

OPTIONS FOR SMALL SCALE SULPHUR RECOVERY

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ABSTRACT

With the issuance by the Alberta Energy Resources Conservation Board and Alberta Environment of their report entitled Sulphur Recovery Guidelines for Sour Gas Plants in Alberta in August of 1988, the requirement in Alberta to recover sulphur was broadened to a sulphur content of one tonne per day (t/d) or greater in the inlet gas to a new sour gas treating plant. This paper reviews the processes in use for recovering sulphur from sour natural gas streams that have a total sulphur content of five t/d or less. These processes are the modified Claus process, the Recycle Selectox process and the reduction/oxidation processes LO-CAT and SulFerox. While the modified Claus process is used in large sulphur recovery plants, the other processes may be more economical for sulphur recovery on a small scale. A description of the sour gas treating and sulphur recovery processes is given, and a comparison of estimated capital and operating costs for typical sour gas streams is provided.

All of the above stated processes are in operation in North America. Operating experiences with these processes in Alberta are discussed. The quality of the end product sulphur varies among these processes, and the options for sulphur disposal are reviewed.