

## ABSTRACT

### MANUFACTURING OF AMMONIUM SULFATE FROM AMMONIA AND SULFURIC ACID WITH CAPACITY OF PRODUCTION 200.000 TON/YEAR

#### Design of Saturator (STR-201)

Oleh

**FITA DESTI SENJA**

Ammonium sulfate is one of the chemical industry products used as fertilizer, chemical raw materials, water treatment, food additives, additives in firefighting and reagents in the laboratory. Ammonium sulfate can be produced by several processes: 1) direct neutralization process, 2) Marseburg process, and 3) Morino process. Industry's utilities were used including water treatment and supply systems, steam supply systems, cooling water, air supply systems and power generation systems.

This plant will be produced 200,000 tons/year with operation time 330 days/year. Factory location is planned on Klari, Karawang, West Java. The require of employees are 192 people with formation of a Limited Liability Company that was led by a President Director who is assisted by Director of Production and Director of Marketing and Finance with line and staff organization structure.

From the economic analysis is gotten :

Fixed Capital Investment	(FCI)	= Rp 345.499.215.703
Working Capital Investment	(WCI)	= Rp 60.970.449.830
Total Capital Investment	(TCI)	= Rp 406.469.665.533
Break Even Point	(BEP)	= 35,68%
Shut Down Point	(SDP)	= 14,78%
Pay Out Time before taxes	(POT) <sub>b</sub>	= 1,59 years
Pay Out Time after taxes	(POT) <sub>a</sub>	= 1,90 years
Return on Investment before taxes	(ROI) <sub>b</sub>	= 39,05%
Return on Investment after taxes	(ROI) <sub>a</sub>	= 31,24%
Discounted cash flow	(DCF)	= 43,74%

Considering the summary above, it is proper to study the establishment of ammonium sulfate plant further, because the plant is profitable and has good prospects.

## ABSTRAK

### PRARANCANGAN PABRIK AMMONIUM SULFATE DARI AMONIA DAN ASAM SUFAT DENGAN KAPASITAS PRODUKSI 200.000 TON/TAHUN Tugas Khusus Perancangan Saturator (STR-201)

Oleh

**FITA DESTI SENJA**

*Ammonium sulfate* merupakan salah satu produk industri kimia yang digunakan sebagai pupuk, bahan baku industri kimia, pengolahan air, bahan aditif pada makanan, zat tambahan dalam pemadam kebakaran dan reagen di laboratorium. *Ammonium sulfate* dapat di produksi dengan beberapa proses yaitu 1) proses netralisasi langsung, 2) Proses Marseburg, dan 3) Proses Morino. Penyediaan kebutuhan utilitas pabrik berupa sistem pengolahan dan penyediaan air, sistem penyediaan *steam*, *cooling water*, sistem penyediaan udara dan sistem pembangkit tenaga listrik.

Kapasitas produksi pabrik direncanakan 200.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di Kec. Klari, Kab. Karawang, Jawa Barat. Tenaga kerja yang dibutuhkan sebanyak 192 orang dengan bentuk badan usaha Perseroan Terbatas (PT) yang dipimpin oleh seorang Direktur Utama yang dibantu oleh Direktur Produksi dan Direktur Pemasaran dan Keuangan dengan struktur organisasi *line and staff*.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 345.499.215.703
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<i>Discounted cash flow</i>	(DCF)	= 43,74%

Mempertimbangkan rangkuman di atas, sudah selayaknya pendirian pabrik *ammonium sulfate* ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai prospek yang baik.