



Company Profile & HDD TECHNOLOGY

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OUR Business

INTRODUCTION

Fenog is an independent Engineering company, specialized in Project Management, Engineering Design, Procurement, Installation and Construction projects. We offer services to the oil and gas industry, corporate organizations and government agencies.

Fenog was formed in 1992 and currently has an experienced workforce who are expert in their fields and have a track record of safely and efficiently executing complex projects. Our corporate headquarter is in Warri, Nigeria.

Fenog is actively involved in the growth of local communities and sustainable development of the Niger Delta region of Nigeria, as the improvement of local content and the commitment to sustainability are key factors in our business philosophy.

Since formation, Fenog has been committed to continually improving the quality of the operations and services we provide, focusing on completely fulfilling safety and environmental requirements.

Fenog's capabilities in its core business areas have helped support the oil industries by bringing together employees with technical expertise in various related fields.

The directors of the company are well qualified engineers and management specialist who hold university degrees in their various respective fields.

Highlights

Fenog set a record in Africa when the company attained 1.7km of HDD

to a depth of 40ft, during the Escravos/Warri Gas to Liquid project, which was the expansion of the Escravos/Lagos gas pipeline.

Horizontal Directional Drilling installation method was utilized to install a 24" pipeline across a 1.7km Escravos river. This ensured that the Escravos River stayed open to traffic

whereas the pipeline installation using conventional open cut method would have impaired the river closure for approximately 9 months.

We have subsequently also completed HDD drill lengths of over 2.5km in the Amukpe-Escravos pipeline project.

Our Mission

Our Mission is to perform our services to the highest level of professionalism and to the satisfaction of the client.

Our Vision

To be the dominant Nigerian Company providing Engineering and design services to the Nigerian Oil and Gas industry and Corporate Organizations.

Our Values

- Honesty and Integrity
- Performance and team work
- Commitment to safe operations
- Sound ethics in all business dealings

Our Strategic Objectives

- To continue to grow aggressively in our core business services, to maintain our position as leader in providing services covering the life circle of the oil and gas sector development and to grow with other corporate organizations

- To develop and exploit our local engineering capabilities and to become the clear Nigerian leader in the provision of engineering and design services

- To develop best-in-class system and processes to enhance operating efficiencies and maximize value to the client

- To extend our re-eminence position in the design and construction engineering of Nigerian Oil and Gas Industry

- To develop our employee into the most professional and fully committed team in the oil and gas industry

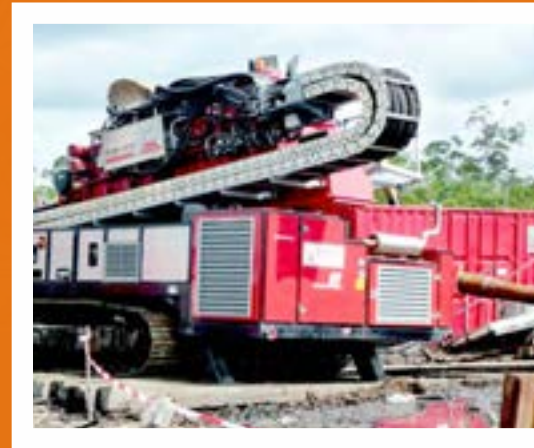
Our HDD Technology

Fenog acquired **HORIZONTAL DIRECTIONAL DRILLING (HDD) RIG** “popularly called **HDD Rig**” so as to meet our client's expectation and needs. HDD is a modern, reliable technology designed for deep (4m-45m) installation of pipe line, sewer, telecommunication lines and heavy duty cables, without trenching over roads, railways, rivers, buildings and even across facilities, without damages or disturbances to traffic or usage of these facilities

Fenog is currently pioneering the use of **CONTINUOUS HORIZONTAL DIRECTIONAL DRILLING (CHDD)** for installation of pipelines.

The CHDD pipeline installation involves installing pipelines at burial depths between 4-45 meters (as required by client) continuously over the entire pipeline span using HDD drilling technique.

This innovative installation technique has been adopted for a 24” x 67KM pipeline which is the first of its kind in the world





PD 500/170RP



Rear View



Side View



Front View

Fenog PD 350 HDD Rig

This Rig is a Special Multi-Purpose
350Ton/150 RP versatile Rig used for:

- Pilot Drilling ·
- Product Pipe Pulling ·
- Product Pipe Pushing ·
- Casing Installation ·
- Tunnel Driving ·
- Auger Drilling ·





Fenog
Swamp
PD 250
HDD Rig

Built for use
in swamp terrain.

Specifications:

Pull force: 552,000 lbs (2500kN)

Torque: 66,800 ft-lbs (90kNm)

Power: 650Hp (480 Kw)

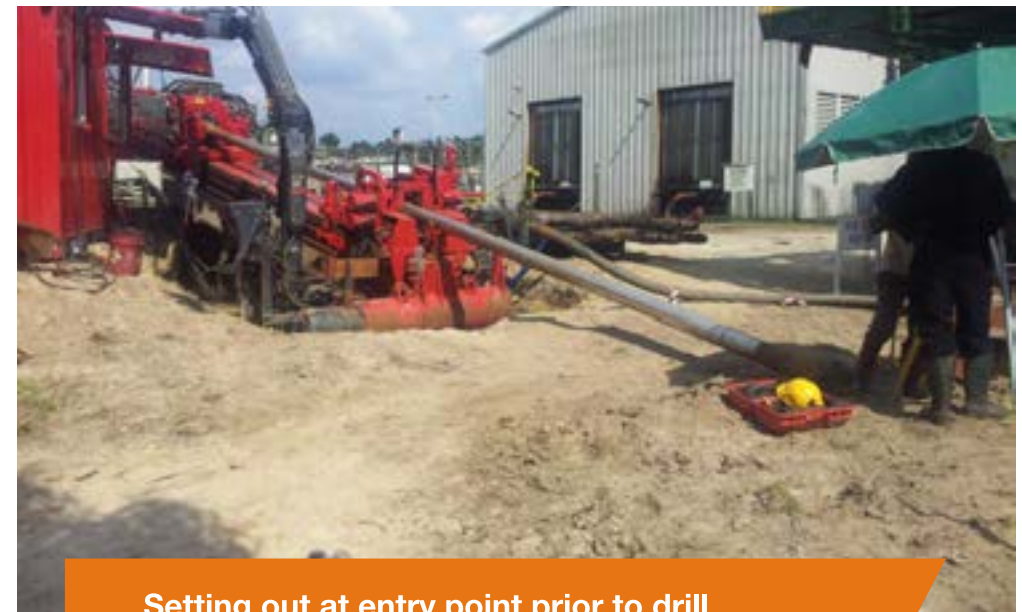
Weight: 45,500 lbs (32T)



Typical **CONTINUOUS HORIZONTAL DIRECTIONAL DRILLING** Process



Site preparation



Setting out at entry point prior to drill



Commencement of reaming process



Pipeline overbend during pullback operation

Typical **CONTINUOUS HORIZONTAL DIRECTIONAL DRILLING** Process (*continued*)



Pullback assembly after a successful operation



Excavating to 4 meters below ground level for tie-in



Overlapping HDD spools awaiting tie-in



Tie-in

1. Project Management

We can offer the following project management services:

- Full EPC, EPCI & EPCM Management
- Scheduling and Planning
- Logistics Planning and Supervising
- Project Construction Management
- Capital and Project Cost Estimating
- Development of Project Execution Plans
- Project and Construction Reviewing
- Document Analysis and Controlling

2. Engineering

We can provide a full complement of engineering services to assist our client with their project needs including:

- Mechanical engineering
- Process engineering
- Civil engineering
- Electrical engineering
- Instrumentation engineering
- Corrosion protection engineering
- Architectural engineering

We have considerable experience in upstream, downstream and utility/civil engineering projects which enables us to be an integral part of a project from its conception, through completion and every stage in between.

We can provide the following engineering packages:

- Feasibility studies
- Conceptual designs
- Basic Engineering Design (BED)
- Front End Engineering Design (FEED)
- Detailed Engineering design (DED)

Our Engineering offices are equipped with the leading edge tools, equipment and engineering software to enhance and streamline the design process.



Our Capabilities



3. Construction

Our construction-related services are offered as part of a full Engineering, Procurement, and Construction (EPC) project or can be employed as a stand-alone service, depending on client needs.

Our range of projects includes but is not limited to:

Onshore Oil and Gas Constructions

- Trench pipelines
- HDD and CHDD pipelines
- River crossings
- Upstream process facilities
- Gathering plants
- Separation plants
- Treatment plants
- Injection units
- Mid-stream process facilities
- Pumping stations
- Block valve stations
- Compressor stations
- Metering stations
- Pressure reduction facilities
- Terminals and storage

- Downstream Process facilities

- Modular Refinery units

Offshore Oil and Gas Constructions

- Offshore Pipelines
- HDD shore approaches
- Productions Platforms
- Offshore Modular Units
- Jackets
- CALM buoys

Utility services and Civil Works

- Pilling
- Utility cables distribution
- Utility cables transmission
- Communication cables
- Wireless communications equipment installation
- Solar and wind power installations
- Water treatment facilities

4. Fabrication

We have extensive experience designing and manufacturing high quality, durable and cost-effective equipment for the oil,

gas, power, petrochemical and heavy oil industries.

Fabrication Services

- Pressure Vessels
- Riser Lines
- Standpipes
- Wye Sections
- J Bends
- Strippers
- Burner Piping
- Carbon Steel & Alloy Piping
- Skid Units
- Structural supports

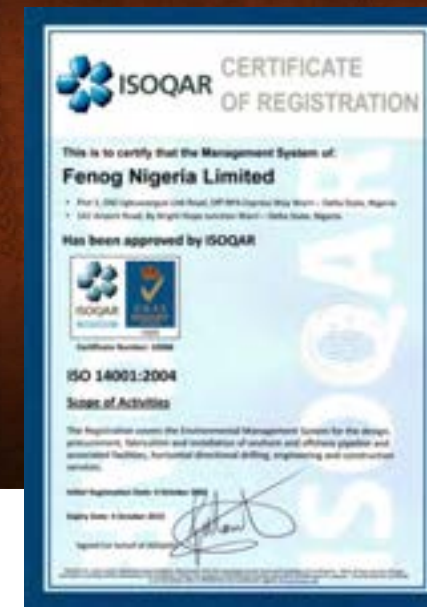
5. Procurement

We can offer worldwide procurement services which include:

- Vendor qualification & selection
- Commercial bid preparations, clarification and evaluation
- Order placement on behalf of the client
- Invoice ratification/payment
- Logistics & project expediting
- Quality Control (witnessing, inspection and testing)

Our Certifications

Our Quality, Health, Safety and Environmental systems and Processes
are certified to ISO standards



Featured Projects

We have completed several engineering and construction projects. Some notable projects are listed below:-

Project	Details	Client's Name
Escravos River Crossing (Gas Pipeline From Escravos Chevron Facility To Escravos Node)	Engineering and construction of 24" X 5km pipeline	ZAKHEM/CHEVRON
Installation, Testing And Commissioning For The Gas Pipeline From Escravs To WGT(Warri Gas Treatment Plan)	Construction and installation of 24" X 56km pipeline	ZAKHEM /NGC
EPC of Amukpe-escravos Pipeline Project Using Continuous Horizontal Directional Drilling (CHDD).	Engineering, Procurement and Construction of 20" X 67km pipeline using CHDD	PAN OCEAN
Fabrication And Installation Of 18"jumper Line At Abiteye.	Fabrication work for End facility for 18" pipeline	CHEVRON
Piling Works For The Installation Of 10-ton Incinerator In Escravos.	Civil work slope	CHEVRON
24" Kwale OB-OB Gas Pipeline Repair	Engineering, Procurement and Construction of 24" X 3km river crossing project	NAOC



Master Plan
Under
Construction

Location

Fenog Base One (Corporate Headquarters)

Plot 3, Old Ugbuwangue Link Road
Off NPA Express Way
Warri – Delta State, Nigeria.

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+234 (0) 805 322 4102

Email Address: fenog@fenog.com

Website: www.fenog.com

Fenog Base Two

No. 71 Airport Road,
Beside Amju Unique Micro Finance Bank
Warri/Effurun - Delta State, Nigeria.

Fenog Base Three

End of New World City Road
Ugbuwangwe Community,
Warri - Delta State, Nigeria.

Fenog Base Four

No. 142 Airport Road,
Opposite Bright Hope Junction
Warri/Effurun - Delta State, Nigeria.

Fenog Base Five

Along Airport Road,
Beside Fantazia Eatery
Warri / Effurun - Delta State, Nigeria.

