

Certificate of Calibration

Altakamul Yard, North Rumailah, Iraq

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Date of Issue: June 27, 2024

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REQUEST NUMBER :	By Mail	CUSTOMER DETAILS	
JOB NUMBER :	QC/JN/24/00256	Name :	Halliburton Worldwide Limited (HPS)
CERTIFICATE NUMBER :	QC240627-01	Address :	Oils Operation Street Dist #29 Western Burjesia Area Basra, Iraq

EQUIPMENT IDENTIFICATION AND SPECIFICATIONS

Description : **Survey Meter**
 Manufacturer : Ludlum Measurements INC
 Model : 3
 Serial Number : **345663** Sensor Model no: 44-38 Sensor S/N: PR391786
 Type : Analog
 Range : 0 to 5 mR/hr X (Knob Values)
 Calibrated Range : 0 to 5 mR/hr X (Knob Values)
 Readability : 0.1
 Calibration Date : June 27, 2024
Calibration Due : December 26, 2024 6 Months Validity
 Calibration Site : QC Labs North Rumailah


ENVIRONMENTAL CONDITIONS DURING TEST

Ambient Temperature : 22.0 ± 2°C Humidity : 45.0 ± 5 % RH Atm. Pressure 1013.1 ± 10 hPa

CALIBRATION METHOD

The above equipment has been calibrated in accordance with **LMI SOP 14.9** The calibration measurements have been taken in increasing and decreasing GM detectors positioned perpendicular to source except for M44-9 in which the front of probe faces source.
 Gamma/Neutron mode using a Digital Gamma/Neutron Generator as the reference standard having traceability to Internationally recognised standards.

TRACEABILITY

The measurements made by Quality Control, realize the physical units of measurements (SI), through its state of the art calibration standards that are controlled and maintained by QC. calibrations are performed using NIST traceable Cs-137 sources S/N: 60646 & E552

REFERENCE EQUIPMENT USED :

DESCRIPTION	Make/SERIAL NO.	CALIBRATION DATE	CALIBRATION DUE DATE
Generator	Adelphi Technology Inc/12036	20 Nov, 2023	19 Nov, 2024
Digital Multimeter	Fluke/22610204	15 Nov, 2023	14 Nov, 2024

Gamma Dose Rate Calibration

 Instrument Voltage Set is: **900 V** Input Sensor Volt: 28mV

Knob Selector Range	Ref. Standard Values (mR/hr)	Measured Values on Unit Under Calibration (mR/hr)	Deviation	Expanded Uncertainty (U) (±mR/hr)
X 0.1	0.1	0.10	0.00	0.01
	0.2	0.20	0.00	0.01
	0.5	0.50	0.00	0.01
X1	1	1.00	0.00	0.01
	3	3.00	0.00	0.01
	5	4.80	-0.20	0.01
X10	10	10.00	0.00	0.01
	20	20.00	0.00	0.01
	30	30.00	0.00	0.01
	50	48.00	-2.00	0.01
X100	100	100.00	0.00	0.01
	200	200.00	0.00	0.01
	300	300.00	0.00	0.01
	500	500.00	0.00	0.01

 Calibration results were found to conform as per specified accuracy requirements. Above Instrument has **PASSED** its Calibration.

REMARK (S) : ☒ The results are as found (no adjustment done).

☐ The results are post adjustment.

CALIBRATED BY	REVIEWED & APPROVED BY LAB INCHARGE	CLIENT
 Hussein Alaa	 LAB INCHARGE Asjad Rafiq	