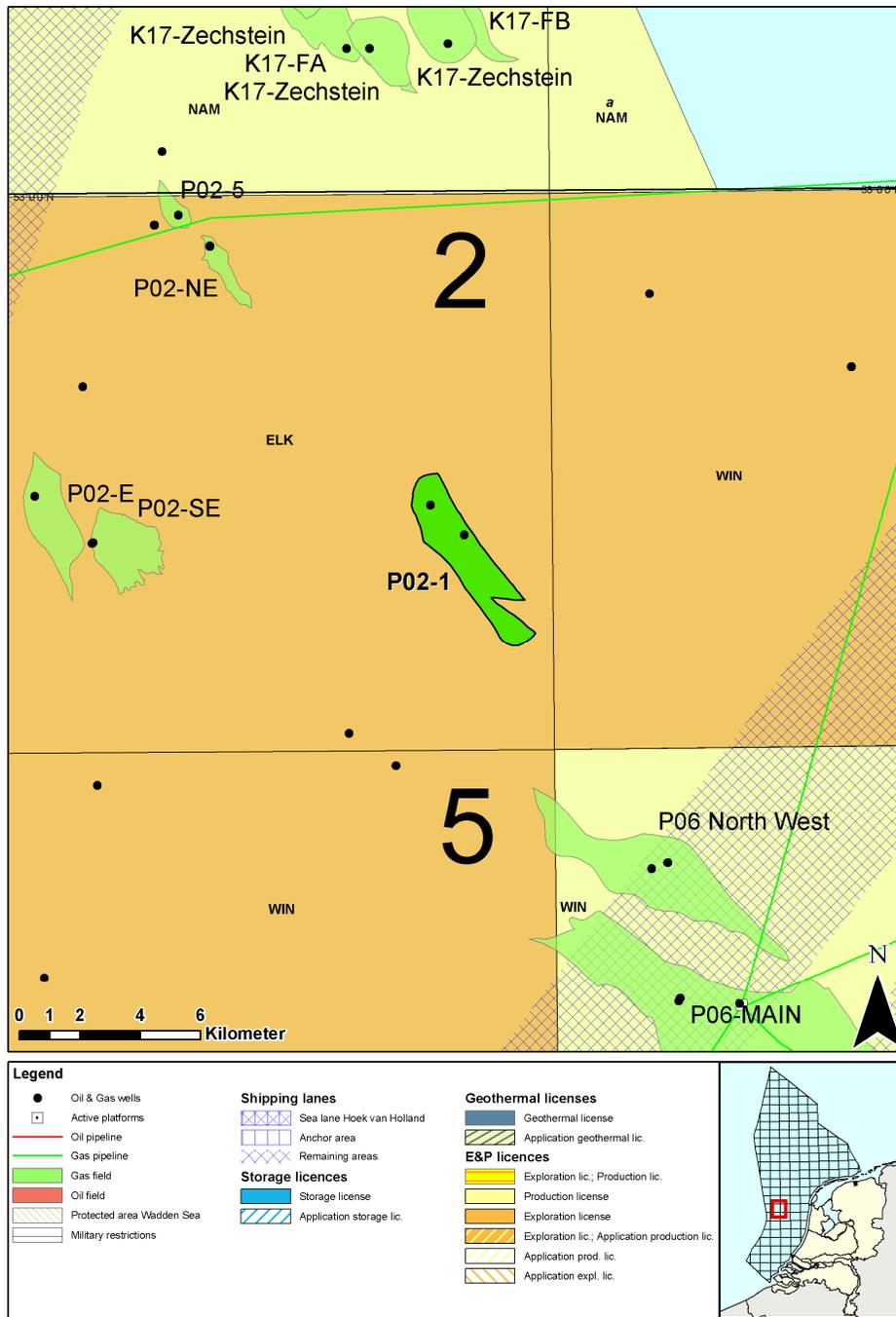




Fact sheet P02-1 field

Stranded fields - Q4 2009



Location map of the P02-1 field

General Information

The P02-1 gas field was discovered in 1969 with exploration well P02-01 by Tenneco. The well reached TD at 3799 meter after penetrating 290 meter of Rotliegendes sandstones. The well tested an elongate faulted anticline with closure mapped at Permo-Triassic level. There were gas shows in the Rotliegende sandstone. There was also a poor show at the top of the Middle Bunter sandstones but it did not warrant testing. The top of the Rotliegend be assigned to the “Weisliend” and the (Strömback and Howell, 2002).

The low porosity Rotliegendes sandstones are believed to represent aeolian deposits reworked to varying extents by water. The low porosity is believed to be due partly to overcompaction during the period of deep burial in the Jurassic/Lower Cretaceous and partly due to compression during uplift in the Late Cretaceous/Early Tertiary. The well also encountered 100 meter of low porosity Triassic sandstone. The porosities are believed to be poorly developed for the same reasons as the Rotliegend sandstones.

In late 1979 the P02-03 well was drilled by Mobil to delineate the P02-1 horst block structure and to evaluate the reservoir zones interpreted gas bearing but not tested in well P02-01. The Bunter reservoir, the primary objective, was found gas bearing in both the Solling and Hardegsen but wet in the Detfurth and Volpriehausen sandstone members.

The field was never developed and the current lies in the P02 block of Elko Energy.

Sequence of events

Date	Event
April 1968	Exploration licence Block P02 awarded to Tenneco as part of the 1 st Round
Oct. 68/Jan 69	Drilling of the discovery well P02-01
June 1976	BP acquired Tenneco's interest in the Exploration licence
1978	Eastern part of the P02 block (P2b) relinquished (April); the acreage (including the P02-1 field) was subsequently awarded to Mobil (June)
Sept 79/Febr 80	Drilling of appraisal well P02-03 by Mobil
23 August 1984	Production licence application P/2b by Mobil
22 November 1988	Production licence withdrawn by Mobil
12 February 1993	Exploration licence P2b Block awarded to NAM (8 th round)
05 December 2001	Exploration licence P2b Block awarded to Clyde (9 th round)
18 September 2003	Merger Clyde with Wintershall
22-02-2008	Elko Energy exploration license P02

Reservoir data

Well	Geological unit RGD & NOGEP A (1993)	Top-Bottom m TVD ss	Net Pay m	av. Porosity %	Saturation Sw %
P02-01	Middle Bunter	2406.8-2721.3		8-10	
	Rotliegendes	3464.9-3767.1		7	
P02-03 (porosity cutoff 5.6%)	Solling		2.9	8.0	36.1
	Hardegsen		3.5	9.3	28.2
	Hardegsen-C		9.1	12.2	28.7
	Detfurth		0	7.5	100

Contacts

Well	Reservoir	Top structure	GWC m TVD ss
P02-01	Middle Bunter	2406.8	
P02-03			2526

Hydrocarbon specifications

Reservoir	CH₄ %	CO₂ %	N₂ %	GHV MJ/m³	Density Relative to air
Middle Bunter	64.7	0.4	33.6	25.32	0.705
Rotliegendes	84.9	9.3	5.2	32.43	0.668

Volumes

Reservoir	GIIP 10⁹m³st	Reserves 10⁹m³st
Solling-B	0.9	0.5
Hardeggen-B	0.13	0.09
Hardeggen-C	0.33	0.31
Detfurth-Ss	0.05	
Total Gas	0.7	0.45
Total Hydrocarbons (excluding Nitrogen)	0.46	0.29

Productivity (well P02-03)

Reservoir	Test	Result
Detfurth	DST	43 bbls formation water. Subsequently the well killed itself
Hardeggen	DST	Maximum rate observed: 11.3 MMSCFD
Solling	DST	No measurable quantities of gas

Well status

Both wells P02-01 and P02-03 were plugged and abandoned.

Infrastructure

The nearest gas production platform is P06-A owned by Wintershall at a distance of 19 kilometers to the southeast.

Public References

RGD: Petrofysische evaluatie t.b.v. de Winningsvergunningaanvraag P02a;

Rapportnummer 88 ADV 10. Haarlem, juni 1988

RGD & NOGEPa 1993, Stratigraphic nomenclature of the Netherlands, Mededelingen
Rijks Geologische Dienst, Nr. 50

Strömbäck, A.C. & Howell, J.A. 2002, Predicting distribution of remobilized Aeolian
facies using sub-surface data: the Weissliegend of the UK Southern North Sea.
Petroleum Geoscience, vol. 8 pp 237-249.

P02-01 en P02-03: Composite log. *On open file*

For more information stranded Oil&Gas fields in the Netherlands:

<http://www.nlog.nl/nl/reserves/reserves/stranded.html>

For released Well data and Seismic data contact DINOloket:

<http://www.dinoloket.nl>

For geological maps of the deep subsurface of the Netherlands:

http://www.nlog.nl/nl/pubs/maps/geologic_maps/NCP1.html

Liability

Facts and figures supplied on this fact sheet have been compiled carefully. Great care has been taken to ensure correct coverage of all information. TNO-NITG and the Ministry of Economic Affairs do not accept any liability for any direct or indirect damage of any kind ensuing from the use of information published on this sheet.