



TEHRAN SUMMIT

The Introduction of New Iran Petroleum Contracts – IPC

Tehran - Y · 12

Offshore Projects

By: Dr. Zobeidi, Karim Deputy Hydrocarbon Resources Corporate Planning Directorate

NIOC



THE MAJOR GOALS





- □ Investment
- □ Fields development
- □ IOR/EOR
- **□** Increase in Recovery Factor
- New Technologies
- **■** Evaluation new contracts (IPC)

OFFSHORE PACKAGES







OFFSHORE PACKAGES











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Tehran - Y.12

IOOC Offshore Projects

By: Mr. Mohammadifard
Head of Reservoir Engineering Studies-IOOC



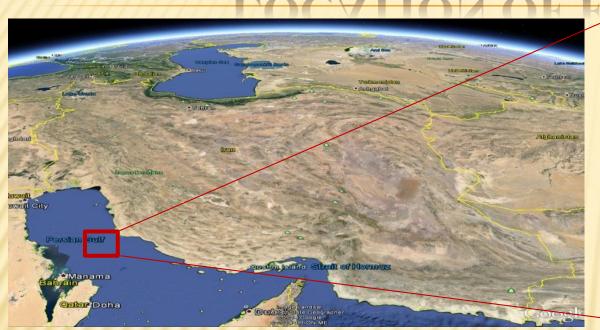


FARZAD-A GAS FIELD





LOCATION OF FARZAD-A FILED





□ Farzad-A gas field in Farsi block is located about ''' Km. of Persian Gulf coastline,

''' Km. of Bushehr port and straddles the Iran-Saudi Arabia border.

Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	CGR	HYS
year	year	kmxkm					ppm
7.1.	N/A	19X19	۳D	٣	Kangan/Dalan	Dry Gas	41

FARZAD-A FIELD GENERAL SPECIFICATIONS





According to Initial MDP



Iran-Saudi Arabia Border

Estimated Production

- > \ \ MMSCF/D Gas
- > 10 V Tones/D Sulfur

"Y" (≈ \ · · Km.)



Barikan Area

The contractor is expected to propose a consumption plan for the produced gas.

Field	OGIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	1.1 SCF	1.° SCF	い SCF/d	۱۰ [†] SCF/d
Farzad-A	1.471	•	•	1

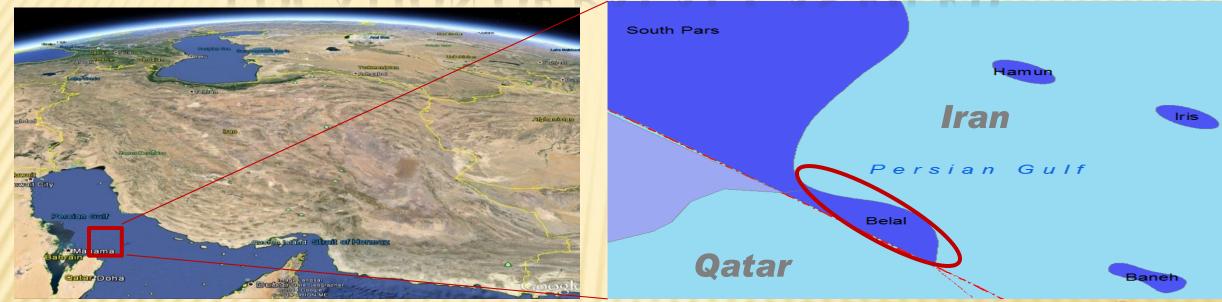


BALAL GAS FIELD





LOCATION OF BALAL GAS FILED



Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	CGR	HYS
year	year	kmxkm				STB/MMSCF	ppm
74	N/A	۵۲۵.۵	۳D	۱ expl.	Kangan Dalan	11_8 WA	1

BALAL GAS FIELD GENERAL SPECIFICATIONS







Cumulative Production

(Up to Now)

1. SCF

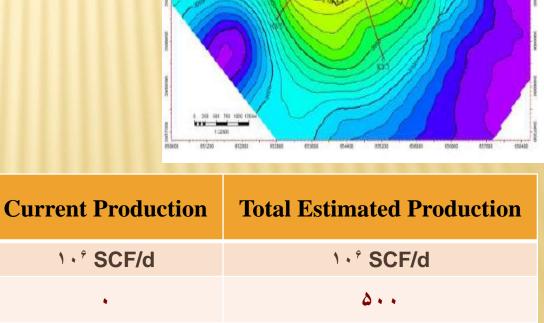
OGIP

1. SCF

940.

Field

Balal Gas Field





SALMAN OIL FIELD





LOCATION OF SALMAN OIL FILED



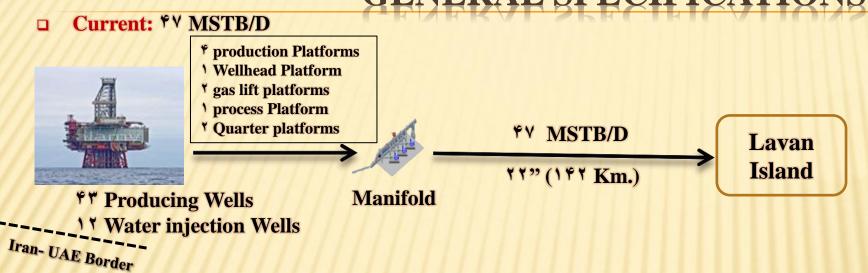
□ Salman oil field is located about \\ \forall \forall \ kilometers south of Lavan Island in Persian gulf and straddles the Iran-UAE border.

Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	API
year	year	kmxkm				Degrees
1990	199A 19A# 7.11	17X17	۳D	۲۵ +۷ injector ۱۵+۵ injector ۳	Surmeh Gadvan Dariyan	۳۳-۳۷ ۳۸ ۳۷

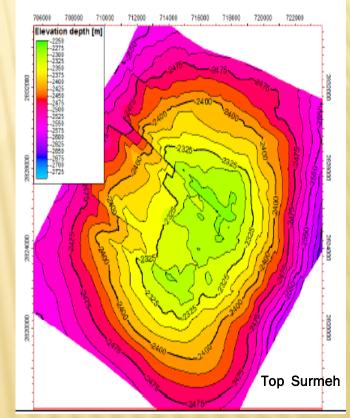
SALMAN OIL FIELD GENERAL SPECIFICATIONS







- Redevelopment of the field conducted by PetroIran Company in Y · · f with the aim of b · MSTB/D additional productions using f MSTB/D water injection.
- □ It is suggested to update the existing studies with the aim of determining optimum production mechanism and possibility of using EOR methods as phase- \ Salman field development plan.



ĺ	Field	STOIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
		MMBbl	MMBbl	MBbl/d	MBbl/d
	Salman	4141	1991	*	To be proposed by contractor



FOROQZAN OIL FIELD

LOCATION OF FOROOZAN FIELD







The field straddles the Iran-Saudi Arabia border.

ļ	Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	API
	year	year	kmxkm				Degrees
	1999	1974	۲۵ _X ۴	۳D	99	Burgan Shoaiba Arab Manifa Nahr'amr Yamama	Y • - 4° ?

FOROOZAN FIELD GENERAL SPECIFICATIONS

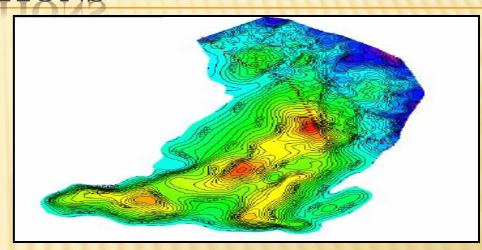


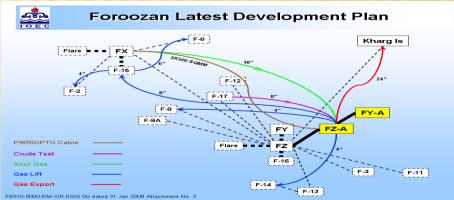




Production Units Nominal Capacity: \ \ \ MSTB/D

- □ Redevelopment of the field conducted by PetroIran Company in Y··· With the aim of F MSTB/D additional productions under natural depletion mechanism through YF production wells.
- □ It is suggested to update the existing studies with the aim of determining optimum production mechanism and possibility of using EOR methods as phase-7 Foroozan field development plan.





Field	STOIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	MMBbl	MMBbl	MBbl/d	MBbl/d
Foroozan	4444	V V Y	**	To be proposed by contractor



SOROOSH FIELD





LOCATION OF SOROOSH FIELD



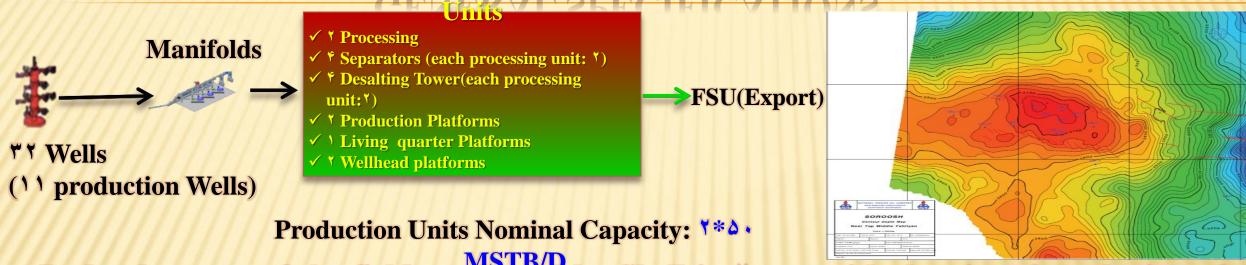
- □ Soroosh oil field, in Persian Gulf, is located about ``` Km. Southwest of Bahregan area and ^` Km. from Kharg Island positioned near Aboozar, Esfandiar, Nowrooz fields.
- □ Field production was stopped during the Iran-Iraq war. The field has been redeveloped by Shell in Y···· under Buy-back contract.

Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	API
year	year	kmxkm				Degrees
1994	194.	14X1.	۳D	۳۲ (۱۱ Prod.)	Burgan	14-44

SOROOSH FIELD GENERAL SPECIFICATIONS







- Redevelopment of the field conducted by Shell in ''', with the aim of producing of ''' MSTB/D under natural depletion mechanism through '' horizontal production wells with ESP and 'water disposal wells.
- □ It is suggested to update the existing studies with the aim of determining optimum production mechanism and possibility of using EOR methods.

Field	STOIP	Cumulative Production (Up to Now)	Current Production	Estimated Production
	MMBbl	MMBbl	MBbl/d	MBbl/d
soroosh	1444.	797	49	To be proposed by contractor

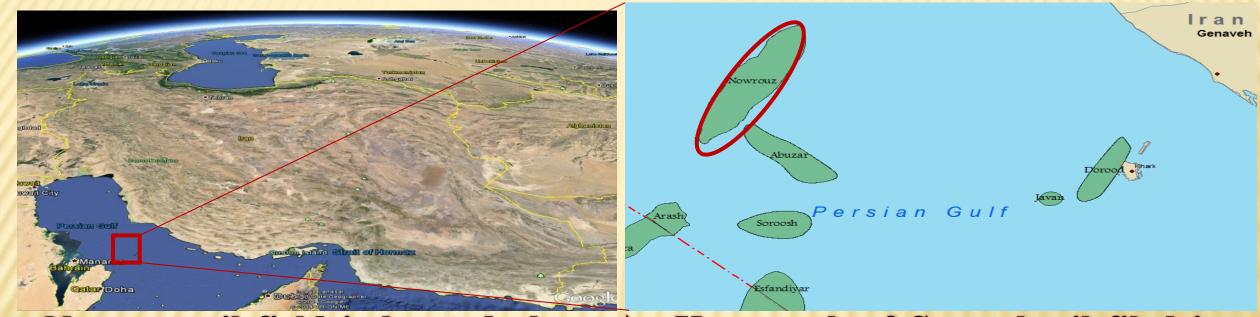


NOWROOZ FIELD









□ Nowrooz oil field is located about 🌣 Km. north of Soroosh oil filed in Persian Gulf near Abuzar field.

Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	API
year	year	kmxkm				Degrees
1999	1971	۲۰ χ ۵	۳D	۳۶ (۲۲ Prod.)	Burgan Khalij Shoeyba Yamama	Y • _ & 1

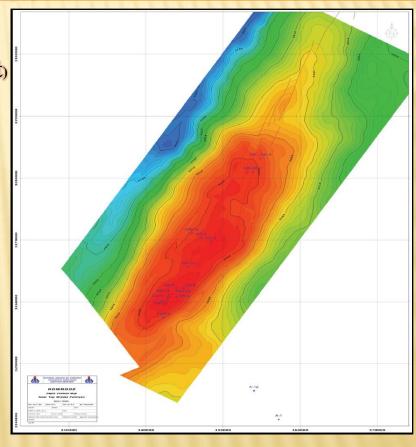
NOWROOZ FIELD GENERAL SPECIFICATIONS







- □ Redevelopment of the field has been done by Shell in Y···, with the aim of producing ¶ MSTB/D under natural depletion mechanism through ¶ horizontal production wells.
- □ It is suggested to update the existing studies with the aim of determining optimum production mechanism and possibility of using EOR methods.



Field	STOIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	MMBbl	MMBbl	MBbl/d	MBbl/d
Nowrooz	44.1	Y 9 V	47	To be proposed by contractor



DOROOD FIELD





LOCATION OF DOROOD FIELD



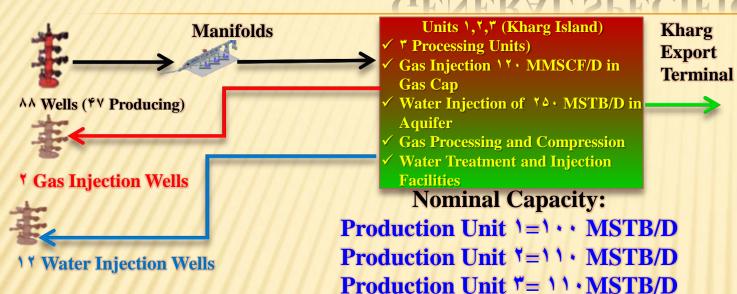
- □ Dorood oil field is located in north of Persian Gulf beneath the Kharg Island.
- □ The field's maximum production was 🕶 MBbl/D in 🐧 📉.

Di	sc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	API
ye	ar	year	kmxkm				Degrees
19	۶١	1994	۲۵χ۵	۲D	۸۸ (۴۷ Prod.)	Asmari Surmeh Yamama Manifa	77 79_0 70 71

DOROOD FIELD GENERAL SPECIFICATIONS







2011200 2012000 2012000 201400 201500 20160000 2016000 2016000 2016000 2016000 2016000 2016000 2016000 20160000 2016000 2016000 2016000 20160000 20160000 20160000 20160000 20160000 20160000 20160000 20160000 20160000 20160000 20160000 201

- □ Development of the field has been done by Total-Elf in Y··· △.
- After Updated Study on Yang it is supposed to:
- □ Drilling \\ \Gamma \) New Wells + \(\frac{7}{2} \) Workover Wells
- □ Constructing * Platforms included: * producing, * gas lift, and * water injection.
- New Processing Unit Included: Gas Compression Unit for Gas Lift with the Capacity of 'Y' MMSCF/D and the Pressure of Y' Psi, Y Separators (Y Phase), Waste Water Treatment Unit with the Capacity of Y' MSTB/D,

Pipeli	^{nes} Field	STOIP	Cumulative Production	Current Production	Total Estimated Production
		MMBbl	MMBbl	MBbl/d	MBbl/d
	Dorood	11	1 V 9 4	99	To be proposed by contractor





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POGC Offshore Projects

By: Mr. Mohammadi Head of Reservoir Engineering





SOUTH PARS OIL RESERVOIR

LOCATION OF SOUTH PARS OIL RESERVOIT





□ South Pars Oil reservoir, in Persian Gulf, is located about ۱۳۰ Km. from Asaluyeh coastline and straddles the Iran-Qatar marine border above gigantic gas field.

Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	API
year	year	kmxkm				Degrees
1997	N/A	۲۵ _X ۷	۳D	Y in AY Y in B Y in C	Maddud Upper Dariyan Lower Dariyan	۲۱

SOUTH PARS OIL RESERVOIR GENERAL SPECIFICATIONS

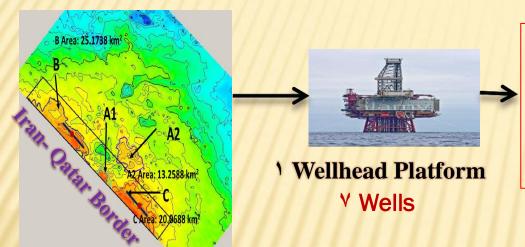


FPSO



The field has been divided in * sections named A', A', B and C.

Phase \ -Development of A \



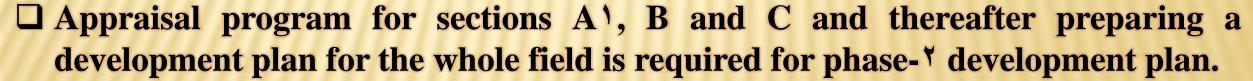
Estimated Production For

AY: YO MSTB/D

B&C: Y .- Y · MSTB/D

Whole field: \$\darksquare\$ \darksquare \dotq \darksquare \darksqua

- > **Drilling: completed**
- **Production:** wait for FPSO



Field	STOIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	MMBbl	MMBbl	MBbl/d	MBbl/d
South Pars Oil Reservoir	1044194	*	•	۶۵



NORTH PARS GAS FIELD





LOCATION OF NORTH PARS GAS FILED





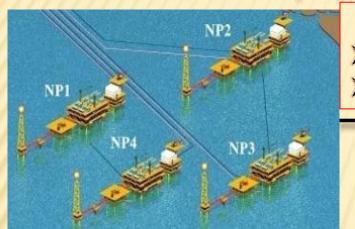
■ North pars gas field, in Persian Gulf, is located about ' ' Km. southeast of Bushehr and near the coastline.

Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	CGR	HYS
year	year	kmxkm				STB/MMSCF	ppm
1990	N/A	7.X10	۲D	1 ٧	Kangan/Dalan	٣	9 14

NORTH PARS GAS FIELD GENERAL SPECIFICATIONS







Estimated Production

MMSCF/D Gas

> 17··· STB/D

Condensate

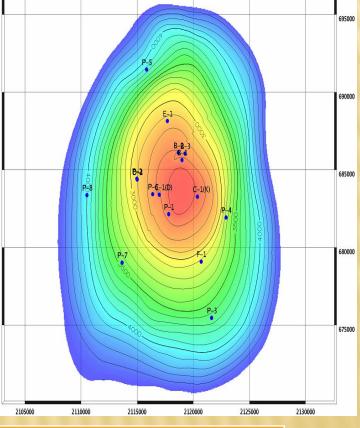
79" (≈ 1 · Km.)

49 wells

Y Wellhead and production platforms

Production Platforms include Gas & Condensate Dehydration

Production Plant or LNG or ...



The contracto	or is expected to propose a	
consumption	plan for the produced gas.	

Field	OGIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	1. SCF	1.° SCF	۱۰° SCF/d	ハ・* SCF/d
North Pars	۵٧.9٨	•	•	46



GOLSHAN&FERDOWSI GAS FIELDS



Based on the preliminary studies, the optimum technical and economical development scenario for Golshan and ferdowsi gas fields is an integrated development plan.

It is estimated that both fields can produce about 'A' MMSCF/D gas.

The contractor is expected to propose a consumption plan for the produced gas.





GOLSHAN GAS FIELD





LOCATION OF GOLSHAN GAS FIELD



Golshan gas field, in the middle of Persian Gulf, is located about 14. Km. southeast of Bushehr and

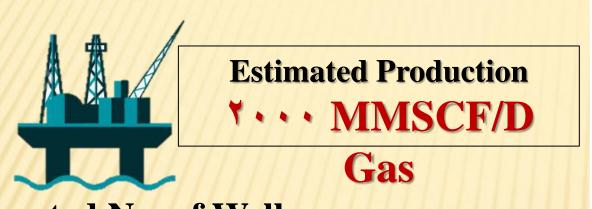
۶۵ Km. south of Iran coastline.

Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	CGR	H۲S
year	year	kmxkm			mid-to-late Cretaceous	Bbl/MMscf	ppm
1998	N/A	**X1V	۳D	۵ expl.	Lower dalan Faraghoun Kangan+Upper dalan	1 · _ ۵	YV

GOLSHAN GAS FIELD GENERAL SPECIFICATIONS



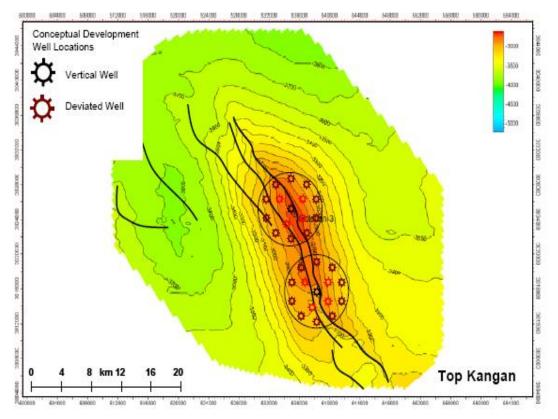




Estimated No. of Wells:

YY wells

- □ It is supposed to be developed in integration with Ferdowsi gas field using ∀∀ wells.
- □ The contractor is expected to propose a consumption plan for the produced gas.



Field	OGIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	1.1 SCF	1. SCF	ヽ f SCF/d	ハ・ SCF/d
Golshan	770	*	4	Y



FERDOWSI GAS FIELD

LOCATION OF FERDOWSI GAS FIELD







Ι	Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	CGR	H۲S
y	year	year	kmxkm			mid-to-late Cretaceous		ppm
١	997	N/A	Y • X 1 W	۳D	۱ expl.	Kangan+Upper Dalan Lower Dalan		11

FERDOWSI GAS FIELD GENERAL SPECIFICATIONS







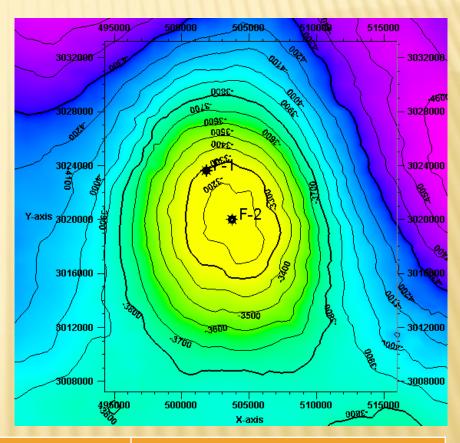
Estimated Production

۵۰۰ MMSCF/D Gas

Estimated No. of Wells:

17 wells

- □ It is supposed to be developed in integration with Golshan gas field using \\ \ \ \ \ \ \ wells.
- □ The contractor is expected to propose a consumption plan for the produced gas.



Field	OGIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	1.1 SCF	\ \ SCF	۱۰ [°] SCF/d	ハ・* SCF/d
Ferdowsi	۸۸۰۰	•	•	۵۰۰





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PEDEC Offshore Projects

By: Mr. Behbahani

Director, North Azadegan Oil Field Development Project/AMAK Gas Gathering and Treatment Project/Internal Resources Projects





GOLSHAN&FERDOWSI HEAVY OIL FIELDS



Based on the preliminary studies, the optimum technical and economical development scenario for Ferdowsi and Golsan oil fields is an integrated development plan.

Total production from both fields is expected to be MSTB/D.





FERDOWSI HEAVY OIL FIELD







□ Ferdowsi oil field, in the middle of Persian Gulf, is located about '4 · Km. southeast of Bushehr, * · Km. southwest of Golshan oil field and ^Δ Km. north of Iran maritime boundary.

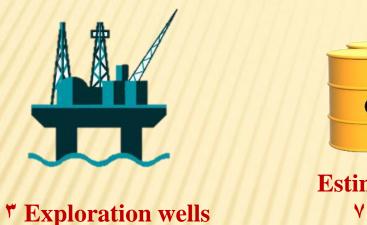
Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	API
year	year	kmxkm				Degrees
1997	N/A	۲۰χ۱۳	۳D	۳ expl.	Khalij, Shoaiba, Arab, Fahliyan	∧- 1 ?

FERDOWSI HEAVY OIL FIELD GENERAL SPECIFICATIONS



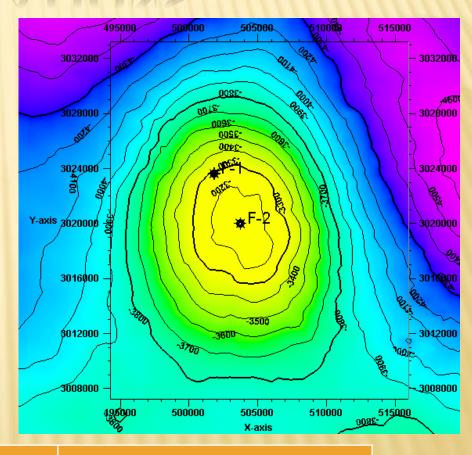


□ The appraisal phase of the field is ongoing.





□ It is supposed to be developed in integration with Golshan oil field.



Field	STOIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	MMBbl	MMBbl	MBbl/d	MBbl/d
Ferdowsi	*17	•	•	٧.



GOLSHANHEAVY OIL FIELD

LOCATION OF GOLSHAN HEAVY OIL FIELD





□ Golshan oil field, in the middle of Persian Gulf, is located about ¹^. Km. southeast of

Bushehr and ⁶ Km. south of Iran coastline.

Dis	sc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	API
ye	ar	year	kmxkm			mid-to-late Cretaceous	Degrees
19	۹۳	N/A	1 • X Y ?	۳D	۵ expl.	Shoaiba Arab Fahliyan	

GOLSHAN HEAVY OIL FIELD GENERAL SPECIFICATIONS







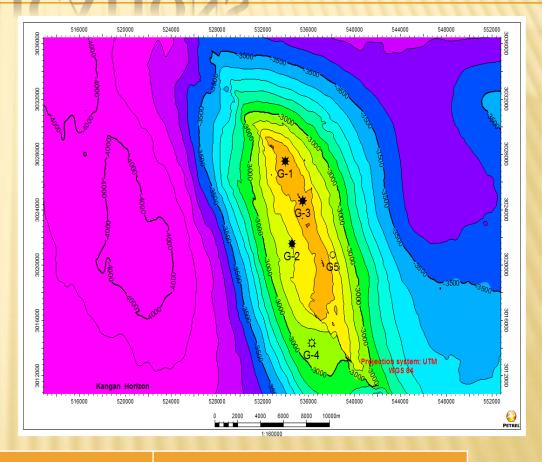


Exploration wells

Estimated Production

MSTB/D oil

□ It is supposed to be developed in integration with Ferdowsi oil field.



Field	STOIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	MMBbl	MMBbl	MBbl/d	MBbl/d
Golshan	40.0	•	•	۲۵



KISH GAS FIELD PHASES 1&*





LOCATION OF KISH GAS FILED





- □ Kish gas field, in Kish island, is located about * Km. east of Lavan island.
- □ 17 wells have been drilled in the field up to now and they are at the completion stage, hence no production.

Disc.	Prod. init.	Dim.	Seismic Data	No. Wells	Formation	CGR	H۲S
year	year	kmxkm				STB/MMSCF	ppm
7	N/A	TTXTD	۲D	١٣	Kangan/Dalan	4.4-11.4	V • - Y • •

KISH GAS FIELD GENERAL SPECIFICATIONS





□ PHASE \ (Under Construction): \ \ \ \ \ \ \ (MMSCF/D)



- □ The Plan for phases Y&F is to increase the production to F··· MMSCF/D
- > The potential of the reservoir production rate is expected to be about 4 phases of
 - **MMSCF/D** each.

Field	OGIP	Cumulative Production (Up to Now)	Current Production	Total Estimated Production
	1.º SCF	1.° SCF	ヽ゚゚ SCF/d	い SCF/d
Kish	۵۵	•	•	** • • •





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KEPCO Offshore Projects

By: Mr. Etemadi Exploration Director of KEPCO



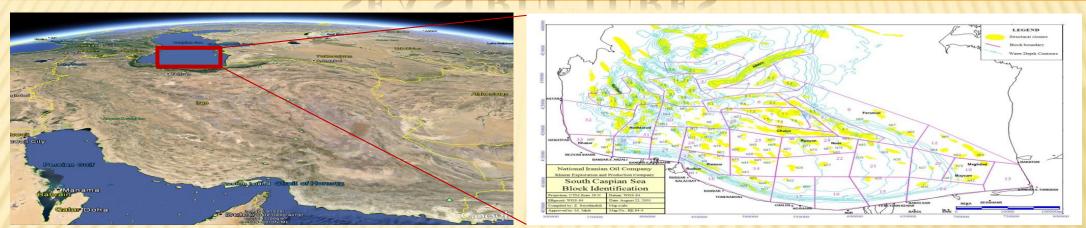


CASPIAN SEA EXPLORATION BLOCKS AND SARDAR-E-JANGAL FIELD

LOCATION OF SOUTH CASPIAN SEA STRUCTURES







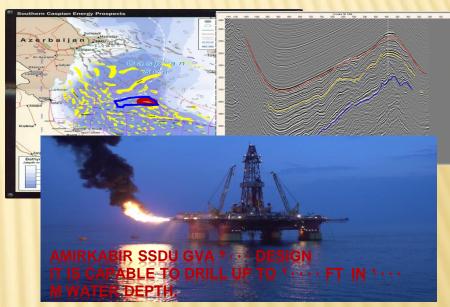
- □ Caspian sea is divided into three sections of North, Middle and South Caspian Basin.
- □ In south of Caspian sea, **, * * * Km. *D Seismic lines has been acquired.
- □ * · · · Km' "D Seismic has been acquired in *, ∨, h and ۲٩ Blocks during ۲ · · ۳-۲ · · b
- □ Blocks ۲۴, ۲7 and Sardar-e-Jangal field are being introduced for Exploration and Delvelopment.

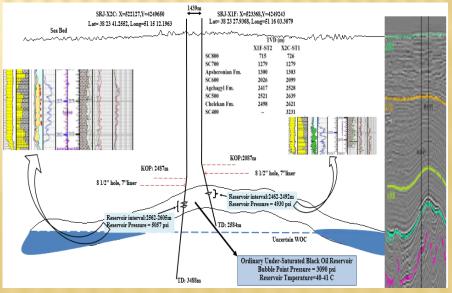
SARDAR-E-JANGAL FIELD GENERAL SPECIFICATIONS





- □ Sardar-E-Jangal field in block f with dimensions of ffxf km. is located about fb. Km. of Caspian Sea coastline, in fb. m water depth.
- □ It is expected the main prospect is Cheleken. Although the first exploration well in ''' has discovered hydrocarbon in layers above Cheleken.
- □ The second delineation/exploration well has been completed in ''' and was tested ''' bbl/d oil with ''' Psi WHP.
- □ It contains about '··· MMSTB oil with API of and GOR of ٩٨٧ Scf/bbl.







EXPLORATION BLOCKS



CASPIAN SEA

EXPLORATION&DEVELOPMENT







BLOCK-YF



Block-YF is situated at YF km to North of Bandar-e-Nowshahr.

Main Structures: N^q (Rouyan) (9x19 km), N1 · (Noor) & N19 (fx t km)

low-moderate relief four-way dip closed structure

Maximum closure in both prospects at the deeper levels is at least 4 · · meters

Hydrocarbon Systems:

> Seal Rock:

- Pliocene Evaporate of Surakhani (Upper **Productive Series**)
- The fine clay of Upper **Aghchagyl Formation**

> Reservoir Rocks:

- Aghchaghyl sandstone
- Lower Productive series sandstone (Balakhany equivalent)

> Source Rock:

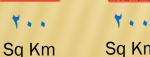
Lower Shale layers from Maykop Series & base of Aghchagyl **Formation**

		Iran	
哥		Neo Caspian	
PLEISTOCENE		Khvalynian	
STC		Khazarian	c:-c=
LE		Bakunian	-6
I .		Apsheronian	
	Late	Akchagyl	=====
PLIOCENE	Early	Cheleken Series (Continental Red Bed)	
MESOZOIC {	Cretaceous		No Scale



N⁹ Prospect

m



Sq Km

N1 · Prospect

Structures



CASPIAN SEA

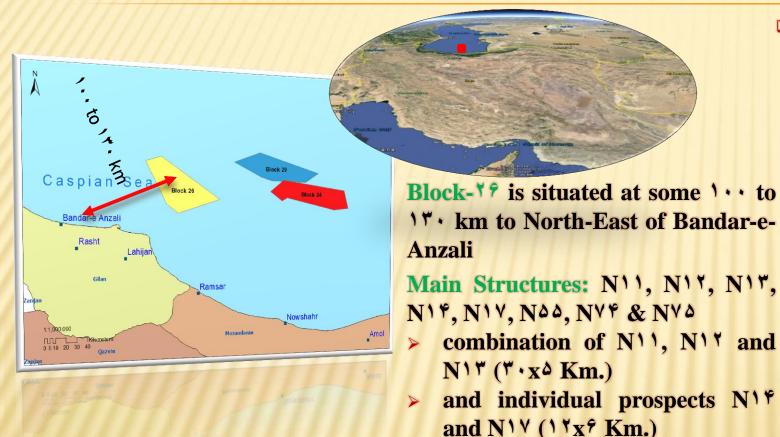
EXPLORATION&DEVELOPMENT







BLOCK-Y9



Hydrocarbon Systems:

> Seal Rock:

- Pliocene Evaporate of Surakhani (Upper Productive Series)
- The fine clay of Upper Aghchagyl Formation

> Reservoir Rocks:

- Aghchaghyl sandstone
- Lower Productive Series sandstone (Balakhany equivalent)

> Source Rock:

Lower Shale layers from Maykop series & base of Aghchagyl Formation

			11111
		Iran	
0.000		Neo Caspian	
PLEISTOCENE		Khvalynian	
ISTC		Khazarian	c:-c=
'LE		Bakunian	
I		Apsheronian	=-% = =================================
	Late	Akchagyl	====
} PLIOCENE	} Early	Cheleken Series (Continental Red Bed)	
MESOZOIC	Cretaceous		No Scale

Water Depth	Total Area	TD Seismic Data	Prospects
109	441	441	٨
m	Sq Km	Sq Km	Structures





CASPIAN SEA

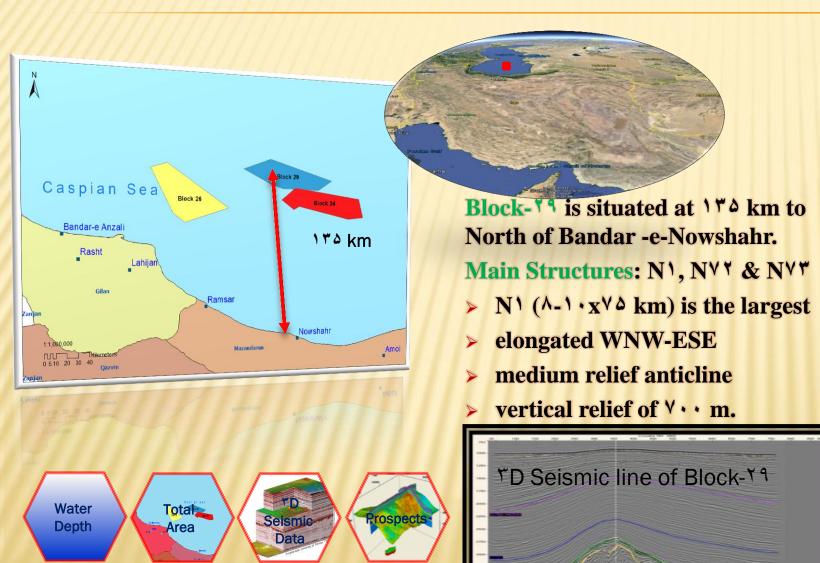
EXPLORATION & DEVELOPMENT







BLOCK-Y9



Structures

1.44

Sq Km

1. 41

Sq Km

A . .

m

Hydrocarbon Systems:

> Seal Rock:

- Pliocene Evaporate of Surakhani (Upper Productive Series)
- The fine clay of Upper Aghchagyl Formation

> Reservoir Rocks:

- Aghchaghyl sandstone
- Lower Productive Series sandstone (Balakhany equivalent)

Source Rock:

Lower Shale layers from Maykop Series & base of Aghchagyl Formation

-	-	\cdots	11111
		Iran Neo Caspian	8
ENE		Khvalynian	
PLEISTOCEN		Khazarian	c: - c:
PLE		Bakunian	
		Apsheronian	
Late	Late	Akchagyl	=====
{ PLIOCENE	Early	Cheleken Series (Continental Red Bed)	
MESOZOIC	Cretaceous		No Scale