

# Ochre from mine water gets new lease of life as artists' pigment

The Coal Authority has helped to demonstrate a novel way to use ochre from treated mine water by using the product in fine art paints.

This is one of a number of ways we are looking at recycling ochre that is removed from mine water during [our treatment process](#).

The limited edition line of wall paint and artists' oil paints were made by Onya McCausland, an artist with Slade School of Fine Art at UCL (University College London), when she was studying for her doctorate.

The Coal Authority manages 82 mine water treatment schemes across Britain, handling and treating more than 122 billion litres of mine water every year. The schemes prevent up to 4,000 tonnes of iron solids from entering watercourses. If the water is left untreated, it could pollute and stain the riverbed turning it orange.

Jon Aumonier, the Coal Authority's Innovation Project Manager, said:

Onya's use of ochre from our mine water treatment schemes in this project is just one of the rewards of the hard work and financial commitment made by the Coal Authority in the recovery, process and testing of ochre samples.

We have worked very hard to get the ochre to this point and seeing it turned into pigments is fantastic.

Bohdan Iwanskyj, the Coal Authority's Principal Innovation Manager, added:

Through this project we were able to reuse a byproduct and ensured that our material stream could be used as an input for other processes.

It demonstrates the possibility of utilising ochre for a variety of uses and opens up other opportunities for the Coal Authority.

Onya, pictured above, visited former coal mine sites dotted throughout Britain – from Scotland, Lancashire and Yorkshire to South Wales – where she collected samples of ochre for further study.

It was through her paintings that she discovered striking differences between the pigments depending on their geographic location and she said:

This highlights how mine water treatment schemes are the vital link between the colour, the material and the place.

They reflect an important part of Britain's cultural, social and industrial history and legacy.

Six Bells Red, the first limited edition of the new line of pigments, was launched (online and with a physical presence) on Friday 11 December at the Six Bells mine water treatment scheme in South Wales.

The highlight of the launch was the unveiling of a commemorative plaque by Alun Davies, Member of the Senedd for Blaenau Gwent, to officially recognise the Coal Authority site as the source of the paint.

Six Bells Red contains more than 50 per cent of iron and is a deep reddish hue.

To mark the occasion, 1,000 tubes of artists' oil paint, named Six Bells Burnt Ochre, each with its own serial number, were made available.

In addition, a special limited edition of 100 one-litre tins have been produced and up to 50 tins will be given to people and organisations across Gwent to enable members of the community to participate in a collective multi-part public artwork.

This will involve painting buildings, houses, doors, gates and walls in the area to create a display that visitors can see and engage with.

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## [Victims of crime: letter from the Home Secretary to Mayor of Greater Manchester](#)

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## [Transparency data: CST register of members' interests](#)

The public appointments, personal and business interests, and political activity of members of the Council for Science and Technology.

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## [Detailed guide: Transporting fresh and live seafood or day-old chicks to the EU from 1 January 2021](#)

What to do if your heavy goods vehicle (HGV) is carrying exclusively fresh and live seafood or day-old chicks and there is severe disruption at Dover or Eurotunnel.

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## [Red letter day for Royal Navy in Scotland](#)

The start of construction on a vast building hall for the Royal Navy's next-generation Type 31 frigates and the naming of the fifth Clyde-bound Astute Class submarine Anson marked a red letter day for the Royal Navy in Scotland today, (Friday 11 Dec 2020).

Defence Secretary Ben Wallace welcomed the steel structures being put in place and main work getting underway on Babcock's mammoth Rosyth module hall in a virtual message of support, while the Venerable Martyn Gough QHC, Chaplain of the Fleet and Archdeacon for the Royal Navy, blessed the 7,400 tonne, 97m long nuclear-powered boat in Barrow-in-Furness in Cumbria.

Robertson of Elgin has been awarded a £31.5 million contract by Babcock to build the module hall. This project will maintain 100 jobs, create five new full-time roles and will support a further 100 positions nationally throughout the supply chain.

The company has also committed significant orders to local Scottish suppliers for the assembly hall build. Robertson also recently completed the new strategic facility for the submarine hunting Poseidon maritime patrol aircraft at RAF Lossiemouth.

Anson will eventually join her sister boats HMS Astute, HMS Ambush and HMS Artful, already in service, at HM Naval Base Clyde. Together they will be contributing to operations and supporting the Scots-based Continuous at Sea Deterrent. HMS Audacious, the fourth of class, left Barrow earlier this year and is currently undergoing sea trials. Boats six and seven – Agamemnon and Agincourt – are in construction at the Barrow shipyard by BAE Systems.

Scottish Secretary Alister Jack said:

Defence underpins a wealth of jobs and investment across the entire United Kingdom. Babcock's 'frigate factory' in Rosyth demonstrates the huge footprint of prosperity that UK Government investment in defence brings.

This vast industrial facility will see Scottish shipbuilders build our latest warships that will take pride of place in the Royal Navy fleet.

Defence Secretary Ben Wallace said:

HMS Anson will play a vital role in defending the UK from deep-sea threats posed by adversaries around the world and provide a competitive edge for decades to come.

The name Anson already exemplifies the long and rich history of our Royal Navy and now, thanks to Anson's latest maritime technology, showcases excellence in UK shipbuilding.

Standing at 147 metres long, the new shipbuilding hall, when completed, could comfortably fit three Olympic size swimming pools. Towering at 30 metres high the aptly named 'megadoors' will accommodate the vital crane system, known as Goliath. Once the Type 31 build begins next year, the hall will be able to accommodate two vessels being assembled at the same time side by side.

The start of work follows the substantial £16.5 billion UK Government settlement for defence over the next four years that will modernise the armed forces, reinvigorate the shipbuilding industry and bring jobs and prosperity to every part of the UK.

Type 31 will be the beating heart of the Royal Navy's surface fleet, deterring aggression and supporting the UK's national interests across the world. The programme employs more than 1,250 people across the UK, which will create a legacy of infrastructure, innovation and skills for the shipbuilding sector. Off the back of the programme, Babcock has also jumpstarted a further

150 apprentice roles to set the sector up for success in the next generation.

Advanced nuclear technology means the Astute Class submarines never need to be refuelled. The extremely capable boats can circumnavigate the world without surfacing and are limited only by the amount of food that can be stored and the endurance of the crew. The submarines manufacture their own oxygen and fresh water from the ocean.

The last HMS Anson (1942-1951) was a King George V-class battleship, which saw active service in World War Two. All eight Anson vessels have been named after an Admiral of the Fleet, George Anson (1697-1762), who commanded at the first battle of Cape Finisterre and was First Lord of the Admiralty during the '7 Years War'.