the ROL project (Ruwwater Oude Land project) not having been included in the calculations in previous years. This situation was corrected in 2009.

Offices and other locations

In addition to many production locations Vitens also has several other locations such as offices, a laboratory and a central warehouse (in Lelystad).

Table 1: Energy and water consumption, secondary buildings in 2009, 2008 and 2007

Region	Electricity (Kwh.)			Gas (m3)		
	2007	2008	2009	2007	2008	2009
Flevoland ¹	136,004	199,000	349,719	0	0	0
Friesland ²	2,196,870	2,163,810	2,331,480	152,530	187,888	163,073
Gelderland ³	1,524,255	1,644,641	1,745,652	0	1,401	900
Overijssel ⁴	264,600	890,400	761,271	76,050	84,172	80,561
Midden Nederland ⁵	2,347,700	1,728,490	1,113,040	429,023	322,853	180,204
Totalen	6,469,429	6,626,341	6,301,162	657,603	596,314	424,738

Explanation 2009

¹ Lelystad office is heated with urban heating. Consumption in the unit of measurement (GJ) is converted to KWH electra and included in these figures

⁵ The differences between 2008-2009 relate to various vacancies in 2009 including part of the laboratory.

Explanation 2008

¹ In 2008 the Logistics Centre went into operation; low gas consumption through the use of urban heating.

² Office & Laboratory.

³ Low gas consumption through heating via air conditioning system.

⁴ Meeting centre put into operation.

⁵ Different offices & laboratory; 2 properties are rented out (anti-squat).

Environmental policy and implementation

• Environmental management

Vitens uses an environmental management system arranged and certified in accordance with the NEN-EN-4001 standard. KEM Quality checks the functioning of this system every half year. In addition, annual internal audits are performed by company employees who were trained for this purpose. The 25 internal audits in 2009 resulted in a number of improvement points, and no significant shortcomings were found.

• Incidents and complaints

Most Vitens sites are situated in areas where the groundwater is protected. In many cases these areas are fairly accessible to traffic and people. Vitens keeps a careful watch to make sure no harmful substances enter the environment in case of incidents such as traffic accidents. 26 incidents occurred in 2009, followed by adequate action taken by us, in comparison to 28 in 2008. These were cases such as the dumping of waste, oil leakages and accidents in the protected areas referred to above. In all cases Vitens was able to take measures to prevent damage to the environment. The incident procedure was practised in 2008, which resulted in major improvements points. In the year under review we received three environmental complaints from external parties concerning our operational management. As a result of these complaints, we took direct action and found good solutions

Environmental incidents

2008
28

2009
26

Region	Location	Findings
Friesland	PB Spannenburg	Wind turbine oil leakage
	PB Spannenburg	Further leakage at wind turbine following repair
Gelderland	PB Van Heek	Leakage of diesel oil from generator
	PB Kolff	Leakage of diesel oil from pile-driver
	PB Druten	Soil contamination found in the vicinity of the PB
	PB Holk	Leakage of oil from a traffic accident
	PB Velddriel	Iron-rich water discharged following control system malfunction
	PB Kolff	Cement found its way into ditch
	PB Eerbeek	Vandalised switchbox - short-circuit hazard
	PB Amersfoortseweg	Leakage of oil from from a traffic accident
	PB Kolff	Dumping of unidentified chemicals
	PB Zutphen	Oil leakage
	PB Harderwijk	Dumping of large quantity of prunings
	PB Harderwijk	Dumping of construction waste in water collection area
	PB Culemborg	Discharge of iron-rich flushing water into surface water
Midden Nederland	PB Beerschoten	NaOH leakage due to defective measurement tube.
	PB Leersum	Leakage of fuel from unidentified parked vehicle
	PB Hogeweg	Oil leakage from brushing machine
	PB Driebergen	Oil leakage from supplier's car
	PB Nieuwegein	Oil slick spotted on watercourse
	PB Zeist	Oil leakage from contractor's excavator
	PB Rhenen	
Overijssel	PB Hammerflie	Overflow of 800 m3 flushing water due to malfunction
	PB Rodenmors	Overflow non-clarified flushing water into ditch
	PB Hoge Hexel	Asbestos contamination
	PB Engelse Werk	Asbestos and mineral oil found

Note: PB (productiebedrijf – production company)

In 2009, 3 environmental complaints were received. These complaints referred to the use of mousetraps on production sites, excessive noise and failure to mow St. John's Wort on time at a production company. The complaints were taken up with all of those involved and subsequently resolved.

• Legislation and regulations

45 environmental inspections were carried out by the government in 2009, presented in the following diagram.

In 2009 checks were made at a large number of production companies to ensure that they were complying with the conditions in the permit:

Environmental checks	2008	2009
	41	45

24 for Environmental Management Act (Wm) permit, 20 for Pollution of Surface Waters Act (Wvo) permit.

Region	Law	Location	Findings
Flevoland	Wm	Res Buitenterp	Check regarding pilot concern- and system-inspection
	Wm	PB Harderwijk	Check regarding pilot concern- and system-inspection
Friesland	Wm	Ov Nybeets	None
	Wm	Leeuwarden lab	Report not yet available
	Wvo	Leeuwarden lab	Supply of info relating to sampling points and use
Gelderland	Wm	Stp Zelhem	None (no longer in operation)
	Wm	Opj. Hattem	None

Overijssel	Wm	PB Zutphen	No installation certificate for plastic tanks
	Wm	PB De Pol	None
	Wm	PB Oosterbeek	None
	Wm	PB Ellecom	None
	Wm	PB Harderwijk	None
	Wm	Stp Harderwijk	None
	Wvo	PB Holk	None
	Wvo	Opj. Hoeklum	None
	Wvo	PB Dinxperlo	None
	Wm	PB St.Jansklooster	None
	Wm	PB Witharen	None
	Wvo	PB St Jansklooster	None (orientation visit)
	Wvo	Havelterberg	None
	Wvo	PB St Jansklooster	None
	Wvo	PB Goor	None
	Wvo	PB Hasselo	Iron-rich water in ditch
	Wvo	PB Wierden	Sampling not representative
	Wvo	PB Rodenmors	None
	Wvo	PB Hammerfliet	None
	Midden Nederland	Wvo	PB Manderveen
Wvo		PB Weerseloseweg	None
Wvo		PB Weerseloseweg	None (effluent check)
Wm		PB Eemdijk	None
Wm		PB Eemdijk	None (rechecking)
Wm		PB Zeist	Permit application
Wm		PB Cothen	Opening in battery room
Wm		PB Cothen	None (rechecking)
Wm		PB Leersum	None
Wm		PB Driebergen	None
Wm		PB Veenendaal	Testing setup not reported; no logbook at refrigeration plant
Wm		PB Nieuwegein	None
Wm		PB Groenekan	Report submission
Wm		PB Zeist	None (fire brigade check)
Wvo		RK Lage Weide	Lack of clarity about sampling points
Wvo		Various locations	Insoluble components not measured
Wvo		PB Linschoten	None
Wvo	PB in HDSR region	None	
Wvo	RK Lage weide	None (rechecking)	

Note: PB (productiebedrijf = production company)

In 2009 and 2010 Vitens was and will be confronted by important legislative changes: the Water Act, the Activities Resolution, the Resolution on Discharges outside facilities, the Environmental Management Act and the future general provisions of the Act on environmental law (Wabo). In anticipation of this, the changes in regulations

• Concern and system supervision

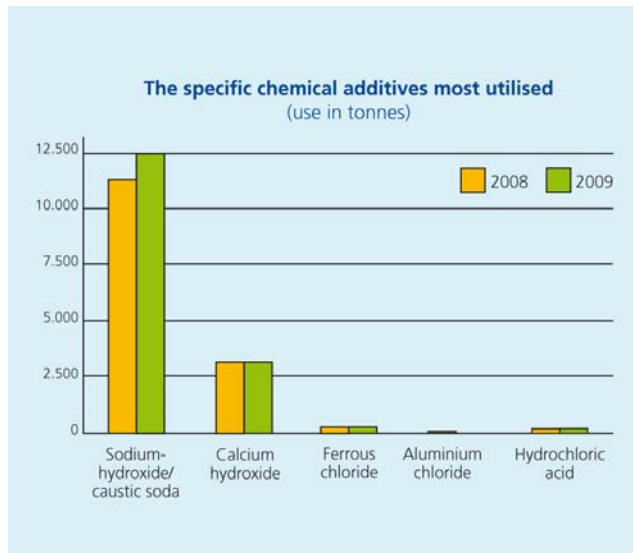
Together with local and regional governments, Vitens carried out various projects in the Provinces of Overijssel and Gelderland that resulted in a select number of enforcers carrying out unambiguous environmental inspections on behalf of several municipalities. A pilot concern and system supervisory project was carried out in the Flevoland Province with the Zeewolde and Almere municipalities. The results were very positive and even more municipalities will be involved in this project in 2010.

Vitens has been making environmental information available to the government in digital format since 2008 via Concernloket.nl. In the meantime, the municipalities in the Provinces of Overijssel and Flevoland are authorised to use this information. Using Concernloket.nl they can carry out an administrative environmental inspection without having to take up our organisation's time.

Additives, waste and residual products

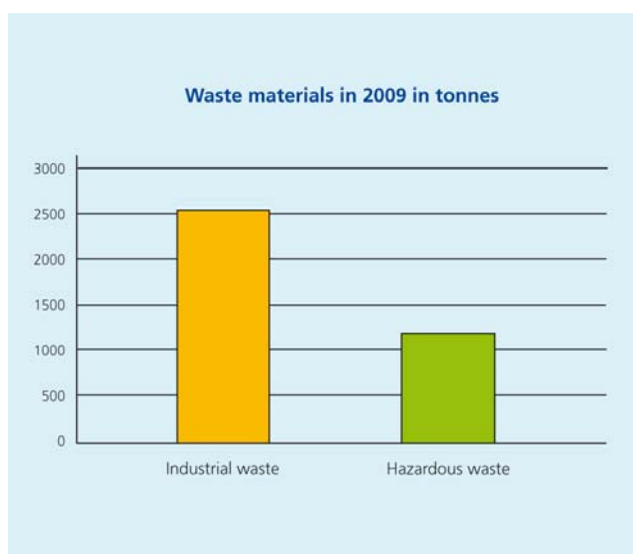
• Additives

The use of additives such as caustic soda (NaOH) is inevitable in drinking water production. The use of NaOH was increased in 2009 in order to improve the water quality. We try to prevent or reduce the use of additives in the drinking water process where possible. Due to an increase in investment in water softening, the use of caustic soda showed a slight increase in 2009.



• Waste products

In 2009, the entire service area of Vitens used just one fixed waste product collector and the waste product registration was placed in a uniform system available to employees online. This enables us to carry out analyses and formulate reduction targets better all the time. A total of 3,861 tonnes of waste was removed in 2009. A detailed overview of all waste materials follows.



VITENS WASTE MATERIALS 2009

PROD / DISTR	GLD	FR	OV	FLE	MN	kg	tonnes
Asbestos cement	18500	10996	6080	3260	6920	45756	46
Biodegradable general	75270	17833	54416	61059	28097	236675	237
Biodegradable other	596976	61467	84161	307675	125540	1175819	1176
Paper	3034	3498	0	6879	2554	15965	16
Hazardous waste	12280	3939	1485	2288	164	20156	20

INFRA	kg	tonnes
Asbestos cement	1061973	1062
Biodegradable general	10195	11
Biodegradable other	693911	694
Paper	0	0
Hazardous waste	0	0

TECH SERV	FAC	UTR	kg	tonnes
Asbestos cement	0	0	0	0
Biodegradable general	182782	117122	299904	300
Hazardous waste	7089	1400	8489	8
Paper	2190	19877	22067	22

LAB	LEEuw	UTR	kg	tonnes
Biodegradable general	4071	26088	30159	30
Hazardous waste	22761	3050	25811	26
Paper	9477	3682	13159	13
Glass	1	2180	2181	2

OTHER	GARAGE	OTHER	kg	tonnes
Asbestos	0	220	220	0.2
Biodegradable general	15444	0	15444	15
Hazardous waste	1844	0	1844	2
Paper	2059	0	2059	2

TOTAL	kg	tonnes
Asbestos	1107949	1108
Biodegradable general	592377	592
Biodegradable other	1869730	1870
Hazardous waste	56300	56
Paper	53250	53
Glass	2181	2

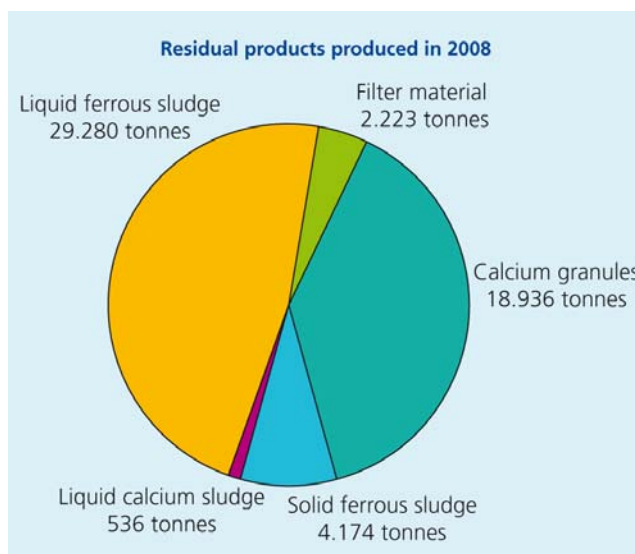
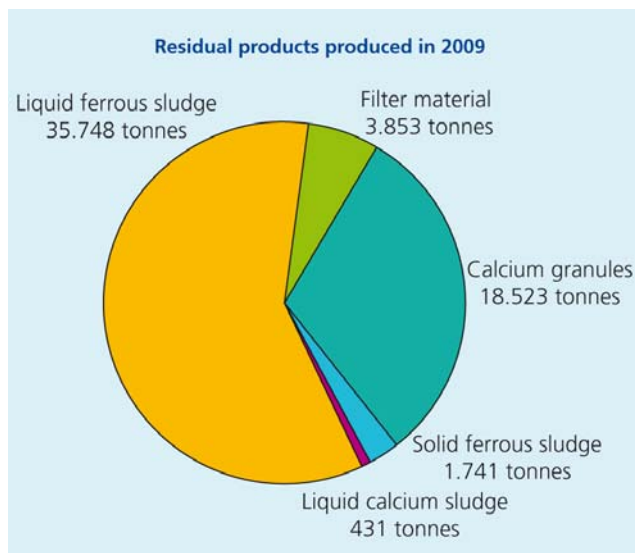
Biodegradable total	2517	tonnes
Hazardous waste incl AC	1164	tonnes

• Waste water

Waste water is released daily at about 100 locations in the form of purified rinsing water and/or wastewater from membrane installations. The purified water is discharged into the surface water or the soil. The discharge standards are laid down in permits. Sometimes the discharge standards are slightly exceeded because of the occurrence of a failure or because there are problems with adjustments at the installation. The goal for 2009 was a 50% reduction compared to the number of times the standards were exceeded in 2008, but we did not succeed in accomplishing this. A total of 31 times of exceeding the standards were registered, compared to 21 in 2008. Meanwhile, many optimisation campaigns have been instigated in consultation with the relevant district water boards in order to comply with the discharge standards.

• Residual products

Waste products produced directly by the drinking water process are called residual products. These are mainly calcium granules released during the softening process and drinking water sludge released when the rinsing water from the water filters is purified. Vitens' objective is to reuse calcium granules and drinking water sludge 100%. We completely accomplished this objective in 2009.



Desiccation and terrain management

• Desiccation

Extracting water for the drinking water process can lead to a drop in the ground water level. This may result in damage to the ecosystem in areas sensitive to desiccation. Vitens invests in reducing desiccation effects in the areas where this has been identified as an environmental problem. Measures we take vary from infiltrating surface water or purified rinsing water in the soil to pumping in ground water from areas not sensitive to desiccation. In 2009 we submitted an environmental impact report for infiltrating water in the Schalterberg area (Apeldoorn municipality), which had a very positive reception. Measures were taken in Mander (Twente) to compensate for the effects of extraction, but the initiative was also taken to search, together with the Province of Overijssel, for alternative extraction sites that are less sensitive to desiccation. Go to www.vitens.nl/milieubeleid for a complete overview of actions related to desiccation, permits and the water framework directive.

In 2009 the following actions relating to the prevention of drying out were carried out:

The MERs (environmental impact reports) for the production companies Schalterberg and Wierden were submitted and relate to the infiltration of water to compensate for the extraction and the moving of extraction to areas not subject to desiccation.
At the Mander production company a number of measures against drying out have been constructed to compensate for the effects of the extraction. (Measures: construction of three water retention areas, change of level of stream and construction of infiltration provisions (agrowadis) for rainwater) A joint project to search for an alternative location for the Mander extraction was also started with the province Overijssel.
The extraction permits for Lent, Beuningen, Varsseveld and Joppe have been withdrawn.
In 2009 a start was made on the investigation into the desiccation effects of the production companies Vorden and 't Klooster. Further decision-making relating to potential measures against drying out to take place in 2010 will be based on these conclusions.

• Terrain management

In the areas where the Vitens's wells are located, we make an effort to maintain the status of the natural and landscape values, and to develop them where possible. We use no pesticides or fertilisers. The place where the wells are located thus fit in well as far as space and water balance are concerned in order to prevent any damage from occurring. In 2009 Vitens started working on obtaining the sustainable terrain management certificate, gold barometer, for all areas it owns and manages. The system will be submitted for certification in the middle of 2010. In addition to the sustainable terrain management certificate, which as yet only applies to the Midden Nederland region, Vitens also has FSC hallmark certificates (Forest Stewardship Council).