

High-Performance SET[®] Systems

Enhancements to standard SET technology increases the burst and collapse ratings for enhanced performance and reliability in Enventure’s High-Performance (HP) Systems.

SET High-Performance expandable systems offer a viable tool in complex wells – particularly in those requiring higher strength materials (i.e. - pore-pressure reversal).

Installation Considerations

Currently available High-Performance systems include the 7-5/8 x 9-5/8 in. system and the 11-3/4 x 13-3/8 in. system. The HP Systems are designed specifically to accommodate:

- ▶ Higher differential pressure applications
- ▶ Installation through window-exits
- ▶ Higher dogleg severity
- ▶ Wellbore instability
- ▶ Mobile salts

Technical Specifications

HP System: 7-5/8 x 9-5/8 in.
Base Casing: 9-7/8 in. 62.8 lb/ft
Pre-Expansion

Nominal OD	7.625 in.
API Drift ID	6.500 in.

Post-Expansion

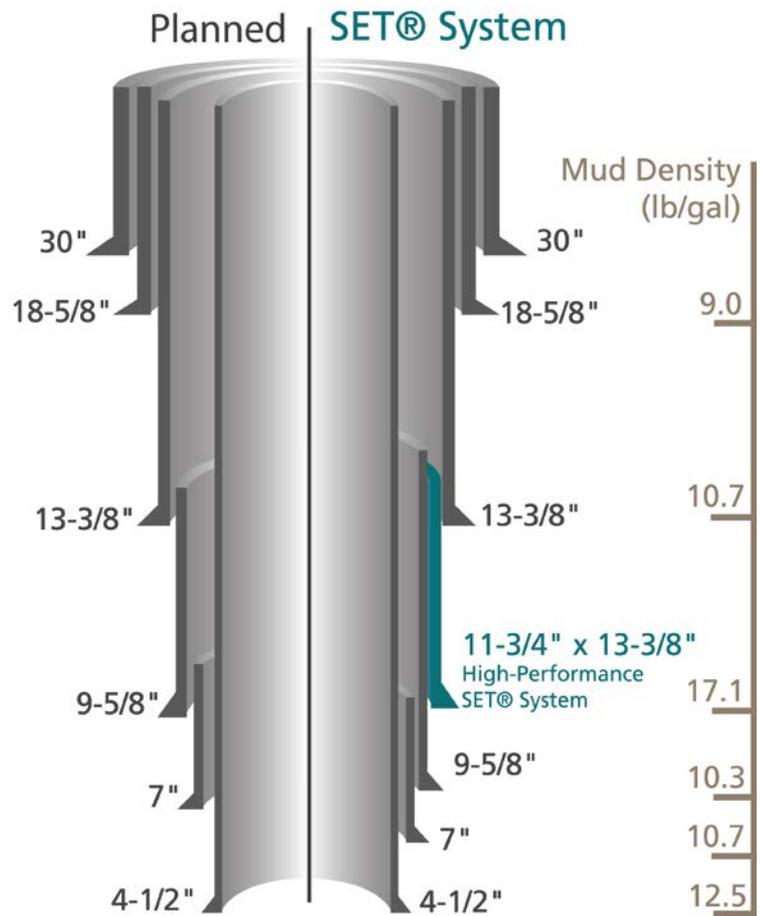
Nominal ID	7.500 in.
Drift ID	7.425 in.
Internal Yield	8,120 psi
Collapse	4,750 psi
Expansion Ratio	13.2%

H P System: 11-3/4 x 13-3/8 in.
Base Casing: 13-3/8 in. 68 lb/ft
Pre-Expansion

Nominal OD	11.750 in.
API Drift ID	10.358 in.

Post-Expansion

Nominal ID	11.125 in.
Drift ID	11.014 in.
Internal Yield	7,070 psi
Collapse	3,700 psi
Expansion Ratio	5.8%



*Other base casing sizes may be available. Contact Enventure for more details.

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15995 North Barkers Landing, Suite 350 | Houston, Texas 77079
 Tel 281.552.2200 | Fax 281.552.2201 | www.EnventureGT.com

Proven Results

Challenge:

A major international operator began planning an infill drilling and appraisal program in the UK sector of the North Sea. This field, in water 302 ft deep and under more than ~16,400 ft of sediments, contains high-pressure (>14,500 psi) and high-temperature (>350F) gas condensate.

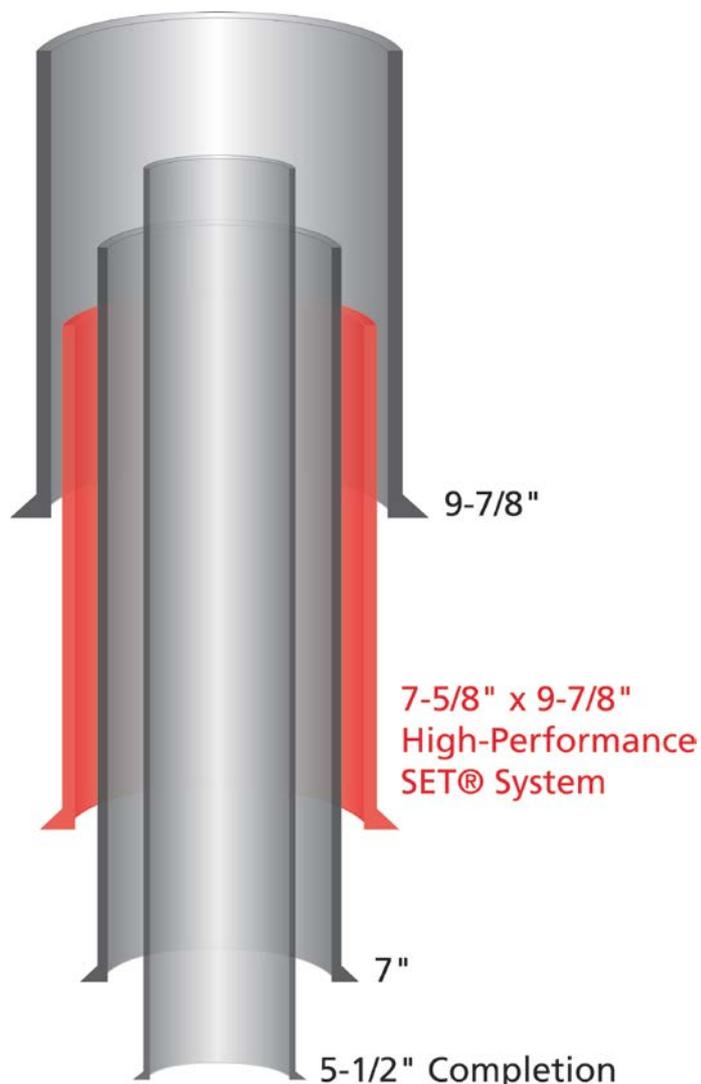
Uncertainty of shale stability in the high-pressure cap rock above the reservoir meant careful progression through this section would be important to minimize the risk of stimulating movement or collapse. The operator needed a way to isolate this cap rock section prior to entering the reservoir to allow the mud weight to be lowered for drilling through the already deplete section. Isolating the cap rock by casing off conventionally would require telescoping the wellbore architecture to a point where valuable production volume would be lost, potentially tipping the commercial viability scale. It very quickly became clear that solid expandable technology could offer a solution.

Solution:

Install a 7-5/8 x 9-7/8 in. SET High-Performance System. The system provided a ~60% increase in collapse pressure compared to standard SET systems. The HP expandable system effectively isolated the high-pressure cap rock's unstable shale. With the high-pressure section isolated, the operator was able to reduce the mud weight and drill ahead into the depleted pressure section of the reservoir without jeopardizing the integrity of the formation and reach the planned TD.

Added Value:

The increased collapse rating of the solid expandable system provided immediate isolation as well as a long-term solution that will withstand the expected increased pressure differential as the depletion continues over the seven-year projected lifecycle of the well.



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