

DEP SPECIFICATION

**TOP-SEAL INTEGRITY ASSESSMENT FOR PRIMARY
RECOVERY, WATERFLOOD, EOR AND CO2 STORAGE
AND FLUID DISPOSAL WELLS**

DEP 25.80.10.22-Gen.

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DESIGN AND ENGINEERING PRACTICE

DEM1



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1. INTRODUCTION

1.1 SCOPE

This DEP specifies requirements and gives recommendations for top-seal integrity assessment and is applicable to primary recovery, waterflood, EOR and CO₂ storage projects. Additional requirements can be applied on individual projects to mitigate specific local risks.

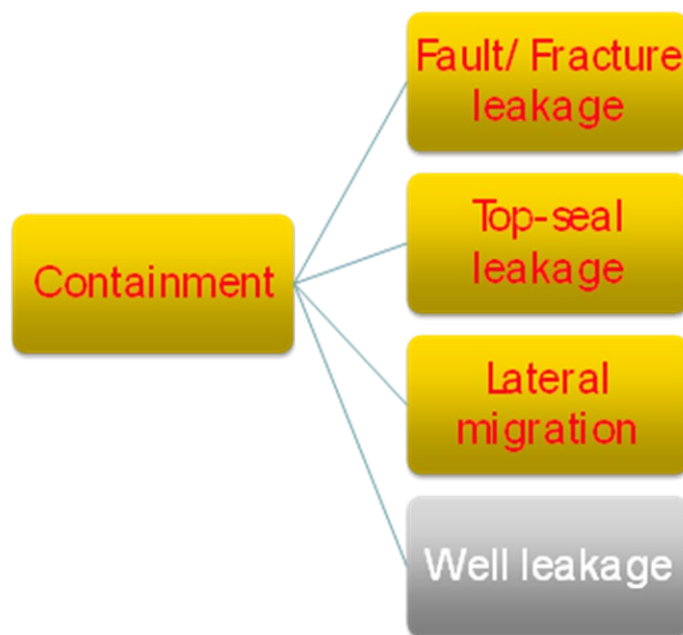
The purpose of this DEP is to ensure containment of fluids and gases within a geological reservoir or storage complex by requiring that all relevant containment risks are assessed and that the evidence supporting the selected remedial actions, including underlying assumptions and reasoning, are being documented.

It covers the risk of leakage through geological seals, along existing (natural) or induced faults or fractures and by lateral migration of fluids. It also considers the potential impacts of wells on geological seal integrity, but minimum standards to prevent leakage through seals along casing-cement or cement-formation interfaces are provided by other DEP documents.

“Cap-Rock integrity assessment”, “Top-Seal integrity assessment” and “Geological Seal integrity assessment” refer to the same activity definition. “Top-seal integrity assessment” in this DEP covers the same activities as “Containment assessment “ for CO₂ projects, with the exception of “Well leakage assessment”, which is covered in a separate DEP.

The scope of this DEP is displayed graphically in the yellow portion of Figure 1.

Figure 1 Assessment tree for top-seal integrity (containment)



It is not in the scope of this document to specify which discipline(s) will perform the assessment of top-seal integrity. This responsibility varies between regions and OUs, and is therefore specified in the region or OU-specific governance.

The custodianship and accountability for this DEP resides with the Petrophysics Discipline Head.

This DEP contains mandatory requirements to mitigate process safety risks in accordance with Design Engineering Manual DEM 1 – Application of Technical Standards.