



























## 5. Conclusion

The model for prediction of crude oil blend property was found suitable for this study, with a linear programming problem, to obtain optimum quantities of the crude oils that when blended provide the suitable feed for the distillation unit with meeting the required specifications of crude oil and fuel oil while fulfilling the requirements of the straight run fuel oil and crude oils compatibility with a reasonable shrinkage loss due to blending.

The model determines the required amounts of production that maximizing the profit of the base case study plant and fulfilling the domestic demands of gasoline grades 80 and 92.

Three other scenarios were studied with more constrains either on demand of the products or on the crude oil availability with their optimum solutions are obtained by using the appropriate inequalities that correctly defined the constrains in the linear programming model.

The model validates -also after investigating the results of the studied scenarios- that the objective function (Profit) decreases with increasing the applied constrains as applying more constrains generate a smaller feasibility region with lower values for the optimal solutions.

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