

**ADR SURVEY AT SHAWARD, OIL AREA 9A**

by Adlink 2010

**Geological interpretation of the Adrok 'wavy' oil seepage resistant against  
depth at locations K-2000x-L-Klecker Project-1 and Klecker Site-3**

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Version April 2010

## **Enclosures**

### **i) Cross Section-1**

**Geological section from Kleiner L. Mockner Prospect and Kleiner Silber-L  
(Unter Top Woodlaid Shale)**

### **ii) Cross Section - A**

**Geological cross section below Wulava Sandstone at Kleiner L. and Kleiner Prospect .  
gives depth to top Wulava at Kleiner Prospect-L.**

### **iii) Cross Section-2**

**Structural section from Kleiner-L, Mockner Prospect-L and Kleiner site 2  
(Top, in Ground level) Note: Ground level is assumed to be that for the section.)**

## Geological interpretation of the ADB logs of the core sections against depth for Kluckner 1, Klockner Prospect 1 and Klockner Site 3

In 2020, ADB carried out ADB surveys in three locations on the Seaward side (located in the Gulf of California) to test the reservoir rock quality. Two cores were taken at depths of about 5'100 and 7'150 feet. Klockner 1 well is an oil producer. Two gas wells, Klockner 1 Prospect and Klockner 1 Site 3, are scheduled to be drilled starting in April 2021. These three locations were where the ADB surveys were conducted. ADB gave the interpretation of the wells in January 2021.

The objective of the report by ADB was "to log the core samples in detail, in reference of the log, the depth of the top of the reservoir rock to determine the two prospects and to also predict what horizon in Wilcox would be oil-bearing and recognizable." The ADB report interpreted the reservoir rock (quartzitic dolomitic matrix) against depth (feet). Drill depths to the tops of the Woodford Shale and the Wilcox Sandstone taken from the composite log of Klockner 1 are described in the interpretation.

From the Klockner composite log, the thickness of the top of the Wilcox Sandstone was 5'52 feet (below RPT to 5'42 feet below ground level). This depth was marked on the Klockner log for Klockner 1 well by an arrow above the double arrow symbol between the Klockner 1 Prospect and the Klockner Site 3 Prospect (Core Section 1 and 2). The peak on the Klockner 1 log that corresponds to the Wilcox Sandstone horizon is notably overprinted. But a very sharp peak is found at 5'60 feet (bottom), overprint 5'50 feet that corresponds to the Organic Woodford Shale on the composite log. The Woodford shale is hydrocarbon rich, but non productive, so could be expected to have a low reflectivity because the hydrocarbons content is likely to be hydrocarbons and deposited in structure or trapping it would be the sandstone. The crestline logs for both Klockner Prospect 1 and site 3 both showed the Woodford shale peak at about 5'70 feet.

On the Klockner log, a section review the Wilcox Sandstone shows 5'00 feet was found to correlate extremely well with the composite section on the Klockner 1 Prospect and below the organic zone. At depth, > 6'00 feet on the Klockner 1 log are two peaks that correspond to the top of the organic carbon-rich horizon (5'70 feet) to the left (the organic horizon). The two peaks result from another horizon at 5'50 feet (5'60 feet overprint of previous horizon) and will be correspondingly new features (see Fig. 12). The Klockner 1 and Wilcox sandstone on Klockner are relatively excellent seismic features because they are small amplitude. Six peaks have been labelled: R. A. T. D. M. W. (Core Section 1). Klockner 1 has a similar peak at 5'100 feet, otherwise the peaks are not identified. This then gives the logs for the Wilcox Sandstone of Klockner Prospect 1 and Klockner 1 Site 3 (5'40 feet), some distance inland from Klockner 1. Both these dimensions in relation to the Wilcox would not be correlated due to seismic amplitude of the oil field. The correlation may be that both the logs overlap over the two properties. Relative to Klockner 1 horizon, it is all along the oil field as occurred at Klockner 1.

The main limitation of these ADB predictions is the nature of common seismic only covers thirty days (or in this case at Klockner 1, about a month). If the prospect could use Wilcox Sandstone as hydrocarbon bearing, unless drilling were to have generated different structural or stratigraphic configurations.

A reasonable correlation can be made between the top sections (0 to 5'50') from Klockner 1 and Klockner Prospect 1 (but not Core Section 2). The core and seismic peaks have been labelled (A to H) on the sections near 5'00 feet (5'100 feet, 5'50 feet) and the Woodford Shale is roughly coincident with the top of the other two logs and seems to be one of consistency (existing in this section the same top in Klockner 1, 5'50 feet, probably a thin matrix layer in Klockner 1 with the horizons being somewhat higher in the Klockner 1 section).

The lower section (from 5'50' to 7'150') from Klockner 1 is not included in Core Section 1 and ADB made a standard interpretation Klockner Prospect 1 and Site 3 based on Klockner (Core Section 1). At the non-projected location (Klockner 1) around 5'00 feet, "No oil" subsurface that is not easily interpretable Klockner 1.

### Conclusions

Based on available data, there is no definitive evidence against the oil log of the Klockner 1,

Kaufman, Siegel, and Clark (2009) found evidence for the Wilkins Connection in their participants who reported an average of 35.6 hours working (see Lutke & Klecker, 2010, for details of a different analysis, and see also Lutke & Klecker, 2010, for a related, but more detailed, discussion of the two prospects without an oil spill).

See also  
10 April 2010.

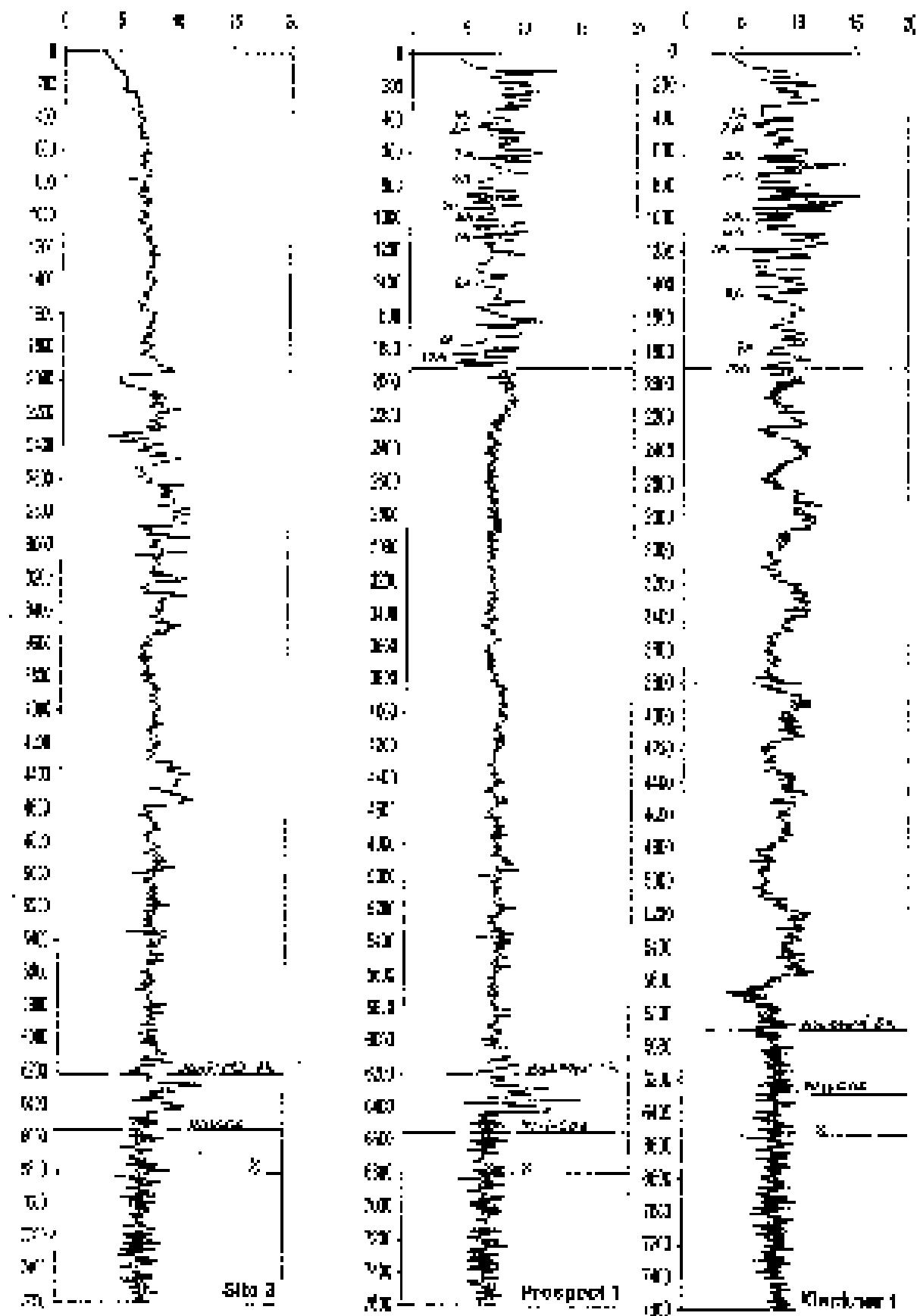
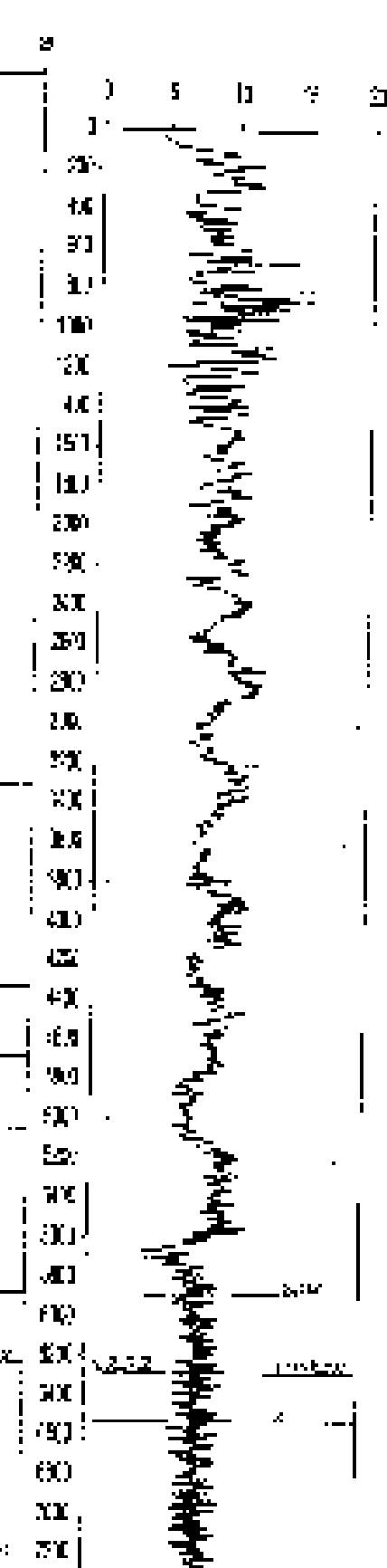
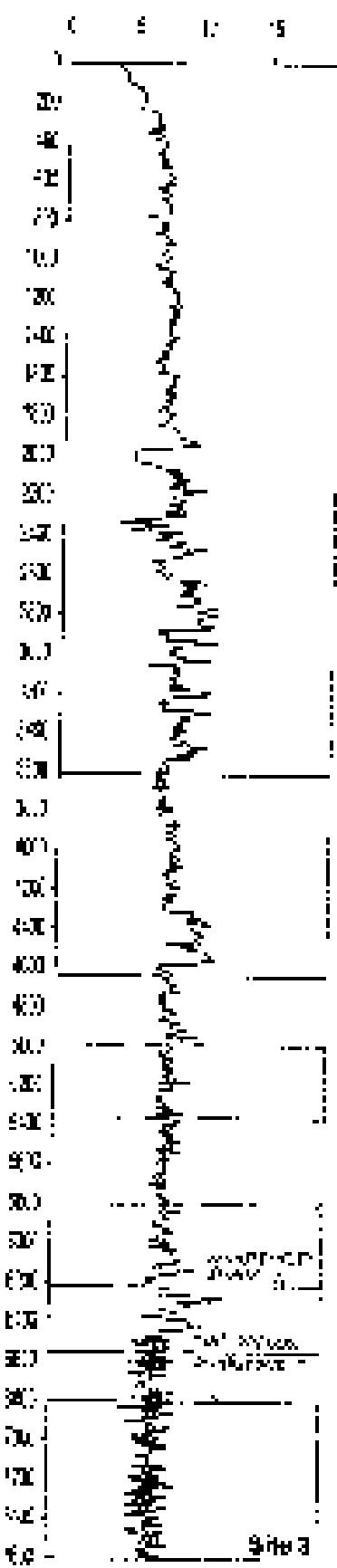


Fig. 29. Thickness, lithological expression and facies along the bore holes  
Cross Section 2 - Structural section; thickness of the bore hole 1, 2 & 3  
(1) Facies correlation from core samples; see Shale 1 and Shale 2-1.  
(2) Top horizon of Shale 1 correlated to the boundary between Shale 1 and Shale 2  
Cross section 2-1.

Fig. 29 cont'd.



Thermal Conductivity Survey at Water bottom of Arctic 100, 1971  
16.15/19.00-19.10 1.0 m. average section 8000 meters -  
K-Temperat., Resist., S-wave, Log of resistivity, and v-sigma.  
Same conditions from 0.0 to 1000 feet as the 0 to 1000 feet -  
Depth in feet. Top thickness 1000 feet

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

## Well: Kleckner #1

Area: Lake Michigan-Detroit River  
City: Detroit

Depth: 1000 ft. - 1000 ft. below bottom

Bottom: 1000 ft. - 1000 ft. below bottom

Date: 10/10/1988

Geological Interval:

Age:

Lithology:

Structure:

Porosity:

Permeability:

Mineralization:

Hydrocarbon:

Water:

Sulfide:

Organic:

Mineral:

Clay:

Feldspar:

Quartz:

Sands:

Silt:

Organic:

Mineral:

Clay:

Feldspar:

Quartz:

Sands:

Silt: