



Kinetics Controls & Innovation Ltd

**North Sea
Project, & Product & Deployment Overview
B13 & B16 Tubing hanger void Isolation
KCI Reference AB1048RM**

Procedure: Deployment of Mac-Pac in tubing hanger void.

REVISION HISTORY

Rev	Date	Description	Author	Checked	NEXEN	Project
01	15/11/13	Issued for internal Review Draft	RM	AP		
	24/01/14	Edited	RM	SR		
	27/01/14	Issued to customer for review and comments	RM	SR		

KCI Reference: AB1048RM/PROC01

Rev. No 01

December 2013



Kinetics Controls & Innovation Ltd

CONTENTS

Section:

Introduction

1. History & Objective
2. Evaluation
3. Repair
4. Mac-Pac deployment Tooling
5. Method statement

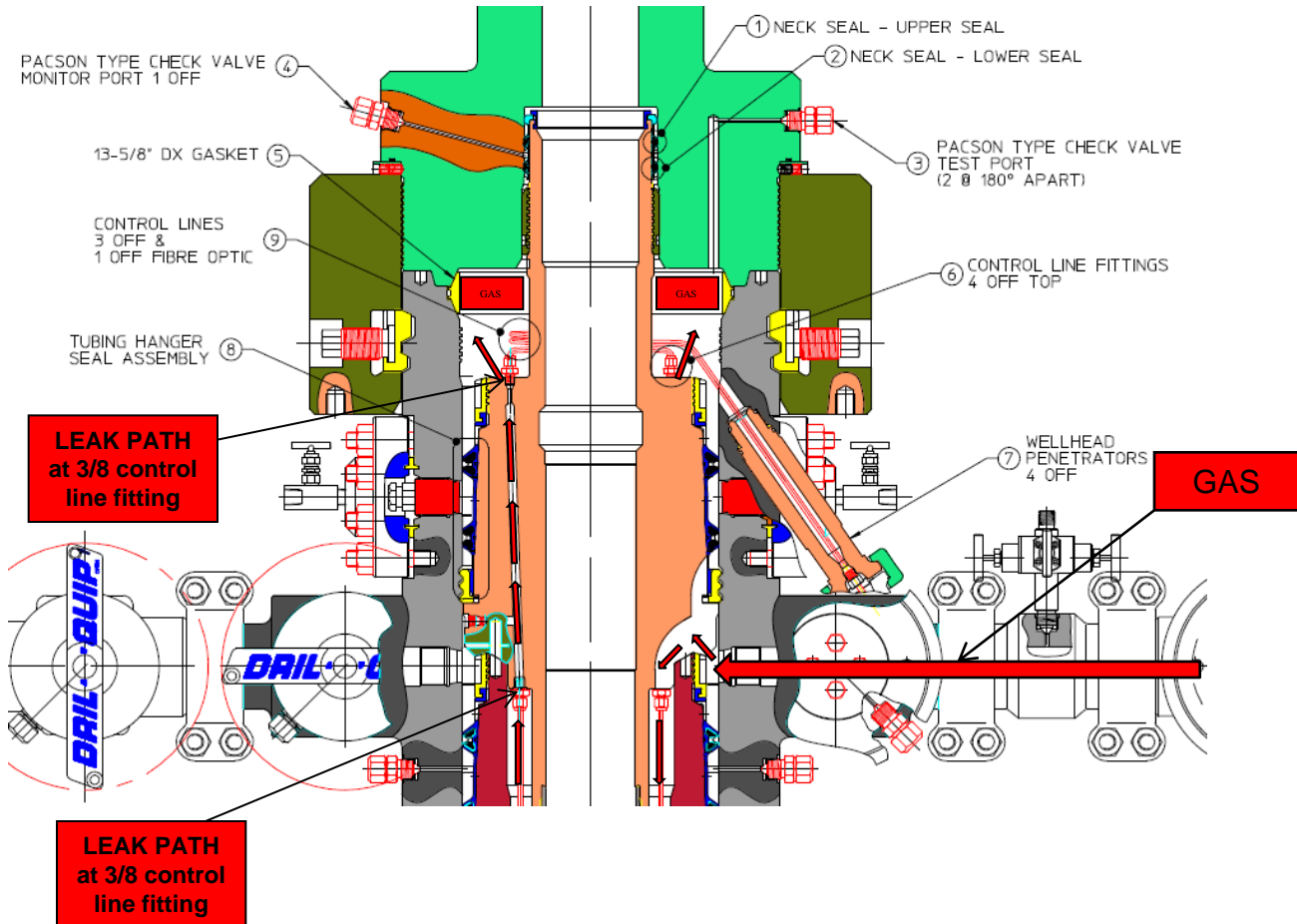


History:

The well has been established as a gas injection well. Indications are that injection gas is migrating through into the tubing hanger void. The tubing hanger seal assembly has been tested and is not passing. The tubing hanger void has also been tested and indicated a PBU thus indicating a one way gas leak through the upper olive on the 3/8" control line into the tubing hanger void by lifting the olive off of its seat during gas injection operations.

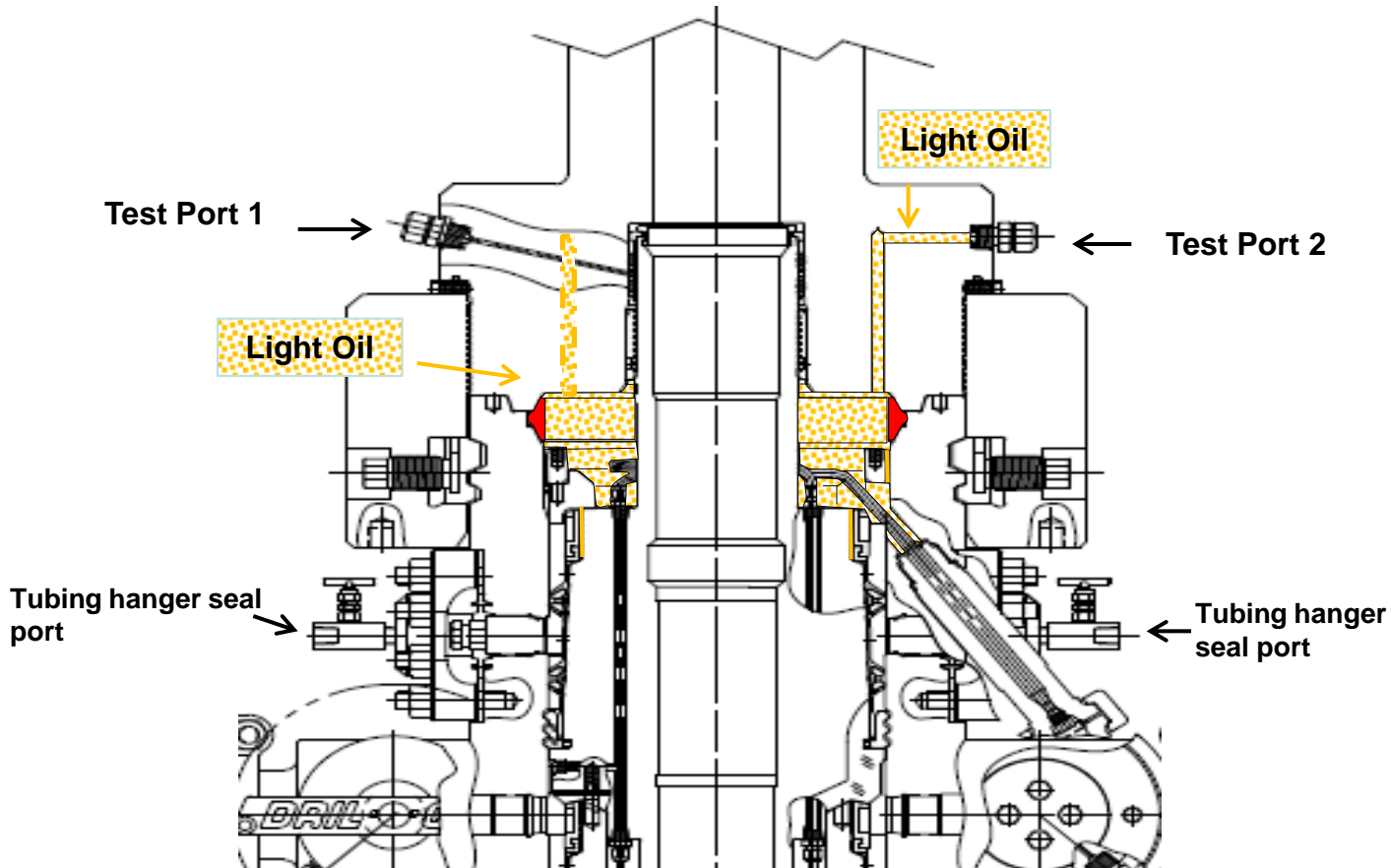
Objective:

KCI have been approached to provide a sealing product and method of deployment to overcome the current problem faced. KCI recommend using the Mac-Pac Isolation system for the following reasons, The sealant will convert to a solid but flexible self-energising seal with the added advantage of supporting long term temperature and pressure fluctuations which could cause failures on the application. KCI recommend injecting Mac-Pac into the void to aid keeping the upper olive on the 3/8" control line in place by filling the void with Mac-Pac. The void is 16 litres with a 1 litre contingency.





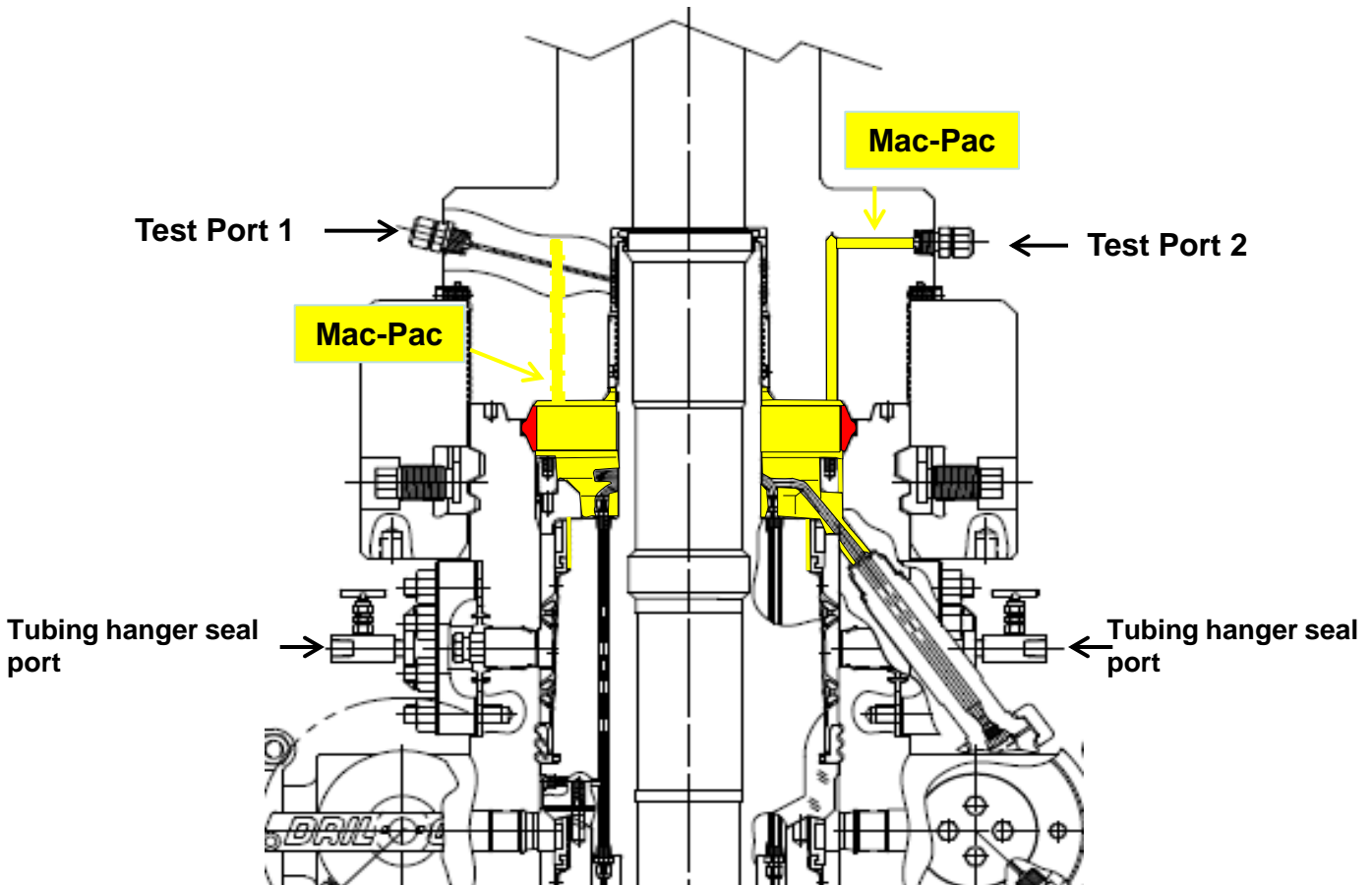
Evaluation



1. Dril-Quip personnel to sting and vent test ports 1 & 2, sting tubing hanger seal test ports.
2. KCI personnel to attach KCI deployment manifold to test port 1, and Dril-Quip personnel to sting test port 2.
3. Pump light oil through test port 1 until oil returns are seen at test port 2.
4. Once oil returns are seen through test port 2, Dril-Quip personnel to close stinger and pressure up to (TBC) psi for 15 minutes. Record findings.



Repair



- 1) Drill-Quip personnel to sting and vent test ports 1 & 2, Sting tubing hanger seal test ports.
- 2) KCI personnel to attach KCI deployment manifold to test port 1, while having a stinger on test port 2.
- 3) Place 1 litre of Mac-Pac into deployment cylinder.
- 4) Begin sealant injection until the cylinder piston dead ended. Bleed down disconnect deployment cylinder.
- 5) Refill deployment cylinder with 1 litre of Mac-Pac, commence sealant Injection. Repeat this process until sealant returns can be see at test port 2. (Estimated sealant volume 15.6 litres)
- 6) When Sealant returns are seen at test port 2, Drill-quip personnel to close stinger and pressure up to (TBC) psi for 15 minutes and monitor. Lock in pressure at (TBC) psi.
- 7) Vent pressure from KCI manifold and KCI personnel to rig down KCI equipment.