

REVISED NON-TECHNICAL SUMMARY

1.0 Introduction

This Revised Non-Technical Summary (NTS 2015) relates to the most recent and detailed proposals to construct the integrated waste management facility (IWMF) at the former Rivenhall Airfield near Kelvedon in Essex for:

“An Integrated Waste Management Facility comprising: Anaerobic Digestion Plant treating mixed organic waste, producing biogas converted to electricity through biogas generators; Materials Recovery Facility for mixed dry recyclable waste to recover materials e.g. paper, plastic, metals; Mechanical Biological Treatment facility for the treatment of residual municipal and residual commercial and industrial wastes to produce a solid recovered fuel; De-Inking and Pulping Paper Recycling Facility to reclaim paper; Combined Heat and Power Plant (CHP) utilising solid recovered fuel to produce electricity, heat and steam; extraction of minerals to enable buildings to be partially sunken below ground level within the resulting void; visitor/education centre; extension to existing access road; provision of offices and vehicle parking; and associated engineering works and storage tanks, at Rivenhall Airfield, Coggeshall Road (A120) Braintree”

The IWMF will provide a fully integrated waste treatment and recycling facility. It will be developed to receive and recover a range of wastes and recyclable materials and generate 'green' power by exporting electricity to the local grid. Throughout its planned construction and future operation, the facility will also provide a number of direct and indirect employment opportunities locally within Essex. About 150 people are expected to be fully employed either directly or indirectly in the operations on site including many in local transportation, engineering and support firms.

This NTS 2015 provides a summary of the Environmental Statement(s) (ES(s)) prepared for the IWMF and the recent operations at the Bradwell Quarry that include the footprint of the IWMF site. These consist of:

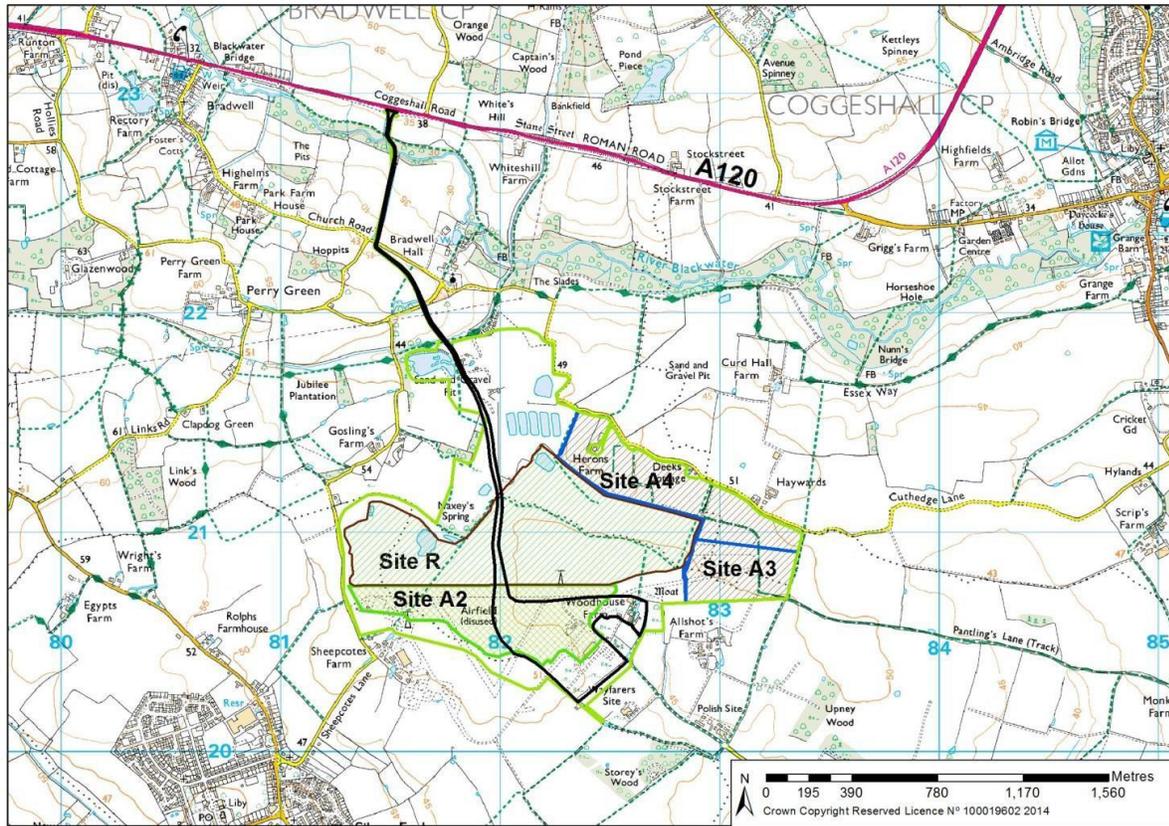
- The IWMF ES, August 2008;
- Regulation 19 Additional Information, December 2008;
- The Addendum Environmental Statement, September 2009 prepared for the Public Inquiry;
- The Site A2 quarry ES, June 2011;
- The Site A3 and A4 quarry ES, August 2014;
- The IWMF Updated ES Review, December 2014; and
- The IWMF Section 73 Updated ES, July 2015, (including submission of details for those planning conditions that require to be approved by the Planning Authority prior to commencement of construction).

2.0 Changes to the Site Setting Associated with Quarrying Operations

The IWMF site boundary and planning application area remain unchanged from that originally assessed and approved. However, recent quarrying operations have resulted in a change to the original ground levels.

The IWMF site lies within the permitted areas of the Bradwell Quarry where quarrying operations will result in a low level restoration scheme which will include areas of agricultural, biodiversity,

water and woodland, which is anticipated to be completed by 2018; however, further quarrying operations are likely within 'preferred' and 'reserved' sites that are allocated in the adopted 2014 Minerals Local Plan.



Base Plan extracted from ECC Committee Report DR/07/15

The above location plan indicates the extent of previous and current quarrying operations that include: Site R permitted in 2001; Site A2 permitted in 2011 which included the whole of the IWMF site; and Site A3 and A4 permitted in 2014.

3.0 Proposed IWMF Development

The scale and nature of the IWMF development now submitted in detail is not substantially different to that which is approved. No changes are proposed to the types of waste to be handled at the IWMF or maximum vehicle numbers, and the environmental impact is shown to be equal to, or less than, originally assessed.

The Planning Inspector's report after the Public Inquiry concluded "...that if a proposal is to be sustainable and economically viable in the long term, one of its attributes must be a degree of flexibility to accommodate future changes in waste arising and in waste management techniques and practices."

In parallel with the recent Section 73 application, Gent Fairhead & Co Limited has submitted its Environmental Permit application to the Environment Agency, confirming that the modifications have not changed the overall effects of emissions resulting from its operation compared with the original assessments.

4.0 IWMF Processes

Consistent with the original permission, the IWMF will incorporate:

- Materials Recycling Facility (MRF);
- Mechanical Biological Treatment (MBT) facility;
- Anaerobic Digestion (AD) facility;
- Pulp Facility;
- Combined Heat & Power Plant (CHP); and
- Wastewater Treatment Plant (WWTP) to support the above facilities.

The IWMF will recover, recycle and treat a range of wastes into marketable products using energy from fuel derived from waste treatment processes.

The current proposals with ECC, to permit construction of the IWMF, demonstrate that no additional environmental impact is expected from the final detailed design. There have been no changes to total waste volumes or heavy goods vehicles expected to be processed at the plant. The proposed building is smaller than in the original permission and there have been no revisions to the CHP stack height.

4.1 Materials Recovery Facility (MRF)

The MRF and MBT processes are designed to work effectively together in order to maximise the recovery of recyclates from the incoming household or commercial waste-streams and produce a Refuse Derived Fuel (RDF). Energy will be recovered from the RDF in the CHP plant.

The MRF is designed to both mechanically and manually sort recyclable materials from the incoming waste, such as metals, glass, paper and card, so they can be recycled. The MRF will have a maximum design capacity to process 300,000 tonnes per annum and will be completely enclosed and operated inside a building to minimise potential emissions of noise, bioaerosols, odour and dust.

4.2 Mechanical Biological Treatment (MBT)

The purpose of the MBT Facility is to receive collected household or commercial wastes that require some pre-treatment in order to remove moisture and recyclates (in combination with the adjacent MRF) and to manufacture a RDF suitable for energy recovery in the CHP plant.

The MBT process is designed for the treatment of up to approximately 170,000 tonnes per annum of organic rich materials that are treated in a series of enclosed vessels, following initial shredding. The vessels include individual floor and roof systems that provide for air to be forced through the waste to facilitate the process of biological drying.

The waste will be treated in the vessels for a minimum of 7 days enabling the biological process to occur, during which time the waste will lose moisture. This enables easier extraction of recyclables, particularly plastics and metals, within the mechanical processes in the MRF.

4.3 Anaerobic Digestion (AD) Plant

The AD process will treat up to 30,000 tonnes of separately collected municipal or commercial food wastes and/or other green wastes.

Following treatment and digestion through the AD process, biogas will be collected from the AD tanks to fuel gas engines that generate electricity; this will supply electricity to the National Grid.

Following the treatment within the AD plant, the resulting slurry will be dewatered and dried to produce compost, for use off site.

4.4 Pulp Facility

The proposed pulp plant will be capable of recycling up to 170,000 tpa of recovered printing and writing paper and card, to produce 85,500 tpa of recycled paper pulp which will be transported off site and used to predominantly manufacture printing and writing paper, white surface packaging and some tissue.

Recovered paper forms a large proportion of the normal household and C&I waste-streams. The quality and purity of the paper and card feedstock imported to the IWMF will comply with a recognised specification. This will provide the Pulp plant with raw materials suitable for the washing, cleaning, bleaching, mixing and drying operations required to produce the recycled pulp.

The Pulp Facility will use heat and hot water produced by the CHP Plant, thereby maximising the use of 'green' energy from the CHP plant when compared to electricity generation alone.

4.5 Combined Heat & Power (CHP)

The IWMF's CHP facility will process RDF produced by external waste treatment facilities, some RDF produced by the on site MRF and MBT, and some biological residues from the WWTP. The CHP facility will produce up to 50 MW of electricity which will be exported to supply the National Grid through the treatment of up to 595,000 tonnes per annum of RDF. With the AD plant in operation and generating 1 MW, the CHP facility will be limited to 49 MW. Normal export is expected to be around 28 MW. This would be more than sufficient for at least 20,000 homes, roughly the size of Braintree town.

Heat will be exported as steam and hot water to on site processes (such as the Pulp Plant, MBT and AD) and for space heating. The largest consumer of steam will be the Pulp plant. Steam will also be used at the WWTP and for plume abatement at the CHP plant. Most of the steam supplied will be returned as condensate to the CHP plant for re-use in the boiler.

The CHP plant will use all exhaust and ventilation air from the other IWMF processes to feed the combustion process, thereby treating any odours and dust from the IWMF and producing one point-source emission for the entire plant.

Emissions from the CHP will be controlled and continuously monitored in accordance with an Environmental Permit regulated by the Environment Agency. The CHP emissions will meet strict European emissions standards for parameters such as nitrogen oxides and other trace gases as conditioned in the Environmental Permit.

4.6 Wastewater Treatment Plant (WWTP)

The WWTP will consist of the following seven treatment stages:

- coarse and fine screens;
- roughing and polishing dissolved air floatation (DAF);
- lime soda softening;
- sand filtration;
- membrane treatment – reverse osmosis;
- DAF and precipitator sludge collection; and
- dewatering.

It is currently proposed that the treated water from the WWTP will be transferred and stored in the on site storage lagoon(s) for reuse as process water within the IWMF.

5.0 Environmental Impacts

The IWMF has been subjected to a full Environmental Impact Assessment(s), updated to December 2015, and the ESs contain assessments and recommendations to mitigate and minimise potential environmental impacts and promote potential environmental and social benefits of the proposals.

The ESs include the following environmental issues:

- Air Quality and Human Health;
- Transport;
- Ecology;
- Ground & Surface Water Resources;
- Landscape;
- Noise;
- Nuisances; and
- Archaeology and Cultural Heritage.

5.1 Baseline Environmental Conditions

In developing this Addendum ES, the assessments have considered the existing environmental conditions and the baseline conditions established by the IWMF in respect of the issues listed above. The ESs pull together the changes that have occurred in and around the Site since the preparation of the 2008 Environmental Impact Assessment.

5.2 Air Quality

There has been no change in the number or location of residential properties within 1 km of the IWMF site. The closest receptor downwind of the IWMF (southwesterly prevailing winds) is Woodhouse Farm – which will be redeveloped and brought into beneficial use to provide offices

and an education centre for the IWMF site. The closest public footpath lies approximately 150 m to the east of the proposed stack location (Footpath No. 8).

There are three County Wildlife Sites located within a 3 km radius around the IWMF site and nine statutory nature conservation areas located within 10 km.

Since the original air quality assessment in 2009 there have been a number of changes to the dispersion model and method for determining the significance of effect for planning purposes. Therefore, the absolute concentrations predicted in the original application and these updated proposals cannot be directly compared.

However, the original assessment concluded that there were no predicted exceedances of any of the relevant Air Quality Assessment Levels at any of the identified residential properties or public rights of way. This conclusion remains valid. Based on the original air quality assessment(s) completed by Golder Associates (UK) Limited, an updated assessment was completed by Fichtner Consulting Engineers in 2015, and confirms that the IWMF will have no greater impact than that assessed as part of the original application. As such, the conclusions of the air quality assessment remain valid i.e. that there are "no unacceptable risks" to any local resident, pedestrian or visitor as a result of the operations at the IWMF.

All point source emissions to air will be released from the main CHP stack, except for the AD flare. Detailed air dispersion modelling of emissions from the stack has been undertaken, which has demonstrated that the impact of emissions to air will not have a significant impact on local air quality.

All emissions to air will comply with any relevant emission limits in the Industrial Emissions Directive and other relevant Air Quality Guidance.

Continuous monitoring of emissions to air from the CHP facility for oxygen, carbon monoxide, hydrogen chloride, sulphur dioxide, nitrogen oxides, ammonia, VOCs, and particulates will be undertaken for the flue gases from the CHP facility. Other pollutants will be monitored by spot measurements at regular intervals. All continuous emissions measurements will be recorded and operations will be alerted if emissions to air approach the permitted limits.

Monitoring of emissions from the AD gas engines will be undertaken in accordance with the requirements of the Environmental Permit.

The results of all emissions monitoring will be reported to the Environment Agency.

5.3 Human Health

Within a Human Health Risk Assessment, the background consumption rates of pollutants are derived from national studies based on typical concentrations in media and consumption rates. The background consumption rate is referred to as the Mean Daily Intake. The 2009 assessment extracted this data from the Environment Agency's Toxicological Reports. This data remains valid and was used as part of the updated 2015 Human Health Risk Assessment. However, since both assessments were prepared, the Environment Agency has withdrawn the TOX report relating to oral intake of nickel in light of scientific opinion from the European Food Safety Authority¹.

¹ European Food Safety Authority (2015) Scientific Opinion on the risks to public health related to the presence of nickel in food and drinking water.

The updated Human Health Risk Assessment, confirms that the IWMF will have no greater impact than that assessed in 2009. Detailed modelling has demonstrated that the emissions from the IWMF are considered to have a negligible impact on human health.

The IWMF will not result in appreciable health risks resulting from its operation.

5.4 Transportation

Waste will be delivered to the IWMF by road for processing, sorting, separating, treating and recycling.

Access to the IWMF will only be permitted via the existing A120. Road barriers will be installed at strategic locations around the perimeter of the Site which will only permit authorised or emergency vehicles to enter the Site from the surrounding road network.

To avoid HGVs using local minor roads as a means of access to the Site, the GPS post code used in navigation systems will give the site access junction along the A120, not the IWMF's position on the airfield.

The transport assessment has considered the potential impact of construction and operational traffic movement to and from the Site on the A120.

No changes whatsoever are proposed to the total quantity of wastes that will be recovered, recycled and treated at the IWMF, or the number of vehicles that will travel to and from the Site. Both of these factors are limited by planning conditions and no changes are sought to those conditions. Therefore, the conclusions from the original traffic impact assessments remains valid and the IWMF is unlikely to have an adverse impact on the local highway network.

5.5 Ecology

Across the footprint of the IWMF, quarrying and restoration operations within Site A2 has resulted in the loss of the former airfield runway(s), an aircraft Hangar, airfield buildings, and agricultural fields that were originally present at the site – leaving predominantly bare ground.

The Site A2 quarrying operations have retained the majority of the woodland(s) tree preservation order (TPO), although some individual and groups of TPO trees were removed. Areas of Open Habitat have been established adjacent to Woodhouse Farm for Great Crested Newts, by stripping agricultural soils from the field due east of Woodhouse Farm (0.8 ha), and a hedgerow has been relocated from the Site A2/IWMF area into Wayfarer's Field. The overlapping footprint of Site A2 and IWMF areas has resulted in the implementation of shared ecological mitigation measures.

Quarrying operations have ceased within Site A2 and are now focussed within Site A3 and A4 – to the northeast of the IWMF site. Across the footprint of Site A2, quarry restoration works are ongoing, and within the IWMF footprint area, overburden has been stockpiled.

Various detailed ecological surveys have been undertaken on and in the vicinity of the IWMF site to evaluate the importance of any habitats or species present. In addition, records of protected species and birds in the local area have been gathered in order to determine whether species may be present off site. Ecological surveys have been carried out which have included: an extended habitat survey and habitat assessment of the site access road, the IWMF site and Woodhouse Farm; a hedgerow survey; and protected species surveys for bats, water voles, otters, amphibians (namely Great Crested Newts), reptiles, badgers and breeding birds.

The IWMF site benefits from a range of ecological baseline surveys, impact assessments and the delivery of mitigation strategies including a Natural England mitigation licence that has been implemented within the IWMF planning footprint and wider study area.

The most recent suite of baseline and habitat surveys has revealed ecological features that mirror the baseline attributes noted during the original ecological surveys. Ecological mitigation continues to be delivered within the Site and regular checks of the Great Crested Newt fence are undertaken.

Habitat Management Proposals such as Great Crested Newt monitoring, scrub clearance and wetland vegetation monitoring are being delivered.

Based on the original ecological assessment, and the various ecological surveys and assessments completed across the IWMF site to support the ongoing quarrying operations, the updated assessment confirms that the overall impact of the IWMF on the local ecological environment remains unchanged and will not result in significant harm to the ecological environment at the Site or surrounding land.

5.6 Ground and Surface Water Resources

Surface Water

As part of the original planning application a detailed review of flood risk was undertaken and the required mitigation measures were formulated to ensure the proposed development was neither at flood risk nor increased flood risk to third parties. This assessment was undertaken using best practice guidance and was reviewed, and approved, by the Environment Agency and Essex County Council.

The flood risk assessment was updated in 2015. This confirms that the IWMF will have a negligible effect on the surface water and flood risk proposals in and around the Site.

Groundwater

Quarrying operations across the footprint of the IWMF have resulted in the phased and systematic excavation of overburden and sand and gravel reserves to the underlying London Clay; and the subsequent restoration operations have resulted in the placement of overburden materials within the IWMF site. Quarrying operations have confirmed that perched groundwater is encountered within the hollows (or natural low points) that result from natural variations in the interface between the sand and gravel and London Clay.

The geological setting, site boundary and planning application area remain unchanged from that originally assessed and approved.

Whilst there is no existing evidence of ground contamination arising as a consequence of historical activities, the removal of remnants of the former airfield could lead to the disturbance of previously unidentified contamination. To address this issue, a 'watching brief' will be maintained during site clearance works to determine the presence of previously unidentified zones of soils or groundwater contamination.

Furthermore, the IWMF development works will also be carried out with due reference to relevant Environment Agency Pollution Prevention Guidelines (PPGs) to reduce or avoid the potential risks presented to the groundwater environment.

The overall environmental impact associated with the development and operation of the IWMF on the quality and quantity of the surrounding ground and surface water is not considered to be significant.

5.7 Landscape

The design of the IWMF building has adopted simple, clean lines in sympathy with the current and historic nature of the location. The horizontal profile of the building would visually reflect the existing landform surrounding the Site, and would be perceived as a rising of the horizon. Any breaks or steps in the roofline would draw attention to the building; therefore, a long, low profile has been adopted so it would not be readily detectable within the wider panorama of the landscape. A double arched roof has been used that reflects the design of World War II aircraft hangars (two side-by-side lamella hangars) to provide historical continuity with the Site's previous use. Cladding materials would be dark in colour as these tend to be more recessive in the landscape.

Although quarrying operations within Site A2 have now changed the local baseline situation as it was assessed in 2008, the ongoing restoration operations are creating a ground profile that blends in with the surrounding topography and could blend with the levels and vegetation planting of the IWMF.

Visual impacts would be limited to a few residential properties though none are in close proximity to the Site. Where the new building would project north beyond the confines of the existing woodland screen, it would be perceived as an increased industrial presence. The potential impact, however, is minimised through the implementation of mitigation measures, which would lead to improved screening provision around the Site.

The major element of the proposed IWMF development which would project above this tree screen would be the CHP chimney. This would stand approximately 35 m above surrounding ground level. To minimise this effect, the chimney will be constructed of stainless steel, with the top of the chimney, for example, that part which would be visible above the adjacent existing tree line, being of a polished finish to mirror and reflect the surrounding weather conditions and environment.

5.8 Noise

Owing to the considerable separation distances between the IWMF and surrounding residential buildings and villages, the assessment demonstrated that there is no likelihood of perceptible levels of noise being heard or felt by neighbours to the Site.

5.9 Nuisances

The IWMF's location, site boundary, planning application area and surrounding site setting remains largely unchanged i.e. no change in residential properties within 1 km etc from that originally assessed. Nothing has changed with regard to the location of potentially sensitive residential or other public receptors. The prevention and control of potential nuisances are predominantly dependent upon operational practices.

On 24 September 2015 an Environmental Permit application was submitted to the Environment Agency. The application is consistent with the IWMF's proposed integrated waste recovery, recycling and treatment operations.

The final and agreed details of the Environmental Permit will demonstrate that the IWMF embodies Best Available Techniques (BAT) to prevent, and where this is not practicable, to reduce emissions and the impact on the environment as a whole to acceptable standards. The Environmental Permit application includes a detailed review of the Site proposals against the EA Guidance on BAT for the Sector and an Operational risk appraisal in accordance with the recently published (April 2014) guidance.

The surrounding site setting and local environment will not be at risk from nuisances from the IWMF's operations. In line with best practice, a risk screening and assessment process will be applied (and continuously reviewed) following commencement of operations at the IWMF.

5.10 Archaeology and Cultural Heritage

An archaeological evaluation by trial trenching was carried out across the IWMF site during September and October 2006.

Across most of the footprint of the IWMF site, quarrying and restoration operations within Site A2 have resulted in the loss of the former airfield runway(s), an aircraft hangar, airfield buildings, and agricultural fields that were originally present at the site. Surveys were carried out of the former aircraft hangar and airfield buildings prior to their removal.

Listed Buildings are located within and around the proposed IWMF site. Woodhouse Farm (Grade II) is located approximately 180 m to the northeast of the proposed IWMF and will be redeveloped to provide offices and an education centre.

The Site would be subject to a 'Monitoring and Recording Brief' during the initial phases of construction.

6.0 Cumulative Impacts

In developing this Addendum ES, the assessment has also considered the cumulative impact of the IWMF alongside other foreseeable developments. This considered the construction and operation of the IWMF alongside: the existing and future quarrying operations across Bradwell Quarry; the installation of an electricity cable from the IWMF to the Braintree Substation; potential alterations in the water abstraction and discharge arrangements to and from the River Blackwater; and, other local development sites.

Most of the foreseeable developments are either short term in nature, or located some distance from the IWMF site. The assessments indicate that there will be no significant change in the overall impact of the IWMF, or the mitigation and control measures, relating to its development and operation.

7.0 Further Information

Further information can be obtained by reading the IWMF Environmental Statements and Technical Appendices. Copies can be viewed at the offices of Essex County Council during normal opening hours.

Further information can also be obtained via the following website:

<http://wrren.co.uk/documentation/>