

## **AFROX SHEQ SUSTAINABILITY REPORT WEBSITE**

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## **1. Introduction by Chief Executive**

### **1.1 Welcome**

A warm word of welcome to Afrox's stakeholders interested in the information presented in the first Afrox SHEQ Sustainability Report.

Our company strives to be a sustainable enterprise that is profitable, cares about the health and welfare of our employees and acknowledges the importance of environmental protection. The information presented in this report demonstrates how our company achieves these objectives and how our business contributes lasting benefits to society by adherence to SHEQ (safety, health, environmental and quality) standards and good practice requirements.

We trust that you will find the information presented informative and comprehensive.

### **1.2 Afrox SHEQ Sustainable Development Reporting:**

#### **Introducing SHEQ Sustainability Reporting in Afrox:**

Afrox, a subsidiary of the Linde Group acknowledges that the social, economic and natural environment that the company operates in must be established, evaluated and appropriately managed for the long term. Our employees, clients, the natural environment and the communities that our business operates in must not be exploited for the sake of increased revenue or quick and immediate profit. One of the foundational principles of the Afrox Spirit, a framework that helps guide our decisions and actions, is sustainability. We undertake to act responsibly in every aspect of our business and commit to technologies and products that combine customer benefit with the promotion of sustainable development.

Sustainable development is part of our company's value system. The information contained in this report serves to demonstrate the various measures Afrox has implemented to illustrate that our company can prosper and grow whilst caring and respecting our employees, the public, our stakeholders and the planet.

We realise that global environmental issues like global warming, climate change, water shortages and pollution are no longer 'if' scenarios but rather 'how soon' and 'how severe'. Effective risk management practices are therefore implemented throughout our company and sustainable development is closely linked with the safety and health of our employees and customers, the environment in which

we operate and the quality of the products that we supply and market (SHEQ).

Although this is the first report of this kind for Afrox, we have maintained sustainable development practices in our company for a number of years. This can be illustrated by our Leading and Lagging Indicators - implemented in our company over a number of years - that measure performance in areas where all aspects of SHEQ are proactively addressed. Our well developed Product Stewardship Programme, ISO Certifications and Behavioural Safety Programme also demonstrates our commitment to sustainable development.

In order to maintain sound sustainability principles, we are proactively addressing risks and opportunities by attending to sustainability issues. Actions taken include, but are not limited to complying with applicable safety, health and environmental legislation, implementing energy conservation programmes that will reduce our company's carbon footprint and auditing our customers that use high risk gases like ammonia.

### **Afrox's SHEQ Sustainability Reporting Objectives:**

We realise that sustainability issues are high on the agenda of stakeholders, local communities, consumers, investors and the media. Our approach is to create shareholder value by embracing opportunities and by having a responsible attitude towards people and the environment.

The objectives of the Afrox SHEQ Sustainability report is to present SHEQ data and to follow international standards for non-financial reporting in the collection of these statistics, such as the Global Reporting Initiative (GRI). Furthermore, we would like to demonstrate that our company adheres to our Code of Ethics that require the highest ethical standards of business in full compliance with applicable laws and industry standards. The information presented in this report also endeavors to:

- communicate the company SHEQ achievements and improvement areas in an open and honest manner
- demonstrate that we are serious about managing the company SHEQ risks appropriately
- demonstrate that we strive for continuous improvement of our SHEQ performance.

### **Acknowledgements:**

I would like to thank everyone that contributed towards managing our SHEQ risks and improving Afrox's SHEQ performance during 2008.

We will continue to review our practices and processes and where appropriate, improve them further.

## **2. SHEQ Sustainable Development in Afrox**

### **2.1 About SHEQ in Afrox**

Afrox's commitment to sustainable development as a strategic priority encompasses the company's commitment towards SHEQ.

As there are no greater priorities for Afrox than the health and safety of colleagues, contractors, suppliers, customers and local communities, and the protection of the environment, our company is committed to excellence in managing these areas through our safety, health, environment and quality (SHEQ) function.

The Afrox Board SHEQ Committee assists the Board to monitor the effectiveness of SHEQ management systems within Afrox and to guide the Board in decision making from a SHEQ perspective.

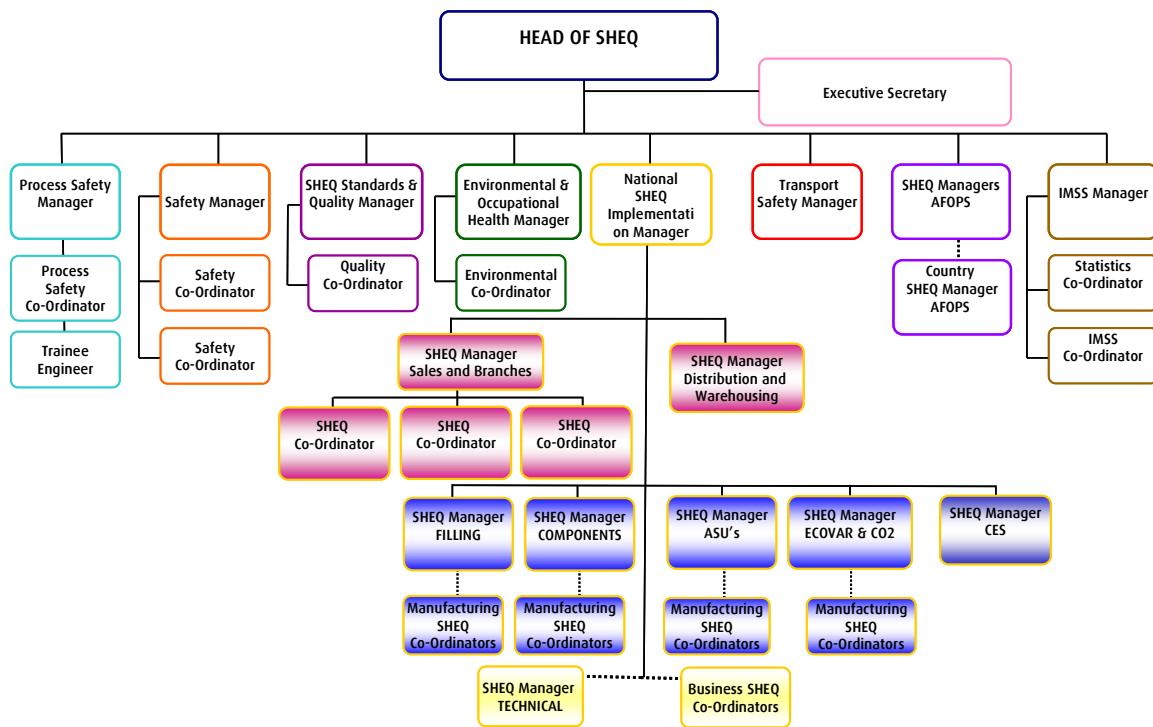
A dedicated SHEQ Department works with the business to ensure that the company has deliverable policies, is proactive in its risk assessment and professional in its remediation.

In line with the company restructuring process the SHEQ structure was also adapted. The eight national SHEQ managers, ten SHEQ coordinators and seven SHEQ Business Implementation Managers in the Afrox SHEQ department focus on specific aspects of SHEQ in South Africa and the other African countries where Afrox operates (see Figure 1). Their focus includes safety, occupational health, environment, transport safety, quality, process safety and the SHEQ integrated management system standards.

The SHEQ personnel are primarily responsible for:

- facilitating the implementation of the company SHEQ strategy and standards
- facilitating the development and implementation of SHEQ Plans in all business areas in accordance with company strategy
- managing the external certification of the business
- to assist line managers to effectively identify and mitigate SHEQ risks
- to facilitate compliance with legal and company requirements and standards
- transferring SHEQ knowledge and experience to line functions.

## **FIGURE 1: AFROX SHEQ STRUCTURE - 2008**



At site level, 19 Business Unit SHEQ Coordinators ensure that the day-to-day SHEQ issues are attended to. The Coordinators contribute significantly towards the SHEQ performance of the company by ensuring that the safety and health of employees are protected, the environment is preserved and high quality products are supplied to customers.

As a subsidiary of the Linde Group, the Afrox SHEQ Policies and procedures are aligned to those of the Linde Group through a global peer group. They are endorsed by the Afrox Managing Director and implemented by the Afrox Business Units with the support of the SHEQ function.

Afrox's objective is to be profitable in such a manner that it is accountable to the company employees, the broader society, communities in which the company operate and other stakeholders. Engagement with our stakeholders internally and externally is important for developing constructive relationships. We work closely with governmental bodies, communities and industry associations to meet the challenges of sustainable development. The SHEQ Department has defined its stakeholders and communicates key issues in the manners indicated in Table 1:



**TABLE 1 COMMUNICATION WITH STAKEHOLDERS**

<b>STAKEHOLDER</b>	<b>COMMUNICATION METHOD</b>
Employees	<ul style="list-style-type: none"> <li>- SHEQ Bulletins/Communications/Newsletters</li> <li>- Training sessions</li> <li>- SHEQ Intranet Website</li> <li>- Meetings</li> <li>- e-mail announcements</li> <li>- Lessons from Incidents</li> <li>- SHEQ Alerts</li> </ul>
Customers	<ul style="list-style-type: none"> <li>- Service and supply contracts – SHEQ information</li> <li>- Meetings</li> <li>- Personal visits and audits</li> <li>- Tele-Query where complaints can be logged</li> <li>- Material Safety Data Sheets</li> </ul>
Governmental Local Authorities and Regulatory Bodies	<ul style="list-style-type: none"> <li>- Formal and informal meetings</li> <li>- Consultations</li> <li>- Seminars and workshops</li> <li>- Incident reports and investigations</li> <li>- Railway Safety Regulator Reports</li> <li>- Other Reports</li> </ul>
Public and Communities	<ul style="list-style-type: none"> <li>- Environmental Impact Assessment and Major Hazard Installation public participation processes</li> <li>- SHEQ contribution towards the Afrox Annual Report</li> <li>- Afrox Internet Website</li> </ul>
Suppliers and Contractors	<ul style="list-style-type: none"> <li>- Supplier visits and audits</li> <li>- Contractor induction – site SHEQ rules</li> <li>- SHEQ Communications</li> <li>- Training</li> <li>- Lessons Learned from Incidents</li> <li>- Risk assessments</li> </ul>
Afrox Board Members	<ul style="list-style-type: none"> <li>- Feedback and reports</li> </ul>

## 2.2 SHEQ Report:

### Introduction:

Afrox's vision for SHEQ reflects its corporate commitment to "SHEQ, 100% of our behaviour, 100% of the time". Employees throughout the organisation all take personal responsibility for SHEQ and are expected to demonstrate this with their everyday behaviours. Unsafe practices and conditions are addressed by all personnel taking direct action. Afrox personnel work together as a team and value each other's well-being by adopting the correct SHEQ behaviours in their individual workplaces.

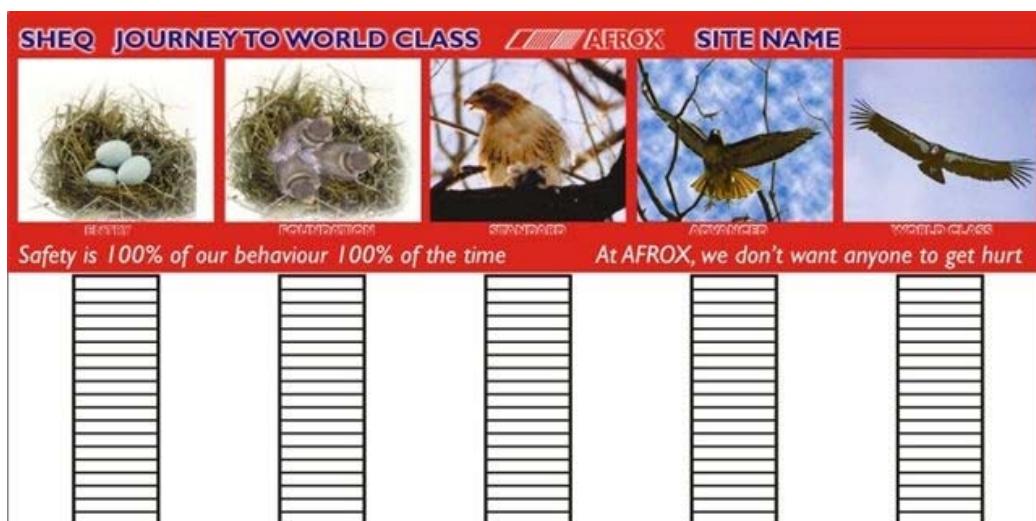
The Afrox SHEQ Policy sets out mandatory guidelines in all areas of SHEQ. Managers are responsible for communicating this Policy and creating the right conditions for continual improvement with the support of SHEQ Managers. The Policy commits to valuing the health and safety of employees and all who come into contact with the Afrox business and to not harm to the environment. The Policy further commits to the supply of high quality and safe products to our customers. A copy of the Afrox SHEQ policy is available on the Afrox web site.

To achieve the vision of being the leading gases and welding company in sub-Saharan Africa, Afrox personnel are expected to apply the Policy in their day to day behaviour and decisions.

The top priority for safety is to reduce the number of incidents and injuries and vehicle-related accidents. Occupational health priorities include the preservation of our employee's health and well being and the reduction of occupational illnesses resulting from Afrox's activities. In the environmental arena we strive to continue to review the efficiency of our production processes and to conserve electricity, water and other raw materials. We believe that all incidents, no matter how small, are avoidable, and through the corrective and preventive actions taken aim to half the number of all incidents over a three year period.

Customer satisfaction and our competitiveness are dependant on the quality of our products. We aim to meet the highest quality and reliability standards in all our products.

The SHEQ Roadmap, a tool used to identify a site's current SHEQ status, is used to monitor Afrox's current status in terms of the effective implementation of various SHEQ components from a behavioural perspective. This strategic SHEQ tool helps the business units visualize World Class, High Performance and Leading in SHEQ. The tool is used to guide us on our journey through various levels (Entry - Foundation – Standard – Advanced – World Class), and provides input to the development of SHEQ improvement plans.





## The Leading. in SHEQ Roadmap



<b>1 Visible Leadership</b>	Applicable
<b>2 Working SHEQ Policy</b>	Applicable
<b>3 Challenging SHEQ Goals and Targets</b>	Applicable
<b>4 High Standards of Performance</b>	Applicable
<b>5 Integrated Network for SHEQ</b>	Applicable
<b>6 Line Accountability &amp; Responsibility</b>	Applicable
<b>7 Motivation, Recognition and Discipline</b>	Applicable
<b>8 Injury &amp; Incident Investigations and Reports</b>	Applicable
<b>9 Effective 2 Way Communications</b>	Applicable
<b>10 Continuous SHEQ Training</b>	Applicable
<b>11 Auditing</b>	Applicable
<b>12 Contractor Safety</b>	Applicable
<b>13 Management of Change</b>	Applicable
<b>14 Emergency Preparedness</b>	Applicable
<b>15 Lone Worker</b>	Applicable
<b>16 Manual Handling</b>	Applicable
<b>17 Transport Operations Safety</b>	Applicable
<b>18 Passenger Car Safety</b>	Applicable
<b>19 Product Stewardship</b>	Applicable
<b>20 Environment</b>	Applicable

The focus during 2008 was on introducing the new Linde ‘Leading in SHEQ Roadmap’. An additional 20<sup>th</sup> component covering Environmental Standards was added to the existing 19 components. Each component consists of a number of themes, against which action plans are developed.

The Visible Leadership component was a high priority during the year – concentrating on ensuring that all leaders in the organisation display the desired behaviours for SHEQ, all the time. Good progress was made with this component as well as with other components including Working SHEQ Policy, Integrated Network for SHEQ, Manual Handling, Management of Change and Product Stewardship.

The executive management team is focusing on various business unit lead themes and sponsoring the action plans needed for the organisation to progress in the applicable themes. The aim for 2009 is to complete the various business area assessments and implement plans to achieve at least Standard level (50%) in a number of value adding priority components.

## **Importance of SHEQ:**

Sustainability is closely related to issues connected with safety, health, environment and quality. The inspirational goal of zero harm to people or the environment motivates us to continually improve the SHEQ performance in ways appropriate to the risk, scale and impact of the products and services that Afrox supplies.

Business priorities and key strategies are defined and understood by all personnel. Detailed goals and targets are defined and articulated in a Business Score Card. The Scorecard includes SHEQ requirements and plans and, in line with the aspirations of a high performing organisation, is cascaded down to unit, plant, factory, site and individual level.

The responsibility and authority for SHEQ is well described in individual Score Cards and job descriptions and evaluated during performance reviews. Everyone is personally responsible for SHEQ on our sites. It is expected of managers to be the leaders and to demonstrate their commitment to SHEQ both in word and in their actions.

Strategic business decisions and new projects consider and evaluate the SHEQ risks associated with such activities. A high level company SHEQ risk assessment is conducted annually where the 20 most significant SHEQ risks are identified. Mitigation measures for these risks are implemented nationally.

The business SHEQ performance is reported to the Afrox SHEQ Department monthly. Comprehensive monthly reports of all important indicators, major incidents, audit findings, directives, legal non-compliances and Tele-Query statistics are compiled for evaluation by the company Executive Management.

The SHEQ performance of the company is discussed and evaluated at executive level during the monthly Executive Committee Meetings. The General Manager SHEQ presents the SHEQ performance indicators to the Afrox Board on a quarterly basis.

Good SHEQ performance of sites and individuals are rewarded at the annual SHEQ Awards function. The SHEQ performance of sites for the financial year is evaluated and awards are given to selected large, medium and smaller sites for superior SHEQ performance annually.

During 2008, SHEQ awards were awarded to the following sites:

Large site: Klerksdorp  
Medium Site: Newcastle  
Small site: Vredendal



Afrox Managing Director Tjaart Kruger hands over the trophy for best SHEQ performance for a small site to Dries Grobler from Vredendaal.

Afrox strives to become truly leading in SHEQ by developing action plans and improvement programmes at all sites annually. Local SHEQ plans consider company policy objectives and the Linde Group's SHEQ strategy so that plans are in line with key risks. SHEQ considerations are integrated into business plans for all current and future operations and developments.

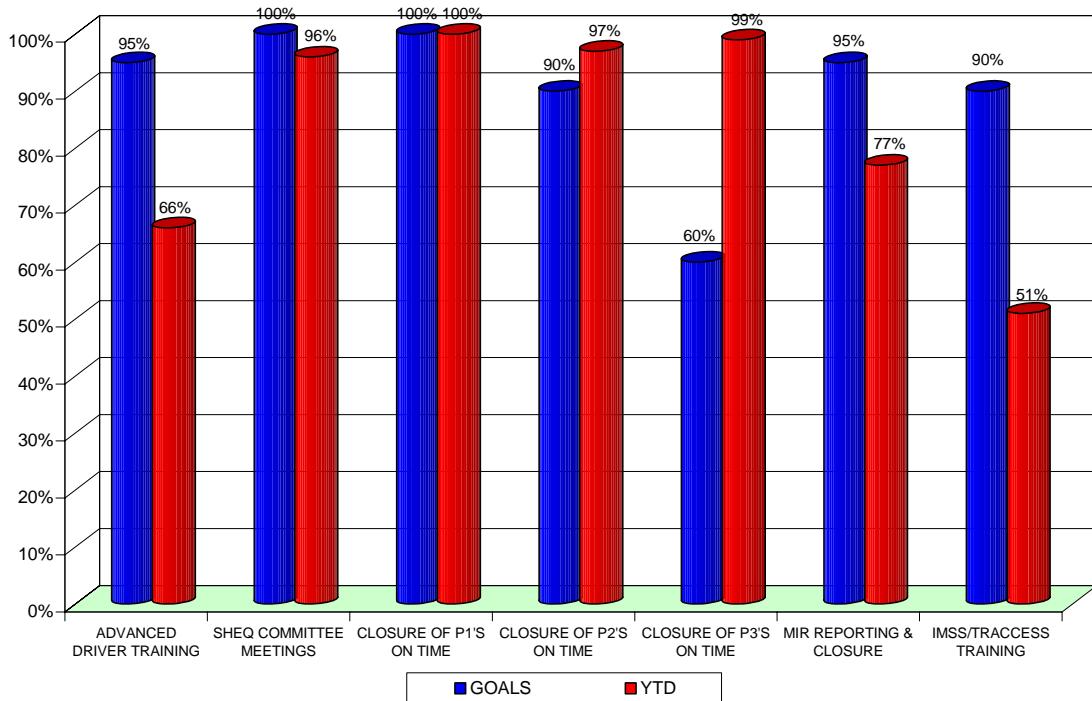
### **SHEQ Leading Indicators:**

Critical SHEQ interventions are tracked and measured by means of seven leading indicators. Leading indicators measure performance in areas where SHEQ is being addressed proactively. The Leading Indicators for 2008 include:

- Advanced Driver Training
- SHEQ Committee Meetings
- Closure of P1 Audit Findings in Time
- Closure of P2 Audit Findings in Time
- Closure of P3 Audit Findings in Time
- Major Incident Reporting and Closure
- Integrated Management System (IMS) Traccess Training.

Performance targets are negotiated with the business and set at the beginning of the financial year and then monitored and reported to the Executive committee monthly. See Graph 1 for the 2008 Leading Indicator performance. Where targets have not been achieved, plans are in place to address them.

## GRAPH 1: SHEQ LEADING INDICATOR PERFORMANCE



### **SHEQ Lagging Indicators:**

Lagging indicators measure events that have happened and are used to measure the past safety performance. Afrox Lagging indicators include:

- Lost Workday Case Rate (LWCR) per 1 000 000 hours worked (according to best international practice, LWCR includes all accidents resulting in the loss of one complete day of work)
- Total Recordable Case Rate (TRCR) per 1 000 000 hours worked (this includes all medical treatment as well as lost work day cases)
- Passenger Car Avoidable Accident Rate (PCAAR) per million of kilometres travelled (this rate includes all incidents relating to personnel travelling on company business, whether in a company or personal vehicle)
- Truck Avoidable Accident Rate (TAAC) per million kilometers travelled. (includes both Afrox and contractor heavy duty vehicle incidents).

The year ended well with most of our SHEQ measures.

Over the years Afrox has demonstrated a significant improvement in the Lagging Indicators.

Graph 2 illustrates the performance of the company with respect to Lagging Indicators over the last nine years:

**GRAPH 2: AFROX LAGGING INDICATOR PERFORMANCE (2000 – 2008)**

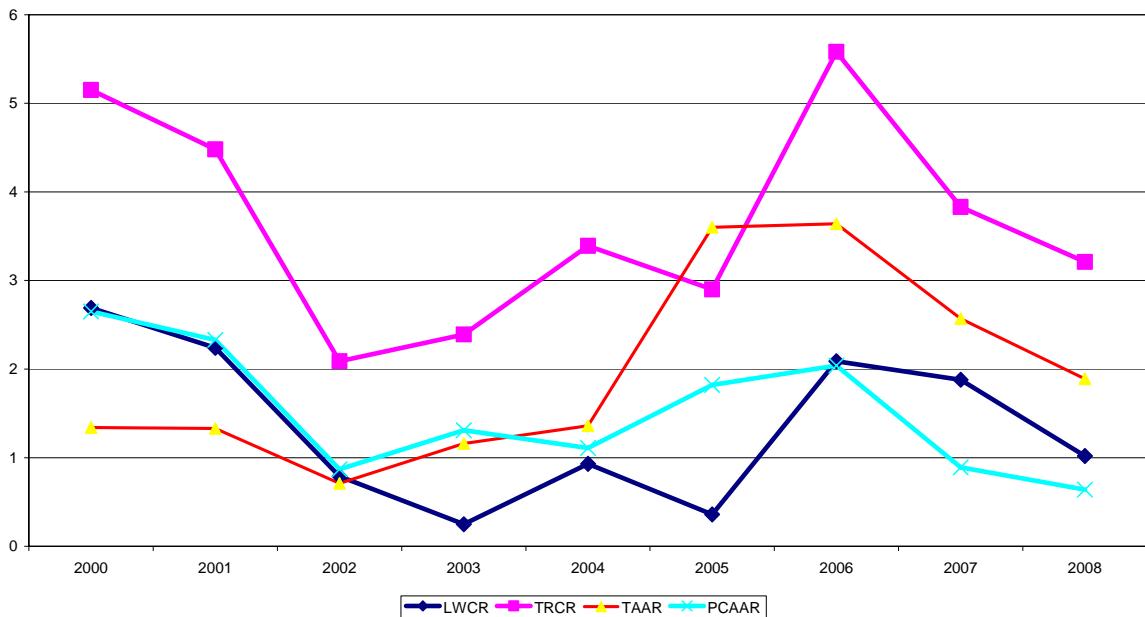


Table 2 illustrates the number of incidents, hours worked and LWCR for the years 2000 to 2008:

**TABLE 2: INCIDENTS, HOURS WORKED AND LWCR**

YEAR	NUMBER OF HOURS WORKED	NUMBER OF INCIDENTS	LWCR
2000	8 550 150	23	2.69
2001	7 594 313	17	2.24
2002	7 640 312	6	0.79
2003	7 946 340	2	0.25
2004	8 556 479	8	0.93
2005	8 264 378	3	0.36
2006	8 596 744	18	2.09
2007	14 346 576	27	1.88
2008	14 658 723	15	1.02

At the end of 2008, the following sites achieved significant numbers of hours worked without a lost time injury.

Swaziland - 1 046 214 hours

Kenya	-	1 375 991 hours
IS	-	2 386 759 hours
Malawi	-	2 448 043 hours
Nigeria	-	2 699 293 hours

## SHEQ Related Certifications:

### ISO 14001 and OHSAS 18001:

Afrox has an environmental management system that aims to respect the right of all people and company stakeholders to a healthy environment. By managing the environmental impacts of daily operations, the company contributes towards the preservation of the environment and to sustainable development.

The implementation of safe work systems and the protection of the health of our employees and contractors are high priorities for the company.

The business is progressing well with the implementation of ISO14001 and OHSAS18001. A number of Afrox business units are ISO14001 and OHSAS 18001 certified. These include all regional sites (sales and branches) as well as the Afrox Gas Equipment Factory, Afrox Self Rescue Division, and five Afrox filling sites. Numerous other business areas have completed a gap analysis or Stage 1 (initial assessment) audit in preparation for their certification audits scheduled for 2009/10.

### ISO 9001:

To ensure the supply of quality products and services, all Afrox business areas have ISO 9001 listings. Quality systems are regularly reviewed for their adequacy and improvement programmes are implemented where required.

During 2008, all existing ISO9001:2000 certificates issued by PriceWaterhouseCoopers were maintained after all surveillance audits were carried out. Company restructuring resulted in a review of the company's ISO 9001 certificates. Systems were streamlined and combined resulting in a reduction of individual certifications. The aim is to ultimately combine all company ISO9001 certification under one umbrella certificate.

These changes have resulted in twenty-eight previous certificates being consolidated into eleven.

During 2008 a number of countries that form part of Afrox's Africa Operations obtained ISO 9001 certification. These countries include Malawi, Zambia, Nigeria, Mauritius and Kenya.

### **Other Certifications:**

All sites that manufacture and fill gas for use in the medical industry comply with the Good Manufacturing Practice (GMP) requirements. The Medicines Control Council (MCC) has accredited all medical gases sites.

Facilities where cylinders are tested are registered with SANAS as approved testing facilities.

Afrox sites with railway sidings have successfully retained their Railway Safety Regulator permits ensuring the safe operation of their private railway sidings. Each of these sites have finalised contracts with Transnet and implemented safety standards, including operating procedures, risk assessments, emergency plans and preventative maintenance programs, as per the requirements of the Railway Safety Regulator standards.

During the course of 2008, Afrox sites have also been audited by Coca Cola and all sites have been authorised to supply Carbon dioxide (CO<sub>2</sub>) to food & beverage industry standards

### **Afrox SHEQ Management System Standards:**

The company has a well developed and integrated SHEQ Management System based on the principles of ISO 9001, ISO 14001 and OHSAS 18001. The integrated system allows for integrated SHEQ audits, risk assessments and management reviews. The system also facilitates employee involvement in the SHEQ risk management, compliance with industrial requirements, compliance with local and national legislation and for the implementation of operational best practice in all areas of SHEQ. Management system standards are documented in the company's Integrated Management System Standards (IMSS).

Teams of Excellence (ToE's) consisting of operational and standard specialists are responsible for writing and reviewing the company SHEQ and Technical Standards. ToE members meet regularly in order to ensure that specific identified standards (referred to as "chapters") are developed or revised.

Audit questions are developed for each new chapter and included in Audit Manager, the company's auditing management tool. New chapters are, on recommendation of the ToE's, added to identified personnel's License to Work Traccess profiles.

## **Product Stewardship:**

Product Stewardship is defined as the ethical and responsible management of all products manufactured and distributed by Afrox beginning with the high risk gas products and the Packaged Chemicals portfolio – potentially hazardous products that include ammonia, sulphur dioxide and ethylene. Additional products are being added to the list annually.

An audit process is used to determine if such high risk products are being safely and responsibly used and managed by our customers. The audit process focuses on the safe handling, storage and usage of the products at customer sites. Orders are only accepted from customers who successfully complete the audit.

The company's product stewardship programme aims to go beyond legislative obligations by managing the safety, health and environmental risks of our products throughout their "life" cycle. As part of this programme all potential hazards of new products are systematically identified prior to their introduction into the market.

Customers are informed and advised regarding the risks of the products that Afrox supplies. Higher risk products are only supplied to customers that have measures in place to mitigate and manage such risks. The programme for introducing new products into the business has been revised by including more stringent controls.

## **SHEQ Risk Assessment:**

All SHEQ risks that could impact on our employees, communities that we operate in, contractors working on our premises and the environment we operate in are identified, assessed and appropriately managed.

Site SHEQ risks are identified and assessed by using the electronic Afrox integrated SHEQ Risk Assessment Tool. The tool allows sites to conduct "on line" risk assessments and to automatically score and prioritise significant site risks. Trained operational teams do risk assessments for all new projects, products and processes.

High level SHEQ risks identified during the Executive Risk Committee SHEQ Risk assessment are:

- Lack of technical and operational competence within the business, particularly manufacturing and distribution due to new employees in roles and lack of progress in terms of practical training / assessment within manufacturing and distribution

- Lack of technical expertise and operational experience in BOC Zimbabwe particularly in light of the economic and political situation in Zimbabwe and brain drain current being experienced in Zimbabwe
- There is a risk of inadequate handover/receipt of plants after commissioning resulting in mal-operation of equipment or incidents due to the business chasing time deadlines
- Lack of sound maintenance system within the business resulting in planned maintenance not being carried out timeously resulting in unexpected downtime(quality effect), serious safety or environmental incidents or legal non compliance

Major safety, health and environmental risks at site level identified during 2008 include:

- Contractor activities on Afrox sites where new projects were being executed
- Manual handling and the exposure of personnel to excessive noise in the workplace
- Compliance with municipal industrial effluent quality standards

## **Quality:**

### **Quality system:**

The Quality Management System in Afrox is designed to ensure all products and services are maintained to predetermined International, National and Company Standards.

These standards are housed within the electronic, on-line Integrated Management Systems and Standards (IMSS) system.

To ensure that products meet these standards, the specifications within the system mandate the testing frequency, required minimum standard as well as the test equipment to be used. Backup or follow up testing is regularly carried out by the Afrox Gases Operation Centre's laboratory on bulk products as well as compressed product.

The Quality Management System requires regular auditing of the processes and products by ensuring that Quality Assurance is built into each process.

Quality Systems require understanding and commitment to the quality system principles by all employees – especially Management. These are monitored during audits and formalised during regular Management Review Forums.

### **Customer Focus:**

A new SAP Telequery system was implemented in 2008. Telequery is an operational tool, which enables customer queries and complaint to be logged and followed through to resolution. It also serves as a management tool to report on the root causes of enquiries and complaints.

### **Safety:**

#### **Safety Standards:**

SHEQ performance is managed through continuous improvement. Safety is a prerequisite to any business we undertake and safe behaviour is a condition of continued employment within Afrox.

Over many years we have worked hard to ensure the highest standard for safety. Through communication, training, checks and audits we have succeeded in ensured a decline in disabling injury frequency rate.

### **Process Safety:**

The management of safety on our sites includes Process Safety. An important component of Process Safety management is the requirement that a risk assessment or Hazop be conducted prior to an engineering change being implemented. This risk assessment identifies and mitigates the hazards associated with the process changes resulting in a significant reduction of engineering related risks.

Other key elements of the process safety programme in Afrox include:

- Engineering Management of Change
- Permit to Work
- Risk assessment
- Operator competence and training
- Auditing

Afrox utilizes Major Hazard installation (MHI), Major Hazard Review Programme (MHRP) and hydrocarbon risk assessments for Air Separation Units as part of the business's Process Safety programme. These specialised risk assessments are fundamental in reducing and

managing the major risks of installations that could potentially result in major disasters.

During 2008, all sites submitted applications for licences for the revised Linde Group MHRP programme.

## **Behavioural Safety:**

We continued to roll out our Behavioural SHEQ programme, and its various tools. The purpose of the programme is to:

- deliver a positive step change in our SHEQ culture and behaviours
- improve our SHEQ performance
- be recognised as a High Performance and Leading in SHEQ Organisation
- achieve our SHEQ Vision of not wanting to harm people or the environment.

This programme helps leaders and employees better understand the concept of total integration of all our SHEQ systems and standards, implement them effectively, and assists with entrenching an interdependent behavioural approach to SHEQ.

The LeadSafe behavioural assessment tool is used by leaders to demonstrate their Visible Leadership for SHEQ, and their care and concern for the well being of employees. Through this approach Leaders recognise and support safe behaviours, address and change unsafe behaviours, and motivate employees at all levels in the organisation to work safely. Numerous LeadSafe workshops have been held with line managers and supervisors, and in some areas, front line employees have also been trained in this positive and peer-to-peer engagement approach.

## **Occupational Health:**

Our aim is to ensure that occupational health is integrated in all our management systems and core operations and to prevent occupational illnesses. Occupational health programmes focus on minimising the major risks in the workplace which include noise exposure, manual handling and hazardous chemical exposure.

To ensure that Afrox personnel stay healthy and fit for their jobs, part-time Occupational Health clinics operate at 7 sites within South Africa and at 4 sites in other African countries. Well trained medical personnel operate these clinics and contribute towards ensuring that high health standards are maintained throughout the company.

A Policy for pre-placement medical examination for designated job categories with specific job-related physical requirements was developed and will be implemented in the new financial year,

## **Environment:**



The Afrox Managing Director bears overall responsibility for Afrox's environmental performance. He has delegated authority to the General Manager SHEQ for ensuring due environmental performance through company standards, directives and strategic direction.

The Afrox Board is kept informed of the company's environmental compliance and high-level environmental risks through regular reports and presentations.

### **Environmental Management System:**

Afrox's environmental impacts are split into direct and indirect impacts. Direct impacts are actions that affect the environment directly as a result of our operations, e.g. accidental releases of materials into the air, water and land. These impacts include emissions of atmospheric pollutants, e.g. combustion emissions from transport, emissions of ozone depleting substances and greenhouse gases such as carbon dioxide. We monitor and report key environmental considerations that result from the businesses we operate.

All sites monitor the consumption of water, electricity and raw materials monthly and keep an inventory of hazardous waste types generated and quantities disposed of.

Our indirect environmental impacts occur as the result of the resources and materials we used, and the products and services we supply to customers. We have limited control over these impacts because they are either derived from or passed to third parties. For example, we use substantial quantities of electricity for our air separation processes.

Non-renewable resources such as oil and coal are burnt to generate electricity. This results in emissions of carbon dioxide to the atmosphere. We have limited direct control over the fuel used and emissions generated by our energy suppliers, but we work with our suppliers and partners to ensure we use energy efficiently.

Afrox recognises the need for formal documented management systems. Afrox's environmental management system is well developed, documented and fully integrated into the company SHEQ system. Environmental standards for the management of significant environmental risks have been developed and the requirements thereof implemented. Management standards are applicable to water, waste, industrial effluent and hazardous chemicals.

Environmental Management Programmes (EMP's) are developed in order to manage impacts during the development and operation of existing and new facilities. Implementation of such EMP's is important for continuously improving the environmental performance of Afrox sites.

### **Environmental Focus:**

The Linde Group goal of being the leading environmental performer in the gas industry sector is also important for Afrox. To achieve this goal our environmental focus during 2008 included the following:

- Maintenance of ISO14001 certifications
- Review of the company's effluent discharge permits and permit conditions in order to ensure compliance
- Refining of the company environmental reporting process by introducing a KPI Tool and the Credit 360 reporting system
- Development of Environmental Legal Compliance Checklists for our operations in Zambia and Kenya.
- Review of Records of Decision (ROD) issued as a result of Environmental Impact Assessments and ROD conditions in order to ensure compliance
- Ensuring compliance with the new Asbestos Regulations - Regulations for the Prohibition of the Use, Manufacturing, Import and Export of Asbestos Containing Materials, 2007.

### **Waste Management:**

Most of Afrox's releases to land result from waste generation. Our sites recognise the importance of effective on-site waste management and

strive to comply with the company standard for waste handling and disposal. The company Standard for waste management governs the storage, treatment and disposal of general and unavoidable hazardous waste legally and responsibly. The standard makes provision for the responsible handling and legal storage and disposal of waste streams like scrap cylinders, carbide sludge, waste oil, empty chemical containers and spent fluorescent tubes.

In addition to adhering to legal requirements for storage and disposal, we make use of various recycling schemes. Scrap metal such as copper swarf and scrap cylinders is sold to dealers for recycling, while significant amounts of plastic, paper and cardboard are also recycled.

Contractors used for the transportation and subsequent disposal of Afrox's hazardous waste streams are approved by the SHEQ Department and their operations audited regularly.

Afrox sites manage their waste responsibly by maintaining site waste inventories, doing regular inspection of waste areas and ensuring that waste assembly and storage areas meet company and legal requirements.

Acetylene production produces lime as a useful by-product in the form of a slurry or filter cake. Afrox acetylene plants have done a lot of hard work to ensure that the lime product is re-used by selling the product to other industries that use the lime for the following purposes:

- Neutralisation of acid mine effluent,
- Construction of roads
- White washing (paint industry)
- Cement manufacturing

Hazardous waste generated by Afrox's sites includes used oil, empty chemical containers, paint related waste, used solvents, etc. Where possible, this waste is recycled or reused or safely disposed of at licensed facilities.

Stringent measures are in place to safely handle and dispose of asbestos-containing waste from scrapped acetylene cylinders. The company is actively working on a programme to replace asbestos in acetylene cylinders with a safer product and a new plant where cylinders will be filled with such safer product is currently being commissioned. Afrox obtained a Registration Number and submitted an asbestos phase out plan to the Minister of Environmental Affairs and Tourism in compliance with the new Regulations for the Prohibition of the Use, Manufacturing, Import and Export of Asbestos Containing Materials, 2007.

Of the 24 236 Ton of lime produced during acetylene gas generation in 2008, 93% is re-used and only 7 % is sent for disposal via land filling.

Major waste type quantities generated and land-filled in registered hazardous waste landfill sites are included in Table 3:

**TABLE 3: MAJOR WASTE TYPE QUANTITIES**

WASTE TYPE	QUANTITY GENERATED	UNIT OF MEASUREMENT	BUSINESS UNIT
Trichloroethylene used for oxygen cleaning	13 440	Litres	Afrox Gas Equipment Factory
Acid dip waste	186.65	Ton	Afrox Gas Equipment Factory
Asbestos containing waste	211.82	Ton	Afrox Porous Mass Plant
Cylinder massing sludge	169.47	Ton	Afrox Porous Mass Plant
Nitrous Oxide Plant Waste	821	Ton	Afrox Gases Operation Centre
Flux powder and welding rod production waste	1 109 68	Ton	Brits Welding consumables Factory
Scrap Cylinders	665.19	Ton	Afrox Gases Operation Centre and Afrox Roodekop

#### **Raw Material Consumption:**

A number of raw materials are used for the production of Afrox's gases, welding consumables, welding equipment and Self Rescue Packs. Sites monitor their consumption of raw material monthly and ensure that processes are efficient and deliver optimal yields and outputs.

Table 4 indicates the consumption of major raw materials used in the manufacture of acetylene gas and nitrous oxide gas.

**TABLE 4: RAW MATERIAL CONSUMPTION FOR SPECIFIC GAS PRODUCTION**

MATERIAL	QUANTITY USED	PRODUCTION PROCESS	NUMBER OF PLANTS
Calcium Carbide	8 663 Ton	Acetylene production	10
Ammonium Nitrate	1 826 Ton	Nitrous Oxide Production	3

Table 5 indicates the raw material consumption for the production of welding rods, gas equipment and self rescue packs:

**TABLE 5: RAW MATERIAL CONSUMPTION FOR OTHER PRODUCTS**

PRODUCTION PROCESS	RAW MATERIAL	QUANTITY USED	BUSINESS UNIT
Welding rod manufacturing	Metal Flux Powders Chemicals	5282.9 Ton 3256.92 Ton 799.66 Ton	Brits Welding Consumables Factory
Welding equipment production	Metal (brass and copper) Solvents Lubricating Machine Oil Chemicals	291.2 Ton 15.3 Ton 15.2 Ton 8 Ton	Afrox Gas Equipment Factory
Self Rescue Pack manufacturing	Chemicals Metal Rubber	10.96 Ton 37.41 Ton 13.8 Ton	Afrox Self Rescue Division
Bulk tank manufacturing	Mild steel Stainless Steel Boler Plate	93 Ton 70 Ton 5 Ton	Afrox Industrial Research and Development
Cylinder maintenance	Shot Zinc Wire Paint Thinner	15 Ton 18 Ton 80 Ton 71 Ton	Afrox Gases Operation Centre and Afrox Roodekop

### Packaging Materials:

The vast proportion of Afrox's products are either delivered in returnable cylinders or as cryogenic liquids into dedicated storage. However, some products supplied by Afrox are packaged, therefore generating waste, and necessitating the use of raw materials.

Afrox sites use cardboard and plastic as materials for packaging of Afrox's welding consumables, welding equipment and self rescue packs. During 2008, 4 158 ton of packaging material was used.

Afrox gases are filled into cylinders. A gas cylinder is a fully reusable package and is refillable. The cylinder will only become waste when it can no longer be used at the end of its economic life (well in excess of 20 years). Cylinder waste is fully recyclable. It is only in exceptional circumstances that gas cylinders are land filled, e.g. scrapped acetylene cylinders.

### **Pollution Prevention:**

Prevention of pollution at source is more cost effective and sustainable than clean up or remediation after pollution has occurred. International regulatory pressure is continually increasing for industry to adopt preventative solutions to pollution. It is therefore imperative that the principals of pollution prevention are understood at all levels within Afrox.

All sites identify possible environmental emergencies that could result in pollution of the environment in Site Emergency Response Plan. Procedures for handling such emergencies are available in the Integrated Management System Standards and sites are expected to conduct emergency drills for site-specific emergencies annually. Spill prevention and other emergency equipment are available at sites where such risks exist.

### **Direct Energy Utilisation:**

Our primary source of energy is electricity, while other sources of energy include LP gas, diesel and petrol. The production of oxygen, nitrogen and argon from air (air separation process conducted at Afrox's Air Separation Units) is energy intensive, indirectly resulting in the release of a significant quantity of greenhouse gas.

There are ten Afrox sites contributing about 90 % of the total Afrox electricity usage with a total monthly consumption of approximately 44 000 000 kWh at a combined maximum demand of approximately 71 000 kVa. There have been no significant changes in usage across the top ten sites over the last three years end. The Air Separation Units (ASUs) represent the most energy intensive section of the Afrox business, accounting for nearly 95 % of the energy consumed by the top ten.

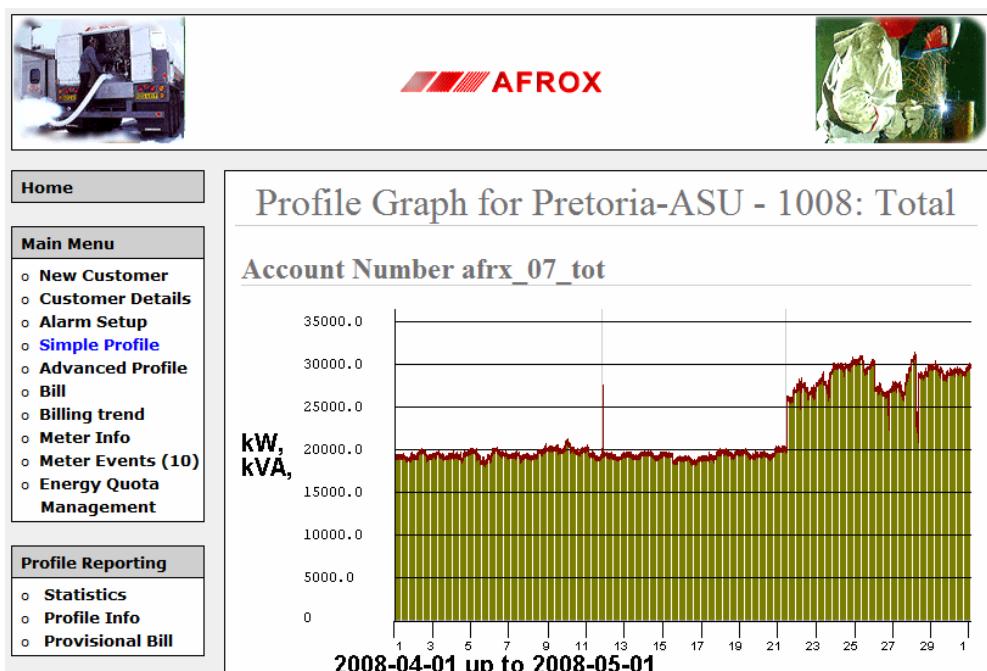
Air Separation Units have energy management programmes in place, both to minimise costs and to reduce environmental impact. Our plants harness maximum demand controls and "Specific Power" (measure of the energy used per ton of product produced) is reported monthly. Production sites have also introduced Power Factor Correction to make optimum use of electricity. Energy consumption for the South African Air Separation units is indicated in the Table 6.

**TABLE 6: ASU ENERGY CONSUMPTION**

PLANT	ANNUAL CONSUMPTION (Megawatt Hour)	CONSUMPTION/TON OF PRODUCT (Kilowatt Hour)	
		2007	2008
Highveld Plant	188 007	564	592
Pretoria West Plant	225 815	537	542
Kuilsriver Plant	173 595	576	1945
Wadeville plant	56 866	1 176	1225
Pietermaritzburg Plant	50 512	1 104	1004
Mondi Plant	12 888	-	628
Xstrata Plant	18 087	-	432

Afrox purchases approximately 837 718 Megawatt Hours of electricity during 2008.

### Energy conservation Programmes:



Afrox is committed to contributing to the South African economy by ensuring that we reduce our electricity consumption by the required 10%.

To date huge investment and resources have been made available within Afrox towards achieving this objective. The actions taken thus far include:

- Installing meters at major sites to be able to monitor electricity consumption and the development of an energy management policy to reduce electricity consumption by the required 10% using Meteringonline.
- Training of employees to understand their roles and responsibilities in reducing their energy consumption. The training highlighted the financial, operating and strategic risks of not being able to reduce our electricity consumption by 10%.
- Development of detailed action plans for each Plant to reduce energy consumption. The detailed action plans focus on energy savings through more efficient operation of the plants, i.e. improved maintenance practices, improved quality, reduce over production, etc.
- Conducting energy audits at major sites and identifying opportunities for electricity savings.
- Numerous GAP (Growth and Performance) projects have been identified and are in the process of being implemented.
- A tariff analysis was conducted at each plant to reduce costs.

### **Water consumption:**

Water is used in Afrox's processes primarily for:

- Manufacturing of gases like acetylene and nitrous oxide
- functioning of cooling systems
- hydrostatic testing of vessels and cylinders
- emergency deluge systems
- office purposes.

Water is sourced from municipal or regional utilities and some sites use boreholes for gardening purposes. Sites are required to monitor their water consumption monthly and trends are analysed to identify conservation possibilities. Approximately 1 226 563 m<sup>3</sup> of water was consumed during the year under review.

Our activities do not have a significant effect on any water resource or related ecosystem.

### **Air Quality:**

Afrox operates a large commercial vehicle fleet and the environmental implications are well recognized. It is our goal to minimise the environmental impact of our transport and distribution operations. Fuel efficiency has been the focus of improvement through vehicle design, driving techniques and optimised delivery routing.

The production of acetylene in South Africa is a Scheduled Process for which a Registration Certificate issued by the department of Environmental Affairs and tourism is required. The four Afrox plants that produce acetylene are in possession of such certificates. The main sources of the emission of acetylene gas from these plants include the generators, lime pits, cylinder filling, cylinder maintenance and compression.

Emissions from these sources are calculated using a standard mass balance methodology for acetylene plants from the European Industrial Gases Association (IGC Doc 84/02/E). A significant improvement in the efficiency of the plants was achieved during 2008 and less acetylene was emitted. Table 7 reflects the emission statistics for the South African plants during 2008:

**TABLE 7: ACETYLENE EMISSIONS FROM SA PLANTS**

Year	Amount of carbide used (Ton)	Amount of acetylene produced (Ton)	Total acetylene emitted (Ton)	Acetylene emitted/ton produced
2007	7 077	2 784	16	5.73 kg/Ton
2008	5 644	2 282	9.2	4.10 kg/ton

The most common method used by many international companies to calculate their potential climate change impact is to report the emission of carbon dioxide (CO<sub>2</sub>) that are emitted to atmosphere by an electricity generator's power station that burns hydrocarbon based fuels (coal and gas) in order to make steam, run turbines and generate electricity. The resultant carbon dioxide emissions are known as indirect carbon dioxide emissions. The emission is calculated by multiplying an emission factor developed by the Green House Gas (GHG) Protocol Initiative against the amount of power used (kWh/mWh). The Linde Group uses the internationally recognised protocols set out in the GHG protocol to calculate the indirect emissions.

Afrox's main constituent of greenhouse gas emissions is carbon dioxide (CO<sub>2</sub>), primarily resulting from electricity purchased from Eskom in South Africa and other service providers in the African countries where Afrox operates. Other greenhouse gas emissions are the result of production processes. The total indirect CO<sub>2</sub> emissions due to electricity consumption was 690 516 Ton during 2008.

Production processes also contribute towards other fugitive greenhouse gas emissions e.g. nitrous oxide (N<sub>2</sub>O) production and cylinder filling.

Carbon dioxide storage vessel re-condensation and a number of Afrox's refrigeration units use R-22, an ozone depleting agent with ozone depleting potential of 0.055. All new condenser units and units that are repaired are being filled with R-404A which has zero ozone depleting potential.

The production of atmospheric gases from our Air Separation Units has a minimal direct impact on the environment. Air separation processes use air as feedstock and are physical processes that do not involve chemical reactions. Only materials originally present in the air could end up in waste gas streams (purges and vents). The potential consequences to the environment are the use of water and energy as well as the use of oil for lubrication purposes. To minimise these impacts, we have improved the energy efficiency of our Air Separation Units continuously, through equipment design, maintenance and efficient operating practices.

The noise producing capability of our activities is recognised and regular monitoring provides the foundation for actions to minimise and wherever practicable eliminate the impact.

Planning has been completed to develop an organisational and product Greenhouse Gas emissions assessment or Carbon Footprint which will commence in 2009.

### **Transportation Impacts:**

The Afrox transport fleet is well maintained and regularly serviced to ensure limited emissions, noise and economic fuel consumption. The environmental impacts of our transport fleet are the use of fuels (diesel and petrol), noise and air pollution by carbon monoxide and other combustion products, accidents and waste created during vehicle service.

Afrox trucks travelled a total distance of 37 602 773 km and passenger cars a distance of 27 957 604 km during 2008.

Afrox vehicles cover large distances to distribute our products resulting in significant volumes of diesel and petrol being consumed. Table 8 indicates the fuel consumption for the 2008 financial year:

**TABLE 8: FUEL CONSUMPTION FOR AFROX'S VEHICLES**

FUEL	CONSUMPTION (Kilo litres)
Diesel	8 985.42
Petrol	285.10

**Effluent Management:**

Afrox's major source of liquid effluent is cooling water blowdown which contains various treatment chemicals such as chlorine based corrosion inhibitors, biocides and acids. Developing a close working relationship with suppliers of water treatment chemicals, and establishing monitoring and testing programmes at all sites, enables Afrox to minimise the quantity of chemicals used and to ensure that the quality of the effluent is of the required standard.

Afrox sites discharge industrial effluent to the municipal sewer system under Permit conditions. Fifteen sites have permits issued by the local authorities. These sites monitor the quality of the effluent regularly and have management interventions in place to ensure compliance with Permit conditions.

During the last financial year the Afrox Corning plant received four notices indicating contraventions of the Sewage Acceptance By-laws. Action plans were developed and implemented to ensure that effluent generated by the plant is of the prescribed quality. No other contraventions were reported.

**Land and Biodiversity Rich Habitats:**

Most of our sites are located in industrial or commercial areas. However, there are a few environmentally sensitive areas close to some of Afrox's sites. Where sites are close to the ocean, bird sanctuaries or other sensitive habitats stringent management controls are in place to ensure that our activities do not adversely affect these areas.

**Environmental Expenditure:**

Afrox recognises that our environmental impact can never be absolutely zero, but our behaviour demonstrates that we care about not harming the environment and we continuously strive to achieve this goal. Environmental best practice is developed and employed and environmental improvement programmes are included and implemented annually.

Environmental expenditure during 2008 includes the following items:

- consultancy fees (environmental impact assessments, external audits and legal advice)
- updating the Afrox SHE Legal Register
- spill prevention equipment
- upgrading of chemical and waste storage areas
- process and infrastructural modifications.

A new effluent treatment plant was constructed at the Afrox Gas Equipment Factory at a cost of R1.3 million.

Environmental expenditure at other Afrox sites for 2008 was approximately R500 000.

## **Transport Safety**

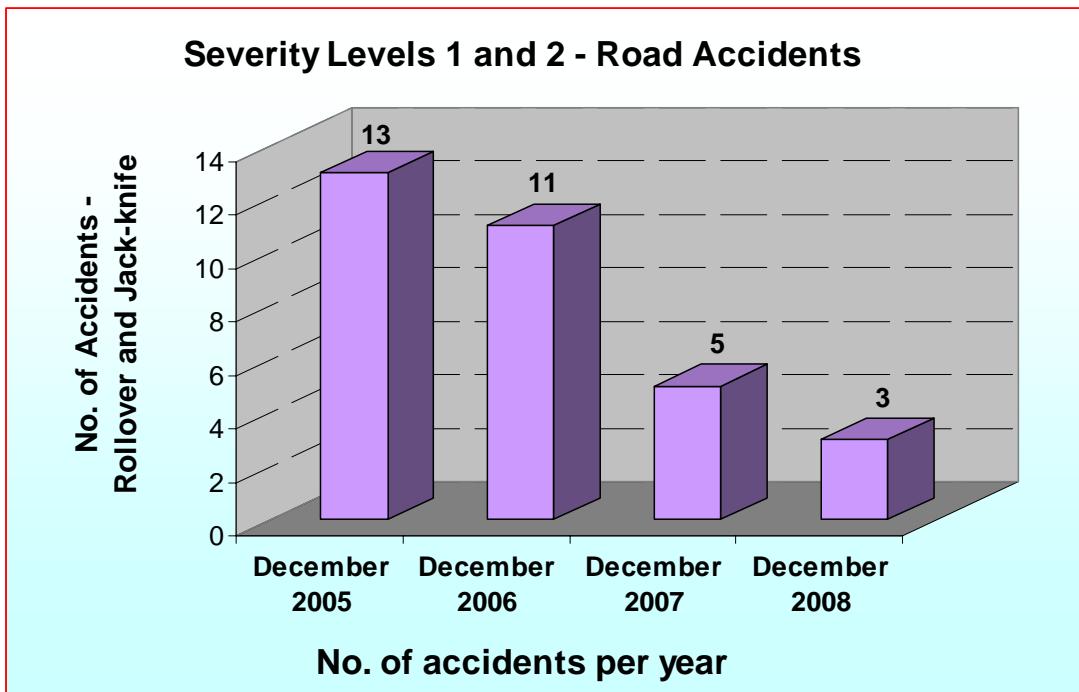
As the result of an increase in vehicle accidents within the Linde Group during 2006, a Linde Group driver survey was conducted in 2007. Concerns were identified during the survey and corrective action plans were addressed and implemented in 2008.

Distribution Management has shown their commitment towards Transport safety. Older vehicles have been replaced and there has been a significant change in the age of the Afrox vehicle fleet. We have also approved service providers for the maintaining and servicing of our vehicles.

During the years 2006 to 2007 the number of significant vehicle incidents were on the increase. These incidents were mainly roll-overs, jack-knifes and head-on-collisions. The number of these incidents have decreased significantly in 2008. Our revised, intensive driver and supervisor training is showing the benefits as we are seeing a huge change behaviours across the distribution function.

Graph 3 illustrates how the severity levels of road accidents have decreased in the period 2005 to 2008.

### **GRAPH 3: ROAD ACCIDENT SEVERITY LEVELS**



Driver fatigue is still a major concern for Afrox. We are in the process of developing awareness programmes for our drivers. We will also get the driver's families involved to carry over the message on driver fatigue. This will be rolled out during 2009

### **Auditing:**

SHEQ performance, improvements and compliance with internal and legal requirements are assessed via regular audits. SHEQ audits are performed annually as part of the company's integrated management system audits. The integrated SHEQ audits include the following aspects:

- Operations and Engineering
- SHEQ Management systems
- Medical Gases Good Manufacturing Practice
- Railway Safety
- SHEQ legal compliance
- Transport Safety
- Customer Engineering Services
- Process safety

An audit schedule is developed and implemented annually and lead auditors are trained in the theoretical and practical components of

auditing. Approximately 80 operational Afrox sites were audited during 2008.

Audit Manager, one of the pillars of IMSS is a database to capture and manage internal and external audit findings. It is used by Afrox auditors to assess site processes, activities and the effectiveness of the implementation of the company's management systems. This system also allows for the management of non-conformances and for central analysis and trending. An upgrade of this system was launched by the Linde Group earlier this year.

Effective close out of audit findings are monitored by the Executive Team on a two weekly basis.

### **Training and Competence:**

The company SHEQ Policy and Standards cover all operational aspects and activities that could influence the safety and health of employees and the environment. These are available to all employees via the company's IMSS.

The company's Traccess system is a Learning Database linked to IMSS. The system allows for the creation of profiles for all employees. The profiles specify the content of the learning programme that will ensure competence prior to starting a task (Licence to Work). Contractors that work on Afrox sites are treated in the same manner as employees and are expected to maintain the same level of competence and operational excellence as Afrox employees. Suitable Traccess/Licence to Work profiles is also allocated to such persons.

We have further developed our relationship with a local training service provider to ensure consistency with regards various SHEQ related training courses. This contract allows us to customise training material in line with Afrox standards and requirements, and allows the business units to make use of one service provider. Other training and coaching tools include SHEQ Bulletins and Newsletters as well as lessons from incidents.

The behaviour of articulated and rigid drivers have significantly changed since training material was revised and made more practical and team work was included in the training. Driver training material is aligned with the Transport Education and Training Authority (TETA). All personnel that travel on behalf of the company undergo defensive driver training.

Each employee's responsibility to protect the environment is also reinforced by celebrations of national environmental programmes at Afrox sites, such as Arbour Week and Water Week and international events, such as World Environmental day.

Afrox-specific environmental awareness training packages are available within the IMSS. These include:

- environmental awareness
- waste management
- storm water pollution prevention
- environmental videos



*Unit Manager, Terrence Moodley, planting a tree at the Afrox Gases Operation Centre in Germiston during National Arbor Week.*

## **Incident Management:**

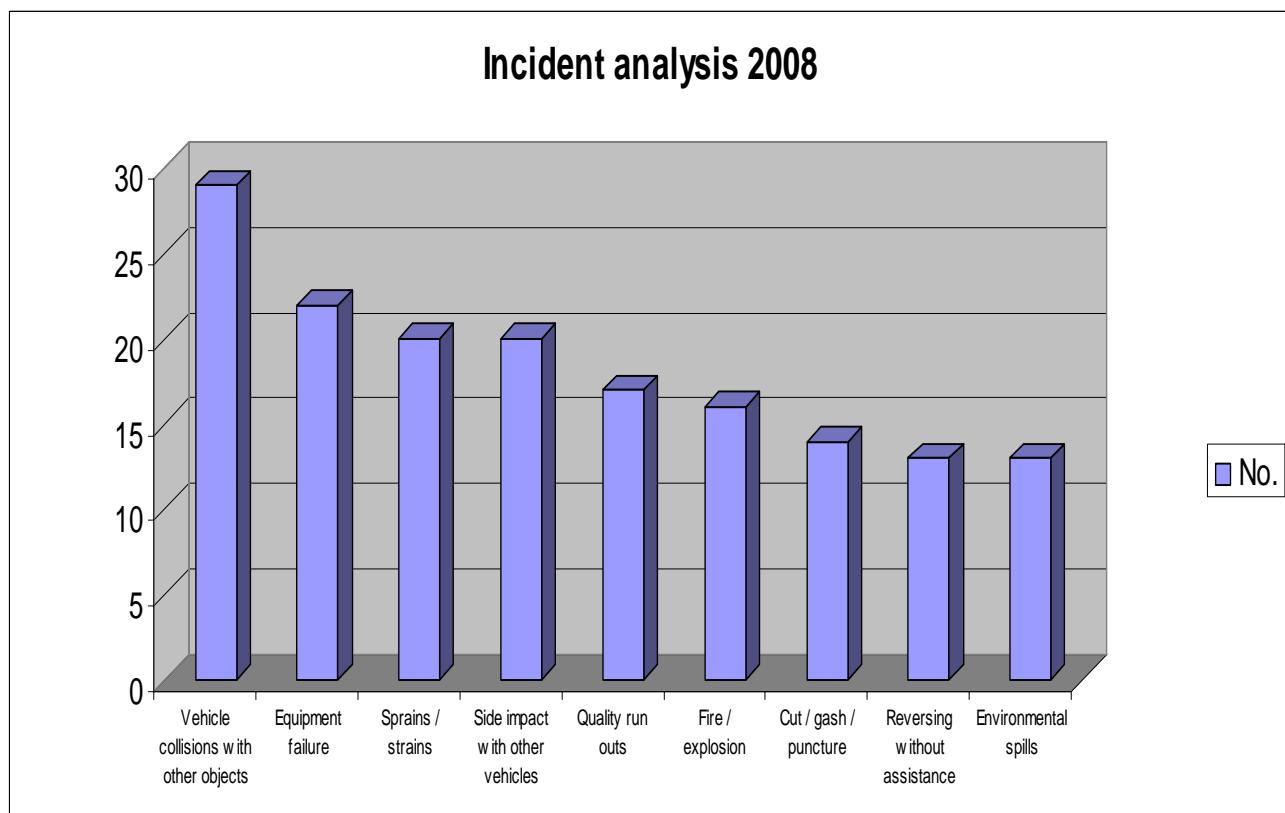
At Afrox we believe that all incidents are avoidable. The company's incident reporting system is used to report and investigate all SHEQ near misses and major incidents. Major SHEQ incidents (MIR's) are reported to the Linde Group. The closing of such incidents are carefully monitored and closed out at Afrox and Linde Group Board level. Table 9 indicates the number of MIR's and the type of incident reported in 2008:

**TABLE 9: MIR'S REPORTED**

NUMBER OF MIR'S	Type of incident
9	Transport
2	Uncontrolled Gas Release
4	Armed Robbery
2	Cylinder Rupture/Fire

Other less serious SHEQ –related incidents are also recorded and reported monthly. Trending and analysis of such incidents are done regularly. Root causes are identified and addressed and preventative measures implemented for all types and levels of incidents. Analysis of the types of incidents for the financial year 2008 is illustrated in Graph 4:

**GRAPH 4: INCIDENT TYPES - 2008**



A number of minor environmental incidents were reported. These were primarily the result of hydrocarbon spills or inappropriate management of industrial effluent. Table 10 illustrates the specific environmental incidents reported in 2008:

**TABLE 10: ENVIRONMENTAL INCIDENTS**

EFFLUENT SPILL	OIL SPILL	CHEMICAL SPILL	LIQUID AMMONIUM NITRATE SPILL	UNCONTROLLED GAS RELEASE
6	1	1	1	1

A number of major customer quality related incidents (MCIR's) were reported and investigated during the year. Table 11 indicates the number of incidents and root causes:

**TABLE 11: MAJOR QUALITY INCIDENTS**

TYPE OF MCIR	NUMBER OF MCIR'S
Medical run out	11
Off specification product	6
Industrial run out	2
Poor service quality	4
Equipment failure	2
LPG run out	1
Suppliers' faulty product	1

A web-based incident reporting tool is being rolled out in the Linde Group. Afrox personnel will use the tool for incident reporting in 2009. Advantages of using the new tool include trending, sharing of learnings from incident investigations and a subsequent reduction in the number of incidents and accidents.

The number of Occupational Illnesses reported to the compensation Commissioner during 2008 is indicated in Table 12. It is our goal to ultimately reduce the occurrence of occupational illnesses to zero by implementing appropriate engineering controls, medical surveillance programmes and training of our personnel.

**TABLE 12: OCCUPATIONAL ILLNESSES**

YEAR	NUMBER OF INCIDENT	TYPE OF INCIDENT	
		<b>Noise Induced Hearing Loss</b>	
2007	4	4	0
2008	4	3	1

In general, there has been an increase in the number of SHEQ-related incidents reported in 2008. The increase is attributed to a change in the management's behaviour towards better managing incident investigations and learning lessons from these.

### **Legal Compliance:**

A company wide framework is provided to facilitate SHE legal compliance. This includes a company SHE Legal Register, a SHE Legal Compliance Checklist and annual SHE legal compliance audits at selected sites performed by an external legal specialist. A new company standard that focuses on SHE Legal Compliance was developed during 2008.

Via the Afrox Information Centre's subscription to legislative updates and SANS Standards as well as regular legal updates from other service providers, the business is constantly informed of any changes that impact on our activities.

Legal compliance at site level is verified and checked during the annual integrated SHEQ and Technical audits conducted at identified Afrox sites during the financial year.

Minor SHEQ-related legal non-conformances were reported and corrected during the financial year. No SHEQ-related non-conformances that lead to prosecution or fines were reported during 2008.

### **Supplier Selection:**

Afrox is a good neighbour and as such is concerned about the environmental impact of all its activities throughout Africa and those of its suppliers. As a consequence, we seek to work with those suppliers who are routinely able to demonstrate to us effective and ethical

performance, and who have a SHEQ Management Policy ensuring that:

- It's activities comply with all applicable legislation and regulations
- Its products or services are designed, procured, produced, packaged, delivered, capable of being used and ultimately disposed of, in ways that are appropriate from an environmental viewpoint
- It's strategic planning for future investment and growth reflects both current and emerging needs concerning the environment and protects the safety and health of people.

Selecting the right supplier for Afrox is fundamental to our being able to conduct our business and provide for the diverse needs of our customers. Throughout our business we are adopting the SESPA standing for Supplier Evaluation, Selection and Performance Appraisal. This is a process to ensure that the selected supplier best matches our precise business needs and covers consideration of health, safety and environment.

### **3. Afrox Business Units SHEQ Performance**

#### **Introduction:**

Afrox business units in South Africa and other African countries have well developed SHEQ systems based on the Afrox Integrated Management System Standards. Each site identifies specific SHEQ improvement programmes - based on high priority SHEQ risks – which are actioned and implemented annually.

Specific case studies where improvement programmes resulted in cost savings and more efficient operations are included in this Section of the Report.

#### **Specific Case Studies:**

##### **New Effluent Plant:**

An effluent treatment plant has been built at the Afrox Gas Equipment factory in Germiston. The operation of the new plant will contribute toward effluent disposal cost saving of about R45 000/month, and will ensure that the quality of the effluent disposed to the municipal sewer system complies with the municipal by-law requirements. Plant effluent did not comply with these municipal standards in the past and was removed and disposed of by a waste contractor at a Hazardous Waste landfill facility.

The new plant is automated and ensures that effluent generated by the plant is effectively reduced and neutralised in order to meet the municipal standards for Chromium +6 and pH. After the addition of a flocculent, the treated effluent is channeled to a clarifier where the solid component of the effluent settles out. Filter pressing ensures that a limited volume of solid has to be disposed of and that the remaining liquid effluent can be discharged to the municipal sewer system under municipal effluent Permit conditions.

An on-line pH monitor, storage vessels equipped with level control equipment and an exit volume flow meter assists with the successful semi-automated operation of the plant.

The construction of the new plant at the Gas Equipment Factory demonstrates that Afrox take environmental preservation and compliance with legal requirements seriously and that the effective management of site environmental risks could lead to cost saving and improved efficiency.



### **New Porous Mass Plant Waste Disposal:**

An investigation into a cost effective and environmentally responsible method of disposing the waste generated by the new Afrox Porous Mass Plant was conducted.



Various disposal and re-cycling opportunities were evaluated and the environmental impact of each considered. The option that was selected allows for the alkaline waste to be re-used during the neutralization of acidic waste generated by the electroplating industry. The waste contractor that was selected transports the waste to a licensed facility where the waste is mixed with the acid waste in an effluent treatment plant. The relatively small amount of solid waste generated during the neutralization process is land filled at a hazardous waste landfill site. Significant cost savings resulted from the waste being re-used instead of land filled.