

DEVELOPMENT OF THE SAPPI SAICCOR SCHEDULED TRADE PERMIT

4th Annual Air Quality Lekgotla

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DEVELOPMENT OF THE SAPPI SAICCOR SCHEDULED TRADE PERMIT

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SAPPI SAICCOR; BACKGROUND

- World's largest manufacturer of speciality cellulose (dissolving pulp) used in the manufacture of textiles, food, pharmaceuticals and plastics
- Located in a valley located approximately 10m above mean sea level and approximately 45km south west of central Durban.
- Situated adjacent to the Mkomazi River, approximately 3.5km from the sea
- Surrounding land use includes a mixture of industrial, agricultural and residential areas including schools (13)
- Topography of the basin inhibits the vertical distribution of pollution as a result of temperature inversions, especially during the winter months.

SAPPI SAICCOR & ETHEKWINI MUNICIPALITY

- eThekweni Municipality extended its boundaries to include the area of Umkomaas in which Sappi is situated in 2004
- In October 2005 the Scheduled Trade bylaws were extended to include the Sappi Saiccor installation.
- At that stage eThekweni Health commenced its deliberations with the industry as DEA and DWAF were the only two authorities that had issued Environmental permits for Air Quality and Waste Water respectively
- In December 2005, Sappi Saiccor applied for a Scheduled Trade permit

1. SAPPI SAICCOR; BACKGROUND



PROCESSES INFORMING PERMIT

2. LEGISLATION

Scheduled Trade Bylaws, 1979

Atmospheric Pollution Prevention Act (45 of 1965)

NEMA (107 of 1998)

NEM;AQA (39 of 2004)

Promotion of Access to Information Act (2 of 2000)

Promotion of Administrative Justice Act (3 of 2000)

Occupational Health & Safety Act (85 of 1993)

National Health Act (61 of 2003)

SCHEDULED TRADE PERMIT APPLICATION

21 December 2005

- General Details
- Production Details
- E.R. and Contingency Plan
- Air Quality
- Environmental Noise
- Occupational Health & Safety
- Major Hazard Installation
- Waste

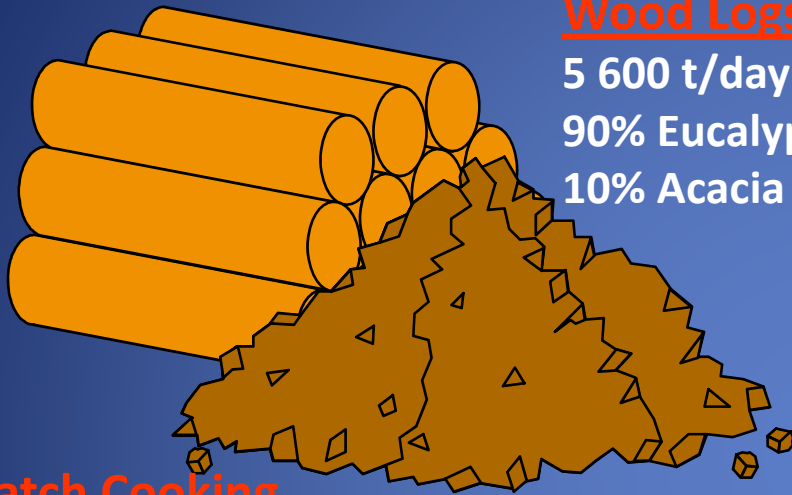
Overall process Flow

Wood Logs / Chipping

5 600 t/day

90% Eucalyptus (Gum)

10% Acacia (Wattle)



Exported to:

Asia, Europe
and
the America's



Batch Cooking

60% Calcium
and

40% Magnesium

140° C

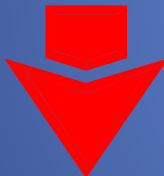
10 Bar

5-7 Hrs

100T

wood/200m3

liquor



Washing / Screening

Soluble Sulphonated Lignin

Dissolved Organics

Knots

Fibre Bundles

Bark



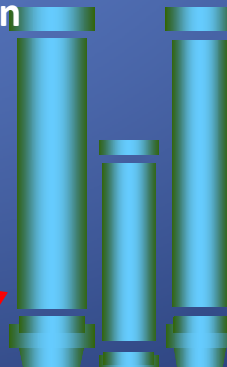
Bleaching

Oxygen (O)

Chlorine Dioxide (D₁)

Caustic Soda (E)

ypochlorite/Peroxide (H/P)

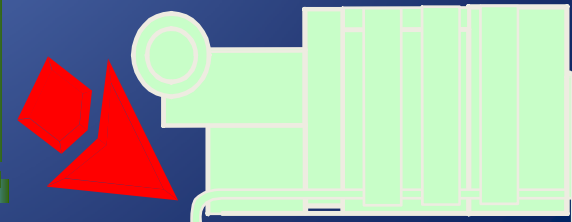


Drying

Continuous Sheet

Baled/Reeled

1650 t/d



PROCESSES INFORMING PERMIT

AIR QUALITY

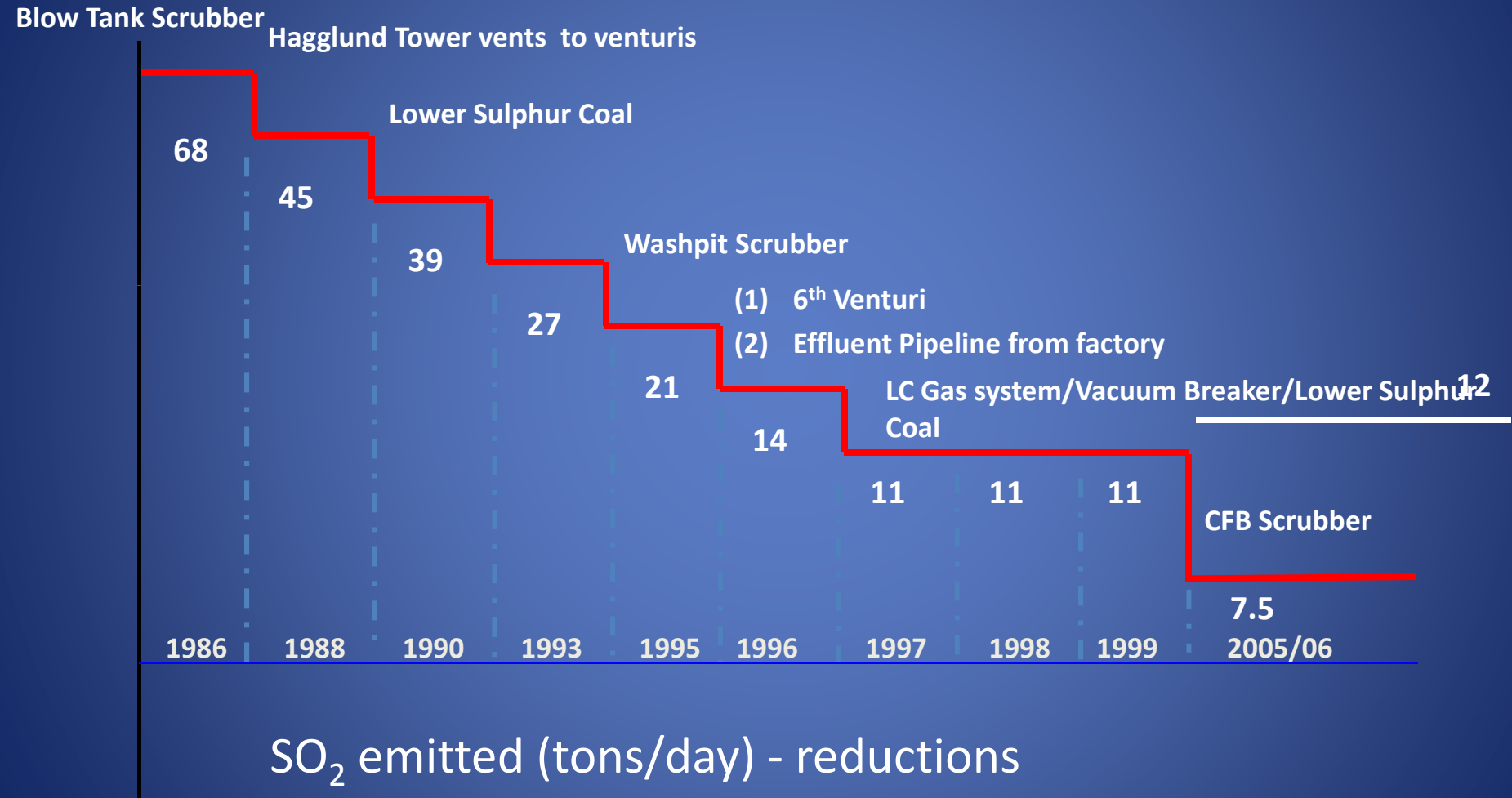
- 6 Coal fired boilers for steam & power generation
- Burn approx. 660 tons of coal $<0.8\%$ sulphur per day
- All boilers fitted with cyclones, gases are vented through 2 wet scrubbers & discharged through a single stack at 62m

SAPPI SCHEDULED TRADE PERMIT

EMISSIONS INVENTORY (incl)

- Stack Data
- Cleaning Device Data
- Process Fuel Consumption Data
- Process Production Data
- Process Emission Data

SO₂ Improvements



SAPPI SAICCOR EIA PROCESS

2005/ 2006

- Applied in September 2005 to expand its chemical cellulose production from about 580,000 to 810,000 tons per annum (Global demand for cellulose increasing).

Project involved;

- Upgrading existing chipping lines
- Conversion of some calcium digestors to magnesium digestors

SAPPI SAICCOR EIA

2005/ 2006

- ENVIRONMENTAL CONSEQUENCES
- Reduced coal demand leading to reduced SO₂ emissions
- Reduced fugitive emissions
- Increased noise, dust and traffic disturbance during the construction and operational phases

eThekwini Health comments

21 November 2005

- Environmental assessment must proceed to the EIA phase
Must evaluate the potential impacts in greater detail.
- The following specialist projects must be undertaken (1-4);
1. An Air Quality Assessment
 - Quantify and detail all emissions
 - Predicted emissions must then be modelled into surrounding communities and the results thereof must be interpreted from a toxicological perspective.
 - The interpretation will need to take into account (where possible) monitored values from existing monitoring stations.
 - The above will enable a reasonable comparison to be drawn between the existing and new scenarios.

2.Environmental Noise Impact Assessment

A specialist / scientific study must be undertaken in order to evaluate any potential noise impacts. This will entail detailing the existing noise levels in the surrounding communities, predicting the noise levels generated by the proposed plant.

3.A Traffic Impact Assessment

It is necessary to conduct a detailed assessment as set out in SANS 10210;2004, “Calculating and predicting road traffic noise.”

4.MHI Assessment

It is necessary to update the existing assessment with the new expansion proposals and to identify and ascertain any additional risks.

General

Best Available Technology

Required to apply the principles of BAT, so that its total pollution is minimised.

Waste

Alternate means of disposal of certain waste including paint, brush-cleaner and thinners must be identified as the existing manner of disposal i.e. burning is not considered an acceptable environmental practice.

Noise

Sappi required to comply with SANS 10103; 2003.

Monitoring requirements

Post commissioning verification monitoring of all identified impacts will be required.

In stack monitoring with real time data transfer is recommended.

Environmental Management Plan

An environmental management plan (EMP) for the construction phase of the project must be submitted to this department. EMP must consider all potential impacts and the mitigatory measures to reduce such impacts to acceptable levels.

Scheduled Trade Application

Although the permitting process is not typically part of the EIA process, this department attempts to run its Scheduled Trade registration process in parallel with the EIA process.

The following process will be required:

Application for Scheduled Trade Permit.

Circulation of application to relevant Council department for input/approval.

Any other approval, e.g. building plans, land use approvals, etc. will need to be pursued with the relevant departments.

eThekwini Health comments

19 April 2006

Air Quality

- Project represents a positive step in improving air quality in the area.
- Query 8 exceedances pa. of the 10-minute SO₂ guideline value, and that this would drop to zero in future.

eThekwini Health comments

19 April 2006

Environmental Noise

- Ambient daytime noise is significantly higher than recommended for rural districts and urban districts.
- Current levels should be used as a baseline and that no increase above these levels should be permitted in terms of the expansion.
- Sappi to contain all noise within the factory in terms of engineering control measures and/ or acoustic screening.

eThekwini Health comments

18 May 2006

AIR QUALITY

- Modeling; (typical, normal conditions) & not upset or start up
- Location of monitoring sites appropriate to quantify impacts on affected communities
- Greenhouse gases; increase in emissions
- EMS must address above
- Continuous improvement; air quality emissions

SAPPI ROD

26 May 2006

- All comments taken into account and written into the ROD except for Noise where the DAEA took a more lenient approach;
- Vague & not specific (may not significantly exceed ambient).

Sappi EIA

Letter to MEC Agric. & Env. Affairs 21 June 2006

- Whilst Dept. supports the project, concern raised in regard to Env. Noise.....
- Ambient noise significantly higher than recommended for rural districts & in most cases higher than recommended for urban.
- eThekweni recommended that current levels should be used as a baseline

Sappi EIA

Letter to MEC Agric. & Env. Affairs 21 June 2006

- ROD states that noise emanating from site must not significantly exceed the current measured ambient levels when these levels already significantly exceed SANS 10103.
- ST permit; specific conditions

AMBIENT MONITORING STATIONS



PROCESSES INFORMING PERMIT

AMBIENT MONITORING & MET DATA

- Sappi provided eThekweni Health with data from the existing monitoring network for a period of 4 years
- This information was required to establish current trends regarding ambient air quality around the plant
- The data provided included SO₂ and meteorological data

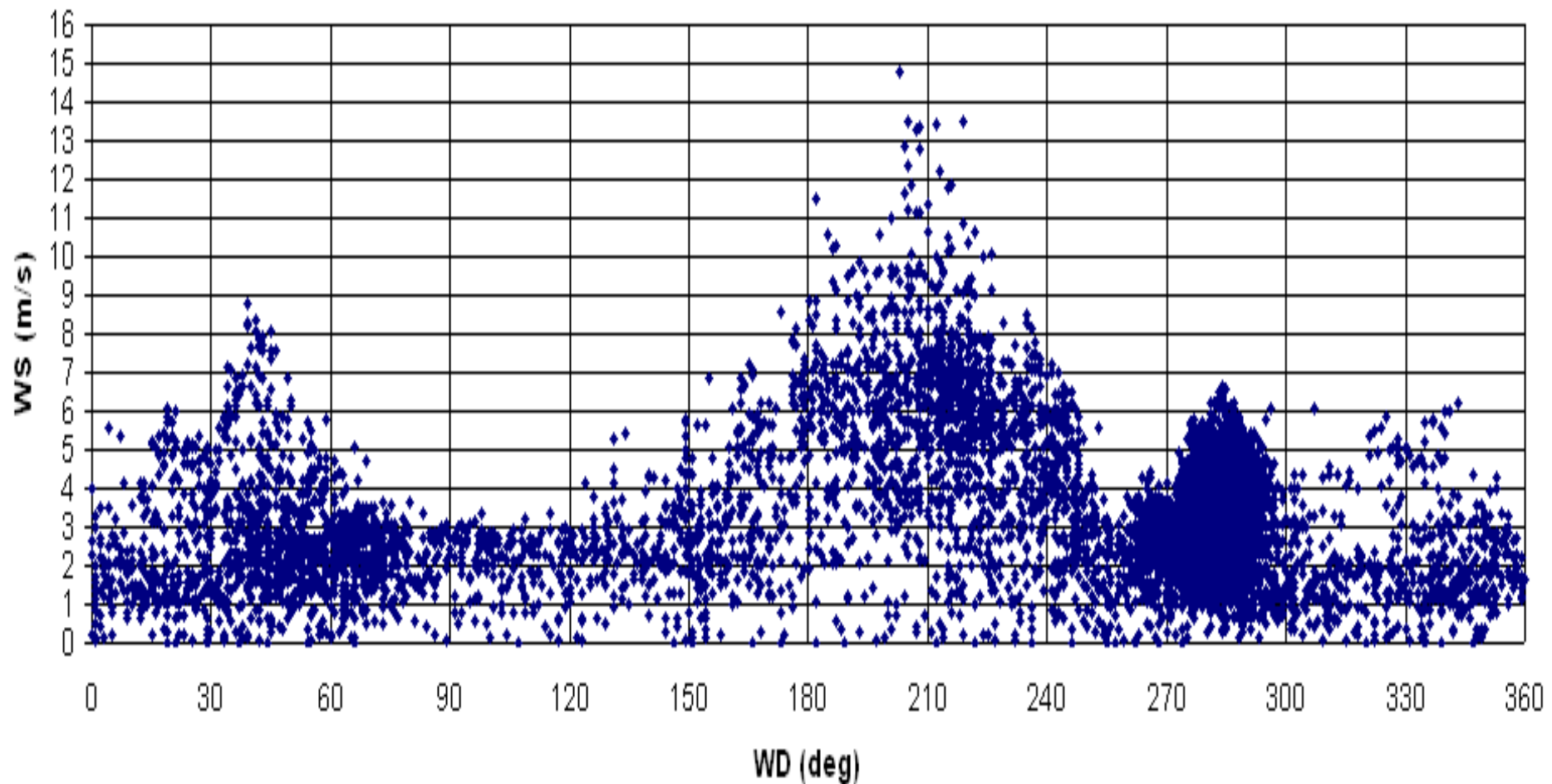
PROCESSES INFORMING PERMIT

AMBIENT MONITORING & MET DATA

- The data was extensively studied and evaluated to establish pathways of highest exposure & impact
- Meteorological data & assessment of the topographical conditions at Umkomaas with reference to the plant also assisted in defining which monitoring stations will be used for permitting
- After reviewing the data it was established that the Dlambula, Drift & Ilfracombe monitoring stations would be used

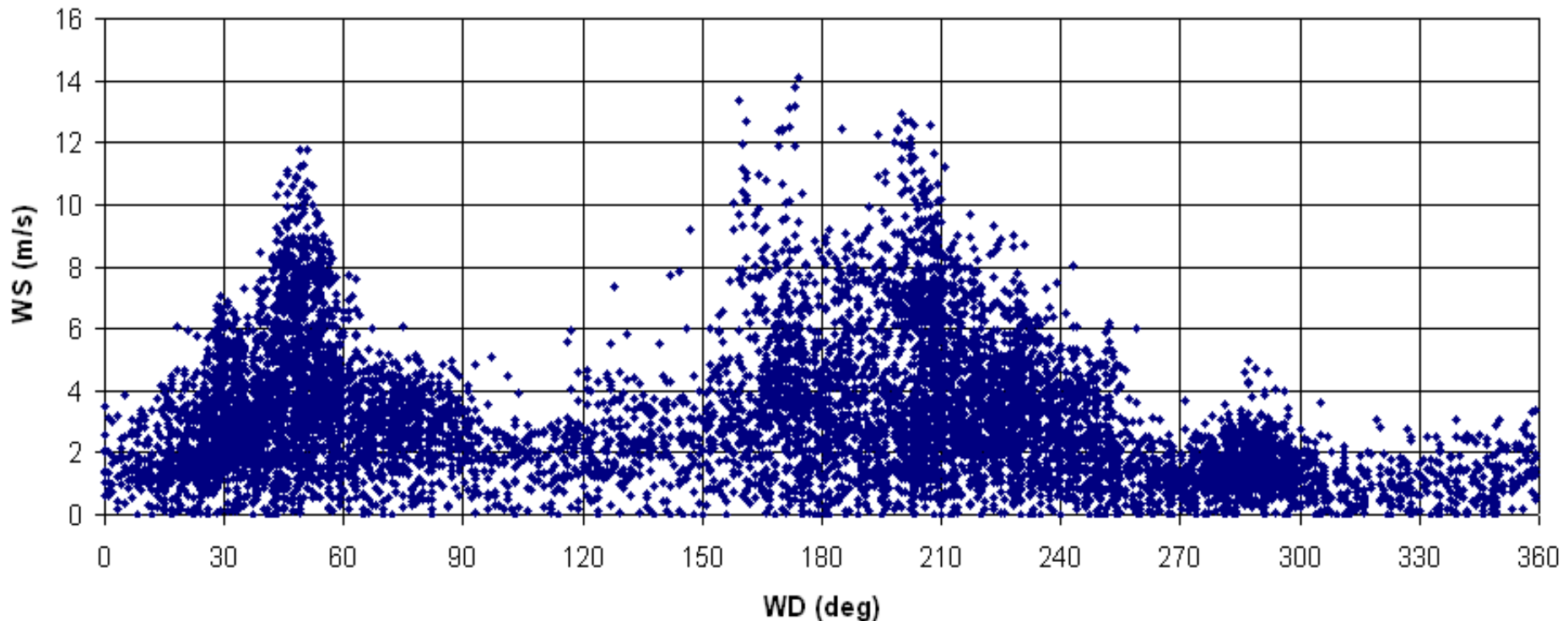
SAPPI SAICCOR AMBIENT AIR QUALITY

Diambula WindSpeed versus Wind direction for June 2006



SAPPI SAICCOR AMBIENT AIR QUALITY

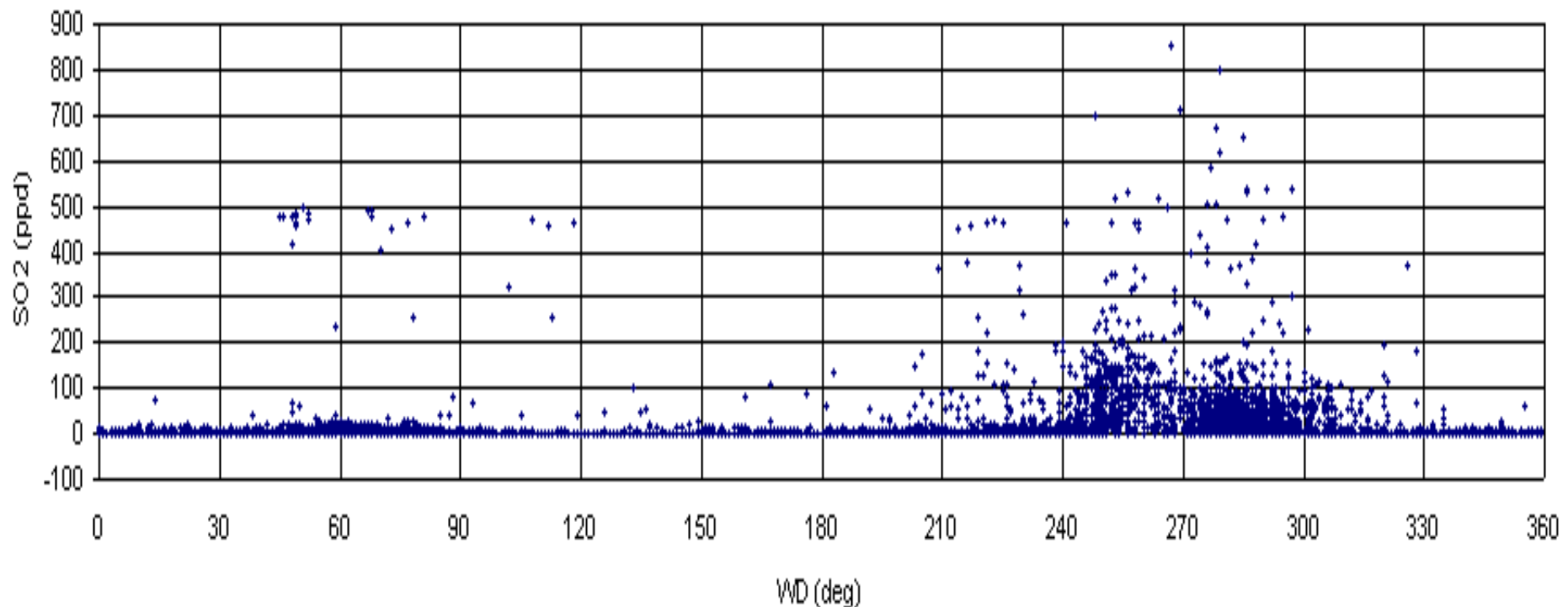
WindSpeed versus wind direction for October 2006



Three predominant wind directions, 30 -60 °, 180- 210 °and 270 °being reflective of a general SW & NW. Topography is undulating & uneven in which the installation is situated & at times the valley changes the dynamics of the meteorological conditions

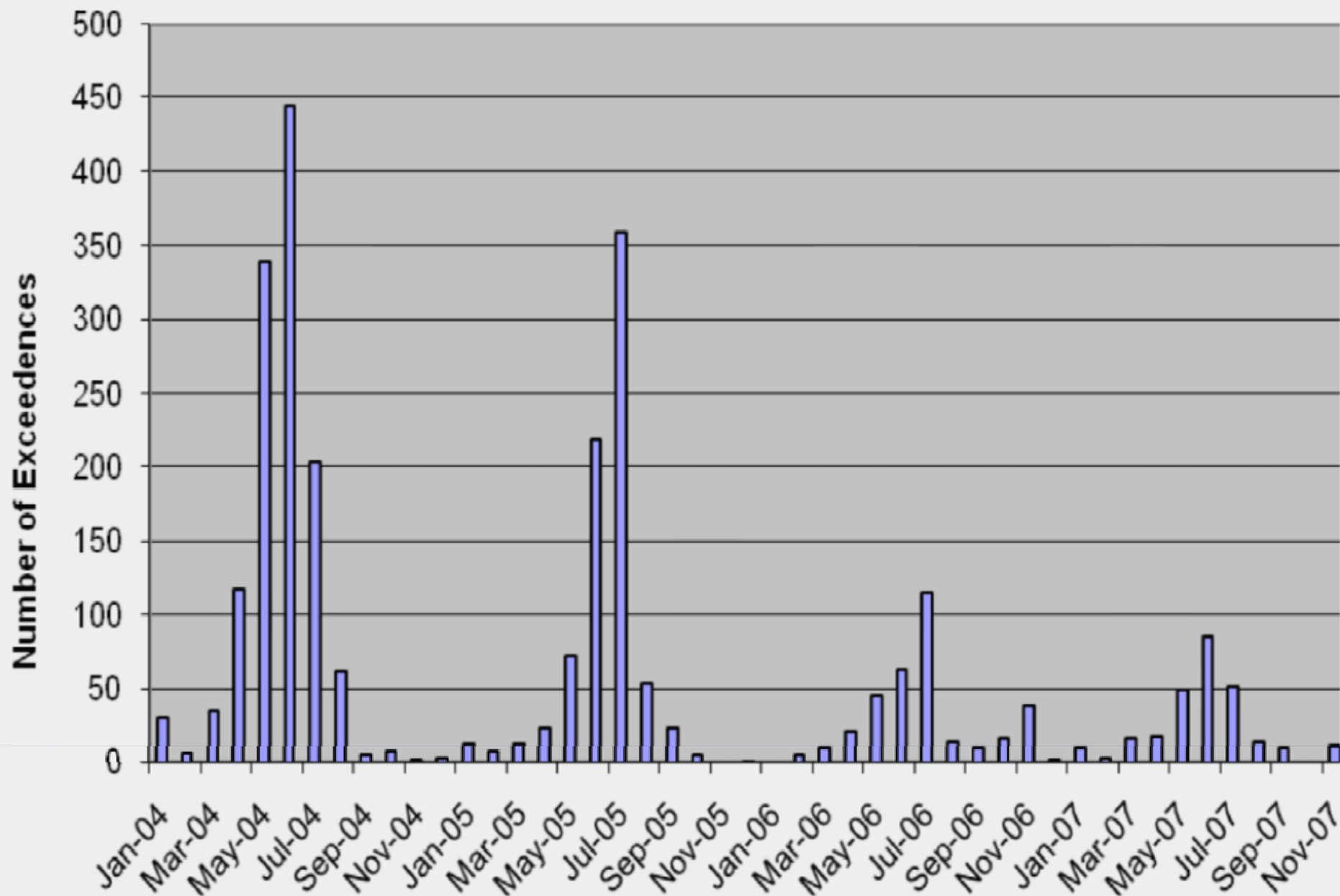
SAPPI SAICCOR AMBIENT AIR QUALITY

SO₂ versus wind direction for September 2006

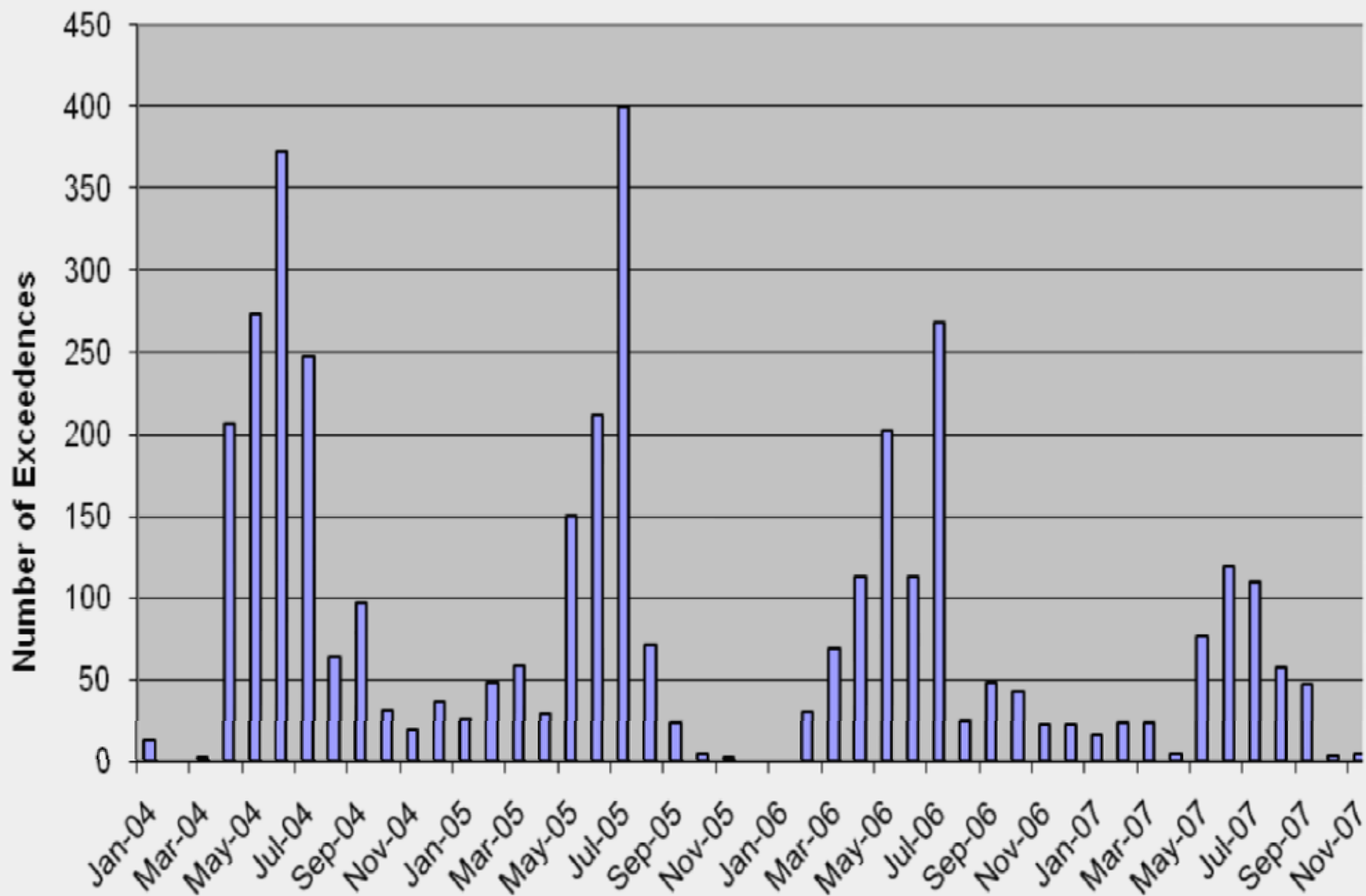


Highest concentration & exposure of SO₂ (240 – 300 wind vectors) are areas of highest exposure being the Dlambula & Ilfracombe area

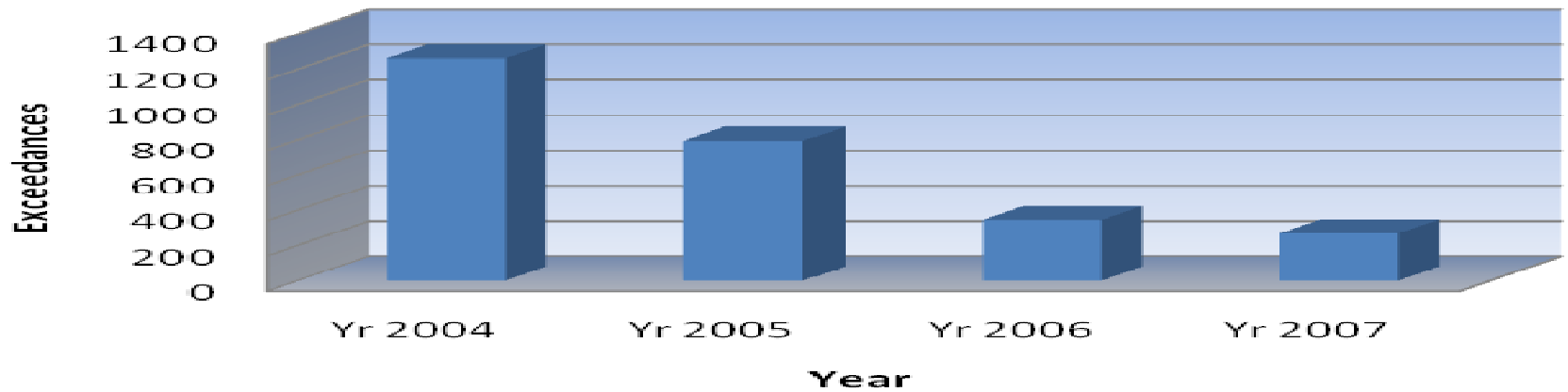
Ilfracombe Station Monthly Exceedences



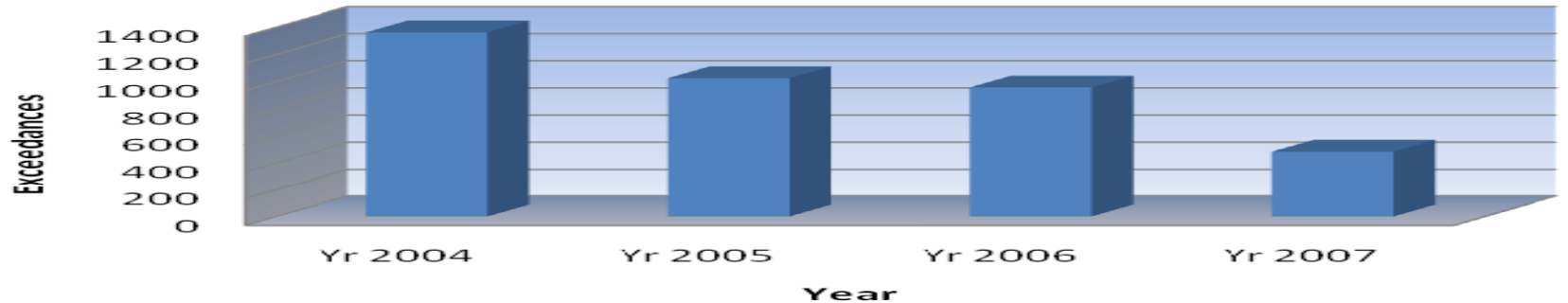
Diambula Station Monthly Exceedences



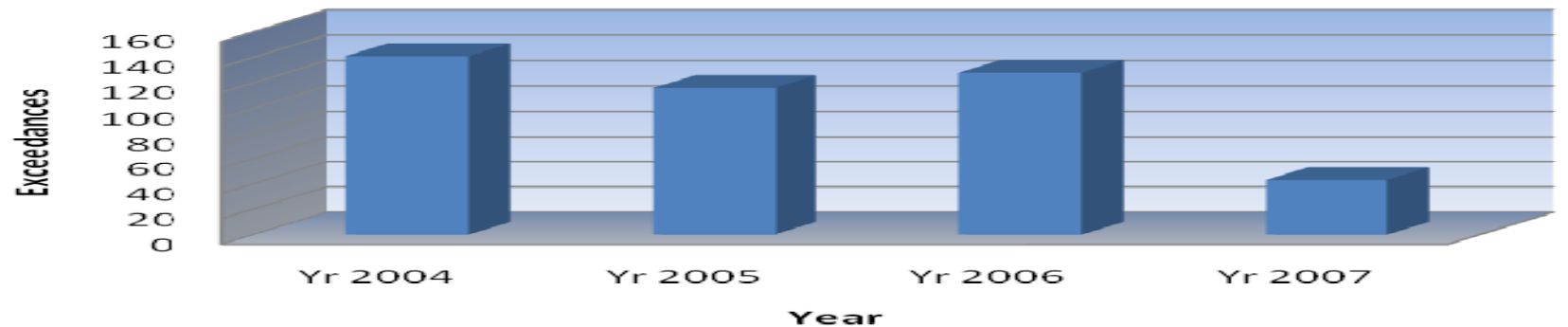
lifracombe SO₂ Exceedances



Diambula SO₂ Exceedances



Drift SO₂ Exceedances



SAPPI SAICCOR SCHEDULED TRADE PERMIT

COMPLAINTS MANAGEMENT

- A monthly Atmospheric Monitoring report is completed by Sappi Saiccor which includes all internal and external complaints and comments
- eThekweni Health maintain their own complaints register
- Complaint analysis has revealed that many of the complaints and exceedances can be attributed to the availability of the control technology and abnormal conditions

SAPPI SCHEDULED SCHEDULED TRADE PERMIT

STAKEHOLDER PARTICIPATION

- A presentation on the Permitting Process was given to the Umkomaas community on 27 January 2009 and they were given the opportunity of making submissions .
- A meeting was also held at Sappi Saiccor together with all major stakeholders including SDCEA and Groundwork to give them the opportunity of commenting on the permit
- All Stakeholders were responded to in terms of their submissions and certain comments were taken into account

SAPPI SAICCOR SCHEDULED TRADE PERMIT

- Permit issued effective from 1 September 2009
- Contained both General & Specific conditions
- General conditions included;
 - Adverse Health, Environmental Risk & Nuisance issues
 - Maintaining an EMS with continuous improvement
 - Annual performance review
 - Application of BAT so total pollution is minimised
 - Identifying Cleaner Production projects
 - The permitting authority reserves the right to set emission limit standards

Total SO₂ Emissions

<u>Dates</u>	<u>SO₂ (Tons/Day)</u>	<u>Comments</u>
Current	7.0 t/day	Current emissions per day.
2009	5.5 t/day	Post commissioning of Amakulu Project
2010	-	No interim limits
2011	-	No interim limits
2012	-	No interim limits
2013	4.0 t/day	End of Permit period.

Priority & other Pollutants

- Sappi Saiccor is requested to quantify their PM₁₀, NO_x, H₂S, Cl₂, Dioxins and Heavy Metal emissions currently and evaluate and assess the opportunities for reduction should there be any significant adverse impacts on the environment. This is to be presented by December 2010, after which permit limits will be adopted.

Permit conditions (cont)

- Greenhouse Gases; report Annually on CO2 emissions
- Smoke emissions; in accordance with APPA.
- Fuel Burning Appliances; constructed, operated & maintained
- Complaints register;
- MHI; Risk ranked & time bound intervention strategy
- Emergency incidents; S30 NEMA incl. contact details
- Pipeline & tank integrity; Documented system
- Environmental Noise; Contribution < SANS 10103

Ambient 10-minute and 24 hr SO₂ Exceedances

	<u>10 minute SO₂ Exceedances</u>			<u>24hr SO₂ Exceedances</u>
	<u>Drift</u>	<u>Ilambula</u>	<u>Ilfracombe</u>	There will be no permissible 24hr exceedance, unless it is associated with abnormal operating conditions as defined below.
Current (Total)	61	483	273	
* <i>Current (Normal)</i>	52	411	232	
2009	46	336	193	
2010	40	261	154	
2011	35	186	115	
2012	35	110	74	
2013	35	35	35	

Reporting requirements

- the permit holder must, for all SO₂ exceedances or major contributions to SO₂ exceedances which is attributable to it, investigate the cause and report to the permitting authority on the findings and when required undertake detailed root cause analyses.
- ***Current (Normal)*** – This refers to the total exceedance after subtracting those exceedances attributed to abnormal conditions.

Reporting requirements

- The Schedule Trade Permit makes provisions for abnormal operating conditions during which exceedances occur. In the event of such an occurrence the industry has to report the details of the incident to the regulatory authority for consideration prior to the exceedance being accepted as one related to abnormal conditions. Abnormal conditions include but are not limited to the following:
 - Start up and Shut Downs
 - Power Failures (Outside the control of Sappi Saiccor)
 - Acts of God (Weather, Storms, etc)

Monitoring Programme

- All releases to Air & also Noise monitoring
 - CEM (In stack for all Fuel Burning Appliances)
 - Verification monitoring (independent consultant)
- Measurement, calculation, sampling & analysis to conform to Nationally/
Internationally acceptable standard
- Quality Assurance

ANNUAL PERFORMANCE REVIEW

- Complete Annual Performance Template & present to all Stakeholders
- Company must demonstrate compliance / non compliance
- Ability for stakeholders to make input

THANK YOU