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Analisis pengaruh reservoir brine terhadap kinerja reservoir uap berdasarkan data geokimia, sumur dan meq pada Lapangan Panasbumi Wayang Windu = Analysis effect of brine reservoir on steam reservoir performance based on geochemical wells and meq data at Wayang Windu Geothermal Field

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Abstrak

Lapangan panasbumi Wayang Windu sudah berproduksi dari tahun 2000 dengan memproduksikan uap sebanyak 227 MW. Selama masa produksi yang dilalui, terdapat beberapa masalah muncul dipermukaan terutama yang bekaitan dengan beberapa sumur 1 fasa di bagian utara lapangan Wayang Windu. Adapun permasalah yang ada diantaranya: penurunan produksi yang melebihi kondisi normal, penurunan tekanan reservoir yang mengkhawatirkan setiap tahunnya, dan indikasi peningkatan jumlah sumur superheat. Analisa yang dilakukan terbatas pada analisa produksi, logging sumur dan geokimia fluida geokimia terutama dari beberapa sumurdi bagian utara lapangan Wayang Windu. Selanjutnya semua data yang ada disandingkan dengan data Microearthquake MEQ, dan hasil monitoring data tracer injection yaitu untuk melihat keberadaan reservoir brine terhadap kinerja reservoir uap untuk kepentingan sustainability. Semua data yang dianalisa adalah data yang diperoleh dari tahun 2000 sampai 2017.
Penelitian ini diharapkan dapat memberikan informasi secara terintegrasil terhadap permasalahan terkini yang dihadapi, selanjutnya dapat diambil langkah perbaikan dalam upaya melakukan penerapan reservoir managemen yang lebih baik untuk kelangsungan produksi, sekaligus memberikan masukan terhadap bagaimana menerapkan strategi injeksi fluida brine/condensat untuk mempertahankan kinerja produksi dan peforma reservoir lapangan Wayang Windu terutama dalam upaya mempertahankan performa reservoir uap.

<hr>Geothermal Wayang Windu Wayang field has been produced since 2000 by producing 227 MW of steam in total. During the production period, there are some problems appearing on the surface especially those associated with 1 phase steam production at some wells in the northern of Wayang Windu field. The problems are decreasing production that exceeds of normal decline condition, decreasing significant reservoir per year, and increasing of number of superheat wells. The analysis are limited to production decline analysis based on steam production data, reservoir performance analysis from well record logging data, and geochemical fluid analysis from several 1 phase steam well at the northern part of Wayang Windu field. Furthermore, all existing data is juxtaposed with information from Micro Earthquake MEQ, and tracer injection data support to see the relationship between wells or reservoir and performance presence of the brine reservoir support for the production sustainability. All data were obtained from the surface record from 2000 but with focussed on mainly data obtained after the existence of Unit 2 in 2009.
This research is expected to provide complete integrated information on the latest problems encountered in the field of Wayang Windu, and furthermore it is expected to give some reccomendation for better good reservoir management improvement as part of maintaining the continuity of production in the future, as well as providing recommendation to how implement good strategy for brine condensate injection in order to maintain reservoir and well production performance at Wayang Windu Field.