

# Southern Africa Region Metallurgy

Vaal River Metallurgy  
CATEGORY 4 – EAST ACID PLANT  
MMMA SAFETY SEMINAR  
04 June 2010



ANGLOGOLD ASHANTI

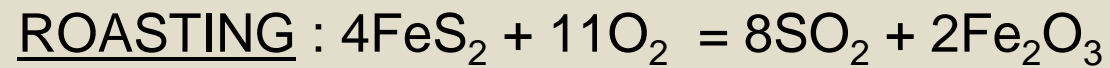
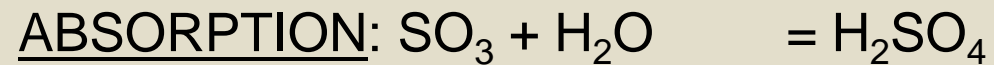
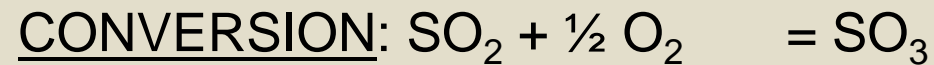
# AngloGold Ashanti East Acid Plant

ANGLOGOLD ASHANTI

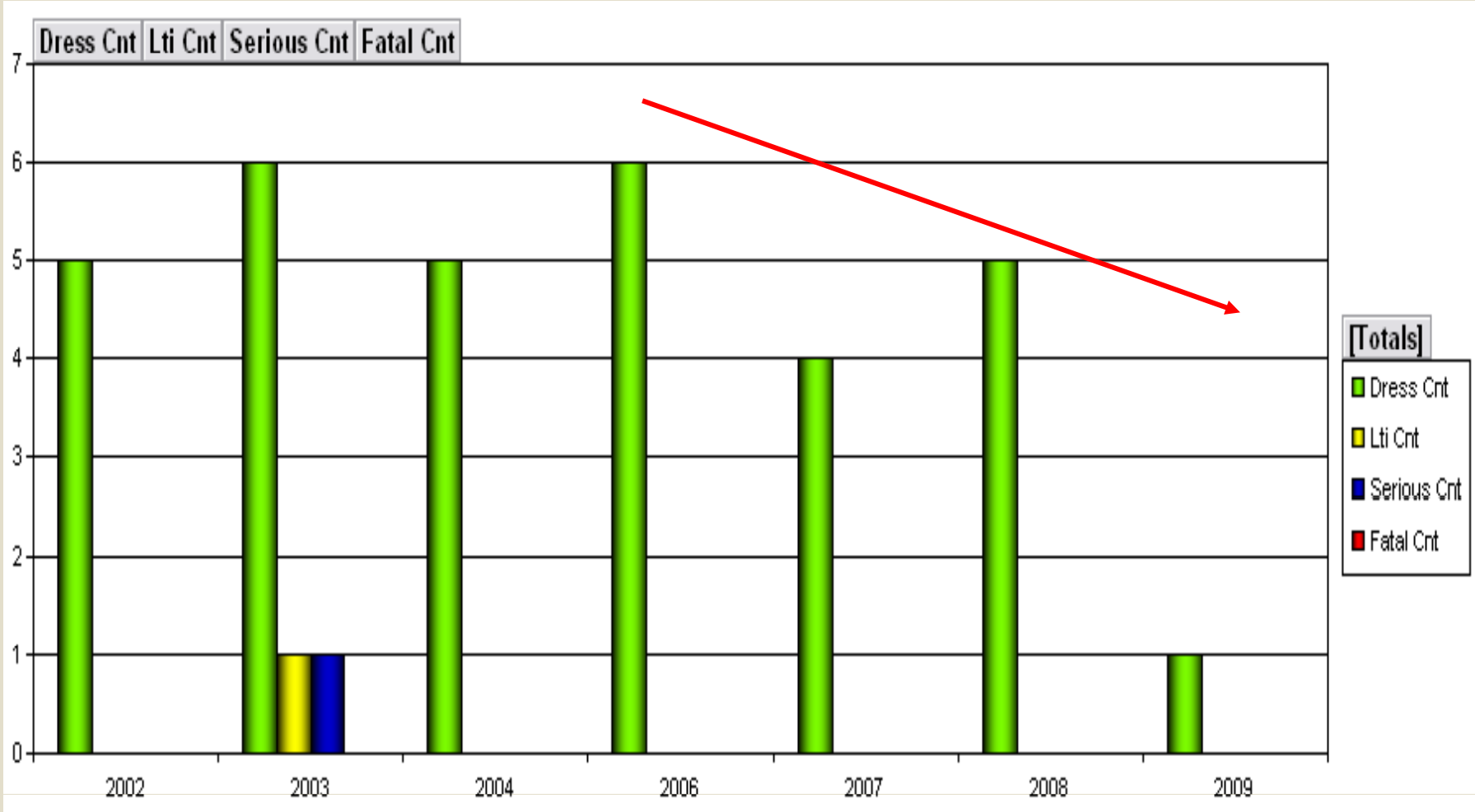


## Background: East Acid Plant

- **Commissioned during 1970**
  - 272 t per day of  $\text{H}_2\text{SO}_4$  at a strength of 98.5%
  - Single conversion/absorption ex 8.5 %  $\text{SO}_2$
- **Feedstock**
  - pyrite from VR East & South Flotation Plants
  - Maranda pyrite from July 2009
  - Prieska pyrite (discontinued in 1990s)
- **Usage of sulphuric acid**
  - Lixiviant for uranium leaching
    - East Uranium Plant (decommissioned 1992)
    - South Uranium Plant
    - 1998 - 2004 – exported to external users
- **Labour**
  - 40 AGA employees (including East Float Plant)
  - 120 contractors for annual shutdown

**Process description:**GAS CLEANINGDRYING

Acid Plant injuries per year



## SUCCESS FACTORS

- BASELINE RISK ASSESSMENTS
  - 1996, 2003 & CURRENTLY BEING UPDATED
  - MAJOR RISKS IDENTIFIED
    - HAZARDOUS CHEMICALS
    - VEHICLES
    - MOVING MACHINERY
    - STORED ENERGY
    - RADIATION
    - OCCUPATIONAL HAZARDS
    - ENVIRONMENTAL
    - ANNUAL SHUTDOWNS

## SUCCESS FACTORS CONTINUED

- METHODS OF ADDRESSING RISKS
  - PPE
  - CODES OF PRACTICES (Lock out & isolation, RPP, TMM)
  - PROCEDURES
  - GAS SURVEYS
  - ISSUE BASED RISK ASSESSMENTS (IBRA)
  - IDENTIFICATION OF CONFINED SPACES & RADIATION AREAS
    - CLEARANCE / RP CERTIFICATES
  - TRAINING
    - CAPABILITY ASSESSMENTS
    - COMPETENCY ASSESSMENTS
  - MINI-RISK ASSESSMENTS

## SUCCESS FACTORS - MEASUREMENT

- ANNUAL PHYSICAL CONDITIONS RATING & COMPLIANCE AUDITS (INTERNAL COMPETITION SINCE 1980)
- OSHAS 18001 AUDITS
- ANNUAL SHUTDOWN AUDITS
  - IBRA<sub>s</sub>
  - MINI-RISK ASSESSMENTS
  - SHE PROGRAMME
  - TRAINING
  - HR FUNCTION
- ISO 14001 AUDITS
- NNR AUDITS
- LEGAL COMPLIANCE AUDITS
- MMMA SAFETY COMPETITION

## SUCCESS FACTORS - MISCELLANEOUS

- CAMPAIGNS – Monthly, Qtly, Special, Investigations
- MANAGEMENT VISIBILITY TOURS
- ADOPTION OF PERTINENT POINTS ex Du Pont System (behaviour)
- “White flag-a-day” SYSTEM
- STAFF
  - MIXTURE OF EXPERIENCED / INEXPERIENCED STAFF
  - MOTIVATED
- ANNUAL SHUTDOWNS
  - TRAINING
  - SAFETY OFFICERS ON SHIFT

Some major shutdown work completed during the past 3 years

ANGLOGOLD ASHANTI



Rebuilding of No 2 roaster - 2007



Removal of old HHE



Replacement of new HHE



New HHE in position



T1

Replacement of roaster gas outlets, cyclones, square ducts and round ducts- 2008



Replacement of 94% & 98% acid receivers - 2008



Rebuilding of No 1 roaster - 2009



Replacement of Acid Stack - 2008



Replacement of cross flow stripper tower - 2009



## CONCLUSIONS

- THE “SUCCESS STORY” OF SAFETY HAS BEEN A JOURNEY
  - COPs
  - PROCEDURES
  - AUDITS
    - INTERNAL
    - EXTERNAL
  - STAFF
  - TRAINING
  
- MEASUREMENT
- REVIEWS
- FEEDBACK

# Safety and Risk

