



WELLHEAD EQUIPMENT ENGINEERS

Well Testing | Upstream | Pressure Pumping
| Solid Control | MPD | UBD |

Introduction

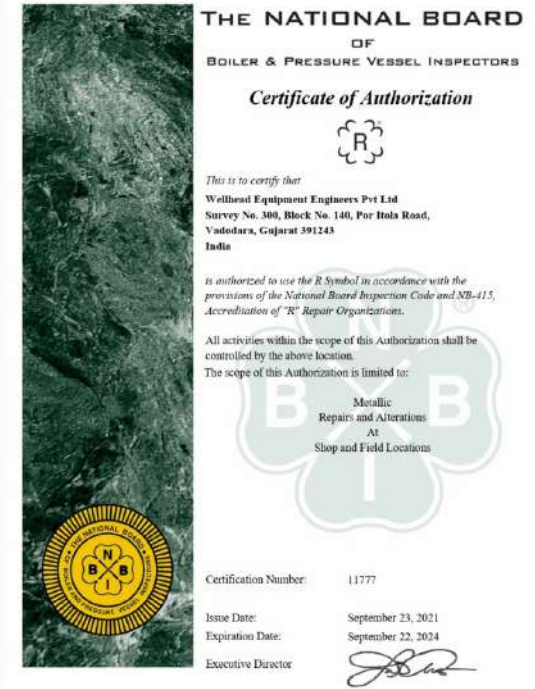


A leading and innovative provider of cutting-edge oil and gas equipment solutions. With a strong commitment to excellence and unwavering dedication to the energy industry, we have established ourselves as a trusted partner for companies across the globe. Our company's foundation is built upon a rich heritage of technical expertise, reliability, and customer-centricity, making us the preferred choice for businesses seeking top-of-the-line equipment and services.



Wellhead Equipment Engineers

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CERTIFICATE OF AUTHORIZATION

The named company is authorized by The American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the ASME Single Certification Mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with the ASME Single Certification Mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

Wellhead Equipment Engineers Pvt Ltd
Survey No. 300, Block No. 140, Por Itola Road,
Vadodara, Gujarat 391243
India

SCOPE:

Manufacture of pressure vessels at the above location and field sites controlled by the above location (This authorization does not cover impregnated graphite)

AUTHORIZED: September 27, 2021

EXPIRES: September 27, 2024

CERTIFICATE NUMBER: 50673

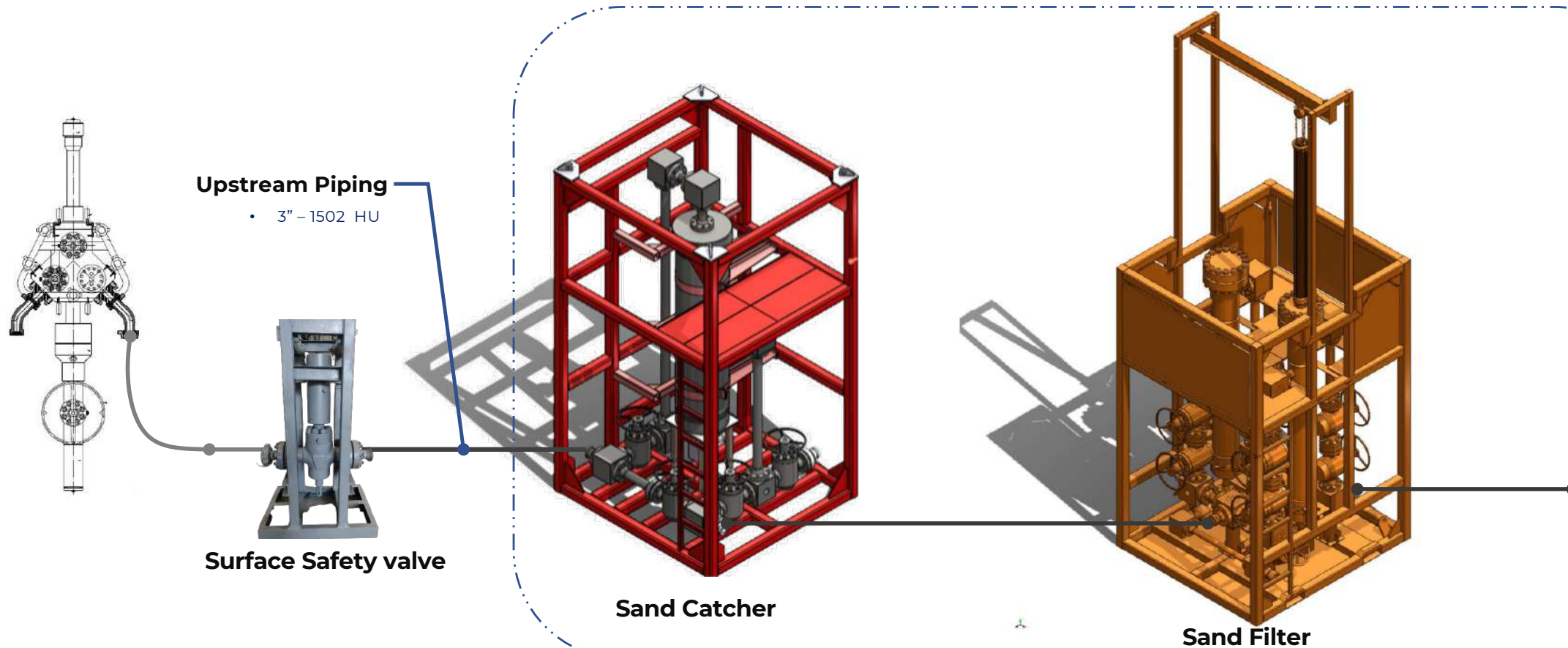
Ronald B. Caplan
Board Chair, Conformity Assessment

Paul Chang
Managing Director, Conformity Assessment

The American Society of Mechanical Engineers



Surface Well Testing-Equipment- Sand Management



WHE Provide Sand Management System with 10K & 5k Rated with multiple Sand Screen 100 Micron , 150 Micron , 200 Micron , 400 Micron . WHE Provide Following Equipment.

- Dual Pot Sand Filter
- Sand Catcher Or De Sander
- Sand Separator
- Sacrificial Choke manifold
- Target Tee and Elbow
- High Pressure Piping



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Surface Well Testing-Equipment

- WHE Design and manufacture heating Unit with Different heating Capacity as per API 12K.

- Heating unit

- Indirect bath heater (5K & 10 K Both)
 - Hot oiler Unit
 - Heat Exchanger -10 Rated Coil
 - Boiler (Zone-II)

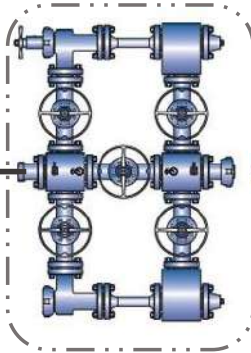


Indirect bath heater



No of Port - 4 Port
Size - 2",3",4"
Working pressure - 5k, 10k, 15k

Data header



Choke Manifold

Size - 3 " 1/16"
Working Pressure - 5K , 10K,
Material and Temperature Class - EE, PU,
Specification Level - PSL-3 with
TP Connection - 3"1502F inlet and 3"1502M outlet.

Data header

No of Port - 4 Port
Size - 2",3",4"
Working pressure - 5k, 10k, 15k

Downstream piping

- 3" - 602 HU,
- 4" 602 HU ,
- 4" 206 HU

to 3 phase separator



3 Phase Separator

We design and Manufacture 2-Phase , 3 Phase Separator as per given process data using Aspen Hysys . We also design standard well test Separator in multiple range like , 30x 8 , 36" x 10' 42 x 10 , 48"x 12' as per API 12J .

- 3 Phase Separation unit

- 3 Phase Separator (36x 10 , 42 x 10 , 48 x 10 , 48x 12, 48 x 15)
 - Vertical Separator

- All vessel - U-stamped



Chemical Injection pump

Size - 1/2in
Working Pressure - 5K , 10K,
Wet part material - SS 316L(Suitable trim for Chemical)
Dosing Range - 80 GPM
Driven Unit -Air Driven.



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Surface Well Testing-Equipment

KOD(Knock out drum)

We design and Manufacture KOD as per Api 521 Guideline .

KOD variant

- 50 BBL Capacity
- 80 BBL Capacity
- All vessel – as per ASME Division -1
- Skid Design as per – DNV 2.7.1
- Design Standard – ASME B31.3 , Api 521 , ASME Div-1 , Dnv 2.7.1



Gas Line

To Flare Stack

Oil Line

Effluent Line

To Surge tank

Surge tank Design

We design and Manufacture Surge tank as per Api 12J Guideline .

Surge tank variant

- 50 BBL Capacity
- 80 BBL Capacity
- 100 BBL Capacity
- All vessel – as per ASME Division -1
- Skid Design as per – DNV 2.7.1
- Design Standard – ASME B31.3 , Api 12J , ASME Div-1 , Dnv 2.7.1

3 way and 5 way manifold

We design and Manufacture Diverter manifold to divert the liquid.

- Design pressure – 1440 PSI
- Equipment Flange class – 600#
- Variant – 3" & 4" with Hammer union connection



To Storage tank

To Transfer Pump

To Flare Stack (Low gas Flare Line)



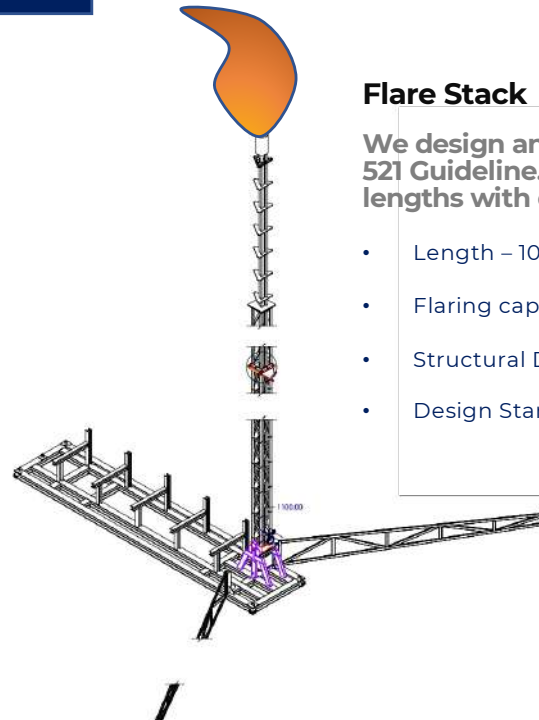
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Surface Well Testing-Equipment



To Flare Stack (Low
gas Flare Line)



Flare Stack

We design and Manufacture Flare System as per API 521 Guideline. We provide Flare Stack with different lengths with different capacities.

- Length – 100 ft , 45 ft , 30 ft
- Flaring capacity – 25 MMSCFD, 10 MMSCFD, 5mmscfd
- Structural Design- Stadd Pro and Solid works FEA
- Design Standard – ASME B31.3 , Api 521 ,



Storage tank & transfer pump

We design and Manufacture Crude oil storage units. These Storage tanks are Equipped with a Flame arrestor at the vent and level glass.

Transfer pump can deliver 24m³/day at 7 kg discharge pressure. These pumps have flame proof motors.

- Capacity – 100 BBL, 200BBL, 400 BBL
- Vent Line – Flame arrestor
- Skid type – DNV Skid
- Dimension – 20 ft x 8ft x 9 ft (container dimension)



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Surface Well Testing-Equipment

Trailer Mounted unit- Purpose and Application

These Packages are flexible and functional and easy to operate and save a large amount of cost when used in desert or areas where basis utilities are a problem i.e. Electricity and Water.

According to the Oil Reservoir Conditions and Client Requirement the above equipment can be assembled in order to meet the well testing service in the Oil and Gas Fields.

The upper and lower space of the trailer bottom skid is utilized sufficiently, so all the required pipeline, elbows, tools, spare parts and the required Items are mounted onto the trailer.

Utility Trailer can be of **20' / 30' / 40' / 50'** and can be built as per requirement for the functioning and accessibility.



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Surface Well Testing-Trailer Mounted Unit

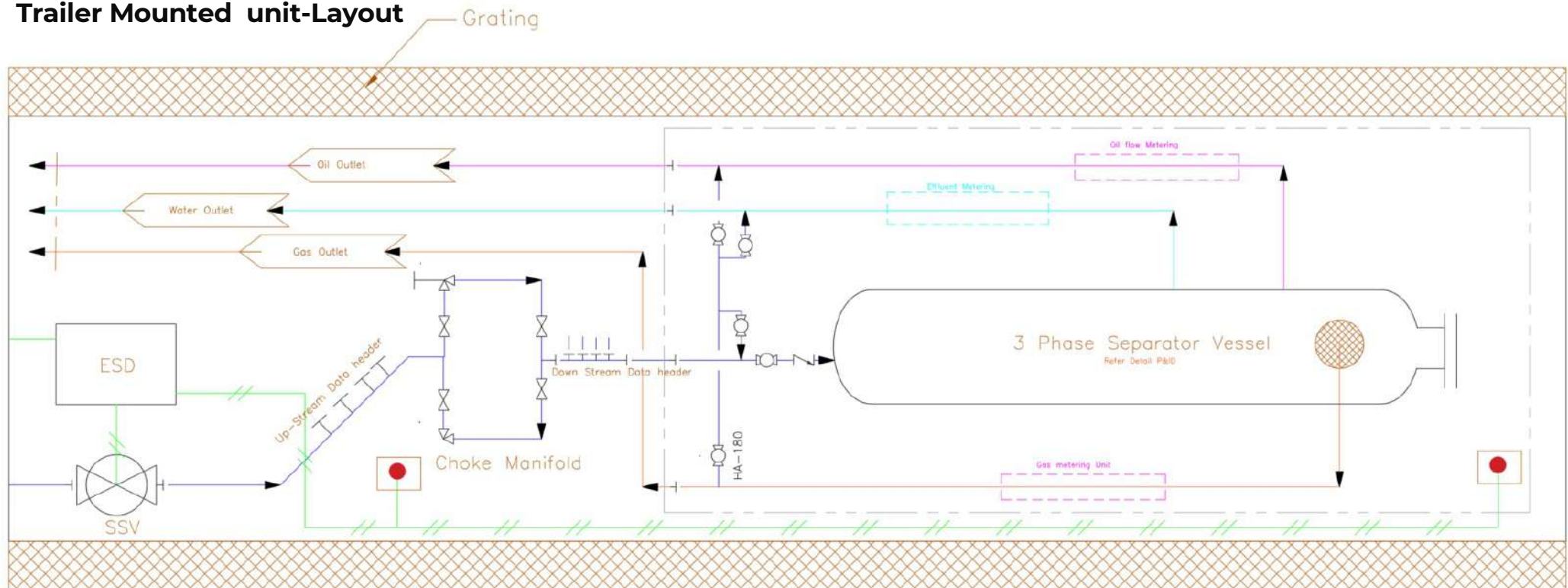
WHE had designed and **manufactured trailer Mounted unit as per client Requirement .**

These Standard packages have been engineered and manufactured to satisfy the high standards demanded by the **oil & gas industry** and are delivered in **a ready to use condition** with all the required instrumentation, ancillaries and inter connections.

The Process Trailer Packages comprise of 2-3 trailer with 40-ton payload **desert application trailers equipped** with all the necessary surface well testing equipment to perform all testing operations in the field.

The trailers are termed as **Process Trailer designed for Zone area** which comprises of all process equipment and secondary trailer termed as Utility trailer, designed for non-zoned area which consists of all support equipment.

Trailer Mounted unit-Layout



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Triplex Pump



One of our Multipurpose pumper skid

Application

- Hermetical test and completion support
- Stimulation and high-rate pumping
- Well killing
- Frac back side pumping
- Coil-tubing support

- 600 BHP Engine to 1000 BHP depends on model
- Semi and fully automatic transmission
- Triplex and quintuplex fluid end depends on the model
- We use the electronic industry lead engines for our pumping packages
- We Design client-specific HMI for pumping units.
- In house power end maintenance and engine overhauling facility
- We do re activation of rig cementing and pumping packages



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Batch mixture



Cement Batch mixture skid blends and recirculates cement slurry for the pumping unit. It is equipped with two **50-BBL** blending tanks that can handle large volumes of slurry.

Two centrifugal pumps can transfer fluids from remote sources and recirculate cement slurry back to the tanks and discharge fluids to the pumping unit.

Application

- Uniform Cement slurry blending
- Cement slurry of fluids delivered to the pumping unit
- Cement Slurry recirculation back to the blending tank
- Fluids transfer from remote sources

A diesel-powered electronic 350 HP engine equipped with an inbuilt air compressor provides suitable drive to the further hydraulic and pneumatic system.

Can pump 22 ppg cement slurry also capable of mixing low and high ph fluid.

We provide spare parts and after-market service support.



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Decanter Centrifuge



WHE had designed and **manufactured Skid Mounted Decanter unit for Drill cutting Solid Management System.**

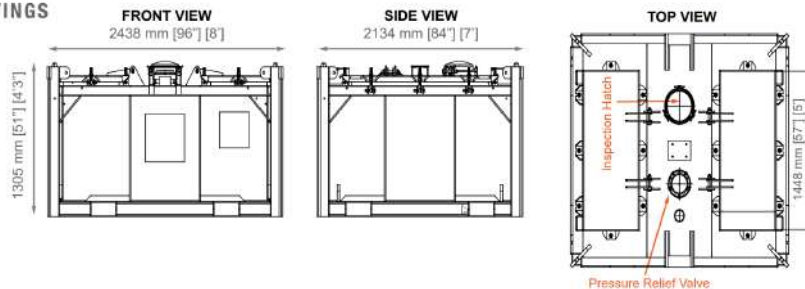
This Skid is designed to handle the solids through drilling mud in UBD and MPD & Conventional Drilling Operation .

Technical Specs

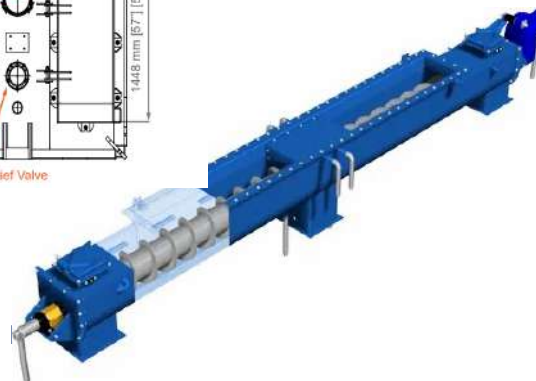
- Bowl Size – 14/355 (inches/mm)
- Bowl Length – 64/1637(inches/mm)
- Maximum G Force produced at maximum speed – 2572 G at 3600 RPM
- Feed pump type and Capacity – Progressive Cavity pump
- Electric Motors type & power requirement – 3 phase, 4 pole, input works kw – 415 -440 VAC , 60 hz, three phase.
- DGMS Certified – yes
- Control system & Type – PLC control with main, back drive motor & VFD.
- Skid type – Decanter with Catch tank Skid,
- Bowl RPM – 3600 or higher
- Feed from solids end
- Flush Connection
- Case Gasket
- Drive type – Electric
- Maximum G Force – 418 to 2275 G's
- Classification – Zone 1 or Class 1 Div 1 hazardous zone area
- The entire system has to be gas leak tight

Skips Tank

DRAWINGS



Auger(Solid Conveyor)



WHE provide Screw conveyors for solid movement. these screw conveyors are available with emergency stop switches. a variable speed drive controls the rate of conveyance.

The top of the units are fitted with expandable metal covers for feed areas and solids covers for non-Feed areas.

Screw conveyor size and horsepower requirement will vary with the length of the run, hole size, rate of penetration, and Solid flow rate.

- Gear Box with variable speed Unit
- Length will be 3.5M or as per client Requirement with Certified Control Panel
- Classification – Zone 1 or Class 1 Div 1 hazardous zone area



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Under balance Drilling



Not Common as Overbalance Drilling, UBD is Achieved when the pressure exerted on the well is less than or Equal to that of the Reservoir.

Our UBD Package has, Nitrogen Package, Separation Unit, Storage System Solid Control Unit Lab Cabin. This Equipment Help to Achieve the Underbalance in the well bore, which minimize the near-wellbore damage, increases well productivity and reduces drilling problems—such as differential sticking and low rates of penetration.

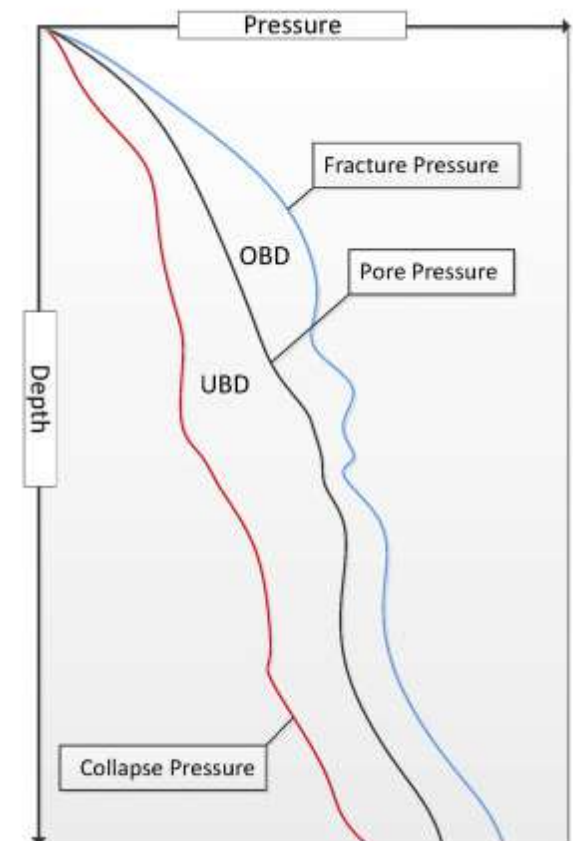
Equipment List

- RCD
- Sample Catcher
- Choke Manifold
- 4-phase separator
- Surge tank or vertical Separator
- Solid Control Unit
- Liquid Storage tank
- Bunded fuel tank
- Flare Stack/Burner Boom
- Flare piping bundle
- Transfer pumping Unit
- High-pressure Triplex pump
- Lab Cabin
- Electrical Distribution Panel
- Nitrogen Unit (Air Compress + Booster +Nitrogen membrane Unit)

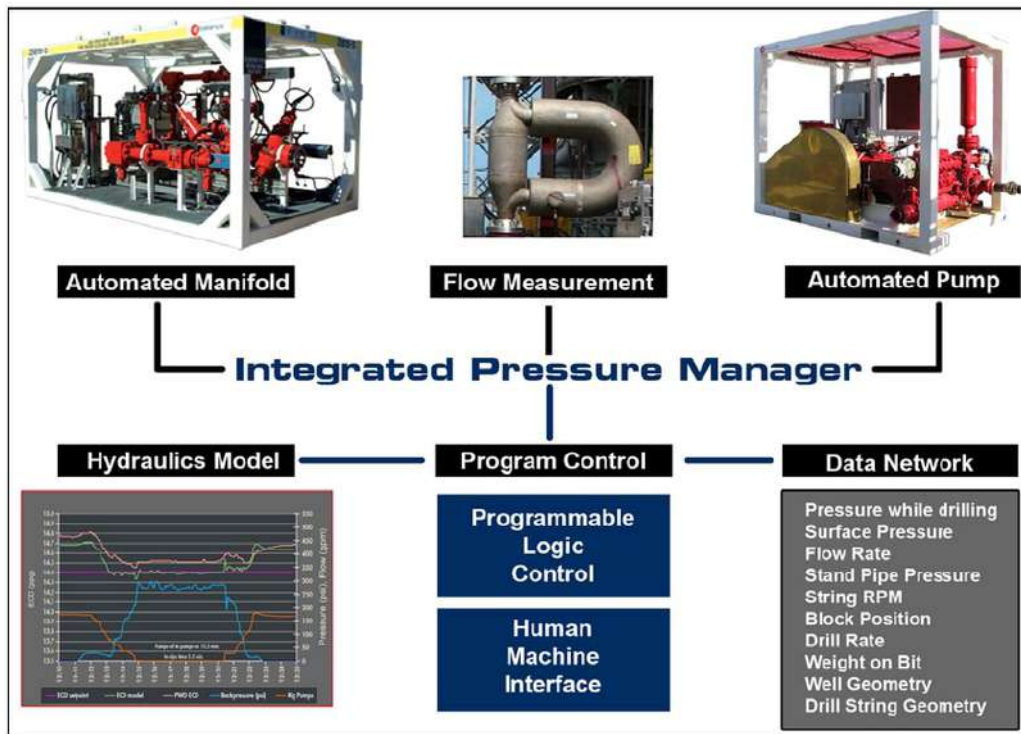


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Manage Pressure Drilling (MPD)



Drilling operations exist in a world circumscribed by high and low pressures. The unexpected appearance of either can lead to delays, increased costs, and even failure.

With increasing frequency, operators are arming themselves against the consequences of pressure-related surprises with techniques different from those used in the past. One such department from tradition is called Managed Pressure Drilling (MPD). WEE has MPD Package with Experienced manpower.

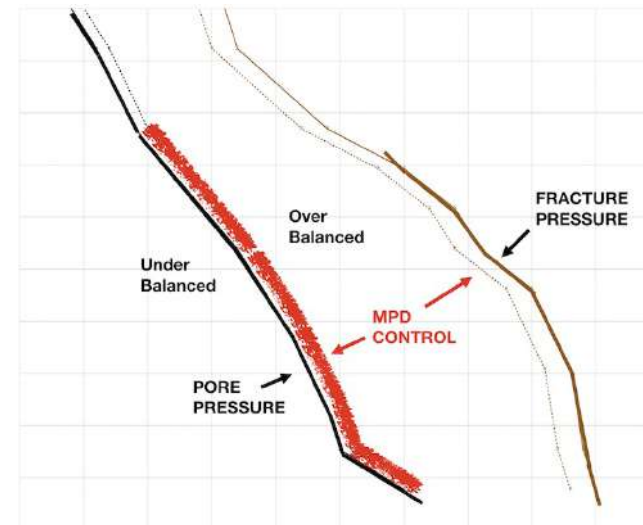
Equipment List

- RCD
- Choke Manifold
- Mud Gas Separator
- Coriolis flow meter



Applications of MPD

- Kick Control
- Severe Drilling Fluid Loss- fractured or vugular formation
- Differential Sticking
- Tight pore pressure- fracture pressure "windows"
- Depleted Reservoir Drilling
- HPHT Drilling
- Unknown pore Pressure
- Wellbore Instability
- MBD + ERD (Extended Reach Wells)
- Low ROP
- Drilled Gas (Nuisance Gas)
- High H2S Levels
- Ballooning/ Breathing Formation



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Well Control Spools & BOP



Well Control Equipment

- Riser Spool
- Flow Spool
- Annular BOP
- HCR Valves
- Accumulator Unit – 24 Bottle, 28 bottle
- FR Resistance BOP Hoses
- Lifting Ring and Lifting Clamp



WEE has Full Well control Setup – **Spool , BOP , Flow Spool , Accumulator Unit , HCR Valves and Cross over on Rental Basic for UBD and MPD Setup**



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Heating Unit- Welltest for Onshore and Offshore



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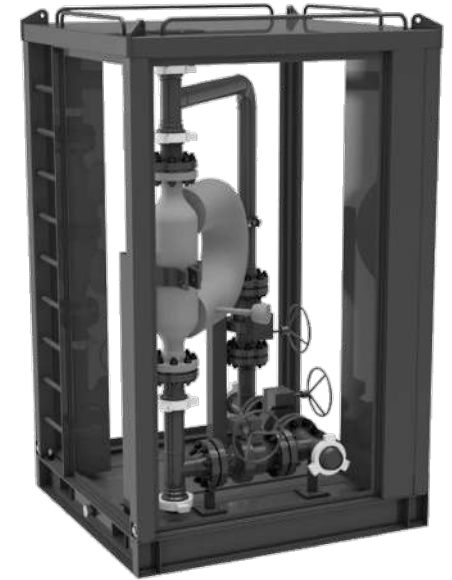
Surface Well Testing-Equipment



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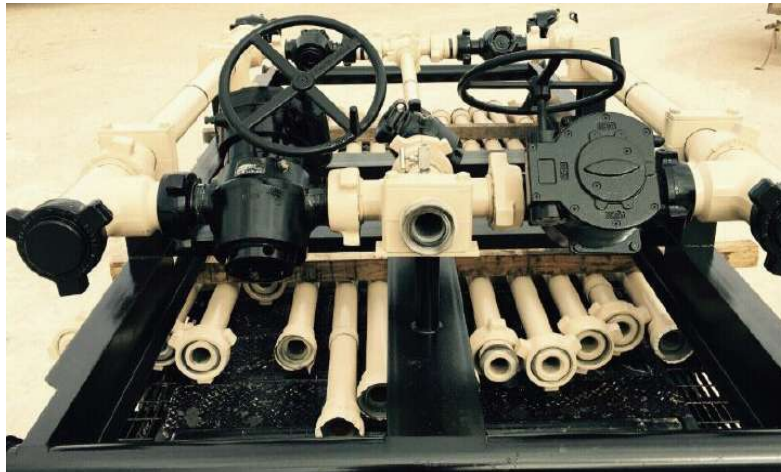
Product Gallery



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Product Gallery



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Product Gallery



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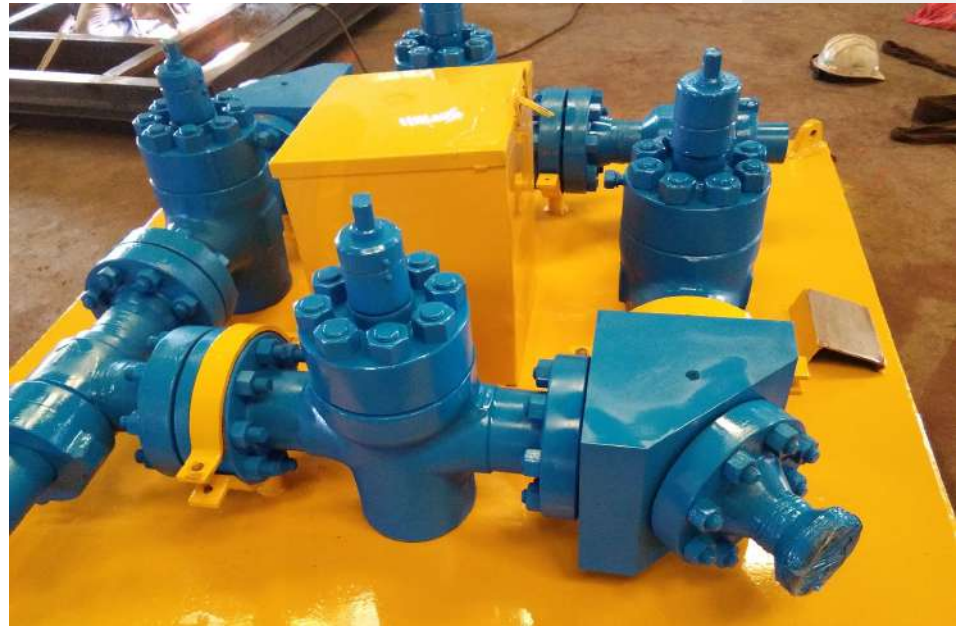
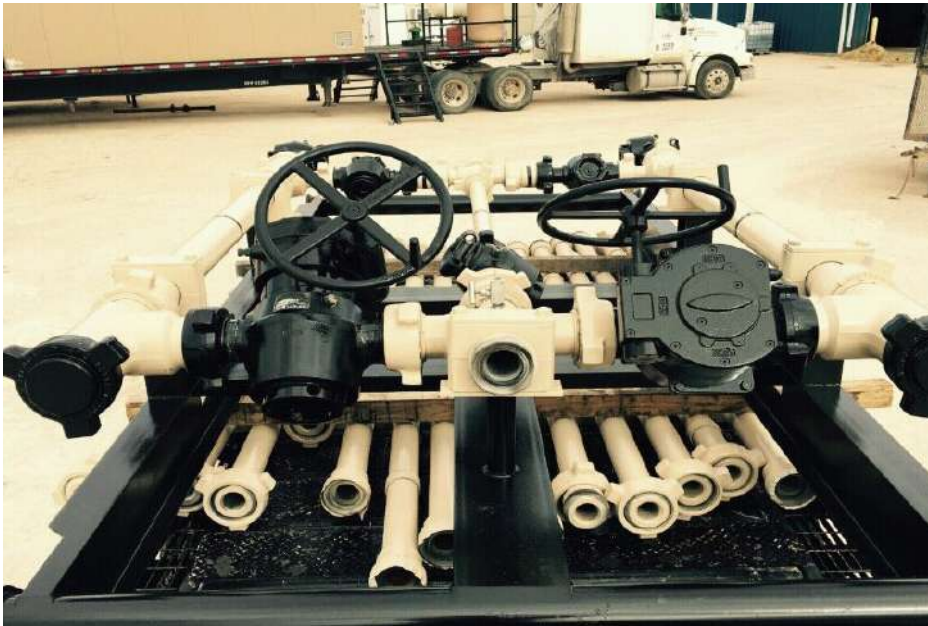
Product Gallery



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Product Gallery



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Clients



Baker Hughes 

HALLIBURTON

SynergiaEnergy



Contact us



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