

# CHAPTER V

## CONCLUSIONS

The different perforation strategies used in order to achieve the highest ultimate recovery gives some clues of which strategies stand out for highest oil and gas recovery and the ones that produce minimum water. For each field, the approach is different. The result obtained is from Integrated Production Model and these strategies should be rerun in other software for consistency.

The results obtained indicate that no single strategy appears to consistently deliver the highest ultimate oil recovery. There may be many factors that contribute to this conclusion.

Strategy 1 which is the actual completion of the company gives the lowest water recovery due to the limitation of field water disposal facility. The wells with high water cut have to perform water shut off either by tubing patch or plug to control well water production.

Strategy 6 which is the bottom up perforation yields the highest gas recovery. This might be because the cross flow between layers have been avoided. Moreover, it was assumed that water shut off was successfully operated to reduce water loading up in the well.

Strategy 6 also gives the highest recovery on BOE basis due to the fact that gas is produced in higher amount as comparative to other strategies.

The conclusion drawn was on the basis of the combined result of the wells that have a good history match and also the ones which do not have a good history match.

The effort and the time it takes to match the wells are huge. It took an estimated time of around half a year for a single man to match 8 wells out of 17 wells that are incorporated in this research. There can be many history match techniques but the one used in most of the history match done in this study is the zonal isolation where one zone is matched first with all the conditions of actual operations and then followed by the second zone and so on.

IPM offers an easy way to optimize typical well depletion strategies or even customize the strategy for each individual well. By building a typical well model, many different tubing and compression scenarios can be easily evaluated.

Although IPM can be expected to give good results and easily used but it has limitations. As with any model, good input data and appropriate use of correlations are required to get good results. Matching model results with real well results is always recommended. IPM has difficulty matching a lot of commingle sands production at the same time and the model can calculate only the homogeneous reservoir.

The platform taken up for this study is 50% oil and 50% gas jacket when measured by cumulative oil recovered. More research should be done to include jackets with other hydrocarbon split ratios. This may help in order to see a broad picture of the strategy if it is really applicable for all split ratios.

Completion strategies could yield better results if hybrid completion strategies are employed which include gas lift, water shut off, and sand groupings.