

## EVALUATION OF STEAM ASSISTED GRAVITY DRAINAGE PROCESS IN HEAVY OIL AND TAR SANDS RECOVERY IN IRAN

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### Abstract

Oil sands must be mined or recovered in-situ. Deposits close to the surface are mined while resources which are very deep require in-situ recovery. Steam Assisted Gravity Drainage process (SAGD) that is an in-situ recovery method that has been tested extensively in the heavy oil and bitumen reservoirs. Steam Assisted Gravity Drainage process uses one or more horizontal production well located near to the bottom of the reservoir with steam injection above from separate injection wells. This configuration will end in good production rates with good recovery and reasonably low SOR (steam-oil ratio). Use of steam assisted gravity drainage has been demonstrated to be a promising way of producing heavy oil and tar sands which are not recoverable in normal operation in fields. In the case of Iranian naturally fractured reservoirs, whatever has influenced the heavy oil production in other parts of the world can certainly help us for future productions and developments which can be achieved efficiently by use of horizontal and multilateral drilling techniques. However, we should propose some modification of these methods (like SAGD) and initiate the process in a way that the vapor chamber in SAGD process or, combustion front, in the case of combustion processes, develops in matrix blocks instead of fractures, that seems to be appropriate for our naturally fractured reservoirs. This is merely a prospect for future works. This paper presents different aspects of SAGD operation together with its possible variations and numerous challenges.

**Keywords:** SAGD, oil sands, fracture reservoir, horizontal drilling.