

ANTON 安東



Drilling Engineering Technical Services

东方智慧 全球分享
Oriental wisdom , Global sharing

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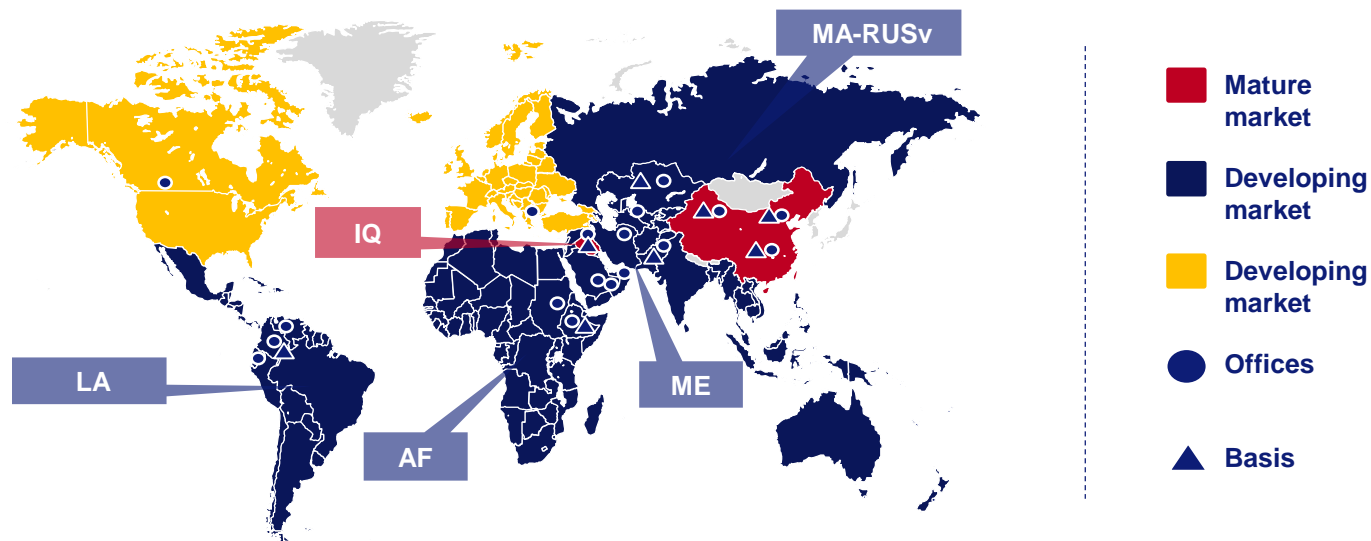
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Drilling Performance

Profile

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Anton Drilling Engineering Technical Services can provide Clients with drilling and completion integrated general contract and single technical services, provide the whole process of drilling services from construction plan design to project organization, give full play to the professional service advantages of service providers, improve engineering quality and risk control ability through fast drilling, and create the maximum value for Clients.



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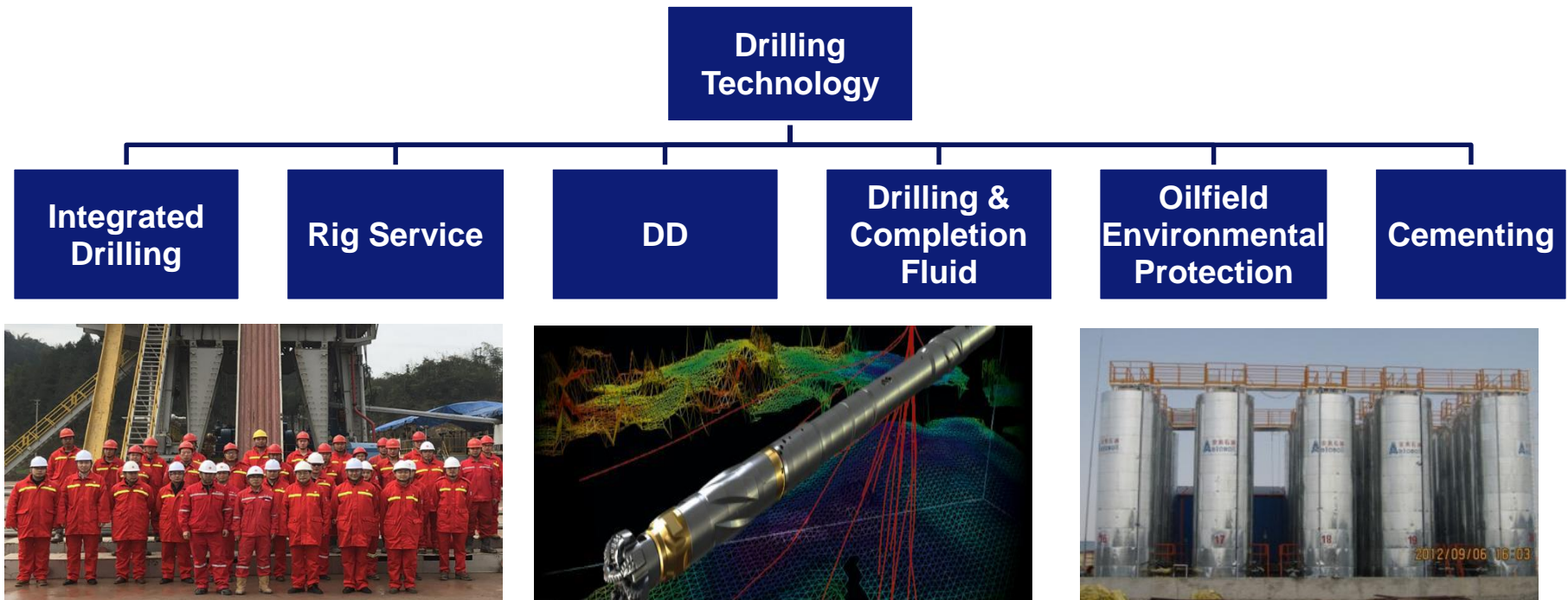
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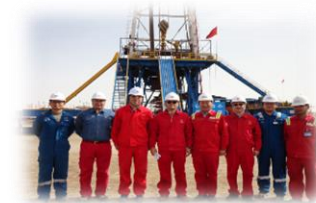
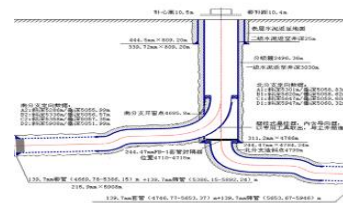
Drilling Performance

- ❑ Single drilling technology: Anton has comprehensive supporting drilling technology service capacity;
- ❑ Integrated drilling service: Can independently undertake integrated drilling services, and help customers to achieve cost reduction and efficiency improvement with superior and fast drilling technology.



■ Advantages

- **Improve Engineering Quality**
- **Improve the ability of Risk Control**
- **A Win-Win Situation**



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2. Rig Service

- Total Management of 25 Rigs, 8 sets (1500HP * 6, 2000HP * 2) - Self-Owned
- Plain/mountainous area/desert/marsh
- Exploration/Development well/Shallow/Deep/Ultra-deep well/Vertical/Horizontal well
- Lateral well/Sidetrack drilling/Gas storage Coal bed methane /Shale gas/Brine, etc.



■ Model

- Rig day rate
- Drilling general contract
- Drilling & completion integrated general contract
- Block general contract (Turnkey project)

3. Directional Drilling Service

- Capacity of serving 30 wells simultaneously.
- More than 760 Wells were constructed.

Type	Positive Pulse MWD	Negative Pulse MWD	LWD	RSS
Quantity	39	20	18	3

- Comprehensive directional/horizontal well service capacity

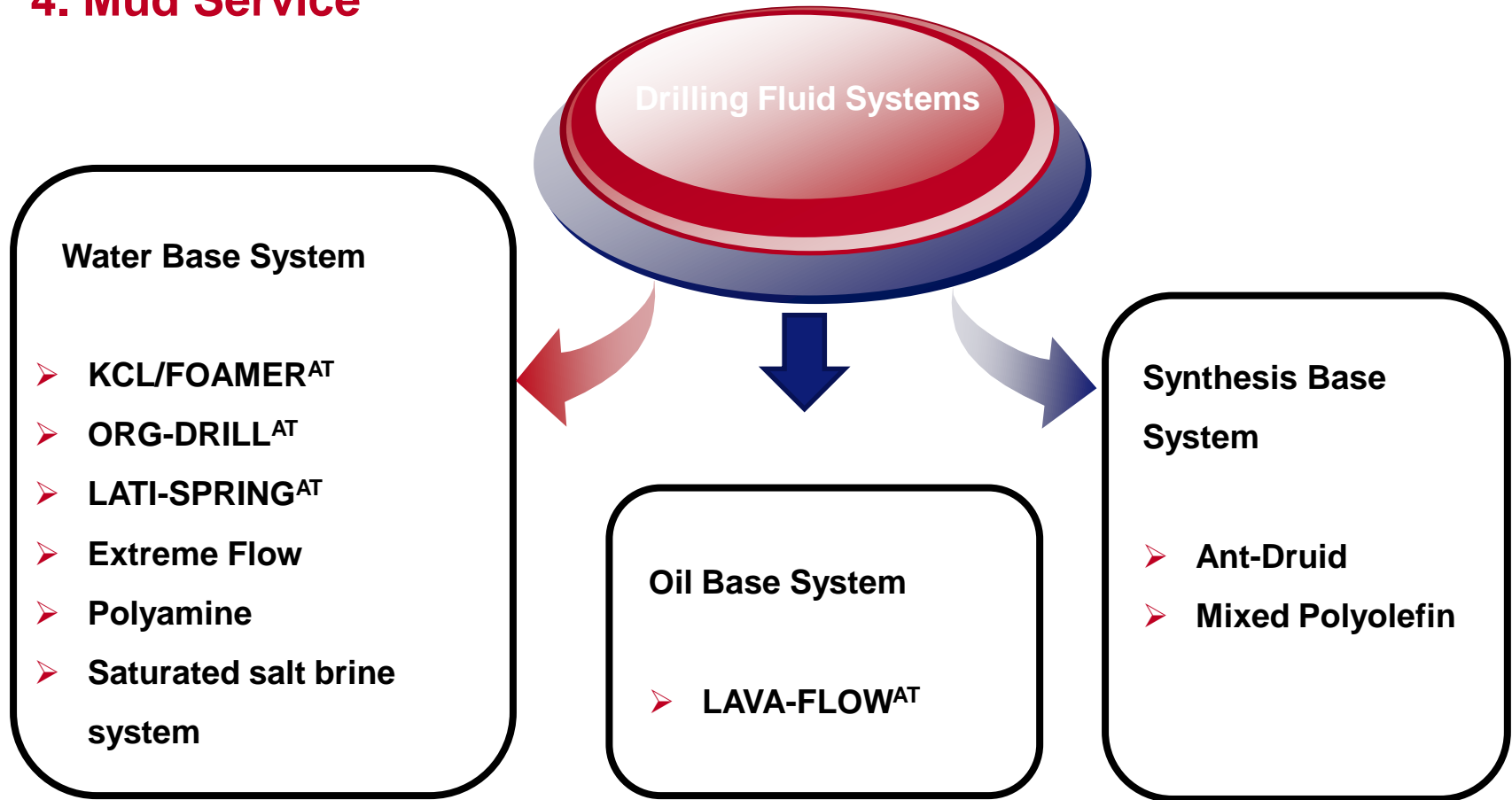
No.	Services	No.	Services
1	Dir./Hori. well drilling	5	Geo-steering
2	HTHP MWD	6	Sidetracking
3	LWD	7	Compact Logging
4	Vertical Drilling	8	Performance drilling

- **Workshop**

Global R&M Center in Tang Gu with full set of R&M facilities and QA/QC engineer;
R&M facility in each service base to handle field R&M work.



4. Mud Service



- Provide a variety of high-performance WBM, OBM, high temperature, salt resistance, environmental protection and other drilling fluid systems and services

5. Cementing Service

Cementing general package construction services, cement slurry system technical services, admixture materials services, cementing tool accessories services, cementing engineering design services.

- HT/UHT cement slurry system (250°C)
- High/ultra-high density cement slurry system (3.0SG)
- Low/ultra-low density cement slurry system (0.85SG)
- Elastic-plastic cement slurry system
- Self-healing cement slurry

- horizontal shale gas well
- Geothermal well
- Deep water and cryogenic well
- Thermal recovery well
- Carbon dioxide well
- CBM well
- Salt mining well

- Cement additives service
- Cementing lump sum



6. Oilfield Environmental Protection

Anton independently designed pretreatment + efficient desalination + biochemical treatment + reverse osmosis process. Dual alkali method was adopted to remove hardness, efficient desalination and biological method to remove COD. Reverse osmosis was used as the reuse water process. After treatment, all water quality indexes are up to and better than the domestic sewage discharge standard level A. The treated water can be used for industrial production and green water, breaking through the bottleneck of oil-gas field mixed wastewater treatment technology with high salt and high COD, and having unique advantages in the treatment technology involving the field of oily wastewater with high salt and high COD.



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■ Important accomplishments listed in the below table

① Quick Response ② Careful Preparation ③ Timetable

No	Year	Name	Service Content	Well No.
1	2011	Sulige Gas Field dual-lateral horizontal well drilling & completion and multi-staged fracturing IPM service	Program design, Integrated drilling engineering service (rig, technique, bit, down-hole tool), directional drilling and Geo-steering service, mud service , 5 stage fracturing service	1
2	2011	Shenhua CCS project Drilling & Completion and CO ₂ Injection IPM service	Program design, Integrated drilling engineering service, Mud logging, WL logging, Mud service, formation test, cementing , perforation, fracturing, Casing supply, Pneumatic Sealing Test, CO ₂ injection.	2
3	2011	Daqing Oilfield UBD side-tracking horizontal well drilling & completion IPM service	Program design , Side-tracking in casing , integrated drilling engineering service, OBM service, DP logging, UBD service, multi-staged completion service	1
4	2012	Daqing Oilfield Coal-gas development IPM service for whole block	Program design, site construction, integrated drilling engineering service, foam drilling fluid, WL Coring service, dual-staged cementing , waste disposal	10
5	2012	Xingjiang Kelamayi side-tracking horizontal well drilling & completion IPM service	Program design, Side-tracking in casing, Geo-steering service, integrated drilling engineering service, drilling and completion fluid service, DP logging, Staged fracturing service, well test.	1
6	2012	TWE Coal-gas well drilling& completion IPM Service	Program design, site construction, integrated drilling engineering service, drilling and completion fluid service, Mud logging, WL logging, Cementing, waste disposal	2

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No	Year	Name	Service Content	Well No.
7	2013	Geothermal Drilling IPM service in Tianjin	Integrated drilling engineering service (rig, technique, bit, down-hole tools, fishing), directional drilling service, Mud service, Casing Running & Cementing	5
8	2013	Sichuan horizontal well drilling & completion Service	Program design , directional drilling and Geo-steering service, Mud service, completion	5
9	2013	Yanchang oilfield side-tracking horizontal well drilling & completion and fracturing IPM service	Geological analysis, well pattern arrangement, Well program design, Integrated drilling engineering service , directional drilling and Geo-steering service, Mud service, side-tracking in casing, multi-staged fracturing, well test	2
10	2014	Geothermal Drilling IPM service in Beijing	Integrated drilling engineering service (rig, technique, bit, downhole tools, fishing), directional drilling service, Mud service, Casing Running & Cementing , waste disposal	4
11	2014	Xingjiang Kelamayi side-tracking horizontal well drilling & completion and fracturing IPM service	Program design, Integrated drilling engineering service, Side-tracking, directional drilling and Geo-steering service, mud service, WL logging, multi-staged completion and fracturing.	15
12	2014	Yanchang oilfield side-tracking horizontal well drilling & completion and fracturing IPM service	Geological analysis, well pattern arrangement, Well program design, Integrated drilling engineering service, directional drilling and Geo-steering service, Mud service, side-tracking in casing, multi-staged fracturing, well test	2
13	2014	Tarim dual-lateral horizontal well Drilling & completion IPM service	Drilling program design, Integrated drilling engineering service, directional drilling service, RSS + LWD service ,multi-staged completion	1
14	2014	Salt well drilling/completion IPM service	Site/road construction, Integrated drilling engineering service , Drilling fluid, Coring service, Directional drilling and RMRS service, Cementing, WL logging, Mud logging, Casing, well-head supply, Waste disposal	2+2

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No	Year	Name	Service Content	Well No.
15	2014	North Sulige horizontal drilling& completion and multi-staged fracturing IPM service	Geological analysis/program design/integrated drilling engineering service/WBM service, directional drilling and geo-steering service, Cementing , Multi-staged fracturing, well test, waste disposal	1
16	2014	Jingmen shale gas well drilling & completion, fracturing,, well test IPM service	Program design, integrated drilling engineering service, WBM service, directional drilling, mud logging, WL logging, Cementing, Multi-staged fracturing, well test, waste disposal	1
17	2015	Yanchang oilfield horizontal , Xinjiang Oilfield horizontal well Drilling IPM service	Integrated drilling engineering service (rig, technique, bit, downhole tools, fishing), directional drilling service, Mud service, Casing Running & Cementing , waste disposal	6
18	2016	IRAQ Halfaya oilfield Drilling IPM service	Integrated drilling engineering service (rig, technique, bit, downhole tools, fishing), directional drilling service, Mud service, Casing Running & Cementing , waste disposal	4
19	2016	IPM service for POLY-GCL in Ethiopia	Integrated drilling engineering service (rig, technique, bit, downhole tools, fishing), directional drilling service, Mud service, Casing Running & Cementing , waste disposal	10
20	2017	Total south sulige block Drilling engineering IPM service	Integrated drilling engineering service (rig, technique, bit, downhole tools, fishing), directional drilling service, Mud service, Casing Running & Cementing , waste disposal	6
21	2018	Southwest Shale gas IPM service	Integrated drilling service, completion service, Fracturing service, testing service	8

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THANKS!

Helping others succeed...