Application Reference No. 3/18/9001

Application Type: Full Planning Permission

Proposal: Establishment of a scheme for minewater treatment comprising construction of an interceptor manhole chamber; provision of transfer pipes; erection of 2no. buildings to house, respectively, pumping and odour abatement equipment; creation of 3no. compost based treatment ponds and 2no. aerobic reedbed ponds; construction of outfalls; creation of access tracks and hardstanding areas; and associated development.

Location: Land between Blagill and Nentsberry, Alston, Cumbria.

Applicant: The Coal Authority

Date Valid: 20 February 2018

Reason for Committee Level Decision: EIA Application and Objections Received.

1.0 RECOMMENDATION

1.1 That having first taken into consideration the environmental information as defined in The Town & Country Planning (Environmental Impact Assessment) Regulations 2017 [the EIA Regulations]; and subject to the applicant first entering into a Section 106 legal agreement with the County Council to secure the monitoring of and potential interventions to the Tyne and Nent Special Area of Conservation (SAC); that Planning Permission be Granted subject to the conditions set out in Appendix 1 to this report.

2.0 INTRODUCTION

2.1 This application is being reported to the Development Control and Regulation Committee as it involves major development within an Area of Outstanding Natural Beauty, has generated a notable number of representations and is accompanied by an Environmental Impact Assessment to assist with the Council’s assessment of the issues raised by the proposal. Further information was requested from the applicant under Regulation 25 of the EIA Regulations relating to archaeology, ground conditions and emissions. This information was submitted in June 2018.

2.2 This minewater treatment proposal is one of a number of such schemes proposed to be developed within the Northumbria River Basin Management Plan area. It forms part of a central government funded national programme to reduce pollution from abandoned metal mines – known as the Water and Abandoned Metal Mines (WAMM) programme.

2.3 The purpose of this scheme is to treat minewater discharging from the Nent Haggs adit in order to remove the high concentration of dissolved heavy metals within this (notably cadmium, lead and zinc) so as to improve the water environment in the Rivers Nent and South Tyne. The River Nent catchment is
The proposed minewater treatment scheme is not a traditional form of minerals or waste development. It represents a crossover between the two issues – with the heavy metal contaminated water discharging from the Nent Haggs adit being the legacy of past mining activities and with wastewater treatment techniques proposed to be used to reduce the polluting effect of these discharges to the River Nent (and the River South Tyne further downstream). Furthermore the proposed passive treatment (i.e. a process using no chemicals or energy to directly affect the treatment) scheme proposed, which utilises naturally occurring sulphate reducing bacteria to remove metals from the water, is relatively novel in the UK.

3.0 THE PROPOSAL

3.1 Planning permission is sought to establish a scheme to treat minewater discharging from the Nent Haggs Mine adit in Nentsberry, Alston. The scheme would involve the construction of an interceptor manhole chamber at the Nent Haggs Mine Adit and provision of a transfer pipeline to convey the minewater to a location to be developed as a Minewater Treatment Site (MwTS). At the MwTS it is proposed to treat the minewater by passing it through anaerobic (without oxygen) Compost-Based Treatment Ponds (CBTP) and then shallow reed-bed aerobic wetland lagoons prior to discharging it back into the River Nent. Due to the intervening topography between the proposed MwTS and the adit, a pumping station is also required to be constructed.

The Minewater Treatment Site (MwTS) and Process

3.2 The MwTS is proposed to be created upon a parcel of agricultural land to the south-east of Foreshield Bridge between the B6294 road and the River Nent. The development of this site to host the proposed minewater treatment scheme would involve extensive ground re-profiling and engineering works. In short, the key elements proposed to be created/installed on the site are as follows:

- 3x anaerobic Compost-Based Treatment Ponds (CBTP);
- Erection of a building to house odour dosing equipment, controls and supplies;
- An open minewater drainage channel;
- 2x aerobic reedbeds (aka wetland lagoons);
- River outfall with scour protection;
- Underground balancing, distribution and dosing chambers and associated underground pipework – with underground pipework between the minewater pipeline entry point to the site, the CBTPs, the odour dosing system and the open channel; and from the reed beds to the river outfall);
- internal access tracks around and between the CBTPs and reed beds;
- erection of timber post and wire stock fencing and timber gates;
- construction of a dry stone wall across the site;
- new tarmac surfaced site access;
- signage boards at the site entrance;
- removal of existing field access gates and replacement with drystone walling;
- land drainage pipework, inspection chambers and headwalls;
- landscape planting

**The Compost Based Treatment Ponds (CBTPs)**

3.3 The MwTS and its' associated infrastructure would involve the development of approximately 3.5ha of land. The three CBTPs would be located to the south-western side of the site and would cover an area of approximately 0.7ha. It is proposed to cut into the existing hillside, create the CBTPs partly within the void created and use the cuttings to engineer a new 1:3 slope embankment to support them (i.e. the CBTPs would be constructed on a raised area of ground). The CBTPs would set across two levels, with two CBTPs being created together on an upper level (where ground level would be set at approximately 351m AOD) and a mid-level with one CBTP (where ground level would be set at approximately 345.5m AOD). The reed beds would be created at a lower level within the northern corner of the site and cover approximately 0.4ha.

3.4 The proposed CBTPs have irregular kidney like shapes/footprints. A CBTP would average approximately 30m in width and 80m in length. Each pond would be created with a depth of 1.8m below the surrounding ground level with 1:2.5 slopes. A high-density polyethylene (HDPE) thermoplastic pond liner would then be laid along the pond bottom and sides to prevent leakage. A drainage layer (consisting of a network of under drainage pipes and limestone aggregate chippings) would be created on top of this. A reactive compost media would then be placed on top of this drainage blanket. The reactive compost media would likely consist of a mixture of PAS100 compost (45%), wood chips (45%) and activated digested sewage sludge (10%). The minewater would then be added to the ponds via concrete distribution channels located along the top slope of the long axis of each pond. An adjustable crenulated weir is proposed to be attached to the inside of the concrete channel so as to promote even distribution of the influent mine water into the CBTPs. The CBTPs will retain a maximum depth of 1.2 m of minewater (from liner to surface). They have been designed to have a 0.2 m freeboard so as to reduce the potential for the ponds to overflow in the event of extreme rainfall. The pond water cover would typically be 0.4m deep above the compost so as to allow an even flow of water across the surface of the pond and an even distribution of the vertical flows through the compost bioreactor layer. The reactive compost material contained within the treatment ponds is thus intended to be submerged at all times beneath water, with a head control system being incorporated into the design to ensure constant water levels are maintained. The under-drainage pipes at the base of the pond establish a downwards vertical water flow through the reactive compost media.

**CBTP Treatment Process**

3.5 The CBTPs are designed to facilitate the removal of the elevated metals present
in the minewater through a Bacterial Sulphate Reduction (BSR) process that sequesters metals as insoluble solid metal sulphides (e.g. Zinc Sulphide, Lead Sulphide etc). The CBTPs use sulphate-reducing bacteria that naturally occur within the activated compost medium to precipitate the heavy metals from the mine water. The solid metal sulphides would be deposited within the CBTPs. The applicant anticipates that the compost media would need to be removed and replaced every ten to fifteen years and requests that a planning condition be imposed requiring agreement of the removal methodology prior to it taking place.

3.6 Hydrogen sulphide is produced as a by-product of the metal removal process. Minewaters typically have elevated sulphate concentrations and the bio-reaction between the heavy metal contaminated minewater and the reactive compost media results in excess sulphide being produced as dissolved hydrogen sulphide. When water high in dissolved hydrogen sulphide emerges to atmosphere the hydrogen sulphide can degas resulting in unpleasant odours if present in sufficient quantities. To mitigate against these potential hydrogen sulphide gas emissions (and its’ associated foul odour) the applicant proposes to install a hydrogen sulphide/odor abatement system based on the use of hydrogen peroxide dosing. Hydrogen Peroxide is an oxidising agent which reacts with the Hydrogen Sulphide so as to oxidise the sulphide back to sulphate which is soluble. The applicant reports that experience from the operation of the CBTPs at Force Crag Mine indicates that the hydrogen sulphide generated by the treatment process is contained within the water flowing out of the ponds via the underdrainage network. Consequently it is proposed to dose the primary treated discharged minewater with hydrogen peroxide in below ground chambers before the water is discharged to air via the open channel so as to reduce the amount of hydrogen sulphide released to air. The proposed scheme design includes sensors to enable remote monitoring of hydrogen sulphide levels and automated remote telemetry control of the dosing system.

Dosing Building

3.7 It is proposed to erect a building to house the odour dosing equipment, controls and supplies. The proposed building would be stone clad and pitched roofed. It would measure 10m by 4m in footprint and 2.65m to eaves, with the ridgeline measuring 4.7m from ground level. Walls are proposed to be finished with locally sourced random stone while natural grey flagstones are proposed to the roof. Three doorsets are proposed (two double and one single) and these are all proposed to be solid timber. Stone lintels and jambs are proposed to frame the doors. Rainwater goods are proposed to be cast iron. A cctv camera and gas vent pipe would protrude from the building. A connection to electricity and water supply would also be provided here to allow for an emergency shower within the building. The building has been aligned so as to be integrated with the “landscape feature” dry stone wall that is proposed to be built running through the site. A spill tank is proposed to be buried below ground adjacent to the northern gable end of the building. A chemical delivery vehicle apron would be created below the access track to the front elevation of the building. The applicant expects that there would be two to three Light Goods Vehicle (LGV) deliveries of the dosing chemicals per month for the first four months of operation, which would reduce to one delivery a month thereafter.

Reed Beds

3.8 It is proposed to create two wetland reed bed areas (shallow ponds planted with reeds) to provide a final polishing step that aerates the treated minewater and
filters out any remaining particles from the water before it is discharged into the River Nent. A synthetic high-density polyethylene (HDPE) liner would be placed at the base of the excavated reedbed areas with a layer of soil growing media being placed upon this prior to the planting of the reeds. In some instances partial oxidation of sulphide following dosing could result in the production of some elemental sulphur which would be deposited in the reed beds. It is proposed that the wetland planting would include common reed, reedmace, yellow flag and sedges. The reedbeds are proposed to be created on the lower platform at the northern end of the site. It is proposed to form a 0.4m-0.7m bund around the reedbed area to mitigate the risk of their inundation by river flooding. Like the CBTP’s access tracks would be provided around their perimeter and the area enclosed with a mixture of stone walling and fencing.

The Outfall

3.9 The proposed outfall from the MwTS into the River Nent would have a concrete headwall (formed from hessian bags filled with concrete spiked to each other) with scour protection set below this in the form of a concrete blanket with locally selected stone cast into its surface. It would be located in the river bank approximately 55m north of the reedbeds. The pipework between the reedbeds and the outfall would be installed underground (with some minor land-raising proposed at points to provide a suitable level of cover) and would cross a public right of way. The applicant proposes to provide willow revetment riverbank protection in the vicinity of the outfall and reedbeds. This would also serve to reduce erosion risk to a public right of way. A number of improvements to this right-of-way are also proposed with stiles being replaced by gateways and new signage being provided.

Access tracks; fencing and landscaping

3.10 The internal access tracks are proposed to be created with sub-base foundations topped with locally sourced crushed stone overseeded with a wild grass seed mix and softwood edging. The width of the tracks would vary around the site, however they are by and large split into two main routes, with 5m width for vehicle maintenance access to the CBTPs (so as to accommodate heavy plant during maintenance operations) and 3m width for areas requiring frequent maintenance visits by a small van or 4x4 and a trailer (providing access to the full perimeter of the CBTPs, aerobic reedbeds and the flow monitoring chambers).

3.11 Stock-proof post and wire fencing would be provided around the outer edge of the tracks and to the norther eastern boundary of the proposed MwTS. Wooden timber posts would stand 1.2m above ground level. Galvanised wire net stock fencing would be set to 0.8m height with two strands of wire running across the top-end of the posts. A mixture of single and double access gates would be provided across the site. All are proposed to be of timber construction with horizontal rails and cross posts. The top cross rail of the gate would stand at 0.92m above ground level.

3.12 It is proposed to erect a drystone wall across the site to act as a landscape feature and tie into the dilapidated remains of a stone wall dissecting the agricultural field to the north-east of the site. It would be set on the mid platform of the site, forming part of the rear elevation of the odour mitigation building before proceeding down the upper part of the access track around the third CBTP before scaling down the site embankment. The proposed wall would utilise locally sourced stone and measure 1.2m in height from ground level to
copings. It is also proposed to affect repairs to the existing stone walls and fencing that bound the MWTS.

3.13 A new tarmac surfaced access is proposed to be created off the B6294 to the MWTS. The proposed access would extend 35m back from the highway edge, would measure 7m in width at its narrowest point and extend along the highway for a 40m length (including tapers). A section of the existing dry stone wall along the B6294 will also require realignment to accommodate the new access and visibility requirements. Two existing field-gates from the B6294 onto the site would be removed and replaced with drystone wall. Wooden signage boards would be provided either side of the highway access gate to provide information and interpretive commentary.

3.14 Land drainage pipework is also proposed to be installed around the site so as to intercept and convey surface water flows. Such flows are proposed to be discharged to the River Nent via the proposed outfall and to an existing ordinary watercourse on the western side of the site. The land drainage pipework would be separate from the minewater pipework. Inspection chambers and headwalls would be provided along the land drainage network.

3.15 It is proposed to soft landscape the MWTS with native tree and shrub planting and a species rich grassland. Small groups of tree and shrub planting are proposed to be located to the corners of the site and along the north-eastern boundary/edge of the site. It is also proposed to expand the existing copse on the western corner of the site and provide additional areas of planting across the site. The proposed planting mix predominantly comprises blackthorn, hawthorn, silver birch, downy birch mountain ash. Some sporadic sessile oak is also proposed.

The Pumping Station Site (PSS)

3.16 The applicant is unable to achieve gravity flows to the proposed MWTS. They therefore propose to install a pumping station in an agricultural hay meadow field to the west of Nentsberry. It is proposed to enclose the pumping station within a building and create an associated compound area around this within the north-western corner of the field.

3.17 The proposed pumping station building would measure 10m by 4m in footprint and 2.65m to eaves, with the ridgeline measuring 4.7m from ground level. Its external walls would be clad with local stone and the roof finished with natural grey slate. Rainwater goods are proposed to be cast iron. A double doorset of timber fabrication would be framed by a stone lintel and jambs. A CCTV camera would be attached to the building.

3.18 The ground level of the pumping station compound area and the access track across the field to it would be raised by 0.15m above surrounding levels. The building would be sited within a hard-surfaced area measuring 16m by 20m in footprint. This hard surfaced area, like the 5m wide internal access track to it, is proposed to be gravel surfaced over-seeded with grass. No fencing is proposed to enclose this compound area or track. An underground balancing chamber and sediment trap would be installed to the south of the pumping station building. The minewater pipeline would be laid underground along the north-eastern side of this field.

3.19 The field where the pumping station is to be located would also be used to provide a bypass / overflow outfall to the River Nent in the vicinity of the pumping
station (where untreated minewater would be discharged from in the event of a power failure to the pumping station). The applicant also proposes to undertake localised surface water drainage works to address existing surface water flooding issues on the A689 and land surrounding this. These works would involve providing improved highway drainage (gullies, culverts and outfalls) and creating new surface water channels around the outer edges of the site and two new outfall structures into the River Nent.

3.20 Vehicular access to the pumping station site would be obtained from a recently widened and improved tarmac surfaced highway access to the field from the A689 that was created in 2017 in association with the creation of check weirs in the River Nent to the south-western side of the field. The field which is to host the pumping station and land drainage improvement works covers an area of some 3.6ha.

**The Minewater Pipeline**

3.21 It is proposed to install an approximately 2.1 km length of pipeline. The majority of this minewater transfer pipeline would be of polyethylene construction; with the gravity pipe being 225mm in diameter and the rising main 250mm in diameter; and would be buried underground within or adjacent to the highway (i.e. The A689 and B6294). The exceptions to this siting would be where it is installed underground within the fields that would host the MwTS and the PSS, and the crossing of the River Nent at Nenthall Bridge. It is currently proposed that the pipeline would either be attached to or sited alongside the downstream (northern) elevation of the bridge and that it would be finished in a dark recessive colour.

3.22 It is proposed to intercept the minewater discharge at the Nent Haggs Adit portal (adjacent to the Nent Haggs Bunkhouse) with a new interception and collection chamber being installed below the road junction adjacent to the Adit portal.

**Environmental Statement (ES)**

3.23 The planning application is accompanied by an Environmental Statement (ES) which assesses the potential impacts of the proposed development in terms of landscape and visual amenity, ecology, noise, vibration, air quality, dust, odour, health, traffic; cultural heritage; ground conditions (including land contamination), hydrogeology, hydrology, flood risk, climate change, waste generation. It also considers the socio-economic implications and cumulative impacts of the scheme. The ES is accompanied by Non-Technical Summary and a Planning Application Supporting Statement.

**4.0 SITE DESCRIPTION & CONTEXT**

4.1 The proposed development lies within an upland river valley in the North Pennines Area of Outstanding Natural Beauty (AONB). The North Pennines was designated as an AONB in 1988 for its moorland scenery. This moorland scenery has been heavily influenced by farming and mining down the centuries. At almost 770 square miles (2,000 km²) it is the second largest of the 49 AONBs in the United Kingdom.

4.2 The footprint of the proposed development spans across an approximately 1.5mile tract of land within the South Tynedale Valley that stretches between the hamlets of Blagill and Nentsberry. This area is characterised by a distinctive wide V-form upland river valley, with steep slopes across which run numerous side
ghylls. Pastoral farming predominates, with small and medium sized fields enclosed predominantly by drystone walls (although some post-and wire fencing is evident in places). Small areas of woodland are present within the valley floor, generally occurring along watercourses or in small copses. Woodland in the area is a mixture of coniferous plantation and native broadleaved species. The area is characterised by a dispersed settlement pattern with small hamlets and isolated farmsteads.

4.3 The River Nent flows in a north-westward direction, south of the Nent Haggs Mine adit, passing beneath the minewater transfer route at Nenthall Bridge and then to the northern side of the proposed MwTS. This stretch of the River Nent is classified as an ordinary watercourse, with it being classified as a Main River once it has passed Foreshield Bridge. The River Nent joins into the River South Tyne at the north-western end of Alston. This confluence is approximately 3.8km downstream of the MwTS. The source of the River Nent lies approximately 3.2km south-east of the Nent Haggs Mine Adit.

4.4 The Minewater Treatment Site (MwTS) is proposed to be accommodated upon a parcel of agricultural land to the south-east of Foreshield Bridge between the B6294 road and the River Nent. The MwTS is proposed to be sited approximately 220m south-east from Foreshield bridge, with the proposed CBTPs some 300-500m south-east of the bridge. This parcel of land is low-lying where it is in proximity to the River Nent, but rises steeply in the south where it forms a platform adjacent to the B6294.

4.5 Immediately to the west of Foreshield Bridge, and downstream of the proposed MwTS, is a statutory designated site that is identified and protected at European (Natura 2000) and National level as, respectively, the Tyne and Nent Special Area of Conservation (SAC) and the River Nent at Blagill Site of Special Scientific Interest (SSSI). This site covers a 1km long tract of land alongside the southern side of the River Nent. The Tyne and Nent SAC is designated varied assemblages of metal tolerant plant communities (known as Calaminarian grassland) which have occurred in these locations as a result of past mining activity/contamination. The River Nent at Blagill SSSI is designated for geomorphological reasons.

4.6 The proposed MwTS is immediately bounded to the south by the B6294. Poor quality agricultural land immediately bounds the MwTS and the other side of the B6294. The River Nent lies to the north and beyond this is a belt of woodland.

4.7 A public right of way (Footpath No. No.302090) follows land to the southern side of the River Nent, providing an off-road route between Foreshield Bridge and Lovelady Shield Country House Hotel (where it connects into other public rights of way). This footpath forms part of a promoted route known as Isaacs Tea Trail. Parts of this footpath have been adversely affected by the active channel of the River Nent. Environment Agency Flood Risk Zones 2 & 3 (associated with the River Nent) narrowly overlap the north-eastern side of the red line planning application boundary of the MwTS, however the aerobic reed beds on the lower platform level are located outside of these flood risk zones. Water is often held within the field areas between the river and the proposed MwTS.

4.8 The Hudgill Lead Mine Bingsteads Scheduled Monument lies approximately 45m south of the MwTS. The Bingsteads comprises stone walls and two small storage buildings and is set into the slope adjacent to the B6294.
4.9 Approximately five residential properties are within a 250m of the proposed MwTS. The nearest lies approximately 120m south of the site. The next nearest properties lie approximately 200m to the north / north-west. Hudgill Farm self-catering cottages are located south-west of the MwTS. Lovelady Shield Country House Hotel is located approximately 400m to the east of the MwTS. Hudgill Caravan Park lies approximately 420m south of the MWTS. The proposed MwTS is 0.5miles north-west of Nenthall, just over 0.75miles south-east of the main nucleus of Blagill; 1 mile north-west of Nentsberry; and approximately 1.75miles east of the eastern edge of the built-up area of the market town of Alston.

4.10 The field where the pumping station is proposed to be sited is on the northwestern edge of the hamlet of Nentsberry. The field occupies a relatively low lying position (at around 350m AOD). The field lies between the A689 (to the north) and River Nent (to the south) in a distinctive V-form upland valley between Middle Fell (575m) to the south and High Raise (537m) to the north.

4.11 It is proposed to site the pumping station building toward the northern corner of the field, with the building being set-back by 7m from the A689. Drystone walls bound the field in proximity to the proposed building. The proposed building would be 70m east of the River Nent and not be in a flood risk zone associated with this. Land to the north and the east (beyond the A689) is in agricultural use. The land to the east is a steep hillside. A public right of way (footpath no. 302125) scales this hillside and at its closest point runs 60m from the proposed building. Three residential properties lie within a 250m buffer of the proposed pumping station building. The nearest dwellinghouse lies 180m from the proposed building. A caravan park and a campsite are located approximately 400m to the south-east of the building.

4.12 The Nent Haggs Mine adit is located on lower hillside to the north of the A689, some 180m north-west of Nentsberry Bridge. It is situated adjacent to the northern side of the Haggs Bank Bunkhouse. The adit falls within the south-western edge of the Tyne and Nent SAC and the Haggs Bank SSSI. These nature conservation designations are coterminous. The Haggs Bank SSSI is designated for its heavy metal tolerant plants (metallophytes) and species rich calcareous grasslands. This land is also designated as a Local Geo-Conservation Site (formerly Regionally Important Geological and Geomorphological Site) by Cumbria Geo-Conservation. The minewater capture structure would be installed underneath the A689 (thus outside these designated areas).

4.13 Once intercepted the minewater would then flow via an underground gravity-piped system laid within the highway/highway verge up until the pumping station field site, where the pipeline would then be laid in the field before re-joining the highway after the pumping station building. From there it would be installed underground in the highway/highway verge of the A689 and the B6294 until the MwTS, with the only exception to this being the proposed crossing of the River Nent at Nenthall Bridge.

4.14 It is currently proposed that the pipeline would either be attached to or sited alongside the downstream (northern) elevation of Nenthall Bridge. Nenthall bridge is not listed nor located within a conservation area. It is a single arch bridge of local stone and mortar construction. The bridge has metal pattress plates visible on both the upstream and downstream elevations – these plates are part of a structural system that ties the bridge together above the arch. A
Public Right of Way (Footpath No. 302090) runs along the southern/western side of the River Nent from Lovelady Shield Hotel to Nenthall Bridge and thus provides clear open public views of the northern downstream elevation of the bridge.

4.15 The North Pennine Moors Special Protection Area (SPA) and North Pennine Moors SAC lie approximately 1.5km north-east of the application site. The western boundary of these designated areas lie 500m AOD.

5.0 BACKGROUND HISTORY

5.1 Lead mining has occurred upon Alston Moor since Roman times, with the peak of mining activity taking place in the 1700s and 1800s as technological advances enabled longer tunnels to be created. During historic underground metal mining operations on Alston Moor, water ingress into mine workings was managed using a vast network of mine drainage tunnels known as adits or levels. For example the Nent Force drainage level was constructed in the 1800s and runs over 7 miles from the Nenthead mines and discharges to the River Nent at Alston. By the 1920s underground mining on Alston Moor had reached its crescendo. After closure of the mines, these drainage tunnel systems continued to collect the water within the mine system and divert the flows to surface, normally via the lowest elevation mine adit/ level entrance.

5.2 Haggs Mine was in operation by the 1730s and extracted Barium, Lead and Zinc metal ores. The peak of production at Haggs Mine is understood to have occurred during the 1930s. In 1953 mining ceased and it was formally abandoned in 1958. For the Haggs Mine, minewater discharges at the Nent Haggs Adit portal (at NGR 376610, 545023) at Nentsberry. The water discharge is then culverted under the A689 and down the adjacent access track so as to discharge into the River Nent.

5.3 The history and extent of mining in the Nent Valley has left large areas of contaminated spoil with little vegetation cover, and as a result, spoil is being eroded by high rainfall and washed into the River Nent. Two sites in the catchment are listed on the Mining Waste Directive Inventory since they cause serious pollution. Many of the spoil heaps are protected as Scheduled Monuments for their industrial heritage while some are protected habitats and/or for their habitats as the high metal levels allow rare calaminarian grasslands to flourish.

6.0 PLANNING HISTORY / BACKGROUND

6.1 The underground mining of lead and zinc has a long history dating back to since the 16th Century in the River Nent valley. The last planning permissions for such working were granted in 1953. One of these permissions covers land to the northern/eastern side of the River Nent and as such coincides with part of the application site (i.e. the part that lies to the east of the River Nent between Nenthall and Nentsberry).

6.2 The only other planning history recorded within the red line planning application boundary of this scheme is the recently completed check weir development in the field opposite the Old Chapel, Nentsberry (where the proposed pumping station is proposed to be located). This development involved the construction of an armour-stone and concrete check weir in the River Nent with the aim of encouraging the deposition of finer grained sediments so that they could be
periodically removed from the river. As part of this development the existing field access from the highway was improved (being widened and set-back) and a new grass covered compacted sub-base access track created at the same level as the surrounding ground to lead down to the check weir. Planning Permission for this development was granted subject to conditions by Eden District Council on 12 July 2017 (Ref. 17/0362).

6.3 It is noted that Outline Planning Permission was granted on 18 January 2018 by Eden District Council for the conversion of the existing Lovelady Shield Country House Hotel, holiday let and owner’s accommodation to provide 22 no. holiday let units, 12 no. new build holiday let units, demolition of Colleton and replacement with 4 no new build holiday let units (resulting in a total 38 no. holiday let units). This permission also provided for new build leisure and catering facilities, and additional car parking, with approval sought for access and layout (Ref. 17/0906). The proposed site plan indicates that no buildings would be built to the western side of the existing hotel building.

7.0 BACKGROUND IN RESPECT OF THE PROPOSED MINEWATER TREATMENT PROCESS

7.1 The proposed Compost Based Treatment Pond (CBTP) system, also sometimes referred to as Vertical Flow Ponds (VFPs) is a relatively new system for passive minewater treatment in the UK/Europe. VFPs have been utilised in America for approximately 20 years. CBTPs have been developed in the UK in conjunction with Newcastle University following more than 10 years’ research and development involving extensive laboratory trials. A pilot trial was undertaken at the Rampgill Level (in the grounds of the Nenthead Mines Heritage Centre) for an approximately 2 year period. A full-scale pilot was then developed at Force Crag Mine which is situated in the Coledale Beck Valley some 2.5miles south-west of the village of Braithwaite, near Keswick. The Force Crag Minewater Treatment Site has been operational since 31 March 2014. Because of its remote location no odour control was designed into this scheme. A series of odour/air quality surveys and odour dosing trials have been undertaken at Force Crag since 2016. Odour dosing trials took place in February 2017 and November/December 2017.

8.0 CONSULTATIONS AND REPRESENTATIONS

8.1 It should be noted that the consultation responses and representations summarised below incorporate those received in respect of the Further Environmental Information (FEI) submitted.

Consultation Responses

8.2 Eden District Council Planning Department: No response received.

8.3 Alston Moor Parish Council: Report that an extraordinary meeting was held on Monday 26 March 2018 to discuss the application and that this was attended by 30-40 residents. Sets out that the community fully supports the aim of removing heavy metals from the River Nent, however it believes the proposed location, design and operation of the site will cause serious public health risks from the uncontrolled release of Hydrogen Sulphide. The Parish Council state they would not want a scheme to proceed unless they have confidence these risks can be removed. The Parish Council provided a summary of issues raised by residents in the meeting as an appendix to their response. These are reproduced verbatim
Potential continual release of toxic gas hydrogen sulphide from the lagoons, which is understood to cause respiratory and nerve damage to humans and animals, which may lose condition. Thought to be released in large amounts when the compost is replaced. Concern that there are no plans to stop the gas being released into the atmosphere.

Concern that the toxic gas may be hazardous to road users, as the road is popular with walkers.

Other countries such as Canada treat their waste in enclosed airtight sheds, so why is this not considered best practice in Alston. Public health should be a priority.

Odour is still a concern and doubts expressed over the commitment by the Coal Authority to close the plant if they are unable to control it.

As the plant will not be manned, it is probable it will take at least 2 hours to respond to a complaint about odour.

Concern that the scheme is experimental, so no-one really knows at this stage how it will go, as there is no data available.

Alston Moor can experience extreme weather conditions, how will the scheme cope should there be 4ft of snow as happened during the recent bad weather.

Too close to habitation, there are residential properties, a hotel and caravan park nearby.

Unsuitable site, as should be closer to the source, or alternatively piped to Tyneside and treated there.

The site is in the Alston District Council Ward, but all [pre-application] consultation to date has been held in Nentsberry or Nenthead.

The scheme may be detrimental to the promotion of tourism and encouragement of new businesses.

8.4 A further communication from the Parish Council received in May 2018 which noted that the site is the habitat of protected species including water voles and that they would wish to see measures put in place to ensure their continued presence.

8.5 In response to the Further Environment Information submitted, the Parish Council report that a meeting was held on the 7 July 2018 and that a number of local residents expressed concerns and anxiety in respect of the proposed development – with the core overall concern being that the planned system is ‘experimental’ particularly regarding the treatment of hydrogen sulphide. The Parish Council resolved to seek confirmation from the Coal Authority as to criteria for the Development Low Risk Area (DLRA) of the coalfield and the concentration of hydrogen peroxide being used.

8.6 Eden District Council Environmental Health Department: Provide observations in respect of air quality, odour, noise and ground conditions and suggest a number of planning conditions. Air Quality: State “that the levels of hydrogen sulphide that are likely to be produced by this scheme are several orders of magnitude below any level that could cause harm to the health of the public or nearby residents. Our main concerns have therefore been around possible nuisance as H₂S [Hydrogen Sulphide] is a highly odorous gas with the potential for annoyance”. Odour: Report that their initial concerns around the levels of hydrogen sulphide potentially constituting an odour nuisance resulted in enquiries that have received answers in the Further Environmental Information
submitted. Express the view that the odour dispersion modelling is robust and
demonstrates that the proposal would not cause statutory nuisance. Satisfied
with the complaint management regime set-out in the submitted Outline
Operational Management Plan. Consider it reasonable to recommend a condition
limiting odour levels at the site boundary suggesting a limit of 3 European Odour
Units over a period of 10 minutes in order to protect neighbouring receptors.

8.7 **Noise:** Operational noise will not normally be an issue but that during
construction and maintenance levels of noise could impact upon neighbours and
will have to be managed. In the absence of a detail schedule of work suggest
planning conditions restricting hours of working during the construction phase;
and securing submission of a) a detailed noise assessment based on the
schedule of construction works prior to the commencement of development; and
b) of a maintenance noise assessment prior to the commencement of use.

8.8 **Ground conditions:** Consider the surveys undertaken and conclusions reached
by the applicant in respect of ground conditions to be satisfactory. Request
imposition of a condition in respect of encounters with unexpected ground
conditions (i.e. outside of those reported in the application) including potential
land contamination.

8.9 **The North Pennines Area of Outstanding Natural Beauty (AONB) Unit:**
Recognise that there is a significant environmental issue with minewater
contamination in the River Nent that has an impact beyond the immediate
location. Note that there has been concern raised by the local community
regarding gaseous emissions and odour and anticipate that this will be fully and
satisfactorily addressed. Stress that the success of this development should it go
ahead (beyond the effective treatment of mine water) will be measured in part by
the way it is accommodated into the location by following vernacular building
patterns, establishing typical grassland habitats and avoiding any visually
intrusive ‘industrial’ elements. Comments that the inclusion of species rich
grasslands of the type typically found in the North Pennines alongside sensitive
local, native woodland and scrub creation, where appropriate, would serve to
offer the best option for establishing a genuine value for nature. Feel that the
removal of all but essential boundaries will ensure that the development does not
introduce unnecessary clutter into the landscape and that those boundaries
included should follow best practice as described in the North Pennines planning
guidance documents. Welcome the intention to include interpretation of the site
in the context of the mining heritage of the valley.

8.10 **Natural England:** No objection subject to appropriate mitigation being secured.
Consider that without appropriate mitigation the proposal could have an adverse
effect on the integrity of Tyne & Nent Special Area of Conservation (SAC) and
would damage or destroy the interest features for which River Nent at Blagill Site
of Special Scientific Interest (SSSI) and Haggs Bank SSSI have been notified.
Consequently they advise that ongoing monitoring surveys should be undertaken
and that should these reveal any decline in calaminarian grassland habitat that a
programme of perturbation of the substrate and plug planting with metallophyte
species be undertaken to promote the rejuvenation and development of
calaminarian grassland. With reference to the Habitats Regulations Natural
England advise that the proposal will not result in adverse effects on the integrity
of any of the sites in question, providing that all mitigation measures are
appropriately secured.
8.11 In respect of the protected landscape of the North Pennines AONB, Natural England state that “Although no photomontages have been submitted as part of the LVIA, as the North Pennines AONB Partnership have inputted into the design of the development we have no further comments to add in respect to the landscape impacts on the AONB”.

8.12 Environment Agency: No objection. Highlight that the proposal would require an Environmental Discharge Permit (which covers the discharge of wastewater to surface water or onto the ground) and an Water Abstraction Licence. State that the actual operation of the site itself would not require an Environmental Permit. Advise that the applicant will need to consider mitigation for potential sediment run-off into the River Nent during the construction stages as part of the Environmental Discharge Permit. Draw attention to the fact that the River Nent is designated as an ordinary watercourse at the location of the proposed development, and that the Lead Local Flood Authority is responsible for consenting works which affect the flow of an ordinary watercourse and for providing advice on the management of surface water from new larger developments.

8.13 Cumbria County Council Lead Local Flood Authority: No objection. Notes that the proposed development intends to include a new highway surface water drainage system within the A689 which will help reduce the risk of highway flooding between the Haggs Mine Adit and the proposed pumping station compound site. Consider the highway drainage to be designed to an acceptable standard that takes into account climate change. Consider that technical concerns in respect of some details of the proposed PSS drainage (90 degree angle of discharge into the site and use of Milliken concrete cloth on open channel embankments) can be resolved through the Ordinary Watercourse Flood Defence Consent (OWFDC) regime.

8.14 Cumbria County Council Highway Authority: No objection. Recommends conditions. Consider that the proposed attachment of the transfer pipe to the downstream side of Nenthall Bridge can be achieved and is acceptable in principle provided detailed plans in respect of this are secured and that the applicant enter into an agreement with the Highway Authority to ensure that the pipe and brackets are to be removed and replaced at the applicant’s expense when the Highway Authority are to undertake any planned or emergency maintenance on the bridge.

8.15 In response to the Further Environment Information submitted, the Highway Authority note that the cut-and-fill calculations for the development reveal a surplus of 16,000m³ (i.e. approximately 24,000 tonnes) of excavated material. Note that the removal of this material is anticipated to be carried out over a 9 week period and would generate in the region of 2,400 20ton HGV movements. Consider this to be a significant increase on the previous estimate of HGV movements. Expect that the A689 would be able to accommodate the volume of construction traffic generated by the proposal, but have residual concerns that it may cause extraordinary damage to the fabric of the highway and associated infrastructure such as culverts and bridges. Request a condition to secure the submission and agreement of a Construction Phase Traffic Management Plan which would include pre-construction road condition survey and construction vehicle routing details.
8.16 Historic England: No objection. Observe that the site is in an area with a long history of mining and that a wide range of archaeological features associated with this survive in the landscape around the site. Consider the proposed development should not impact directly upon the nearby Hudgill Lead Mine Bingsteads Scheduled Monument (where lead was stored before being transported to the smelting mill), and that once completed, it should not impact to a significant degree upon its setting. Notes the ES suggests that the development of the minewater treatment site will have a direct impact upon a couple of undesignated archaeological assets associated with the bingstead. Consider that this impact could be appropriately mitigated by a programme of archaeological recording. Recommend that the mitigation measures proposed in the Environmental Statement; including a programme of archaeological recording for directly impacted heritage assets and provision of protective fencing for nearby heritage assets; which could otherwise potentially be accidentally damaged during construction works; be secured by condition. With these mitigation measures in place, considers the level of harm to heritage assets to be low.

8.17 Cumbria County Council Historic Environment Officer: Recommends a condition. Highlights that the submission indicates the earthwork remains of a probable former lead mine survive within the proposed minewater treatment site. Observes that little information is provided on this asset or its relationship with the nearby Scheduled Monument of Hudgill Lead Mine Bingsteads within the original submission. In light of this the officer considered that the conclusion that its significance is low was not justified and therefore recommended that further information be supplied on this non-designated archaeological asset to determine its significance prior to the determination of the application. Following the provision of further information in respect of this matter (a detailed topographic survey and professional assessment of the archaeological earthwork remains); the County Council Historic Environment Officer was satisfied with the survey work and its conclusions – i.e. that it is a probable mining prospection pit that pre-dates the 1770s and are considered to be of local significance. Recommends a condition be imposed to require these earthwork remains to be archaeologically recorded during the course of the construction ground works (i.e. an archaeological watching brief be undertaken).

8.18 In terms of other historic environment issues, the Officer agrees with the ES that it is unlikely the proposed development will impact upon other archaeological assets. Notes that the ES proposes mitigation to protect the Hudgill Lead Mine Bingsteads Scheduled Monument from accidental physical harm during construction work by erecting fencing around it, and agrees that this would be appropriate mitigation. Notes that Historic England have no concerns regarding the impact of the proposed minewater treatment site’s impact on the setting of Hudgill Lead Mine Bingsteads Scheduled Monument.

8.19 Cumbria County Council Public Health: No response received.


8.21 International Sites: Highlights the County Council’s duty to ensure compliance with The Conservation of Habitats Regulations 2017. Observes that the Tyne and Nent Special Area of Conservation (SAC) and the Tyne and Allen River Gravels SAC potentially lie within the zone of influence of the scheme and that a Habitats
Regulations Assessment (HRA) looking at the potential impact of this proposal (alongside other related WAMM schemes in this catchment) was submitted in support of the application. Recommended the Council review the submitted HRAs conclusions. Following this review he concluded that the proposal could have a significant adverse effect on the calaminarian grasslands of the SAC and that measures to monitor this habitat and secure any potential compensatory works that may be required would need to be secured via a legal agreement. Content that for more distant European designated sites, such as The North Pennine Moors Special Protection Areas (SPA) and the North Pennine Moors SAC have been comprehensively covered within the ES and that there is no reasonably foreseeable likelihood of impact upon the interest features for which they have been designated.

8.22 Nationally and Locally Designated Sites: Considers the ES to be comprehensive in respect of these and that in his professional opinion its conclusions about likely impacts are robust. Content that there will not be impacts upon any Sites of Special Scientific Interest (SSSI) or County Wildlife Sites.

8.23 Local Habitats and Species: Observes that the submitted ecology surveys reveal that the land proposed to be developed supports habitats and species that are, in the main, common and widespread; although they also note that there are also records of small numbers of ground-nesting birds that have been subject to declines associated with the site. States that they are of the opinion that the Environmental Statement is comprehensive and provides a reliable baseline against which impacts have been judged. Reports that he has taken note of the representations submitted by members of the public in relation to ecology matters, and the additional depth of knowledge that these add to the overall process. Concludes that overall, they are of the opinion that the documents adequately identify which short-term impacts will arise and that there will be some overall long-term change in the nature of the site (which is inherent within the proposed scheme). Considers that these changes are clearly addressed. Notes that an ES cannot seek to address all impacts, but it must address those which are significant. Consequently the County Council’s Ecological Consultant is satisfied that the scheme will not result in any significant residual impacts upon any ecological features within the site that are to be developed. Recommends conditions be imposed in respect of vegetation clearance (so as to protect breeding birds); to secure the prompt provision of the soft landscaping planting scheme and its maintenance; and to require submission of a Construction and Environmental Management Plan in order to protect terrestrial, aquatic and air environments during the construction phase.

8.24 Further to the provision of updated water vole survey information, The County Council’s Ecological Consultant is content that, whether present or otherwise, water voles and their habitat will not be impacted by the MwTS as it lies some distance away from the watercourses of interest. Given the fact that surveys have not proven presence, CCC’s Ecological Consultant is of the view that nothing further is required, but if the Council is minded to adopt a very cautious approach then a planning condition that ensures a final search for water voles (at an appropriate time of year) could cover this before the outfall structure is installed into the River Nent, or it could be covered under the ecological section of a Construction and Environmental Management Plan. Notes that the completed scheme is likely to provide suitable new habitat for voles (water and bank), so no adverse impacts would be predicted in the event that the species was confirmed as present.
8.25 **Cumbria County Council Countryside Access:** No objection. Note that the proposal will necessitate temporary closure of a number of footpaths. Note that the footpath within the red line planning application boundary of the MwTS would benefit from enhancement and that the applicant has been liaising with the Countryside Access Team with a view to achieving improvements to this.

8.26 **Campaign to Protect Rural England (CPRE – Cumbria Association):** Satisfied that the application adequately explains the need for the scheme given the legacy of metal mining activity in the region and its continuing impact on the water quality of the River Nent. Note that the ‘River Nent fails to achieve good status for cadmium, lead, zinc, fish and invertebrates’ and that the Northumbria River Basin Management Plan sets out legally binding objectives for the River Nent, which includes lowering the metal concentrations towards the Environmental Quality Standard (EQS) by implementing the Nent Haggs Mine Water Treatment Scheme. Further note that alternative sites outside the AONB were not viable and that the AONB North Pennines Partnership and other key stakeholders provided early advice on site selection within the AONB. Welcome this early engagement and understand that the initial location proposed for the Nent Haggs minewater treatment site was moved as a consequence of issues identified by interested parties. Given that the need for the scheme has been firmly established, and its location within the AONB a necessary requirement, it is essential that the design of the scheme strives to mitigate all impacts on the AONB. Welcome the early design advice provided by the AONB Partnership, particularly in relation to the naturalistic shape of the treatment ponds in order that they sit more sympathetically within the landscape. Also welcome the soft landscaping proposed as it would enhance the landscape character and biodiversity value of the sites; the interpretative on-site signage to aid public understanding of the historical legacy of metal mining; and adherence to the AONB’s built design guide in relation to the buildings proposed. State that they have not been able to make specific comments regarding the conclusions of the Landscape and Visual Impact Assessment (LVIA). Relate that having reviewed the viewpoint photography they have found it difficult to visualise the proposal within the landscape because no visualisations of the completed development have been provided. In particular, viewpoints 3-7 could have been selected for this treatment. Comment that the summer photography for most of the viewpoints is also particularly dark when compared with the winter photography which adds to the difficulty in visualising the proposal within the landscape.

8.27 **Open Spaces Society:** No objection.

8.28 **Penrith Ramblers Association:** No objection raised to the original consultation. Responded to the FEI consultation stating they would not object to the application provided the applicants’ can furnish the scientific and technical assurance that people and animals walking and taking picnics along the path are not at risk of harm from pollutants escaping across the site.

8.29 **Coal Authority:** No comment. Standing Advice for Development in a Low Risk Area of the coalfield should be applied to any grant of planning permission.

8.30 **Cumbria Fire and Rescue Service:** Comment that the site would be accessible to emergency services as designed.

8.31 **Crime Prevention Design Advisor:** No observations or comments.

8.32 **Planning Casework Unit:** No response received in respect of the planning
application. Responded on behalf of the Secretary of State (SoS) for the Ministry of Housing, Communities and Local Government (MHCLG) in respect of the County Council’s Habitats Regulations Assessment of the proposal and is satisfied that this fully meets the tests set out in the Regulations.

8.33 **Health & Safety Executive (HSE):** Highlight that their role in the land use planning process is that of a statutory consultee providing local planning authorities with safety advice on developments in the proximity of major hazard sites or major hazard pipelines. Highlight that the proposed development does not lie within any HSE consultation zones, and that therefore they have no comment in respect of the proposal.

8.34 **HSE Mine Inspectorate:** No concerns with this application. Notes that the HSE’s limits for hydrogen sulphide in the workplace are 5ppm (7mg/m³) for 8 hours, and 10ppm (14 mg/m³) for 15 minutes. Note that monitoring including odour detection is proposed within the scheme.

8.35 **Electricity Northwest:** No objection. Note that 11kv overhead wires/cables are within the development area and that the applicant should be advised that great care should be taken at all times to protect both the electrical apparatus and any personnel working in its vicinity.

8.36 **Northern Gas Networks:** No objection.

8.37 **Northumbrian Water Ltd:** No response received.

8.38 **The County Councillor for Alston East Fellside, Ms Claire Driver,** has been notified of the application.

**Representations**

8.39 A letter was received on 4 April 2018 from Julie Ward, who is a Member of the European Parliament (MEP) for the North West of England. The letter voices the concerns of her constituents in respect of the proposed application. It highlights the following concerns:

- That the Hydrogen Sulphide gas that would be released to the air not only causes odour but is toxic in nature and therefore presents a health risk;
- That the reports on the Nent Haggs project suggest that potentially more hydrogen sulphide may be released by this scheme than the Force Crag Mine Pilot Scheme;
- That constituents do not feel reassured that the release of hydrogen sulphide will be fully controlled / treated effectively and kept below levels that may be dangerous to health;
- Given the proposed scheme will be closer to residential dwellings and businesses than the pilot scheme constituents want the health and odour concerns of the Hydrogen Sulphide to be considered with more caution.
- That some constituents have indicated that there may be other methods of treating the mine-water in a safer manner.
- That some constituents have suggested that there are other techniques for capturing the Hydrogen Sulphide more effectively and that these have not been fully explored.
- “They are concerned that the costs of other schemes have been a deterrent for planners looking into them more fully”.
- “Constituents have raised the concern that the Environmental Impact
Assessment has not adequately taken into account all of the species currently using the habitat of the proposed site, some of which may be protected. They feel that a more thorough impact of the habitat and the species present there needs to be completed. Some of the wildlife believed to be present may be protected by EU law."

- Concerns about how the scheme is being funded.

8.40 The letter indicates that there is a feeling among some residents that there has not been enough time allowed in the application process for residents to fully analyse the effects of the scheme. Constituents request that the application process is extended further to allow more time for them to fully understand the implications of the scheme and to raise their concerns in a considered manner. No response was received from the MEP to the FEI consultation.

8.41 A number of public representations have been submitted in a variety of forms. For the purpose of this report these have been grouped as letters of representation; round robin style template letters; and petitions.

Public Letters of Representation

8.42 A total of 21 letters of representation have been received from the general public. Of these one expressed “no objection to the proposal in this location”; one provided comment; whilst the remaining 19 objected to the proposal. The 19 objection letters were received from 14 individuals and a locally formed opposition group: Alston Moor Community Protection. The representation from Alston Moor Community Protection was signed by 20 individuals, a small number of whom have also submitted their own individual letters of representation.

8.43 The representation providing comment requested that “the engineers and planners calculate and check that the new surface water drainage system [proposed within the field where the pumping station is proposed to be located] will be robust and able to cope with the peak flooding volumes that are associated with this location”. Highlights that the nearby residential dwelling referred to as The Old Chapel, is situated at a low point in the road and land profiles and suffers serious external flooding. State that they welcome the proposed new drainage but seek assurance that it will cope with the surface water flows as they are discharged into the field opposite the Old Chapel. State that a field stream runs under the Old Chapel and that they "do not want this [to] "back up" and cause flooding inside the property".

8.44 The letters of representation objecting to the proposal primarily focus upon the proposed Minewater Treatment Site and Treatment Process. The issues/matters the letters of representations raised in objection to the scheme have been ordered below by site component and then theme:

8.45 Proposed Minewater Treatment Site

8.46 > Health Risk

8.47 Various aspects of the scheme have been cited in representations as public health risks. These have been sub-grouped below as those relating to: a) the minewater treatment process; b) the chemical dosing to remove hydrogen sulphide; c) the metal contaminated compost medium (and its replacement); d) the schemes vulnerability to accident/extreme events; and e) other miscellaneous concerns in respect of the scheme and treatment process.
a) **the minewater treatment process**

- That hydrogen sulphide gas emitted from the proposed minewater treatment process is toxic in nature and could adversely impact upon human health and the health of livestock and other fauna in the surrounding area.
- The following points are raised in respect of the properties of hydrogen sulphide gas:
  - That a short exposure to highly concentrated levels can be fatal.
  - That it can cause respiratory system problems and nerve damage – with eye irritation and respiratory effects starting at 20ppm-30ppm.
  - That “asthmatics are particularly susceptible to the effects of this gas” with broncho-constriction and headaches at 2ppm.
  - That “elderly people or those with lung conditions (some of our carers visit older members of the community with Chronic Obstructive Pulmonary Disease), children and even pets are very vulnerable”.
  - That it is not easily dispersed (removed from the air) as it is heavier than air.
  - That the Health & Safety Executive (HSE) in [HSE EN40/2005 - Workplace Exposure Limits 1 2nd Edition 2011](#) establish Workplace Exposure Limits (WEL’s) to protect workers from the harmful effects of hydrogen sulphide – with a long-term exposure limit of 5ppm (parts per million) and short-term exposure limit of 10ppm.
- Assert that the amount of hydrogen sulphide released from the scheme is likely to be in excess of 10ppm.
- Query what levels of hydrogen sulphide are deemed to be safe for people and wildlife.
- That the application is not sufficiently clear how hydrogen sulphide emissions will be dealt with safely.
- Query how Hydrogen Sulphide levels will be monitored.
- That the budget for hydrogen sulphide removal is vague. A representee calculates that over 200kg of sulphate would be entering the system per day but less than 5kg hydrogen sulphide (about one-fifteenth of the sulphur) is expected in the treated water, leaving far more sulphur than can be accounted for, either by bi-sulphide in the treated effluent water or by production of metal sulphides in the compost. Therefore postulates that if this excess accumulates within the compost, that the applicant’s timescales for renewing the compost are unrealistic or that it must be escaping from the surface of the lagoons.
- That 62% of the sulphur at Force Crag could not be accounted for by the University Research Group.
- That bubbles of hydrogen sulphide have been seen bursting out on the surface of the CBTPs at Force Crag.
- That hydrogen sulphide would be continuously vented from the uncovered lagoons (CBTPs) to the air and no treatment of the hydrogen sulphide from this emission point is proposed.
- That it does not seem possible that 8 ppb of hydrogen sulphide or lower will be continuously maintained given the total volume of hydrogen sulphide being released to the air across the whole site.
- The edge of the lagoons would be close to the road, with Pond 3 being 19m from this and Pond 1 being 23m.
- That residents who live alongside the site boundary “are far closer than the Environment Agency’s directive of 250m distance” (for new waste recycling plant)".
• That the well-used national Isaac’s Tea Trail path is just below the lagoons and open-venting channel and that hydrogen sulhide gas is likely to cascade downhill towards the route.

• That in light of the health risk posed, that the proposed minewater treatment site is in too close a proximity to houses and businesses (farms, a hotel and a holiday park with about 50 caravan plots); walking routes used regularly by locals, visitors and tourists – with the B6294 and public rights of way along the River Nent (which form part of Isaac’s Tea Trail walking route); the B6294 (which is reported as carrying a “surprising amount of regular local commuter traffic and commercial lorries and vans”); livestock and wildlife. That the proposed treatment process should be situated in a isolated area as far away from human and livestock habitation as possible.

• That the compost cannot be “shut-down” if problems occur and that it will continue to produce hydrogen sulphide.

• Reactions in the compost are neither contained or controlled (as they would be in an active treatment process/method).

8.49  

b) Chemical Dosing to Remove Hydrogen Sulphide

• That it is proposed to “treat toxic emissions with chemicals, but that it does not say how it will do it”.

• That Hydrogen Peroxide dosing to treated minewater containing organic residues creates an explosion hazard.

• The amount of Hydrogen Peroxide used upon the treated minewater “cannot be increased ad inifinitum (high concentrations in a confined space are an explosive hazard)”.

• Transportation of supplies of Hydrogen Peroxide in winter could present difficulties in terms of ensuring a ready and available supply.

• There has not been a large-scale trial of treated minewater effluent dosing. Observe that the reports on the short dosing trials at Force Crag recommended further study and that this should be undertaken at Force Crag not Hudgill. Consider that independent confirmation of success should be obtained.

• No measures are in place to control hydrogen sulphide release from the lagoons directly to air.

• That the use of hydrogen peroxide to remove dissolved hydrogen sulphide from effluent was deemed ineffective and uneconomic at Rampgill.

8.50  

c) Metal Contaminated Compost Medium (and its replacement).

• Highlight that the used compost will be saturated with heavy metals which are toxic in nature and which will need to be regularly removed and disposed of in hazardous landfill.

• That when the lagoons are drained and the waste compost dug out this could lead to emissions of very high levels of Hydrogen Sulphide gas to the atmosphere – with possible levels of around 500 ppm close to the surface of the compost stacks postulated. Consider that it is unclear from the application “how the Heavy-Metal Waste compost stacks will be treated to make them safe to transport to a hazardous waste landfill. If the waste were treated on site with chemicals (Hydrogen Peroxide or Sodium Hypochlorite) it would still require at least 24-48 hours storage, prior to transport to a hazardous waste landfill otherwise the level of hydrogen sulphide emitted is too high for safe normal truck transport. This waste compost would have to
be stacked and turned-over every few days (for 3 to 8 weeks) on-site until the aerated compost no longer emits hydrogen sulphide or other hazardous gases. The workers on site would require full respirators during the removal process and disinfection treatments - which local residents and visitors would not have. The waste toxic compost would have to be stored on-site, for several days to several months.” Surmise that the hydrogen sulphide level in the air at the boundary of the site is highly likely to be over the 10ppm short-term HSE WEL limit during this process and would thus be hazardous to passers-by and those on the boundary.

- That hydrogen sulphide “is released from the lagoons steadily, but released in very large amounts, each time the compost is removed (dredged) and replaced”.
- That the storage of “hydrogen sulphide emitting, heavy-metal waste compost on-site, has not been described in the planning application”.
- Observe that for the removal and disinfection of the Heavy-Metal saturated Compost, no chemicals are specified in the supporting documents. Highlights that another neutraliser often used to disinfect similar composts is Sodium Hypochlorite, but this is not declared here. Highlights that this too is a toxic chemical substance.
- Note the supporting documentation suggests that Hydrogen Peroxide (or perhaps Ozone) will be used in large amounts, to neutralise the hydrogen sulphide and other toxins in the Anaerobic Compost Filtrate. Asserts that these dosing agents are toxic hazardous substances.
- That the only comparison for compost with high levels of hydrogen sulphide is from intense mushroom farming and that in Canada and Ireland there have been deaths from hydrogen sulphide poisoning in the removal of mushroom compost. Reports that in some Canadian states this process is required to be undertaken in air/gas tight buildings and passing it through hydrogen peroxide solutions before being vented to the atmosphere.
- “It's comforting to know that the very best future technology will be used to handle the compost, when the time comes, but it would be good to know, for example, how part of the compost layer could be removed and replaced, without disturbing the rest of the lagoon, if this needed to be done tomorrow…”
- Query how this “toxic sludge” would be transported and where it would be dumped. Consider this to be a danger.

8.51 d) Vulnerability to Accident / Extreme Events

- That if the CBTPs freeze over, hydrogen sulphide gas would continue to be produced anaerobically meaning large concentrations of hydrogen sulphide gas would accumulate under the ice and that when the ice melts large volumes of gas would be released to air and be a severe public health risk.
- That unpredictable and extreme weather conditions of this area will affect the safe running of the treatment process;
- There has been no longterm investigation of how concentrations of hydrogen sulphide in CBTPs change under different weather conditions.
- That “Statistically the dangers of major accidents en-route to and from the proposed site, even on moorland roads in severe winters, are not high; but are however significant” with the nature of loads carried being hazardous.
- That “the means of sealed transport of this hazardous waste [heavy metal contaminated waste compost] off-site, to hazardous landfill, has not been decided. If these trucks are involved in a major accident, the effects of toxic...
H2S gas exposure as well as the toxic heavy-metal exposure, would be very serious

- That “response time to our remote location would be a likely problem, increasing hazard risk.”
- That “storage of Hydrogen Peroxide on-site is an accident hazard” as tank or pipework fractures could lead to it spilling “downhill onto hay meadows, the proposed reed-bed ponds and into the River Nent”.
- That the application “discusses the possibility of generating Ozone chemically on site, to increase the percentage neutralization of toxic H2S in the lagoon filtrate. This site, as AECOM in their reports confirms, would be largely unstaffed and the explosion hazard of high-voltage ozone production, is not discussed”.
- That the CBTPs are to be constructed on high ground which increases the risk of subsidence and that a resulting breach of a CBTP due to future settlement would allow the “heavy-metals and sewage sludge compost slurry” to contaminate the floodplain hay meadows and the rivers Nent and Tyne.

8.52 **e) Other Comments in relation to the treatment process / proposal**

- That the type of treatment proposed is still experimental - with there being only one other such treatment plant of this kind in the country – namely that at Force Crag Mine which is situated in a very isolated area of the Lake District. Due to the experimental nature of the process there is still a substantial lack of certainty in respect of its impacts.
- Perception that residents of Alston Moor are being treated as guinea pigs.
- That the treatment technology is “clearly in need of further study, and measures to remediate hydrogen sulphide pollution are still experimental”.
- That there has been no investigation of the proposed treatment technologies “pollutant emissions over long periods or under changing weather conditions”.
- If the proposals should be accepted it should only be under the strictest possible conditions on air quality.
- That there is no appropriate site on Alston Moor for the proposed installation.
- That a safer form of treatment should be utilised.
- That more effective and efficient means to treat the minewater are not being considered by the applicant because of cost.
- That the CBTPs are not the same as Anaerobic Digesters found on farms (which produce methane / biogas) or water treatment plants or decorative ponds.
- That sulphur based chemicals could enter the food-chain.
- Application should not be progressed until all health concerns are dealt with.
- Query whether a safety plan or risk assessment has been produced to identify the potential hazards and how these will be addressed?
- Should planning approval be granted permissible levels of hydrogen sulphide given off from the facility should be clearly defined and monitored.
- Should planning approval be granted then an action plan should be secured requiring reductions of hydrogen sulphide emissions to stipulated parameters within a set timescale – e.g. 24hours.
- That there are no obvious health concerns relating to the River Nent in its current condition – it has no adverse health effects on the human population and many species of animals and plant-life flourish along the river.
- That the proposal fails to address any local or national environmental need.
8.53  > Odour Impact

- The form of treatment proposed produces hydrogen sulphide gas which has a characteristic foul rotten egg smell that would cause significant nuisance.
- Complaints have been made about the obnoxious gas smell from the Force Crag Minewater Treatment site even though it is in an isolated place with no houses nearby.
- That the odour monitoring undertaken at Force Crag was half-hearted, does not constitute a detailed assessment of sources of odour from this facility and has not been peer reviewed.
- That odour nuisance from hydrogen sulphide occurs between 8ppb and 20ppb depending on the person concerned.
- “That only computer modelling has been used to assert that “no odour will be detectable beyond the site boundary””.
- That the applicant sets out a “suck-it-and-see approach to odour abatement, commissioning and compost removal” the project’s uncertainty.
- Queries how odour will be reduced if it becomes unacceptable.
- Fearful that future financial constraints could affect the applicant’s ability to effectively control odour emissions.
- That “Even if the applicant is able to maintain a “very minor (not significant)” level of hydrogen sulphide in the air around the plant, it will still be detectable, and therefore noisome, for the next 40 years”.
- That significant odours would be released during commissioning and maintenance.

8.54  > Impact upon the AONB (including landscape and visual impact)

- Adverse impact on the character, tranquillity, wildlife and landscape value of the North Pennines Area of Outstanding Natural Beauty.
- That the proposal, and similar minewater treatment schemes intended to follow, could irreversibly degrade the area.
- That the treatment site would be clearly visible from the nearby road between Alston and Nenthead.
- That the CBTPs would appear ugly in a natural meadow and would not protect the area’s outstanding natural beauty.
- That “tasteful landscaping” to try and hide the proposal would do little to minimise its presence.

8.55  > Socio-Economic impacts / implications

- That “Alston Moor (Nenthead, Nentsberry, Alston Town and Garrigill) is a community which relies heavily on its natural environment for its economic survival” and that this proposal would adversely impact that natural environment and have concomitant adverse socio-economic effects. Consider that it would have a negative Impact upon existing tourism related businesses – i.e. the nearby hotel, caravan sites and bunkhouses and tourism related activities, attractions and visitors centres - with game-shooting, Mining Heritage Sites, Outdoor Recreation Facilities and School Adventure Trips (Duke of Edinburgh) being cited as examples.
- That the sight and smell of the proposal would deter visitors.
- The applicant’s promised boost to tourism as a result of the scheme is unrealistic.
- That promotion of the scheme would tarnish the area as a pollution black-spot and adversely impact upon local tourism.
• That potential adverse odour and health effects could deter tourists from returning to the area.
• The proposal would adversely affect property prices.
• That people settle on and visit Alston Moor for its clean air, beautiful scenery and healthful environment and that this proposal jeopardises those characteristics / pull-factors.
• Query whether the full costs of the scheme – in terms of pumping water to the treatment site and the quantities of hydrogen sulphide potentially required, have been evaluated and query who will pay for it.
• That all costs associated with the initial installation and power consumption of the scheme should be defined and should not fall on council tax rate payer.

8.56 > Impact upon Heritage Assets

• The proposal would have an adverse impact on the adjacent, recently restored, Hudgill Lead Mine Bingsteads Scheduled Monument.

8.57 > Nature conservation, biodiversity impact and soils

• That the proposal would result in the loss of habitat and could adversely impact on protected and priority species.
• That for the past 30 years the following species have been observed on site:

<table>
<thead>
<tr>
<th>Grouping</th>
<th>Protected Species</th>
<th>Other Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birds</td>
<td>▪ Barn Owl</td>
<td>▪ Mallard</td>
</tr>
<tr>
<td></td>
<td>▪ Curlew</td>
<td>▪ Meadow Pipit</td>
</tr>
<tr>
<td></td>
<td>▪ Buzzard</td>
<td>▪ Oystercatchers</td>
</tr>
<tr>
<td></td>
<td>▪ Dippers</td>
<td>▪ Wheatear</td>
</tr>
<tr>
<td></td>
<td>▪ Fieldfare and Redwing Thrushes</td>
<td>▪ Wren</td>
</tr>
<tr>
<td></td>
<td>▪ Grey Partridge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Kestrel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Lapwing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Snipe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Sparrow Hawk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Tawny Owl</td>
<td></td>
</tr>
<tr>
<td>Animals</td>
<td>▪ Hare</td>
<td>▪ Badger</td>
</tr>
<tr>
<td></td>
<td>▪ Otter (feeding on Brown Trout &amp; Eels),</td>
<td>▪ Mole</td>
</tr>
<tr>
<td></td>
<td>▪ Water Vole (a protected species which they say are not present)</td>
<td>▪ Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Roe Deer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Stoat</td>
</tr>
</tbody>
</table>

• That adjacent to the site area the following protected species have been seen: Heron (feeding on Water Voles & Frogs), Gold Crest and Red Squirrels. Other species seen on the adjacent area are Black & Red Grouse, Coal Tit, Cuckoo, Greater Spotted Woodpeckers, Grey Squirrels, Long Tailed Tit, Mistle Thrush, Nuthatch, Siskin, and Tree Creepers.
• “The statement that nesting bird sites found during construction will be protected, is worthless. Species such as Snipe, Curlew, Oystercatchers and Lapwing, are too shy to stay on the nest, while construction work goes on around them – and are likely not to return because of the change of habitat.”
• That in extreme weather conditions the overflow pipe from the CPTS would direct untreated minewater “back into the Nent and/or into the North Hudgill burn (contaminating a Protected Water Vole habitat)”.
• That this sheep pasture land is partially on a river floodplain which has a wide range of meadow flowers. It is a very important feeding site for the wading birds and ducks. This is a very important and rare local habitat.
- The River Nent adjacent to the site hosts extremely rare Metal-tolerant algae, Dippers and Sandpipers.
- That the area hosts rare metallophyte species [calaminarin grasslands] which are threatened by the proposals as “their habitat absorbs the effects of metals mining.
- That the proposal would remove 24,000 tonnes of topsoil from the proposed MWTS and that “top soil on Alston Moor is too valuable to be lost from these fields, which are wildflower hay meadows”

8.58 > Contaminated Land

- Lead and Zinc Ores, such as Galena, are highly likely to be present on site given the historic mining activity in the area.
- Many of the River Nent floodplain fields have high Heavy Metal contamination from flood flows as the Nent has a very high sedimentary load of Heavy-Metal Ores. This is evident, not only from scientific testing, but from the abundant metalliferous plants on site.

8.59 > Water Environment & Flood Risk

- Support of the objective of improving water quality in the River Nent.
- No evidence that the scheme would work.
- That “the best the scheme can achieve locally is to improve the river habitat at times when much of that habitat is running dry”
- Queries what “ratio of contamination between the water entering and exiting the facility would be deemed successful”?
- That should planning approval be granted then an agreed plan to monitor the water quality entering and discharging from the facility should be secured with samples being taken on a regular basis.
- That laboratory samples of treated water should be independently verified.
- That the proposal will do little to bring metal loadings in the River Nent within Environmental Quality Standards (EQS) – with it expected to remove 25% of Zinc, 10% of Cadmium and <1% lead from the River Nent. Water toxicity in the Nent will not improve without a significantly greater reduction than the proposal offers. The river Nent fails the EQS before any minewater from Nent Haggs is even added.
- Significance of minewater to water quality in the River Nent is seasonal (covering about a third of the year) and is progressively diluted downstream and is dwarfed by the consequences of sediment transported from the area which is a significant source of lead.
- More should be done to stabilise stretches of river bank.
- The benefits of cleaning the water from Nent Haggs lie further downstream in the South Tyne, though they do not consider that fish stocks would improve significantly due the presence waterfalls and dams.
- That this project would have minimal impact on improving “toxin levels in the River Tyne Estuary”.
- That the proposed MwTS' fields are in a flood plain and regularly under water.
- That the public were informed that surplus topsoil would be retained on the MWTS to form floodbunds.
- That once minewater has been filtered through the sewage-sludge inoculated compost and dosed with Hydrogen Peroxide it is then proposed to undergo Biological Tertiary Treatment in two Reed-Bed Ponds. Consider that this polishing treatment is not explained and postulates that if the reed bed ponds’ water levels were low and there were strong winds, the sewage
contaminated sediment in these would be discharged into the River Nent. Highlights that this area of the Nent Valley is known for very strong wind speeds.

- That diversion of water from the Nent Haggs adit would adversely affect the volume of water flowing along a 3km stretch of the River Nent and considers that in dry summer conditions “severe eutrophication will occur” and that this would look and smell unpleasant and means that this stretch would not be able to support the rivers’ population of Brown Trout would put livestock and plant populations (including important metalliferous species) at risk.

8.60 > Traffic Impact

- The scheme will involve tankers transporting large volumes of hazardous chemicals and waste materials on the small roads of the moor.
- The scheme would generate “unnecessary traffic”.

8.61 Nenthall Bridge

- That attaching a 250mm diameter pipe to the north side of the stone masonry constructed Nenthall Bridge will have an adverse visual impact and would not enhance the landscape. That the proposal to minimise the adverse visual impact of the pipeline by painting it in a colour to blend in would not serve to minimise the impact. That the pipeline should instead be buried at the river crossing as is the existing water main.

8.62 Pipeline

- Routing of the pipeline in the highway will cause extended disruption and a route off the highway should instead be used.

8.63 Other Miscellaneous Points Raised in Respect of the Proposals

- Express doubts about the long-term sustainability of this scheme as well as “its motivation, impact and appropriacy”.
- That the “Haggs Mine polluted water should be treated where it emerges at Nentsberry”.
- That the application is ill conceived and insufficient information has been provided.
- That “the applicant has provided so many alternatives and fall-back positions that, rather than reassure, they give the impression that nobody has a clue what is going to happen”.
- That there are a number of outstanding problems that have not been addressed by the applicant and that these indicate the trial nature of the proposal.
- The proposal would entail a lengthy and disruptive period of development.
- That further anaerobic CBTPs are proposed upon the Moor in addition to this proposal.
- Query “what is the plan to return the site back to pasture should the project fail to reach its design performance”.
- That if planning permission is granted it should only be done so for a temporary fixed period (such as three years) and that should the experiment not achieve expectations then the site to be returned to pasture.
- That “Less polluting methods of treating mine water do exist (active systems may be ugly, but that’s what hedges are for)”.
- That it would make more sense to backfill the mines in question with concrete (and that Scheduled Monument designation should not be used as an excuse against this).
- That “Slag heaps further up the river, near Hansome Mea, are in imminent danger of collapse, further contaminating the river” and that works to prevent this should be undertaken and “would have a significant, if less easily quantifiable, impact on both loading and concentration of metals in the downstream river system.
- That calamarian grasslands/plants could be harnessed to clean up polluted run-off.
- That the originally submitted planning application form includes “many errors (or even false statements)”. The content of the following numbered and named sections of the application form are disputed:
  - Section 7: Waste Storage and Collection;
  - Section 11: Foul Sewage;
  - Section 13: Biodiversity and Geological Conservation;
  - Section 14: Existing Use – Dispute the stated nature of the current use of the land
  - Section 22: Industrial or Commercial Machinery;
  - Section 23: Hazardous Substances

8.64 Publicity & Engagement

- Lack of individual notification in respect of the planning application;
- That pre-application engagement undertaken by the Coal Authority and the Environment Agency (including written responses, face-to-face meetings and Public Presentations) “remained vague, inconclusive and gave false assurances”.
- That the applicant’s engagement with the public has “resembled a marketing campaign, rather than a sincere attempt to build consensus”.
- That following the selection of the proposed site that the applicant should have engaged and consulted with the wider Alston Moor Community, as the proposed treatment site to be progressed is situated in the Alston Town district ward.
- That the Plans submitted differ from those previously used in pre-application community consultation(s) (and that many people locally are not aware of these changes);

8.65 The above summarised representations include points made by Alston Moor Community Protection - a group of 20 residents opposed to the scheme. They close their representation by arguing that the installation is “experimental, ineffective and too great a hazard in populated areas. Environmental Pollution or Accident Owing to Operational Mishap are additional serious concerns”.

Round-robin style template letters

8.66 22 “round robin style” template letters of objection have been received. The template text of these objects on the grounds of the “release of toxic hydrogen sulphide gas from the three lagoons”. These template letters also provided space for individuals to expand upon this and include additional points. Ten out of the seventeen letters utilised this space. Further issues/views raised on these in respect of the proposed development include:

- That it is unsuitable for the area;
That it would ruin this quiet and unspoilt area of outstanding natural beauty.
That it would create a public health issue – with one representee stating that they live in close proximity and express concern about the impact that it may have on their partners health as they suffer from asthma;
That Hydrogen Sulphide gas will contaminate the area with it being heavier than air and more poisonous than Carbon Monoxide;
That the submitted application has not fully assessed the potential risks involved with the proposal;
Odour impact of the Hydrogen Sulphide gas released;
Proximity to residential dwellings;
That the proposed treatment plant is still experimental – highlights that there have been a number of problems at the Force Crag Minewater Treatment Site (and that Force Crag is situated in a remote location away from people);
That insufficient information has been submitted in respect of the proposal;
That “more information is required before an informed opinion can be given by residents – in particular, levels of Hydrogen Sulphide and toxicity and management of faults”;
That it is not wanted by the local community;
Destruction of a special environment for feeding and nesting of waders such as snipe and curlew;
That there is no need for the development as the “water was good then and is now”. A further representee expands that the existing water quality has led no side-effects on longstanding local residents.
Lack of notification in respect of the proposed application/scheme.

**Petitions**

8.67 Two differently worded sets of petitions have been submitted in opposition to the scheme.

8.68 The first petition to be received has been signed by 69 individual signatories over the course of the application. A number of signatories of the petition have also submitted individual letters of representation and round robin style template letters. The text of this petition states the following:

“The release of toxic Hydrogen Sulphide gas into the air is a dangerous public health hazard. The odour abatement proposal does not address the real problem. On the boundaries of this site are farms, residences, Lovelady Shield Hotel and a well-used by-pass road. Very close is a large Caravan Park, a bus stop, more homes, Nenthall Hotel and the main road between Alston and Nenthead which links up to the site (by-pass) road. There are a significant number of residents and visitors within a close radius whose health would be badly affected by this Treatment Plant.”

8.69 A second petition was received on 23 July 2018. This petition takes the form of a letter dated 18 July 2018 and includes the names/signatures of 62 individuals. A number of signatories of the second petition have also signed the first petition and submitted individual letters of representation and “round robin style” template letters. The second petition states the following:

“The Hydrogen Sulphide Anaerobic Digester, proposed at Hudgill/Foreshields, and any future Digesters planned for Capecleugh, Rampgill (Nenthead), the Nent Force Level (Gossipgate, Alston), any proposed for Garrigill, etc. are not safe (acceptable) to be built in sites close to our homes or on our moors. The
release of H2S gas from the Open Lagoons is not quickly controlled and is not only an ‘Odour Nuisance’ but is a Public Health Risk. The Uncertain Safe Disposal Method for the Hazardous H2S and Zinc/Lead/Cadmium-Saturated Compost, is also an unacceptable risk to people nearby – and in any populated area. The Accident Risks from Hydrogen Peroxide (H2O2) Spillages, from Lagoon Breaches, or from Reed-Bed Sludge Pollution, of the Rivers Nent and South Tyne are too high to be acceptable.

The Loss of feeding and breeding sites for Protected and Endangered Species of animals and birds is unacceptable, especially in what is supposed to be a North Pennines Area of Outstanding Natural Beauty. The Water Voles, Brown Hares, Badgers, Curlew and Oystercatchers have bred on the Hudgill/Foreshields site for decades. The three fields of this site are wildflower – rich hay meadows and pasture which is increasingly rare in the UK. This season these fields have had sheep and lambs, then a wildflower hay crop and now sheep and cattle grazing. This is not vacant land (as stated in both planning applications), but a long-term valuable farmland, which needs to be preserved on Alston Moor, where good farming land is precious.

Health effects from H2S exposure can be extremely serious and in the worst circumstances, fatal. We consider this planning proposal to be an intolerable interference and threat to our right to enjoy our natural living environment. The elderly and the young, the infirm and those who live an outdoor life would all be adversely affected. Installation of these Digesters would have an irreversible negative impact on our economic, social, cultural and touristic experience of life on Alston Moor. Our livelihoods, health, associations and in the end, our ability to live here would be denied to us.

We, the residents of Alston Town, respectfully ask that you Reject the Planning Application #03/18/9001 and Reject other Hydrogen Sulphide Anaerobic Digesters on Alston Moor.”

9.0 PLANNING POLICY

9.1 Section 38(6) of the Planning & Compulsory Purchase Act 2004 provides that planning applications must be determined in accordance with the development plan unless material considerations indicate otherwise. Government policy is a material consideration that must be given appropriate weight in the decision making process.

9.2 The Cumbria Minerals and Waste Local Plan 2015-2030 (CMWLP) was formally adopted on 6 September 2017. The key planning policies contained within this that are relevant to the determination of this planning application are considered to be:

- SP1 - Presumption in Favour of Sustainable Development
- SP2 - Provision for Waste
- SP13 - Climate Change Mitigation and Adaptation
- SP14 - Economic Benefit
- SP15 - Environmental Assets
- SP17 - Section 106 Planning Obligations
- DC1 - Traffic and Transport
- DC2 - General Criteria
- DC3 - Noise
- DC5 - Dust
• DC6 - Cumulative Environmental Impacts
• DC9 - Criteria for Waste Management Facilities
• DC16 - Biodiversity and Geodiversity
• DC17 - Historic Environment
• DC18 - Landscape and Visual Impact
• DC19 - Flood Risk
• DC20 - The Water Environment
• DC21 - Protection of Soil Resources

9.3 Some thematic and area based policies of the Eden District Council Core Strategy (EDC CS) - adopted 31 March 2010, and saved policies of the Eden District Council Local Plan (EDC LP 1996) - adopted December 1996, are also of some relevance to the consideration of this proposal. Policies of particular relevance to this proposal from these are considered to be:

• CS1 - Sustainable Development Principles;
• CS4 - Flood Risk;
• CS16 - Principles for the Natural Environment;
• Saved Policy NE1 – Development in the Countryside;
• Saved Policy NE2 – Development in the North Pennines AONB;
• Saved Policy NE10 – Woodland Planting;
• Saved Policy BE9 – Protection and Recording of Archaeological Remains;
• Saved Policy BE10 – Archaeological Assessments;
• Saved Policy BE18 – Environmental Improvements;

9.4 An examination into the soundness of the proposed Eden District Council Local Plan 2014-2032 (EDC LP 2014) commenced in May 2016. Following this Eden District Council have consulted upon various Main Modifications to their proposed new Local Plan – with the majority of modifications focusing upon housing matters. A final proposed Main Modifications consultation expired on the 24th January 2018. A consultation on a revised Habitats Regulations Assessment that underpins the plan closed on the 4 August 2018. The Planning Inspector is now anticipated to finalise their report on the plan in the coming months. Draft policies of particular relevance to this proposal from these are considered to be:

• DEV1 - General Approach to New Development;
• DEV2 - Water Management and Flood Risk;
• DEV5 - Design of New Development;
• ENV1 - Protection and Enhancement of the Natural Environment, Biodiversity & Geodiversity;
• ENV2 - Protection and Enhancements of Landscapes and Trees;
• ENV3 - The North Pennines Area of Outstanding Natural Beauty;
• ENV4 - Green Infrastructure Networks;
• ENV7 - Air Pollution;
• ENV8 - Land Contamination;
• ENV9 - Other forms of Pollution (Noise, Vibration, Dust, Odour, Light, Water Quality);

9.5 Neighbourhood Plans also form part of the statutory development plan once it has been made (brought into legal force) by the local planning authority. Alston Moor Parish was designated as a Neighbourhood Area on 1 July 2014. Consequently Alston Moor Parish Council now has the right to produce a neighbourhood plan and/or neighbourhood development orders. It is currently understood that Alston Moor Parish Council are not progressing a neighbourhood plan at this moment in time.
9.6 Eden District Council have adopted two Supplementary Planning Documents covering the North Pennines AONB:

- North Pennines Area of Outstanding Natural Beauty (AONB) Planning Guidelines (adopted 29 July 2011);
- North Pennines Area of Outstanding Natural Beauty (AONB) Building Design Guide (adopted 29 July 2011);

9.7 In terms of this proposal, these SPDs provides relevant guidelines in respect of environmental resources - in terms of Landscape Character, Biodiversity and geodiversity, Cultural heritage, Tranquillity (light and noise); Soil, air and water; and specific types of development such as minerals extraction and access roads and tracks.

9.8 A revised version of the National Planning Policy Framework (NPPF) was published on 24 July 2018 and came into immediate effect. The NPPF is a material consideration in the determination of planning applications. The following sections and paragraphs of the NPPF are considered to be relevant to the determination of this application:

- Section 2: Achieving sustainable development - Paragraphs 7-8, & 10.
- Section 4: Decision Making – Paragraphs 38, 47, 48, & 54-56.
- Section 8: Promoting healthy and safe communities – Paragraphs 95, 98.
- Section 11: Making effective use of land – Paragraphs: 117, 118.
- Section 12: Achieving well-designed places – Paragraphs 124, 127, 128, 130, 131.
- Section 14: Meeting the challenge of climate change, flooding and coastal change – Paragraphs 148, 150, 153, 155, 163, 165.
- Section 15: Conserving and enhancing the natural environment – Paragraphs 170, 172, 175, 176, 177, 178, 179, 180, 181, 183.
- Section 16: Conserving and enhancing the historic environment – Paragraphs 184, 189, 190, 192-200.

9.9 It should be noted that paragraph 177 of the NPPF stipulates that the presumption in favour of sustainable development is not applicable to proposals such as this that require Appropriate Assessment under the Habitats Regulations. The NPPF also notes that SPDs are capable of being a material consideration in planning decisions but are not part of the development plan.

9.10 The National Planning Practice Guidance (NPPG) suite was launched in March 2014 and is an online resource that is regularly updated. The NPPG is also a material consideration. Sections of the NPPG of particular relevance to these proposals are considered to be the following:

- Air Quality
- Before submitting an application
- Conserving and enhancing the historic environment
- Design
- Environmental Impact Assessment
- Flood risk and coastal change
- Land affected by Contamination
- Land stability
- Natural environment
- Noise
Planning obligations
Travel Plans, Transport Assessments and Statements
Use of planning conditions
Water supply, wastewater and water quality

9.11 *The National Planning Policy for Waste* (NPPW) was published on 16 October 2014. This sets out the government’s current waste policy to be taken into account by waste planning authorities and forms part of the national waste management plan for the UK. This has also been taken into account.

10.0 OTHER RELEVANT LEGISLATION


10.2 The Countryside and Rights of Way Act 2000 places a duty on Local Authorities to have due regard to the purpose of AONB designation (the conservation and enhancement of natural beauty) in the discharging of their functions.

10.3 The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on Local Authorities to have regard to conserving biodiversity in the exercise of their functions. Section 41 of the NERC Act 2006 sets out types of habitat that are Habitats of Principal Importance (HPI) for the purpose of conserving biodiversity. N.B. HPI were formerly referred to as Priority Habitats.

10.4 Article 13 of the EU Waste Framework Directive (2008/98EC) requires member states to take the necessary measures to ensure that waste management is carried out without causing a nuisance through noise or odours.

11.0 PLANNING ASSESSMENT

11.1 The main key planning issues relevant to the proposed schemes are considered to be:

A) *Is there a need for the proposed scheme?*

B) *Is the principle of siting the proposed development within an AONB acceptable?*

C) *Would the proposed design of this scheme within the location(s) proposed have an unacceptable landscape and visual impact?*

D) *Would the proposed treatment process have an unacceptable impact upon Human Health?*

E) *Would the proposed development result in a level of odour emissions that would have an unacceptable impact upon local amenity?*

F) *Would the proposed development have an unacceptable impact upon habitats and species?*

G) *Would the proposed development have an unacceptable impact upon heritage assets?*
### Need: Is there a need for the proposed scheme?

11.2 Within the WAMM programme the River Nent catchment is ranked as the most polluted catchment in the Northumbria River Basin District and the second most polluted river in England. The pollution within the River Nent contributes to pollution in the River South Tyne up to 40km downstream.

11.3 The Water Framework Directive (WFD) provides for the analysis, planning and management of water bodies. It is delivered in England through River Basin Management Plans (RBMPs) which describe baseline waterbody conditions and objectives for their improvement. An RBMPs objectives for each quality element within every water body within their river basin area are legally binding.

11.4 The Northumbria RBMP (NRBMP) (updated December 2015) states that the River Nent is failing to achieve its ‘Ecological Potential’ (in terms of fish and invertebrates) primarily due to high levels of zinc, cadmium (a ‘priority hazardous substance’) and lead (a ‘hazardous substance’). The River Nent is currently, based on 2016 data, classified as having moderate ecological status and to fail in respect of its chemical status. Surveys of the River Nent have revealed that non-migratory brown trout, the primary fish species in the watercourse, are found at very low levels compared with the expected population. At least one other fish species, either minnow or stone loach, would also be expected to be present in this type of watercourse but none have been recorded. It is believed that the chronic (long-term) exposure to metals such as zinc in the tissues of the fish; particularly gills, liver, kidneys and bone; can limit the number of eggs produced and those that hatch, the quality of the offspring, and can reduce their lifespan. High metal concentrations also have an impact on the development of fish eggs in the watercourse after they have been fertilised. High metal concentrations not only directly affect fish reproduction and survival but also affect the number and variety of characteristic invertebrates (insects and other small aquatic animals) available for fish and other species to eat. Invertebrates form an important part of the ecosystem and are also a good indicator of water quality. Within the River Nent recent surveys have found no freshwater shrimp, whilst snails, crustaceans, mayfly and caddisfly are all under-represented.

11.5 In order for the River Nent to be able to achieve its required RBMP objective of overall ‘Good Potential/Status’ by 2027, reductions in the levels of cadmium, lead and zinc within it are required alongside other measures to address other factors negatively impacting this river. The main sources of metals to the River Nent are former mine workings and associated mine water discharges located throughout the catchment. The Nent Haggs Mine adit outflow at Nentsberry is one such source. The purpose of this scheme is to treat the minewater discharging from the Nent Haggs adit so as to reduce the amount of dissolved metals entering the River Nent, thereby helping the river to meet its legally binding RBMP objective.

11.6 The current metal loadings of the minewater discharging from the Nent Haggs adit are set-out below as compared to the WFD’s Environmental Quality Standards (EQS):

<table>
<thead>
<tr>
<th>Metal in Micrograms per litre (µg/L)</th>
<th>Zinc</th>
<th>Cadmium</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQS required to achieve good status for river basin planning</td>
<td>10.9 µg/L</td>
<td>0.08 µg/L</td>
<td>1.2 µg/L</td>
</tr>
<tr>
<td>Average filtered metal concentrations in the Nent Haggs adit (EA data: Apr 2016 to Jun 2018)</td>
<td>8,400 µg/L</td>
<td>7.23 µg/L</td>
<td>0.5 µg/L</td>
</tr>
</tbody>
</table>
11.7 It can be seen that the levels of Zinc and Cadmium in the minewater discharge are significantly in excess of the EQS; although it is acknowledged these metal concentration levels would be lesser when in the River Nent (due to the larger volume of water within the river). Taking this into account, the WFD Assessment submitted in support of this application highlights that a previous study of water flow and quality data in the River Nent concluded that “the 95th percentile loadings from the Nents Hagg adit contribute an estimated loading proportion of 7.2% cadmium, 0.3% lead and 17.5% zinc to the River Nent at Nenthall”. Whilst these percentages may not seem high, this is due to the fact that the River Nent is also heavily contaminated by metals derived from mining legacy upstream of the Nent Haggs Mine Adits outfall into the Nent. Assuming the amounts of metals that are discharging from the Nent Haggs Adit found their way into a watercourse that was of “good status” and of a similar size to the River Nent, then the average metal concentrations of Zinc would exceed the EQS by 143x. From the above it is clear that the Nent Haggs adit at Nentsberry is a notable source of heavy metal pollution.

11.8 The Nent Haggs Minewater Treatment scheme has been designed based on providing a reduction in the metal loading within the mine water discharge from the Haggs Adit of between 70% to 90%, treating a total flow of 10 l/s. As such it would make a notable contribution towards lowering the metal concentrations within the River Nent and thereby helping enable the watercourse to meet the required EQS.

11.9 Paragraph 7 of the NPPF establishes that “the purpose of the planning system is to contribute to the achievement of sustainable development”. The NPPF establishes that the environmental dimension/role of sustainable development involves contributing to protecting and enhancing the natural environment and that helping to improve biodiversity and minimising pollution are a key part of this. The design objective of this scheme to reduce the input of metals into the River Nent is considered to strongly align with environmental role of sustainable development. Policy SP1 of the CMWLP requires the Council to take a positive approach that reflects the presumption in favour of sustainable development contained in the NPPF.

11.10 The project also resonates strongly with the broad objectives of Paragraph 170 of the NPPF which sets out that the planning system should contribute to and enhance the natural and local environment by helping to improve local environmental conditions such as water quality (explicitly referencing the need to take into account River Basin Management Plans). The PPG establishes that water quality is an important material planning consideration and that where it stands to be affected that assessments of the proposed development should take into account the measures in the river basin management plan to achieve good status in water bodies.

11.11 The legacy of metal mining activity on Alston Moor and its continuing impact on the water quality of the River Nent and further downstream is an environmental problem that clearly needs addressing. There is a clear national policy impetus and driving legal imperative to improve water quality. As such it is accepted that there is a strong environmental need for the proposed scheme.

**Principle of Location within an AONB:** *Is the principle of siting the proposed development within an AONB acceptable?*
11.12 **Part IV, Section 85 of the Countryside and Rights of Way Act 2000** requires Councils to have regard to the purpose of conserving and enhancing the natural beauty of designated Areas of Outstanding Natural Beauty (AONBs) in exercising or performing any functions in relation to land within an AONB. AONB designation primarily seeks to recognise, conserve and enhance the distinctive natural beauty of certain landscapes that are deemed as being of high quality. Paragraph 172 of the NPPF expands that AONBs have the highest status of protection in relation to landscape and scenic beauty.

11.13 Paragraph 172 of the NPPF directs that planning permission should be refused for major developments in AONBs, “other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest”. The NPPF sets out that whether a proposal is ‘major development’ for the purpose of paragraph 172, is a matter for the decision taker. Taking into account the proposals spatial extent, the scale of the proposed MwTS, its wider setting and potential to have significant adverse impacts I am satisfied that this proposal constitutes major development for the purposes of Paragraph 172. Paragraph 172 of NPPF continues that “consideration of such applications should include an assessment of:

- the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;
- the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for it in some other way; and
- any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.”

11.14 Policy SP15 of the CMWLP echoes the NPPF, stipulating that major developments that adversely affect AONBs will only be granted planning permission in exceptional circumstances and where it can be demonstrated that they are in the public interest. Emerging Policy ENV3 of the EDC LP 2014 states that proposals within the North Pennines AONB will only be permitted where they do not have a significant or adverse impact upon its special qualities or statutory purpose; do not lessen or cause harm to its distinctive character; and they adhere to design guides and policies contained within the North Pennines Management Plan, the North Pennines AONB Planning Guidelines and the North Pennines AONB Building Design Guide. Policy ENV3 repeats the approach to major development set-out in the NPPF, however the EDC LP 2014 defines Major Development in line with **The Town and Country Planning Development Management Procedure (England) Order 2015** (DMPO). Due to its nature and scale this proposal also represents a Major Development as defined within the DMPO.

11.15 Saved Policy NE2 of the EDC LP 1996 sets out that priority will be given to the protection and enhancement of the special character of the North Pennines AONB and that major development outside established settlements will only be permitted if an exceptional case can be made and all reasonable alternative locations have been explored and shown to be unacceptable. It requires all development within the North Pennines AONB to minimise environmental impacts and contribute to the preservation or enhancement of the distinctive character of the landscape through appropriate siting, design, materials and
11.16 Having established that the proposal is major development, the above policies next require presence of an exceptional circumstance and demonstration that it is in the public interest. The drivers and environmental need for the development (in terms of what it seeks to achieve – i.e. a reduction in the level of pollution within the River Nent) has been clearly established in the preceding paragraphs of this section. Within the context of the first bullet point of paragraph 172 of the NPPF, it would seem clear that there is a strong national imperative (and legal obligation) to deal with pollution resulting from the legacy of mining activity upon the environment and to achieve good qualitative and quantitative status of water bodies. The creation and funding of the WAMM programme in itself is testament to the national drive to tackle the heavy metal pollution of watercourses. Given the condition of the River Nent and the national need to deal with these issues, it is considered that the need to reduce metal pollution and improve water quality is strong and in the wider public interest. The significant level of heavy metal pollution in the River Nent and the national imperative to reduce this would seem to present an exceptional circumstance for development within the AONB and outside of established settlements.

11.17 It is considered that the impact upon the economy of permitting or refusing this application would be negligible in both scenarios. Permitting it could arguably lead to a reduction in the level of tourism at a local level due to negative perceptions associated with its presence and emissions; however the improvement the scheme could help deliver to the River Nent could arguably increase tourism as a result of improved water quality and increased wildlife. The converse could also be argued, i.e. that refusing the proposal would adversely impact the local tourism economy by leaving the River Nent in a polluted state. The scheme would only deliver small-scale indirect benefits for the local economy and would only generate/sustain jobs during the construction and commissioning phases. In light of the above it is reasoned that economic considerations do not serve to provide exceptional circumstances.

11.18 In accepting the need, the second bullet-point of Paragraph 172 of the NPPF, in respect of the cost of, and scope for, developing elsewhere outside the AONB (or meeting the need for it in some other way) next becomes key. The Nent Haggs Mine discharge adit is centrally located within the North Pennine AONB. It measures 9 miles as the crow flies from the nearest part of the AONB’s boundary. Given the distance and intervening wild moorland topography and habitat; the economic and environmental costs/scope for transporting the minewater outside the AONB boundary are accepted as being economically unviable, environmentally unsustainable and spatially inequitable.

11.19 In terms of meeting the need (of reducing heavy metal pollution within the River Nent) in some other way, it is considered that only some form of treatment process can address the high dissolved metal content within the water-column. Interventions such as check-weirs or bank stabilisation can only serve to remove solid trace metals associated with sediments. Nor do I consider it possible or desirable to prevent water from entering and leaving Nent Haggs Mine. Consequently it is accepted that a water treatment process is required to contribute to meeting the objectives of the WFD, NRBMP and the national WAMM programme.
11.20 In sum, there would appear to be a strong national impetus to reduce pollution and improve water quality and it is recognised that these objectives are in the wider public interest and present exceptional circumstances justifying development in the North Pennines AONB. It is also recognised that removal of dissolved metals from the water column is required to contribute to these objectives and that there is no other means to do this than a treatment process. Nor is there considered to be any reasonable scope to site such a minewater treatment development for Nent Haggs Mine outside of the AONB boundary. Consequently it is considered that the principle of siting a minewater treatment scheme in the AONB to help address the heavy metal pollution of the River Nent is acceptable in principle. The scheme would address an environmental problem that is present within the AONB and is linked to historic human activity that has influenced the landscape of the AONB.

11.21 With the principle of developing a minewater treatment scheme to address heavy metal contaminated water outfalling from the Nent Haggs Mine adit accepted it therefore falls to whether the specific scheme now proposed would be acceptable in terms of its environmental impacts. Consequently the following sections of assessment will address the third bullet-point test of Paragraph 172 of the NPPF relating to “any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated”.

**Landscape and Visual Impact:** Would the proposed design of this scheme within the location(s) proposed have an unacceptable landscape and visual impact?

11.22 Paragraph 172 of the NPPF sets out that “great weight should be given to conserving landscape and scenic beauty” in AONBs. Policy DC18 of the CMWLP requires proposals to be compatible with the distinctive characteristics of their host landscape and should avoid significant adverse impacts upon the natural landscape. It also seeks to ensure that development proposals are directed to “less sensitive locations, wherever this is possible, and ensure that sensitive siting and high quality design prevent significant adverse impacts on the principal local characteristics of the landscape” including views within AONBs. Policy DC18 also seeks proposals to use Landscape Character Assessment to assess the capacity of landscapes to accept development, to inform the appropriate scale and character of such development.

11.23 The North Pennines AONB can be broadly characterised as a very tranquil landscape of open heather moors between deep dales with a great sense of remoteness permeating throughout. The immediate landscape setting of the proposed development is classified by the Cumbria Landscape Character Guidance and Toolkit (CLCGT) as “8d: Main Valleys - Dales”. This area is characterised by a distinctive wide V-form upland river valley with steep slopes across which run numerous side ghylls. The area is predominantly rough pasture with tree cover confined to small dispersed woodlands, copses and plantations along water features. The CLCGT notes that the open and expansive uninterrupted views along valley bottoms and rims are sensitive to unsympathetically sited and scaled development. The areas north and south of the valley are classified as “13b: Fells and Scarps - Moorland, High Plateau”. The landscape character of the application site and its surrounds is of high sensitivity due to its AONB designation.

11.24 A landscape and visual impact assessment (LVIA) has been undertaken in respect of the proposals and submitted as part of the Environment Statement
(ES). The LVIA establishes the baseline conditions of the land that it is proposed to be developed (and its surrounds) in terms of its landscape character and visual context. This assessment will firstly focus on landscape impacts before progressing to consider visual impacts.

- **Landscape Impact**

11.25 The LVIA utilises the CLCGT and appraises that the landscape in the immediate context of the scheme is generally rural, of medium value, of good quality, of fair condition, and possesses fair scenic and perceptual qualities. It observes that the proposed MwTS and PSS comprise rough pasture bounded by partially dilapidated dry stone walls; sit within/toward the river valley bottom and “are not well defined within the wider valley floor due to the effect of topography, built form and the intervening vegetation”. However it also notes that there are several elevated points that allow views down to the sites. It also denotes the nearby presence of well-used highways as detractors.

11.26 The applicant has undertaken a rigorous site selection process incorporating extensive public/community involvement. This process is documented within the Statement of Community Involvement submitted in support of the application. A 2.5km search radius from the Nent Haggs adit was used to generate a long-list of possible sites. As part of the assessment of the potential sites, landscape and visual impact were recognised as important selection criteria. A low level of potential for unacceptable landscape and visual impact was a key factor that weighed in favour of the proposed MwTS (Site 4) compared to the other sites shortlisted, due to its visually contained location and the opportunity to embed it in a hillside to help conceal it. As such I am satisfied that the proposed development of the MwTS has been directed to a less sensitive location in landscape terms (as far as that is possible within an AONB and in the vicinity of the Nent Haggs adit).

11.27 The applicant reports that a number of design iterations looking at different layouts/configurations of the proposed MwTS were undertaken, including the number, siting and shape of ponds, so as to reach a design that would integrate into the landscape. The applicant also highlights that the ponds have been shaped to represent natural hydrological features typically found in a river valley, and that the two proposed buildings have been kept small and designed in a vernacular style with local materials in line with North Pennines AONB Design Guide. It is also noted that a Landscape and Ecological Management Plan, which includes soft green landscaping proposals for the MwTS and PSS has been devised so as to help soften and integrate these sites into their surrounds.

11.28 The LVIA notes that the proposed development of the MwTS and PSS would result in the direct loss of landscape elements (primarily predominant and characteristic rough pasture) and a number of additions of new elements. It considers that the proposed PSS would extend slightly the currently developed boundary of the hamlet of Nentsberry but would remain mostly in-keeping with the landscape character of the valley. The LVIA notes that the water bodies being created on the MwTS would represent new features but that “their proximity to the River Nent would help to integrate into the landscape” of the river valley and remain largely in-keeping. The LVIA considers that, within the contextSCALE of this landscape, the scheme would be small scale and partially retains some of the sites’ rough meadow characteristics. It continues to express the view that the sympathetic layout of natural looking water bodies and the high proportion of rough, marshy, grassland reinstatement would act to conserve the
natural quality and beauty of the landscape on the MwTS. Consequently, the LVIA reaches the view that the proposal “would not be entirely incongruous within the existing context of the hamlet of Nentsberry and the River Nent valley or within the wider landscape context of the Dales and Moorland – High Plateau character areas”. In terms of the Landscape Character Areas, the LVIA judges that the proposed scheme would have a minor adverse effect but that this would not be significant. Conversely, the LVIA identifies significant (moderate adverse) residual landscape effects on the scheme site during the construction phase and during the initial operational life of the site (in the opening year and 15 years after opening). However, it concludes that these landscape effects are site specific and that the overall character of the landscape would not experience an adverse effect due to the proposal.

11.29 The assessment of the impacts on the landscape is considered acceptable and I largely agree with its conclusions, although I would query the extent to which the CBTPs on the upper platform of the MWTS can be considered to integrate in to the landscape character of this river valley given their position/elevation in relation to the river Nent. That said it is accepted that they could be read as a natural feature from a distance. I consider that the proposed contours for the MwTS echo and tie into the existing contours of the area and note that the gradient of embankments is not dis-similar to those present in the vicinity. Consequently, whilst acknowledging the need and presence for level areas to service the CBTPs, I am of the view that overall the proposal provides a sympathetic landform fit. Moreover the provision of a landscape feature drystone wall and the proposed landscape planting scheme’s use of small scalloped groupings of native trees (including a notable number of heavy standards) along contour lines would serve to enhance the character of the site and reinforce key characteristics of the local landscape. As such I am satisfied that the MwTS has been sensitively designed so as to be compatible with the distinctive characteristics of its landscape setting and the AONB. Consequently I am of the view that the proposed design and landscaping of the MWTS avoids significant adverse impacts upon the natural landscape and therefore complies with Policy DC18 in this respect. I am also satisfied that the proposals go as far as possible in minimising change to the local landscape and therefore also complies with the final bullet-point of paragraph 172 of the NPPF in respect of this and the emerging EDC LP 2014 Policy ENV3.

11.30 With specific reference to the proposals for the PSS; I am of the view that these would have a negligible impact upon the landscape. Key factors in reaching this view are the small size and vernacular design of the pumping-station building; the ground-level nature of the remaining elements alongside their proposed grassing-over the track and sides of the drainage channels; and the nature of surrounding topography and boundary features. The sympathetic design of this site is considered to fit well with the landscape character of the immediate area and to conserve its open, scenic and perceptual qualities. Consequently it is considered that this component of the proposal does not lessen, or cause harm to, the distinctive landscape character of this open meadow field and therefore complies with CMWLP Policy DC18.

- Visual Impact

11.31 Turning to the visual effects of the proposed scheme (i.e. the effects on specific views and on the general visual amenity experienced by people); the submitted LVIA includes a Zone of Theoretical Visibility (ZTV) plan and assessment of the visual effects of the scheme from 18 representative viewpoints to assist in the
The ZTV plan is a bare earth plan using Ordnance Survey Terrain data. The ZTV plan shows that the PSS is the most open and readily visible area of the proposed scheme. The ZTV suggests visibility of the MwTS would be relatively limited within its immediate surrounds due to the local topography, with some potential for relatively narrow views from higher ground predominantly to the north-west, east and south-west of the MwTS. The viewpoints selected in the LVIA were agreed in conjunction with the Council and the analysis of the visual effects of the proposals at these points are considered to be sound. The viewpoint photography submitted is considered to be acceptable and in line with best practice as set-out in *Guidelines for Landscape and Visual Impact Assessment* (The Institute of Environmental Assessment and Landscape Institute, Third Edition; April 2013). Whilst it is disappointing that no three-dimensional imagery of the proposed MwTS was provided as part of the original application submissions as an additional illustrative tool; it is recognised that there is no requirement that such materials must form part of an LVIA and that the cross-sections submitted provide a useful representation of the visual change the scheme would result in.

11.32 The LVIA recognises that there are a number of visual receptors of high sensitivity within the area including residents with views of the scheme and recreational users of local public rights of way. The LVIA appraises that there would be significant residual visual effects upon some receptors during the construction phase, but that these would be localised and temporary in nature. As a significant portion of the minewater treatment infrastructure would be installed underground or at ground-level, visual impact of the operational scheme would be primarily confined to the proposed PSS, the rising-main pipeline crossing of the River Nent at Nenthall Bridge, and the proposed MwTS.

11.33 The PSS would be visible to users of some roads and recreational footpaths where high value views of natural elements of scenic quality are present alongside elements of human influence. It would also be visible from two dwelling-houses situated on the outer fringes of the field to be developed (namely the Old Chapel and Island Cottage); and a small number of residential properties at elevated locations on the nearby valley sides. As the introduction of built form would be limited and remain in-keeping with the local vernacular, and the track and drainage channels would be vegetated, I concur with the LVIA’s assessment that the proposal here would result in a Very Low to Low magnitude of impact and would not result in significant visual effects.

11.34 Visibility of the rising-main pipeline to the northern elevation of Nenthall Bridge would be largely confined to users of public right of way no. 302090 which runs along the western side of the River Nent to the north of the bridge and to a few properties at Nenthall on the un-named road (U3111) to the north-eastern side of the bridge. The LVIA considers that whilst the pipeline would be noticeable, its presence/position here would not alter the overall balance of features in the view. It concludes that the pipeline would have minor adverse (but not significant) visual effect. To minimise this potential adverse effect as far as possible, a condition is proposed to require the submission and agreement of the detailed design and samples of this externally installed pipeline.

11.35 The MwTS would undoubtedly create the greatest level of visual impact due to the magnitude of change it involves. The LVIA considers the magnitude of visual impact of the MwTS to range from medium to very low; with the greater level of impact occurring directly outside the site and around the river valley floor in its
immediate proximity. As such the visual receptors that stand to be affected the
greatest are users of nearby public rights of way (in particular users of public
footpath no. 302090 along the River Nent); the two dwellinghouses at East
Foreshield Bridge (which are the only properties in proximity that have direct,
open and uninterrupted views of the site); and users of the B6294 where it runs
in proximity to the site. The LVIA considers that this could result in some minor-
adverse visual effects from these vantage points (i.e. it would cause obvious
ceterioration to views), with the MwTS being readily apparent in a substantial
proportion of the middle-ground of views. In views from the higher sections of the
B6294 the CBTPs and Odour Dosing Building would be prominent features. In
views from East Foreshield Bridge and along the River Nent, the embankment
sides of the CBTPs are likely to be the most prominent feature. The LVIA
considers that the sympathetic design of the MwTS layout would allow the
CBTPs to work with the existing steep topography of the site and form
naturalised features of the landscape surrounded by retained and reinstated
grassland. The LVIA appraises that in views of the MwTS from a distance, the
proposals would not alter the overall balance of features and elements that
comprise the existing view.

11.36 The proposed development will have an impact on both visual amenity and the
landscape (with some elements of landscape fabric being lost). However, the
LVIA concludes that the completed operational scheme would, on the whole,
have negligible (not significant) residual visual amenity effects. Above ground
built development has been kept to a minimum and the proposals have
endeavoured to naturalise and soften key components of the scheme (ponds,
tracks and drainage channels). I consider that the careful arrangement, setting
and design of the physical elements of proposed scheme in conjunction with the
proposed landscape planting, provision of boundary features and use of a
traditional materials palette ensures that the proposals avoid significant adverse
visual impacts (thus complying with CMWLP Policy DC18). As such the proposal
seeks to conserve the natural beauty of the landscape and provide features that
represent key positive characteristics of the AONB so as to minimise the impact
of the scheme on the scenic quality of the area and enhance landscape
character. Furthermore the operation of the site would maintain the sense of
openness and (with the possible exception of maintenance and compost
replacement activity) tranquillity that are core characteristics of the area.
Consequently I am of the view that, with the mitigation embedded in this scheme,
the proposal would not result in unacceptable significant adverse landscape or
visual impacts.

Health Impact: Would the proposed treatment process have an
unacceptable impact upon Human Health?

11.37 Paragraphs 117 and 180 of the NPPF requires planning decisions to ensure that
new development is appropriate for its location taking into account the likely
effects of pollution on health, safe living conditions and the natural environment.
Policy DC2 of CMWLP requires proposals to assess and be designed to address
impacts on human health; and to demonstrate that they would not give rise to
significant adverse impacts upon local air quality. Policy DC2 continues to
indicate that considerations in relation to the above include the proximity of
sensitive receptors; impacts on surrounding land-uses and protected habitats,
species and landscapes; how residual wastes will be managed; the extent to
which adverse effects can be controlled through sensitive siting and design; the
use of appropriate and well maintained and managed equipment; the
duration/hours of working/operations; and other mitigation measures.

11.38 The proposed compost based minewater treatment process would result in the generation of hydrogen sulphide gas. The uncontrolled release of hydrogen sulphide has the potential to impact upon the health of humans and fauna. The applicant reports that a number of treatment technologies have been considered but that all the short-listed technologies would generate excess hydrogen sulphide that would need to be controlled/managed. It is proposed to control/limit the amount of hydrogen sulphide that is released to air by dosing it with hydrogen peroxide. Another aspect of the proposed treatment process that has been cited as a public health concern by representees is the periodic removal of the heavy metal contaminated compost medium.

- Hydrogen Sulphide Gas Emissions from the Treatment Process

11.39 The majority of correspondence received from members of the public in respect of this application has raised concerns around the toxic nature of hydrogen sulphide (H₂S). Hydrogen Sulphide is a colourless gas that can be toxic to human health in high concentrations. The majority of fatalities caused by exposure to hydrogen sulphide gas involve encounters with high concentrations in confined/enclosed spaces. Exposure to lower levels of Hydrogen Sulphide Gas can also cause adverse health effects such as eye irritation.

11.40 The World Health Organisation (WHO) sets out an air quality guideline value for hydrogen sulphide of 150µg/m³ (micrograms per cubic metre) in air. This guideline value is derived from the lowest observed adverse effect level in humans for eye irritation (which is recorded as 15,000µg/m³) with an uncertainty (safety) factor of 100 being applied. It thus presents an extremely conservative threshold that is designed to be protective of human health for lifetime exposure, and to be protective of eye irritation during any 24 hour period.

11.41 The applicant proposes to treat the hydrogen sulphide generated by the minewater treatment process via hydrogen peroxide dosing. The November 2017 odour dosing trials at the Force Crag MwTS established that hydrogen peroxide dosing is effective and is likely to remove between 93%-96% of the dissolved hydrogen sulphide from the treated minewater. The lowest removal rate achieved during these trials was 90%. This rate was achieved during a short hydraulic residence time (hrt) (i.e. contact time) of approximately 8 minutes. The longer the hrt the greater the removal rate. This application has been designed to allow for a minimum hrt of 90 minutes. As such there is a high confidence that a 93% to 96% removal rate can be achieved for this scheme.

11.42 To address fugitive hydrogen sulphide emissions (i.e. the remaining 4%-10%) the applicant has submitted odour dispersion modelling to predict the likely remaining levels of this gas at the boundary of the site and at key nearby receptors – i.e properties, public rights of way and the highway (B6294). The dispersion model assumes a worst case scenario 90% removal rate and predicts that a concentration of hydrogen sulphide in air of less than 0.9µg/m³ (average level over a 24hr period) at the MwTS boundary for the likely/early operation scenario. This figure is 150 times less than the highly conservative WHO guideline value of 150µg/m³ for hydrogen sulphide which is designed to protect long-term health.

11.43 The applicant has submitted a large amount of detailed information and research that underpin the modelling and its conclusions. This covers matters such as the factors that influence how much hydrogen sulphide is generated in CBTPs;
where hydrogen sulphide gas is emitted from in CBTP systems; the efficacy of different oxidising dosing agents (and their amount/rates of application); and the airborne emission of fugitive hydrogen sulphide from the CBTPs at the proposed MwTS. The applicant also recognises and highlights that, due to the biological nature of the treatment process, that there would be a notable difference in the amount of hydrogen sulphide generated during the initial commissioning period; the first few months of operation of a CBTP; and its operation thereafter. The amount of hydrogen sulphide generated would be highest in the earliest stages. These differing levels of hydrogen sulphide production have been taken into account in the scheme design, hydrogen peroxide dosing programme (rate) and dispersion modelling.

11.44 I consider the information provided by the applicant in respect of hydrogen sulphide generation, the efficacy of control measures and dispersion modelling to be sound and robust. I am satisfied that suitable assessment of hydrogen sulphide gas emissions has been carried-out as required by Policy DC2(a) and that the scheme has been designed with mitigation embedded so as to address the potential human health impacts that could arise from uncontrolled hydrogen sulphide emissions, therefore complying with Policy DC2.

11.45 To enable comparison of the WHO guideline value with other measurements specified by the applicant, consultees and representees please see the criteria and values tabulated below for reference:

<table>
<thead>
<tr>
<th>Description</th>
<th>µg/m³ (micrograms per cubic metre)</th>
<th>mg/m³ (milligrams per cubic metre)</th>
<th>ppm (parts per million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO Air Quality Guideline Value for Hydrogen Sulphide - protective of human health for lifetime exposure, and protective of eye irritation during any 24 hour period</td>
<td>150 µg/m³</td>
<td>0.15 mg/m³</td>
<td>0.11 ppm</td>
</tr>
<tr>
<td>Lowest observed adverse effect level in humans for eye irritation due to Hydrogen Sulphide exposure</td>
<td>15,000 µg/m³</td>
<td>15 mg/m³</td>
<td>10 ppm</td>
</tr>
<tr>
<td>Level from which Hydrogen Sulphide can be Toxic (based on HSE data)</td>
<td>697,000 µg/m³</td>
<td>697 mg/m³</td>
<td>500 ppm</td>
</tr>
<tr>
<td>HSE Limit for Hydrogen Sulphide exposure in the workplace for any 15 minute period</td>
<td>14,000 µg/m³</td>
<td>14 mg/m³</td>
<td>10 ppm</td>
</tr>
<tr>
<td>HSE Limit for Hydrogen Sulphide exposure in the workplace for an 8 hour period</td>
<td>7,000 µg/m³</td>
<td>7 mg/m³</td>
<td>5 ppm</td>
</tr>
<tr>
<td>Potential for bronchio-constriction and headaches in asthmatics due to Hydrogen Sulphide can occur from</td>
<td>3,000 µg/m³</td>
<td>3 mg/m³</td>
<td>2 ppm</td>
</tr>
<tr>
<td>Dispersion Model prediction of average level of hydrogen sulphide at the proposed Nent Haggs MwTS boundary</td>
<td>0.9 µg/m³</td>
<td>0.0009 mg/m³</td>
<td>0.00065 ppm</td>
</tr>
</tbody>
</table>

1 The HSE workplace exposure limits are reflective of the greater health risks where workers are in proximity to a point of hydrogen sulphide emission that may be within an enclosed space.
11.46 It is considered that the level of residual hydrogen sulphide emissions predicted to arise from the treatment process would not adversely affect human health. It is recognised that a number of representees have been critical of some of the assumptions underpinning the dispersion modelling. Even assuming additional margin for error beyond the multiple factors of safety incorporated into the applicant’s assumptions and calculations; it is considered extremely unlikely that concentrations of hydrogen sulphide arising from the treatment process would reach concentrations above the WHO’s extremely conservative 150 µg/m$^3$ threshold. Eden District Council’s Environmental Health Department has scrutinised the application and is of the view that “the levels of hydrogen sulphide that are likely to be produced by this scheme are several orders of magnitude below any level that could cause harm to the health of the public or nearby residents”.

11.47 As hydrogen sulphide odour is detectable at much far lower concentrations than those at which it is harmful to human health more detailed consideration of the dispersion modelling is incorporated in the odour impact assessment section of this report as the assumptions and variables in this could result in small changes to the level of fugitive hydrogen sulphide predicted that could have notable odour impacts.

- Heavy Metals within the Compost Medium

11.48 Another aspect of the treatment process that has been cited as a public health concern by representees is the accumulation of heavy metals within the compost medium and in particular the potential for risks to public health when this contaminated compost is removed. The applicant proposes that the compost media will be replaced when its metal removal rate performance begins to decline. The applicant estimates that this spent heavy metal contaminated compost will need to be removed at intervals of 10-15 years, with this material then being transported off-site for disposal at an appropriately licensed landfill site.

11.49 Turning first to the operation of the CBTPs, it is noted that the ponds would be constructed, lined and filtered so as to prevent any of the compost medium (or associated solid metal sulphides) escaping and contaminating the surrounding land or waters. If any solid metal sulphides did leave the CBTPs via the treated minewater then they would be destroyed by the hydrogen peroxide dosing system that controls the release of odours (i.e. zinc sulphide solids would be converted back into dissolved zinc and sulphate). As such it is considered to comply with emerging EDC LP 2014 Policy ENV9 as it will not result in any adverse impact on the quality of ground and surface water. The wider site and the CBTP levels would be enclosed with a mixture of walls, stock-proof fencing and wooden gates. Signage is proposed to be installed on the site highlighting the presence of heavy metal contaminated materials in the CBTPs. These measures are considered sufficient to prevent any indirect impacts upon public health.

11.50 Some representees have suggested that disturbance of the heavy metal contaminated compost during its replacement would lead to the release of hydrogen sulphide gas. The applicant has not discounted this as a possibility. The applicant reports that a drain-down of one of the Force Crag CBTPs was undertaken this year and scrape samples of the surface layer taken. They report that no odour was observed from this and that personal and fixed hydrogen sulphide monitors did not make any recordings. However they qualify that no
excavation/disturbance of the compost took place. As the hydrogen sulphide is produced as a bi-product of the reaction that occurs between the influent minewater passing down through the compost with no minewater passing through there would seem to be less propensity for hydrogen sulphide to be generated/emitted once the influx of metal rich water has been halted. Furthermore, as the replacement process would take place when the compost would be “spent” i.e. it would have a much lower level of reactivity and would thus be generating very low levels of hydrogen sulphide by this point in time.

11.51 In respect of the removal of the spent heavily metal contaminated compost medium, the applicant has submitted an Outline Operational Management Plan (OOMP) in support of the application. The OOMP sets out a series of options currently available for the replacement of this spent waste compost. These options include:

a) “Wet removal” through the use of a long reach vacuum pump to hoover-up the heavy metal contaminated compost directly into a sealed tanker while it is still submerged;

b) “Wet removal from the ponds to an in-situ drying area” – with removal taking place using a vacuum pump, excavator or via dredging and the material being placed in a holding areas with covers and other forms of containment /protection such as geotextile dewatering tubes (aka Geotubes).

c) “Dry removal from the ponds” – reducing the water levels of the ponds, allowing the spent compost medium to dry out within the pond confines before being excavated straight into HGVs.

11.52 From the OOMP it would seem clear that there are established technologies and measures currently available that could ensure that no adverse health impact would arise to the public from the spent compost removal process. For example the use of a long-reach vacuum pump into sealed tanker would involve minimal disturbance and ensure negligible atmospheric contact for the heavy metal rich spent compost medium. Whilst the measures stipulated in the OOMP lack detail they provide sufficient confidence that compost removal could be undertaken safely and in a controlled way.

11.53 However the removal of this contaminated compost material is not anticipated to arise until at least 12 years from now (assuming a two year period for the build and commissioning of the scheme and the earlier ten year period before the compost medium is spent and requires removal). The applicant therefore proposes to review the technologies available (including evaluation of their potential environmental impacts) and select the most appropriate technology available (and to detail the specific arrangements for spent compost removal based on that technology) 6 to 12 months prior to undertaking any compost removal works. They request that this information be secured by planning condition. The NPPF and PPG direct that where potentially unacceptable impacts exist local planning authorities should consider whether the potential impacts can be made acceptable or be reasonably mitigated through the use of planning conditions. Given that spent compost removal is unlikely to be required to be undertaken until sometime after 2030, the applicant’s proposal to review and select an approach/technology at a future point in time is considered to be reasonable and prudent, ensuring that best available technology can be considered and utilised. It would also afford the opportunity for the applicant to build on the experience of compost removal from the CBTPs at its remote Force
Crag MwTS. A condition could require details and assessment of the technologies, removal methodologies (and their potential environmental impacts) and environmental controls to be submitted and approved prior to any spent compost removal taking place in order to ensure that this potentially decennial process does not result in any unacceptable adverse impacts. Consequently it is considered reasonable to control this aspect via a planning condition.

**- Other Miscellaneous health concern**

11.54 The dosing of the hydrogen sulphide could also result in the deposit of small amounts of elemental sulphur in the polishing reed beds. Elemental sulphur is not toxic. Sulphur only presents a risk in some compound forms. The most likely compound that may result here is sulphate which would not be problematic. The applicant considers it unlikely that the amounts of elemental sulphur that could potentially be formed would be sufficient to have any adverse effect on land/soil condition, habitats/species, water environment or health.

11.55 The HSE and Eden District Council’s Environmental Health Department do not consider that the proposal would impact upon public health. In light of this and the preceding analysis I consider that the proposal, subject to conditions proposed, prevent unacceptable risks to human health and thereby complies with Paragraph 120 of the NPPF.

**Odour Impact: Would the proposed development result in a level of odour emissions that would have an unacceptable impact upon local amenity?**

11.56 As established above, the operation of the minewater treatment system would generate hydrogen sulphide gas. In the absence of appropriate control measures, emissions of hydrogen sulphide gas could lead to perceptible odour impacts. Hydrogen Sulphide gas has a distinct malodour often likened to that of rotting eggs and can be smelled at much lower concentrations than the level at which it starts to have harmful effects. Odour is an established material consideration in the planning process.

**- Measurement of Odour and Levels of Detection, Recognition and Nuisance**

11.57 Odour is subjective in nature. Odour impact (i.e. the scale of exposure to an odour) is determined by a variety of factors: frequency and duration of exposure; intensity (perceived strength of an odour), unpleasantness/offensiveness of the odour (hedonic tone), the degree of sensitivity of a given receptor and location/distance from source.

11.58 The Odour Detection Threshold (ODT) is the lowest concentration of a specific substance at which it can be ascertained that an odour is present - i.e. the level that produces the first sensation of odour. The ODT for any substance is assigned an odour concentration of 1 \( \text{OU}_E/m^3 \) (European odour units per cubic metre of air). European Odour Units are an established method for measuring and reporting the detectability or concentration of an odour sample and are defined by European Standard BSEN 13725:2003. An odour concentration of 1 \( \text{OU}_E/m^3 \) is the concentration at which an odour is just detectable by 50% of a panel of selected trained people in controlled conditions. The ODT for hydrogen sulphide is around 0.76\( \mu g/m^3 \) (micrograms per cubic metre) in air. DEFRA’s 2010 *Odour Guidance for Local Authorities* (which was replaced by generic guidance held on *Gov.uk* on 15 September 2017) expands that: “an odour at strength of 1 \( \text{OU}_E/m^3 \) is in reality so weak that it would not normally be detected outside the controlled environment of an odour laboratory by the majority of the population.
(that is individuals with odour sensitivity in the “normal” range). As an odour becomes more concentrated, then it gradually becomes more apparent”.

11.59 At some point above the ODT there is a concentration at which an odour is recognised as having a characteristic odour quality – referred to as the Odour Recognition Threshold (ORT). The ORT reflects human ability to differentiate between odours. The ORT for most substances stands at around 3 OU\textsubscript{E}/m\textsuperscript{-3}, although this can range from 2 to 10 OU\textsubscript{E}/m\textsuperscript{-3}. For Hydrogen Sulphide the ORT is considered to be 3 OU\textsubscript{E}/m\textsuperscript{-3} and can be equated to 2.28μg/m\textsuperscript{3}. The Chartered Institute of Water and Environmental Management’s [CIWEM] 2012 Policy Position Statement: Control of Odour considers that for odour concentrations below 3 OU\textsubscript{E}/m\textsuperscript{-3} complaints are unlikely to occur; with exposure below this level being unlikely to constitute significant pollution or significant detriment to amenity unless the locality is highly sensitive or the odour highly unpleasant in nature.

11.60 DEFRA’s Odour Guidance for Local Authorities considers that, in general, a value of 5 OU\textsubscript{E}/m\textsuperscript{-3} constitutes a faint odour that may be noticeable and that a value of 10 OU\textsubscript{E}/m\textsuperscript{-3} would comprise a distinct odour which may be intrusive and constitute an actionable nuisance. The WHO note that half-hour average concentrations of hydrogen sulphide exceeding 7μg/m\textsuperscript{3} are likely to produce substantial complaints among persons exposed.

11.61 The Environment Agency’s 2011 Technical Guidance Note: H4 - Odour Management: How to comply with an Environmental Permit (TGN-H4) establishes levels of protection against odour annoyance for the general public. For the most offensive odours it considers that exposure to odour concentrations above a precautionary benchmark of 1.5 OU\textsubscript{E}/m\textsuperscript{-3}, based on a 98\textsuperscript{th} percentile of hourly mean-averaged odour concentrations (C\textsubscript{98,1hour}), could potentially give rise to a level of odour annoyance that may constitute a nuisance. TGN-H4 sets out that most offensive odour sources include processes involving decaying animal remains or septic effluent or sludge or biological landfill odours. For a moderately offensive odour it suggests a benchmark of 3 OU\textsubscript{E}/m\textsuperscript{-3}. Moderately offensive odour sources include intensive livestock rearing and well aerated green waste composting.

11.62 The 98\textsuperscript{th} percentile of hourly mean concentrations represents an odour level that would be achieved 98% of the time (this equates to 8,584 hours out of 8,760 hours in a non-leap year - i.e. 357.6 days out of 365 days). The 98\textsuperscript{th} percentile excludes the 2% of highest odours. The logic being that any period of exposure to unpleasant odour should be short lived at some 2% of a year. The application sets out that using the 98\textsuperscript{th} percentile of hourly values as the assessment criteria gives a more representative account of the fluctuating and often transient nature of odour events than can be obtained from using either the maximum or annual mean value and is the approach adopted to regulate the risk of odour impacts within the UK. The Institute of Air Quality Management’s (IAQM) Guidance on the Assessment of Odour for Planning - Version 1.1 – July 2018 notes that the 98\textsuperscript{th} percentile has become an established metric for odour survey modelling. It considers the 98\textsuperscript{th} percentile to be an appropriate frequency metric on the basis of a constant odour emission for odour dispersion modelling and highlights support for the use of 98\textsuperscript{th} percentile in a High Court case and several planning appeal decisions.

11.63 TGN-H4 recommends that for assessing odours in air in the open environment that sniff-testing using the German VDI (Verein Deutscher Ingenieure)
method/standards are an appropriate, proportionate and responsive approach. The VDI assesses the intensity of an odour (i.e. how strong it is perceived to be). It describes the relative magnitude of an odour sensation as experienced by a person on a scale ranging from 0 (no odour), through 1 (slight/ very weak), to 6 (extremely strong). The below table extracted from the IAQMs 2018 guidance shows the VDI odour intensity scale and how it relates to European odour units.

<table>
<thead>
<tr>
<th>Odour Strength</th>
<th>Intensity Level</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>No odour/not perceptible</td>
<td>0</td>
<td>No odour when compared to the clean site</td>
</tr>
<tr>
<td>Slight/very weak</td>
<td>1</td>
<td>There is probably some doubt as to whether the odour is actually present</td>
</tr>
<tr>
<td>Slight/weak</td>
<td>2</td>
<td>The odour is present but cannot be described using precise words or terms</td>
</tr>
<tr>
<td>Distinct</td>
<td>3</td>
<td>The odour character is barely recognisable</td>
</tr>
<tr>
<td>Strong</td>
<td>4</td>
<td>The odour character is easily recognisable</td>
</tr>
<tr>
<td>Very strong</td>
<td>5</td>
<td>The odour is offensive. Exposure to this level would be considered undesirable</td>
</tr>
<tr>
<td>Extremely strong</td>
<td>6</td>
<td>The odour is offensive. An instinctive reaction would be to mitigate against further exposure</td>
</tr>
</tbody>
</table>

VDI 3940 says that the recognition threshold intensity is generally 3-10 times higher than the ODT (i.e. 3-10 cu.m^3)

11.64 The character or quality of an odour is, in basic terms, what the odour smells like – i.e. the property that identifies an odour and differentiates it from another odour. In this instance, for hydrogen sulphide, the odour character is akin to that of rotten eggs.

- **Odour Regulation Framework and Planning Policy relating to odour**

11.65 The pre-revision NPPF considered odour within its broad definition of pollution and sought to prevent unacceptable risks from pollution. Paragraph 183 of the revised NPPF highlights that the focus of planning should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. In this instance, it is currently understood that the treatment processes at the site would not be regulated by the Environment Agency under the auspices of an Environmental Permit. As such regulatory responsibility for managing odour arising from this proposal falls between the planning and environmental health regimes. This latter regime is tasked with ensuring that emissions of odorous substances do not constitute a statutory nuisance under the provisions under the Environmental Protection Act 1990. National Guidance in respect of this sets out that for a smell to count as a statutory nuisance it must either ‘unreasonably and substantially interfere with the use or enjoyment of a home or other premises’ or ‘injure health or be likely to injure health’. The planning regime by contrast is concerned with the potential impact upon amenity of odour generated by a proposed land-use.

11.66 Appendix B of the NPPW sets out that in determining the suitability of sites when assessing planning applications waste planning authorities should consider odour and that this consideration should “include the proximity of sensitive receptors and the extent to which adverse odours can be controlled through the use of appropriate and well-maintained and managed equipment”. Policy DC2 of the CMWLP does not explicitly reference odour, but does require proposals to demonstrate they would not give rise to significant adverse impacts upon local air
quality and highlights proximity of sensitive receptors and appropriate and well maintained and managed equipment as being considerations that should be taken into account. Part g of Policy DC9 of the CMWLP supports wastewater treatment infrastructure if adverse environmental impacts are minimised to an acceptable level and it would result in no unacceptable impacts on housing, business uses or other sensitive land-uses. Policy ENV9 of the emerging Eden Local Plan sets out that proposals for development likely to generate odour must be supported by an adequate assessment to assess risks and their acceptability, ensure that appropriate mitigation is put in place and that they will only be permitted “where it can be demonstrated that resultant odours will not impact on nearby development”.

- Odour Generation, Control Measures and Points of Emission within the Minewater Treatment Scheme

11.67 Hydrogen Sulphide is generated as a bi-product of the minewater treatment process when the dissolved metal rich influent minewater drains down through and reacts with the sulphate-reducing bacteria that naturally occur within the activated compost medium. The excess sulphide produced in these reactions takes two forms – that of dissolved hydrogen sulphide (H\textsubscript{2}S) and bi-sulphide (HS\textsuperscript{-}), a colourless, odourless gas. For minewaters of a neutral pH (pH 7) these forms are present in equal proportions i.e. a 50-50 split. If the pH is higher (i.e. more alkalis/base) then less Hydrogen Sulphide is produced. The applicant sets out that the amount of hydrogen sulphide generated is quite sensitive to small changes in pH. The influent minewater entering the Force Crag MwTS has an average pH of 6.8 with a range of 5.4 – 8.6. The Nent Haggs Minewater has an average pH of 8 with a range from 7.6 - 8.2. It is noted that the odour modelling utilises a conservative pH value of 7.2.

11.68 Other factors that can affect the amount of hydrogen sulphide generated by the treatment process are the compost substrate composition - particularly the amount of labile (easily degradable) organic matter present; the compost substrate depth/amount; hydraulic residence time of water within the CBTPs; the concentrations of sulphate within the influent minewater; climatic conditions, turbulence of treated minewater when it reaches air. The proposed Nent Haggs minewater treatment scheme seeks to replicate the compost substrate composition (mix) and depth and residence time of water within the CBTPs established at Force Crag. It is noted that the sulphate concentration within the Nent Haggs minewater is higher than that within the Force Crag minewater and Rampgill minewater. The applicant sets out that it is their current understanding that the concentration of sulphate within the influent minewater only affects hydrogen sulphide generation to a point, as it becomes limited by the availability of organic components (i.e. there is a rate limiting/determining step). The rate limiting step can be compared to the neck of a funnel. The rate at which water flows through a funnel is limited by the width of the neck of the funnel and not by the rate at which the water is poured into the funnel. Like the neck of the funnel, the slow step of a reaction determines the rate of a reaction.

11.69 When water high in dissolved hydrogen sulphide emerges to atmosphere the hydrogen sulphide can degas resulting in unpleasant odours if present in sufficient quantities. Due to the continual flow of minewater into the CBTPs and the underdrainage contained within their base, a downward vertical flow of water is sustained, with the dissolved hydrogen sulphide in the treated minewater being drawn down and out of the ponds via their underdrainage. The applicant states that there has been no evidence that hydrogen sulphide has been emitting from
the surface of the CBTPs at Force Crag. Whilst the applicant acknowledges occasional bubbles do form at the CBTP surface at Force Crag, they relate that they have examined these and detected no hydrogen sulphide within them and that they currently consider the bubbles to be similar to those released by natural bogs or stagnant ponds. Consequently it is considered reasonable to conclude that the pond surface is not an emission point for hydrogen sulphide and that the dissolved hydrogen sulphide only reaches atmospheric conditions (allowing it to degas) once it leaves the CBTPs.

11.70 To control and limit hydrogen sulphide gas emissions (and its’ associated foul odour) the applicant proposes to install a hydrogen sulphide/odour abatement system based on the use of hydrogen peroxide ($H_2O_2$) dosing. Hydrogen Peroxide is an oxidising agent which reacts with the Hydrogen Sulphide ($H_2S$) so as to oxidise the sulphide ($S^{2-}$) back to sulphate ($SO_4^{2-}$) which is soluble. Hydrogen peroxide dosing is commonly used to control hydrogen sulphide in food/ drink production industries as well as being used as an established method to remove hydrogen sulphide from other wastewaters (waters contaminated by industrial processes or in sewage treatment).

11.71 It is proposed to dose the primary treated discharged minewater with hydrogen peroxide in below ground chambers before the water is discharged to air via the open channel so as to reduce the amount of hydrogen sulphide released to air. Based upon the Force Crag MwTS, other trial studies and the characteristics of the water outfalling from the Nent Haggs Mine adit; the applicant anticipates that the concentration of hydrogen sulphide in the treated minewater would ordinarily range between 0.4 mg/l (milligrams per litre) and 1 mg/l. As previously set-out, the most recent November 2017 odour dosing trials at the Force Crag MwTS revealed that hydrogen peroxide dosing is likely to remove between 93% and 96% of hydrogen sulphide from treated minewater, with a worst case removal rate of 90%. The residual 4%-10% of dissolved hydrogen sulphide remaining in the treated minewater equates to between 0.02 – 0.1mg/l. It is noted that the improved hydrogen removal rate achieved in the November 2017 dosing trials at the Force Crag MwTS was a result of treatment within a reaction chamber and an increased contact time between the minewater and dosing agent within this.

11.72 Other factors that affect the success of dosing are its residence time and dosing rate. Residence time refers to the length of time the dosing agent is in contact with the dissolved hydrogen sulphide – with the longer the residence time the greater the level of treatment being achieved. The scheme proposes a residence time of >90 minutes. The dosing rate refers to the addition of the hydrogen peroxide dosing agent. The greater the ratio of addition the greater the speed of reaction. The applicant reports that theoretically, in simple applications, a 1:1 addition ratio (Hydrogen Peroxide to Hydrogen Sulphide) is sufficient to destroy hydrogen sulphide in aqueous solution. However due to the presence of other oxygen demands in the treated minewater the applicant has considered a range of ratios ranging from 2:1 to 10:1. The applicant relates that it is proposed to utilise Hydrogen Peroxide with a concentration of 35%.

11.73 Once the residual/fugitive dissolved hydrogen sulphide in the treated and dosed minewater is exposed to atmosphere it aerates – i.e. is released from the water to the air. The applicant has identified the potential odour emission points on the proposed Nent Haggs MwTS utilising odour assessments made at the Force Crag MwTS which observed that hydrogen sulphide gas is liberated predominantly where the treated minewater is flowing swiftly down and out of the
CBTPs and is turbulent and exposed to atmospheric conditions. More specifically, they note that odours are primarily evident around the flow control pipework and at the entry and exit points of the aerobic wetland where there are small weirs present that create turbulence within the treated water. In light of these findings it is noted that the proposed treatment system has been designed to, where possible, minimise turbulence and to enclose points where agitation of the treated water could cause dissolved hydrogen sulphide to be emitted to air.

11.74 Odour emissions are anticipated to occur at a number of points across the proposed Nent Haggs MwTS – namely the vents situated on the three flow control chambers (adjacent to each CBTP) associated with the underground dosing chambers, at the outflow point to the open stepped channel, and along the length of the stepped channel. The proportion of hydrogen sulphide gas that could be released from each of these locations and the rate at which it could be released have been built into the dispersion modelling assessment of the scheme submitted by the applicant.

- Odour Dispersion Modelling
  - Assumptions and Scenarios

11.75 The applicant has undertaken odour dispersion modelling of the proposal so as to predict odour concentrations at a number of representative “receptor” points at the MwTS boundary and at nearby properties. The modelling simulates the dispersion of hydrogen sulphide from the emission sources using information on wind patterns and topography. This modelling utilises a series of conservative assumptions, with a few examples of these being the utilisation of a 90% hydrogen sulphide removal rate; applying safety factors to the concentration of sulphide in the treated minewater (i.e. increasing the sulphide concentration values in the treated water beyond those expected); and applying very low exit velocities at emission points. It also models a number of scenarios which account for different concentrations of dissolved hydrogen sulphide present in the minewater once it has been treated.

11.76 The odour modelling scenarios are referred to by the applicant as Best (Normal Operation), Likely (Early Operation), and Worst (Early Commissioning). Further details in respect of these scenarios is set out below:

- The ‘Best’ case emission scenario covers a CBTP scheme that has been operating for approximately two years and is considered by the applicant to represent likely normal operating conditions. This scenario is based on the amount of sulphide present in the treated minewater following dosing trials undertaken at the Force Crag MwTS in November 2017. This takes the 0.6mg/l of sulphide measured in the treated minewater at Force Crag as a start, applies a factor of safety to set a level of 1mg/l of sulphide and then calculates the amount of this sulphide that would be Hydrogen Sulphide at pH7.2 – i.e. 0.39mg/l.

- The ‘Likely’ scenario factors in the potential for the high sulphate concentrations in the Nent Haggs Minewater (which are higher than the concentrations present in the minewaters treated elsewhere) that could possibly result in higher levels of hydrogen sulphide being generated. Although the applicant highlights that laboratory experiments have found no relationship between minewater sulphate levels and the amount of hydrogen sulphide generated by CBTPs. This scenario also accounts for the bedding-in
of a “fresh” compost medium with labile organic carbon which could increase reactivity rates (and thereby the amount of hydrogen sulphide generated) in the first 6-9 months or so of operation. This takes monitoring data from Force Crag shortly after commissioning which indicated total sulphide concentrations of <2 mg/l; applies a small factor of safety to establish a total sulphide concentration of 2 mg/l (0.97 mg/l as Hydrogen Sulphide). Consequently this scenario is equated to an Early Operation emission scenario.

- The ‘Worst’ case scenario utilises data from the Force Crag Minewater Treatment Site, laboratory trials and the Rampgill Pilot-Scale Minewater Treatment Schemes to calculate the maximum amount of dissolved Hydrogen Sulphide that is likely to be generated. This calculation assumes that none of the sulphide generated by the sulphate reducing reactions in the compost is retained within the compost; where-as in reality, some of the sulphide will be bound up as metal sulphides (e.g. Zinc Sulphide) as well as being sorbed into the compost itself. Consequently this represents a highly conservative and unlikely scenario, however there is a possibility that this may occur during the initial commissioning of the CBTPs i.e. the first flushes of water through the CBTPs. This scenario assumes 2mg/l of Hydrogen Sulphide and a pH of 7.2."

11.77 The assumptions, rationales and scenarios deployed in the modelling are clearly set-out in the submissions and appear reasonable – being based on available evidence, scientific reasoning and utilising factors of safety to address potential variables. The applicant has also conducted a sensitivity analysis of the dispersion model (i.e. looking at the extent different inputs for the various parameters can affect the odour concentration predicted at certain points). In the case of the use of different values for the terrain/ground-profile and emission point split, the applicant reports that it only results in a minor effect on predicted odour concentrations at the representative points evaluated. Eden District Council’s Environmental Health Department is satisfied that the dispersion model is robust. The odour modelling of the proposal undertaken by the applicant is thus considered to be comprehensive, robust and to adopt a suitably precautionary approach.

- - Results

11.78 The odour dispersion modelling indicates that during the ‘best’ normal operation scenario none of the receptor points would be above the odour detection threshold of $10_{\text{EU}}\cdot\text{m}^{-3}$. For the ‘likely’ early operation scenario none of the residential receptor points would be above $10_{\text{EU}}\cdot\text{m}^{-3}$. The highest predicted odour concentration for this scenario for a roadside receptor point is $2.20_{\text{EU}}\cdot\text{m}^{-3}$ (R6) whilst for Isaac’s Tea Trail it is $1.60_{\text{EU}}\cdot\text{m}^{-3}$ (R10). These values are below the odour recognition threshold for hydrogen sulphide ($30_{\text{EU}}\cdot\text{m}^{-3}$). Given these receptor points are transient in character (and thus considered to be of lesser sensitivity than a residential dwelling), the levels of odour predicted are not considered likely to cause a significant detriment to amenity. It should also be emphasised that the above two scenario results being considered are based on the lowest end of the expected range of hydrogen sulphide removal rates (i.e. the 90% removal rate). Should the more likely 93% hydrogen sulphide removal rate be achieved by dosing, then $1.50_{\text{EU}}\cdot\text{m}^{-3}$ would not be exceeded at any receptor points in the ‘likely’ early operation scenario.

11.79 The worst-case initial commissioning scenario utilises the lower end of expected
range hydrogen sulphide removal rate of 90% and looks at a variety of different water flow rates. The applicant highlights that during operation of the scheme it will always be possible to limit the flow rate of water through the treatment system and consequently reduce the hydrogen sulphide emission rate. This modelling has been utilised to determine the initial flow rate to be used during commissioning. Based on this the applicant proposes to limit the initial flow rate to 2l/s (as all receptor points are modelled below 1ouE.m⁻³), and to only gradually increase the flow rate in small 1l/s increments only if monitoring of emissions to air demonstrate that there is no recognisable odour at the site boundary. To ensure this is the case a condition is proposed requiring the submission and approval of a detailed commissioning strategy prior to any use of the CBTPs taking place.

11.80 The odour dispersion modelling concludes that there will be no odour nuisance caused during normal operations but there is a small risk of an odour nuisance immediately outside the site boundary under the conditions assumed during the commissioning and initial period of operation. Provided the proposed odour dosing system is installed and operated effectively; the Environmental Statement concludes that a minor adverse effect at worst is predicted at the closest sensitive receptors during the first few months of operation, which would not be significant. Following the commissioning and optimisation period it predicts a negligible effect to occur during normal operation. The reasoning and conclusions of the ES in respect of potential odour are considered to be sound. To ensure that the level of odour emitted from the proposed development does not have any unacceptable adverse effect upon local and residential amenity I consider it reasonable to impose a condition limiting the level of odour at the boundary of the site to a value of 3 on the VDI scale over a period of 10 minutes.

- **Odour Management Plan**

11.81 The applicant has also submitted an Odour Management Plan (OMP). This includes outline details of the proposed procedures and processes for monitoring odour, maintaining the hydrogen peroxide dosing system and responding to any odour issues or abnormal events such as mechanical faults or extreme weather conditions. Key aspects of this of note are:

a) that automated sensors would be positioned within a vent fitted to the lid of each flow control chamber to continuously monitor hydrogen sulphide gas concentrations in the system. Where Hydrogen Sulphide concentrations exceed a defined level, the dosing system would be automatically activated and appropriate amounts of Hydrogen Peroxide are added by the system to reduce/eliminate the hydrogen sulphide. The applicant sets out that the detectors and dosing controls would be linked to the site telemetry system to allow remote review of real time readings and remote control adjustments of the dosing equipment. The applicant also sets out that this system would include a chemical re-order alarm that would be available to view on a local control panel housed in the control room of the odour abatement building, and also remotely via telemetry.

b) that an effective, planned inspection and preventative maintenance regime will be employed on all odour-critical plant and equipment.

c) a proposed programme of field measurements, using boundary sniff testing, initially three times a week during the commissioning and treatment optimisation phases, to a procedure based on that outlined within the
Environment Agency’s TGN-H4. Once the MwTS is performing optimally, and the odour mitigation measures have been demonstrated to be effective, the applicant would look to deploy a less frequent programme of site boundary sniff testing.

d) monitoring of weather forecasts and undertaking sniff testing at the site boundary during periods of adverse meteorological conditions.

e) procedures for all operatives visiting the site to note and centrally record observations on the odour climate within the site;

f) complaint recording and investigation procedure and pro-active monitoring of complaints and other forms of community feedback;

11.82 The submitted OMP outlines sensible and pro-active measures and procedures to monitor and manage odour. As the detailed-design on this scheme has not yet been completed it is unsurprising that I find that there is a lack of detail in the OMP and OOMP in respect of the maintenance programme for the hydrogen peroxide dosing system. Given the importance of the dosing system’s effective operation in reducing hydrogen sulphide/odour emissions to an acceptable level, I consider it necessary and justified that a pre-commencement of use condition be imposed to ensure that the proposed management and maintenance programme of the dosing system is sufficiently robust. A condition is also proposed to require submissions of the annual reviews of the OMP so as to enable the Local Planning Authority to review the efficacy of odour control measures and agree the proposed odour monitoring programme for the year ahead.

11.83 Taking all of the above issues and considerations into account, it is considered that the balance of evidence suggests that no demonstrable adverse impacts would result to the amenity of the occupiers of residential property within the vicinity of the site or other development in the wider area, and that the proposal would thereby conform with Policy ENV9 of the emerging EDC LP 2014. It is also considered that the proposal would not give rise to significant adverse impacts overall, and that any adverse odour impact can be minimised to an acceptable level and that the proposal therefore also complies with CMWLP policies DC2 and DC9. The above assessment takes into account Appendix B of the NPPW, noting the distance of the most sensitive residential receptors and takes into account the extent to which adverse odours can be controlled through the use of appropriate and well-maintained and managed equipment.

Impact upon Habitats & Species: Would the proposed development have an unacceptable impact upon habitats and species?

11.84 Section 15 of the NPPF seeks to protect, maintain, conserve and enhance nature conservation and biodiversity interests. These broad intentions are reflected in CMWLP policies SP15 (Environmental Assets); DC6 (Cumulative Environmental Impacts) and DC16 (Biodiversity and Geodiversity); EDC-CS Policy CS16 (Principles for the Natural Environment) and emerging EDC LP Policies ENV1 (Protection and Enhancement of the Natural Environment, Biodiversity & Geodiversity), ENV2 (Protection and Enhancements of Landscapes and Trees) and ENV4 (Green Infrastructure Networks). In general terms, these policies seek to protect habitats and species and provide for biodiversity enhancements where possible.
The proposed development lies in close proximity to internationally and nationally designated environments. It also runs in proximity to, and directly interfaces with, the River Nent; and will result in the loss of and changes to the existing habitat types in the footprint of the PSS and the MwTS. The proposed development would therefore have a number of direct and indirect ecological impacts, both positive and negative. These potential impacts are considered below, starting with designated sites before progressing to considering other protected habitats and species.

**- European, National and Other Designated Sites**

A component of the European designated [Tyne and Nent Special Area of Conservation](#) (SAC) and the full extent of the nationally designated [River Nent at Blagill Site of Special Scientific Interest](#) (SSSI) lie to the immediate west of Foreshield Bridge, approximately 225m downstream of the proposed MwTS' outfall. The extents of these designated areas in this location overlap (i.e. they are coterminous). They cover a 9ha area of land and river running between the B6294 and the U3108 road (which runs between the A689 and Blagill). For clarity, the Tyne and Nent SAC covers a number of geographically dispersed designated component areas amounting to a total area of 36.84ha. The potential impact on this SAC component is the most significant ecological consideration of this proposal.

The Tyne and Nent SAC is notified/designated solely due to the presence of varied assemblages of metal tolerant plant communities known as Calaminarian Grassland. Calaminarian Grassland has occurred as a result of pollution related to past metal mining activity in the river catchment and their condition is understood to be sustained by metal particles carried and periodically deposited on the land by the rivers Nent and Tyne. The conservation objectives of this SAC seeks to ensure that the integrity of the Calaminarian Grassland by maintaining or restoring a) its extent and distribution; b) the structure and function including its typical species composition; and c) the processes on which it relies. As the proposed scheme is designed to remove the dissolved metal loading in minewater from the Nent Haggs Mine adit (which currently outfalls to the River Nent); it would lead to a reduction of the levels of zinc and other metals that could affect the condition/integrity of nearby Calaminarian Grassland. Consequently, in line with the European Habitats Directive and [The Conservation of Habitats and Species Regulations 2017](#) [The Habitats Regulations]; the County Council commissioned its Ecological Consultant to undertake a Habitat Regulations Assessment (HRA) of this scheme in terms of its potential to impact upon the Tyne and Nent SAC.

Whilst it is likely that metals bound in sedimentary gravel deposits are the main sustaining element of Calaminarian Grassland it is recognised that dissolved metals in the water column may also make a contribution. Consequently the HRA exercises the precautionary principle and concludes that this proposed minewater treatment scheme could have an adverse effect on the integrity of the Tyne and Nent SAC. The Habitat Regulations require that, following a Negative Assessment such as the above, a proposal may only proceed if there are no alternative solutions that would have a lesser effect on the integrity of the site and if Imperative Reasons of Overriding Public Interest (IROPI) can be demonstrated. The HRA recognises that the legal obligations and objectives of the WFD preclude alternative solutions that would have a lesser effect on the Tyne and Nent SAC. It also considers that the improvements to the chemical and
ecological status of the Rivers Nent and Tyne that this proposal would contribute to are beneficial consequences of primary importance for the environment and as such constitute IROPI.

11.89 Article 68 of the Habitats Regulations requires that where a negative assessment is reached any necessary compensatory measures are taken to ensure that the overall ecological coherence of sites are protected. Where, in instances such as this, the effects on the integrity of the site are uncertain, guidance suggests it is appropriate for a monitoring regime to be secured alongside a contingency programme of remedial and compensatory measures in the event that the monitoring shows harm to integrity is occurring. Accordingly a Section 106 Legal Agreement has been drafted to secure such monitoring and contingency perturbation works to create new calaminarian grassland habitat at the Tyne and Nent SAC (which stands to be the most directly affected by the Nent Haggs Minewater Treatment Scheme). The contingency perturbation works would involve bringing old contaminated sediments back to the surface to provide the conditions for calaminarian grasslands to colonise.

11.90 Article 64 of the Habitats Regulations requires that where a competent authority is satisfied that IROPI exist it must notify the Secretary of State (SoS) for the Ministry of Housing and Local Government (MHCLG). This notification was lodged on 16 July 2018. The Planning Casework Unit, which is authorised to act on behalf of the SoS for MHCLG, provided notification that the County Council may proceed to adopt the HRA on 6 August 2018. The HRA was subsequently adopted on 7 August 2018.

11.91 The River Nent at Blagill SSSI is designated for geomorphological reasons – i.e. for the information it provides on the morphology of river channels. It is considered that this project would not impact upon these features.

11.92 The proposed capture/interception structure to the Nent Haggs Mine adit would be installed underneath the A689 and would thus be outside of the boundary of the Haggs Bank SSSI (whose boundary also coincides with another component of Nent and Tyne SAC) and which are designated for Calaminarian Grassland. The Haggs Bank Local Geo-Conservation Site (formerly Regionally Important Geological and Geomorphological Site) closely coincides with the boundary of these ecological designations. The applicant proposes to fence off these designated areas during the undertaking of construction works in its proximity so as to avoid any accidental incursions by construction activity/vehicles. I am satisfied that these measures would avoid any construction phase impact. As the Haggs Bank SSSI is upstream of any treated minewater it would not be affected by the operation of this proposal. The Haggs Mine County Wildlife Site is located 100m north and uphill of the adit and would not be impacted.

11.93 The habits and species of the North Pennine Moors Special Protection Area (SPA) and North Pennine Moors SAC, due to their height above and distance from the MwTS and the Rivers Nent and Tyne, would not be impacted by the proposal.

11.94 The Tyne and Allen River Gravels SAC is located downstream of the proposal and is also constituted of multiple component areas and designated for calaminarian grassland. The closest component of the Tyne and Allen River Gravels SAC to the proposed MwTS outfall is the gravel bar near Slaggyford (which coincides with the Williamstone River Shingle SSSI) which is approximately 11km downstream. In light of this distance; the levels of diffusion
of dissolved metals from the Nent Haggs outfall as a result of the River Nent’s confluence with the South Tyne River and other intermediate tributaries prior to this point; it is considered that neither this component, nor those further downstream, are likely to be negatively impacted by this proposal.

11.95 In light of the above; in particular the HRA conclusions and the monitoring and contingency compensatory measures that would be secured by a Section 106 Legal Agreement; the proposal would comply with CMWLP policies SP15 and DC16, EDC-CS Policy CS16, and emerging EDC-LP Policy ENV1 in respect of European and other designated sites.

- Habitats and Species Impacts

11.96 A suite of habitat and species surveys have been carried out and submitted in support of the application – including an Upland Wader Survey and an Otter and Water Vole Survey. The County Council’s Ecological consultant is satisfied with the survey work undertaken and their conclusions.

11.97 The proposal would result in the permanent loss/change of approximately 5ha of semi-improved grassland habitat with moderate species richness that is in agricultural use. It would also result in the loss of some riverbank on the Nent where the three new outfalls are constructed. Given the nature and prevalence of these habitat types in this area, these losses are considered to be minor.

11.98 The only protected and notable species presence identified within the application site that could potentially be affected by the development relate to ground-nesting birds as wader presence on the proposed MwTS has been identified. The upland wader survey recorded probable breeding of oystercatcher and one pair of curlew within the red line planning application area associated with the MwTS. It is considered that the loss of the footprint of the MwTS is unlikely to affect the local population of these species. A condition is proposed to ensure nesting birds are afforded adequate protection during the construction phase.

11.99 Whilst the surveys found no otter holts along the stretch of river corridor in proximity to the scheme, they did observe fresh otter spraints and possible refuge locations. It is therefore likely that otters use the River Nent in this location for movement/commuting. A series of planning conditions are proposed to ensure otters are not inadvertently harmed during the construction phase.

11.100 A representee has reported that there is presence of water vole in the section of the North Hudgill Brook that runs through the field adjacent to the MwTS and in the River Nent. Following this statement, the applicant undertook a further check for water vole of these areas. This found no clear signs of presence of water vole in either location but did note the presence of a number of holes along the brook that could potentially be used by water voles (although no signs of water vole feeding lawns or footprints were found by these) and that the origin of some droppings found here could not be identified and could potentially be attributed to Water Vole. However they note that the footprint of the MwTS would be at least 50-60m away from North Hudgill Brook at its closest point and are therefore of the view that Water Vole would not be affected by the proposed development. The County Council’s Ecological consultant concurs with this view. However, it is considered prudent to adopt a precautionary approach, so conditions are proposed to ensure construction activities do not encroach upon North Hudgill Brook and to require a pre-construction check of riverbanks for water vole burrows and otter holts prior to any outfalls to the river Nent being
constructed. Subject to these conditions it is considered the proposals would not destroy or disturb Water Vole Habitat, nor any places they use for shelter or protection.

11.101 In light of the above it is considered that the proposals would not cause any significant habitat loss or result in any harm to protected species. The proposal would also have a number of positive impacts; with the proposed reedbeds and landscaping scheme providing additional, higher quality and more biodiverse habitat; whilst the reduction of dissolved heavy metals in the River Nent would provide improved conditions for fish and invertebrates populations within this. Consequently it is considered the proposals would, overall, serve to enhance biodiversity on and off site and therefore comply with CMWLP Policy DC16.

Heritage Impact: Would the proposed development have an unacceptable impact upon heritage assets?

- Hudgill Lead Mine Bingsteads Scheduled Monument

11.102 The most significant heritage asset which could be affected by the proposed development is the Hudgill Lead Mine Bingsteads Scheduled Monument which lies some 45m south of the proposed MWTS and in close proximity to the B6294 under which the minewater transfer pipeline is proposed to be installed. As a Scheduled Monument the Hudgill Lead Mine Bingsteads is a heritage asset of high significance. It is considered that its significance is principally derived from its high historical and evidential value and regional/local aesthetic-architectural value. Its historical value is rooted in its relationship to historic mining activity in the area. Its evidential/archaeological value lies in its well preserved form and layout (with ore chutes, storage bays, count-house and working area) and as indication of the increasing organisation of the mining industries infrastructure from the 18th century onwards. Indeed the scheduling record considers it to be one of the best preserved bingsteads complexes in northern England. Its aesthetic-architectural value lies in its form and use of local stone masonry and paving flags for roofing. It is noted that some of the bingsteads appears to have been recently restored.

11.103 The applicant has set out measures to fence off the bingsteads to ensure that it is not accidentally disturbed or otherwise directly affected during the construction phase. Both Historic England and the County Council’s Historic Environment Officer are satisfied that this would provide adequate protection to the bingsteads. A condition is proposed to ensure that this is undertaken prior to any pipe laying activity under the B6294 or development of the MwTS taking place. Subject to this condition it is considered that the proposal complies with the NPPF’s and CMWLP Policy DC17’s objective of conserving heritage assets, and would not directly harm this asset.

11.104 The NPPF and CMWLP Policy DC17 also seek the setting of heritage assets to be preserved and enhanced. The setting of a heritage asset is defined in Annex 2 as “the surroundings in which a heritage asset is experienced”. The bingsteads physically abuts the highway with the top of the ore bins being level with the highway allowing for easy movement of material. As such the area of road immediately adjacent to the bingsteads is considered to form an important part of its setting. The proposal would not alter the form or nature of this road/relationship. Other than this roadside aspect, as the Hudgills Bingstead is considered to be an example of an isolated collection point, the setting of this bingstead is considered to contribute little to its significance. Nor would the
- Other potential archaeological assets

11.105 An archaeological desk-based assessment has been undertaken to identify and describe the archaeological assets/features within and surrounding the application site. This reveals that there are nine non-designated assets (all related to mining/quarrying activity) within the sphere of influence of the proposal. Two of these could be directly impacted by the proposals – a tramway associated with local lead mining activity (Asset No. 121) that lies to the southwest of the B6294; and an area of earthworks within the MwTS (Asset No. 122).

11.106 The tramway (Asset No.121) has archaeological and historic significance in its contribution/connection with industrial mining activity in the area. The ES sets out that the extent of this asset appears to partly extend under the road and therefore intersects with the proposed route of the minewater transfer pipeline. Given the nature and extent of the tramway, the ES evaluates that it is a heritage asset of low value. Given this and the nature and extent of the proposed pipeline to be installed the ES surmises that there would be a low magnitude of impact and that this would therefore result in a minor adverse effect in the area where the pipe would be laid. Whilst noting its likely association with the Hudgill Lead Mine Bingsteads Scheduled Monument, the asset is of low value, and the extent of potential impact is considered to be negligible. It is also considered highly likely to have already been disturbed by historical in-highway works. On that basis the County Council’s Historic Environment Officer does not consider there would be any value of undertaking archaeological monitoring and recording of the small area of potential remaining tramway that could be affected by this proposal. This is considered to be a reasonable and proportionate approach.

11.107 Following a request for Further Environmental Information, the applicant commissioned an archaeological topographic survey of the earthwork remains (Asset No. 122) within the proposed MwTS. The archaeological interpretation of this survey work concludes that the recorded feature is likely to represent a single abandoned prospection pit that failed to locate any ore deposits. It continues to note that such features are common throughout the North Pennines ore field and as such ascribe it a low significance in terms of heritage value. Based on the survey work and archaeological interpretation it would seem unlikely that there is a direct connection between Asset No.122 and the Hudgill Lead Mine Bingsteads Scheduled Monument. In line with the County Council Historic Environment Officer’s advice, a condition is proposed to require the asset to be archaeologically recorded prior to any construction works taking place in the MwTS. Subject to this condition it is considered that this proposal complies with CMWLP Policy DC17 in respect of non-designated archaeological assets.

Other heritage considerations

11.108 The application site is not within, nor in proximity to, a conservation area. Nor is it in proximity to any listed buildings. The nearest listed features are milestone posts on the A689, the closest of which is 375m from the proposed pipeline and
320m from the MwTS. Given this distance and the nature of this feature it is considered the proposal would not affect its setting.

**OTHER PLANNING CONSIDERATIONS**

**Alternatives**

11.109 The NPPF is silent on the principle of considering the availability, and comparative merits of alternative sites. The PPG clarifies at Paragraph: 041 Reference ID: 4-041-20170728 that the EIA Regulations do not require an applicant to consider alternatives. However, where alternatives have been considered, applicants are required to include in their ES a description of the reasonable alternatives studied and an indication of the main reasons for selecting the chosen option including their environmental effects.

11.110 The applicant’s ES and ES Addendum establishes that they have assessed and dismissed a large range of alternative sites (within a 1.5km radius of the Nent Haggs Adit) and potential treatment technologies. The other sites considered were dismissed by the applicant for a variety of reasons including their restricted size; elevation; visual impact; lack of availability; and proximity to sensitive receptors. The assessment methodology utilised by the applicant in their site selection approach appears logical and robust and their reasoning for progressing with this site is clear and transparently set out.

11.111 Similarly, the rationale for the treatment technology proposed is recognised to be its lesser costs, its utilisation of natural processes, its limited degree of built development, lesser degree of anticipated externalities and as it has the greatest potential to be merged into the landscape of the Nent Valley. It is noted that active treatment technologies involve industrial processes and would have likely involved containment within a large building or buildings.

**Contaminated Land**

11.112 The NPPF requires the planning system to contribute to protecting and improving the environment by remediating despoiled, degraded, derelict and contaminated land. Emerging EDC-LP Policy ENV8 requires, where there is a reasonable possibility of land contamination, adequate contaminated land assessments prepared by a suitably competent person to be submitted prior to any planning decision being taken, to determine whether or not unacceptable risks to human health or the environment arise from the proposals.

11.113 An appropriate suite of Ground Investigation andGeo-Environmental Assessment has been undertaken by the applicant across the footprint of the proposed development. Although the Nent Valley has been subject to various phases of historic metal mining, these revealed no evidence of impact by mine waste. On the proposed greenfield PSS and MwTS these found no evidence of made ground. However made ground is present around the Nent Haggs Mine Adit and underneath the Highways. Although elevated levels of metals were recorded within the ground across the proposed development area, the concentrations observed were generally low and are likely to be reflective of natural background levels given the underlying geology of the area. A human health risk assessment has been undertaken by the applicant; and this considers that the levels of metals recorded across the site would not pose a danger to human health for site workers during the construction works, and latterly for the operational and maintenance workers (with the main risks being...
ingestion of soils and inhalation of dust during disturbance). Eden District Council’s Environment Health Department consider the surveys undertaken and conclusions reached by the applicant in respect of ground conditions to be satisfactory.

11.114 In light of the presence of some elements of made ground the applicant proposes to set out a series of precautionary measures to protect construction workers during earthworks. It is considered that this detail can be secured via a planning condition requiring an updated Construction Environmental Management Plan (CEMP). A condition is also proposed to ensure that any encounters with contaminated ground not identified in the surveys are appropriately addressed. In light of the above the application is judged to comply with the NPPF and emerging EDC-LP Policy ENV8 in respect of land contamination considerations.

**Dust Impact**

11.115 CMWLP Policy DC2 requires proposals to not give rise to significant adverse impacts on local air quality. CMWLP Policy DC5 requires proposals to provide evidence that dust emissions will not have a demonstrable impact upon amenity, human health, air quality and the natural and historic environment. As the issue of hydrogen sulphide emissions has already been considered, this section of the report focuses upon the scheme’s potential to create fugitive emissions of dust and particulate matter. The ES establishes that such emissions are primarily confined to the construction phase during the undertaking of earthworks and other construction activities. Earthworks, such as those associated with formation of the CBTPs, reedbeds, access tracks, drainage channels and the trench for the pipeline along the route are considered to be the greatest potential sources of dust. The ES considers the dust impacts of these activities upon amenity, ecology and human health to range from negligible to minor-adverse. The Outline Construction Environmental Management Plan (CEMP) submitted in support of the application provides a range of appropriate measures to prevent the emission of dust outside the application site. If correctly and consistently applied, these measures would be capable of controlling impacts to a level at which a significant effect on amenity and health would not occur. Moreover any potential effects would be temporary and short-term in nature.

11.116 There is also potential for dust and particulate matter emission during the periodic removal and replacement of the compost medium. The OOMP establishes there are technologies and measures currently available that could control potential emissions during this process, however, as previously set-out, given the 10-15 year intervals at which it is anticipated for this process to be undertaken, it is considered appropriate to secure a detailed methodology, including dust control measures, via planning condition, prior to this process taking place. In light of the above considerations the proposal is considered to comply with CMWLP policies DC2 and DC5.

**Flood Risk & Drainage**

11.117 A Flood Risk Assessment (FRA) and Drainage Strategy have been submitted in support of the application.

11.118 **Fluvial Flood Risk:** With the exception of the outfalls and surface water drainage channels – which are water compatible development; the MwTS’ and
PSS' above ground infrastructure (and associated embankments) would be located outside the currently defined extent of the Environment Agency’s Fluvial Flood Risk Zones 2 & 3. To address increased peak river flow volumes associated with Climate Change and residual risk of flooding from any unfavourable river channel migration, the existing ground-level would be raised by at least 0.5m around the reed beds and localised riverbank stabilisation works would be undertaken so as to lessen the degree of potential fluvial flood risk to these lower sited elements of the treatment chain, thus providing added resilience. The proposed exposed minewater transfer pipeline at Nenthall Bridge could theoretically be subject to high pressures during high flows in the watercourse which could weaken, damage, or dislodge the pipeline; however its’ proposed sitting on the downstream side of the bridge substantially reduces the pressures exerted upon and risk to this element of pipeline. Furthermore, by intercepting, diverting and creating new space/capacity and storage infrastructure for flows from the Nent Haggs Adit the proposal would also reduce fluvial flood risk downstream. In light of the above it is considered that the proposal adequately considers and takes into account fluvial flood risk considerations and would not increase fluvial flood risk outside the site or downstream. Therefore, in terms of fluvial flood risk considerations, the proposal is considered to comply with CMWLP Policies SP12 and DC19, EDC-CS Policy CS4 and the NPPF.

11.119 **Surface Water Flood Risk & Drainage:** The proposal has the potential to impact on local flood risk by introducing new areas of impermeable surfacing that could increase surface water flow rates and impacting on existing surface water flow routes. The amount of impermeable surfacing introduced would be limited to the new highway access to the MwTS and the two small proposed equipment buildings. Given the small footprint of these elements and their distance from sensitive receptors it is considered they would not present a significant increase in peak discharge rate or total volume of runoff from the site and therefore present negligible risk.

11.120 Based on a review of the Environment Agency’s Risk of Flooding from Surface Water Mapping, the FRA considers that there is a medium risk of surface-water flooding occurring on some parts of the MwTS based on the current lie of the land. The proposal for the MwTS includes a network of filter drains and open surface water channels positioned at the base of each of the proposed earthworks batters to intercept and manage surface water run-off. The Surface Water Drainage Design takes into consideration the impact of climate change and has provided capacity for a 1 in 100 year rainfall event, plus an allowance for 40% climate change. The land drainage network would thus serve to convey peak surface water flows away from the CBTPs and the odour dosing building and as such is considered to adequately mitigate surface water flood risks to the most sensitive components of the scheme. Rainfall falling directly on the surface of the CBTPs ponds will be stored in the ponds. The ponds have been designed with a freeboard of approximately 200mm and an overflow pipe for each to provide extra water storage capacity and allow controlled overflow in the event of excess water levels occurring within the CTPs (for example during extreme weather events or in the unlikely event of accidental overfilling).

11.121 The FRA also recognises the existing and recent number of surface water flooding issues at the north-western end of Nentsberry which affects the A689, nearby properties and the field where the PSS is proposed to be located. As part of their proposal the applicant proposes to address this issue. The
application includes measures to collect surface water runoff from the upstream fellside catchment by installing kerbed roadside gullies linked to a new surface water carrier drain (to be installed under the road). This drain would then outfall into open surface water drainage channel system that would be created around the perimeter of the PSS field and discharge into the River Nent. This system has been designed to collect excess runoff in the A689 corridor up to the 1 in 100 year return period event plus a 40% allowance climate change. Flooding from more extreme events would be routed along the highway and through the site entrance gate. This would provide a betterment that would reduce flood risk in this area – reducing the frequency and duration of flood events that inundate the road and better protecting local properties. The detailed design of this drainage scheme would be regulated through the OWFDC regime.

11.122 In light of the above, it is considered that the proposal adequately considers the existing surface water flooding baseline and provides appropriate sustainable drainage measures that would protect the development and surrounding land from surface water flooding and also provide betterment in terms of reducing existing surface water flooding issues. It is therefore found that the proposed development design complies with CMWLP Policies SP12 and DC19, EDC-CS Policy CS4 and the NPPF.

11.123 Other Forms of Flood Risk: Due to the proximity of the site to the River Nent and permeable geology of the area there is a potential risk to some elements of the proposal from groundwater flooding. Based on the ground investigations submitted in support of the application the greatest risk of flooding from groundwater relates to the PSS and the proposed reedbeds on the MwTS. The PSS would involve installation of underground pipework and chambers; however groundwater can be managed during construction and it is unlikely that these elements would increase flood risk off-site. The ground level of the pumping station building would be slightly built-up by 0.15m to reduce groundwater flood risk, with manual pump controls and electrics being set at least 0.35m above the finished floor level to provide added resilience. A liner is proposed to be placed under the wetland area and this would be weighed down with sufficient soil to prevent any potential uplift from rising groundwater. There are also a number of minor watercourses in close proximity to the MwTS but these are not considered to pose a significant risk to the proposed Scheme. The risk of flooding from sewer and drainage infrastructure is considered low.

Hazardous Materials

11.124 The storage and handling of hazardous materials are material considerations in the planning application process. The applicant relates that it is proposed to utilise Hydrogen Peroxide with a concentration of 35%. Hydrogen Peroxide, whilst acidic, is not classed as a hazardous material. An emergency shower is to be provided in the odour dosing building to provide operatives with the means to dilute/remove hydrogen peroxide in the event of accidental contact. The proposed measures and procedures for its handling to protect the environment are considered within the Water Environment section later in this report. It is possible that the metal rich spent compost may be classified as a hazardous waste. With this being contained within the lined ponds and submerged under water, it is considered to be safely stored. The condition proposed to agree a scheme for its removal, prior to any removal taking place, would secure appropriate measures that protect human health. It is proposed that the spent compost would be securely transported and disposed of at an appropriately
Highways Matters

11.125 CMWLP Policy DC1 requires proposals for minerals and waste development to be located so that they are well related to the strategic route network and to minimise operational waste road miles where practicable. In determining planning applications CMWLP Policy DC2 notes that considerations will include appropriate routes and volumes of traffic. CMWLP Policy DC6 sets out that the cumulative impacts of proposals will be assessed in light of other land-uses in the area and that, where appropriate considerations will include the type, size and number of vehicles generated (including site preparation) and their potential impacts on the highway network, highway safety and the environment. Paragraph 109 of the NPPF states development should only be refused on transport/highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

11.126 Both key elements of the proposal are considered well related to the highway network as they do not necessitate the use of minor roads to achieve access. The proposed access to the MwTS provides suitable visibility splays and sufficient space beyond the highway edge to accommodate the range of vehicles required to service the site. The access to be used for the PSS was recently constructed and is considered suitable for use in connection with the construction and operation of this element of the development. Both the MwTS and PSS include sufficient space for parking on-site and for vehicles to turn allowing for safe forward gear egress back onto the highway. As such the proposals allow for safe highway access and egress. Once operational it is expected that there would be regular visits to these components by one vehicle to monitor the operation of the scheme. The frequency of these visits is likely to be daily at first as the development beds-in, then to become less frequent, ranging from weekly to monthly. It is anticipated there would be two to three light goods vehicle (LGV) deliveries of dosing chemicals to the MwTS per month for the first four months of operation, which would reduce to one delivery a month thereafter. Consequently, normal operational visits to the site would have no discernible impact upon the highway network. However, the need to remove and replace the spent waste compost on a periodic basis (at somewhere between 10-15 year intervals) is estimated to generate in the region of 250 two-way HGV movements. Whilst this is not an insignificant amount of HGV movements, as this would be at most decennial in occurrence, it would not adversely impact the fabric or safety of the highway. In line with Policy DC2, a condition is proposed to require details of the phasing and routing of HGVs associated with compost replacement activities.

11.127 The greatest highways impact would be during the construction phase. The applicant anticipates that the construction of the whole scheme would take place over a 17-18 month period and estimates that for the majority of this an average of five HGVs would serve the site per day (5 in/ 5 out) with a maximum of 16 HGVs arriving at the site on any one day (16 in/ 16 out). The exception to this is the re-profiling operations to the MwTS where an excess of cut ground/soil is anticipated. The earthwork cut operations are anticipated to take place over a 9 week period, resulting in HGV visits ranging from 27-30 (i.e. 54-60 two way movements) over a full working day. Assuming an 11-12 hour summer working day as sought by the applicant, then this would result in an
average of 2-3 HGV movements an hour for this operation. Whilst this does constitute a significant amount of HGV movements, given the short duration of the spoil removal activity and the low number of hourly HGVs, it is considered that the highway network would be able to accommodate the volume of HGV traffic this element of the construction phase would generate. However to address concerns in respect of its potential to impact the fabric of some elements of the highway it is proposed to secure a road condition survey from the applicant prior to the commencement of development and to require them to address any damage that can be reasonably attributed to these works following their undertaking. Any adverse impacts on amenity resulting from this peak in HGV movements would be temporary and short-term in nature and therefore judged to be acceptable in light of the benefits of the development. The change in total traffic flows on the A689 resulting from the construction of the scheme is considered to be low and in tolerance. Whilst there would be a high percentage increase in traffic flows on the B6294 (due to the low baseline traffic recorded), the main spike in HGV activity/movements on this road would only take place over a 3-4 month period.

11.128 It is noted that the applicant proposes to undertake single lane closures for pipeline installation works. This is a matter for the Temporary Traffic Regulations Orders process and is not a material planning consideration. No other major traffic attracting land-uses or permitted developments are present in the vicinity of this scheme so there is considered to be little potential for cumulative highway impacts.

11.129 The ES concludes that the construction phase would result in no significant effects on pedestrians, cyclists, road safety, and driver delay during construction. A condition is proposed to secure submission and agreement of, and adherence to, a Construction Traffic Management Plan to ensure the construction phase of the development is carried out in accordance with the details submitted and does not adversely impact local residential amenity. Consequently it is considered that construction phase traffic would not have an unacceptable impact upon the highway or local amenity.

11.130 Overall, the proposed development is considered unlikely to result in significant adverse highway or traffic impacts, and subject to conditions to ensure this is the case, is considered to comply with CMWLP policies DC1, DC2 and DC6 and the NPPF.

**Noise and Vibration Impact**

11.131 Paragraph 180 of the NPPF stipulates that planning decisions should aim to ensure new development avoids (and if not possible mitigates and reduces to a minimum) noise so that it does not give rise to significant adverse impacts on health and quality of life. It continues that decisions should also protect areas of tranquillity that have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason. CMWLP Policy DC3 sets out that minerals or waste developments should not exceed background noise levels by more than 10dB(A) at noise sensitive properties. EDC CS Policy CS18 establishes that new development will be required to demonstrate that it does not contribute to unacceptable levels of noise pollution.

11.132 The ES confirms that the baseline noise environment is typical of a rural area, with occasional road traffic being the greatest source of noise and that during breaks/lulls in traffic flows the predominant noise sources were running water,
farm animal and wildlife. The greatest potential noise source associated with the operational scheme would be the centrifugal pumps that would likely be operational 24 hours a day (but may cycle in and out). These would be contained within the two proposed buildings which would provide substantial sound reductions and the ES assesses that they would not be audible at the nearest residential dwellings. The next greatest noise source of the proposed operational development is considered to be running water. This would not be out-of-character with the locale and would have a negligible impact. The spent compost replacement activity is considered akin to a “temporary activity” as defined within CMWLP Policy DC3. The ES predicts that these would not exceed 65 dB(A) LAeq at the nearest noise sensitive property and would therefore be under policy DC3s temporary activity limit of 70 dB(A) LAeq. To ensure maintenance noise is minimised as far as possible a condition is proposed requiring a maintenance noise assessment and mitigation programme be submitted and agreed prior to the commencement of use.

11.133 The greatest noise and vibration impacts would arise during the construction phase. The greatest impact is anticipated to arise from the breaking-out of road surfaces for the minewater transfer pipeline in proximity to properties and the earthworks for the CBTPs. In the latter case it is noted that noise levels would only be high for short periods of time when works are in close proximity to these properties. The applicant proposes to deploy mobile noise barriers during the undertaking of these works to reduce their impact. Given these measures and the short and temporary nature of work to undertake the development it is considered that the construction phase would not give rise to significant adverse noise impacts to the detriment of health or quality of life. To ensure impacts are sufficiently minimised conditions are proposed to secure a detailed noise assessment and mitigation programme based on a detailed schedule of construction works prior to the commencement of development and to further limit the hours that the greatest noise generating activities can take place in.

11.134 I am satisfied that the operational scheme has been designed so as not to disturb the tranquillity of this area of the AONB and that with the conditions proposed that it would not have any adverse noise or vibration impact outside of temporary operations. I am also of the view that the construction phase and temporary operations would not result in unacceptable levels of noise pollution. Consequently it is considered that the proposal would comply with CMWLP Policy DC3, EDC CS Policy CS18 and Paragraph 180 of the NPPF.

Public Rights of Way

11.135 CMWLP Policy DC 2 requires proposals to demonstrate that public rights of way are not adversely affected. The works to install underground pipework may temporarily obstruct access to/from or along a number of public rights of way in the area – including footpaths which form part of Isaacs’ Tea Trail. Consequently users of the rights of way network during the construction phase could experience some disruption. Due to the rolling nature of pipework installation (anticipated to be undertaken in 130m sections) only one right of way would be obstructed at any one time. The applicant also proposes to undertake river-bank stabilisation works (via willow revetment) along a section of the River Nent to the north of the proposed MwTS so as to further reduce flood risk to the reed beds. This area also coincides with an eroded section of a footpath (public right of way no. 302090) which also forms part of Isaac’s Tea Trail. As part of the riverbank stabilisation works the applicant also proposes to
provide a number of associated further improvements to this section of footpath within the red-line planning application area, providing improved signage and step-free gateways amongst other measures. The proposal would thus make a positive contribution, providing some betterment to the public rights of way network. A condition is proposed requiring the submission, agreement and implementation of a detailed scheme for these riverbank stabilisation works and other associated footpath improvements. The applicant has indicated that they will liaise with the County Council’s Countryside Access Team to secure temporary closures / diversions to affected footpaths. The proposed completed development would not obstruct any public rights of way and would not have any detrimental effect on recreational opportunities. Any residual operational odour or noise are likely to be low in proximity to public rights of way and are not considered to be at levels that would adversely affect the enjoyment of people utilising these recreational routes. Consequently the proposal is considered to comply with CMWLP Policy DC2.

Risk of Accident/Disaster

11.136 There remains debate as to the extent accident, plant failure or human error can be taken into account into arriving at planning decisions. Where other regulatory control regimes apply and address accident prevention/contingency, the planning system should not duplicate these controls. The PPG directs (at Paragraph: 050 Reference ID: 28-050-20141016) that planning authorities “should assume that these regimes will operate effectively”. Thus it is generally accepted that these other regulatory control regimes can be taken into account as a material consideration that would counter and control/minimise risks. The proposed development would be subject to building control; Environment Agency environmental discharge permit and water abstraction licences (though it is noted that an Environmental Permit is not required for the operation of the Minewater Treatment System); and regimes overseen by the Health and Safety Executive such as The Construction (Design and Management) Regulations 2015 and Control of Substances Hazardous to Health (COSHH) Regulations 2002. This latter regulatory regime would address the handling of hydrogen peroxide. The Control of Major Accident Hazard (COMAH) Regulations 2015 do not apply where no dangerous substance below qualifying quantities, as specified in schedule 1 of the regulations, are present. The Environment Agency considers that these regulations are not applicable to this proposal. Separate legislation covers the transport or carriage of dangerous substances (i.e. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009).

11.137 The EIA Regulations require that the characteristics of development must be considered with particular regard to the risk of major accidents and/or disasters relevant to the development concerned. The most likely event that could impact the proposal is considered to be a flood/severe rainfall event and it is considered that the proposed scheme adequate addresses flood risks and include appropriate safeguards and measures to address the impact of an intense rainfall event. An example in respect of the latter is the pond size design, presence of a controlled overflow system for the CBTPs alongside remote water level monitoring and the ability to curtail minewater inflow).

11.138 The ES also considers storage of potentially contaminating materials and accidental spillage or leaks during operation of the scheme. Taking into account the mitigation measures proposed, for example bunded storage of Hydrogen
Peroxide, it is considered that the magnitude of impact from accidental leaks and spillages on the water environment is negligible.

11.139 Measures and processes have been outlined in the ES and the Outline Operational Management Plan (OOMP) to minimise the risk of accident. In the interests of protecting the environment a condition is proposed to require submission and agreement of a detailed Operational Management Plan prior to commencement of the use of the minewater treatment site and to require the subsequent implementation and adherence to the plan. In the highly unlikely event of an accident, given the nature and quantities of the substances present on the MWTS, and the level of resilience of the local environment and abundance of the habitats at risk below the MWTS it is considered that the magnitude, intensity, complexity and spatial extent of impact alongside the likely short duration and reversibility of impact, would not result in anything more than an effect of moderate adverse significance.

**Slope Stability**

11.140 Paragraph 178 of the NPPF sets out that the planning system should ensure adequate site investigation information so that development and surrounding land-uses are not put at unacceptable risks associated with land instability. CMWLP Policy DC 2 requires proposals to demonstrate that issues of ground stability have been addressed. The MwTS is proposed to be constructed within a valley side. The ES observes that this comprises three distinct sections - a very steep roughly vegetated slope to the northwest; a very smooth green grassed area to the north with an even gradient of approximately 1:5 (vertical:horizontal); and a steep roughly vegetated uneven slope to the northeast, which continues beyond the southeast site boundary. In light of this slope and the mining history of the wider area, the applicant has submitted an Interim Slope Stability Risk Assessment (the SSRA) in line with the guidance set-out in the PPG. It is noted that the MwTS has been designed to employ slopes no steeper than 1:3 and incorporates measures to allow effective drainage of the slopes. The SSRA concludes that there are unlikely to be any significant slope stability issues affecting the proposed scheme. Notwithstanding this, it considers that should further assessment identify more significant land instability there are appropriate mitigation options available to deal with this risk. The SSRA is considered satisfactory however it is noted that it is interim in nature, as it was undertaken prior to completion of the ground investigation and geo-environmental assessment for the MwTS. These were submitted as part of the Further Environmental Information. The ground investigation and geo-environmental assessment for the MwTS considers that on-site excavated material is unsuitable for use in the formation of the required slope at the settlement ponds in its current condition. It therefore recommends that the excavated material is improved by lime modification/stabilisation or another suitable method of improvement. The applicant has confirmed that they intend to employ lime modification and that information in respect of this will be incorporated into an updated slope stability assessment. To ensure that this is satisfactorily addressed a condition is proposed requiring the submission and approval of the updated slope stability assessment. Subject to this condition, it is considered that the proposal adequately addresses land/slope stability issues and complies with CMWLP Policy DC2 and the NPPF.

**Socio-Economic Impact**

11.141 CMWLP Policy SP14 seeks proposals to demonstrate how they would provide
economic benefit. It continues that this can include factors such as the number of jobs directly or indirectly created or safeguarded and the support that proposals give to other industries and developments. However, it also sets out that adverse economic impacts on other industries and development initiatives will be weighed against the overall economic benefits of the proposal. Paragraph 8 of the NPPF sets out that Local Planning Authorities should seek opportunities to achieve each of the economic, social and environmental dimensions of sustainable development, and net gains across all three. Significant adverse impacts on any of these dimensions should be avoided and, wherever possible, alternative options which reduce or eliminate such impacts should be pursued. Paragraph 8 of the NPPF continues that the social role of sustainable development should support the health, and social and cultural wellbeing of local communities.

11.142 The proposed scheme is unlikely to lead to the direct creation of any new jobs but would help sustain a wide range of existing jobs – supporting existing employment during the construction phase and through its operation (with a management company anticipated to be appointed to oversee its maintenance and monitoring checks). The construction phase would generate demand for local materials and provide indirect economic benefits to local facilities, resulting in a minor beneficial effect. This beneficial effect is considered to marginally outweigh the short-term disruption pipe laying activities may cause to nearby businesses (hotels, campsites and other holiday accommodation). The direct economic benefit of the operational scheme would be negligible. The scheme’s provision of betterment to the water environment / reduction in pollution is a positive narrative that could be utilised to the benefit of existing tourism and agricultural related enterprises. Conversely, negative perceptions or experience of the scheme – in terms of its visual impact and potential to generate adverse emissions outside of the site could have a diffuse negative impact upon local businesses offering tourist accommodation. Given that the development would not be visible from any tourist accommodation and the distance of the MwTS from these facilities it is highly unlikely that these businesses would experience any direct adverse impacts.

11.143 The preceding health impact section has already established that the proposal would not result in any direct adverse public health impacts. Although it is acknowledged that negative perceptions of the perceived impact of emissions upon people’s health could adversely affect mental health and wellbeing of the local community. A negative experience of emissions from the MwTS could also have a similar impact, although the modelling and measures proposed in this application suggest this would be unlikely to occur. The measures to reduce flood risk at Nentsberry would have a positive effect upon the well-being and mental health of the local community. The improvements to existing footpaths would add long-term minor beneficial effects that would contribute to the wellbeing of the local community and are in line with paragraph 98 of the NPPF which seeks to provide enhancement to public rights of way and access.

11.144 The applicant has demonstrated how the scheme would provide economic benefit in line with CMWLP Policy SP14. Taking into account the economic benefits of the scheme and the potential disbenefits considered above, it is judged that the proposed scheme is likely to have marginally more positive economic benefit than negative. Similarly, it is considered that the proposed scheme is likely to have marginally more positive social effects than negative.
Soil Resources

11.145 Paragraph 170 of the NPPF directs that planning decisions should contribute to protecting valued soils and the best and most versatile agricultural land. Footnote 53 of the NPPF expands that where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality. Policy DC21 or the CMWLP seeks to safeguard the longterm potential of Best and Most Versatile agricultural land (i.e. land graded 1, 2 and 3a under the DEFRA agricultural land classification system) and to maintain soil resources in a viable condition for reuse.

11.146 The DEFRA Agricultural Land Classification survey identifies the proposed MwTS and PSS as being grade 5 land i.e. very poor quality agricultural land. In noting this it is acknowledged that the agricultural land quality within the North Pennines AONB is generally poor, with the majority of the land being grade 5, although there is also a notable proportion of grade 4 land. However, within the limited context of the planning system, the land is of poorer quality and its soils of low value and thus it is considered preferable to develop grade 5 land over higher grades. With reference to the representation stating that topsoil on Alston Moor is too valuable to be lost from these fields, it is recognised that soils suitable for agriculture are a limited and valuable resource in the AONB and that soils are essential and ultimately finite resource that provide important ecosystem services. All soils excavated on the PSS would be retained. The majority of top-soil would also be retained on the MwTS for re-use in the landscaping of the site, with the majority of material being removed from the site being comprised of subsoil and other underlying material. Conditions are proposed to ensure soil resources are appropriately handled and conserved during the construction phase so as to aid the revegetation of the site. In light of the above considerations, the proposal is found to comply with CMWLP policy DC21 and the NPPF.

Trees

11.147 A Tree Survey Report has been submitted in support of the application as part of the Further Information submission. This found predominantly Category B and C trees, i.e. moderate and low quality trees, within the sphere of influence of the development proposal. No Category A trees were identified. The applicant proposes to produce Tree Protection Plans in parallel with the development of the detailed construction design and construction method statement. A pre-commencement condition is proposed to secure the submission and agreement of the tree protection plan so as to secure the retention and protection of as much of the existing tree stock as is practicable. The proposed landscape and ecology management plan submitted by the applicant proposes to plant over 45 heavy standard trees and over 50 standard trees. The landscaping would therefore meet Emerging EDC-LP Policy ENV2’s aspiration for new development to contribute to the creation of new trees. It is also considered highly likely that the number of new trees proposed would compensate for any unavoidable losses to the existing tree stock that may arise.

Water Environment

11.148 CMWLP Policy DC20 requires proposals to demonstrate that they would have not have an unacceptable quantitative or qualitative adverse effects on the
water environment, both within the application site and its surroundings. Overall, in terms of water quality, the ES sets out that the scheme is predicted “to have a moderate beneficial effect on the River Nent and the River South Tyne through the long term and ongoing treatment of heavy metals that are fundamental to improving the quality of river water and river ecosystems”. Whilst the proposal seeks to deliver water quality improvements in the downstream river system, the undertaking and operation of the scheme also present a number of risks to the wider water environment.

11.149 These risks are predominantly associated with the construction stage, where there is potential for contamination of surface waters or groundwaters (e.g. from suspended solids, accidental discharge of pollutants held on site such as fuels, or excavation works). This risk is greatest where works are close to watercourses, especially on steep slopes. The Outline Construction Environmental Management Plan sets out a robust range of measures to prevent pollution incidents occurring and uncontrolled release of sediments during the construction phase so as to protect water bodies. Provided the avoidance measures set out in this are implemented no long lasting significant effects should occur. A condition is proposed to require a detailed, updated and fully completed Construction Environmental Management Plan to be submitted and agreed prior to the commencement of development, and for this to be subsequently implemented, in order to ensure the water environment is suitably protected during the construction phase.

11.150 Outside of the construction phase, one of the main risks to the water environment relate to the presence of the compost medium and its removal. There is a potential that during the initial bedding-in of the compost medium, fresh fine compost material (i.e. organic/minerogenic matter) entering the River Nent could exert an oxygen demand on the river (i.e. lower the dissolved oxygen content) and thereby lead to a short-term decline in its chemical quality. This potential effect is understood to be temporary and short-term, correlating to the initial freshness of the compost medium. It is considered likely that measures to introduce turbulence to the treated water, and generally turbulent nature of the River Nent would reduce this potential impact, enabling the water to re-oxygenate quickly. Despite this the ES recommends watercourse monitoring be undertaken. This matter would be controlled by the Environment Agency’s discharge permit for the site. Paragraph 183 of the NPPF sets out that planning decisions should assume that other regulatory regimes will operate effectively and should not duplicate other regimes. Consequently a planning condition is not proposed in respect of this matter. The lining of the CBTPs would protect the groundwater environment from this effect and the concentrated metals that would be bound-up in this medium over the course of time.

11.151 The proposed dosing agent, Hydrogen peroxide, is acidic. Should there be a leakage of this it has the potential to alter the pH levels of water resource receptors and could therefore impact river ecology. The application sets out processes and safeguard measures to safely store and contain the hydrogen peroxide during operation of the scheme – with it proposed to be stored in Intermediate Bulk Containers (IBC’s) within a bunded area in the chemical storage and dosing room. The bunded area would be sized to contain any chemical spillage from the IBC’s and dosing pump pipework. The emergency shower would drain to a secure underground tank. Accordingly, I am satisfied that appropriate measures have been put in place to protect land condition and
the water environment.

11.152 A representee has also raised concerns that the diversion of water from the Nent Haggs adit could negatively impact upon water levels within a 3km stretch of the River Nent (between the current adit outfall point and the proposed MwTS outfall) in dry summer conditions with concomitant adverse impacts upon dependent species and river corridor plant communities. The amount of water that can be diverted and when it can be diverted from the Nent Haggs adit are regulated by the Environment Agency via the water abstraction license regime. Consequently paragraph 183 of the NPPF applies and it should be assumed for the purpose of making a decision on this land-use proposal that the water abstraction license regime will operate effectively so as to protect the 3km section of the River Nent in question during extended periods of dry weather.

11.153 The proposed scheme would deliver qualitative improvements to the river system downstream of the Nent Haggs adit. It also provides appropriate safeguards and measures to ensure no inadvertent adverse impacts occur to the water environment as a result of the scheme. Consequently I find the application to comply with CMWLP Policy DC20.

HUMAN RIGHTS

11.154 The Human Rights Act 1998 requires the County Council to take into consideration the rights of the public under the European Convention on Human Rights. Article 8 of the Convention provides that everyone has the right to respect for his private life and home save for interference which is in accordance with the law and necessary in a democratic society in the interests of, amongst other things, public safety, the economic wellbeing of the country or the protection of the rights and freedoms of others. Article 1 of Protocol 1 provides that an individual’s peaceful enjoyment of his property shall not be interfered with save as necessary in the public interest and subject to conditions provided for by law. For any interference with these rights to be justified the interference needs to be proportionate to the aims that are sought to be realised. The County Council has a duty to consider the policies of the development plan and to protect the amenities of residents as set out in those policies.

11.155 The proposal would have an impact on the visual amenity of the immediate area and could impact negatively upon local amenity on occasion; but it is considered that those impacts would be insufficient to interfere with the rights of the applicant and satisfactory controls could be imposed on the proposed development to protect amenity. The impacts on the rights of local property owners to a private and family life and peaceful enjoyment of their possessions (Article 8 and Article 1 of Protocol 1) would be minimal and proportionate to the wider social and economic interests of the community and could be satisfactorily controlled by planning conditions.

12.0 CONCLUSION

12.1 Paragraph 170 of the NPPF states that the planning system should contribute to and enhance the natural and local environment by halting declines in biodiversity and remediating contamination. This proposal seeks to deliver betterment in the water quality of the Rivers Nent and Tyne by reducing metal pollution from the abandoned Nent Haggs mine so as to improve the chemical and ecological condition of these rivers in line with the legally binding objectives of the
Northumbria River Basin Management Plan. This proposal would thus benefit the wider river ecosystem, enabling an increase in biodiversity within the river. Thus it is accepted that there is a compelling environmental need for and benefit arising from the treatment of metal contaminated minewaters. As such I believe the scheme presents exceptional circumstances that justify development within the North Pennines AONB.

12.2 Whilst it is possible that the reduction in dissolved metals in the water column that this scheme seeks to achieve could potentially lead to a deterioration in the condition of European protected Calaminarian Grassland immediately downstream of the site; it is considered that the proposal would have beneficial consequences of primary importance for the wider environment that outweigh this potential impact and that appropriate compensation can be secured via a Section 106 Legal Agreement. The Council has undertaken an Appropriate Assessment of the proposal and the SoS for the MHCLG is satisfied that this fully meets the tests set out in the Habitats Regulations. This includes agreement that there are Imperative Reasons of Overriding Public Interest that justify the proposed development. In respect of other habitats and species present on, and in proximity to, the land proposed to be developed; the minewater treatment scheme as designed would not, subject to the conditions proposed, have any unacceptable impacts on these.

12.3 As Nent Haggs Mine is the source of metal pollution and is situated within the heart of the North Pennines AONB, it is accepted that there is no reasonable scope to site a scheme for treatment of its contaminated minewater outside of the AONB boundary. Overall the proposed scheme has been sensitively designed to be compatible with the distinctive characteristics of its landscape setting and the AONB and thus avoids significant adverse landscape and visual impacts. It also avoids any unacceptable impact upon the significance of the Hudgill Lead Mine Bingsteads Scheduled Monument, and with the conditions proposed would not have any unacceptable impacts on non-designated heritage assets.

12.4 A great deal of public concern has been raised as to whether the proposed treatment process would result in a level of hydrogen sulphide emissions that could negatively impact upon public health and upon local amenity due to its malodourous characteristics. The World Health Organisation sets a highly conservative limit for hydrogen sulphide in air of 150µg/m³ in order protect longterm public health. The applicant applies a series of conservative assumptions to calculate that within the likely operational scenario the proposed scheme would result in average hydrogen sulphide levels in air of less than 0.9µg/m³ over any 24 hour period at the site boundary. Consequently it is considered that residual hydrogen sulphide emissions from the treatment process would not affect human health. It is recognised that hydrogen sulphide can be smelled at much lower concentrations in air than those at which it causes harm, with the odour detection threshold for hydrogen sulphide standing at around 0.76µg/m³ (i.e. 1 OU_E/m³). Odour dosing has been embedded into the scheme design and the dispersion modelling submitted indicates that the 98th percentile average annual hourly concentration of hydrogen sulphide would not exceed the odour recognition threshold (i.e. 3 OU_E/m³) for the operational scenarios modelled. It is considered that the balance of evidence suggests that no demonstrable adverse impacts would result to the amenity of the occupiers of residential property within the vicinity of the site as a result of odorous emissions. Whilst odour may be detectable on public routes in proximity to the site boundary
on occasion, it is consider that this would not be at a level that would adversely affect amenity nor substantially detract from the enjoyment of these routes.

12.5 All the other potential adverse impacts of the scheme are considered to have been satisfactorily identified and addressed by the application. The applicant has set out a series of measures to control and reduce potential negative externalities associated with the MwTS so as to ensure they do not generate any unacceptable impacts and that they comply with planning policy. A comprehensive set of planning conditions are proposed to ensure that this is the case.

12.6 In light of the above considerations I am satisfied that the potential detrimental effects of the scheme on the environment and landscape have been moderated to an acceptable degree so as to enable the proposal to comply with the local development plan and Paragraph 172 of the NPPF in respect of development within AONBs.

12.7 Thus; taking account of the environmental information submitted in connection with the application and the collective issues considered within this report; it is concluded that the proposed development is in accordance with the development plan and is acceptable in planning terms with there being no material considerations that indicate otherwise. With the planning conditions proposed, any potential harm would reasonably be mitigated. Furthermore, any potential harm to interests of acknowledged importance is likely to be negligible and would be outweighed by the environmental benefits of the development. It is therefore recommended that, subject to the applicant first entering into a Section 106 legal agreement with the County Council to secure off-site monitoring of and contingency compensatory measures relating to the Tyne and Nent SAC; Planning Permission be Granted subject to the conditions set out in Appendix 1 to this report.

Dominic Donnini
Executive Director of Economy and Infrastructure

Contact: Mr Edward Page

Electoral Division Identification: Alston and East Fellside – Cllr Claire Driver
Appendix 1 - PROPOSED PLANNING CONDITIONS

Time Limit for Implementation of Permission

1. The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

   Reason: To comply with Section 91 of the Town and Country Planning Act 1990 as amended by Section 51 of the Planning and Compulsory Purchase Act 2004.

Approved Scheme

2. The development hereby permitted shall be carried out, except where modified by the conditions to this permission, in accordance with the following:

   a. The Environmental Statement (ES) – Volume 1 – Rev.2 – dated February 2018;
   b. Addendum to the Environmental Statement - Rev.1 – dated June 2018;
   d. Phase 2 Geo-environmental and Geotechnical Ground Investigation Report – dated April 2018;
   e. The Landscape and Ecology Management Plan – Rev.1 – dated January/February 2018;
   g. Drawings/Plans numbered and named:
      • MWTS-AEC-NG-XX-DR-A-2000 P0 - Site 38 Proposed Pumping Station Building General Arrangement;
      • MWTS-AEC-NG-XX-DR-C-2001 P1 - Site Location Plan Red Line Boundary;
      • MWTS-AEC-NG-XX-DR-C-2007 P1 - Site 4 General Arrangement;
      • MWTS-AEC-NG-XX-DR-C-2008 P1 - Site 4 Proposed Access Arrangement;
      • MWTS-AEC-NG-XX-DR-C-2009 P1 - Nent Haggs Site 4 Proposed Longitudinal Section A-A;
      • MWTS-AEC-NG-XX-DR-C-2012 P1 - Site 4 Proposed Contours
      • MWTS-AEC-NG-XX-DR-C-2013 P0 - Mine Water Capture Point and Transfer Route Sheet 1;
      • MWTS-AEC-NG-XX-DR-C-2014 P0 - Mine Water Capture Point and Transfer Route Sheet 2;
      • MWTS-AEC-NG-XX-DR-C-2015 P0 - Mine Water Capture Point and Transfer Route Sheet 3;
      • MWTS-AEC-NG-XX-DR-C-2016 P0 - Mine Water Capture Point and Transfer Route Sheet 4;
      • MWTS-AEC-NG-XX-DR-C-2017 P1 - Site 38 Proposed Mine Water
Pumping Station General Arrangement;
- MWTS-AEC-NG-XX-DR-C-2018 P1 - Site 4 Proposed Surfacing Layout;
- MWTS-AEC-NG-XX-DR-C-2019-Rev.P0 – Site 38 & Highway Improvement Works Drainage Strategy;
- MWTS-AEC-NG-XX-DR-C-2020-Rev.P0 - Site 38 & Highway Improvement Works Drainage Schedule;
- MWTS-AEC-NG-XX-DR-C-2021-Rev.P0 – Site 38 Surface Water Longitudinal Section;
- MWTS-AEC-NG-XX-DR-C-2022-Rev.P0 – Drainage Strategy Standard Details Sheet 1;
- MWTS-AEC-NG-XX-DR-C-2023-Rev.P0 – Drainage Strategy Standard Details Sheet 2;
- MWTS-AEC-NG-XX-DR-C-2024-Rev.P0 – Site 38 Surface Water Outfall Structures;
- MWTS-AEC-NG-XX-DR-C-2025-Rev.P0 – Mine Water Rising Main Breach Sheet 1;
- MWTS-AEC-NG-XX-DR-C-2026-Rev.P0 – Mine Water Rising Main Breach Sheet 2;
- MWTS-AEC-NG-XX-DR-C-2027-Rev.P0 – Site 4 Drainage Strategy;
- MWTS-AEC-NG-XX-DR-C-2028-Rev.P0 – Site 4 Proposed Outfall Structure;
- MWTS-AEC-NG-XX-DR-C-2035 P0 - Site 38 Natural Scale Cross Sections Sheet 1;
- MWTS-AEC-NG-XX-DR-C-2036 P0 - Site 38 Natural Scale Cross Sections Sheet 2;
- MWTS-AEC-NG-XX-DR-C-2037 P0 - Site 4 Natural Scale Cross Sections
- MWTS-AEC-NG-XX-DR-C-2039 P0 - Site 4 Natural Scale Longitudinal Section;
- MWTS-AEC-NG-XX-DR-C-2051 P0 - Proposed Standard Details;

j. The details or schemes approved in accordance with the conditions attached to this permission

Reason: To ensure the development is carried out to an approved appropriate standard and to avoid confusion as to what comprises the approved scheme.

3. A copy of this planning permission (i.e. this decision notice and the approved scheme documents/drawings) shall always be available for inspection on the minewater treatment site (identified as Site No.4 within the application) throughout the construction and operation of the scheme. The existence and content of the planning permission shall be made known to all operatives likely to be affected by matters covered by them.

Reason: To ensure the development is carried out and operated in accordance with the approved scheme.

Notification of Key Stages of the Development

4. Written notification shall be given to the Local Planning Authority within 7 days of each of the following events:
   a. The commencement of development;
b. The completion of construction work on the minewater treatment site;
c. The commencement of commissioning of the compost based treatment ponds;
d. The commencement of landscape planting works.

Reason: To enable the Local Planning Authority to monitor the development and to ensure compliance with the approved scheme.

PRE-COMMENCEMENT SUBMISSIONS AND REQUIREMENTS

WHOLE SCHEME

Tree Protection Plan

5. No development shall take place until a Tree Protection Plan has been submitted to and approved by the Local Planning Authority. The Tree Protection Plan shall clearly identify which trees are to be removed, pruned and/or retained and the measures proposed for protecting trees during construction works / operation of the site. It shall also include a scheme for the phased implementation of the tree protection measures prior to development commencing in the vicinity of trees that require protection measures. The tree protection measures shall be retained in place throughout the undertaking of development within their vicinity.

Reason: To protect trees from damage during construction in recognition of the contribution which trees make to the North Pennine landscape and to local amenity in accordance with emerging policies ENV1 and ENV2 of the Eden Local Plan 2014-2032 (ELP-2014).

Construction Phasing Plan

6. No development shall take place until a construction phasing plan has been submitted to and approved by the Local Planning Authority. The plan shall set out the proposed sequence of development and any associated temporary operations (including the set-up and demobilisation of temporary construction compounds).

Once approved the phasing plan shall be adhered to unless otherwise agreed in writing with the local planning authority.

Reason: In the interests of local amenity and highway safety in accordance with policy DC2 of the Cumbria Minerals and Waste Local Plan 2015-2030 (CMWLP).

Construction Traffic Management Plan

7. No development shall take place until a Construction Traffic Management Plan (CTMP) has been submitted to and approved by the Local Planning Authority. The CTMP shall include details of, but not be limited to:

   a. details of proposed crossings of the highway verge;
   b. temporary construction compound locations, extents and access arrangements;
   c. delineated areas for sufficient vehicle parking, manoeuvring, loading and unloading retained for their specific purpose during the construction phase;
   d. measures for the management of traffic within and accessing the site;
e. measures for cleaning of site entrances and the adjacent public highway;
f. measures to prevent surface water flowing from land to be developed outside of the highway onto the highway;
g. HGV construction traffic routing details;
h. construction vehicle routing including details of the location of temporary directional signage;
i. a protocol to avoid HGVs travelling in convoy;
j. the management of junctions to and crossings of the public highway and other public rights of way/footway;

The approved CTMP shall be adhered to throughout the construction phase.

Reason: To ensure construction traffic does not adversely impact local residential amenity to an unacceptable degree or compromise highway safety. In accordance with policies DC1 and DC2 of the CMWLP.

Pre-Construction Road Condition Survey

8. No development shall take place until details of pre-construction road condition, as established by a detailed survey for accommodation works within the highway boundary conducted with a highway authority representative, have been submitted to the local planning authority. All post development repairs shall be carried out by the applicant to the satisfaction of the local highway authority, with the records of this subsequently being provided to the local planning authority.

Reason: To ensure construction traffic does not adversely the fabric of the highway to an unacceptable degree or compromise highway safety. In accordance with policies DC1 and DC2 of the CMWLP.

Construction Environmental Management Plan

9. No development shall take place until a Construction Environmental Management Plan (CEMP), based upon the ‘Outline Construction Environmental Management Plan – Rev.1 – dated 30 May 2018’, has been submitted to and approved by the Local Planning Authority. For the avoidance of doubt, the CEMP shall include clear measures for the management of surface water during the construction phase.

The approved CEMP shall be adhered to throughout the construction phase.

Reason: To minimise the impact of the undertaking of the development in the interests of local residential amenity in accordance with Policies DC2, DC16, DC19 and DC20 of the CMWLP.

Detailed Construction Noise Assessment

10. No development shall take place until a detailed Construction Noise Assessment & Mitigation Plan (CNAMP) has been submitted to and approved by the Local Planning Authority. The CNAMP shall be based on the schedule of works and include proposed methods of working, times and locations and shall aim to minimise noise disturbance to neighbouring dwellings. It shall clearly identify and define the highest construction noise generating activities (such as, but not limited to, the breaking out of the carriageway) that will be confined to the reduced hours of operation specified in Condition 25 concerning hours of working during the construction phase.

The approved CNAMP shall be adhered to throughout the construction phase.
Reason: In the interests of residential amenity in accordance with emerging policy ENV9 of the ELP 2014.

DETAILS AND ACTIONS REQUIRED BEFORE COMMENCEMENT OF DEVELOPMENT ON SPECIFIC COMPONENTS OF THE SCHEME

SUBMISSIONS

Pumping Station Field Site – Low Mound Details

11. No construction work or earthworks shall take place within the pumping station field site (Site 38) until a plan showing the proposed location, extent, maximum height and seeding proposals for the low mounds of excavated material proposed to be retained on site has been submitted to, and approved by, the Local Planning Authority.

The plan shall be implemented as approved and the low mounds seeded in the first available seeding season following their formation.

Reason: To secure details not provided for within the application so as to ensure a visual and landscape fit of the proposed development in light of the proposal to retain excavation arisings on site within low mounds. In accordance with policy DC18 of the CMWLP and emerging policies ENV2 and ENV3 of the ELP 2014.

Buildings and Walls - Stone Samples

12. No buildings shall be externally clad or walls erected until samples of the natural stone proposed to be used including the finishes proposed to be effected to these have been submitted to and approved by the Local Planning Authority.

The buildings and stone boundary walls shall thereafter be finished in accordance with the approved material samples.

Reason: In order to ensure an acceptable locally appropriate stone(s) are utilised in the interests of ensuring locally distinctive design in the North Pennines Area of Outstanding Natural Beauty in accordance with policy DC18 of the CMWLP and emerging policies DEV5, ENV2 and ENV3 of the ELP 2014.

Minewater Transfer Pipe Crossing the River Nent at Nenthall Bridge

13. No development shall take place between chainages 1050.000 and 1190.00 as set out on ‘Drawing No. MWTS-AEC-NG-XX-DR-C-2014 P0 - Mine Water Capture Point and Transfer Route Sheet 2’ until detailed plans, design assessment, an installation methodology and material samples of the externally visible elements of the proposed minewater transfer pipeline crossing of the River Nent at Nenthall Bridge have been submitted to and approved by the Local Planning Authority.

The pipeline shall thereafter be installed in accordance with the approved plans, methodology and material samples.

Reason: In order to ensure an acceptable design of this element of the scheme in the interests of reducing its visual impact within the North Pennines Area of Outstanding Natural Beauty in accordance with policy DC18 of the CMWLP and emerging policies DEV5, ENV2 and ENV3 of the ELP 2014.
Scheme of Archaeological Investigation for Asset No. 122

14. No construction work or earthworks shall take place within the minewater treatment site (Site 4) until a written scheme of archaeological investigation of the earthwork remains numbered as 122 in the Environmental Statement has been submitted to, and approved by, the Local Planning Authority.

Once approved, the scheme shall be implemented in full with an archaeological watching brief being undertaken by a qualified archaeologist on the archaeological earthwork remains numbered as 122 in the Environmental Statement. Within two months of the completion of the development, two copies of the archaeological report shall be deposited with the Local Planning Authority.

Reason: To afford reasonable opportunity for the investigation and recording of the archaeological asset that survives with the site in accordance with CMWLP Policy DC17 and emerging policy ENV3 of the ELP 2014.

Updated Slope Stability Assessment

15. No construction work or earthworks shall take place within the minewater treatment site (Site 4) until an Updated Slope Stability Assessment and Slope Drainage Scheme has been submitted to, and approved by, the Local Planning Authority.

Once approved, the scheme shall be implemented in full.

Reason: To ensure that the proposed slopes are suitably safe and stable in accordance with policy DC2 of the CMWLP and Paragraph 178 of the NPPF.

Scheme of Willow Revetment and Footpath Improvements

16. No work to construct the river outfall serving the minewater treatment site (Site 4) shall take place until a detailed scheme for willow revetment of the nearby banks of the River Nent and associated footpath improvements has been submitted to, and approved by, the Local Planning Authority.

Once approved the scheme shall be implemented in full.

Reasons: To afford opportunity to assess details not fully set-out within the application. To secure enhancements in line with Paragraph 98 of the revised NPPF published July 2018. To minimise flood risk and to protect the water environment and soil resources in accordance with policies DC19, DC20 and DC21 of the CMWLP.

Outfalls

17. No outfalls shall be constructed until a Detailed Outfall Scheme has been submitted to, and approved by, the Local Planning Authority. The scheme shall include:

a) A morphological assessment of the areas of the river where the outfalls are proposed;

b) Hydromorphological modelling to assess future avulsion and scour risks;

c) Detailed plans confirming the micro-siting of the outfalls;

d) Detailed designs which reflect the findings of the morphological assessment and modelling and the characteristics of the exact location where they are proposed to be installed;
e) Mitigation measures to address any potential impacts the final design and sitting may have upon hydromorphology and habitats.

f) Provision for an appropriately qualified ecologist to undertake checks for Water Vole and Otter prior to the commencement of construction of the outfalls and for records of the checks to be made available to the Local Planning Authority upon a written request from them for such.

The outfalls shall be thereafter constructed in accordance with the approved detailed outfall scheme.

Reason: To prevent any adverse morphological affects on the River Nent in accordance with policies DC19 and DC20 of the CMWLP.

ACTIONS

Interception Chamber

18. No works to install the interception chamber outside of the Nent Haggs Mine Adit, including excavation or preparatory site set-up, shall take place until all areas north of the A689 road and in proximity to the adit that are not covered by existing hard-surfacing or built development have been securely fenced-off with free-standing fencing. This fencing shall be kept in place for the duration of construction operations of the minewater interception chamber and its immediately interconnecting pipework.

Reason: To protect the designated features of the Haggs Bank Mine SSSI and Geo-conservation Site from accidental damage Nent in accordance with policy DC16 of the CMWLP.

Grassland

19. No development shall take place on the Minewater Treatment Site (Site 4) or the Pumping Station Site (Site 38) until the grass-cutting measures specified in paragraph 10.5.80 of Volume 1 of the Environmental Statement have been carried out on the respective site.

Reason: To ensure measures designed to prevent an offence against reptiles under the Wildlife and Countryside Act 1981 are undertaken and to be in accordance with policy DC16 of the CMWLP.

Tree, shrub and scrub clearance (Protection of Breeding Birds)

20. No trees, shrubs, scrubland or any other form of woody vegetation shall be removed, pruned or otherwise cleared between the 1st March and 31st August inclusive in any year unless they have been first checked by a qualified ecologist for breeding birds in accordance with Natural England’s Guidance. In the event that breeding birds are found to be present an appropriate exclusion zone shall be set up around the habitat in question. No work shall be undertaken within the exclusion zone until nesting birds have been confirmed absent by a qualified ecologist.

Reason: To ensure appropriate protection for breeding / nesting birds under Section 1 of the Wildlife and Countryside Act 1981 and the Waste Planning Authority’s biodiversity duty under The Natural Environment and Rural Communities Act (NERC) 2006 and in accordance with policy DC16 of the CMWLP.
Protection Measures for the Hudgill Bingsteads Scheduled Monument

21. No construction work, earthworks or construction compound set-up shall take place in relation to the minewater treatment site (Site 4) or within the B6294 road until their boundaries with the Hudgill Bingsteads Scheduled Monument have been securely fenced-off with free-standing fencing. This fencing shall be kept in place for the duration of construction operations on the minewater treatment site (Site 4) and minewater transfer pipeline installation works underneath the B6294.

Reason: To protect the Hudgill Bingsteads Scheduled Monument from accidental damage during the construction phase in accordance with CMWLP Policy DC17 and emerging policy ENV3 of the ELP 2014.

Protection Measures for the Hudgill Burn

22. No construction work, earthworks or construction compound set-up shall take place within relation to the minewater treatment site (Site 4) until its boundary in proximity to Hudgill Burn has been securely fenced-off with free-standing fencing. This fencing shall be kept in place for the duration of construction operations on the minewater treatment site (Site 4).

Reason: To afford reasonable protection to Water Vole, which may be present along Hudgill Burn, from construction operations. To ensure measures designed to prevent an offence against Water Vole under the Wildlife and Countryside Act 1981 are undertaken and to be in accordance with policy DC16 of the CMWLP.

CONSTRUCTION PHASE

Construction Sequence – Provision of Access to the Minewater Treatment Site

23. Prior to any earthworks taking place within the minewater treatment site (Site 4), the access road to the site shall be constructed and bituminous surfaced.

Reason: So that construction traffic can safely access the site and turn clear of the highway in the interests of highway safety as the carrying out of development without the provision of these facilities is likely to lead to inconvenience and danger to road users.

Highway Condition

24. During the undertaking of the development, no vehicle shall leave the site in a condition that would give rise to the deposit of mud, dust or other debris on the public highway. All HGVs taking spoil to or from the development site shall be sheeted or their loads otherwise contained so as to prevent spillage or deposit of materials on the highway.

Reason: In the interests of highway safety.

Construction Phase Working Hours

25. No construction, excavation or other earthwork; including start-up of generators or other plant and/or machinery and the deliveries of equipment and materials; shall take place outside the hours specified below:
From 1 May to 30 September:
07.30 am to 19.00 pm Monday to Friday
08.00 am to 13.00 pm on Saturdays.

From 1 October to 30 April:
07.30 am to 17.30 pm Monday to Friday
08.00 am to 13.00 pm on Saturdays.

No work shall be carried out on Sundays or public and/or bank holidays.

Notwithstanding the above, the highest construction noise generating activities (such as, but not limited to, the breaking out of the carriageway) identified in the Construction Noise Assessment and Mitigation Plan required under Condition 10 will be limited to take place between 0800-1800 Monday to Friday and 0900-1300 Saturdays only.

This condition shall not operate so as to prevent the operation of any traffic control systems and the carrying out, outside these hours, of essential maintenance to plant and machinery used in the construction works.

Reason: *In the interests of residential and local amenity.*

**Protection of Otters - Checks**

26. All plant engaged in construction and any stored construction materials shall be checked prior to use or movement to ensure otters are not sheltering underneath or by them.

Reason: *To prevent harm to otters. To ensure measures designed to prevent an offence against Otter under the Wildlife and Countryside Act 1981 are undertaken and to be in accordance with policy DC16 of the CMWLP.*

**Protection of Otters & Other Mammals - Excavations**

27. All excavations deeper than 0.5m that will be left unattended overnight should be securely fenced and be provided with an escape ramp measuring 0.5 m wide and positioned at an angle of no more than 45° or have a similar soil slope.

Reason: *So as to allow any animals such as otter that may manage to enter such an excavation to escape in order to prevent harm to them. To ensure measures designed to prevent an offence against the Wildlife and Countryside Act 1981 are undertaken and to be in accordance with policy DC16 of the CMWLP.*

**Soil Handling**

28. The stripping, movement and respreading of topsoil and/or subsoil shall be restricted to occasions when the topsoil and/or subsoil is in a suitable dry and friable condition and the ground is sufficiently dry to allow the passage of heavy vehicles and machinery over it without damage to the topsoil and/or subsoil so that the topsoil and/or subsoil can be separated without difficulty.

Reason: *To safeguard soil resources in accordance with policy DC21 of the CMWLP.*

29. Soil stripping and replacement shall only be carried out in accordance with the
Encounters with Unsuspected Contamination

30. In the event that contamination is found at any time when carrying out the approved development that was not previously identified it must be reported in writing immediately to the Local Planning Authority. Development on the part of the site affected must be halted and an investigation and risk assessment must be undertaken and submitted to and approved in writing by the Local Planning Authority. Where unacceptable risks are found remediation and verification schemes shall be submitted to and approved in writing by the Local Planning Authority. These shall be implemented prior to the relevant area of the development being brought into use. All work shall be undertaken in accordance with current UK guidance, particularly CLR11. Following completion of measures identified in the approved remediation scheme a verification report must be prepared and submitted to and approved in writing by the Local Planning Authority.

Reason: To protect the health of construction works, end-users and nearby land-uses in accordance with CMWLP policy DC2.

Seeding of Embankments

31. The embankments on the Minewater Treatment Site (Site 4) shall be seeded in line with the Landscape and Ecology Management Plan – Rev.1 – dated January/February 2018 within six months of their completion. Thereafter they shall be maintained in a vegetated condition and shall be kept free from noxious agricultural weeds with steps being taken to destroy such weeds at early stages of growth to prevent seeding.

Reason: In the interests of landscape and visual amenity and to safeguard soil resources in accordance with policies DC2, DC18 and DC21 of the CMWLP.

PRE-COMMENCEMENT OF USE REQUIREMENTS

Commissioning Strategy

32. No use of the Compost Based Treatment Ponds to treat minewater shall take place until a Detailed Commissioning Strategy, based upon Section 7.3 of the Addendum to the Environmental Statement - Rev.1 – dated June 2018, has been submitted to and approved by the Local Planning Authority. The strategy shall include but not be limited to:

a. Details of stepped flow-rate increases/increments to be utilised for the commissioning of each pond;

b. Provision for boundary sniff-testing prior to and following any increase in input flow-rate;

c. Details of the frequency of boundary sniff-testing during the commissioning period;

The commissioning phase shall be undertaken in strict accordance with the
approved strategy.

Reason: In the interests of the amenity of the local area in accordance with policy DC2 of the CMWLP and emerging policy ENV7 of the ELP 2014.

Detailed Operational Management Plan

33. No use of the Compost Based Treatment Ponds to treat minewater shall take place until a Detailed Operational Management Plan, based upon the ‘Outline Operational Management Plan – Rev.P1 – dated February 2018’, has been submitted to and approved by the Local Planning Authority. The plan shall include but not be limited to:

a. A schedule for pro-active checks and maintenance of all plant, equipment and other treatment infrastructure;

b. a BS4142 assessment of noise relating to maintenance activity;

c. The operation and maintenance manual;

d. Full contact information for all relevant stakeholders.

The use shall be operated and maintained in accordance with the approved detailed operational management plan.

Reason: In the interests of the amenity of the local area in accordance with policy DC2 of the CMWLP and emerging policies ENV7 and ENV9 of the ELP 2014.

DEVELOPMENT REQUIREMENTS

Implementation of Landscape Planting

34. The landscape planting schemes as shown and specified on:

- ‘Drawing No. MWTS-AEC-NG-XX-DR-L-3322-Rev. P0 – Site 4 Landscape Mitigation Design’
- Drawing No. MWTS-AEC-NG-XX-DR-L-3323-Rev. P0 – Site 38 Landscape Mitigation Design’ and
- Landscape and Ecology Management Plan – Rev.1 – dated January/February 2018

shall be implemented in full in the first available planting season following completion of construction of each discrete site – i.e. the minewater treatment site (Site 4) and the pumping station site (Site 38).

Should any tree, shrub or other flora planted as part of the approved landscape mitigation design be removed, die or become seriously damaged or diseased, within a period of 5 years after planting, then it must be replaced in the first available planting season with a specimen of the same species and size as that originally planted, unless the Local Planning Authority gives written consent to any variation.

Reason: To ensuring the early establishment of the landscape planting scheme in the interests of promptly reducing the visual and landscape impact of the scheme and to ensure the prompt delivery of biodiversity benefits in accordance with policies DC16 and DC18 of the CMWLP and emerging policies ENV1, ENV2, ENV3 and ENV4 of the ELP2014.
OPERATIONAL REQUIREMENTS AND RESTRICTIONS

Control of Odour - Odour Limit

35. The level of odour intensity at the boundary of the minewater treatment site (site 4) shall not exceed a value of 3 on the VDI Scale over a period of 10 minutes as tested using the Sniff Test protocol set-out in the Environment Agency’s *Technical Guidance Note: H4 - Odour Management* (TGN-H4). This limit shall not apply to the carrying out of essential maintenance activities.

*Reason: In the interests of the amenity of the local area in accordance with policy DC2 of the CMWLP and emerging policy ENV7 of the ELP 2014.*

Control of Odour - Odour Monitoring

36. The Odour Management Plan (OMP) shall be reviewed and updated annually. Where an update of the OMP proposes any changes to the frequency, methodology or locations for odour testing these proposals must first be submitted to and approved by the Local Planning Authority. The OMP shall be strictly adhered to throughout the operational life of the site. Details of odour monitoring records and/or odour complaints received shall be made available to the local planning authority within 24 hours of a written request for such.

*Reason: In the interests of the amenity of the local area in accordance with policy DC2 of the CMWLP and emerging policy ENV7 of the ELP 2014.*

Compost Replacement Scheme

37. No removal of the compost medium within the compost based treatment ponds shall take place until a scheme for its removal has been submitted to and approved by the Local Planning Authority. The scheme shall be based upon the details set-out in Section 2.3.3 and Appendix A1 of the ‘Outline Operational Management Plan – Rev.P1 – dated February 2018’. For avoidance of doubt, the scheme shall include:

a. The findings from compost replacement activities undertaken at the Force Crag Minewater Treatment Site;
b. An appraisal of the full range of potential environmental impacts associated with all available methods and technologies for compost removal;
c. A full and detailed justification of the reasons for selecting the preferred method and technology proposed;
d. A detailed method statement for the undertaking of the works including clear assessment of all potential impacts and details of all mitigation, safeguarding and monitoring measures;
e. A phasing plan and timetable for the undertaking of the works;
f. Details of the number of Heavy Goods Vehicles (HGVs) required to transport spent waste compost from the site and to deliver new compost to the site and (if applicable) the phasing of movements.
g. The routing of HGVs to and from the site.

Once approved the scheme shall be implemented in full. Within three months of the completion of any compost replacement operations a detailed written report on the operation shall be lodged with the local planning authority.
No subsequent compost replacement operations shall take place until an updated compost replacement scheme has been submitted to and approved by the Local Planning Authority. All subsequent compost replacement operations shall be undertaken in accordance with the relevant updated compost replacement scheme.

Reason: To protect human health and the environment and ensure that the operations do not adversely effect residential amenity in accordance with policies DC2, DC3, DC5, DC16 and DC20 of the CMWLP and emerging policies ENV1, ENV7 and ENV9 of the ELP 2014.

INFORMATIVES

Coal Authority Standing Advice - Development Low Risk Area: The proposed development lies within a coal mining area which may contain unrecorded coal mining related hazards. If any coal mining feature is encountered during development, this should be reported immediately to the Coal Authority on 0345 762 6848. Further information is also available on the Coal Authority website at: www.gov.uk/government/organisations/the-coal-authority

Environment Agency Consents: An Environmental Discharge Permit (which covers the discharge of wastewater to surface water or onto the ground) and a Water Abstraction Licence will be required from the Environment Agency for this scheme.

Highways: Permissions to undertake works within the public highway and to undertake any temporary road closures will be required from Cumbria County Council in its position as the local Highway Authority. The former would need to include an agreement for the operation and future maintenance of the proposed surface water drainage structure/pipework under the public highway. The applicant will also need to enter into a legal agreement with the Highway Authority in respect of the attachment of any minewater transfer pipeline to the external elevations of Nenthall Bridge.

Public Rights of Way: Public Rights of Way may require a formal temporary closure or diversion to allow for the minewater transfer pipeline installation works.

Ordinary Watercourses and Flood Defence Consent (OWFDC): OWFDC will be required from Cumbria County Council in its position as Lead Local Flood Authority for all alterations and diversions of existing culverts and crossings of ordinary watercourses and for the new proposed surface water drainage network.
Appendix 2
Ref No. 3/18/9001
Development Control and Regulation Committee – 23 August 2018

Appendix 2 - PLAN OF SITE LOCATION/EXTENT

Ref. 3/18/9001 Plan Generated August 2018 Scale 1:15000
Grid Ref. NY7546; (OS 1:50,000)
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NOTE: site location/extent is INDICATIVE ONLY

Proposed Minewater Treatment Site
Proposed Pumping Station Site