Schedule of Accreditation

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Accredited to ISO/IEC 17025:2017

SGS United Kingdom Limited

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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 Rossmore Business Park Ellesmere Port South Wirral Cheshire CH65 3EN	**Local contact** Paul Dunkerton Tel: +44 (0)151 530 6672	Organics – chemicals, solvents Fuels, oils and lubricants	A
Address SGS House Wellheads Drive Dyce Aberdeen Scotland AB21 7GQ	**Local contact** Dr Derek Bryce Tel: +44 (0)1224 793600	Gases Fuels, oils and lubricants Water	B
Address 859 London Road West Thurrock Essex RM20 3LG	**Local contact** David Mercer Tel: +44 (0)1708 681943	Fuels, oils and lubricants	C
Address Middleplatt Road Immingham North East Lincolnshire DN40 1AH	**Local contact** Ryan Lamplough Tel: +44 (0)1469 557523	Gas Fuels, oils and lubricants	D
Address Aurora Court Barton Road Riverside Park Middlesbrough TS2 1RT	**Local contact** Dr. Jon Clark Tel: +44 (0)1642 549333	Fuels, oils and lubricants Gas Trade Effluents	E

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Chemical and Physical Tests	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	A
		Joint IP/ASTM methods marked with an asterisk (*) Equivalent ISO/IP methods marked with a hash (#)	A
CHEMICALS, ORGANIC	Chemical and Physical Tests		
	Distillation of volatile organic liquids	IP 195*ASTM D1078	A
ORGANIC SOLVENTS	Chemical and Physical Tests		
	Acidity	ASTM D847 by titration	A
	Acid Wash Colour	ASTM D848	A
	Non-volatile Matter	ASTM D1353	A
	Water Content	ASTM E1064 by Coulometric Karl Fisher	A
PETROLEUM and PETROLEUM PRODUCTS	Chemical and Physical Tests	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	A
		Joint IP/ASTM methods marked with an asterisk (*) Equivalent ISO/IP methods marked with a hash (#)	A
	Acid or base number	IP 139*ASTM D974 by Colorimetric Titration #ISO 6618	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS (cont'd)	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	A
		Joint IP/ASTM methods marked with an asterisk (*) Equivalent ISO/IP methods marked with a hash (#)	A
	Acid number	IP 177*ASTM D664 by potentiometric titration	A
	Additive elements in lubricating oil - Ca, Mg, P, S, Zn	ASTM D4951 by ICP-AES	A
	Aniline and mixed point	IP 2*ASTM D611 #ISO 2977	A
	Ash	IP 4*ASTM D482 #ISO 6245	A
	Ash sulphated	IP 163*ASTM D874 #ISO 3987	A
	Asphaltenes (heptane insolubles)	IP 143*ASTM D6560	A
	Bromine number	IP 130*ASTM D1159 #ISO 3839	A
	Base number	IP 276*ASTM D2896 #ISO 3771	A
	Burning characteristics of kerosene char value	IP 10 24-hour method	A
	Carbon, Hydrogen and Nitrogen	ASTM D5291	A
	Carbon residue	IP 398 #ISO 10370	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	A
		Joint IP/ASTM methods marked with an asterisk (*) Equivalent ISO/IP methods marked with a hash (#)	A
	Cetane Index:		
	- calculated	ASTM D976 IP 380*ASTM D4737 #ISO 4264	A
	Cloud point	IP 219 #ISO 3015 ASTM D2500	A
	Cold filter plugging point of distillate fuels	IP 309/99 # EN 116-97	A
	Colour: - ASTM	IP 196*ASTM D1500 #ISO 2049	A
	Corrosiveness to copper	IP 154*ASTM D130 #ISO 2160	A
	Density	IP 365 #ISO 12185 ASTM D4052 by digital density meter	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS (cont'd)	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	A
		Joint IP/ASTM methods marked with an asterisk (*) Equivalent ISO/IP methods marked with a hash (#)	A
	Distillation characteristics at atmospheric pressure	IP 123 #ISO 3405 ASTM D86 ASTM D1160 by reduced pressure	A
	Doctor test	IP 30	A
	Electrical conductivity of aviation and distillate fuels	IP 274*ASTM D2624 #ISO 6297	A
	Flash point	IP 170 / ISO 13736 (Abel) IP 34 / ASTM D93 / ISO 2719 (PMCC)	A
	Flash and Fire point	IP 36 / ASTM D92 / ISO 2592 (COC)	A
	Foaming characteristics of lubricating oil	IP 146*ASTM D892	A
	Freezing point of aviation fuels	IP 16 ASTM D2386	A
	Gum existent in fuels	IP 131*ASTM D381 #ISO 6246	A
	Hydrocarbon types:		A
	aromatic in diesel fuel and distillates	IP 391 # EN ISO 12916	A
	Paraffin, naphthene and aromatic hydrocarbon	ASTM D5443	A
	Mercaptan sulphur content	IP 342*ASTM D3227 #ISO 3012	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS (cont'd)	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	A
		Joint IP/ASTM methods marked with an asterisk (*) Equivalent ISO/IP methods marked with a hash (#)	A
	Metals in lubricating oils:		
	Al, Ag, B, Ba, Ca, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, S, Si, Sn, Ti, V, Zn	ASTM D5185 using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES)	A
	Metals in fuel oils:		
	Al, Ca, Fe, Na, Ni, P, Si, V, Zn	IP 501 by ICP Spectroscopy	A
	Naphthalenes in aviation turbine fuels	ASTM D1840	A
	Nitrogen, trace	IP 379*ASTM D4629	A
	Octane number:		
	Motor	IP 236 #ISO 5163 ASTM D2700 IP 236/17*ASTM D2700-17 #EN ISO 5163:14	A
	Research	IP 237 #ISO 5164, BS 2000: 237 ASTM D2699 IP 237/14*ASTM D2699-012 #EN ISO 5164:14	A
	Organic halogens	IP 510	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS (cont'd)	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	A
		Joint IP/ASTM methods marked with an asterisk (*) Equivalent ISO/IP methods marked with a hash (#)	A
	Oxidation stability:		
	- Gasoline	IP 40*ASTM D525 #ISO 7536	A
	- JFTOT	IP 323*ASTM D3241	A
	Particulate contamination:		
	- Distillate fuels	ASTM D4176	A
	Pour point	IP 15*ASTM D97 #ISO 3016	A
	Quinizarin	IP 298	A
	Sediment	IP 53*ASTM D473 ASTM D4870 by hot filtration	A
	Part 1: Total sediment in residual fuel oils Part 2: Ageing of Residue Fuel Oils	IP 375*ASTM D4870 #ISO 10307-1 IP 390 #ISO 10307-2	
	Smoke point	IP 598 (manual only)* ASTM D1322 #ISO 3014	A
	Specific energy	IP 12 ASTM D240	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS (cont'd)	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	A
		Joint IP/ASTM methods marked with an asterisk (*) Equivalent ISO/IP methods marked with a hash (#) (cont'd)	A
	Sulphur	IP 336 #ISO 8754 ASTM D4294 by XRF ASTM D2622 by WD-XRF	A
	Total acidity of aviation turbine fuel	IP 354*ASTM D3242	A
	Total salts content of crude oil	IP 265 by conductimetric method	A
	Total sulfur	ASTM D5453	A
	Vapour pressure (DVPE)	ASTM D5191 IP 394	A
	Viscosity	IP 71, Section 1* ASTM D445 #ISO 3104	A
	Calculation of viscosity index from kinematic viscosity	IP 226*ASTM D2270 #ISO 2909	A
	Ravenfield	CEC-L-36-A-90 ASTM D4741 Ravenfield HTHS Viscometer	A
	Apparent viscosity at -25, -30 and -35C	ASTM D5293 Cold Crank Simulator	A
	Water content	IP 74*ASTM D95 #ISO 3733	A
	Water separation	ASTM D3948	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS (cont'd)	Chemical and Physical Tests (cont'd)		
Oils	Dielectric breakdown	LM-9 based on BS EN 60156	A
	Flash Point (Pensky Martens Closed Cup)	LM-15 based on ASTM Method D93	A
	Kinematic Viscosity at 50 & 100°C	IP71 part 1 1997 (2017) using U-tube viscometer	A
	Water Content	LM-8 based on ASTM Method D1533	A
	Density – Oscillating U-Tube Method	BS EN ISO 12185:1996, IP 365/97 (2020) using Anton Paar DMA 4100 M Densitometer	A
	Carbon Residue – Micro Method on the 10 % Volume Distillation Residue 0.01 – 0.47 % m/m		
	Polychlorinated biphenyls (Total)	LM-41 and LM-104 using extraction, SPE clean-up and capillary GC-ECD, based on BS EN 61619:1997	A
INORGANIC AND ORGANIC MATRICES	Chemical Tests	Analysis through the appropriate application of documented in-house methods using the flexible scope documents OGC-GEN-1QP-018	A
Oils Greases Lubricants Detergents Surfactants Additives	Oxidative induction time Onset/degradation temperatures Enthalpy Specific heat capacity	CEC-L-85-99 Pressure DSC OGC-EP-PRO-LAB-NR-006 DSC	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
TRANSFORMER OIL	Chemical Tests		A
	Parts per million (ppm) of gas in oil by headspace gas analysis	IEC 60567 (modified)	A
PETROLEUM and PETROLEUM PRODUCTS – Used Oil	Oil Condition Monitoring Tests		
	Pensky Marten flash point	ASTM D93 (modified) using in-house procedure OGC-OCM-PRO-LAB-008	A
	Total acid number	ASTM D664 (modified) using in-house procedure OGC-OCM-PRO-LAB-006	A
	Total base number	ASTM D2896 (modified) using in-house procedure OGC-OCM-PRO-LAB-003	A
	Chlorine	LM-39 using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES)	A
	Oil cleanliness test	LM-44 in-house procedure for the international method BS EN ISO 4406. Particle Counter SBSS	A
	Total Acid Number	LM-7 based on IP Method IP 177	A
	Total Acid Number	LM-6 based on IP Method IP 139	A
	Total Base Number	LM-4 based on IP Method IP 276	A
	Viscosity	LM-3 based on ASTM D7279	A
	Water content (up to 25%)	IP74/2000 (2014) by distillation	A
	Water Content	LM-33 based on ASTM method D6304	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS – Used Oil (cont'd)	<u>Oil Condition Monitoring Tests</u> (cont'd)		
	Wear Metals: Aluminium Barium Boron Cadmium Calcium Chromium Copper Iron Lead Lithium Magnesium Manganese Molybdenum Nickel Phosphorus Potassium Silicon Silver Sodium Sulphur Tin Titanium Vanadium Zinc	LM-5 using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) based on ASTM Method D5185	A
	Metals: Aluminium Calcium Iron Nickel Phosphorus Sodium Silicon Vanadium Zinc	IP501/05 (2019) using ICP	A
Lubricating Oils	High Temperature Foaming Characteristics	ASTM D6082 # IP 543	A
	Nitrogen content	ASTM D5762	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS – Used Oil (cont'd)	Oil Condition Monitoring Tests (cont'd)		
Lubricating Oils (cont'd)	MRV Viscosity and Yield Stress	ASTM D4684 procedure A	A
	Shear Stability	ASTM D7109 and CEC L-14-93	
	Noack Evaporation Loss	ASTM D5800 and CEC L-40-93	
	High Temperature High Shear Viscosity	ASTM D4683 and CEC L-36-90 by Tannas	
	Air Release Value	ASTM D3427 # IP 313	
GASES	Chemical Tests	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	B
Natural Gases	Hydrocarbon Composition: C_1 - C_{11} and Benzene Non-hydrocarbon Gases: H_2, He, Ar, O_2, N_2, CO_2	Documented In-House Method OGC-ABZ-PRO-LAB-050 ASTM D1945 BS EN ISO 6974:1 BS EN ISO 6974:2 BS EN ISO 6974:6 ISO 6975	B
	Calculation of Calorific Values, Density, Relative Density, Molecular Weight, Compressibility Factor and Wobbe index from composition	ISO 6976:2005 (superseded)	B
PETROLEUM and PETROLEUM PRODUCTS	Chemical Tests	Documented In-House Methods (see below)	
Crude Oils and Condensates	Density	IP 365 OGC-ABZ-PRO-LAB-016	B
	Flash Stabilisation, to determine fluid composition	OGC-ABZ-PRO-LAB-014	B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM and PETROLEUM PRODUCTS (cont'd)	Chemical Tests	Documented In-House Methods (see below)	
Crude Oils and Condensates (cont'd)	Total Sulphur Content	IP 336	B
	Water Content	IP 386	B
	Microbiological Tests	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	B
Marine Gasoil	Viable aerobic microbial content of fuels and fuel components boiling below 390° C	IP 385 Filtration and culture method using documented in-house procedure OGC-ABZ-PRO-MICRO-009	B
WATER	Chemical Tests	Documented In-House Methods (see below)	
Trade Effluent (to controlled water)	Alkalinity	API RP OGC-ABZ-PRO-LAB-019 by Titrimetric analysis	B
	Chloride content	OGC-ABZ-PRO-LAB-010 by Potentiometric analysis	B
	Density	OGC-ABZ-PRO-LAB-016 by Digital densitometer	B
	Particle count	OGC-ABZ-PRO-LAB-020 by Microscope - based on SA 598	B
	pH	OGC-ABZ-PRO-LAB-008, Electrometric method	B
	Sulphate content	ISO 10304-1	B
	Total hydrocarbon content	IP 426	B
	Oil in water (hydrocarbon content)	ISO 9377-2 (modified by OSPAR) OGC-ABZ-PRO-LAB-018	B
Potable Water (non regulatory	Chloride content	ISO 10304-1 by Ion Chromatography	B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATER (cont'd)	Chemical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018	
	Suspended Solids	BS EN 872	B
	Microbiological Tests	Documented In-House Methods (see below)	
Drinking Water (non regulatory)	Enumeration of heterotrophic bacteria	OGC-ABZ-PRO-MICRO-020 based on the Microbiology of Drinking Water Part 7	B
	Isolation and enumeration of Coliforms/E.coli	OGC-ABZ-PRO-MICRO-004 based on the Microbiology of Drinking Water Part 4D	B
	Isolation and enumeration of Enterococci	OGC-ABZ-PRO-MICRO-010 based on the Microbiology of Drinking Water Part 5B	B
PETROLEUMS and PETROLEUM PRODUCTS including jet fuel	Chemical and Physical Tests	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018 # IP Equivalent ISO Standard	
	Ash	IP 4 # ISO 6245	C
	Asphaltenes	IP 143 ASTM D6560	C
	Burning Test: 24 hrs (Char value)	IP 10	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018 # IP Equivalent ISO Standard	
	Cetane Index	by calculation, provided that Density and Distillations are known IP 380 ASTM D4737 # ISO 4264	C
	Cetane number of diesel (ULSD)	ASTM D613/03b IP 41/2000	C
	Cloud Point	IP 219 # ISO 3015 ASTM D2500	C
	Cold Filter Plugging Point	IP 309	C
	Colour	ASTM D6045 Lovibond Tintometer	C
	Conductivity, electrical	IP 274 ASTM D2624	C
	Corrosion, Copper	Copper strip tarnish test IP 154 ASTM D130 # ISO 2160:1998	C
	Coumarin content of kerosene	IP 374(B)	C
	Density and relative density	IP 365 (Digital density meter) # ISO 12185 ASTM D4052 (Digital density meter) ASTM D5002 (Digital density meter)	C
	Distillation	IP 123 # ISO 3405 ASTM D86	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018 # IP Equivalent ISO Standard	
	Doctor test	IP 30	C
	Filter blocking tendency	IP 387	C
	Flash point	Abel closed cup IP 170 # ISO 13736 Pensky-Martens closed cup tester IP 34 ASTM D93 # ISO 2719 IP 523 # ISO 3679 Rapid equilibrium closed cup method	C
	Freezing point of aviation fuels Manual Method	IP 16 ASTM D2386	C
	Freezing point of aviation fuels Automatic Laser	IP 529	C
	Gum-existent	IP 131 ASTM D381 # ISO 6246 Jet evaporation	C
	Gum existent – aviation fuel	IP 540	C
	Hydrocarbon types: - olefins, non-aromatic	IP 156 ASTM D1319 # ISO 3837 Fluorescent Indicator Absorption	C
	Jet Fuel Thermal Oxidation Testing (JFTOT)	IP 323 ASTM D3241	C
	Lubricity of diesel (ULSD)	IP 450	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018 # IP Equivalent ISO Standard	
	Mercaptan Sulphur	Potentiometric method IP 342 ASTM D3227 # ISO 3012	C
	Micro Carbon Residue Test (MCRT)	IP 398 #ISO 10370 ASTM D4530	C
	Naphthalene Hydrocarbons	ASTM D1840	C
	Octane number:		
	Motor	IP 236 #ISO 5163 ASTM D2700 IP 236/17*ASTM D2700-17 #EN ISO 5163:14	C
	Research	IP 237 #ISO 5164, BS 2000: 237 ASTM D2699 IP 237/14*ASTM D2699-012 #EN ISO 5164:14	C
	Oxidation Stability of: - Gasoline	Induction Period method IP 40 ASTM D525 # ISO 7536	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018 # IP Equivalent ISO Standard	
	Octane number: (cont'd)		
	Pour point	IP 15 ASTM D97 # ISO 3016	C
	- of crude oils	ASTM D5853	C
	Quinizarin in gas oil	IP 298	C
	Smoke point	IP 57 ASTM D1322 # ISO 3014	C
	Sulphur content	IP 336 # ISO 8754	C
	Sulphur content by Ultraviolet Fluorescence	ASTM D5453 IP 490 # ISO 20846	C
	Total acidity in aviation turbine fuel	IP354 ASTM D3242	C
	Vapour pressure	ASTM D5191 IP 394	C
	Viscosity Index	IP 226 ASTM D2270 # ISO 2909	C
	Viscosity, Kinematic	IP 71/Section 1 ASTM D445 # ISO 3104	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUMS and PETROLEUM PRODUCTS including jet fuel (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018 # IP Equivalent ISO Standard	
	Water content	Distillation using Dean & Stark equipment IP 74 ASTM D95 # ISO 3733	C
	Water in Crude Petroleum	Coulometric using Karl Fischer Titration IP 386 ASTM D4928 # ISO 10337	C
	Water in petroleum products	IP 438 Coulometric Karl Fischer titration method	C
	Water reaction of Aviation Fuels	IP 289 ASTM D1094	C
	Water Separometer Index, Modified (WSIM)	ASTM D3948	C
FAT AND OIL DERIVATIVES - Fatty Acid Methyl Esters (FAME)	Oxidation stability of FAME and blends with diesel fuel	EN 15751	C
	Determination of FAME in middle distillates by IR	EN 14078	C
Crude Oils & Fuel Oils	Sediment in Crude Oils & Fuel Oils by the extraction method	ASTM D 473	D
	Sediment in Crude Oils by Membrane Filtration	ASTM D 4807	D
	Water in Crude Oils by Coulometric Karl Fischer Titration	ASTM D 4928	D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FAT AND OIL DERIVATIVES - Fatty Acid Methyl Esters (FAME) (cont'd)	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedure OGC-GEN-1QP-018 # IP Equivalent ISO Standard	
Crude Oils & Fuel Oils (cont'd)	Density and Relative Density of Crude Oils	ASTM D 5002	D
PETROLEUM AND PETROLEUM PRODUCTS	Chemical and Physical Tests	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018	
	Appearance	ASTM E2680 Visual inspection	E
	Colour (Pt/Co)	ASTM D5386	E
	Density/Specific gravity	IP 365 ASTM D4052	E
	Distillation at atmospheric pressure	ASTM D86	E
	Flash Point	ASTM D93 Pensky Martens Closed Cup (PMCC)	E
	Refractive index	ASTM D1218	E
	Water content	ASTM E203 by Karl Fisher	E
Crude Oil	Sulphur content	ASTM D2622 by WD-XR	E
AROMATIC HYDROCARBONS	Total sulphur	ASTM D7183 by UV Fluorescence	E

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	<u>Chemical and Physical Tests</u> (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018	
BITUMEN	Penetration	IP 49 EN 1426	E
	Softening point	IP 58 EN 1427	E
LPG (Propane, butane, isobutane)	Hydrocarbon composition Ethane Propane Propene iso-Butane n-Butane Trans-2-butene 1-Butene Isobutene Cis-2-butene neo-pentane iso-pentane n-pentane 1-3 Butadiene	IP 405, ISO 7941:1988 Gas Chromatography	E
	Hydrocarbon composition Ethane Propane Propene iso-Butane n-Butane Trans-2-butene 1-Butene Isobutene Cis-2-butene neo-pentane iso-pentane n-pentane 1-3 Butadiene	ASTM D2163 Gas Chromatography	E
Lubricating Oils	Chlorine content	ASTM D6443 by WDXRF	E

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018	
LPG (Propane, butane, isobutane) (cont'd)	Mercury	ASTM D6350 (Modified) Atomic Fluorescence Spectroscopy	E
LIQUID PETROLEUM HYDROCARBONS	Total mercury	UOP 938 Mercury Analyser Atomic Fluorescence	E
	Trace nitrogen	ASTM D4629 Chemiluminescence	E
LIGHT HYDROCARBON, DIESEL, ENGINE OIL, SPARK IGNITION	Cetane Number	ASTM D613	E
	Individual components in spark ignition engine fuels	ASTM D6733 by Gas Chromatography	E
	Motor Octane Number (MON)	ASTM D2700-01 (Historical)	E
	Research Octane Number (RON)	ASTM D2699-01 (Historical)	E
	Total sulphur	ASTM D5453 UV Fluorescence	E
NAPHTHAS	Detailed analysis of petroleum naphthas	ASTM D5134 by Gas Chromatography	E
NATURAL GAS	Composition to C_{10} (as per table 1 of method)	ASTM D1945 Gas Chromatography	E
	Calorific value, density, relative density and Wobbe index from the composition of gaseous fuels	ISO 6976 calculation based on GC data	E
	Mercury	ASTM D6350 Atomic Fluorescence Spectroscopy	E
	Mono-ethylene Glycol (MEG) content	OGC-MID-PRO-LAB-016 Thermal desorption of sampling tubes and Gas Chromatography	E

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
REFINERY GAS	Chemical Tests		
	Composition (as per section 1 of method) Mol % Hydrogen 0.01 to 100.0 Oxygen/Argon 0.01 to 21.0 Nitrogen 0.01 to 78.1 Carbon Monoxide 0.01 to 5.0 Carbon Dioxide 0.01 to 25.0 Dihydrogen Sulphide 0.01 to 1.0 Methane 0.01 to 100.0 Ethane 0.01 to 100.0 Ethene 0.01 to 100.0 Ethyne 0.01 to 1.0 Propane 0.01 to 7.0 Propene 0.01 to 100.0 Propyne 0.01 to 3.0 Propadiene 0.01 to 1.0 Isobutane 0.01 to 6.0 n-Butane 0.01 to 4.0 trans-2-Butene 0.01 to 2.6 1-Butene 0.01 to 2.0 2-Methylpropene 0.01 to 2.0 Cis-2-Butene 0.01 to 2.4 1,3-Butadiene 0.01 to 3.0 Isopentane 0.01 to 1.0 n-Pentane 0.01 to 1.0 C5+ 0.01 to 9.0	BS EN 15984	E
TRADE EFFLUENTS	Chemical Tests	Documented In-House Methods:	
	Ammonia as Nitrogen	OGC-MID-PRO-LAB-009 by Aquakem Discrete Analyser	E
	Chemical Oxygen Demand (COD)	OGC-MID-PRO-LAB-011 by Aquakem Discrete Analyser	E
	Biochemical Oxygen Demand (BOD)	OGC-MID-PRO- LAB-003	E

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
TRADE EFFLUENTS (cont'd)	Chemical Tests (cont'd)	Documented In-House Methods:	
	Metals: Aluminium, Antimony, Arsenic, Barium, Berylium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Thallium, Thorium, Uranium, Vanadium and Zinc	OGC-MID-PRO-LAB-008 by ICP-MS	E
	Volatile Organic Compounds (VOC) Di ethyl ether 1,1-dichloroethene Methyl iodide 1,1,2-trichloroethane Allyl chloride CS2 t-1,2-dichloroethene 1,1-dichloroethane Chloroprene cis-1,2-dichloroethene Bromochloromethane Trichloromethane 2,2-dichloropropane Tetrahydrofuran 1,2-dichloroethane 1,1,1-trichloroethane 1,1-dichloroprop-1-ene CCl4 Benzene Dibromomethane 1,2-dichloropropane Trichloroethylene Bromodichloromethane cis-1,3-dichloropropene trans-1,3-dichloropropene	OGC-MID-PRO-LAB-010 based on USEPA Method 8260c by Headspace GC/MS	E

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
TRADE EFFLUENTS (cont'd)	Chemical Tests (cont'd) Volatile Organic Compounds (VOC) (cont'd) 1,1,2-trichloroethane Toluene 1,3-dichloropropane Dibromochloromethane 1,2-dibromoethane Tetrachloroethylene 1,1,1,2-tetrachloroethane Chlorobenzene Ethyl benzene Meta & Para Xylenes Tribromomethane cis-1,4-dichlorobutene Styrene 1,1,2,2-tetrachloroethane Ortho Xylene trans-1,4-dichlorobutene 1,2,3-trichloropropane iso-propyl benzene Bromobenzene n-Propyl benzene 2-Chlorotoluene 4-Chlorotoluene 1,3,5-Trimethyl benzene Pentachloroethane Tert-butyl benzene 1,2,4-trimethyl benzene Sec-butyl benzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 4-iso-propyltoluene 1,2-Dichlorobenzene Butyl benzene 1,2-Dibromo-3-chloro propane 1,2,4-trichlorobenzene Naphthalene Hexachlorobutadiene 1,2,3-Trichloro benzene	Documented In-House Methods: OGC-MID-PRO-LAB-010 based on USEPA Method 8260c by Headspace GC/MS	E

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS	Chemical Tests		
Ground water and saline water	Determination of Extractable Petroleum Hydrocarbons (EPH) C_{10} to C_{36}	OGC-MID-PRO-LAB-012 Using GC-FID	E
Ground water, trade effluent, land and prepared leachate, surface water and process water	pH	OGC-MID-PRO-LAB-013 based on ASTM D1293	E
	Conductivity	OGC-MID-PRO-LAB-014 based on ASTM D1125	E
Ground water, trade effluent and surface water	Suspended Solids	OGC-MID-PRO-LAB-015 based on BS EN 872:2005	E
BIOFUELS	Chemical Tests	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018	E
Solid biofuels	Total Moisture	BS EN ISO 18134-2 using Gravimetric Determination	E
	Analysis Moisture	BS EN ISO 18134-3 using Gravimetric Determination	E
	Ash	BS EN ISO 18122 using Gravimetric Determination	E
	Carbon, Hydrogen, Nitrogen	BS EN ISO 16948 using Combustion Analyser	E
	Calorific value	BS EN ISO 18125 using Bomb Calorimetry	E
	Sulphur and Chlorine	BS EN ISO 16994 using Ion Chromatography	E
Solid recovered fuels	Total Moisture	BS EN 15414-2 using Gravimetric Determination	E
	Analysis Moisture	BS EN 21660-3 using Gravimetric Determination	E

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BIOFUELS (cont'd)	Chemical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods to be introduced in accordance with documented SGS UK corporate procedure OGC-GEN-1QP-018	
Solid recovered fuels (cont'd)	Ash	BS EN 21656 using Gravimetric Determination	E
	Carbon, Hydrogen, Nitrogen	BS EN 21663 using Combustion Analyser	E
	Calorific value	BS EN ISO 21654 using Bomb Calorimetry	E
	Sulphur, Fluorine, Bromine and Chlorine	BS EN 15408 using Ion Chromatography	E
	Biomass Content	BS EN 21644 using Selective Dissolution Method Determination by Gravimetry Determination by Total Carbon Determination by Calorific Value	E
END			