

Coring Introduction

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Objectives of a Coring Program

Coring has both engineering and geologic objectives, and these should be carefully defined before coring commences. In some cases the objectives conflict, and it is impossible to satisfy all requirements on a given well.

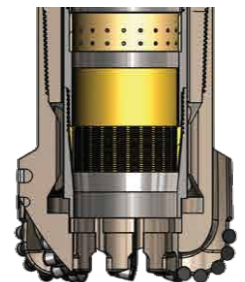
The objectives that are established will affect the selection of both the coring fluid and the coring device to be used. The decision will also affect the choice of a suitable core handling and preservation technique and will define most measurements required.

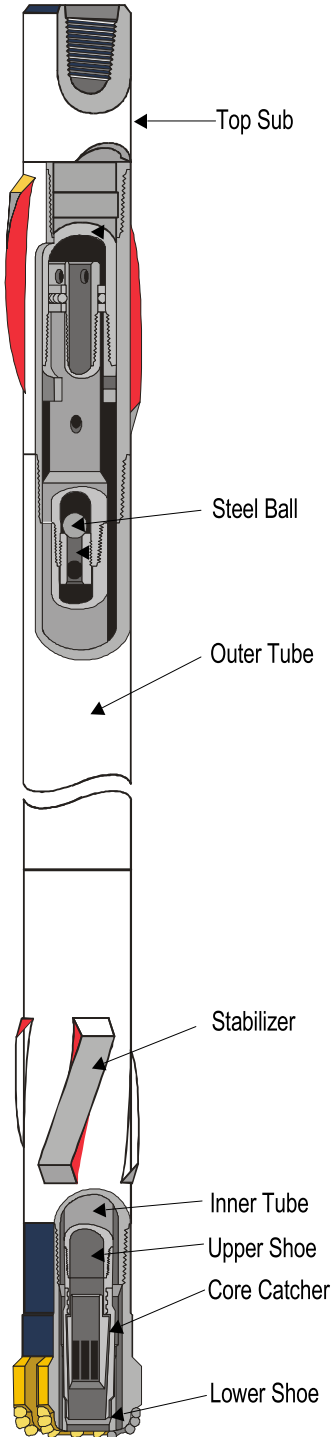
Geologic Objectives

The geologic objectives include:

- defining gas-oil and oil-water contacts, formation limits, and type of production expected;
- providing core data from which the depositional environment can be deduced, including grain size and grain size sequences; vertical sequence of facies; sedimentary structures (ripples, cross bedding); biogenic structures (root zones, burrows); diagenetic alterations (cementing, secondary porosity, secondary mineralization);

Two basic rotary coring methods are applied: coring at the time of drilling (bottom coring) and coring after drilling (side-wall coring). All bottom coring methods utilize some type of open center bit which cuts a doughnut shaped hole, leaving a cylindrical plug or core in the center. As drilling progresses, this central plug rises inside a hollow tube or core barrel above the bit where it is captured and subsequently raised to the surface.





CONVENTIONAL CORE BARREL

Wide Range of Core Sizes:
1-3/4" up to 5-1/4"

Core Bit Design For All Formation
Applications

Inner-Tube Materials:
Aluminum, Fiberglass, Steel

Inner-Tube Style:
Split, Solid, Fluted

Double Catcher Style Assembly

Core Catcher Available For All Formation

Barrels come in 9 meter/30 Foot lengths
stackable.

All Barrel Threads Are Double Shoulder
And Are Suitable For Extreme Torque Applications.

System is equivalent to DBS, Baker and NOV
USA Standard Product.

Table 1 : Core Specification

Core Barrel Specifications		
System Type	4 ³ / ₄ "	6 ³ / ₄ "
Outer Tube	4 ³ / ₄ " × 3 ¹ / ₄ "	6 ³ / ₄ " × 5 ³ / ₈ " with 7 ¹ / ₄ " × 5 ³ / ₈ " Upsets
Inner Tube	2 ⁸ / ₈ " × 2 ³ / ₈ "	4 ³ / ₄ " × 4 ¹ / ₄ "
Core Diameter	2 ¹ / ₈ "	4"
Top Connection	NC38 Box	7 ¹ / ₄ " O.D. with NC50 Box Connection
Core Bit Shank	4 ³ / ₄ "	7 ¹ / ₄ " O.D.
Recommended Makeup Torque	13,200 ft-lbs / 18,000 N-m	19,600 ft-lbs / 26,500 N-m
Maximum Torque	17,400 ft-lbs / 23,600 N-m	24,500 ft-lbs / 33,200 N-m
Dogleg Severities	5.0 Deg./10 Metre Non-Rotating 1.7 Deg./10 Metre Rotating	10.7 Deg./10 Metre Non-Rotating 2.0 Deg./10 Metre Rotating
Standard Stabilizer Placement	2, 32, 62, 92,...ft	2, 32, 62, 92,... ft
Optional Stabilizer Placement	NA	15 ft intervals
Weight per Section	30 ft = 1,170 lbs/530 kg	30 ft = 1,750 lbs/800 kg

Table 2 : Series Core Barrel Specification

Item	3½" x 1¾"	4⅛" x 2⅛"	4¾" x 2⅝"	5¾" x 3½"	6¼" x 4"	6¾" x 4"	8" x 5¼"
Length	30 ft (9 m)	30 ft (9 m)	30 ft (9 m)	30 ft (9 m)	30 ft (9 m)	30 ft (9 m)	30 ft (9 m)
Outer Tube	3½" x 2¾"	4⅛" x 3¼"	4¾" x 3¾"	5¾" x 4⅝"	6¼" x 5⅛"	6¾" x 5⅜"	8" x 6⅝"
Inner Tube	2⅜" x 1⅞"	2⅞" x 2⅜"	3⅞" x 2⅞"	4¼" x 3¾"	4¾" x 4¼"	4¾" x 4¼"	6¼" x 5½"
* Top Connection	2⅜" API Reg	2⅞" API Reg	3½" API FH	4½" API FH	4½" API FH	4½" API FH	6⅝" API Reg
Bore	1"	1½"	2⅞"	3⅝"	3⅝"	3⅝"	3⅝"
Steel Ball Size	0.625"	1.000"	1.000"	1.250"	1.250"	1.250"	1.250"
Core Size OD	1¾"	2⅛"	2⅝"	3½"	4"	4"	5¼"
Recommended Hole Sizes	3¾" - 5"	5" - 6"	6" - 7"	7" - 8"	7⅞" - 8½"	8" - 9"	9"-12¼"
Weight (Gross) lbs	1,208	1,894	2,676	3,163	3,833	4,240	5,441
Recommended Max. Pull	166,367	172,000	232,000	328,000	350,000	407,000	602,000
Maximum Torque (ft-lbs)	2,904	4,400	5,800	10,800	11,800	13,900	27,300
Makeup Torque (ft-lbs)	2,323	3,500	4,700	8,600	9,400	11,100	21,900