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Filtration | Separation NAPTA Services

### Tail Gas Treating (TGT)

## Amine-Based TGT or also known as SCOT-Type TGT

The Tail Gas Treating Unit (TGTU) is there to enhance the overall sulphur recovery to around 99.9%. The tail gas from the SRU is being routed to a catalytic converter where all SO<sub>2</sub> is being converted into H<sub>2</sub>S, which is routed to a quench column. In the quench column the majority of the water produced during the Claus process is being removed. The remaining components are then routed to an Amine Absorber which contains MDEA (selective absorption) to absorb all H<sub>2</sub>S and slip around 80% of the CO<sub>2</sub> and some ppm H<sub>2</sub>S. The H<sub>2</sub>S rich MDEA is routed to a regenerator where the H<sub>2</sub>S is removed and routed to the inlet of the SRU and cleaned MDEA is routed back to the Absorber.

The TGTU process is safe, environmental and proven technology. Through-out the world many TGTU has been installed to enhance liquid sulphur recovering and to minimize  $H_2S$  emission.

### A sketch of the TGTU process is provided below.



TGTU are already being used for decades for meeting overall H<sub>2</sub>S emission legislation. It is often the most cost effective and simple process to increase overall sulphur recovery. This process can be found in almost every refinery and every sour gas plant which has to deal with H<sub>2</sub>S.

TGTU increase overall SRU recovery to around 99.9% and is basically at the back-end of a SRU.

The TGTU contains the following main equipment:-

 Heater and catalytic converter to convert all SO<sub>2</sub> into H<sub>2</sub>S.



- Condensers to cool the process gas by producing LP steam.
- Quench Column, to remove water.
- Intermediate cooler as side exchanger in the quench column.
- Amine Absorber.
- Amine Regenerator.
- Tower bottom pumps.
- Lean/Rich Amine exchanger.
- Regenerator reboiler and overhead cooler.
- Lean Amine cooler.

NAPTA can provide assistance during design, installation, operation and troubleshooting of the TGTU installations. In the project phase, NAPTA can support in project development phases as P&ID, Hazop review etc. Also NAPTA can advise on equipment design and selection and also advise on the materials for construction. NAPTA experts can conduct a site visit for better understanding of site-specific issues; and training of local operational and technical staff.

The provided services can help you to:-

- Identify causes of the problems encountered in your TGTU.
- Optimise the operation of the unit.
- Provide long lasting solutions.

For more information, please contact with NAPTA's Tail Gas Treating Unit SME Mr Egbert van Hoorn via herein below contact details.

### Contact

NAPTA's New Business Development team, NAPTA International B.V., The Hague, the Netherlands

 Telefax
 +31 (0)70 211 1312

 Mobile
 +31 (0)6 2819 0101

 Email
 info@napta.co