Cleveland UK Mining and Transport

The name Cleveland in North Yorkshire is derived from the Norse Cliffland. It has some of the highest sea cliffs in England at Boulby

There has been mineral mining and quarrying activity in North Yorkshire for centuries. . A bloomery was in existence at Levisham in 550 BC. Peter de Brus gave the canons of Guisborough Priory rights to work iron ore in the early 13th century. Alum was recovered from about 1600 to 1871. There is evidence of early iron manufacture by various monasteries and other religious establishments in the area. There were establishments at Whitby, Mount Grace, Guisborough, Rieveaux and Bylands

Jet was also found in this area and there are still shops in Whitby selling Jet 'jewellery' but using imported material. Lead was mined in the Pennine Dales especially Swaledale and Teesdale also from Roman times. Lead was transported by pack horse. Whinstone was quarried near Great Ayton and was in much demand for road surfacing throughout the UK

Potash is now mined at Boulby in a much deeper pit extending under the sea.

Quarries are opencast operations. MInes are either drifts which enter the ground more or less horizontally and so require no head gear; or pits, which are vertical shafts dug by specialist 'sinkers' and provide access and lift product vertically. Some mines had both sorts of access points. Some mines on the Cleveland Orefield were joined together underground. In particular Eston which had three drifts eventually connected to others under Eston Moor so that stone could be removed much less expensively at Eston which was closest to the Tees and had direct rail access to the Teesside furnaces

At times ironstone was able to be collected on the sea shore in sufficient quantity to make it economic to transport it by sea to the Tyne or later to Whitby for furnaces at Grosmont

There were some 80 ironstone mines and up to 10,000 miners working them on the Cleveland Ironstone Field. Many of them were owned by iron and steel companies on Teesside as well as in Co Durham and further afield. Over 63,000,000 tonnes of stone were extracted from Eston alone. Miners came from all over the UK especially Cornwall and other mining centres

Ironstone mining. The ironstone area may be roughly defined to the north east by the coastline, to the East by the rivers Murk Esk and Esk which entesr the sea at Whitby, to the south by an East West line through Levisham and to the West by a North South line through Middlesbrough

Railways. The activity of the North Eastern Railway and later the LNER was very closely involved with ironstone recovery. In many cases directors of the mining companies were also directors of the various railway companies formed to move ironstone, mainly to the Tees, which eventually became part of the NER. Many of the mines were operated by the iron companies on Teesside. In particular the Rosedale branch railway was built solely to carry ironstone across the North York Moors from both East and West Rosedale to Battersby on the Esk Valley line for onward transport to furnaces on the Tees and elsewhere. Similarly the Scugdale Branch served the drift mines near Swainby and joined the Stockton to Ingleby line near Potto. The stone at Rosedale was calcined to reduce the weight carried by the railway which determined the transport cost. There are still remains of the

calcining furnaces at each side of Rosedale some 100 years after mining ceased. The residue tipped at Rosedale after calcining was found to be valuable and the Rosedale branch remained open for some years after mining ceased to allow the removal of that material It eventually closed in 1929. The Rosedale line included the 1500 metre long incline, at Ingleby, which was rope hauled by gravity ie full wagons pulled up empties or coal trucks. It can still be seen easily against the adjacent heather covered hillside. The wagons used were made from steel as the calcined material was loaded hot from the Rosedale furnaces. The line rose about 220 metres with a maximum rise of 1 in 5. Passengers were carried informally at the discretion of train crews, there were no passenger coaches used. Passengers were supposed to walk the incline. The 6 wheel locomotives used on the line were maintained at the engine shed at Rosedale and were brought down for more major work only at very long intervals. The shed was equipped with shear legs to allow the removal of the centre set of wheels of the locomotives before, or to replace them after, they were moved along the incline

A lot of the iron produced on Teesside was sold in the form of railway lines but perhaps the best known example of steel made on Teesside is the Sydney Harbour bridge. 'Dorman Long MIddlesbrough' is still clearly visible on the rolled steel joists.

Before iron production on Teesside commenced there was a short lived furnace at Grosmont, upstream of Whitby, on the river Esk near Grosmont Railway Station and at the junction of the Eskdale and Pickering branches of what became the North East Railway. Grosmont is now the engineering centre for the North York Moors Railway.

Location of ironstone strata. There are several ironstone seams at various levels which often outcrop in the sea cliffs and in many inland valleys. The main seam of ironstone, some 16 ft thick at Eston, was discovered as an outcrop near Middlesbrough in 1860. The Pecten seam below the main seam is some 4ft thick there and was mined together with the main seam. The other seams, the Two foot, the Avicular and the Dogger were mined also but to a much lesser extent. The ironstone was all above sea level and occasionally a mine could extend to a cliff opening but not one used for product removal! Such openings were however used occasionally for spoil discharge

The first (drift) mine of the more modern era was started at Skinningrove in 1846 and that is now the site of the Cleveland Ironstone Mining Museum. Stone was taken from this mine to a new iron works on the cliff top on the opposite side of the valley. Initially that was by a zigzag railway but when the railway company put up its rates stone was taken on a new low level bridge across the valley into a drift and then up to the works in a vertical shaft. The works at Skinningrove are still in use but not for the production of molten steel, special sections are rolled there.

Stone was gained throughout the area by quarrying, by drift mining and by sinking pits. When the ironstone was exposed stone was released by first making a 3 or 4 ft deep hole using hand tools in which powder was then packed using clay or other soft materials available in the mine - horses were used to move the tubs of stone and left soft materials around. Miners had to buy their own powder and made their own ‘squibs’ or explosive cord. Squibs were inserted into the powder and lit to cause the blast. The removal process used is known as Bord - the part removed initially - and Pillar. left to support the roof. When the time comes to remove the pillars a JUDD is formed and the roof is allowed to fall. If the stone had a low iron content the pillars were not always removed.

The blasting process is graphically demonstrated during a tour of the Cleveland Ironstone Mining Museum. Candles were used for illumination. Deputies were responsible for mine safety and inserted supports as the stone was removed. Operation in later years used various mechanical drilling operations powered by water, by air or by electricity. By that time 'shot firers' were responsible for placing the powder and firing it.

There was a string of pits along the coast and another along the rivers Esk and Murk Esk. The majority however were within 5 miles or 8 km of Guisborough

Some 83 places are listed in the Gazetteer of Cleveland Ironstone Mining published by Peter Tuffs of Industrial Archaeology of Cleveland, who has also published lists of people involved in the industry. His various 'name' publications include a DVD

All ironstone mining has now ceased in Cleveland. The last mine to close was at North Skelton in 1964; the deepest at 720 ft. That site is now used by an engineering company which includes amongst the services it provides a maintenance service for only mining activity still active in Cleveland at Boulby where Potash is recovered in a much deeper mine and transported on a reinstalled railway to Middlesbrough. The North Skelton pit is still a useful waste dump for its present owners.

The rail line along the coast from Middlesbrough to Whitby and on to Scarborough was open until the Beeching era and was truncated then to serve only the steelworks at Skinningrove. The existing track from Middlesbrough to Skinningrove via Saltburn is now used to provide a rail link to Boulby. A new bridge was required over Skinningrove beck to allow potash wagon trains to reach the Boulby mine via the reused trackbed towards Whitby. Passenger services have not been resumed. Saltburn-by-the-Sea has a Victorian Festival each year and there have been private passenger workings to Boulby at times during those periods.

By 1860 the Stockton and Darlington Railway, built to allow coal to be moved avoiding the Tyne, had been extended towards deeper water on the Tees near Middlesbrough farm. That site was initially called Port Darlington and the railway extension to Middlesbrough avoided the meandering part of the river below Stockton on Tees which had made the river part of the journey by ship to London half of the travelling time. Ships could reach what became the town of Middlesbrough on one tide rather than three or four tides. This produced a situation where it was beneficial to produce iron and later steel, mainly along the south bank of the river Tees.

The only remaining blast furnace on Teesside is the 10,000 tonnes per day blast furnace at Lackenby near Redcar. It was closed in 2010 but is to be brought back into operation later in 2011.

There was at one time, long before the present town began, a Monks Cell at Middlesbrough where the Tees could be forded. It was at about the middle of the journey from Whitby Abbey to Durham Cathedral.

Record Offices. The area records are to be found at Teesside Archives in Middlesbrough, at the North Yorkshire County Record Office in Northallerton, in the Cleveland Ironstone Mining Museum at Skinningrove and to some extent in the Darlington Railway Museum which holds the Ken Hoole collection of railway data for Cleveland. Peter Tuffs a local author, publisher and printer has overseen the production of several publications listing people involved in the Cleveland Ironstone

Industry, with accompanying CD in some cases, as well as histories of several of the more well known mines individually

References, Repositories and other useful data

Cleveland Ironstone Mining by John S Owen published by C Book, Redcar, 1986

Gazetteer of Cleveland Ironstone Mining by S K Chapman
published by Langbaurgh Museum Service 1975
later reedited, reprinted and published by Peter Tuffs in 2003 *peter.tuffs@ntlworld.com*

Cleveland Ironstone Mining Museum, Skinningrove www.ironstonemuseum.co.uk

Teesside Archives, Middlesbrough

- particularly 'The Howe Collection'
http://www.middlesbrough.gov.uk/ccm/navigation/leisure-and-culture/local-history-and-heritage

National Union of Ore Miners, Coke Workers and Kindred Trades

Cleveland Mine Owners and Quarrymen's Association

North Yorkshire County Record Office, Northallerton www.northyorks.gov.uk

Cleveland Industrial Heritage Magazine edited by Peter Tuffs

The Story of Eston Maurice E Wilson Published by the Author Printed by Southeran's of Redcar

'A Century of Stone' - a film by Craig Hornby, available on DVD

OS Outdoor Leisure Map No 26 North York Moors Western Area

OS Outdoor Leisure Map No 27 North York Moors Eastern Area

Along the Scar – A guide to the Mining Geology and Industrial Archaeology of the North Yorkshire Coast Author: Denis Goldring; Published by Peter Tuffs, 2001

A series of publications by Peter Tuffs, Editor of the ***Cleveland Industrial History Magazine*** lists many people mentioned in various records

Cleveland from the Air by Richard Crosthwaite ISBN 0 95 10232 2 5
Published by the Tees Towing Company