

**Adverse Physical Conditions
&
The Experienced Contractor**

David Kinlan

Delft Academic Press

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First edition 2014

Published by Delft Academic Press
Leeghwaterstraat 42, 2628 CA Delft, The Netherlands
tel. +31 15 27 82124, e-mail: hlf@vssd.nl
Publishers website: <http://www.vssd.nl/hlf>
About this book: <http://www.vssd.nl/hlf/b032.htm>

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ISBN: 97890-6562-327-0

Key words: adverse physical conditions, claims, civil engineering, contracts, dredging, FIDIC, tenders, unforeseen conditions

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About the Author



David Kinlan is a freelance Chartered Quantity Surveyor and Queensland Registered Adjudicator with 25 years of professional experience in the marine infrastructure industry. He was for many years employed by Ballast Nedam Dredging as a contracts manager and has been involved in many of the major and iconic dredging projects of the past twenty five years.

In 1994 David Kinlan participated in the tender negotiations and eventual contract award of the Oresund Fixed Link Project. This project was groundbreaking for the dredging industry not just in that it had strict environmental monitoring of turbidity in the pristine waters of the Oresund Sound but the manner in which the project dealt with adverse physical conditions and contract disputes.

Whilst still active with many global marine infrastructure tenders and contracts David has increasingly become involved in tenders and contracts supporting the recent expansion of the resource sector in Queensland and Western Australia both for Clients and Contractors. David is based in Brisbane and offers all-round, proactive support for all stages of a project be it tender, contract, claim and project management services.

David has published a number of articles in the International Association of Dredging Contractor's publication - Terra et Aqua dealing with vesting of plant, escalation and adverse physical conditions.

The subject of adverse physical conditions continues to occupy the attention of the many marine infrastructure practitioners around the world and the lack of concise and precise knowledge on the subject spurred David to further develop his original Terra et Aqua article with more in-depth study and to share his experience and insights on the subject by means of this publication.

Foreword

From the perspective of the major international dredging contractors, the dire consequences of encountering “adverse physical conditions” during a dredging project have long been obvious. Also obvious has been the lack of literature examining the “unforeseeability” of these conditions from an engineering and contractual perspective. In this regard the present book by David Kinlan is warmly welcomed.

When port authorities or other clients issue a request for tender for a major maritime infrastructure development project, it is done in good faith based on the available knowledge. The tenders that contractors offer are equally done in good faith based on their assessments of site conditions as “experienced contractors”. In both cases, these actions are done to the best of each party’s knowledge and skills. But clearly, since dredging occurs below the water’s surface, not everything is knowable - or foreseeable - before a project commences.

A few things are knowable however: First, the major dredging contractors have a broad range of expertise in-house. They have experienced engineers and scientists and invest extensively in the latest research and development to ensure that they can offer the most cost-efficient, accurately implemented solutions. Second, all parties recognise that detailed and accurate geotechnical information is essential. Consequently, thorough site investigations are the backbone of maritime projects. Experienced clients realise that spending time, money and energy to discover the specific characteristics of the area to be dredged is invaluable.

And yet: Not all physical conditions of the site will be discovered until the operations are actually underway. And once they are encountered, these adverse physical conditions can be the source of costly conflicts. Even though, with hindsight, most are found to be unforeseeable and unavoidable. How can we best deal with these unforeseeable conditions? How can contractors and clients avoid lawyers, claims and recourse to the courts to solve disputes? All these subjects are touched upon in David Kinlan’s book.

David also takes a critical look at how to escape the worst pitfalls of site investigations and - when an adverse physical condition is discovered - how to make the best of a “bad” situation. This “best” means: using early contractor involvement and the insights of experienced contractors at the site investigation stage; trying

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to avoid the risks of unforeseen conditions - which lead to claims - by conducting sufficient site investigations; implementing a risk register and using best practice contract clauses that clearly address adverse conditions. In these ways, disputes can be nipped in the bud - before cooperation turns into disagreement and before partners become adversaries.

David offers numerous insights, based on his own hands-on experiences with major dredging contracts, his examination of the FIDIC contracts and PIANC workgroup studies. All in all, Adverse Physical Conditions & The Experienced Contractor provides a much-needed reference work for those in the dredging industry - both contractors and clients alike - who must cope with the reality of adverse physical conditions.

*Peter de Ridder
President
International Association of Dredging Companies*

Acknowledgements

This publication was inspired by the tales of my father Frank Kinlan, a diesel mechanic who together with the crew of ‘scousers’ worked on the cutter suction dredger ‘Port Sunlight’ and who valiantly battled to dredge caprock under difficult conditions in Manama Harbour, Bahrain in 1975 (see photo).



I would like to acknowledge the following people for their assistance :

- Tim Maddock for reviewing the draft and Jim Anderson for providing many valid and insightful comments and reminding me of the developments of the NEC 3 Contract in the United Kingdom.
- Peter de Ridder for writing the Foreword to this book.
- Marsha Cohen who has guided me through a number of Terra et Aqua articles which ultimately led me to take on this publication.

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- Van Oord NV for providing me with a large number of photos for illustration in this book.
- The Delft Academic Press who agreed to be my publisher and bring it to a wider readership.

I would like to thank François Baillon from the Fédération Internationale des Ingénieurs-Conseils (FIDIC) for allowing me to reproduce sections of the FIDIC website as well as quote from the Rainbow Suite of Contracts.

Lastly I would like to thank my wife Inge for putting up with the many hours I locked myself away in my office pouring over the many drafts it took before I arrived at something under which I was willing to put my name.

CHAPTER 1

Introduction

This book aims to assist those practitioners who have to formulate, manage or otherwise wish to avoid claims for adverse physical conditions on marine infrastructure projects.

It is not meant as a definitive legal review of the status of adverse physical conditions as they may be dealt with under a particular infrastructure contract but is meant more as a general overview by bringing together the essential elements and development both technically and contractually that have led to the adverse physical conditions provisions we see in use in contracts today.

Differing Site or Latent Conditions

Adverse physical conditions, in the USA referred to as ‘differing site conditions’ or in Australia also referred to as ‘latent’ conditions, can come in many forms. These may include sub-surface and geotechnical conditions, environmental and hydrological conditions such as the influence of wind, wave and tide to artificial obstructions such as debris, munitions, wrecks and even polluted material. There is no definitive list as to what constitutes an ‘adverse physical condition’. In recent years however standard contracts such as the FIDIC “Rainbow” Contracts have made inroads into defining what is unforeseeable and defining what is an adverse physical condition.

The allocation of the risk for adverse physical conditions has a long pedigree going back many years. It was originally founded in the major railway expansions both in the United Kingdom and around the world in the 19th Century when although contracts were undertaken little or no detailed geotechnical investigations were conducted. Thankfully in the modern era that situation has changed. Nowadays any project instigator is well advised to invest in a comprehensive geotechnical survey to adequately assess the project location’s sub-surface conditions.

Get out of Jail Free Card

The concept of how adverse physical conditions are dealt with between Employer and Contractor verges on the holy grail of marine infrastructure. It represents

CHAPTER 2

Site Investigation & Inspection

Site investigation and inspection is an essential step in all land and marine construction projects. It consists of planning, deploying and reviewing all the resultant site specific information which is required to design, plan and realize a construction project. In general, it encompasses meteorological, oceanic, hydrographical, sea bed and sub-surface data.

The Contractor is generally under an obligation to have inspected the Site to evaluate the influence the local conditions will have on the work to be carried out before tender submission, although this should always subject to what is practical. This may be specifically required under a provision of the contract or may be an implied obligation given that the Contractor will need to assess for himself the conditions at the Site and any constraints which may need to be considered.

Finding hidden conditions

Usually the contract documents will require tenderers to make a site inspection and investigate the site conditions. Even so, this does not require a contractor to find all hidden conditions at the site. Rather, the contractor is under a duty to discover only those conditions which would be ascertainable by a reasonable investigation. What is reasonable will depend upon the circumstances, and if a physical condition occurs which could have been observed by a realistic and visual site site inspection, in all likelihood the contractor will be denied relief under the clause.

Whilst site inspection and investigation is easily undertaken for land based projects how is this feasibly carried out when the Site consists of an expanse of water and a sub-surface many metres below it?

Generally speaking, a Contractor's only chance to do his own inspection and investigation will be on the site visit when all he can do is a visual inspection of the surrounding geology and geomorphologic aspects surrounding the site and perform a desk study of all publically available information and that information provided by the Employer as part of the tender documents.

“...Is a claim excluded only if an experienced contractor could have foreseen that the conditions or obstructions must occur, or is it sufficient that there was a possibility, however remote, that the conditions might occur?... It is suggested that a claim is barred only if an experienced contractor could have foreseen a substantial risk. ” (Abrahamson’s ‘Engineering Law and the I.C.E. Contracts’, 4th Edition)

An adverse physical condition or obstruction can be said to have been foreseen only if an experienced contractor considers there could be a substantial risk of such condition or obstruction arising.

Contractors are thus put on notice that based on the information available at time of tender, a reasonable thorough investigation could have brought to light the particular adverse physical condition which is causing the delay.

Whilst the contract clauses remained largely unchanged for decades a radical overhaul finally occurred with the issue of the Rainbow suite of FIDIC Contracts in 1999. The FIDIC Contracts Committee sensed the need to guide practitioners, Engineers and arbitrators as to some of the meanings in clause 12 and definitions were provided in the FIDIC Contracts.



Site Inspection of marine projects will generally be limited to examination of shoreline outcrops which may or may not be representative of the actual sub-surface conditions.