



**Relinquishment Report**  
**Licence P900**  
**Block 49/8b**  
**August 2009**

# Licence P900 Block 49/8b Relinquishment Report

## 1. Header -Licence Summary

**Licence Number:** P900

**Licence Round:** 15<sup>th</sup> Seaward Licensing Round

**Licence Type:** Fallow B

**Block Number:** 49/8b

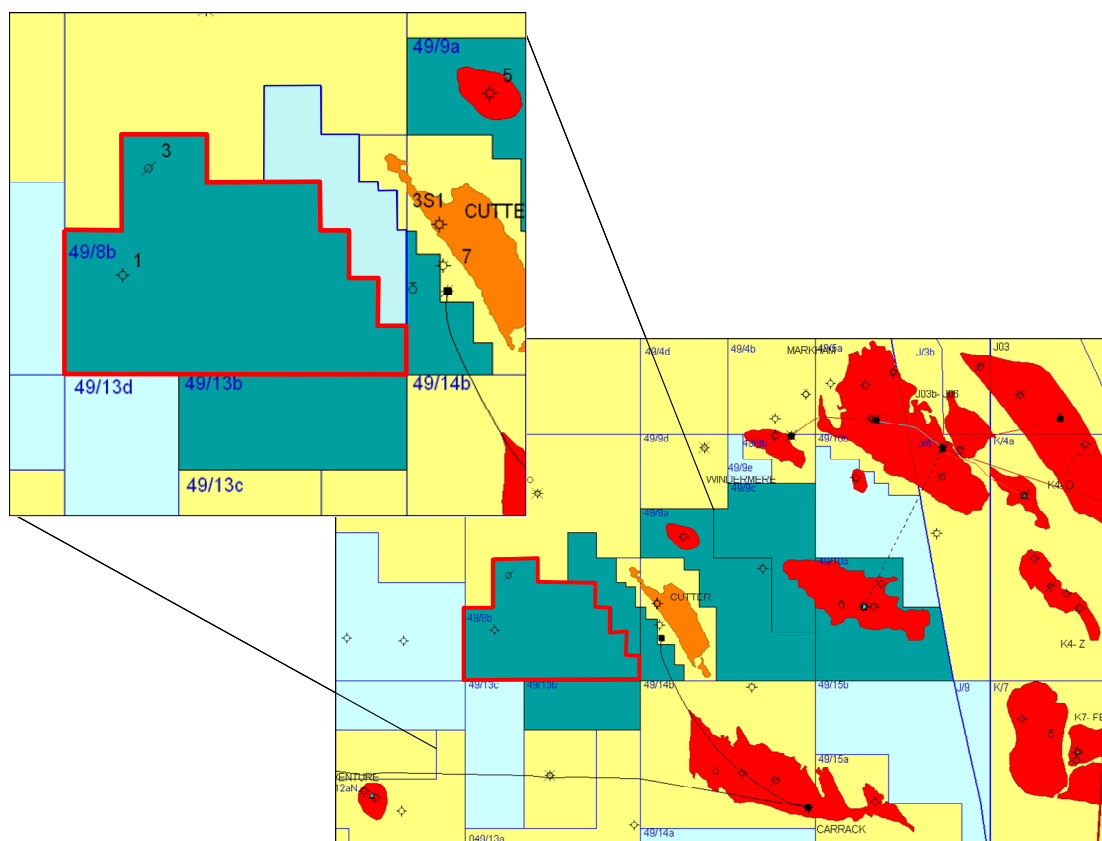
**Operator:** Centrica 80% (Newfield Petroleum UK Limited pre 1/12/07)

**Partners:** Sojitz 20%

**Licence Date Award** Purchased from Shell/Exxon by Newfield in 2004

**Work Programme** Drill or Drop decision required by DECC

Abandonment of 49/8b-3



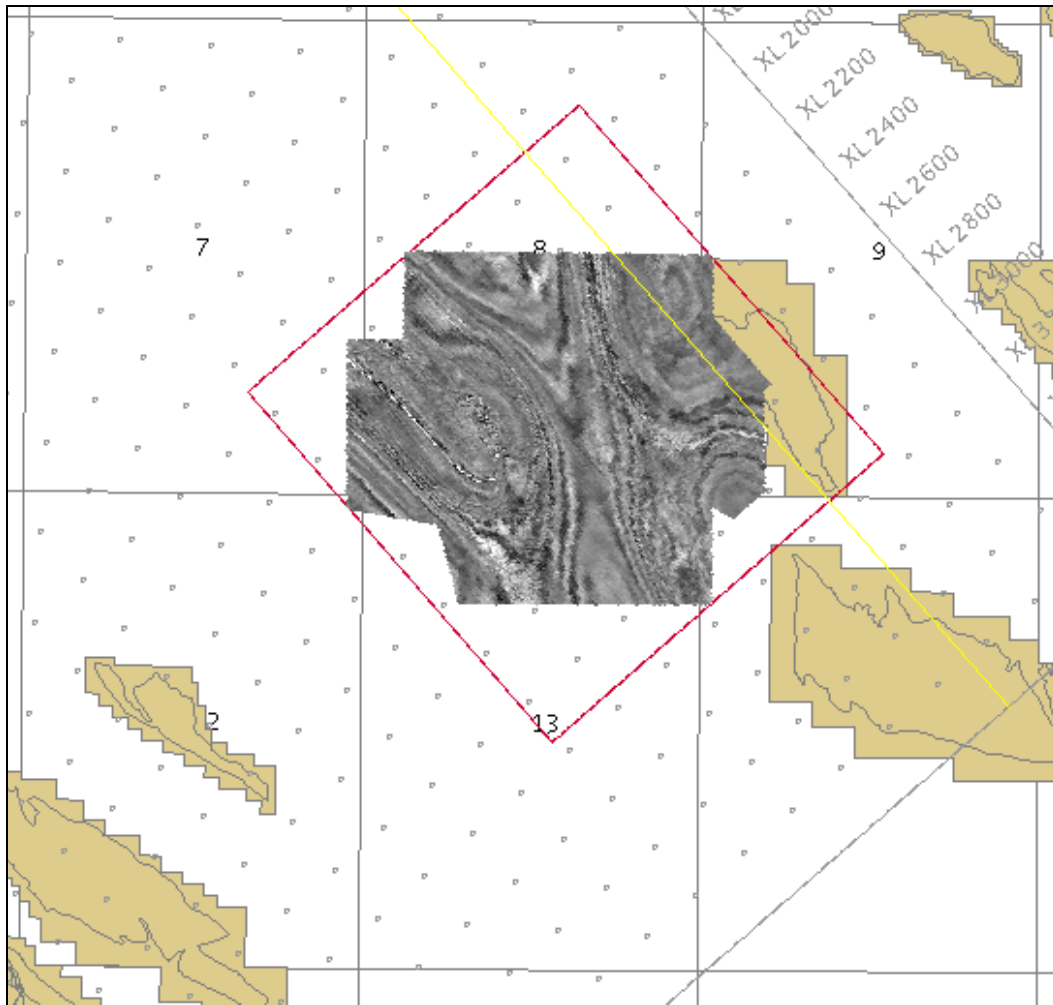
**Figure 1** Location Map

## 2. Synopsis - Licence Status

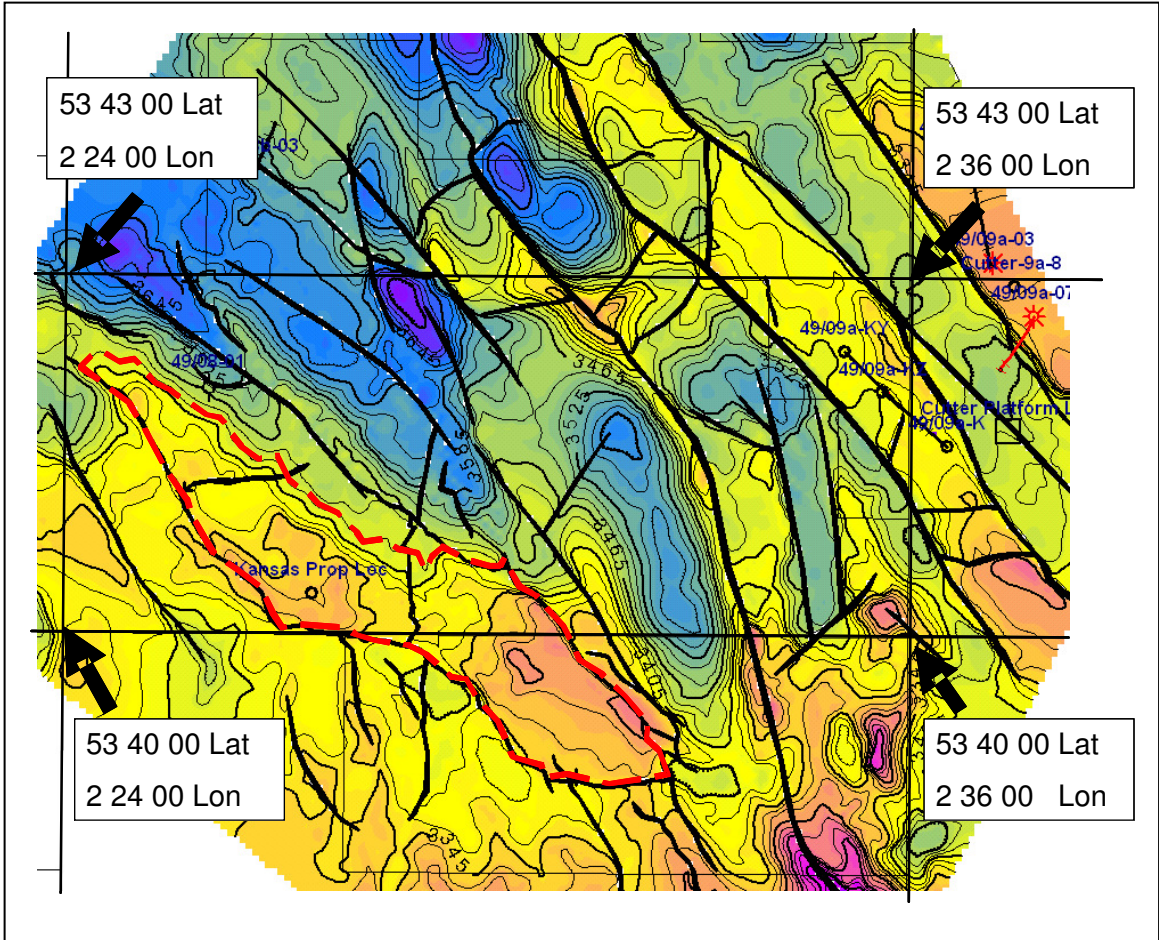
Licence P900 was relinquished by Newfield Petroleum on the 24<sup>th</sup> September 2007 in accordance with the Drill or Drop requirement of its Fallow B status. The main prospect within the licence, Kansas, was deemed high risk due to its low relief and position beneath a salt wall. With no other remaining prospectivity the entire block was relinquished.

### **3. Exploration Activities**

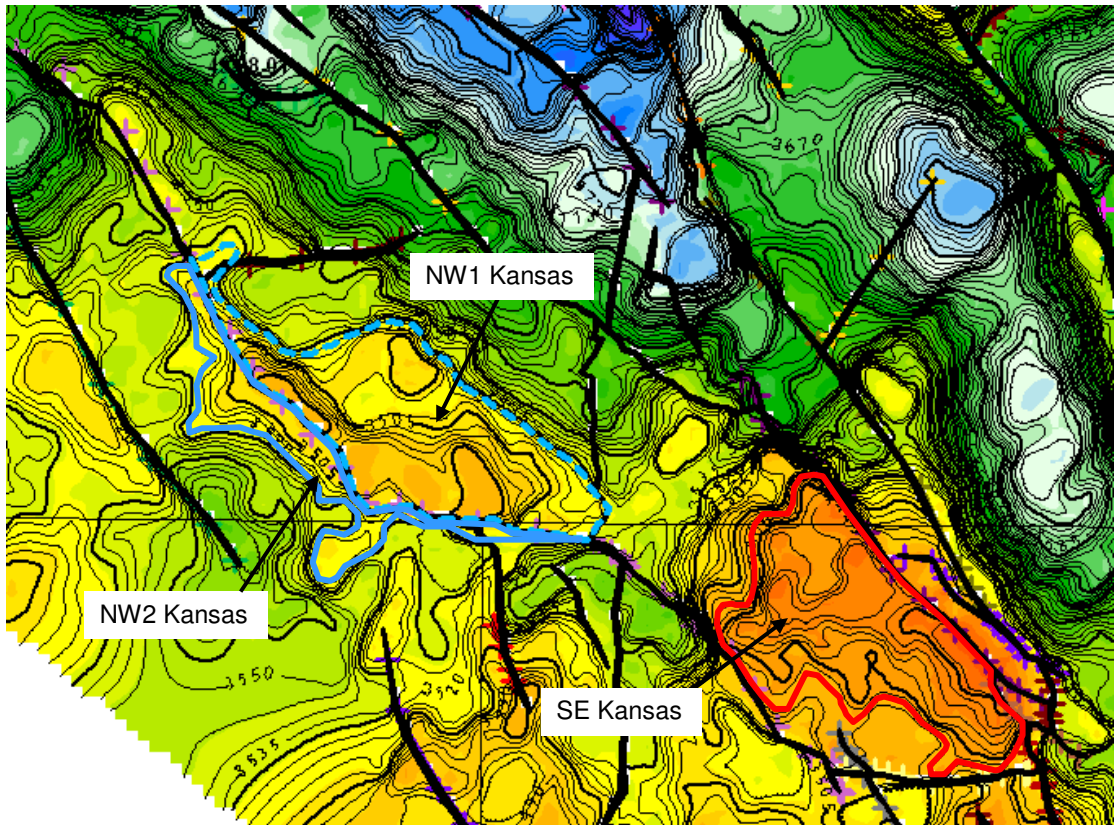
Seismic reprocessing to PreSDM was carried out over 49/8b & 49/13b (figure 2) by PGS to improve the definition of the Kansas prospect. The new data showed the Kansas structure to be a fault bound horst block with two structural highs (NW & SE Kansas). Further depth conversion sensitivity work was also completed and found the structure to be highly sensitive to velocity changes therefore raising the risk of the prospect.



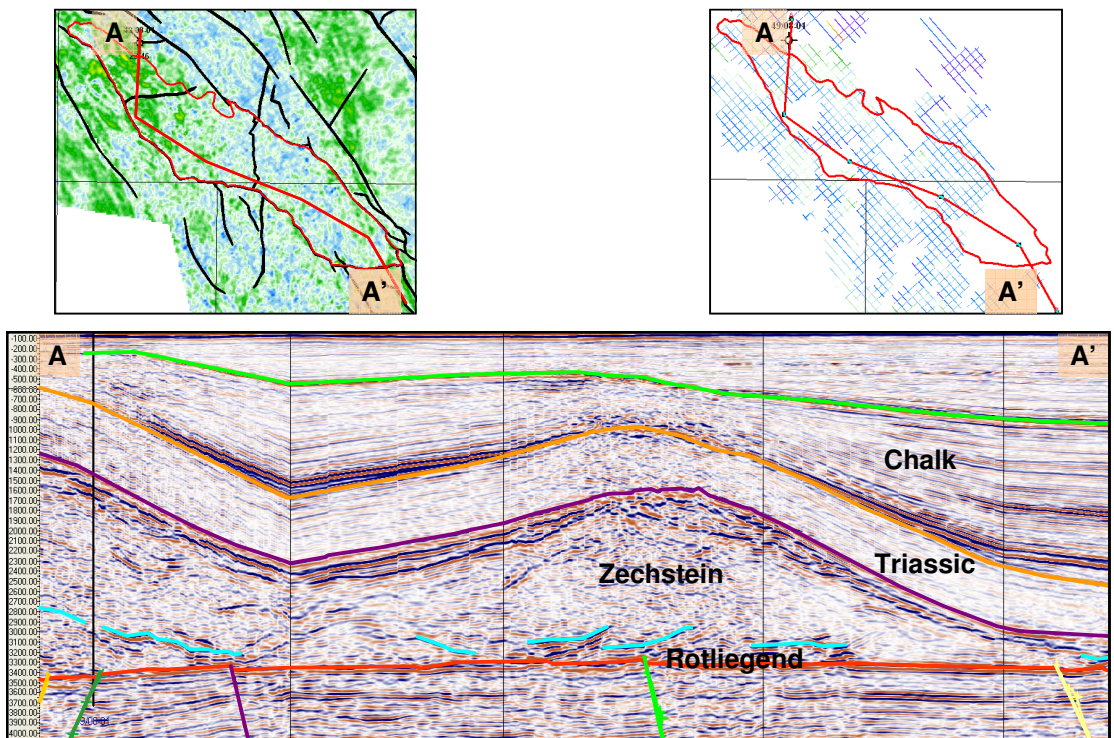
**Figure 2** Area of Reprocessed PreSDM 3D volume



**Figure 3** Depth Structure Map showing Kansas Prospect with two structural highs forming NW & SE Kansas.



**Figure 4** Depth Structure Map showing NW& SE Kansas separated by a structural low.

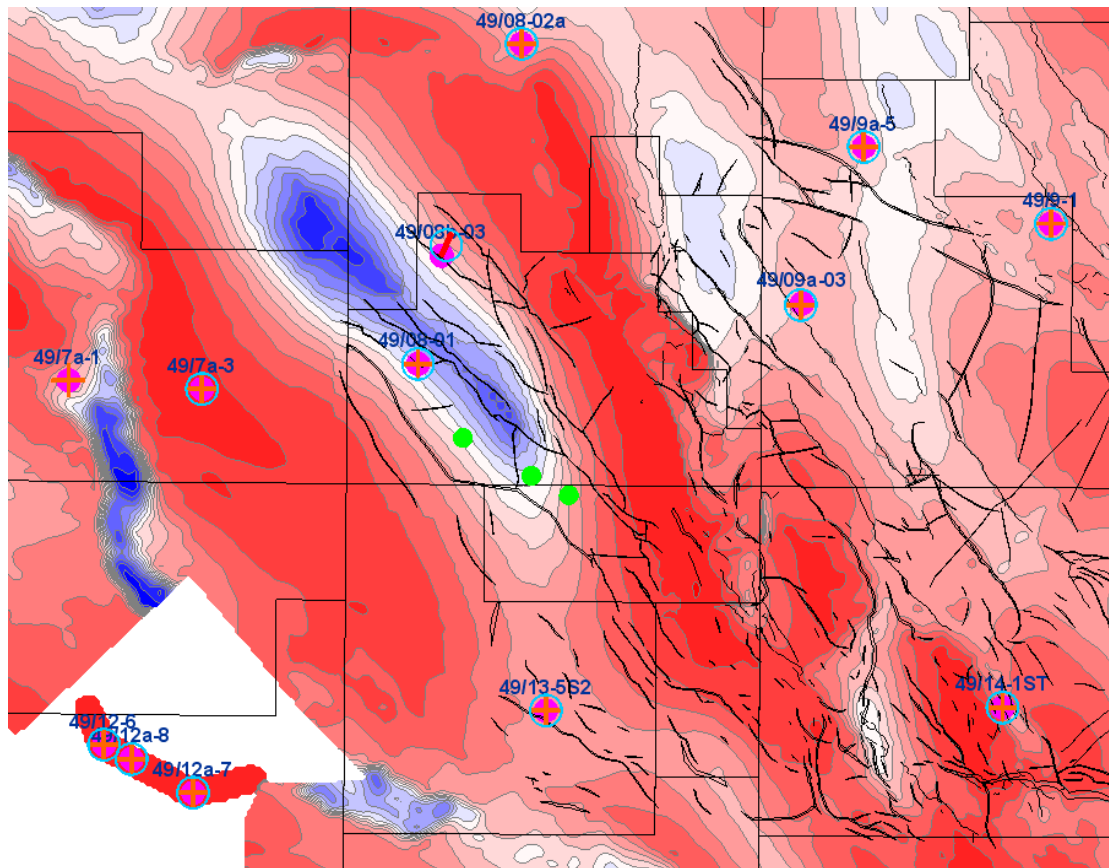


**Figure 5** Depth seismic section showing the low relief Kansas structure and overlying salt wall. Inset, amplitude extraction and Zechstein rafts interpretation.

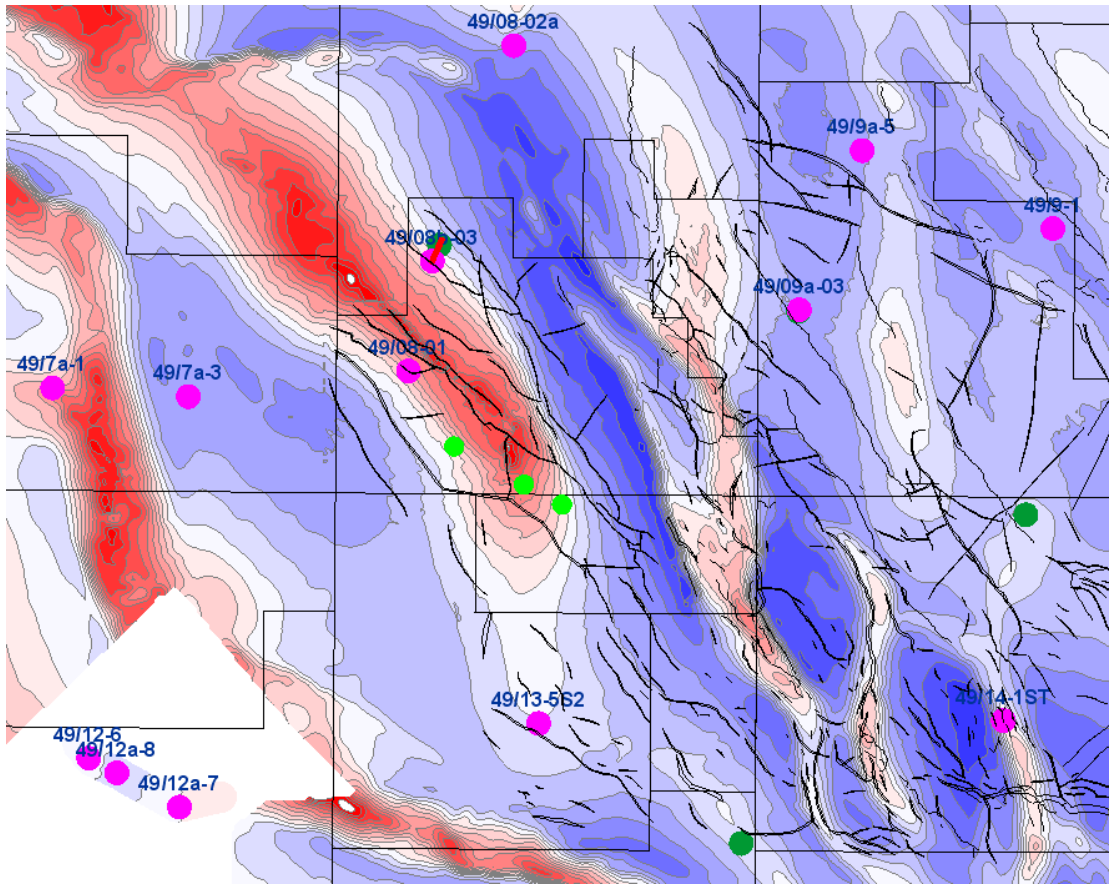
## 4. Prospectivity Analysis

### Structure

The Kansas structure is largely defined by a northwest-southeast orientated horst block with a north-south fault through the centre of it (figures 3&4). The horst block contains two principal topographic structures named NW Kansas and SE Kansas (figure 4). The two highs are separated by a saddle, which is coincident with the central fault. Above the saddle location is a thick Zechstein salt wall and a dramatic change in Chalk thickness (figure 5, 6 & 7).



**Figure 6** Zechstein Isochron with notable thinning to the Southeast (Blue indicates Thickening).



**Figure 7** Chalk Isochron depicting thickness change over the centre of the prospect (Red indicates thinning)

**NW Kansas**

The structure is defined by a three-way dip closure approximately 3.5km<sup>2</sup> (860acres) in area (NW1 Figure 4). On the south side of the closure’s bounding fault is another three-way dip closure that together with the first makes a slightly larger four-way dip closure (NW2 figure 4).

**SE Kansas**

The SE Kansas structure is defined by a three-way dip closure against a NW-SE trending fault (figure 4). It is approximately 3.6km<sup>2</sup> (889acres) in area with 40m of relief. Below the 3465m contour is a risk of hydrocarbons spilling to the south-east in the direction of Carrick Field. This spill point is highly sensitive to the depth conversion used.

## Reservoir

The reservoir for the Kansas prospect is the Lower Leman Sandstone. The 49/8-1 well penetrated 24m of Lower Leman Sand with an average porosity of 16% and a maximum of 19%.

The lateral extent of the good reservoir properties seen in 49/8-1 is uncertain as a high variation of reservoir properties is seen within the local wells. The amplitude response from the Lower Leman shows bright spots at the well location which continues to the southwest perhaps indicating continuation of good reservoir properties in that direction. Over much of the structure however, poor amplitudes exist. These poorer amplitudes may be a sign of thinning sands or simply the amplitude being masked by Zechstein rafts and the thick Zechstein Salt wall.

SE Kansas contains much thinner Zechstein strata and fewer rafts, indicating the poor amplitude response in this area is more likely the result of thin Lower Leman Sand.

## Seal

The primary seal for the prospect is the Silverpit Formation which in the 49/8-1 well is 160m thick. The formation in 49/8-1 consists of claystone, tight sandstone and some irregular patches of anhydrite. In other wells, the Silverpit is known to contain sandstone stringers that decrease its sealing efficiency and this must be considered a risk for the prospect.

The secondary seal for the prospect is the Zechstein which is thicker over NW and Central Kansas and thinner over SE Kansas (figure 6). Consequently Kansas SE has a higher risk of failure.

In addition to top seal, Kansas also requires lateral fault seal; however in places along the bounding fault there is minimal throw which heightens the risk of leakage.

## Risking

	NW Kansas	NW+SE
Structure / Lateral Seal	0.725	0.35
Top Seal	0.775	0.7
Reservoir	0.6575	0.25
Source / Migration	0.9875	1
<b>Overall COS</b>	<b>0.36</b>	<b>0.06</b>

## GIIP

	NW Kansas	SE Kansas	Total
P90	36	18	<b>54</b>
P50	42	25	<b>67</b>
P10	49	31	<b>80</b>

Given the combination of GIIP distribution and risk, Kansas was not deemed suitable for a drill commitment and as a result was relinquished by Newfield.

## Remaining Prospectivity

Other than Kansas, no further potential is identified.



## **5. Well Abandonment**

In accordance with the licence requirements suspended well 49/8b-3 was abandoned by Newfield.

## **6. Clearance**

All data used in this report is owned by Centrica or permission for its use has been granted by the owner.