Decline Analysis

Production curves were created for 630 wells using Wyodecline software. Wyodecline is a Microsoft Excel spreadsheet created by Chris Holten, Petroleum Engineer. The software is inexpensive, easy to use, and fast. Wyodecline is designed to help the user analyze data and has the capability to be used by any organization to analyze their data. It is relatively free and easily trained.

Tabulated Data & Results

Wyodecline creates curves with daily mcf rate, daily bbls water, and daily drilled volume in months on a logarithmic time scale. Decline curves trend the data and can be used to analyze the rate at which production drops off. We used Wyodecline in order to analyze our data set. We inputted the data into the program and Wyodecline automatically created the curves.

The process of data analysis began by downloading production data from the Utah Division of Oil, Gas and Mining (DOGM) database for each well. The database is located at www.ogm.utah.gov.

Once all of the wells had been processed for decline curve analysis and the data had been compiled and tabulated, we applied a simple exponential analysis in order to determine the rate of decline. Although none of the data returned straight deviations, overall, we felt confident that the values reported provide an accurate statistical description of coal bed methane gas production in the Drunkards Wash field. We also included well log information over our data set such as coal bed information (based on lithology), bottom hole temperature recorded at initial legging, and bore hole depth. The well log provided valuable information necessary for the spatial distribution analysis.

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Each data set was sorted according to time since completion, copied and pasted into the production worksheet in Wyodecline. We then organized the data into the order in which it was needed. The data was then sorted according to time since completion and copied and pasted into the production worksheet in Wyodecline. We then organized the data into the order in which it was needed.

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