A BRIEF INTRODUCTION TO SUSOP®

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SUSOP® is an emerging industry standard:
Incorporating sustainable development (SD) principles into the design and operation of industrial processing plants

We have brought a design methodology to safety (e.g. HAZOP)...

...SUSOP® seeks to do the same for sustainability
Development

- Centre for Sustainable Resource Processing (CSRP) from 2003 to 2010
- Contributions from major mining companies
- Key members of SUSOP® Development Team
  - University of Queensland
  - University of Technology Sydney
  - GHD Pty Ltd
  - Hatch Associates Pty Ltd
  - CSIRO
- SUSOP Pty Ltd commenced in March 2011 to promote and develop the SUSOP® technique
Key features

- **SUSID™**
  - Generate “new ideas” leading to better project outcomes
  - Identify business and sustainability risks

- **SD Balance Sheet™**
  - Schematically show impacts on sustainability framework

- **Sustainability Register™**
  - Formal record of outcomes, similar to a risk register
The SUSOP® framework is applied through a series of multi-disciplinary workshops and off-line analysis.
Example of an SD Balance Sheet™

**Ideal:**
All capitals positive

**Acceptable:**
Balance of all capitals is positive

**Unacceptable:**
Balance of all capitals is negative

**Catastrophic:**
Any capital has extreme negative impact or all capitals are negative
Case Study 1:
Site selection for new mineral processing plant

Problem:
- Developer faced with deadline for site selection due to pending expiration of leases
  - Standard risk and financial analysis could not provide definite guidance on which sites to retain

SUSOP® delivered:
- Clear points of difference between the sites
  - Labour, energy, infrastructure integration, by-products, transport
- 70 design and business-related opportunities and risks
  - Water treatment, energy, transport, enterprise development, export, by-products
- A development plan for two key business risks
  - Related to high operating costs (specifically energy and expatriate labour costs)
Case Study 2:
Effluent management for mineral processing operation

Problem:
- Company seeking to review possible effluent treatment options for mineral processing expansion
  - Critical to operation expansion
  - Economic, environmental, and social considerations and risks

SUSOP® delivered:
- Agreement on sustainability goals for project
  - Based on Five Capitals Framework
- Set of opportunities for each effluent treatment option
  - To enhance performance and/or reduce risks
  - Integration with processing plant and environment
- Ranking of treatment options
  - Based on sustainability objectives and SD opportunities
Business activities

- Current business activities:
  - Training in sustainable development and SUSOP®
  - Undertaking SUSOP® studies

- In the longer term, SUSOP Pty Ltd will focus on accreditation, training and facilitation – leaving the delivery of SUSOP® studies to engineering consultants and in-house project teams
Benefits

- SUSOP® can be used to:
  - Identify and reduce project risks
  - Identify opportunities to improve sustainability outcomes and business performance
  - Address stakeholder concerns
  - Satisfy government and corporate objectives

- All in a form that is comprehensive and manageable; and “accessible” to various stakeholders
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