

ABSTRACT

CIVIL ENGINEERING AND MANAGEMENT IN LAND-BASED
PETROLEUM PRODUCTION IN TRINIDAD

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Civil Engineering in petroleum production is held by many to be relatively insignificant. This common belief is probably based on the fact that expenditure on civil engineering is very small in comparison with that of the other more well known producing activities. It is therefore the broad objective of this work to show that despite this fact, civil engineering is as important as any of the other activities and requires adequate attention, if the overall efficiency of the industry is to be improved.

This work therefore will address the whole question of the improvement of civil engineering management within the environment of the petroleum producing industry. The task is approached in three stages which form the three parts of this thesis. These parts are as follows:

PART I - THE HISTORICAL AND ECONOMIC IMPACT
OF PETROLEUM

PART II - CIVIL ENGINEERING AND PETROLEUM
PRODUCTION

PART III - INDIGENOUS PROBLEMS AND RECOMMENDATION

Part I covers the historical development and the economic significance of petroleum to the world in general and to Trinidad and Tobago in particular. This section should be of importance to our national planners and decision makers. It is the author's belief that better long-term policies cannot be made unless the persons involved in decision-making have an overall appreciation of the important role that petroleum has played in forming the very economic and social fabric of Trinidad and Tobago, and its potential to continue to do so for decades to come.

This history is important also in presenting the petroleum industry not only as an economic benefit but for the political power it commands. Its astute use in this regard by the multinationals to achieve their global objectives under the disguise of benefits to developing countries, can sensitise policy makers into clearer interpretations of any foreign assistance. In this way a more efficient industrial framework would be possible.

Part II places the practice of civil engineering in perspective with its counterparts in petroleum production. It examines the technological relations with other activities and highlights aspects of them that should

be of importance to the civil engineering personnel. Apart from this technical aspect, this section examines the existing management systems that are being used to implement civil projects. The analysis however stops short of recommendations as this aspect is scheduled to be dealt with in part III. Part II thus provides the technical foundation that is necessary for the execution of management principles and also lays the background against which such (management) practices are expected to be performed.

Part III identifies the technical and managerial problems of civil engineering that have developed essentially because of the petroleum environment in Trinidad. These problems are analysed and recommendations made towards some kind of solution or a mitigation of their effects. The opportunity is taken in this part to present appropriate details in the form of a guide. In this way persons wishing to conduct similar exercises might be facilitated. A chapter on the law and civil engineering as it relates to the producing sector is included as a final contribution towards identification of problems and recommended solutions.

A word of caution however is offered. This work is intended for a general audience of persons who may

be involved in the producing business. It does not attempt to address actual construction site management activities. Therefore, management's control of surveying, pavement construction and such are not discussed in any detail, as these are probably well known to most civil engineering personnel or are adequately covered in other texts. Rather this work pays attention to the supporting activities where most of the delays and inefficiency exist.

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