CHAPTER 1

SW NOVA SCOTIA EXPANSION ATLAS

INTRODUCTION

An important exploratory effort have been carried out on the Nova Scotia offshore area during the last years. This effort had a first materialization in the Play Fairway Analysis Atlas 2011 (http://energy.novascotia.ca/oil-and-gas/offshore/play-fairway-analysis) that encompass the central – eastern region offshore Nova Scotia and provide a comprehensive description of the petroleum system and hydrocarbon resources in the area.

During a new phase on this hydrocarbon's exploration campaign, Beicip-Franlab accomplished the expansion of the Play Fairway Analysis Study to the western border of the Nova Scotia marine shelf at the Nova Scotia Department of Energy's request. This expansion corresponds to the Georges Bank zone and surrounding area extending from the Yarmouth Arch to the Shelburne Sub-basin (see Figure 1). The aim of this study is the evaluation of the petroleum potential of the stratigraphic column in this area, notably in the interval between the top post-rift (Early Jurassic, considered in this study as the reflector J200 or the Top of the autochthonous salt) and the K94 (Late Cretaceous) reflector. The results showed in this atlas correspond to a multidisciplinary workflow integrating Geology and Geophysics for generating a strong and coherent data framework as input for the petroleum system modeling. A number of activities were accomplished during this study that can be summarized as follows:

- Data base preparation
- Tectonic setting
- Seismic time maps
- Depth conversion of seismic time maps
- Conceptual Stratigraphy / Gross Depositional Environment (GDE) mapping
- Forward stratigraphic modelling with DionisosFlow® / GDE
- Basin modelling with TemisFlow®.

All this activities were accomplished following an innovative workflow proposed by Beicip-Franlab (Figure 2) and their results are presented in the different chapters of this atlas. A detailed index for this atlas is presented later in this chapter.

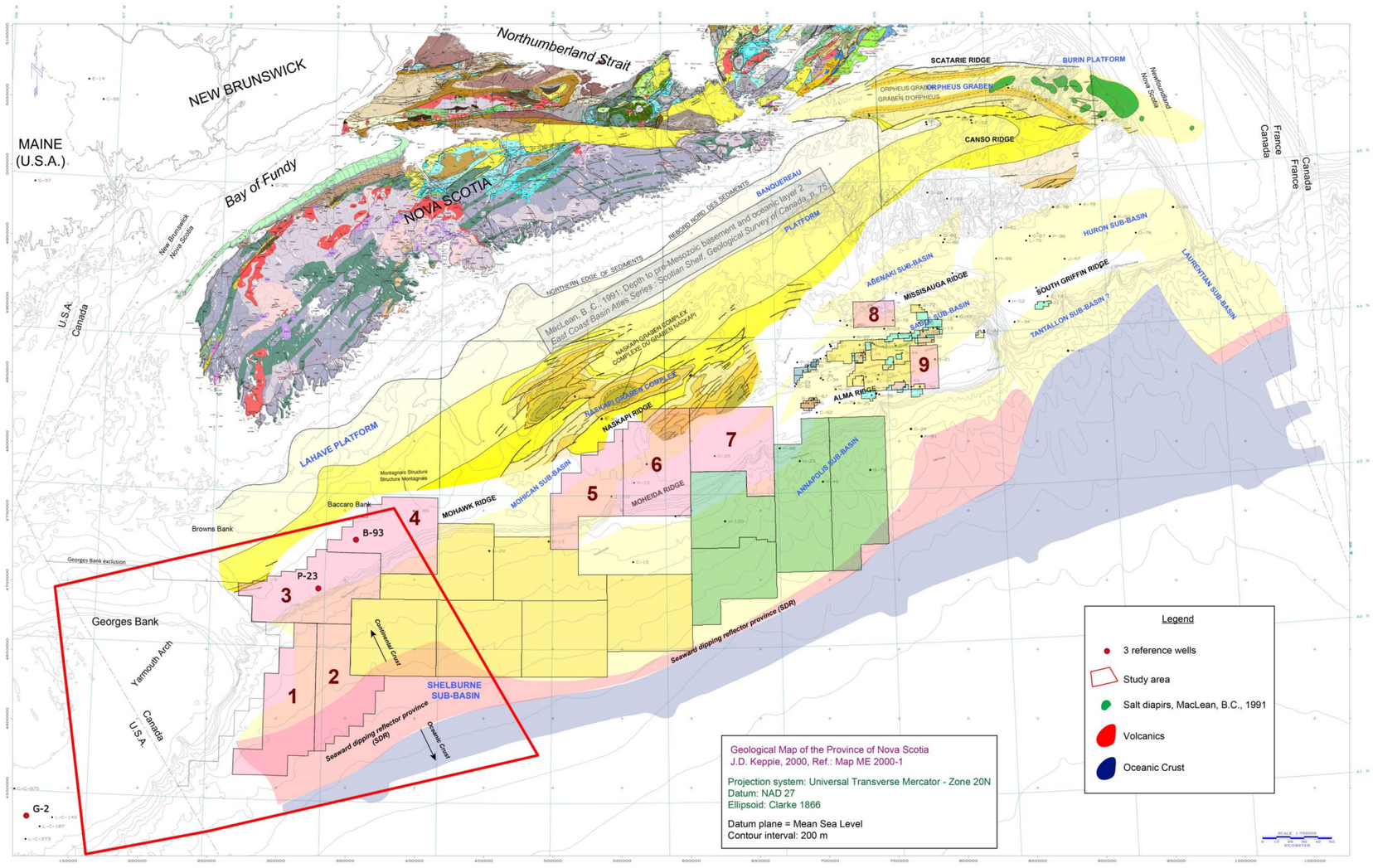

Figure 1. The study area (red polygon) lies to the south west part of the Nova Scotia shelf. It corresponds to the western expansion of the PFA 2011 study

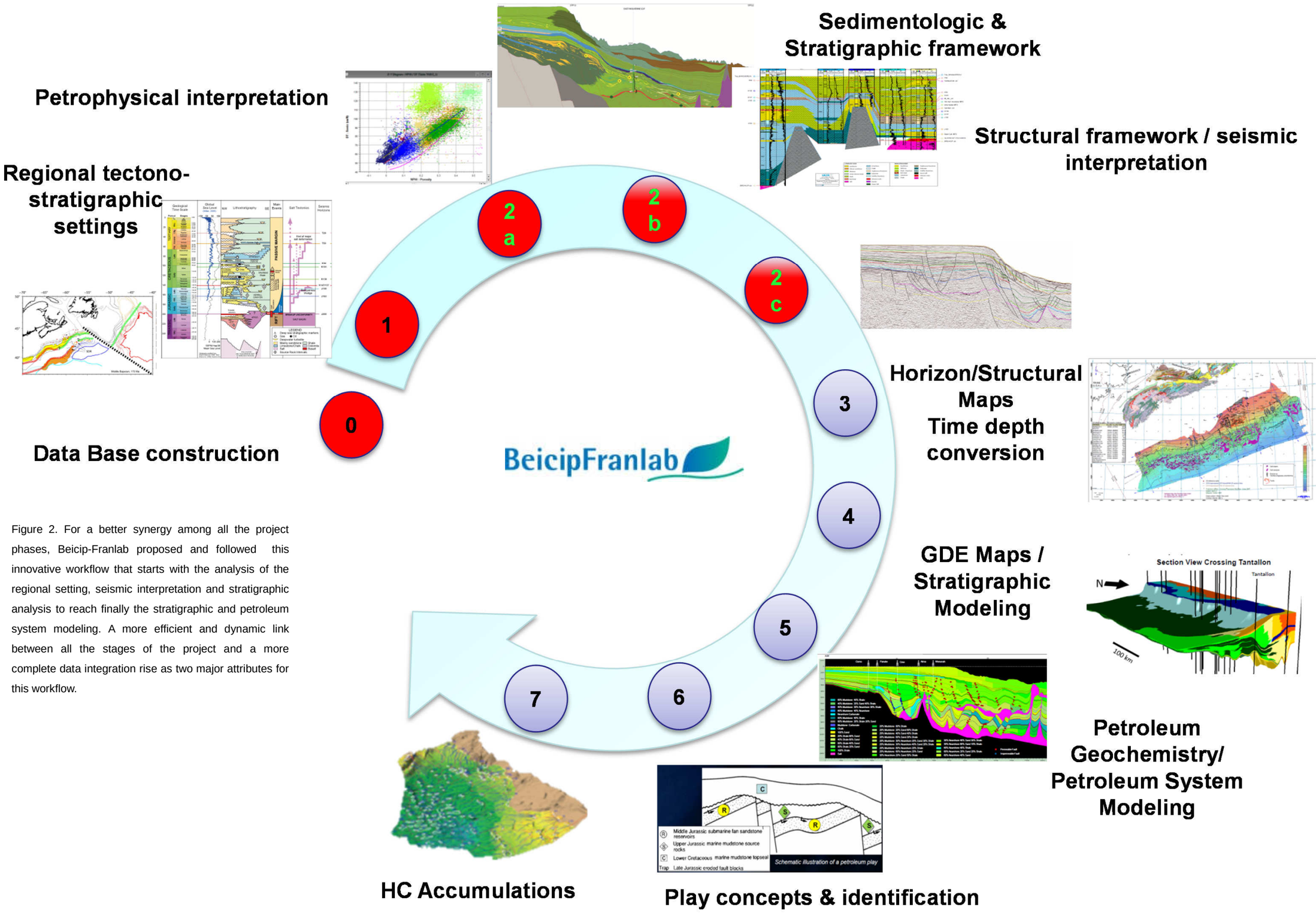

Figure 2. For a better synergy among all the project phases, Beicip-Franlab proposed and followed this innovative workflow that starts with the analysis of the regional setting, seismic interpretation and stratigraphic analysis to reach finally the stratigraphic and petroleum system modeling. A more efficient and dynamic link between all the stages of the project and a more complete data integration rise as two major attributes for this workflow.