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Scoping Report

Proposals for the Scope and Content of an Environmental Impact Assessment for Sand and Gravel Extraction and Restoration at Great Billing, Northampton

On behalf of Anglian Water

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CAPL/101297/A6
1.0 Introduction

1.1 A full planning application is being prepared for sand and gravel extraction with subsequent restoration of land east of the Wastewater Treatment Works, Great Billing, Northampton. Savills is providing planning consultancy services to Anglian Water. These services include the co-ordination and preparation of an Environmental Impact Assessment (EIA) in conjunction with a team of specialist consultants.

1.2 The access route to the site is located within Northampton Borough whilst the extraction area is located within the administrative area of Wellingborough Borough Council. However, this application will be made to Northamptonshire County Council (NCC) as the Minerals Planning Authority. The application will cover both the extraction area and the access route. The access is an integral and necessary part of the proposals for minerals extraction, so it is to be included in the same planning application to NCC.

1.3 The proposed mineral extraction at the site is considered to meet the requirements within the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 and is thus likely to be EIA development.

1.4 Regulation 13 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 makes provision for a prospective developer or their agent to request a formal opinion from the relevant planning authority on the information to be supplied in the Environmental Statement (ES) (known as a ‘scoping opinion’). Scoping is used to help identify where there is the potential for interaction between a project and the environment, and it allows the applicant to be clear about those effects that the planning authority and other relevant parties consider to be potentially the most significant, and upon which the ES should focus.

1.5 This scoping request provides a brief description of the nature and purpose of the development and its possible effects on the environment and outlines the range of assessment studies that are proposed in order to gauge the significance of these issues. It also describes the intended approach to the assessment itself.

1.6 Comments are invited on the content of this report. Should consultees be in a position to identify or provide additional relevant information concerning the existing environment or any particular issues of local importance in respect of the site or its surroundings, this would be welcomed by Anglian Water.
1.7 Anglian Water is a major provider of water and environmental services. The environment is central to its business and to the quality of life of its customers. Anglian Water continually strives to improve its environmental performance, the conservation of resources and the adoption of best environmental practice.
2.0 Site Description

2.1 The site at Great Billing is located less than two miles to the south east of Northampton. The site is accessible via the strategic road network at the Great Billing junction on the A45.

2.2 The application site is located on the south side of the A45 and covers an area of approximately 150 hectares shown outlined in red on the plan in Appendix 1. The land extends from the A45 boundary and agricultural fields in the north to approximately the River Nene to the south. The western boundary of the extraction area is formed by an overland drain whilst the northern boundary lies a few metres south of the A45. The eastern boundary is formed by a field boundary which comprises hedges and trees. The southern boundary adjoins former mineral workings which now comprise water bodies beyond which is the River Nene itself. The site contains a public right of way running in a north-south direction broadly in the middle of the site.

2.3 The site is situated in the river valley and the land broadly rises from the south to the north. To the north west of the site is the settlement of Great Billing which is effectively a suburb of Northampton. Beyond the A45 to the north is the village of Ecton whilst to the north east is the village of Earls Barton. The village of Cogenhoe lies broadly to the south west of the site south of the River Nene. Almost immediately to the west of the extraction site is the Great Billing Wastewater Treatment Works (WWTW) which is owned by Anglian Water and serves the Northampton area.

2.4 The land to the east of the WWTW within the application site has historically been used as a sewage farm comprising a sewage irrigation field.
3.0 The Development Proposal

Concept

3.1 The working scheme has been designed to enable the anticipated restoration scheme to be achieved. This is based on the ‘Concept Restoration Plan’ (ref. 0047/CR/2) which:

- creates an east/west aligned wetland swathe along the southern boundary,
- the central area restored to farmland (but at a marginally lower level to provide additional flood capacity),
- eastern area can be either farmland or wetland/nature conservation,
- western area back to farmland to provide future development area.

3.2 The Plant and Operations Area has been moved to the centre of the site onto the area that is outside the floodplain. This allows environmental bunding without having an impact on the flood capacity. It should be noted that the surface of the plant site will be lowered by the removal of the soil and overburden and the level consolidated with sand and gravel (i.e. there may be additional flood capacity from the start).

3.3 Water management will initially be south of the plant & operations area (see plan 0047/CO/1). It is envisaged that as workings progress, the silt can be used in Phases 1 & 2 (and possibly 3) to assist in the restoration.

3.4 The approach to soil handling (both in site preparation and restoration) is to provide a central storage area (see plan 0047/CO/1) to allow balancing of materials, especially topsoils.

3.5 The restoration of the wetland is expected to rely on indigenous overburden supplemented by silt. However, to maintain flexibility, some importation of inert material may be required.

Importation

3.6 There will be a need for imported material to achieve the restoration back to farmland, albeit part at a lower level. This is needed for Phases 8 - 11 and to complete the Plant & Operations area. Whether material is needed for Phases 5, 6 & 7 will depend on the outcome of the restoration design.
3.7 It is suggested that importation will increase midway through the operations (Phase 5 onwards) but before then the volumes may be limited to achieve/assist in restoration. The annual import volume is likely to be less than the mineral output so an additional period to complete the importation/restoration will be needed once the minerals are exhausted.

Output/Volume

3.8 The mineral output is assumed at 200,000 tonnes annually. This means that there has to be 125,000 cu.m. excavated and processed each year, which in turn will produce some 12,500 cu.m. of silt that can be used in restoration (very good for reed establishment).

3.9 The level of input material is more difficult to assess to get a realistic annual volume (this may require some research into the Waste Plan/statistics). Generally, it is expected that the volume could be in the range of 60,000 - 70,000 cu.m. annually.

Plant

3.10 A typical processing plant plan is attached (plan 96032/PP/1) which should be viewed as illustrative. In addition it is proposed that there is an on-site concrete plant, and a typical plant is also attached (plan 96032/CP/1).

3.11 The layout within the plant area is flexible so that what is shown on plan 0047/CO/1 is illustrative but it should be noted that most of the area will be used for the stockpiling of product.

3.12 In terms of buildings and ancillary plant there will be:
   - weighbridge,
   - site offices (assume 2/3 single storey typical site offices - 3 m wide x 2.8 m high x 12 m long),
   - workshop (portal framed building - 12 m wide x 7 m high x 12 m long),
   - bunded fuel tanks and surfaced refuelling area,
   - access road is assumed to be unbound,
   - concrete pad beneath plant and around weighbridge (both areas will be very small),
   - plant area surface will be unbound compacted sand and gravel.
Mobile Plant

3.13 Within the plant area there will probably be two wheeled loaders for material management, including vehicle loading and loading the concrete plant.

3.14 Day to day excavation will be by an hydraulic excavator that will load to articulated dump trucks (probably 35 tonne capacity). It is expected that there will be two (possibly three on occasions) articulated dump trucks.

3.15 Excavated material will be taken to the plant and operations area via internal unbound roads (suggested routes shown on plan).

3.16 Reclamation material will probably also use these internal roads, but generally the internal roads are retreat excavated as the workings move around the site.

Working Scheme

3.17 The suggested working scheme is shown on plan 0047/CO/1, with the arrows showing the general direction of progress.

3.18 The approach is to store the soils from the Plant and Operations area as environmental bunds around the plant site. At this stage a southern bund is not proposed, but can be added as there is sufficient material.

3.19 The subsoil/overburden, at this stage in the design, will be either temporarily stored within the central area and/or used in the building of the water management area. Once 'mineral' extraction starts the overburden will be progressively placed in the void as the workings are restored.

3.20 The material balance calculations indicate that the overburden 'runs out' by Phase 5. In other words, importation of reclamation material will be needed at this time if the restoration objectives are to be achieved.

3.21 The plan broadly shows annual requirements but it is stressed that it is illustrative as the output is dependent upon the market and other such factors.
Timescale

3.22 The north western area has been excluded due to archaeological constraints. This has reduced the recoverable reserves by around 0.400 Million tonnes to 2.7 Million tonnes.

3.23 There will be some further reduction due to margins and working constraints so the expected output is 2.5 Million tonnes which at 0.200 M.t.p.a. gives an overall life for the minerals of 12 - 13 years.

3.24 Regarding reclamation, the figures are much more uncertain at this stage, but the initial assessment is that the infilling/completion of Phases 5, 6 & 7 will be at the same time as the mineral extraction completes; i.e. Year 12/13.

3.25 This leaves the western section, the Plant and Operations area and the temporary storage area unrestored. Infilling of the western area (Phases 8, 9, 10 and 11) could last a further 5 - 7 years with an additional 2 years to complete the plant and operations and temporary store area.

3.26 Based on the above the overall timescale could be around 20 years.

Traffic

3.27 The mineral output is 200,000 t.p.a. of which it is assumed that some 50,000 t.p.a. will be used by the concrete plant which will cease to operate/be removed when the minerals are exhausted. This traffic breaks down as follows,

**Mineral Output**

150,000 t.p.a. ÷ 250 working days ÷ 20 tonnes/lorry x 2 = 60 movements (30 in, 30 out)

**Concrete**

50,000 t.p.a. ÷ 250 working days ÷ 12.5 t/truck x 2 = 32 movements (16 in, 16 out)

**Total** = 92 movements (46 in, 46 out).

3.28 Turning to the reclamation, the input is estimated at 60,000 - 70,000 cubic metres annually. This will be delivered by tippers carrying 9 - 10 cu.m.
70,000 cu.m. p.a. ÷ 250 days ÷ 9.5 cu.m./lorry x 2 = 56 movements (28 in, 28 out)

3.29 In addition there will be cement deliveries and fuel tankers etc. so allowances should be made for 2-3 extra movements each day.

3.30 When reclamation is taking place from Year 5, there will be an element of ‘back haul’ between input and output and a figure of 25% of input vehicles will leave loaded (this reduces the input movements to 42 movements).

Summary

3.31 Mineral Reserve 2.5 M.t.
Annual output 0.200 M.t.
Life of mineral 12 - 13 years
Reclamation Input 0.060 - 0.070 M.cu.m.
Reclamation Req. est. 1.0 M.cu.m.
Life of Reclamation 14/15 years
Start reclamation Year 5
Complete reclamation Year 20
Traffic Years 1 - 4 94 movements (47 in, 47 out)
Traffic Years 5 - 13 136 movements (68 in, 68 out)
Traffic Years 13 - 20 56 movements (28 in, 28 out)
4.0 The Overall Approach to the EIA

4.1 The following sections of this report describe how the EIA will be undertaken and the main issues that it is likely to address. The output of the EIA process is an Environmental Statement (ES), which will comprise a free-standing document containing all the environmental information relevant to the determination of the planning application. This will be accompanied by a Non-Technical Summary.

**Technical Studies**

4.2 The main element of the EIA work will comprise a series of specialist environmental studies. These will be undertaken by a team of specialist consultants. Each consultant will undertake and present their research to a consistent methodology. The results of these studies will form the basis of the different topic chapters within the ES. It may also be necessary to include detailed technical studies as appendices to the ES.

**Consultation**

4.3 Consultation will take place with the relevant statutory and non-statutory bodies as appropriate to the topic being considered. In particular, it is intended to consult with relevant organisations, including specific departments within Northamptonshire County Council, on the precise methodologies to be adopted within the EIA process. This consultation process would also enable any requirements for mitigation raised by these organisations to be considered and, if appropriate incorporated into the scheme design at an early stage.

**Dealing with impact significance**

4.4 Each predicted impact and residual effect, whether adverse or beneficial, will be ascribed a level of significance. Each technical chapter of the ES will set out the framework used to establish impact significance in its methodology section.

**Cumulative effects**

4.5 Where appropriate to the issue in question, the effects of this Great Billing proposal will be considered together with those impacts that are likely to arise from other relevant schemes that are proposed to come forward within the vicinity and to a similar timescale. The range of
assessment for such potential cumulative impacts will be agreed, via this scoping process, with Northamptonshire County Council.

4.6 The two main aspects of the development proposals at Great Billing which are capable of having impacts causing a cumulative effect with other proposals are traffic and mineral extraction. In this case we have identified other projects in and immediately around the wastewater treatment works which are expected to contribute additional traffic on roads that will be affected significantly by traffic from the development proposals at Great Billing. These projects are identified below. In terms of mineral extraction, we are aware that a site immediately adjacent to the proposal site has recently been granted planning permission for sand and gravel extraction and this is also listed below:

- Industrial Units at the former L & H Polymers site (approved planning application)
- Sand and gravel extraction at Earls Barton Spinney Quarry at Grendon Road
- Winning and working of sand and gravel with progressive restoration to wet woodland and agriculture utilising imported inert materials at land west of Earls Barton Quarry, Grendon Road, Northants.
- Allocated Strategic Waste Management Facility (WMF), east of the existing WWTW.

4.7 Cumulative impacts relating to these schemes will be assessed where relevant within each of the technical chapters.

Alternatives

4.8 The EIA Regulations (2011) state that the following must be included in an ES:

“…an outline of the main alternatives studied by the applicant and an indication of the main reasons for this choice, taking into account the environmental effects…”

4.9 The EIA process provides an opportunity for the consideration of alternative design and phasing options, prior to the selection of the final scheme. In accordance with the above regulations, the ES will describe those alternatives that were considered by the applicant as the scheme progressed, along with an analysis of how the environmental considerations have influenced the scheme proposals. This consideration of alternatives will include the ‘do nothing’ scenario.
4.10 As regards alternative locations for the extraction of mineral resources, reference will be made to the strategic and site specific analysis conducted within the Northamptonshire Waste and Minerals Development Plan Document process.
5.0 The Content of the Environmental Statement

5.1 It is proposed that the Environmental Statement will be structured as follows:

**Non Technical Sections**
- Introduction;
- Description of the site;
- Description of the development;
- Policy context;
- Outline of main alternatives and scheme evolution;
- Scope of the EIA and consultation;

**Technical Sections**
- Environmental Assessment for technical sections, including mitigation measures for the following:
  - Landscape and Visual Impact;
  - Ecology;
  - Transportation;
  - Noise;
  - Hydrology, drainage and ground conditions;
  - Archaeology;
  - Air Quality including dust
  - Contamination
  - Climate Change
  - Non-technical summary

5.2 The following paragraphs provide a brief synopsis of the likely contents of each of these sections.

**Non Technical Sections**

5.3 The **non-technical summary** will comprise an accurate and balanced summary of the information contained in the ES, and a summary of significant effects of the proposed development, using non-technical language and appropriate illustrations, in a manner that the
lay person can understand. It will be available separately from the ES.

5.4 The **introduction** will provide information about the applicant, provide relevant background information regarding the history of the site and outline the rationale behind the proposal.

5.5 The **description of the site** will provide a brief outline of the site and its surroundings including the local transport network.

5.6 The **description of the development** will define the details of the extraction proposals along with the phasing and timescales. The restoration strategy for the site will also be described.

5.7 The **planning policy context** will identify the statutory development plan for the site. This comprises the RSS for the East Midlands, the Northamptonshire Minerals and Waste Development Framework consisting of the Core Strategy, Locations for Minerals Development and Locations for Waste Development, the Northampton Local Plan (1997) and the parts of the Wellingborough Local Plan (2004) together with the North Northamptonshire Core Spatial Strategy.

5.8 The National Planning Policy Framework has recently been issued which provides guidance on mineral developments. The relevant emerging local policy documents include the West Northamptonshire Joint Core Strategy.

5.9 The section on **alternatives and scheme evolution** will explain how the proposals originated and evolved in response to the site evaluation and the findings of the EIA process and set out the alternatives considered.

5.10 The section on **scoping and consultation** will outline the scoping process that was followed, clarify how the ES provides any environmental information that was specifically requested at the scoping stage and identify any issues which were ‘scoped out’ at this stage in the process.

**Technical Sections**

5.11 The environmental assessment for each technical section of the ES will follow a generalised format. Where appropriate, the technical information relating to environmental issues will be included as **appendices** to the ES.
6.0 The Scope of the Environmental Effects

6.1 The scope of the ES will be determined through consultation between the applicant, Northamptonshire County Council and key consultees to the planning process. An outline of the proposed content of the technical sections of the ES document is set out below.

A Landscape and visual impact

6.2 The landscape and visual assessment within the Environmental Statement (ES) will study the existing landscape character, identify viewpoints of the proposed scheme and assess the sensitivity of such views with and without mitigation. The landscape and visual assessment would be carried out through a combination of site visits and desk study. Representative viewpoints within the Study Area will be identified and will be confirmed with the Planning Authority.

6.3 The methodology will be developed in accordance with guidance set out in the Landscape Institute and The Institute of Environmental Management Guidelines for Landscape and Visual Impact Assessment, published by Spon (2002).

Consideration will be been given to the following documents:

- Landscape Character Assessment – Guidance for England and Scotland (The Countryside Agency and Scottish National Heritage, 2002);
- Photography and Photomontage in Landscape and Visual Impact Assessment (Landscape Institute Advice Note 01/11).

6.4 The landscape assessment will analyse the sensitivity of identified landscape resources within the study area which contribute to landscape character. The assessment will provide a statement of the significance of effects, including mitigation proposals. Landscape character will be assessed with reference to the following documents:-

- “Current Landscape Character for Northamptonshire”, Character Area 18, Broad River Valley Floodplain (Website), available from http://www.rnrpenvironmentalcharacter.org.uk/
6.5 The proposed development is situated within the Nene Valley, with the A45 located to the north and the River Nene located to the south. The site proposed for development is largely screened by trees and hedges. However, there are a number of locations where phases of the scheme will be visible from properties, footpaths, public rights of way and roads. The visual impact assessment will assess views from:-

Residential Properties

6.6 The villages of Cogenhoe and Whiston, with a number of individual properties located to the south of the site may have views to some phases of the scheme. Properties located to the north of the site, include:-

- The village of Ecton, which is likely to have views of the site, primarily to phases 8 to 11;
- South Lodge is located to the north and is likely to have views to some phases of the site;
- Properties within Earls Barton to the north east have potential views of the site, primarily phases 1, 2, 6 and 7;

Roads

6.7 Lower Ecton Lane is located to the north west of the site, (adjacent to the A45). This has potential views of the site. In addition, the A45 located on part of the northern boundary has potential views of the site.

Public Rights of Way

6.8 The Nene Way (National Trail / Long Distance Route) is located to the east and south of the site and links to the village of Cogenhoe. A bridleway is located to the east of the site, which leads in a southerly direction to the village of Whiston. A Byway is located along parts of the northern boundary and dissects the site along the eastern boundary of phases 11 and 8. In addition, footpaths are located to the south of the site. Views from these footpaths will be assessed.

6.9 The landscape and visual assessment section of the ES will be illustrated with a series of plates recording views of the scheme. Each plate will contain a photograph, a location plan indicating the viewpoint and direction of view and a table summarising the existing landscape, the nature of the proposals and the impact of the proposed development both with and without mitigation proposals.
6.10 The proposed development will be assessed within the context of planning policies and guidance at national and especially local level. Consideration will be given to local planning objectives. The assessment will fully consider all relevant statutory and non-statutory guidance, which, together with detailed fieldwork, would form the baseline for assessment of the proposals.

**Restoration and Mitigation Plan**

6.11 The preparation of a suitable restoration and mitigation plan will be developed in response to the proposals and findings of the ES chapters. The plan will include appropriate planting mixes and an overview of ground preparation, planting and aftercare of the proposals. This will be supported by a short report that will include an overview of the proposals, the strategy for handling, storage and spreading of soils, proposed methods of habitat creation as well as management and aftercare for the scheme.

**B Ecology**

6.12 The ecological assessment will assess the ecological interest of the Great Billing application site by determining the range and distribution of habitats / species within and adjacent to the site; evaluating their importance, and assessing potential impacts associated with proposed mineral extraction. Measures for impact avoidance, minimisation, mitigation and compensation will be provided. In addition, identification of opportunities for ecological enhancement of the site following restoration will be provided.

6.13 The assessment will be carried out in accordance with the IEEM Guidelines on Ecological Impact Assessment (IEEM, 2006) and will make reference to relevant policy guidance and legislation relating to nature conservation.

6.14 A desk study has been undertaken by MLM to obtain existing ecological and nature conservation data records for the site and surrounding area (up to 2km from the site for non-statutory designated areas and protected and notable species; 10km for statutory designated areas). The main findings are:

**Non Statutory Designations**

- Three Potential Wildlife Sites (PWS) occur wholly or partially within the site. These are Wind Spinney to the East, Billing Sewage to the west and its continuation, Billing Scrub a former County Wildlife Site. The ES will assess if construction of the southern access road will have an impact on the Billing Sewage and Billing Scrub
PWS.

- One Local Wildlife Site (LWS) Ecton Gravel Pits (to the east at SP840617), borders the central and south-eastern half of the site and partially encroaches in the South-Eastern corner. It qualifies as a LWS and wetland habitat due to the twelve indicator species recorded in its area. The ES will assess if mineral extraction at the site will have an impact on the LWS.

Statutory Designations

- Units of the Upper Nene Valley Gravel Pits Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) are located 1.3km to the east and 1.5km to the south west of the site. These areas are designated for their importance for breeding bird assemblages and wintering waterbirds. The ES will assess if quarrying operations will have an impact on the statutory sites and will identify appropriate mitigation.

6.15 A full assessment of potential impacts to statutory and non-statutory sites will be included within the ES.

6.16 A series of surveys were originally carried out in 2006 / 2007 on the site by Hankinson Duckett Associates (HDA) for habitats, badger, otter, dormouse, water vole, bats, birds, reptiles, amphibians, white-clawed crayfish and hedgerows. The habitat survey recorded low botanical diversity across the site, most likely resulting from the arable setting and the history of sewage sludge spreading on the land.

6.17 MLM Environmental carried out a complete suite of site specific surveys for habitats and notable species between 2010 and 2011 to update this information. A Phase 1 Habitat survey of the site was carried out in August 2010 to identify areas or features of ecological interest and evaluate the potential for protected or notable (e.g. UK or county BAP, Natural Area, nationally/locally scarce, Red Data Book) species to occur within the site. The site is therefore considered to have a very low potential significance for terrestrial invertebrates, as well as botanical assemblages.

6.18 The majority of the site is considered to be dominated by habitats of negligible nature conservation importance, consisting of large intensively farmed arable fields. However, the following habitats of nature conservation importance have been identified:

- An area of lagoons occurs along the southern edge of the site containing a sizeable area of standing open water, reedbeds and swamp, providing important habitat for
bats, birds and reptiles;

- A wooded strip along the track following the eastern section of the northern site boundary provides an important area of foraging and commuting habitat for bats, and mature trees along this strip provide probable roosting sites for bats;
- A corridor of habitats occurs along Ecton Brook (the drain which flows north to south through the centre of the site; including woodland, species-rich hedgerows and reedbed), supporting a variety of species and forming an important wildlife corridor;
- Billing Scrub PWS within the south-western part of the site provides some wildlife interest, with areas of open water, ruderal vegetation, scrub and rough grassland; and,
- Further areas of local nature conservation interest include the Barton Brook flowing along the eastern site boundary, the Ecton Brook flowing through the centre of the site, as well as other areas of woodland and hedgerows within the site.

6.19 A potential risk of dust and water pollution resulting from the works has been identified, which may impact on the above habitats. The ES will assess if the dust and water pollution resulting from the works will impact on these habitats. This will be further considered in the ES.

6.20 Following the findings of the habitat survey, specialist surveys were subsequently undertaken for badger, otter, water vole, bats, birds, reptiles, amphibians and hedgerow importance in 2010/2011, which will be considered further in the ES.

6.21 The following protected and notable species are considered not to be present and as such are removed from further consideration in the ES:

- Dormice – No records were found within 2km of the site. Surveys by MLM in 2010/2011 found the woodland and hedgerows on site are of low suitability for Dormice. This observation of low suitability of habitats on site, and the negative result of a site nest tube survey undertaken by HDA between May and November 2007 concluded that no further surveys for Dormice were required.
- White-clawed crayfish – No white-clawed crayfish were found in data searches by HDA and MLM. Records of the invasive, non native signal crayfish have been highlighted by MLM. A survey of the site by HDA in April 2007 did not identify white-clawed crayfish. Based on the above information it is considered highly unlikely that white-clawed crayfish are on site, or in its locality. It was concluded no further surveys for white-clawed crayfish were necessary.

6.22 The potential effects of proposed mineral extraction works on designated sites surrounding
the site will be fully considered and significance determined in the ES. In addition, habitats and protected/notable species within and adjacent to the site will be fully considered and significance determined in the ES. Key potential impacts in the assessment include:

- Loss or damage to valuable habitats and features in whole or part, including the lagoons, streams and drains, woodlands, hedgerows and Billing Scrub and Ecton East Gravel Pit CWS;
- Impacts on waterbodies arising from pollution from groundwater or surface runoff and/or changes in hydrology;
- Impacts on habitats and species arising from noise, dust and light pollution associated with the works;
- Habitat fragmentation;
- Loss of habitat, disturbance and risk of killing or injury to protected and notable species, including badger, otter, bats, birds and reptiles;
- Indirect impacts on habitats occurring outside the site boundary but within the zone of influence of the proposed minerals extraction works, including local designated areas. The zone of influence includes hedgerows and woodland immediately outside of the site boundary, as well as any other areas that may be affected by noise, dust or run-off pollution.

6.23 Advice on ecological constraints and enhancement opportunities will be provided to ensure that measures for impact avoidance and minimisation are incorporated where appropriate. Proposals to mitigate any remaining impacts will be described. The ecological impacts of the proposals taking account of this mitigation will be assessed on receptors within and outside of the site. Opportunities for ecological enhancement of the site following restoration will be explored during the design process. These opportunities will be detailed in a nature conservation management and restoration strategy, outlining measures to safeguard the long-term nature conservation interest of retained and newly created habitats across the site following extraction.

6.24 The assessment process will include consultation with Natural England, Northamptonshire Wildlife Trust and the local planning authorities.

6.25 A Habitat Regulations assessment is outside of the scope of the EIA. However, a separate stand alone report will be provided, drawing on data obtained from desk studies and site surveys, to help determine if Appropriate Assessment is required.
C  Transportation

6.26 This section of the EIA will focus upon an assessment of the transport, movement and access implications of the proposed development. The ES will describe the local highway and transport network including reference to the wider strategic transport issues, consideration of transport policy and an explanation of how the scheme relates to national and local transport objectives before providing an assessment of the implication of the scheme for traffic movements.

6.27 It will describe the impact of generated development traffic on users of the highway network, and the measures that will be offered to mitigate this impact.

6.28 The significance of the effects in both the local and strategic contexts will be described, identifying the location and intensity of any effect. The ES will include analysis of the temporary transport effects anticipated during the extraction phase arising from the introduction/reconfiguration of roads and mineral vehicle movements on the local road system. Specific routing agreements will also be considered. Traffic surveys will be carried out in locations agreed with the relevant highway authorities.

Key Issues

6.29 The study will identify the impact of the additional development traffic on the local highway network including Crow Lane and Lower Ecton Lane, together with the other traffic flows from identified and agreed committed developments in the immediate area.

6.30 The study will also assess the impact on the strategic highway network on the nearby A45 Great Billing Interchange in discussion with the Highways Agency.

6.31 The specific phases of the development are a key influence on the Transport Assessment and therefore will be assessed in turn. These phases are likely to be existing traffic flows prior to commencement of the development including committed developments and future peak mineral extraction rates in conjunction with the other local committed development uses representing the operational phase. The assessment will be required to consider a growth horizon that includes background traffic growth on the network and is normally 5 years for the local highway network and 10 years for the trunk road network. Background traffic growth will be forecast using the TEMPRO database. Any localised growth or available data will be discussed with the Highways Authorities and used in the assessment. We are aware of the A45 corridor model and improvements recently finalised by the Authorities to support planned growth in Northampton.
Guidelines

6.32 Reference will be made to the following:

- Guidelines for the Environmental Assessment for Road Traffic, Institute of Environmental Assessment (1993);
- Guidance on Transport Assessment, Department for Transport (March 2007);
- NPPF
- Design Manual for Road and Bridges (DMRB), Highways Agency; and
- Northamptonshire LTP, the emerging LDF, and SPD documents.

Baseline and Assessment Methodology

6.33 The Transport Assessment will follow the ‘Guidance on Transport Assessment’ and C2/2007 prepared by the Department of Transport and any specific parameters set by the local highway authorities under a separate scope to be agreed with them.

6.34 Trip generation rates will be determined from first principals and compared with any similar site information available using the TRICS database. Growth factors will be calculated through the use of the TEMPRO database. Detailed assessments of junction capacity will be undertaken using industry standard computer software traffic assessment packages including ARCADY, PICADY, and LINSIG.

6.35 In addition to baseline traffic flows obtained through independent traffic count surveys, the following committed development schemes have been identified to add to the baseline traffic flows:

- Industrial Units at the former L & H Polymers site (approved planning application)
- Allocated Strategic Waste Management Facility (WMF), east of the existing WWTW.

6.36 The above committed/allocated development traffic flows will be included in the transport model to assist in the calculation of future year traffic flows and trip assignment. Trip distribution will be based upon logical links to the strategic highway network which will be used for materials to reach the market. To the south of Crow Lane, a weight restriction is present at the bridge crossing, therefore influencing the distribution of heavy vehicle traffic.
Further data will be obtained from traffic surveys that will be undertaken specifically for this planning application.

6.37 Details of a Lorry Management Plan will be included within the Transport Assessment to:

- accommodate lorries safely and to minimise their impact on roads, by discouraging the use of minor roads except for local journeys or deliveries;
- discourage unnecessary lorry movements in environmentally sensitive and other unsuitable areas such as near schools or shopping areas; and
- encourage positive routing of lorries on appropriate roads.

6.38 The study area will be agreed with the local highway authority and confirmed through supporting data obtained by the use of traffic survey data. The current preliminary study area is identified by the list of junctions below:

- Crow Lane/The Causeway Roundabout Junction;
- Crow Lane/Main Anglian Water Wastewater Treatment Works Access;
- Crow Lane/Ravens Lane Junction;
- Crow Lane/Lower Ecton Lane Junction; and
- Great Billing Interchange: Crow Lane/A45 Nene Valley Way/A5076 Great Billing Way.

6.39 The site access strategy will be considered in detail with junction assessments undertaken for all proposed site accesses.

Potential Impacts and Mitigation

6.40 During construction, the ES will assess the impacts on the local road system, arising from additional vehicle movements in the area as well as the possible need to reconfigure roads temporarily. Mitigation could include agreed vehicle routing to the site and operating times of use.

6.41 Once operational, the ES will consider vehicle movements on the local road network, both with and without the scheme for the anticipated period of extraction. Impacts on the operation of junctions and network performance will be considered. Mitigation measures that will be reviewed and considered comprise the following proposals that formed part of the agreed S.278 with NCC:

- Improvements at the junction of Crow Lane with the main Anglian Water Wastewater Treatments Works Access;
- Improvements at the site entrance from Lower Ecton Lane
- Introduction of a one-way traffic circulation around the Wastewater Treatments Works.

6.42 The impacts of the development traffic and associated mitigation measures on sustainable modes of transport such as walking and cycling will be considered in the Transport Assessment.

D Noise and vibration

6.43 The noise assessment will consider the noise emitted by site plant and by road traffic associated with the sand and gravel extraction, at existing sensitive receptors in the vicinity of the site.

6.44 The baseline noise levels at the sensitive receptors will be obtained by carrying out measurements at representative locations. The measurements will be taken at times of the day which coincide with the proposed hours of working. The sensitive receptors and the scope of the background noise survey will be discussed and agreed with the Environmental Health Officer and the Planning Authority.

6.45 Noise predictions will be carried out, in accordance with BS 5228, “Code of practice for noise and vibration control on construction and open sites – Part 1: Noise” to determine the likely noise levels to be associated with the proposed minerals and waste operations. The predictions will be carried out using proprietary noise modelling computer software. Each phase of working will be considered separately. Source data for the site plant and equipment will be obtained from Wardell Armstrong archive sources.

6.46 The predicted noise levels for the proposed mineral working will be assessed in accordance with standards and/or guidance to be agreed with the local authority. This is likely to comprise the Technical Guidance to the National Planning Policy Framework.

E Hydrology, hydrogeology and flood risk

6.47 This section of the EIA will assess the impacts of the proposed development upon both the quantity and quality of surface waters and groundwater. The assessment will consider the potential impacts during the construction, extraction and restoration phases.
Baseline Environmental Conditions

Hydrology and flood risk

6.48 Published mapping shows the site to lie within the fluvial floodplains of the River Nene, Ecton Brook and Barton Brook. The site is also shown as being potentially liable to flooding from several reservoirs according to EA reservoir inundation mapping. The River Nene lies to the south of the site and flows east, broadly parallel to the southern site boundary whilst the Ecton Brook doglegs through the site, roughly bisecting it. The Barton Brook forms the eastern boundary of the site and flows south to join the Nene.

6.49 The River Nene drains a catchment of approximately 611 km$^2$, flowing from the Daventry area northeast through Northampton to The Wash. To the east of Northampton the River Nene forms a naturally braided channel with mean flows of approximately 18 m$^3$/s. Ecton Brook drains a catchment of approximately 6 km$^2$ and flows southwards from the edge of the suburb of Great Billing, under the A45 and through the proposed site to River Nene. Barton Brook serves a catchment of approximately 12 km$^2$ and flows south, most notably, from the Sywell Reservoir some 2.5 km north of the site. An initial review of groundwater data at the site suggests that water levels in the Ecton Brook are not dependant on groundwater. It is fair to presume that the same is true of level in the Barton Brook.

6.50 The majority of the proposed site is currently undeveloped laid to grass, scrub and arable farmland. The current surface water runoff regime will be rural, with runoff dispersing via infiltration, evaporation and overland flow to the local network of watercourses.

Geology

6.51 The site lies in a region at the boundary of the Lias Group and the overlying Inferior and Great Oolite Group, all of Jurassic age. The beds are near horizontal in this region, and the Oolite Group is thin, allowing the Lias Group to be exposed in the base and sides of river valleys. The Lias Group deposit underlying the site comprises the Whitby Mudstone Formation (previously known as the Upper Lias Clay), which is a mudstone and siltstone containing thin limestones, sandstones and phosphatic nodules, approximately 20 – 65 m thick in this region. Mantling the bedrock geology are Quaternary deposits comprising a thin layer of alluvium associated with the floodplain of the River Nene beneath which are River Terrace Deposits comprising the Ecton Member sand and gravel.
Hydrogeology

6.52 Water levels measured within boreholes across the site suggest that the River Terrace Deposit sands and gravels contain water at a depth of between 1m and 4 m below ground level. Given the proximity in level between the groundwater and the surface waters of the River Nene, it is probable that they are in hydraulic continuity with groundwater providing baseflow to the river. Groundwater monitoring indicates that the direction of shallow groundwater flow in the sands and gravels beneath the site is from northwest to southeast towards the River Nene.

6.53 The River Terrace Deposit sands and gravels are considered to be a locally important aquifer, considered by the Environment Agency to be a Secondary A aquifer. The vulnerability of the aquifer to pollution is high, due to the high permeability of soil and shallow water table. The overlying Northampton Sand of the Inferior Oolite Group is also considered to be a locally important aquifer however this stratum is typically found on higher ground above the river valley and will not be in hydraulic connection with shallow groundwater in the sands and gravels found beneath the site. Information on the Environment Agency website suggests that a groundwater Inner Source Protection Zone (SPZ) exists in Great Billing, approximately 2.5 km to the northwest of the site, however the Environment Agency has confirmed this SPZ relates to a historic abstraction borehole drilled in 1935 and is not a current supply. There are no known public water supply sources within 2 km of the site.

6.54 The shallow groundwater beneath the site is likely to be in connection with surface water in the River Nene, principally via groundwater movement in the sand and gravel continuous beneath the site and the river course. This means that groundwater levels and quality will be capable of influencing surface water levels and quality in the river and ditches on site and nearby.

6.55 The Whitby Mudstone Formation beneath the site is underlain by further Lias Group mudstones. Cumulatively, the Lias Group forms a thick (> 170 m) low permeability layer protecting deep aquifers associated with underlying Triassic bedrock formations from the planned extractions.

Surface water quality

6.56 EA mapping indicates that the site ultimately drains to environmentally sensitive areas of the River Nene. The EA consider the ecological quality of the Nene as poor but the chemical
quality as good. The ecological quality of the Barton Brook is considered to be moderate with an assessment of chemical quality deemed unnecessary. The Ecton Brook is not included in the EA assessment.

**Groundwater quality**

6.57 Groundwater sampling and testing was carried out from boreholes on site in 2009 and identified concentrations of nitrate, selenium and petroleum hydrocarbons in excess of Environmental Quality Standards (EQS). The nitrate was persistent beneath the whole site and is considered to be background contamination potentially resulting from intensive agricultural practices within the local area. Selenium was localised on the northwest boundary and no source was apparent. Hydrocarbons were present in the northwest and could be as a result of fuel contamination from an adjacent filling station on the northern boundary or from highway runoff. However attenuation does occur across the area of proposed minerals extraction and hydrocarbons were below method detection limits on the downstream (southern) boundary nearest the River Nene.

6.58 Historical mapping shows that between the WWTW to the west and the western boundary of the minerals extraction area there have been historical sewage sludge beds. These are known to have impacted on groundwater quality beneath land to the west of the site.

**Potential Impacts**

**Construction phase**

6.59 The proposed construction of a new internal access road and site compound will result in the creation of impermeable cover on land which is currently permeable. Left unchecked this would increase the rate at which rainfall is converted to surface water runoff and discharged to the Nene and its tributaries. The Flood Risk Assessment (FRA) which will form a technical appendix to the ES will include a chapter which addresses surface water runoff management.

6.60 Storage of plant and construction materials within the floodplain could result in floodwater displacement and/or the release of pollutants (fuel and oil for example) and debris into the surrounding water environment. The FRA will therefore assess suitable storage areas for plant and construction materials.
**Extraction phase**

6.61 Through the FRA the EIA will assess, and manage downstream impacts associated with any reduction in floodplain storage. The potential release of physical and chemical pollutants associated with the extraction process will be assessed to determine appropriate mitigation measures (such as storage of material and plant outside of the floodplain). Such measures will be incorporated in the site environmental plan.

6.62 It is understood that the site will be dry-worked, requiring dewatering of the sands and gravels. Extracted water will be vulnerable to any uncontrolled physical and chemical contaminants arising from the extraction operation. Good environmental site and process management (regular maintenance and cleaning of equipment, suitable storage of fuels and oils) would aid in avoiding pollution incidents from such sources.

6.63 Allowing uncontrolled disposal of water, abstracted during dewatering into the surrounding watercourses could result in physical and chemical pollution of the water environment. It is envisaged that this will be avoided with the use of stilling basins and/or the application of abstracted water to ground.

6.64 The uncontrolled discharge of water abstracted during dewatering to the surface water environment would result in an increase in surface water flows in the area. The FRA will include an assessment of the impact of such discharges and any required mitigation measures.

6.65 Dry working the site for minerals will require dewatering of excavations to reach sand and gravels below the groundwater table. The hydraulic connection between shallow groundwater and the river will mean that adverse impacts from dewatering will need to be controlled through careful management, possibly requiring a range of mitigation including lining of excavations, phased working and increasing opportunities for groundwater recharge.

**Restoration phase**

6.66 We understand that the preferred restoration plan will involve backfilling the site excavations with inert material to allow the majority of the site to be returned to arable farmland. A wetland area will also be created in the south of the site to tie into the existing off-site wetland/waterside environment. Opportunities to reduce current ground levels and increase the flood storage capacity of the site will be investigated as part of the FRA. Changes in the
permeability of the site will be dictated by the nature of the inert fill and will be broadly assessed in the FRA.

Data Sources

6.67 Existing Strategic Flood Risk Assessment flood mapping and model data from the EA, will set the baseline for the flood risk investigation within the EIA.

6.68 Existing data relevant to the groundwater at the site includes the findings from previous ground investigations of the site in 2004 and 2009/10. Water levels have been monitored in a number of permanent boreholes on a monthly basis since November 2005 up to the present time. British Geological Survey mapping of superficial and bedrock and Environment Agency mapping of SPZs and aquifer classification would be consulted together with historical borehole logs from the British Geological Survey archive and any ground investigation reports for the surrounding area found on the local authority planning portal websites. Additional data requirements for a full EIA assessment are outlined below.

Assessment Methodology

Overview of approach

6.69 At this stage, we envisage that the scope of works would include:

Hydrology and flood risk

- A review of published data, EA flood levels, Strategic and Preliminary Flood Risk Assessments, etc.
- Assessment of any impacts on flood storage and conveyance at the site.
- Assessment of the fluvial and surface water runoff impacts arising from the development, as well the potential risk to the site itself and any residual risk, taking climate change into account.
- Assessment of the pre and post-development surface water run-off regime and any likely changes.

Groundwater

- Description of the baseline conditions building on the scoping study and including the relevant aspects of the local geology, hydrogeology, groundwater levels and quality, and any significant features that may be impacted by the proposed extraction.
● A review of mapping will be undertaken, focussing on locating and identifying groundwater dependent features.
● A review of groundwater and surface water abstractions within a 2 km radius. For groundwater abstractions this would include details of the SPZs.
● A review of private groundwater and surface water abstractions within a 2 km radius.
● A review of available reports on groundwater conditions within the surrounding area.
● A review of groundwater level and quality monitoring data in the sand and gravel stratum, and level and available quality data for relevant reaches of the River Nene Ecton Brook and Barton Brook.
● Monitoring of groundwater levels in existing boreholes.
● Sampling of existing boreholes on site and testing for water quality.

**Relevant standards and guidance**

6.70 The assessment will be carried out in consultation with the Environment Agency and Northamptonshire County Council. The following standards and guidance will set the context and requirements for this chapter of the ES;

- National Planning Policy Framework (NPPF) and Local Planning Policy
- *The SUDS manual* CIRIA C697.
- Pollution Prevention Guidelines

**F Archaeology and cultural heritage**

6.71 The production of the Archaeology and Cultural Heritage Assessment chapter for the Environmental Statement will be carried out in accordance with the National Planning Policy Framework. It will follow the guidelines for desk based assessment, as set out by the Institute for Archaeologists (2008). It will:

- provide an historic overview of the site through research undertaken at Northamptonshire Record Office;
- establish the presence of designated and non designated heritage assets within the site and its vicinity, through consultation with the Northamptonshire Historic Environment Record; including a review of the geophysical survey recently undertaken within the site, earlier this year;
verify the presence of ‘above ground known’ heritage assets, and assess the potential for ‘as yet unknown’ heritage assets within the site boundary, through a site walkover survey;

- analyse the potential impact of the proposed development on known and potential buried archaeological remains; and,

- analyse the impact of proposed development on the setting of designations and other relevant heritage assets within and adjacent to the site boundary.

6.72 The report will be fully illustrated and will include a statement on potential requirements for further fieldwork.

G Air quality including dust

6.73 The air quality assessment will assess the impacts of emissions from road vehicles, associated with the proposed sand and gravel extraction at Great Billing, Northampton, at existing sensitive receptor locations in the vicinity of the site.

6.74 A screening assessment will be undertaken in accordance with the Design Manual for Roads and Bridges (DMRB), for the roads likely to be affected by the proposed development. The baseline air quality will be established in the vicinity of the site, by obtaining the most recent air quality monitoring data from the local authority. The assessment will quantify the air quality impacts as a result of additional vehicles accessing the site.

6.75 The air quality assessment will consider local air quality and the current air quality standards, and objectives of the ‘Air Quality Standards Regulations 2010.’ The magnitude and significance of impacts will be assessed using significance criteria, detailed in the Environmental Protection UK (EPUK) document ‘Development Control: Planning for Air Quality (2010 Update).’

6.76 A dust assessment will assess the impact of dust from on-site activities, at existing sensitive receptor locations in the vicinity of the site. The assessment will provide qualitative analysis of the magnitude and significance of potential dust impacts. The method will follow accepted practice, which considers the existing baseline conditions for the site and the on-site activities / operations (which result in dust emissions); identifying impacts and providing mitigation measures.

6.77 The assessment will utilise the most recent ten years of Met Office meteorological data from the closest recording station to site, to determine the likelihood of dust impacts being experienced by existing sensitive receptors in the vicinity of the site.
H  Contamination

6.78 This section of the EIA will examine the potential impact of contamination from the previous use of the site as a sewage farm including a sewage irrigation field together with any other potential sources off site, particularly those in an 'upstream' location. Mitigation measures that may be needed to minimise adverse impact on the local environment and identified receptors prior to, during mineral extraction and during/following restoration will be described.

6.79 The methodology, scope of work and assessment process will be agreed with the Environment Agency and the Environmental Health Departments of Wellingborough Borough Council and Northampton Borough Council.

6.80 Baseline soil, groundwater and gas conditions will be assessed through desk-based studies and intrusive investigations undertaken in accordance with Environment Agency and DEFRA document “Model Procedures for the Management of Land Contamination” CLR11.

6.81 The EIA will draw on existing data for the site, which includes previous investigations of the site and of surrounding land undertaken between 2004 and 2010. Relevant existing soil and groundwater analysis results and groundwater and gas monitoring data will be examined to assess the presence of and the effects of any existing contaminants within the area or outside that could be of relevance. Sensitive receptors and locations on and off site would be identified. Detailed and generic quantitative risk assessment will be undertaken to evaluate risks to identified receptors both in terms of baseline conditions, during extraction and during/following restoration.

6.82 At this stage, based on existing data there are potential risks from contaminants in soil and groundwater that will need to be assessed for various stages in the extraction and restoration process. This will allow potential impacts to be quantified and mitigation strategies to be developed such that any residual impacts can be mitigated down to acceptable levels.

6.83 Separate reports will be produced to support the Environmental Statement and would include a Phase Preliminary Contamination Assessment (Desk Study) and Contamination Assessment report including findings of previous investigations and Quantitative Risk Assessments.
J Climate change

6.84 This section will pull together findings of other sections of the ES and analyse potential effects of climate change on the project, as well as the effects of the project on the receiving environment (climate). This is increasingly requested by Planning Authorities and the Institute of Environmental Management and Assessment (IEMA).
7.0 Conclusion

7.1 This scoping report has identified a range of environmental and technical issues that the EIA will assess. Direct and indirect effects of development will be considered. Effects during extraction and following restoration will be assessed. The range of studies and identification of potential effects will influence the scheme design and determine where additional mitigation measures are necessary.

7.2 Comments are invited on the scope of the EIA. Relevant comments/suggestions would be appreciated, as would any information that could be supplied to help establish the baseline.

7.3 This Scoping Report will be issued to Northamptonshire County Council as the Minerals Planning Authority. It is expected that the planning authority will consult the following parties:

- Northampton Borough Council
- Wellingborough Borough Council
- Ecton Parish Council
- Cogenhoe and Whiston Parish Council
- Earls Barton Parish Council
- Great Billing Parish Council
- Environment Agency
- Natural England
- Northamptonshire Wildlife Trust
- RSPB
- Internal Drainage Boards
- Highways Agency/Authority
Appendix A


Appendix D