

Foot and Mouth Statement - Save Middlewick Ranges - 14 March 2021

Representation ID: 6722

Received: 10/08/2017

Respondent: Mr Sam Barfoot

I sent a long and detailed objection to the development on the Middlewick Ranges. As part of that objection I mentioned "*The local papers archive reveals contamination from foot and mouth carcasses as well as local residents who witnessed it. The MOD denials are just that whereas proper testing and research will reveal contaminated land.*"

From the Vision document produced by the MOD in December 2020, which will form part of a masterplan in the future, it seems that Colchester Borough Council are taking the technical documents produced verbatim, disregarding how inconclusive the reports are and not following up on their duties to seek additional information needed to further clarify issues on all aspects of the development relying on the developers or MOD to update.

As S2 of Colchester Borough Council's Local Plan is soon to be examined, I have researched further the issue of contaminated land and Foot and Mouth.. This statement has also been produced on the behest of the members of the Save Middlewick Ranges Facebook Campaign Group who are concerned that the health risks have been understated with regards to the burials of cattle due to the 2001 Foot and Mouth disease as low to moderate in the Land Quality technical document provided by the MOD in December 2020 (see Appendix 2). Also there are discrepancies of exactly where the burial pits are located, how they were buried, with respect to the proposed development and safety with regards to drainage.

Although I know Contaminated Land in the Local Plan is considered as a general topic and the onus is placed on the developer to sort out any problems, I and the Save The Middlewick Ranges members feel that the Examining Inspector needs to be made aware of the concerns and the what I feel are serious questions that need to be asked by the Inspector to the MOD. I am aware that Contaminated Land is usually dealt with at the planning permission stages but we were not consulted on this during the 2017 consultations for objections due to lack of information available at that time and denial by the MOD that any burials had occurred on the ranges.

The NPPF refers to contaminated land in three areas: (11) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate. (121) “after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990

Site investigation information: Includes a risk assessment of land potentially affected by contamination, or ground stability and slope stability reports, as appropriate. As per the Essex County Council document regarding guidance for developers I believe that a Phase 2 report should be produced in liaison with the Environmental Agency. (See reference to this in Appendix 3)

Many people have eyewitness accounts of when the cattle/sheep and pigs were buried on the Wick not only in 2001 but also in earlier periods of previous outbreaks. It has been pointed out by members that the burial sites shown in the MOD technical document do not correlate to where the burial mounds are located and there are discrepancies on MOD maps showing the location of burial site(s) which are either in the in the development area or indicated outside the development area.

The comments made by Save Middlewick Ranges Campaign Group with regards to the questions posed and news reports can be found at Appendix 1. Legislation can be found on Appendix 2 and the documents referenced at Appendix 3.

It is to be noted that when the first consultation took place in 2017 and when residents asked it was stated that there was no issue with foot and mouth disease and there “*was nothing to worry about*” without any evidence being put forward on this. Under a Freedom of Information request in January 2017, the MOD denied burials took place on Middlewick Ranges. This was later corrected by DEFRA (a time after the 2017 consultation) and another FOI request was sent to the MOD in August 2019 where they responded to the amount of remains buried, the areas in which they were buried and the licence under which they were buried in April 2001.

Although this statement is on the subject of Foot and Mouth burials on the Wick, infrastructure such as drainage, surface water and dirty water should also be looked at in connection with the development and in regards to Foot and Mouth contamination.

Questions asked by Save Middlewick Ranges Campaign Group

The main questions asked by myself and the members of the Save Middlewick Ranges group with regards to Foot and Mouth burials on the Middlewick Ranges can be grouped together as below. I have collated comments made by each member from the Save Middlewick Ranges Campaign facebook group and news reports relating to each question (found in Appendix 1). A response has been made from the comments given in the main statement and proposed action that we would like to have for further clarification.

Question 1: How many burial mounds are there and is the location of the site(s) stated correctly by the MOD?

Question 2: Were carcasses buried on Middlewick Ranges and then burned or just ashes of carcasses buried as the MOD have stated?

Question 3: Will the contaminated areas of the burial mounds affect the development as envisioned by the MOD?

Question 4: Is the land still contaminated and is there a danger to public health if burial mounds are disturbed?

Response and Action with regards to Comments (See Appendix 1)

Question 1: How many burial mounds are there and is the location of the site(s) stated correctly by the MOD?

Response

The map provided by the 2019 FOI request shows one burial site at grid reference TMO1202240. The CBC Map shows one burial site just behind the butts outside the development area. The Land Quality technical document states that developers will work around this area. There is a recorded borehole at TM0220218800 and three obsolete boreholes which areas have not been identified. When the FOI 2019 request maps are overlaid on the GL Hearn / masterplan Defence Infrastructure Organisation Consultation map from the 'Middlewick Ranges consultation report' it shows two burial sites both within the development area.

A comment made by one of the respondents states that the 1/10,000 map has the pit on the wrong side of the boundary fence, but the 1/5,000 map looks correct. They are saying the pit was 90m x 10m x 3m, but the actual size of excavation may have been larger? Were there 2 burial sites? The maps in that document show a disposal site south of the brook, and a burial site north of the brook but south of the butts? The rest of the document reads to me that there was 1 site only.

Page 29 of the Middlewick Ranges, Colchester Phase 1 Land Quality Assessment, DIO Project No: FATS5/DIOCB3/230 Final dated June 2018 shows S3 burials to be underneath the development? (See Appendix 3)

Action

The correct grid references need to be confirmed for all burial sites and the location of four boreholes before the development goes ahead. There may also be a burial site prior to 2001. There is mention of a “proposed borehole as well”. Further clarification on exact locations of the burial sites are required and confirmation of whether they are inside or outside the development area. This information is also important for those who may undertake the construction of the development under Health and Safety although this will be the developers concern.

Question 2: Were carcasses buried on Middlewick Ranges and then burned or just ashes as the MOD state?

Response

After the MOD denied any burials in 2017, the MOD response to the August 2019 FOI request stated that they were not able to answer the question if the animals burnt were undertaken on the ranges or if they were burnt elsewhere and the ashes transported to ranges for disposal. They did, however, bring to attention the licence that they had was for the disposal of ash pyres and accerrants including wheat and Silage. It was also underlined that *whole* Carcasses were not buried on Middlewick Ranges.

It is particularly noted that MOD state “*whole*” carcasses were not buried, This, however, does not mean that parts of carcasses were buried which is what people may have seen.

The MOD technical documents states that they are unsure if any issue would arrive from the animal ashes so have rated it low, however, of more concern is the hay

which was burned which can cause ground gases such as methane and this has been listed as a moderate risk. There would be an expectation that additional protection will need to be incorporated into the build by the future builders but this appears not to be requisite.

Action

It cannot be determined whether just the ashes of carcasses burnt elsewhere were buried on the Middlewick Ranges as information provided by reports and eyewitness accounts mention actual carcasses. The carcasses however may not have whole but parts of them. The question of contamination from methane gases will need to be further clarified and further information may need to be sought from the Environmental Agency/MAFF and Defra Records with regards to this.

Question 3: Will the contaminated areas of the burial mounds affect the development and safeguard the construction workers?

Response

Under the 2019 FOI request response from the MOD, the licence states that engineered water systems were to be provided to enable ground water dispersal and that a sample was to be taken every 6 months for 4 years. The groundwater licence authorisation was handed back to the Ministry of Agriculture, Fisheries and Food on 25th May 2001.

The MOD technical assessment on land quality states that the Animal and Plant Health Agency have confirmed that as far as onward transmission of foot and mouth disease from buried materials there is zero risk and to contact the Agency for further information. The MOD report also states that the burial sites will be worked around by the developers - this statement is unclear and requires further clarification. What safeguards will be put in on disturbing burial mounds is unknown. .

Middlewick Ranges, Colchester Phase 1 Land Quality Assessment, DIO Project No: FATS5/DIOCB3/230 Final dated June 2018 states from APHA records that they have

“No records if any of the bore holes have been capped – this could be an issue that needs to be looked at if the site is being on-sold”

Action

Have the Environmental Agency taken soil samples and checked the condition around the burial sites? See Appendix 1 with regard to the testing of Foot and Mouth Burial Sites. As stated in Question 2 the exact location of the burial site(s) need to be determined as whether in or just outside the development area and how the construction will proceed to avoid disturbing burial mounds.

There is a concern that there are no records of bore holes being capped,

Question 4: Is the land still contaminated and is there a danger to public health if burial mounds are disturbed?

Response

It does appear that if all the testing has been undertaken and burial sites examined for it's condition that there is a low to zero risk to the public health of Foot and Mouth Disease on contaminated land. Scientific evidence with regards to whether there is a danger where burials have occurred is continuing to be debated. There have been incidences where burial sites have been found during a development (or pre development) across the UK. These are rare, however, it is worrying to note that most Councils did not know that these sites existed before planning permission was granted. Examining Inspectors of Local Plans have previously ruled that these issues are dealt with at planning permission stage.

The MOD report states: A number of potential current and historical sources of contamination have been identified at the site, namely: the firing ranges; a landfill located off-site by the eastern boundary; and burial pits for burnt remains of animal carcasses and specified ancillary waste associated with Foot and Mouth Disease outbreak in 2001. If the site is redeveloped for a residential end use, the potential risks from the firing ranges are assessed as low to moderate.. The off-site landfill is considered to pose a moderate risk to future development if mitigation is not incorporated into the building design. The site use as a burial area for ash from animal carcasses together with wheat and silage poses a potential moderate risk to site users and buildings from soil gas, whilst the burial ash poses a potential moderate and moderate/low risk to people under residential and commercial use respectively.

APHA have records that there was ash buried on this site that originated from animals culled during the 2001 foot and mouth disease outbreak - Of the approximately 153 cattle buried, 33 were born before 1996 - and state that as far as

the risk of onward transmission of foot and mouth disease from the buried material, there is zero risk. However, in relation to the 33 animals born before 1996, there is a negligible risk of bovine spongiform encephalitis (BSE – “mad cow”) prions being present (this could be the case if not all material was properly incinerated at the time)

Middlewick Ranges, Colchester Phase 1 Land Quality Assessment, DIO Project No: FATS5/DIOCB3/230 Final dated June 2018 states that “ the main reason for sampling being undertaken at the site was to comply with Environment Agency groundwater pollution legislation rather than for assessing animal disease risks. Evidence was found that the last sampling undertaken at the site was done in December 2011, with a report being produced in May 2012. The monitoring was carried out by ESG – now (<https://www.socotec.co.uk/>) on behalf of Moucel and it appears that at one point, there were 4 bore holes being monitored - **We only have reference to one borehole on the last monitoring report** – the grid reference for this is TM0220218800 - Bore holes 1-3 are referenced as being obsolete”.

Action

To clarify what it means that 3 boreholes are obsolete and to request that updated testing is taken and clarify the exact method used for the burials.

Conclusion

There are a number of actions that are required to be taken and questions to be asked and the Save Middlewick Ranges Campaign Group hope that the Examining Inspector will be in a position to pose these questions from Colchester Borough Council and the MOD.

We hope that the Examining Inspector would recommend that an expert analysis report needs to be undertaken, as a result of this statement, supporting documents and concerns of the Campaign Group, to understand and clarify the infracture of water drainage around the burial sites, and gain information from the MOD/Defra and Environmental Agency of exactly how many burial sites there are on the Middlewick Ranges and updated testing be undertaken.

APPENDIX 1

Comments on Questions asked from Members of Save Middlewick Facebook Campaign Group and News Reports

Question 1: How many burial mounds are there and is the location of the site(s) stated correctly by the MOD?

Comment

I took the pictures from top of the mound which would be the dirt that was dug to create a pit and then I took pictures immediately on the other side of the mound where the carcasses would be buried. I went into the gorse as far as I could go and took pictures around me and possibly standing on the ground where carcasses are buried directly underneath me (pictures can be provided on request). The measurements that were quoted (100 metres x 30 metres) looks exactly what was dug up hence the mound. I went on google maps and I got 51.865323, 0.922493 references for the location. I measured the area and it is 100 metres by 35 metres. This is a disused firing butt Pit behind the butt which they still use for firing, has a fence running along it at the back. If you pass this first butt and walk along behind the fence which lots of people do, you're walking on top of the carcasses. It's taken years to even grow some grass on it.

If you go to the far end behind the firing butt still in use and you will see the high ground from the huge excavations dug for the cattle. As someone has said, the thousands of bodies mean a large excess of spoil. The ground behind the butt is still in use, it used to be all flat and level.

The 1/10,000 map has the pit on the wrong side of the boundary fence, but the 1/5,000 map looks correct. They are saying the pit was 90m x 10m x 3m, but the actual size of excavation may have been larger? Were there 2 burial sites? The maps in that document show a disposal site south of the brook, and a burial site north of the brook but south of the butts? The rest of the document reads to me that there was 1 site only.

Only looked at the map but location seems to not be absolutely accurate, the pit was directly behind the butt, this seems arranged so they can just squeeze in housing and avoid the pit.

I remember them carting in dead cows by the lorry load and I could probably tell you where about on the wick. There were various large holes roughly in the middle. From where they used to have the RC airplane club and follow the fence through to the gate .

News Report

Colchester Gazette

27th January 2017

Army bosses deny Middlewick Ranges was the site for mass burial of foot and mouth infected livestock (Extract)

THE Ministry of Defence has denied land it plans to sell for housing was used to bury infected livestock. Burnt remains of 1,750 sheep, 96 cattle and two pigs were buried at Middlewick Ranges, in Mersea Road, Colchester, in 2001 after the animals were found to have hand, foot and mouth disease. They were buried in a 100 metre by 30 metre pit. The Gazette reported on the mass burial and Michael Francis, of Speedwell Road, confirmed he had seen cattle buried on the Wick 16 years ago. He said: "I recall large trenches being dug on the Wick and then large tipper lorries tipping whole dead cattle into the trenches. "Whether they were then burned in the trenches I am not sure but I certainly saw dead cattle being tipped into the trenches." The Ministry of Defence announced last year the ranges would be sold for housing. Lee Scordis, (Lab) borough councillor for Old Heath and the Hythe, says residents have called on the Ministry of Defence to inform developers about the burial of carcasses. Mr Scordis submitted a Freedom of Information request to the defence bosses for clarification as to exactly where the burial site is. He was shocked when he received a reply stating it "categorically did not take place". He said: "It is very worrying the MoD claims they know this categorically did not happen when all the evidence is against them." My fear is they are covering this up in the hope that it will not put off any potential developers for the sale. "It is clear from talking to residents remains of animals were buried on the Wick. It may be the MOD did not

keep records at the time."However, in response to Mr Scordis's question, asking for information linked to the burial of cattle that may have had foot and mouth, the Ministry of Defence said: " The MoD does not hold any records of the burying of cattle which have died as a result of foot and mouth disease at Middlewick Ranges as we know categorically this did not take place.

Question 2: Were carcasses buried on Middlewick Ranges and then burned or just ashes as the MOD state?

Comment

I have taken some time to review some reports for myself and I found one that confirms the ground behind the butts was used to bury the ashes of burnt cows (slightly more than 1000) sheep (several thousand) and 1 goat along with several tons of hay etc. The review states that they were unsure if any issue would arrive from the animal ashes so rated it low, but of more concern was the hay, which can cause ground gases such as methane and listed this as a moderate risk. I would expect some additional protection incorporated into the build by the future builders. But this appears not to be requisite.

The CRBC local planning link for Middlewick mentions ash burial but further down the page suggests that risk from carcass burial in 2001 would propose little risk, Is that not contradictory?

Interestingly on page 7 of the MOD Vision document it shows the number and type of disposals in April 2001 including quote "153 cattle (33 pre-1996)". Surely the age of the culled animal is immaterial and if that is the case then this would indicate that the Wick had been used for burial during a previous outbreak, the last major one prior to 2001 being in 1967. 1996 probably refers to the Comprehensive Feed Ban on 1st August 1996. Cattle born earlier than this may have been exposed to the BSE prion and so had to be burnt to eradicate that prion which is long lasting. Cattle after that date could be buried so it seems the Wick may have a mixed consignment and therefore could have both ash, waste and carcasses. Some more interesting information regarding Foot and Mouth disease. There was an outbreak in 1960 of which 71 cases were in East Anglia. I am reliably informed that some of the carcasses were transported to the Wick and were incinerated on site using coal fires.

A license was issued for disposal of 'pyre ash', from livestock during foot & mouth in Apr 2001. Although there are reports of people seeing carcasses being tipped in? People may remember the greeny yellowy whitish grey dusty cloudy stuff coming from that area at the time- not only myself and many others witnessing lorries taking carcasses over to Middlewick on numerous occasions, including my husband who remembers it because of the stench of rotting flesh and ash would not smell like that? There was a huge outcry concerning the burial of foot and mouth carcasses in 2001 on the Middlewick Range land, and I refer to the Gazette article COLCHESTER FOOT AND MOUTH ANIMALS BURIED, dated 10.04.2001, confirming this. The then Councillor for Berechurch Ward, Terry Sutton, was involved in the matter. The MOD denied that the burials ever took place and having been asked about this at the Local Plan drop in today at Abbots Road, a member of the Colchester Borough Council team stated that the MOD have denied this took place. Given that this was indeed a huge issue at the time, and it was reported on, and residents of the area confirmed that they saw evidence of it taking place, can we have some clarity over this and confirmation that it will be properly investigated in the Local Plan Process. Something seems awry here and transparency should be initiated in all matters before any Development is allowed. I believe that Colchester Borough Council do have records of contaminated Land but it also states in the Q and A section of their Contamination and Planning Page, and I quote, "Equally a lack of record does not indicate that your site is necessarily free from contamination". Will this important matter be looked into properly.

They confirmed to me that it was just ash of carcasses that was buried but worrying that we were lied to in 2017 when told there were no burials on the Wick.

BBC Report - Saturday, 31 March, 2001, 19:54 GMT 20:54 UK

Burial to replace burning of cattle (Extract)

"Increased burials will speed up the disposal of carcasses. All cattle less than five-years-old are to be buried rather than burned to speed up the disposal of foot-and-mouth slaughtered carcasses. Agriculture Minister Nick Brown announced the move as the result of new advice from the government's advisory committee on BSE. The decision came after a meeting of the Spongiform Encephalopathy Advisory Committee (SEAC) - a group of high-ranking experts who advise the government on BSE - or mad cow disease. **BSE risk ruled out** The committee presented its findings to ministers, who concluded the burial of animals less than five-years-old would not harm water supplies. Mr Brown said: "Cattle born after the effective date of the Comprehensive Feed Ban, 1 August 1996, can be buried in Great Orton-style pits, rather than burned or rendered without constituting a risk of infection to the water table or surrounding land." "Cattle born before this date must only be incinerated or rendered, not buried." "It was feared that burying cattle was hazardous because of the risk that they were infected with BSE. Independent research has estimated the risk of spreading BSE through burning cattle on funeral pyres is less than one in a

million, according to the Ministry of Agriculture Fisheries and Food (Maff)

News Report

Gazette Article Colchester: **Foot-and-mouth animals buried** April 2001

(extract) Ash and burnt remains from foot-and-mouth-infected animal carcasses have been buried in a vast pit in Colchester. The Army was called in to find a dumping site for the disinfected ash from 1,750 sheep, 96 cattle and two pigs slaughtered and incinerated at Wick Farm and Rye Farm in Layer de la Haye. The remains have now been buried in a 100m by 30m pit in the Middlewick Ranges off **Mersea** Road and was found for the Ministry of Agriculture, Food and Fisheries (Maff) by the Ministry of Defence. The news has sparked uproar among politicians, who have condemned Maff for not letting either nearby residents, or **Colchester Council**, know what was going on. A spokeswoman for Maff said they were keen to have good relationships with local authorities and would be investigating to find out what has happened. She added the deposited remains were safe and had been disinfected.

Question 3: Will the contaminated areas of the burial mounds affect the development and safeguard the construction workers?

Comment

Under the 2019 FOI request response from the MOD, the licence states that engineered water systems were to be provided to enable ground water dispersal and that a sample was to be taken every 6 months for 4 years. The groundwater licence authorisation was handed back to the Ministry of Agriculture, Fisheries and Food on 25th May 2001.

It is not clear on the report whether the plan intends to flatten / remove butts & associated works (and potentially risk disturbing burial pit/s) within the development area or preserve them.

Those familiar with the burial site itself will understand why I am mentioning this here- There are no plans to remove the butts merely lower the height of them.. the butts are staying according to their environmental expert. they are working around them and are not disturbing the area immediately surrounding them

From the Land Quality Assessment: Ash from burnt animal carcasses from the 2001 foot and mouth outbreak was buried to the south of the stop butts in 2001. The groundwater discharge licence was transferred to MAFF and is understood to be managed by the Animal Health Veterinary Laboratories Agency. A review published by the Scientific Advisory Committee indicates that "The risk of the foot and mouth disease virus surviving from the date of the carcass burials in 2001 is negligible.

Further details are being sought from the Animal Health Veterinary Laboratories Agency as to status of the licence and the monitoring being carried out. The site is not shown as a current or historical landfill and there are no entries for the site under the current public registers for groundwater discharges. A landfill is shown to be present on the eastern boundary of the site which operated from 1983 to 2010.

Government Advice: “under favourable conditions the disease can survive for long periods” and of the risk of groundwater contamination from decomposed bodies and the chemicals, including lime, used to disinfect the pits.

Question 4: Is the land still contaminated and is there a danger to public health if burial mounds are disturbed?

Comment

Scientists have stated that there presents a clear and present danger for 50 years- and that's a conservative estimate- apparently THERE HAVE BEEN NO EARTH BORES TAKEN AT ALL- so if they have not got a pipeful of the multi layers and strata of the soil - how can they know what's going on- and what's still lurking there.? I remember hearing the trucks coming in overnight when they were dumping all the carcasses. There were massive pipes, at the back of the butts, coming out from the ground for years after to let all the gases escape.

Under a FOI request it has been stated that only ash was taken onto our Wick. Who knows the truth of this, but surely this matter must be properly investigated, as contamination of the land is surely a huge issue before any Development could take place. Interesting one thislocals say one thing and Officials say another....

There is a bore hole next to the burial ground near the butts. Would it be worth asking if this borehole was capped before the burials took place?

News Report Sunday March 31 2019, 12.01am, The Sunday Times [Mark Macaskill](#)
Mad cow disease burial pits ‘may still still pose a threat’ (Extract)

Dozens of burial pits where infected animals were dumped during the BSE crisis 30 years ago are likely still contaminated, posing a potential public health risk. The Roslin Institute near Edinburgh found that prions, the infectious proteins that cause bovine spongiform encephalopathy, remain highly virulent “for very long periods of time”. Scientists were surprised to find that prions could be flushed through soil by rainwater, prompting them to warn that watercourses close to burial sites could have been contaminated. The disclosure comes more than 20 years after the government admitted that thousands of infected animals had been

buried. Though the heads were removed before burial, the spinal cords — which are highly infectious — were not.

APPENDIX 2

From the Science Advisory Council (SAC) Report by SAC Sub-Group on 2001 Foot and Mouth Outbreak Carcass Burial 15 March 2017

In 2015, the National Audit Office (NAO) took the view that Defra has a 100-year financial liability, from the date of the carcass burials, to protect water quality and contain any potential biosecurity breaches arising from the burial of the carcasses. Accordingly, Defra's annual accounts must carry a financial provision for the 2001 FMD outbreak burial sites. The only way to reduce the provision is to reduce the life of the liability. The burial sites are managed by contractor(s) at a cost to Defra of approximately £1m per annum for maintenance of the sites, and approximately £1m per annum in clean-up costs.

Given the scale and unique status of the 2001 FMD outbreak burial sites, and the likely continued public interest in them, a systematic review of the monitoring regimes at all the burial sites should be undertaken.

The systematic review of the water quality monitoring regimes is used to:

- a. Identify any trends/anomalies that would indicate existing contamination of water quality adjacent to the burial sites and at receptors.
- b. Evaluate the risk of burial pit (cell) rupture, including assessment of how many burial pit (cells) would need to rupture for a demonstrable impact on water quality.
- c. Identify the risk to water quality of leaving the physical infrastructure of the sites to degrade "naturally" vs intervention to maintain their physical structures.

NPPF

<https://www.gov.uk/guidance/land-affected-by-contamination>

Foot & Mouth Disease Epidemic. Disposal of culled stock by burial: Guidance and Reference Data for the protection of controlled waters Draft R&D Technical Report: Version 7:20 June 2001

SITE LOCATION REFERENCE

The highlighted section are where questions also need to be asked

1. Burial sites should not be located in areas subject to surface flooding.

2. All burial pits must be at least 250 metres away from any well, borehole or spring used for abstraction and, in addition, not in Source Protection Zone I for any supply. In high permeability (usually major) aquifers and also for mass burial sites, this set off distance should be increased to at least 500 metres, unless fully engineered containment is used.

3. Mass burial sites must not be located on Major aquifers, on Minor aquifers where there is less than 5 metres of unsaturated zone (minimum 1m below the base of the burial pit), **in groundwater Source Protection Zones, or below the regional water table.**

4. Burial pits must be at least 30m away from any watercourse and at least 10m from any field drain. Any identified drains should be removed or permanently sealed.

5. Burial pits should not be located directly on fissured and/or high permeability strata.

6. A detailed record of the burial pit location, numbers & types of carcasses disposed of, and pit construction should be made and submitted to the Environment Agency.

7. Site Location must follow risk assessment that as a minimum should consist of an initial risk screening exercise (desk study and minimum good practice criteria as above).

8. The Agency will conduct initial risk screening to locate mass burial sites, which will then be passed to MAFF for further evaluation (for logistics etc.). Final location should follow any further risk assessment that is necessary; this risk assessment is to be undertaken by MAFF and reviewed by the Agency.

All subsurface field drains in the vicinity of the burial pit should be intercepted and preferably removed to avoid short- ^ ^ circuiting of the natural subsurface flow system. If field drains are believed to exist (or suspected) hydraulically downgradient of the site, the extent and outflow points should be thoroughly investigated to determine the risk to surface water or, if there are soakaways, to groundwater

When assessing possible engineering measures for mass burial sites, the possible presence of field drains and other drainage systems should be considered. Many clay sites are heavily drained (by field drains) in order to reduce water content and improve the horticultural properties of the soils. Similarly, many military sites, such as airfields, are heavily drained in order to prevent the collection of standing water, which would cause operational difficulties. There may be more than one drainage system on site representing different phases of site development. The presence of drainage systems could allow rapid migration of polluting fluids

(leachate, blood etc) to surface water systems, by-passing the attenuating properties of the soil and geological strata. * On sites with low groundwater vulnerability, the movement of polluting fluids through unprotected / identified drainage systems probably poses the greatest threat to water quality. Every effort should be made to identify and remove, or permanently seal, drainage systems close to where burial pits are proposed.

A full understanding, via investigation, of the surface water and field drain layout must be undertaken. Utilising the knowledge of the local Environment Agency officers and site owners/operators can assist greatly in this process.

APPENDIX 3

References:

Save Middlewick Ranges Group (Facebook)

<https://www.facebook.com/groups/692112914272789>

Middlewick Ranges, Colchester Phase 1 Land Quality Assessment, DIO Project No: FATS5/DIOCB3/230 Final dated June 2018

<https://cbccrmdata.blob.core.windows.net/noteattachment/CBC-Local-Plan-Annexe-5---Middlewick-Ranges-Phase-1-Land-Quality-Assessment-Annexe%205%20-%20Middlewick%20Ranges%20Phase%201%20Land%20Quality%20Assessment.pdf?fbclid=IwAR2RADA2v4qFVjbDtjRkPU6N-t05TsRnCKGR30xo2JVtJArZM-W-4kHBy4U>

MOD Phase 1 Middlewick Ranges Land Quality Assessment

<https://cbccrmdata.blob.core.windows.net/noteattachment/CBC-Local-Plan-Annexe-5---Middlewick-Ranges-Phase-1-Land-Quality-Assessment-Annexe%205%20-%20Middlewick%20Ranges%20Phase%201%20Land%20Quality%20Assessment.pdf?fbclid=IwAR1uXmk-2dlUflbsHVdAyadlkDyBsvxmLtwfFlmOZFQO5t-mC9j51abxoho>

Middlewick Ranges Technical Documents

<https://www.gov.uk/government/publications/middlewick-ranges-consultation-technical-documents>

Cemeteries and burials: prevent groundwater pollution Act 2017

Human and animal burials: minimum groundwater protection [minimum groundwater protection measures](#)

The Waste (Foot and Mouth Disease) Regulations

<https://www.legislation.gov.uk/ukxi/2001/1478/made>

Science Advisory Council (SAC) Report by SAC Sub-Group on 2001 Foot and Mouth Outbreak Carcass Burial 15 March 2017

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/642195/sac-fmd-carcass-burial-review.pdf

<https://www.gov.uk/guidance/land-affected-by-contamination>

LAND AFFECTED BY CONTAMINATION Technical Guidance for Applicants & Developers Third Edition

<https://cbccrmdata.blob.core.windows.net/noteattachment/Land%20Affected%20by%20Contamination%203rd%20edition%20Sept%202014.pdf>