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HANDBOOK

ecoPETROL

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AN INTEGRATED METHODOLOGY FOR GENERATING PRODUCTION FORECASTS FOR GAS AND CONDENSATE RESERVOIRS

INTRODUCTION

This application has the main objective is the generation of reservoir–well–plants forecasts production for piedemonte field.

The proposal of the code designed in Matlab software is based on four stages:

First, to be able to estimate how much a well produce in any instant of time with a model multivariate proxy, which depends on values that are known or can be obtained easily.

Then have a pressure balance or energy balance inside the reservoir, as a model of "tank - reservoir".

As a third stage, carry out a prediction or projection per well-formation, taking into account what was found in the previous steps.

Finally, with all the information stored, a balance of plant is made, where everything is integrated above to be able to know all the gas uses: sales, injection, internal consumption, and burning.

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Input Data

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Output graphics

MATLAB®

The graphical user interface counts on your home screen with ten input data that must be typed according to their kind.

In "Input data files names ", the files must be in ".xlsx" extension, corresponding to Excel files:

1. Wells file.
2. Injectors wells file.
3. Gas declaration file.
4. Maximum gas demand file.
5. Volume from transfer for Pauto-Floreña file.
6. Sectors parameters file.

In the "Start date" box you must select the start date point of the forecast.

For the inset of "Slug catcher pressure Reduction start date", you must select the start date for reducing the pressure of the slug catcher.

In "Sales limit rate" must be stipulated the minimum limit for gas sales in cubic feet.

For "Number of cases" you must choose the number of cases in which analysis will be carried out and later the gas sales results for each one of them.

Installation of the APP in your Matlab portfolio

It is necessary to have the Matlab software installed for the program to work correctly, since it depends on this for the interpretation of the codes.

First, the executable file must be opened and installed in the application bar of Matlab, is done automatically by double-clicking on the executable file.
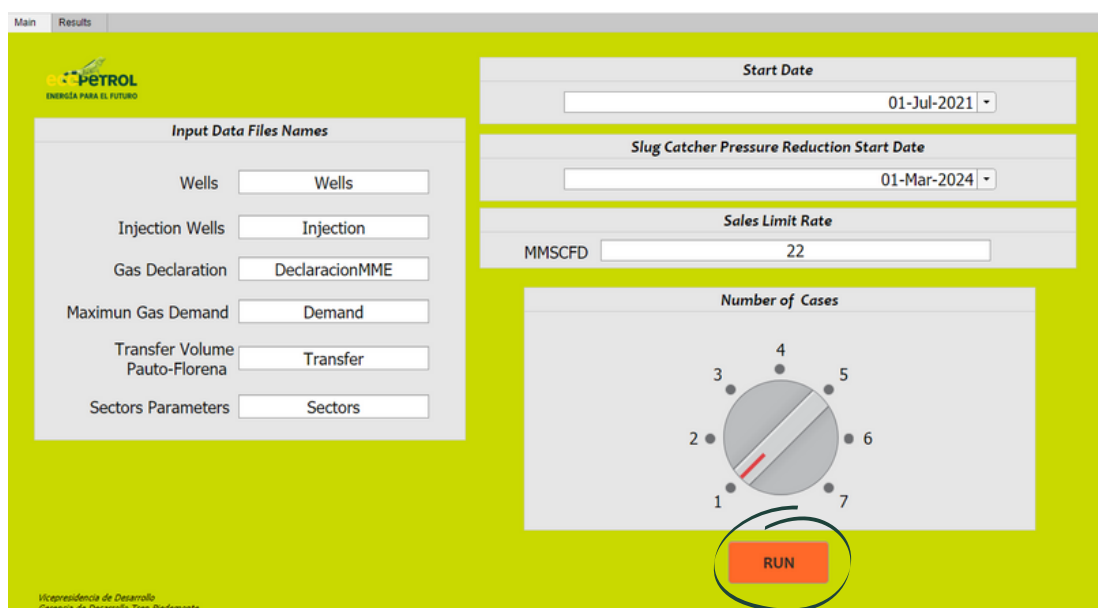.

The graphical user interface is installed in the application bar above.
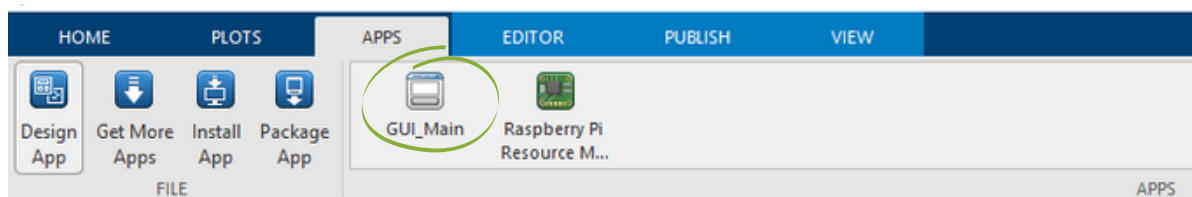
Finally, you will have access to the interface whereby clicking on the "Run" button the program will start to run according to the input data. Note: remember to select a folder where the final results will be obtained before running the code.

GRAPHICS AND RESULTS

Within the "Results" tab you can easily access the results once the code has been run.

1
2
The results are graphically separated according to the case number and to access these, just click on the images on the right, for example, if you need to know the gas balance for the Cupiagua node for case 1 study, click on the first image on the right.

3
Also, if you want to close all the graphs, you must click on the "Close all" button on the left.
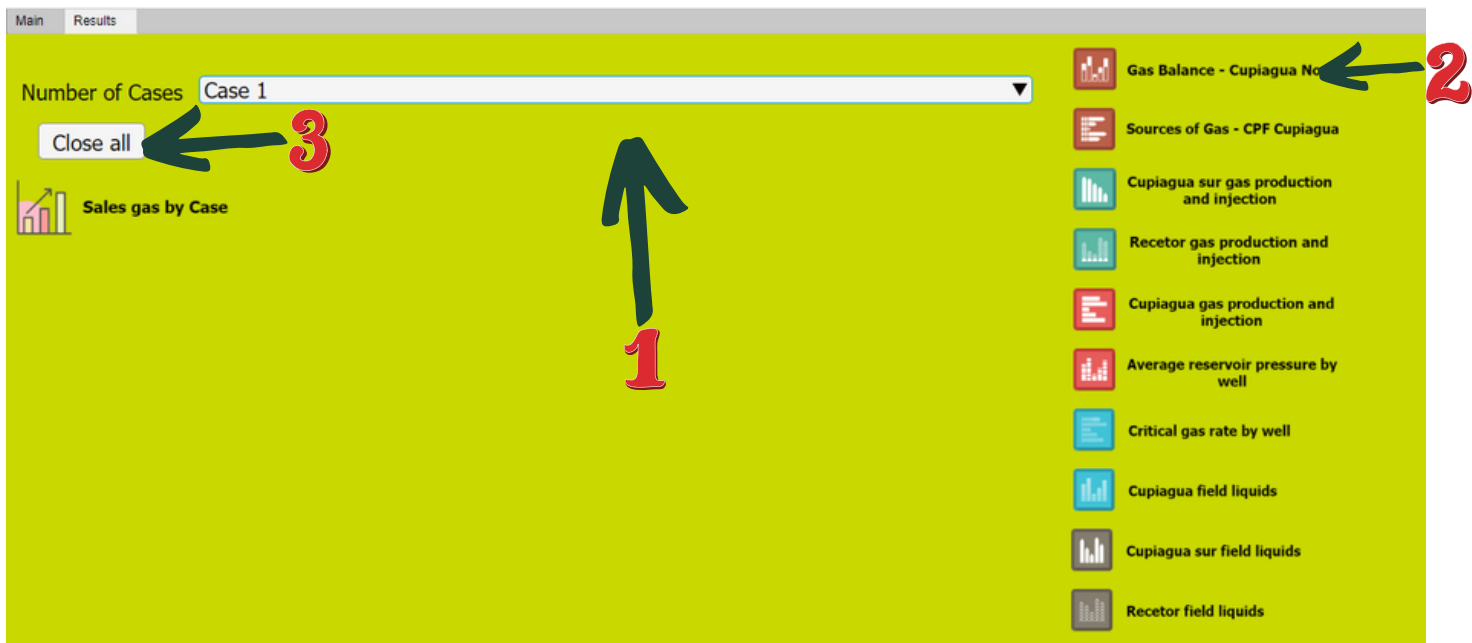
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