



74 ILK CONSTRUCTION TURKMENISTAN BRANCH (PETRONAS PROJECT)

GARAGOL DENIZ WEST OIL DEVELOPMENT PROJECT – 14" GAS PIPELINE (TURKMENISTAN)

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**74 ILK CONSTRUCTION TURKMENISTAN BRANCH
(PETRONAS Project)- GARAGOL DENIZ WEST OIL DEVELOPMENT
PROJECT – 14"gas pipeline
(TURKMENISTAN)**

1 General project Overview and Reference

The project is "TRANSPORTATION AND INSTALLATION OF OFFSHORE FACILITIES FOR GARAGOL DENIZ WEST OIL DEVELOPMENT PROJECT" under patronage of Malaysian PETRONAS CARIGALI TURKMENISTAN SDN BHD and awarded to Malaysian Pipe Laying Company SIGUR ROS SDN BHD as the Main Contractor.

The shore approach section is subcontracted to the Turkish ILK CONSTRUCTION.

The original construction design was based on dredging a navigation channel for the access of a pipe-layer and logistic barges to shallow water. However, ILK CONSTRUCTION proposed to bottom-tow/surface-tow the complete landfall string and PETRONAS CARIGALI TURKMENISTAN SDN BHD approved this proposal providing that the required trench depths and pipe burial criteria are achieved based on existing seabed levels. The purpose of this approach was mainly to eliminate the dredging scope required for vessel access and to change the trenching scope to a relatively simple and quick method.

The pipeline was requested to be trenched to an approximate depth of 1m TOP, and SEA S.R.L. was contracted by ILK Construction to perform the Post-Trenching activities of the 14" pipeline from the shore line to approx. 12 m water depth.

The approximate landfall location is N40d 09.3' / E52d 45.8' and is close to the PETRONAS Port (within 3 Nautical miles).



Figure 1: Overview of project area

2 Scope of work

SEA's scope of work included the post-trenching of a 14" subsea pipeline from GDWP-A to OGT.

The 14" subsea pipeline had the following characteristics:

Pipeline details:	
Pipe:	n.1 x 14in pipeline (OD 355,6mm)
Wall thickness:	12.7mm
Material:	API 5L X52
Protective coating:	3.5mm 3LPP
Concrete Weight Coating:	95mm
Total OD:	545,6mm
Anodes:	Circular anodes are hidden in concrete coating at app. 50 metres spacing
Joints:	Covered by polyurethane for the entire thickness of the concrete coating.

The pipeline was flooded and unpressurized when post-trenching operations were performed.

The following table summarizes the original trenching SOW:

TRENCHING OPERATIONS from GDWP-A to OCT									
PRODUCT	Concrete Coating	Zone	Operations	KP Start	KP End	Length (approx Km)	Burial Depth (m) TOP	From Water Depth (approx m)	To Water Depth (approx m)
14" subsea pipeline	95mm	Landfall point towards offshore	Post-trenching	72,700	70,466	2,234	1	1,5	-7

The following table summarizes the post-trenched sections revised by Contractor:

Post-Trenching – Total mts. 1.984				
product	From Kp	To KP	meters	progressive
14" SUBSEA PIPELINE + 95 mm CWC	72,650	72,700	50	50
	72,650	72,500	150	200
	72,120	71,980	140	340
	71,980	71,970	10	350
	71,510	71,970	460	810
	72,120	72,300	180	990
	71,500	71,140	360	1.350
	71,140	70,740	400	1.750
	70,700	70,600	100	1.850
	70,600	70,520	80	1.930
	70,520	70,466	54	1.984

3 Encountered soil condition

Sandstone rock, having UCS hardness value of 38MPa.

High density silty sand and sand.

4 Photos at worksite



14" Pipeline on the shoreline





The shore approach operations

5 Reference