EXTRACT FROM ENGLISH HERITAGE'S RECORD OF SCHEDULED MONUMENTS

MONUMENT: Lead mines and smeltmills at Moulds Side west of Langthwaite

PARISH: ARKENGARTHDALE

DISTRICT: RICHMONDSHIRE

COUNTY: NORTH YORKSHIRE

NATIONAL MONUMENT NO: 28902

NATIONAL GRID REFERENCE(S): NY98650292
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DESCRIPTION OF THE MONUMENT

The monument lies within Arkengarthdale and occupies an extensive area at Moulds Side near Langthwaite. It includes three areas. Lead mining remains form the principal industrial feature within the Dale though chert and coal were exploited at a later date.
The monument includes examples of 17th to early 19th century lead mining hushes including Stodart Hush, 40m wide with 40m high cliffs on either side, and Hungry Hushes. From 1181/2 anyone who paid a royalty to the Crown could search for lead in the wastes and the earliest reference to lead mining in the Dale is recorded in an Inquisition Post Mortem of 1285. Until 1628 the area had been part of the Lordship of Middleham. The sale of Crown land by Charles I led to the granting of the manor to the Citizens of London. These rights were in turn sold to the Bathurst family in the later 17th century.
Joseph Harker is the earliest recorded hush operator who worked from 1782 to 1785 when he was joined by Joseph Stodart, with Stodart and Edmund Anderson working jointly from 1789. In the latter year Stodart applied for permission from the mineral Lords to begin Stodart Hush.
Tips of spoil and manual ore dressing waste, representing the earliest phase of processing, lie beside many of the hushes. The hushes also contain numerous ancilliary features including miners' huts and bridges. Dams, with earthen banks and well built internal drystone revetments, together with feeder leats to supply water for hushing, are numerous with fine examples visible at Sun and Moralees Dams. The association of shaft-based mining features is particularly striking with prominent shaft mounds, up to 4m high by 30m diameter, leading westward from Stodart, Adam Bird's and Turf Moor Hushes where they form distinctive rakes following the line of the vein. The areas between the shaft mounds are linked by extensive areas of spoil and dressing waste. Adits are also numerous and formed the principal mining technique of the later mines. A good example of a small adit-based nucleated mine is situated in the north west part of the site at Danby Lead Level. The scheduling includes the major part of the surface workings on Moulds Side as well as the Danby Lead Level site and the Turf Moor Hush. The remains of ore dressing floors, to the north and south of the core area, are poorly preserved due to extensive later reworking and are therefore not included in the scheduling.
Early smelting occurred in bales (primative wind blown hearths) on Moulds

Side, however the earliest recorded smelting of ore at Moulds Side took place at the Lords smelt mill near Fore Gill Gate 1.5km to the SSE. This was built about 1740 and included a stamp mill, ore and slag hearths and a peat store. As output rose a new mill was built near the head of Turf Moor Hush and included dams, stamp mill, stores, smithy and ore hearths. The remains at these sites survive in poor condition and they are not included in the scheduling. The monument does include the later Octagon and CB ore hearth smeltmills situated in the north west part of the site. Built in 1803, Octagon mill (so named because of its unique shape in plan) measured 32.61m by 21.34m internally and was built on a terrace cut into the hillslope. It employed six ore hearths with a 10.97m diameter overshot waterwheel providing power for the blowing apparatus. Fumes from the smeltmill were carried 700m along a 10m wide double arched flue to a chimney on Moulds Side. The chimney now stands to its base height and most of the flue arches have collapsed, though access tunnels located along its length, used to clean and maintain the flues, do survive. A well preserved section of the flue survives beneath the modern road to the south. The working life of the mill was shortlived. Despite demolition of the main structure of the mill, stratigraphy containing important process residues will survive. An original roofed building survives to the south of the mill. The building is currently in use and is not included within the scheduling, though the ground beneath is included.

In 1822 a new mill was built close by following a property dispute over the Octagon mill. The New or CB (Charles Bathurst) Smelt Mill employed six ore hearths and used a 160m double arched flue to connect with the Octagon flue and chimney on Moulds Side. The mill buildings were surviving largely intact until the late 1940s, though today only the north wall, standing approximately 4m high, survives to any great height. The presence of extensive wall tumble, however, suggests that internal features and archaeological deposits will remain. The new mill site also includes the remains of the wheelpit and condenser, as well as an area of slag tip situated 20m to the east. Sometime after 1854 a new higher chimney was built on Moulds Side giving a total flue length of 1.47km. The flue also connected with the old chimney via a 136m detour. The Octagon and CB smeltmills and the entire flue and chimney system, including access tunnels, are included within the scheduling.

The core area of mining remains also includes the remains of extensive chert mining activities dating from 1922 to the early 1950s, particularly in the vicinity of Underedge Level. This area includes the remains of ruined buildings, including a smithy with intact hearth, revetted adit entrances and numerous wall stubs exposed beneath spoil tips, indicating that archaeological deposits will survive here. The lead mining features in this area are difficult to distinguish from the later chert mining and the reuse of earlier lead related features is highly likely. The chert mining remains, including the double-acting incline to the north of Underedge Level, are included within the scheduling.

A number of features are excluded from the scheduling; these are all boundary walls, modern fences, telegraph/electricity poles and road surfaces; the ground beneath all these features is included.

ASSESSMENT OF IMPORTANCE

Approximately 10,000 lead industry sites are estimated to survive in England, spanning nearly three millennia of mining history from the later Bronze Age (c.1000 BC) until the present day, though before the Roman period it is likely to have been on a small scale. Two hundred and fifty one lead industry sites, representing approximately 2.5% of the estimated national archaeological resource for the industry, have been identified as being of national importance. This selection of nationally important monuments, compiled and assessed through a comprehensive survey of the lead industry, is designed to represent the industry's chronological depth, technological breadth and

regional diversity.
A hush is a gully or ravine excavated at least in part by use of a controlled torrent of water, to reveal or exploit a vein of lead or other mineral ore. Dams and leats to supply the water are normally associated, and some examples show tips of waste from manual ore processing beside the hush itself. Shaft and adit mineworkings sometimes occur in spatial association, though their working will not have been contemporary with that of the hush. There is documentary evidence for hushing from the Roman period on the continent, and from the 16th century in England; however a high proportion of surviving hushes are believed to be of 17th to 18th century date, the technique dying out by the mid 19th century.
Hushes are a dramatic and very visible component of the lead mining industry. They are common in the Pennines from Yorkshire northwards, and in parts of Wales, but are rare in other lead mining areas. A sample of the better preserved isolated examples and those which form part of more extensive lead mining complexes, will merit protection.

The lead mining remains at Moulds Side includes a rich multi-period mining landscape with excellent examples of hush, opencut, shaft and adit based mining features with a wide range of components. It also includes the remains of two early 19th century ore hearth smeltmills and an extensive flue system.
The monument includes a number of hushes including Stodart Hush, considered to be one of the finest examples in the North Pennines. The hushes are thought to be largely 17th and 18th century in date and are supported by a complex water management system which includes extensive leats and well built dams. Prominent shaft mounds form impressive rakes on and around Moulds Side with excellent examples following the line of veins from the upslope end of the hushes. The Turf Moor Hush is a good example of this. The horizontal stratigraphic relationship of hushes and rakes clearly demonstrates the relationship between the location of the shafts and hushes and the deposits of mineralisation.
In common with most developed lead mines of the 18th and 19th centuries, mining at Moulds Side became increasingly based on long adits driven for deep drainage and access. The Danby Lead Level, situated to the north west of Moulds Side, is a good example of these characteristic adit mines.
Ore hearth smelt mills were introduced in the 16th century and continued to develop until the late 19th century. They were the normal type of lead smelter until the 18th century, when they were partly replaced by the reverberatory smeltmill. The ore hearth itself consisted of a low open hearth, in which lead ore was mixed with fuel. An air blast was supplied by bellows, normally operated by a waterwheel; more sophisticated arrangements were used at some 19th century sites. Early sites were typically small and simple buildings with one or two hearths, whereas late 18th and 19th century smeltmills were often large complexes containing several ore and slag hearths, furnaces, and somtimes complex flues, condensers and chimneys for recovering lead from the fumes given off by the various hearths and furnaces.
Built in 1803 and worked until 1822, Octagon mill will retain buried archaeological deposits providing a `unique opportunity to study the development of ore hearth technology at the beginning of the 19th century'. In addition, the mill area contains the only intact section of the extensive double arched flue system and an undisturbed slag tip.
The remains of the nearby CB smeltmill, condenser and flue, will include important undisturbed stratigraphic deposits.

MONUMENT INCLUDED IN THE SCHEDULE ON 08th December 1997