P-wave velocity and Density

Core Logging –
Leg I and II of the ONR NEMP Characterization: 2016
Allen Reed and Edward Braithwaite
Leg I –
Piston Coring Coring
(18 April – 25 May)
(320 meters of core collected and logged)
Piston Cores

• 54 cores were logged
• Length ranged from <2 m to> 8m in length

• Data presented :
  – Vp ratio
    • (Vp water = 1480 m/s for all sites as measured)
  – Vp and Density
  – Resistivity and magnetics data was also collected
Core: 16PC_EN577_

- Sound Speed Ratio
- P-Wave Velocity
- Gamma Density (kg/m³)

Depth in Core (cm)
Core: 17PC_EN577_

- Sound Speed Ratio
- P-Wave Velocity
- Gamma Density (kg/m$^3$)
Core: 20PC_EN577_

- **Sound Speed Ratio**
- **P-Wave Velocity**
- **Gamma Density (kg/m$^3$)**
Core: 39PC_EN577_

Sound Speed Ratio

P-Wave Velocity

Gamma Density (kg/m³)

Depth in Core (cm)

P-Wave Velocity
Vibracoring

New England Mud Patch 2016
ONR Acoustics Characterization of Sediments – U. Texas with NRL7430

Leg II – Vibracoring and Acoustic Gravity Coring (26 April – 2 May)

(120 meters of core collected and logged [greater than 6 tons of sediment])
Core: VC2_Hole1_EN577_

- Sound Speed Ratio
- P-Wave Velocity
- Gamma Density (kg/m³)
Core: VC26_Hole1_EN577_

**Sound Speed Ratio**

Depth in Core (cm)

**P-Wave Velocity**

Depth in Core (cm)

**Gamma Density (kg/m³)**

Depth in Core (cm)
Core: VC32_Hole1_EN577_

**Sound Speed Ratio**

**P-Wave Velocity**

**Gamma Density (kg/m$^3$)**
Acoustic Core – Gravity Core

New England Mud Patch 2016
ONR Acoustics Characterization of Sediments – U. Texas with NRL7430

Leg II – Vibracoring and Acoustic Gravity Coring (26 April – 2 May)
(120 meters of core collected and logged)

Leg II – UT-ARL Acoustic Gravity Coring
New England Mud Patch 2016
ONR Acoustics Characterization of Sediments - UTexas with NRL7430

Leg II – Vibracoring and Acoustic Gravity Coring (26 April – 2 May)
(120 meters of core collected and logged)

Leg II – UT-ARL Acoustic Gravity Coring
Core: GC_AC2_EN577_

Sound Speed Ratio

P-Wave Velocity

Gamma Density (kg/m³)
Core: GC_AC9_1_EN577_

Sound Speed Ratio

Depth in Core (cm)

P-Wave Velocity

Gamma Density (kg/m$^3$)
There is a lot more to consider...

New England Mud Patch 2016
ONR Acoustics Characterization of Sediments – USGS, UT-ARL
and U. Texas Institute of Geophysics with NRL7430

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Leg 1&II – Piston Coring, Vibracoring and Acoustic Gravity Coring (18 April – 2 May)

(440 meters of core collected and logged)

Code 7430 Logging Cores (Soundspeed, Density, Resistivity and Magnetic Susceptibility Quantified)