



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ALS ENVIRONMENTAL
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CHEMICAL

Valid To: February 29, 2020

Certificate Number: 3568.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following types of tests on liquid fuels (waste oil, black liquor, diesel, and other waste organic liquids) and solid fuels (biomass, coal, tire derived fuel, municipal solid waste, sewage sludge, manufacturing wastes, and other alternative fuels):

<u>Test</u>	<u>Test Method(s)</u>	<u>Internal Method</u>
Calculation of Oxygen in Fuels During Ultimate Analysis	ASTM D3176	CHM-ULTIMATE
Carbon and Nitrogen in Sediments and Particulates in Water	EPA 440.0	GEN-POC PC PN Prep
Halogens (Br, Cl, F) by Bomb Combustion and Ion Chromatography	EPA 5050/9056	CHM-IC
Heating Value in Liquid Fuels	ASTM D4809	CHM-BTU
Heating Value in Solid Fuels	ASTM D5865	CHM-BTU
Loss on Ignition of Solid Combustion Residues	ASTM D7348	CHM-TGA
Moisture, Ash, and Organic Matter of Peat and Organic Soils	ASTM D2974	CHM-TGA
Proximate Analysis Using Thermo-Gravimetric Analyzer	ASTM D7582	CHM-TGA
Proximate in Fuels (Moisture, Volatile Matter, and Ash) Using Manual Gravimetric Method	ASTM D3172, D3173, D3174, D3175 modified	CHM-PROXIMATE
Total Carbon, Hydrogen, and Nitrogen in Liquid Fuels	ASTM D5291	CHM-CHN MAC
Total Carbon, Hydrogen, and Nitrogen in Solid Fuels	ASTM D5373	CHM-CHN MAC

<u>Test</u>	<u>Test Method(s)</u>	<u>Internal Method</u>
Total Chlorine in Fuels by O ₂ Combustion Vessel and Ion Specific Electrode	ASTM D4208	CHM-CL_FUELS
Total Mercury (Hg) in Coal and Coal Combustion Residues by Combustion, Amalgamation, and AAS	ASTM D6722	CHM-HG_COMBUST
Total Mercury (Hg) in Solids and Solutions by Combustion, Amalgamation, and AAS	EPA 7473	CHM-HG_COMBUST
Total Sulfur and Carbon in Liquid Fuels by Combustion/IR	ASTM D1552	CHM-CS500
Total Sulfur and Carbon in Ore and Related Material	ASTM E1915	CHM-CS500
Total Sulfur and Carbon in Solid Fuels by Combustion/IR	ASTM D4239	CHM-CS500
Water Content in Organic Liquids by Coulometric Karl Fischer	ASTM E1064	CHM-KF





Accredited Laboratory

A2LA has accredited

ALS ENVIRONMENTAL

Tucson, AZ

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard *ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).



Presented this 6th day of July 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 3568.01
Valid to February 29, 2020

For the tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.