

Great Man-made River Authority



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In 1953, while searching for oil beneath the Libyan desert, the Libyans struck massive fresh water reserves, some 100 meters below the surface. The government wanted to use the water for agricultural projects, domestic use, and industry. The **Great Man-Made River Authority (GMRA)** was established by the Libyan government to manage this project and in the 1980's the first part of the network of pipelines was constructed.

Reservoirs:

As part of the project huge concrete reservoirs were constructed in various parts of the country. The main reservoirs include:

- Ejdabiya Reservoir (storage: 4,000,000 cubic meters)
- Omar Elmokhtar Reservoir (storage: 4,700,000 cubic meters)
- Omar Elmokhtar Grand Reservoir (storage: 2,400,0000 cubic meters)
- Ghordabiya Reservoir (storage: 6,800,000 cubic meters)
- Ghordabiya Grand Reservoir (storage: 15,400,000 cubic meters)

Pipelines:

There are a total of 4071 kilometres of pipelines in the project:

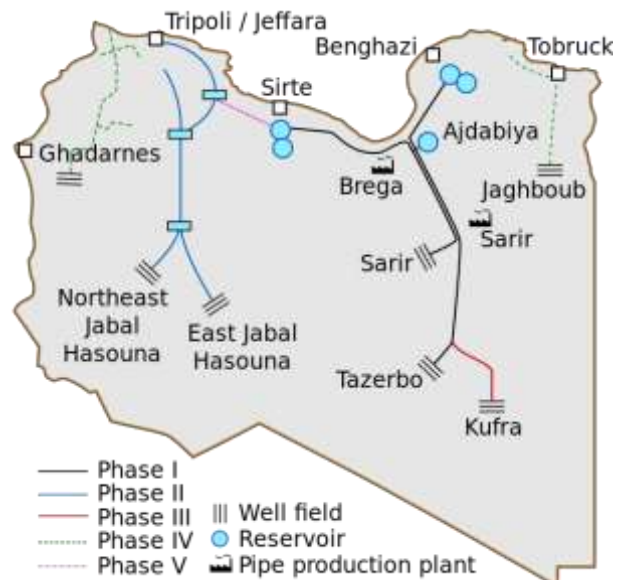
- 1600 km of pipelines in Sarir/Sirt - Tazerbo-Benghazi system
- 1277 km of pipelines in Hasouna-Jeffara system
- 190 km of pipelines in Assdada-Ajdabiya system
- 383 km of pipelines in Tazerbo-kufra system
- 621 km of pipelines in Ghdames-Zuwarah system

Wells:

1300 wells were planned. Just before the Libyan war in 2011 the following wells were realized:

- 476 wells in Hasouna field
- 300 wells in Kufra field
- 126 wells in Sarir field
- 108 wells in Tazerbo field
- 106 wells in Ghdames field

On the left a schematic drawing of the project by Danmichaelo. Note that different routes have been proposed for the not-yet-implemented phases (dashed). Tobruk may for instance end up connected to Ajdabiya instead of to the Jaghboub well field.



Modes:

ALE

Voice

USB/Rohde & Schwarz 2400Bd proprietary burst PSK waveform

Clover-2000

Frequencies:

3000 4050 4200 5047 5300 5368 6500 6800 6884 7805 7900 8200 8800 9176 9218 9250
 9375 10000 10125 10215 10250 10375 10404 11100 kHz

ALE idents:

AGDABIA	Agdabia	K11		MOBILE25	
ALMARG	Al Marj	MISRATA	Misratah	MOBILE26	
ALWAOW	Al Jawf	MIZDA	Mizdah	MOBILE27	
BAIDA	Al Bayda	MOBILE3		MOBILE28	
BENGAZI	Benghazi	MOBILE4		MOBILE29	
CB4		MOBILE6		MOBILE31	
CB5		MOBILE7		MSAAD	Musa'id
DER	Derna	MOBILE10		NALUT	Nalut
GHADAMES	Ghadames	MOBILE11		OBARI	Obari
GHARIAN	Gharyan	MOBILE16		TRIPOLI	
GS4		MOBILE18		TUBRUK	Tobruk
HQ1	NCS Tripoli	MOBILE20		UN4	
HQ2	NCS Tripoli	MOBILE21		ZAWIA	Az
HQ3	NCS Tripoli	MOBILE22		Zawiyah	
HQ5	NCS Tripoli	MOBILE23		ZWARA	Zwara
HQ4	NCS Tripoli	MOBILE23			
HQ6	NCS Tripoli	MOBILE24			

Note that the net is silent since the Libyan Civil War of 2011.

Related websites:

GMRA <http://www.great-man-made-river.algaddafi.org/>

Wikipedia http://en.wikipedia.org/wiki/Great_Man-Made_River

Water Technology Net <http://www.water-technology.net/projects/gmr/>

Pure Technology http://www.puretechltd.com/case_studies/water_pipeline/great_man_made_river.shtml