


SELECTION OF BOREHOLE GEOPHYSICAL METHODS FOR COMMON APPLICATIONS

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 APPLICATION	ACOUSTIC		ELECTRICAL					FLUID LOGS				RADIOACTIVE or NUCLEAR				OTHER METHODS			
	Televiewer	Velocity	IP	Multi-elect. Resistivity	Single-pt. Resistivity	S.P.	Induction/ Conductivity	Flow Meter	Fluid Resistivity	Fluid Sampler	Temp.	Gamma- gamma- density	Natural gamma	Neutron	Spectral gamma	Borehole Video	Caliper	Casing Collar Locator	Deviation
Lithology & Correlation																			
Bed/Aquifer thickness	1	1	-	1	1	1	3	-	-	-	-	6	7	6	7	-	-	-	-
Lithology, depositional environment	?	1	-	1	1	1	3	-	-	-	-	6	7	6	7	-	-	-	-
Shale or Clay content	-	-	1	1	-	1	3	-	-	-	-	6	7	6	7	-	-	-	-
Bulk Density	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-
Formation Resistivity	-	-	-	1	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Production/Injection profiles	-	-	-	?	-	-	?	4	4	-	4	6	-	6	-	9	7	-	-
Permeability Estimate	-	1	-	-	-	-	-	4	4	-	4	-	7	-	-	9	7	-	-
Porosity (amount and type)	1	1	-	1	-	-	3	-	-	-	-	6	-	6	-	-	-	-	-
Mineral Identification	-	-	1	-	-	-	-	-	-	-	-	6	-	-	7	-	-	-	-
Potassium/Uranium/Thorium content	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-
Rock Structure																			
Strike and dip of bedding	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	7
Fracture detection and RQD	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	9	7	-	-
Fracture orientation and character	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	7
Thin bed resolution	1	-	-	?	1	-	-	-	-	-	-	-	-	-	-	9	7	-	-
Fluid Parameters																			
Borehole Fluid characteristics	-	-	-	-	-	-	-	?	4	4	4	-	-	-	-	-	-	-	-
Fluid flow	-	-	-	-	-	-	-	4	4	-	4	-	-	-	-	9	-	-	-
Formation water quality	-	-	-	1	-	1	3	-	-	4	-	-	-	-	-	-	-	-	-
Moisture content (water saturation)	-	-	-	?	-	-	?	-	-	-	-	6	-	6	-	-	-	-	-
Temperature	-	?	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-
Water level and water table	1	1	-	1	1	1	3	-	4	-	4	6	-	6	-	9	-	-	-
Borehole Parameters																			
Casing evaluation	2	2	-	-	-	-	-	5	-	-	5	-	-	-	-	8	7	10	-
Deviation of borehole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Diameter of borehole	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-
Examination behind casing	-	1	-	-	-	-	-	-	-	-	-	6	-	6	-	-	-	-	-
Location of debris in wells	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	7	7	-
Well completion evaluation ie. grout	?	2	-	-	-	-	-	-	-	-	-	6	7	6	-	-	-	-	-

? - Possible application

1 - Open fluid filled hole only

2 - Cased fluid filled hole

3 - Open or non-conductive cased holes

4 - Screened or open fluid filled hole

5 - Cased fluid filled

6 - Must be a stable borehole

7 - No Restrictions

8 - Clear fluid or dry cased hole

9 - Clear fluid or dry open hole

10 - Steel Casing Only

* A copy of the complete ASTM Standard may be purchased from ASTM International, Phone: 610-832-9585, fax: 610-832-9555, email: service@astm.org, website: www.astm.org