Services for DECOMMISSIONING

The James Hutton Institute is a respected, globally recognised research organisation. Scientists at the James Hutton Institute follow the inspiration of James Hutton, whose observations on Scotland's rock, soils, agriculture and landscapes forever changed the way we think about the world.

Making an impact through science, James Hutton Limited draws on the scientific expertise, intellectual property, facilities and resources of the James Hutton Institute to offer a comprehensive range of analytical, research and development, crop science and scientific project services.







James Hutton Limited has access to research facilities and analytical equipment at the James Hutton Institute's Aberdeen site that have been used extensively to assist the oil and gas sector throughout all lifecycle phases.

Accreditation

Our analytical laboratories operate to the standards required by UKAS accreditation and many of our routine techniques are accredited. See www.UKAS.com for our full accreditation schedule. Our ability to perform a huge variety of techniques means that while a one-off analysis may not be accredited, a total commitment to high standards ensures it will be carried out to the same exacting specifications as an accredited analysis would.

James Hutton Limited will provide analysis and reports to the specification of the appropriate legislation and regulating body.

People are what set us apart from other analytical laboratories.

The scientists that carry out analyses for James Hutton Limited are dedicated experts in their own techniques, with many years of experience. This provides customers with more detail and interpretation of results than a high throughput laboratory would. A small, close knit team of practiced professionals also means that techniques are often combined to find the most accurate results and there are extensive material libraries and experiences to draw from.



DECOMMISSIONING SERVICES

Scientists at the James Hutton Institute have a long track record of working with the oil and gas sector and James Hutton Limited is a leading provider of chemical and geological analysis to the biggest

Expertise in several disciplines at the James Hutton Institute lends valuable information during decommissioning processes.

Identification of unknown substances

Identification of unknown substances FTIR Spectroscopy is an extremely versatile technique. It excels at tackling 'problem samples', identifying unknowns or confirming identification based on a reference material, to support correct disposal. James Hutton Limited was commissioned by the Scottish Government Challenge Fund to write a report on the need for identifying unknown chemicals during the process of

Analysis of paint residues to ascertain composition

Heavy metal analysis (ICP-MS)

James Hutton Limited has a long established reputation for heavy metal analysis using techniques which can be applied to spoil piles and sediments during the process of decommissioning.

Statistical analysis

Through Biomathematics and Statistics Scotland (BIOSS), James

Monitoring Environmental Impacts







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UKAS Accredited analytical methods, useful for decommissioning

Method Number	Summarised name	Accredited analytes	Instrument type & name
AM002	15N and Total N, and 13C and Total C by CF IRMS	Total C & N 15N and 13C	Biologicals, botanicals, inorganic (incl. dried waters), sediments and soils
AM004	Sm and Nd ID and isotopes by TIMS	Sm & Nd isotopes and concs, province age	Geological, sediments and soils
AM005	Sr isotopes by TIMS	87Sr/86Sr	Geological, soils and sediments, waters and soil extracts
BM002	Estimation of Common Inorganic Anions In Aqueous Solutions By Ion Chromatography	Chloride, nitrate and sulphate	Waters
BM003	Ammonia, O-Phosphate, Alkalinity, Nitrate, Nitrite And Kjeldahl Nitrogen In Aqueous And KCl Extracts	Ammonia, O-Phosphate, Alkalinity, Nitrate, Nitrite And Kjeldahl Nitrogen	Botanical and animal feedstuffs, sediments and soils, waters
BM015	Flexible scope ICP-MS	Depends on mini-validation	Sediments and soils, + everything if done validation
BM019	Total Inorganic And Organic Carbon And Total Nitrogen in waters	Total Inorganic (TIC) And Organic Carbon (TOC) And Total Nitrogen (TN)	Waters and soil extracts
BM022	Mercury using the Merlin Cold Vapour Analyser	Mercury	Waters (processed), soils, sediments and sludge's
CM001	PFAs in biological materials by GLC	Phospholipid fatty acids	Botanical and animal feedstuffs, sediments and soils,
DM001	Total N and C by Elemental analyser	Total N and total C	Botanical and animal feedstuffs, sediments and soils,
DM002	Estimation of Exchangeable Acidity	Exchangeable acidity	Sediments and soils
DM003	Estimation of Phosphorus after NaOH Fusion of Soils	Phosphorus	Sediments and soils
DM004	Estimation of Exchangeable Cations in Soil	Ca, Mg, Na and K	Sediments and soils
DM005	Estimation of Soil Nutrients with 0.43M Acetic Acid	Ca, Mg, K and P	Sediments and soils
DM006	Estimation of pH of Soils in Water and Calcium Chloride Matrices	рН	Sediments and soils, waters
DM007	Moisture and Loss of ignition	Moisture content and loss on ignition	Sediments and soils, biological materials
DM009	Soluble in Aqua Regia Using B7755	Al, Cd, Cr, Cu, Fe, Pb, Mn, Ni and Zn	Sediments and soils
DM011	Particle Size Distribution Using Laser Diffraction	Particle size distribution	Particulate matter, sediments and soils, clay and clay products
DM012	Conductivity in aqueous samples	Conductivity	Waters and soil extracts
EM001	Examination by SEM	Qualitative identification/ composition	Inorganic and organic chemical products. Fibre products, geological, soils, sediments, clays
EM002	Qualitative Elemental Analysis SEM-EDX	Qualitative identification / characterisation	Inorganic and organic chemical products. Fibre products, geological, soils, sediments, clays

UKAS ACCREDITED ANALYTICAL METHODS, USEFUL FOR DECOMMISSIONING

Method Number	Summarised name	Accredited analytes	Instrument type & name
EM002	Qualitative Elemental Analysis SEM-EDX	Qualitative identification / characterisation	Inorganic and organic chemical products. Fibre products, geological, soils, sediments, clays
EM003	Digital X-ray Maps and Line Scans by SEM- EDS	Qualitative X-ray mapping	Geological, soils, sediments, clays
FM001	Inorganic and Organic Compounds by FTIR	Qualitative identification / characterisation	Biologicals, Inorganic and organic chemical products, fibres, plastics, geological, soils, sediments, clays
GM001	Identification by XRD of Clay Minerals	Qualitative identification / characterisation	Inorganic and organic chemical products. geological, soils, sediments, clays
GM002	Quantitative Analysis by XRD of Clay Minerals	Quantitative estimation of mineralogical composition	Geological, soils, sediments, clays
GM003	Identification of Polycrystalline Materials by XRD	Qualitative identification / characterisation	Inorganic and organic chemical products. geological, soils, sediments, clays
GM004	Quantitative Phase Analysis by XRD of Random Powder Samples	Quantitative estimation of mineralogical composition	Inorganic and organic chemical products. geological, soils, sediments, clays
GM005	Semi-Quant Phase Analysis by XRD of Random Powder Samples	Semi-quantitative mineralogical composition	Geological, soils, sediments, clays
GM006	Cation Exchange Capacity using Cobalt Hexamine Trichloride	CEC	Geological, soils, sediments, clays
HM002	n-Alkanes in Soil	n-Alkanes, n-C21, n-C23, n-C25, n-C27, n-C29, n-C31, n-C33, n-C35	Sediments and soils



UNACCREDITED ANALYTICAL METHODS, USEFUL FOR DECOMMISSIONING

Summarised name	Unaccredited analytes	Unaccredited matrix	Instrument type & name
Pesticides by GCMS	Herbicides, Molluscicide, Fungicide and Insecticides.	Water, Soil and Sediment	GC-MS
Phenolic compounds by GC-MS	Phenolic compounds	Water	GC-MS
Organotin by GC- MS	Organotins	Sediment/soil and Water	GC-MS
Phthalates by GCMS	Phthalates	Soil/sediment, animal tissue and serum	GC-MS
Alkalinity titration	OH, HCO3 and CO3	Waters and brines	titration
Phenol in water	Phenol	Waters and produced waters	Discrete Analyser
PAHs by GC-MS	PAHs	Water, Soil/sediment, animal tissue and serum	GC-MS
Selected Pharmaceuticals by GC-MS	Selected pharmaceuticals	Water	GC-MS
PCBs and PBDEs by GCMS	PCBs and PDBEs	Soil and Serum	GC-MS
Advanced Particle Classification by SEM (APC-SEM)	Particle size and quantification	Filter membrane	Zeiss SEM
Total Particle Area (TPA)	Particle size and area	Filter membrane	Zeiss SEM
Optical Microscopy	Mineral characterisation	Rock Thin Section	Leitz Polarizing microscope
Cryogenic SEM/EDS	Qualitative characterisation/composition	Various	Zeiss SEM



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