Republic of Bulgaria
Executive Agency
Bulgarian Accreditation Service

Signatory to the EA Multilateral Agreement in this field

ORDER

№ A 139

Sofia, 05.04.2024

Pursuant to Art. 10, para. 1, item 2a of the Law on National Accreditation of Conformity Assessment Bodies, item 5.3.1 in connection with item 4.3.8 f) of the BAS QR 2 Accreditation Procedure, assessment report reg. № 392/113 ЛИ/6/В/05.12.2023, declaration reg. № 392/113 ЛИ/3/Р/24.01.2024, annex G2 Section reg. № 392/113 ЛИ/6/В/15.02.2024 and EA BAS order № A 138/05.04.2024, I hereby

AMEND

EA BAS order № A 16/16.01.2023

University of mining and geology
St. Ivan Rilski
Central scientific research laboratory
Geochemistry

Management address: 1700 Sofia, Studentski grad, 1 Prof. Boyan Kamenov Str.
Laboratory address: 1700 Sofia, Studentski grad, 1 Prof. Boyan Kamenov Str.

To perform testing of:

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test/ Characteristics**	**Testing methods (standard/validated method)**
1	**2**	**3**	**4**
1.1	1. Water: drinking (1), surface (2), ground (3), waste (4)	pH	БДС 3424 (1) Potentiometric method БДС 17.1.4.27 (2,3,4) Potentiometric method
1.2		Electrical conductivity	БДС EN 27888 (1,2,3,4)
1.3		Solids	БДС 3546 (1); БДС 17.1.4.04 (2,3,4)
1.4		Total dissolved solids /TDS/	БДС 17.1.4.04 (2,3,4)
1.5		Undissolved solids	БДС 17.1.4.04 (2,3,4)
1.6		Suspended solids	БДС EN 872 (2,3,4)
1.7		Chloride	БДС 3414 (1) БДС 17.1.4.24 (2,3,4) Silver nitrate method
1.8		Nitrate	БДС ISO 7890-3 (1,2,3)
1.9		Nitrite/ Nitrite nitrogen ($N\text{-}NO_2^-$)	БДС EN 26777 (1,2,3,4)

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Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test/ Characteristics**	**Testing methods (standard/validated method)**
1	**2**	**3**	**4**
1.10		Ammonium	БДС 3587 (1) Photometric method with Nessler's reagent БДС 17.1.4.10 (2,3,4) Nessler photocolorimetric method
1.11		Kjeldahl nitrogen	БДС EN 25663 (1,2,3,4)
1.12		Oxidation/ Permanganate oxidation	БДС 17.1.4.16 (2,3,4) БДС 3413 (1)
1.13		Oxidation/Chemical oxygen demand (COD)	БДС 17.1.4.02 (2,3,4)
1.14		Dissolved oxygen	БДС EN 25813 (1,2,3,4)
1.15		Biochemical oxygen demand (BOD_n)	БДС EN 1899-2 (2,3,4)
1.16		Total alkalinity	БДС EN ISO 9963-1 (2,3,4)
1.17		Composite alkalinity	БДС EN ISO 9963-1 (2,3,4)
1.18		Carbonate	CNILG BM-5:2013 (1,2,3,4)
1.19		Hydrogencarbonate	CNILG BM-5:2013 (1,2,3,4)
1.20		Total hardness	БДС ISO 6059 (1,2,3)
1.21		Fluorine	БДС 16911 (1,3) Colorimetric method
1.22		Aluminium	БДС EN ISO 11885 (1,2,3,4)
1.23		Arsenic	БДС EN ISO 11885 (1,2,3,4)
1.24		Boron	БДС EN ISO 11885 (1,2,3,4)
1.25		Barium	БДС EN ISO 11885 (1,2,3,4)
1.26		Beryllium	БДС EN ISO 11885 (1,2,3,4)
1.27		Bismuth	БДС EN ISO 11885 (1,2,3,4)
1.28		Calcium	БДС EN ISO 11885 (1,2,3,4)
1.29		Cadmium	БДС EN ISO 11885 (1,2,3,4)
1.30		Chromium	БДС EN ISO 11885 (1,2,3,4)
1.31		Copper	БДС EN ISO 11885 (1,2,3,4)
1.32		Iron	БДС EN ISO 11885 (1,2,3,4)
1.33		Mercury	EPA 6010C (1,2,3,4)
1.34		Potassium	БДС EN ISO 11885 (1,2,3,4)
1.35		Magnesium	БДС EN ISO 11885 (1,2,3,4)
1.36		Manganese	БДС EN ISO 11885 (1,2,3,4)
1.37		Sodium	БДС EN ISO 11885 (1,2,3,4)
1.38		Nickel	БДС EN ISO 11885 (1,2,3,4)
1.39		Phosphorus	БДС EN ISO 11885 (1,2,3,4)
1.40		Lead	БДС EN ISO 11885 (1,2,3,4)
1.41		Sulfate	БДС 3588 (1) БДС 17.1.4.03 (2,3,4)
1.42		Sulfur	БДС EN ISO 11885 (1,2,3,4)
1.43		Antimony	БДС EN ISO 11885 (1,2,3,4)
1.44		Selenium	БДС EN ISO 11885 (1,2,3,4)
1.45		Silicon	БДС EN ISO 11885 (1,2,3,4)
1.46		Zinc	БДС EN ISO 11885 (1,2,3,4)
1.47		Phosphate/orthophosphate	CNILG BM-11 (1,2,3,4)
1.48		Aggressive carbon dioxide	БДС EN 13577 (3)
2.1	2. Soils (1); Construction soils (2)	pH	БДС EN ISO 10390 (1,2)
2.2		Electrical conductivity	БДС ISO 11265 (1,2)
2.3		Chloride	БДС 11301 (2)
2.4		Nitrate	БДС 11301 (2)
2.5		Ammonium	БДС 11301 (2)
2.6		Sulfate	БДС 11301 (1,2)

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test/ Characteristics**	**Testing methods (standard/validated method)**
1	**2**	**3**	**4**
2.7		Kjeldahl nitrogen	БДС ISO 11261 (1,2)
2.8		Aluminium	ISO 22036 (1,2)
2.9		Arsenic	ISO 22036 (1,2)
2.10		Calcium	ISO 22036 (1,2) CNILG BM-1 (1,2)
2.11		Cadmium	ISO 22036 (1,2)
2.12		Cobalt	ISO 22036 (1,2)
2.13		Chromium	ISO 22036 (1,2)
2.14		Copper	ISO 22036 (1,2)
2.15		Iron	ISO 22036 (1,2) CNILG BM-1 (1,2)
2.16		Mercury	EPA 3051A (1,2)
2.17		Potassium	ISO 22036 (1,2) CNILG BM-1 (1,2)
2.18		Magnesium	ISO 22036 (1,2) CNILG BM-1 (1,2)
2.19		Manganese	ISO 22036 (1,2)
2.20		Sodium	ISO 22036 (1,2) CNILG BM-1 (1,2)
2.21		Nickel	ISO 22036 (1,2)
2.22		Phosphorus	ISO 22036 (1,2) CNILG BM-1 (1,2)
2.23		Lead	ISO 22036 (1,2)
2.24		Sulfur	ISO 22036 (1,2)
2.25		Antimony	ISO 22036 (1,2)
2.26		Tin	ISO 22036 (1,2)
2.27		Zinc	ISO 22036 (1,2)
2.28		Water soluble salts content /total/	БДС 11301 (2)
2.29		Organic matter/organic carbon/humus	БДС 11302 (2)
2.30		Water content	БДС EN ISO 17892-1 (2)
2.31		Particle density	БДС EN ISO 17892-3 (2) Fluid pycnometer method
2.32		Bulk density	БДС EN ISO 17892-2 (2) Cutting ring method
2.33		Liquid and plastic limits	БДС EN ISO 17892-12 (2)
2.34		Particle size distribution	БДС EN ISO 17892-4 (2)
2.35		Compression properties	БДС EN ISO 17892-5 (2)
2.36		Shear strength Direct shear tests	БДС 10188 (2) БДС EN ISO 17892-10 (2)
2.37		Unconfined compression test on fine-grained soil	БДС EN ISO 17892-7 (2)
2.38		Unconsolidated undrained triaxial test	БДС EN ISO 17892-8 (2)
2.39		Consolidated triaxial compression tests on water saturated soils	БДС EN ISO 17892-9 (2)
3.1	3. Nature material and nature material processing products: construction (1), refractory (2), ceramic (3), sand (4),	Moisture	БДС 11330 (2) CNILG BM-2 (1,3,4,5,6)
3.2		Loss on ignition	БДС 11330 (2) CNILG BM-2 (1,3,4,5,6)
3.3		Water soluble salts	БДС 15050 (1,3)
3.4		Aluminium / Dialuminium trioxide	CNILG BM-2 (1,2,3,4,5,6)

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test/ Characteristics**	**Testing methods (standard/validated method)**
1	**2**	**3**	**4**
3.5	clay (5), limestone (6)	Calcium / Calcium oxide	CNILG BM-2 (1,2,3,4,5,6)
3.6		Cobalt	CNILG BM-6 (1,2,3,4,5,6)
3.7		Chromium	CNILG BM-6 (1,2,3,4,5,6)
3.8		Copper	CNILG BM-6 (1,2,3,4,5,6)
3.9		Iron / Diiron trioxide	CNILG BM-2 (1,2,3,4,5,6)
3.10		Potassium / Dipotassium oxide	CNILG BM-2 (1,2,3,4,5,6)
3.11		Magnesium / Magnesium oxide	CNILG BM-2 (1,2,3,4,5,6)
3.12		Manganese / Manganese dioxide	CNILG BM-2 (1,2,3,4,5,6)
3.13		Sodium/ Disodium oxide	CNILG BM-2 (1,2,3,4,5,6)
3.14		Nickel	CNILG BM-6 (1,2,3,4,5,6)
3.15		Phosphorus / Diphosphorus pentoxide	CNILG BM-2 (1,2,3,4,5,6)
3.16		Lead	CNILG BM-6 (1,2,3,4,5,6)
3.17		Sulfur / Sulfur trioxide	CNILG BM-6 (1,2,3,4,5,6) CNILG BM-2 (1,2,3,4,5,6)
3.18		Silicon / Silicon dioxide	CNILG BM-2 (1,2,3,4,5,6)
3.19		Titanium / Titanium dioxide	CNILG BM-2 (1,2,3,4,5,6)
3.20		Zinc	CNILG BM-6 (1,2,3,4,5,6)
4.1	4. Ore (1) and ore processing products: concentrate (2), alloy (3), slag (4)	Moisture	БДС 7480 (1,2) CNILG BM-4 (1,2,3,4)
4.2		Loss on ignition	БДС 15872 (1,2) CNILG BM-4 (1,2,3,4)
4.3		Silver	CNILG BM-3 (1,2,3,4)
4.4		Aluminium / Dialuminium trioxide	CNILG BM-3 (1,2,3,4) CNILG BM-4 (1,2,3,4)
4.5		Antimony	CNILG BM-3 (1,2,3,4)
4.6		Arsenic	CNILG BM-3 (1,2,3,4) CNILG BM-4 (1,2,3,4)
4.7		Bismuth	CNILG BM-3 (1,2,3,4)
4.8		Calcium / Calcium oxide	CNILG BM-4 (1,2,3,4)
4.9		Cadmium	CNILG BM-3 (1,2,3,4) CNILG BM-4 (1,2,3,4)
4.10		Cobalt	CNILG BM-3 (1,2,3,4)
4.11		Chromium	CNILG BM-3 (1,2,3,4) CNILG BM-4 (1,2,3,4)
4.12		Copper	CNILG BM-3 (1,2,3,4) CNILG BM-4 (1,2,3,4)
4.13		Iron / Diiron trioxide	CNILG BM-3 (1,2,3,4) CNILG BM-4 (1,2,3,4)
4.14		Potassium / Dipotassium oxide	CNILG BM-4 (1,2,3,4)
4.15		Magnesium / Magnesium oxide	CNILG BM-4 (1,2,3,4)
4.16		Manganese / Manganese dioxide	CNILG BM-3 (1,2,3,4) CNILG BM-4 (1,2,3,4)
4.17		Molybdenum	CNILG BM-3 (1,2,3,4)

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test/ Characteristics**	**Testing methods (standard/validated method)**
1	**2**	**3**	**4**
4.18		Sodium/ Disodium oxide	CNILG BM–4 (1,2,3,4)
4.19		Nickel	CNILG BM–3 (1,2,3,4)
4.20		Phosphorus / Diphosphorus pentoxide	CNILG BM–3 (1,2,3,4) CNILG BM–4 (1,2,3,4)
4.21		Lead	CNILG BM–3 (1,2,3,4) CNILG BM–4 (1,2,3,4)
4.22		Sulfur / Sulfur trioxide	CNILG BM–3 (1,2,3,4) CNILG BM–4 (1,2,3,4)
4.23		Silicon / Silicon dioxide	CNILG BM–4 (1,2,3,4)
4.24		Titanium / Titanium dioxide	CNILG BM–4 (1,2,3,4)
4.25		Zinc	CNILG BM–3 (1,2,3,4) CNILG BM–4 (1,2,3,4)
5.1	5. Waste: solid (1), liquid (2), sludge (3)	pH	БДС EN ISO 10390 (1,2,3) БДС EN 10523 (1,2)
5.2		Dry matter/dry residue/water content	БДС EN 15934 (1,2,3)
5.3		Loss on ignition	БДС EN 15935 (1,2,3)
5.4		Total dissolved solids (TDS)	БДС EN 15216 (1,2,3)
5.5		Kjeldahl nitrogen	БДС EN 13342 (3)
5.6		Aluminium	CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.7		Arsenic	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.8		Barium	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.9		Cadmium	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.10		Calcium	CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.11		Cobalt	CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.12		Chromium	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.13		Copper	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.14		Iron	CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.15		Mercury	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.16		Magnesium	CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.17		Manganese	CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.18		Molybdenum	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)

Type of the scope: *flexible for a part of the scope*			
№	**Tested products**	**Type of test/ Characteristics**	**Testing methods (standard/validated method)**
1	**2**	**3**	**4**
5.19		Nickel	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.20		Phosphorus	CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.21		Lead	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.22		Sulfur	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.23		Antimony	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.24		Selenium	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.25		Zinc	БДС EN ISO 11885 (1,2,3) CNILG BM–1 (1,2,3) БДС EN 16170 (3)
5.26		Chloride	CNILG BM–8 (1,2,3)
5.27		Fluoride	CNILG BM–9 (1,2,3)
5.28		Sulfate	CNILG BM–10 (1,2,3)

Flexible scope: *Implementing a new version of standards/documents or standards / documents replacing them is allowed. An updated list of standards/documents and their dated versions is provided by the laboratory.*

Fixed scope references:

1. CNILG BM–1:2014 Determination of water soluble forms in soil, waste, sludge and total content of elements aluminium, arsenic, barium, calcium, cadmium, cobalt, chromium, copper, iron, mercury, potassium, magnesium, manganese, molybdenum, sodium, nickel, phosphorus, lead, sulfur, antimony, selenium, zinc in waste and sludge
2. CNILG BM–2:2014 Determination of elements aluminium, calcium, iron, potassium, magnesium, manganese, sodium, phosphorus, sulfur, silicon, titanium and their oxides in nature materials and nature materials processing products
3. CNILG BM–3:2013 Determination of elements silver, aluminium, arsenic, bismuth, cadmium, cobalt, chromium, copper, iron, manganese, molybdenum, nickel, phosphorus, lead, sulfur, zinc и antimony in ore and ore processing products, concentrate, alloy, slag after extraction with a mixture of acids
4. CNILG BM–4:2013 Determination of elements aluminium, calcium, iron, potassium, magnesium, manganese, sodium, phosphorus, sulfur, silicon, titanium and their oxides and elements copper, lead, zinc, cadmium, chromium, arsenic in ore and ore processing products
5. CNILG BM–5:2013 Determination of carbonate and hydrogencarbonate content in water
6. CNILG BM–6:2013 Determination of elements cobalt, chromium, copper, nickel, lead, sulfur и zinc in nature materials and nature materials processing products
7. CNILG BM–7:2013 Water concentration method for the determination of elements arsenic, antimony, mercury, lead, selenium
8. CNILG BM–8:2017 Determination of water soluble chloride in waste (solid, liquid and sludge)
9. CNILG BM–9:2017 Determination of water soluble fluoride in waste (solid, liquid and sludge)
10. CNILG BM–10:2017 Determination of water soluble sulfate in waste (solid, liquid and sludge)
11. CNILG BM–11:2014 Determination of phosphate/ orthophosphate in water

I ORDER

To issue the certificate of accreditation reg. № 113 ЛИ/05.04.2024, valid until 16.01.2027, and this order as an integral part of it.

The certificate of accreditation with the enclosure to be received by the Rector of University of mining and geology St. Ivan Rilski, the head of the Central scientific research laboratory Geochemistry at University of mining and geology St. Ivan Rilski, or other authorized person in the office of EA BAS.

Upon receipt of the certificate and the enclosure issued, the accredited percon is obliged to return to EA BAS the originals of accreditation certificate № 113 ЛИ/16.01.2023, valid until 16.01.2027 and an enclosure – EA BAS order reg. № А 16/16.01.2023 as an integral part of it.

This order shall be notified to the University of mining and geology St. Ivan Rilski, within 3 (three) days from its issuance.

Eng. Irena Borislavova

Executive Director of EA BAS