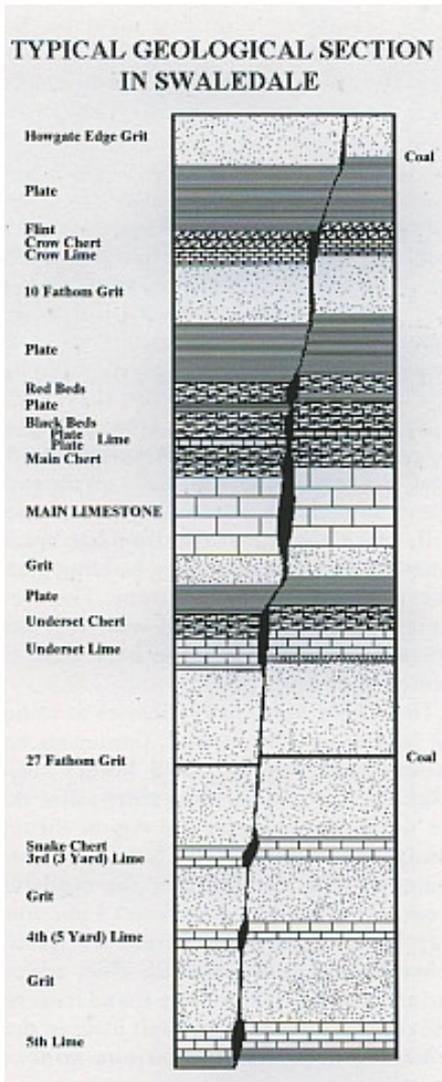


# Mould Side: Lead, Chert and Grit – a circular walk

About 3.8 miles / 6.1 km or 3-4 hours when you stop and look at the landscape.

Good walking boots and appropriate clothing is essential.

There are several short sections usually no more than 20 metres in length, which are steep climbs or descents of grassy banks. You can usually zig-zag up these. Walking down Stoddart's Hush requires walking of rocks but this isn't very difficult other than choosing your path over the rocks. Stoddart's Hush, by far the most spectacular hush to visit, is one of those 'off the beaten track' places which is well worth the effort of getting there.



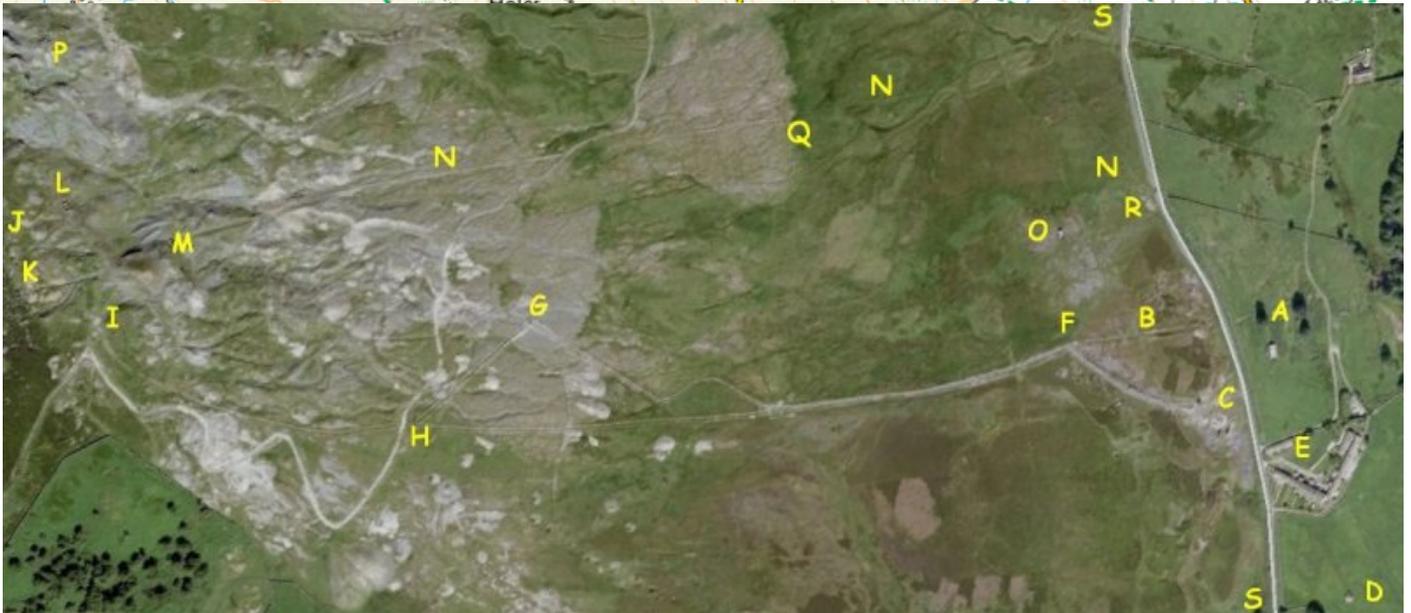
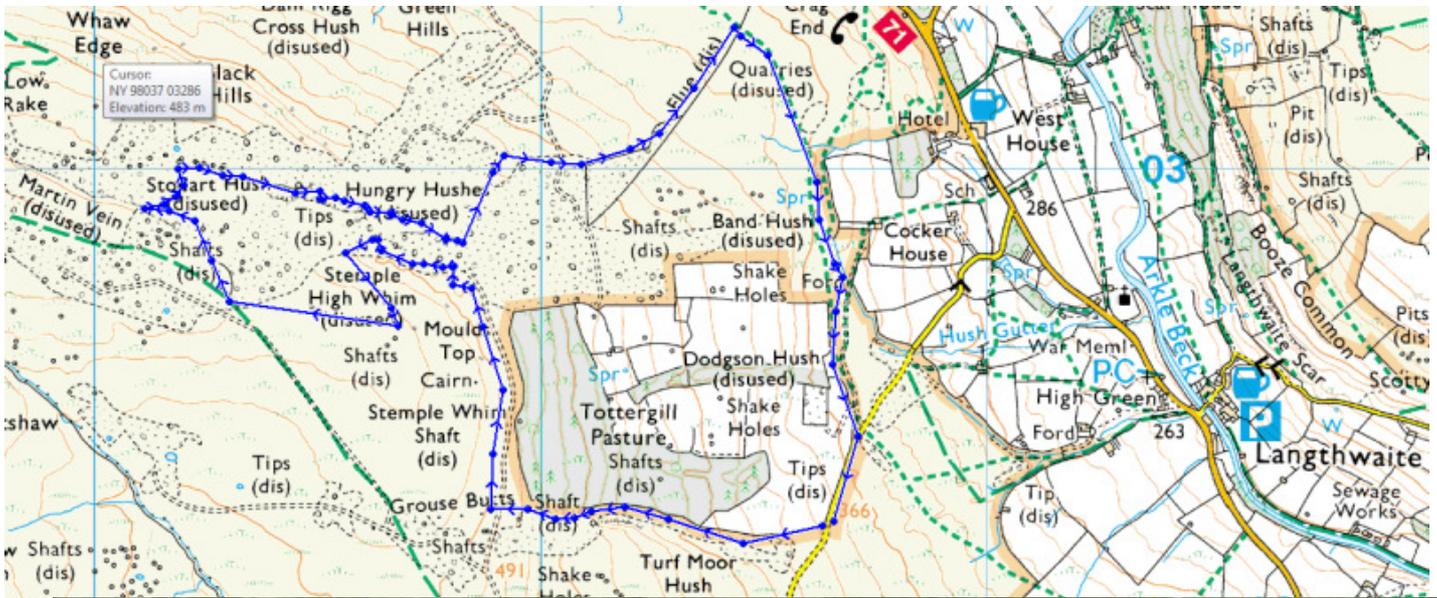
I have placed all the photographs at the end of this document, so that you can just print the front 5 text pages of the guide to take with you.

**Location:** From Reeth turn by The Buck Hotel to go up Arkengarthdale. Between the village of Lanthwaite and the CB Inn turn left towards Low Row (sign post = Low Row). The lane climbs up hill passing some large lead mining spoil heaps. Just passed the last spoil heap the lane continues to climb, but after approximately 200m it passes over a flat bridge with stone side-walls, located at the bottom of Turf Moor Hush. Park either side of this bridge on the grass verge. There is plenty of room for many cars.

**Route:** Using your GPS follow the route up Turf Moor Hush. The first 20 minutes is all up hill. About 75-80% of the hill climbing is done whilst you are fresh. The main features identified by their GPS waypoint numbers are identified below:

**The geological section diagram:** will be referred to when highlighting the industrial archaeology that you will be passing. The *Mould Side: Lead, Chert and Grit – a circular walk* will show you how busy this area (Mould Side) was particularly from the 1600's to 1900.

When you look across the dale to Fremington Edge the exposed limestone at the top of the edge is the Main Limestone. At the top of Turf Moor Hush the limestone outcrop there is the Main Lime too. Lead ore is mainly found in mineralised faults in limestone strata. Note the different limestone strata: Main, Underset, 3<sup>rd</sup> or 3 yard, 4<sup>th</sup> or 5 yard and finally the 5<sup>th</sup> Lime. ( fathom = 6 feet or 1.83m)



Mouldside features referred below:

- A. Site of Octagonal Smelt Mill
- B. Octagonal Smelt Mill flue which ran from A under the Tan Hill Road S, to chimney G.
- C. New or CB Smelt Mill. The flue went from C > F > H > I > J > then on to Mould Top. From F to where the flues part, was a double flue.
- D. Powder House. Black powder store and later when dynamite became available it use used to store candles and other goods.
- E. CB Yard. Houses, workshops and offices.
- F. Start of double flue
- G. Chimney
- H. Section G-H connected the Octagonal Smelt Mill flue to the Mould Top chimney.
- I. Location where the flue passed under the gravel track
- J. Location of flue as it goes up the slope to Mould Top
- K. Section of the flue that was destroyed by later Chert Quarrying
- L. Blacksmith Shop built by the lead mining company and later used by the Chert Quarrying company.
- M. Cable Braking house controlling the top half of the Chert Tramway
- N. Chert Tramway down to the cattle grid R on the Tan Hill road S. Chert was then loaded onto lorries and taken to Richmond station and then by train to the Potteries.
- O. Dynamite Shed
- P. Hungry Hush
- Q. Location of petrol engine powered winch that controlled the tram wagon down to R
- R. Loading Platform by Cattle Grid which once had a small tripod type crane to load the Chert blocks from the tram wagon to lorry.
- S. Langthwaith to Tan Hill Road. Top of image is towards Tan Hill.

Waypoint	Description
Tm1	Start at car parking area. Walk up Turf Moor Hush with the dry stone wall on your right.
Tm2	You can decide to either walk up the hush or walk above the hush beside the wall. Either way after a 100 metres or so you will see a depression filled with scrap metal and just a few metres further the entrance to Turf Moor Level. This level allowed access to the Underset limestone, whereas the ore extraction in the hush above extracted lead from the Main Limestone. If you have walked up the hush to view the entrance to the level, now double back a few metres and climb out of the hush along a narrow sheep track.
Tm5	Stop and look back down Turf Moor Hush. Generally 'Hushing' is described as the quick release of water from a dam, to scour the surface soils and expose the underlying rocks. It is not known for sure how the hushes on Mouldside were formed. There seems to be insufficient water available above the hushes for this technique, although as you will see dams were constructed. It is likely the hushes were constructed by opencast mining, and the water that was dammed and channelled was used in the hotching-tubs and buddles to separate the lead ore from the gang rock.
Tm9	This is the end of the main climb. Follow the track above the woodland and onto Mould Side. You will see some evidence of mining in the woodland, and if you are lucky a Roe Deer as featured on the webpage.
Tm13	Note the curving collapsed flue on the right side of the track. This flue has come all the way up Mould Side from the Langthwaite – Tan Hill road. The flue passed ? under the track and can be seen on the other side. Walk off the track following the flue until waypoint Tm14
Tm14	The flue originally continued in the same direction until it reached the hillside, then continued up and over onto the Mould Top. You now can clearly see 2 other 'channels' crossing at right angles. There is a third just out of sight nearer to the hillside. These were entrances to the Chert quarrying levels. The levels have since collapsed. Now turn 90 degrees to the right and walk to Tm15.
Tm15	From Tm14 to Tm15 you are following an upper tramway taking the chert from the quarry to the chert dressing floor. The tramway went straight across the track along the top of the revetted wall to the right of a small now roofless building, the Cable Braking House (M). (See Tm 48 to Tm50 later in the walk). See Tm49 later.
Tm17	Blacksmiths shop. See if you can spot the miners graffiti inside the shop. Take a look out of the windows and follow the path of the tramway and the flues down Mould Side.
Tm19 – Tm22	Now for 2 more short climbs first to Tm20 when you can see Hungry Hush curving around your vantage point. Then go to Tm21 and then make your own way down and up a little valley until you are on Mould Top at Tm22.
Tm23	Now walk directly to Tm24. About half way to Tm24 you will cross the upper section of the New Mill Flue. You have seen 2 industries: lead mining and chert quarrying. Tm 23 is an example of a third industry. You are looking for a large stone that is slightly propped up on another. When you find it it will become obvious to you what the third industry is. You are well above the Main Limestone so the geological section will give you a confirmatory clue.
Tm24	Look for a larger stone still that will give you an idea of the date when workers were up here. It is a good place to sit and have your lunch!
Tm25	Walk directly from Tm 24 to Tm25 and just over halfway there you will see the ghost shape of the Mould Top Flue chimney. Just consider the amount of work involved in building this flue and chimney all the way from the New Smelt Mill C. When you get to Tm25 climb to the top of the shaft mound. <b>IMPORTANT: When climbing shafts never walk into the centre hollows. You never know how much earth is covering a potential long drop to the shaft bottom!!</b> This is Sun shaft. As you can see from all the shafts in the area, there is a lot of lead bearing veins criss-crossing Mould Top. Look towards Tm26.
Tm26	Between Tm25 and Tm26 is the Sun dam. You can walk along it to Tm26 as you proceed towards Tm32 you may notice some other less obvious small dams on your right.
Tm29	Go to the edge and have a look into Adam Bird's Hush. An alternative route to Tm33 is to

	walk along the bottom Of Adam Bird's Hush until you come to the top of Dan Rigg Cross Hush on your right. Turn down Dan Rigg until come to a 3 way junction. Again turn right slightly back on yourself towards Tm33 at the top of Stoddart's Hush.
Tm33	Entrance to Stoddart's Hush and walk its length to Tm38. Take your time down Stoddart's Hush.
Tm38	Don't be tempted to follow the easy route at the bottom of Stoodart's Hush but climb the right hand side steep grassy bank to Tm39.
Tm44	You now are in Hungry Hush (Called Hungry because of the poor grazing).
Chert Information	<p>You may be wondering what Chert is and what was it used for. <a href="#">Wikipedia</a> describes it as: Chert is a fine-grained silica-rich microcrystalline, cryptocrystalline or microfibrinous sedimentary rock that may contain small fossils. It varies greatly in color (from white to black), but most often manifests as gray, brown, grayish brown and light green to rusty red; its color is an expression of trace elements present in the rock, and both red and green are most often related to traces of iron (in its oxidized and reduced forms respectively). In petrology the term "chert" is used to refer generally to all rocks composed primarily of microcrystalline, cryptocrystalline and microfibrinous quartz.</p> <p>Strictly speaking, the term "flint" is reserved for varieties of 'chert' which occurs as nodules in chalk formations. Whereas Chert is found in Limestone strata. Limestone is formed from multi-cellular and relatively complex organisms containing calcium carbonate mainly as an exo-skeleton, whereas chalk is formed from the deposits of relatively primitive and in the main single celled organisms that have extracted calcium carbonate from the ocean.</p> <p>Among non-geologists (in particular among archaeologists), the distinction between "flint" and "chert" is often one of quality - chert being lower quality than flint. Chert like flint is very hard and chemically similar. In the Pennines there is no flint, so in prehistoric times flint used in the manufacture of arrow heads, flint knives and scrapers had to be imported. The nearest source to Swaledale being in East Yorkshire. Local chert was also used, as it could be worked in a similar manner. The Swaledale Museum in Reeth has examples of local chert arrow heads. The modern use of chert was in the manufacture of fine porcelain, where flint was used as a 'clay' material. Flint was ground to a very fine powder slurry using chert stones. The advantage being that the chert which was worn from these stones during the grinding process, was chemically similar, so its presence did not affect the quality of the finished products.</p>
Tm45 + Tm46	There is some evidence that chert was quarried from the bottom of Hungry Hush.
Tm48	At this waypoint you will see a line of 'kerb' stones. If you look up the line of stones you will see you are below the blacksmith's shop at Tm17. If you turn around to look downhill, you will see a cutting in the hillside. The 'kerb' stones may have been the original loading platform for quarried chert blocks. Loading them onto the tramway taking them down the cutting to the Tan Hill Road, where there is a similar loading platform where the chert was transferred to lorries. The lorries took the chert to Richmond station, where it went by rail to the Potteries.
Tm49 Tm50	<p>This waypoint shows the main loading platform. Under the kerbed edge of the platform there was a short section of railway line that lead to the 'U' shaped building, the Cable Braking House (M) (located at Tm50). A wooden 'tripod' type crane loaded the chert blocks onto trams from the 'dressing' area behind the platform.</p> <p>The loaded trams were pushed to the Cable Braking House. The trams were turned through 90 degrees on a little turn-table in front of this building. A cable was then attached and the tram pushed on to the slope. The weight of the loaded tram pulled an empty tram up to the top of the incline, and the cable brake mechanism controlling the speed. It was a 2 stage process getting the tram to the Tan Hill Road.</p> <p>This first stage took the tram about 2/3 of the way to the road. About 1/3 of the way from the top there must have been a small section of double line where the two trams crossed. When the empty tram coming up the hill reached the top, the loaded tram simultaneously reached a small shed (Q), which housed a petrol engine. Here it was attached to a second cable that controlled its descent to the roadside loading platform below, and the empty tram hauled back up by the engine.</p>

	If you look up the above the Cable Braking House, you can see a series of stone pillars mentioned in Tm15 above. Initially I thought that a track laid on the top of the pillars took the chert from the levels to the dressing floor beside the Cable Braking House (M). However a photograph taken in 1946 shows no sign of a track on these pillars, but does show the trams on the line from the Cable Braking House. I think the original idea was to take the trams from above all the way down to the the shed (Q).
Tm50 to Tm52	Walking down the tramway you will first notice the original path of the tramway from the platform at Tm48 coming to meet the tramway you are walking on. Just after this and just before Tm51, you can see evidence of a wider area where the tramway was a double line allowing the trams to pass one another.
Tm52	Leave the tramway and turn right to Tm54
Tm54	This is the site of the Low Chimney from the Octagonal Smelt Mill. You will see 2 flues. The flue running downhill eventually become a double flue as it meets the New Smelt Mill flue. The flue at about 110 degrees to this, running uphill, connects with the New Smelt Mill Chimney. <b>Before you leave Tm54 read Tm56.</b>
Tm56	Instead of walking directly to Tm56 walk uphill along the second flue. After a few metres you should notice just to the right of the flue a small access point into the flue. Looking up the flue you should see 3 impressive spoil heaps in the distance from Justice level. Continue up until it meets the New Smelt Mill flue. Here you will see the only surviving intact flue and the quality stonework where the two flues meet. Now walk down the New Smelt Mill flue to Tm 56. Before you get there you will see the spoil heaps from Underedge level on your left.
Tm56 - Tm57	The 2 flues become a double flue.
Tm58	Go over the style beside the gate. Before continuing to Tm59 and beyond to Tm66, walk downhill beside the fence you have just crossed. Just around the kink in the fence is where the double flue separates to the original Octagonal and the later New Smelt Mills. If you follow the right-hand flue to the brow of the hill you can see the ruins of the New Smelt Mill. Consider the distance from here to the High chimney beyond Tm24. Retrace you steps to the style and continue to Tm66.
Tm66	This is Moulds Level portal. The large area opposite being Moulds Dressing Floor where ore was prepared for smelting.
Tm67 – Tm68	The last uphill section back to your car.

Photos on next 5 pages

Waypoint	Photographs
<p data-bbox="300 203 363 237">Tm1</p> <p data-bbox="252 277 411 311">Car Parking</p> <p data-bbox="108 349 555 383">Track up Turf Moor in foreground</p> <p data-bbox="86 423 577 568">If you drive up the road to the right of the image you get to the water splash that was featured in many episodes of 'All Creatures great and Small'.</p>	
<p data-bbox="300 808 363 842">Tm2</p> <p data-bbox="121 882 542 949">Turf Moor Level Entrance at the bottom of Turf Moor Hush.</p>	
<p data-bbox="300 1415 363 1449">Tm5</p> <p data-bbox="79 1489 587 1630">View down Turf Moor Hush showing remnants of the Main Limestone on the right, with Fremington Edge in the distance.</p>	

Tm9

At the top of Turf Moor Hush on the gravel track. Track is just above the second gun-butt.



Tm9

Gravel Track that cuts across the top of Tottergill Pasture and on to Mouldside.

Although not covered on this walk, walking in the opposite direction leads to a fork in the track. The right hand up hill track leads to the site of the High Smelt Mill, whereas the left hand fork eventually leads back down to the Low Row road just before Foregill Gate, which stands above the 'James Herriot' water splash. By the water splash was the Low Smelt Mill. There is little evidence of either smelt mill now. Just below Foregill Gate is Foregill Level which eventually connected to Turf Moor Level to provide better ventilation underground.



Miner's Graffiti on the hillside above  
Tm12



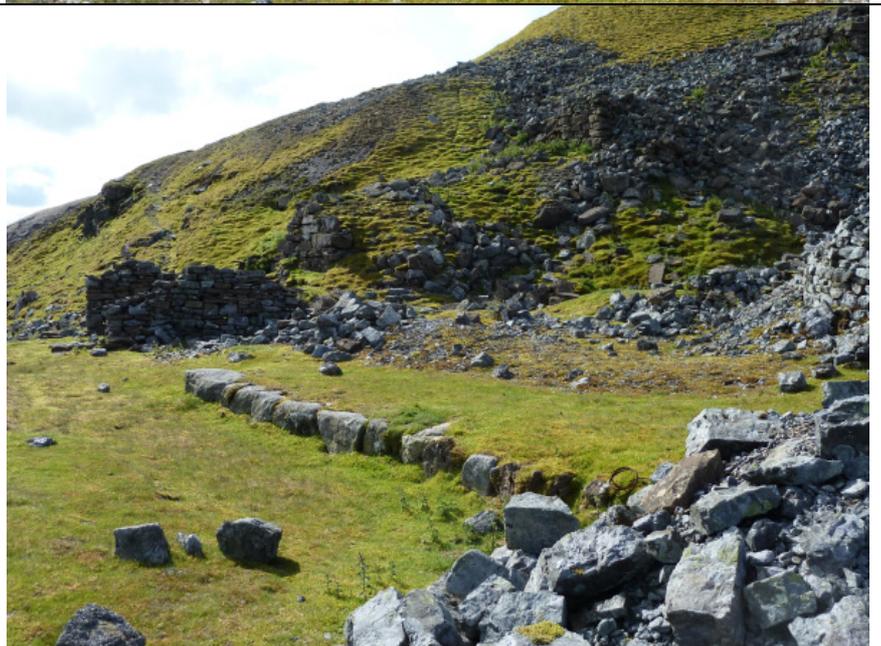
Sample of millstone failures  
Above Tm12



Tm48



Tm49



Tm50



Smelt Mill flues



Tan Hill Road chert loading platform.  
The dynamite shed is directly above it.



Double flue section



Old Moulds Level  
Tm66

