


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 1765 Accredited to ISO/IEC 17025:2017	Alfred H Knight Energy Services Ltd	
	Issue No: 047 Issue date: 29 June 2023	
	Unit 1 Palmermount Industrial Estate Bypass Road Dundonald Kilmarnock Ayrshire KA2 9BL	Contact: Mr John Watt Tel: +44 (0)1563 850375 Fax: +44 (0)1563 850830 E-Mail: john.watt@ahkgroup.com Website: www.ahkgroup.com
Testing performed by the Organisation at the locations specified below		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address Unit 1 Palmermount Industrial Estate Bypass Road Dundonald Kilmarnock Ayrshire KA2 9BL Local contact Mr John Watt Tel: +44 (0)1563 850375 Fax: +44 (0)1563 850830 Email: john.watt@ahkgroup.com Website: www.ahkgroup.com	Fuels - Chemical and Physical Tests	A
Address Units B3 - B4 Olympic Business Park Dundonald Kilmarnock Ayrshire KA2 9BE Local contact Mr John Watt Tel: +44 (0)1563 850375 Fax: +44 (0)1563 850830 Email: john.watt@ahkgroup.com Website: www.ahkgroup.com	Fuels - Chemical and Physical Tests	B
Address LMA cv Oeverkruid 14 4941 VV Raamsdonksveer Netherlands Local contact Arno Kant Tel: +31 (0)183 307050 Fax: +31 (0)183 304502 Email: arno.kant@lma-xrf.nl	Fuels - Chemical and Physical Tests	C

Site activities performed away from the locations listed above:

Location details	Activity	Location code
Premises away from the main Laboratories	Fuels - Sampling	D



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
COAL, COKE	<u>Chemical and Physical Tests</u>		
	Sampling	Documented In-House Method KES/93/Prep-C conforming to: BS ISO 18283:2006 ASTM D2234 (location D)	A, B, C, D
	Sample Preparation	Documented In-House Method LMA/93/Prep-C conforming to: BS ISO 18283:2006 ASTM D2013 (location B)	B, C
	Hardgrove Grindability Index (HGI)	Documented In-House Method SM041 (using Hardgrove Machine) based on: BS ISO 5074:2015; and ASTM D409	A, C
	Free Swelling Index (Crucible Swelling Number)	Documented In-house Method SM010 based BS ISO 501:2012	A
	Free Swelling Index (Crucible Swelling Number)	Documented In-house Method LSM010 based on BS ISO 501:2012	C
	Total Moisture	Documented In-House Method based on ASTM D3302	A, B
	Analysis Moisture	Documented In-House Method based on ASTM D3173	A
COAL	Trace Elements: As, Ba, Be, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, B, Ti, U, Sn, Te	Documented In-House Method SM044 (using ICP-MS) conforming to: BS ISO 23380:2013; and ASTM D6357:2011	A
ASH	Trace Elements: As, Be, Cd, Co, Cr, Cu, Hg, Mn, Ni, Pb, Sb, Se, Sn, V, Zn	Documented In-House Method SM044 (using ICP-MS) conforming to BS EN ISO 16968:2015	A
SOLID BIOFUELS	Sampling	Documented In-House Method KES/93/Prep-B conforming to: BS EN 18135:2017; BS EN ISO 14780:2017 + A1 2019	A, C, D



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	<u>Chemical and Physical Tests</u> (cont'd)		
SOLID BIOFUELS (cont'd)	Sample Preparation	Documented In-House Method LMA/93/Prep-B conforming to: BS EN 14778:2011; BS EN ISO 14780:2017	A, C
	Minor Elements: As, Ba, Be, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, B, Ti, U, Sn, Te	Documented In-House Method SM044 (using ICP-MS) conforming to: BS EN ISO 16967:2015; and ISO BS EN 16968:2015	A
	Particle Size Distribution	Documented In-House Method SM048 conforming to BS EN ISO 17827:Part 1 :2016	A
SOLID BIOFUELS (including WOOD PELLETS) and ASH	Particle Size Distribution: <3.15mm	Documented In-House Method SM049 conforming to BS EN ISO 17827: Part 2:2016	A
SOLID BIOFUELS	Particle Size Distribution of Disintegrated Pellets	Documented In-House Method SM049 conforming to BS EN ISO 17830:2016	A
WOOD PELLETS	Length Diameter	Documented In-House Method SM048 conforming to BS EN ISO 17829:2015	A
SOLID BIOFUELS (including WOOD PELLETS), ASH and SOLID RECOVERED FUELS	Bulk Density	Documented In-House Method SM050 conforming to: BS EN ISO 17828:2015 and DD CEN/TS 15401:2010	A
COAL, COKE AND SOLID BIOFUELS, SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE	Major and Minor Elements	Documented In-House Method SM040 (using X-Ray Fluorescence Spectrometry) conforming to: ISO/CD 13605; PD ISO/TS 16996:2015 and ASTM D4326	C
SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE	Sample Preparation	Documented In-House Method KES/93/Prep-S conforming to: BS EN 15442:2011; BS EN 15443:2011; BS EN 15413:2011;	A



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SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE	<u>Chemical and Physical Tests</u> (cont'd)		
	Minor Elements: As, Ba, Be, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn, B, Ti, U, Sn, Te	Documented In-House Method SM044 (using ICP-MS) conforming to: BS EN 15410:2011; and BS EN 15411:2011	A
COAL, COKE, SOLID BIOFUELS, PEAT, SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE	Chlorine and Fluorine	Documented In-House Method SM045 (using Ion Chromatography) conforming to: BS EN ISO 16994:2016 and BS EN 15408:2011	A
	Chlorine and Fluorine	Documented In-House Method LSM045 (using Ion Chromatography) based on ASTM D3761, ASTM D4208, and BS EN 15408:2011	C
COAL	Mercury	Documented In-House Method LSM046 (using dedicated mercury analyser) based on ASTM D6722	C
COAL, COKE, SOLID BIOFUELS, SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE, PEAT, SOILS, COLLIERY SPOIL and HIGH ASH MATERIALS	Total Moisture	Documented In-House Method SM030 (Gravimetric Determination) conforming to: BS 1016: 1:1973 ISO 589:2008 ISO 579:2013 ISO BS EN 18134-2:2015 CEN/TS 15414, Part 2; 2010	A, B, C
	Analysis Moisture	Documented In-House Method SM031 (Gravimetric Determination) conforming to: ISO 11722:2013 ISO 687:2010 ISO BS EN 18134-3:2015 BS EN ISO 21660-3:2021	A, C
	Ash	Documented In-House Method SM033 Gravimetric Based on ISO 1171:2010, ASTM D3174, BS EN ISO 18122:2015, BS EN ISO 21656:2012	A, C



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COAL, COKE, SOLID BIOFUELS, SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE, PEAT, SOILS, COLLIERY SPOIL and HIGH ASH MATERIALS (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)		
	Total Sulphur	Documented In-House Method SM 034 (using combustion Infra-Red Analyser) conforming to: ASTM D4239 and ; ISO 17247; BS EN ISO 16994:2016, and BS EN ISO 21663:2020	A
	Volatile Matter	Documented In-House Method SM032 (Gravimetric Determination) conforming to: BS ISO 562:2010 ASTM D3175; BS EN ISO 18123:2015 BS EN ISO 22167:2021	A, C
	Carbon Hydrogen Nitrogen	Documented In-House Method SM 035 (based on Instrumental Determination) conforming to: ASTM D5373; ASTM D2013; ISO BS EN 16948:2015 BS EN ISO 21663:2020BS ISO 29541:2010	A
	Carbon Hydrogen Sulphur	Documented In-House Method LSM 035 (based on Instrumental Determination) conforming to: ASTM D5373; ASTM D2013; ISO BS EN 16948:2015 BS EN ISO 21663:2020; BS ISO 29541:2010 and ASTM D4239	C
Gross Calorific Value	Documented In-House Method SM 036 (using Bomb Calorimetry) conforming to: BS ISO 1928:2020 BS EN ISO 18125:2017 BS EN 15400:2011; ASTM D5865;	A, C	



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	<u>Chemical and Physical Tests</u> (cont'd)		
COAL, COKE, SOLID BIOFUELS, SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE	Chloride	Documented In-House Method SM039 (Ion Selective Electrode Testing of aqueous residue from Test SM036) conforming to: BS EN 16994:2016, ASTM D4208 & BS EN 15408:2011	A
COAL, COKE, SOLID BIOFUELS, SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE, PEAT, SOILS, COLLIERY SPOIL and HIGH ASH MATERIALS (cont'd)	Calculation of Net Calorific Value	Documented In-House Method SM 037 conforming to: BS ISO 1928:2020 BS EN ISO 18125:2017 BS EN 15400:2011 ASTM D5865	A, C
COAL, COKE, SOILS, COLLIERY SPOIL and HIGH ASH MATERIALS	Calculation of Fixed Carbon	Documented In-House Method SM 022 conforming to: BS 1016, Part 100:1994 ASTM D3172	A, C
BIOFUELS, SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE and other CARBONACEOUS MATERIALS	Biomass Content	Documented In-House Method SM 042 (using Selective Dissolution Method) conforming to: BS EN ISO 21644:2021 (Annex B)	A
	Biomass and Fossil Energy Content	Documented In-House Method SM 046 based on "Template Methodology for measuring fossil derived contamination within waste wood" Ofgem Guidance Note 9 November 2013.	A
SOLID BIOFUELS: PELLETS and BRIQUETTES	Mechanical Durability	Documented In-House Method SM 043 (using Pellet Tester) conforming to: ISO BS EN 17831-1:2015	A
	Determination of Fines Content	Documented In-House Method SM 053 (using 3.15mm Sieve) conforming to: BS EN ISO 18846:2016	A



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	<u>Chemical and Physical Tests</u> (cont'd)		
COAL, SOLID BIOFUEL and SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE	Carbonate Content and Calculation of Organic Carbon Content	Documented In-House Method SM 047 (by Titrimetry) conforming to: BS 1377-3:1990	A
COAL, SOLID BIOFUEL and SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE	Ash Fusion Temperature	Documented In-House Method SM017 (using Ash Fusion Furnace) conforming to: ISO 540; ASTM D1857; and BS EN ISO 21404:2020CEN/TS 15404:2010	A, C
COAL, COKE, SOLID BIOFUELS, SOLID RECOVERED FUELS, REFUSE DERIVED FUELS, MUNICIPAL SOLID WASTE	Loss on Ignition at specified temperatures inc 440°C, 550°C, 815°C	Documented In-House Method SM052 based on BS ISO 1171:2010 BS ISO 18122:2015 BS EN 15403:2011 and BS EN 15169:2007	A
TROMMEL FINES	Loss on Ignition at specified temperatures inc 440°C, 550°C, 815°C	Documented In-House Method SM052 in accordance with HMRC document LFT1	A
METALS, ALLOYS AND METAL PRODUCTS			
Chrome Ore, Ferrochromium and Ferrosilicochromium	Chromium	Documented In-House Method LMS 111 (by Titrimetry) conforming to ISO 4140:1979 and ISO 6331:1983	C
Ferrotungsten	Tungsten	Documented in-house method LMS151 (by fused bead X-Ray Fluorescence Spectrometry)	C
Ferromolybdenum	Molybdenum Silicon Copper Phosphorus	Documented in-house method LMS152 (by fused bead X-Ray Fluorescence Spectrometry)	C



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METALS, ALLOYS AND METAL PRODUCTS (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)		
Ferroalloys	Carbon Sulphur	Documented in-house method LMS101 (using combustion-IR analyser)	C
	Oxygen Nitrogen	Documented in-house method LMS102 (using combustion-IR analyser)	C
Manganese Ore	Manganese Iron Silicon Aluminium Phosphorous Titanium Magnesium Calcium	Documented in-house method LMS176 (by fused bead X-Ray Fluorescence Spectrometry) based on ISO 12677	C
Iron Ore	Manganese Iron Silicon Aluminium Phosphorous Titanium Magnesium Calcium	Documented in-house method LMS177 (by fused bead X-Ray Fluorescence Spectrometry) based on ISO 12677 and ISO 9516	C
END			