

Mike Gunningham SPE Papers – Link: <https://www.onepetro.org/>

116713-MS SPE Conference Paper	Sand Quantification: The Impact on Completion Design, Facilities Design, and Risk Evaluation	2008	Addis, Michael Anthony, Shell International Gunningham, Michael Caspar, Sakhalin Energy Investment Company Ltd Brassart, Philippe Charles, Shell Webers, Jeroen, Sakhalin Energy Investment Company Ltd Subhi, H., SEIC Hother, John Anthony, Proneta Ltd.	<p>Sand Quantification involves predicting the volumes of sand which can be produced at the sandface completion and transported to the surface facilities for different operational scenarios. Sand quantification estimation is still novel in the industry, and this paper describes its application in completion selection and design, facilities design and operation, and facilities risk evaluation, with reference to a high rate gas field development.</p> <p>The estimation of sand production volumes for openhole and cased and perforated completions is presented for the high rate gas wells, along with the workflow used for the selection and optimisation of the completion design, based on these estimates. The optimum completion aims to delay the onset of sand to surface for the first 18 years of production, whilst maintaining high gas productivity (>300mmscf/d/well). The selection of contingency sandface completions is also discussed along with mitigation measures in the event of unexpected sand production. The impact of the sand quantification on surface facilities design is discussed based on a probabilistic approach, along with the operational procedures identified to manage this sand.</p> <p>The operational evaluation is based on a Quantitative Risk Analysis (QRA) of the facilities and wells, which helped identify operational changes to further reduce the 'as built' low risk operation. This use of sand quantification for completion design and for QRA of facilities forms a new capability and an extension to the existing use of sand prediction technologies.</p>
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