Field Testing Nonaqueous-based Drilling Fluids

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This recommended practice provides standard procedures for determining the following characteristics of nonaqueous drilling fluids (NADFs):

a) drilling fluid density (mud weight);

b) viscosity and gel strength;

c) filtration;

d) nonaqueous fluid (NAF), water, and solids concentrations;

e) alkalinity, chloride concentration, and calcium concentration;

f) electrical stability (ES);

g) lime and calcium concentrations, calcium chloride, and sodium chloride concentrations;

h) low-gravity solids and weighting material concentrations;

i) sand content;

j) high-temperature, high-pressure (HTHP) filtration using the permeability plugging apparatus (PPA).

Calibration and verification methods for glassware, thermometers, viscometers, retort kit cups, and drilling fluid balances shall be required for the application of recommended test methods; procedures are provided in Annex J.

Other annexes provide additional test methods or examples that can optionally be used for the determination of the following:

— shear strength (see Annex A);

— NAF retained on cuttings (see Annex B);

— drilling fluid activity (see Annex C);

— aniline point (see Annex D);

— example of lime, salinity, and solids concentration calculations (see Annex E);

— sampling, inspection, and rejection of drilling fluids materials (see Annex F);

— rig-site sampling (see Annex G);

— cuttings activity (see Annex H);

— active sulfides (see Annex I);

— elastomer compatibility with NADF (see Annex K);

— identification and monitoring of weight-material sag (see Annex L);

— NADF daily report form (see Annex M).