Environmental Impact Assessment Report

Relating To the Construction of 1 New Poultry Unit

For

Finian O' Harte.,

At, Creevaghy, Clones, Co. Monaghan

Signed:- J. Beggan **09/10/17**

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1.0 Introduction & Preamble

The applicant, Finian O' Harte, Contacted Joe Beggan, Bsc(Hons)Eng., Arch. Tech. MCIOB to carry out an Environmental Impact Assessment Report (EIAR) to accompany an application for planning permission for the construction of 1 No. poultry units located in the townland of Creevaghy, Clones, Co Monaghan.The development site is located c. 3.5km North of the town of Clones, Co Monaghan, 5.0km South of the village of Smithborough & 12km South of the county town of Monaghan. Grid reference X – 252811 & Y – 327916 relate to this development

Existing development on site consists of 4 No. poultry units with a combined stocking capacity of circa 140,000. The capacity of this proposed unit will be 50,000 birds bring the overall stocking capacity on site to circa 190,000 birds. A previous planning reference is associated with this development ref. P. 12/74. Also in the vicinity is a nitrate storage building, (Planning reference 06/1467) which is located circa 160 meters west of the proposed development and also a cattle shed which incorporates two underground effluent storage tanks (Planning reference 00/1257) which is located circa 100.0 meters to the west of the proposed development.

Having reviewed the terms of reference regarding the application, the consultant undertook a study of the impacts both real and perceived, which the proposal would have on the receiving environs and community. The areas, which were reviewed, include all areas, which an Environmental Impact Statement is required to cover. The applicant is obliged to have an EIS carried under the following regulations:

1) EC (Environmental Impact Assessment) Regulations 1989: Article 24, 1st Schedule, Part II 1. (d) "Poultry rearing installations where the capacity would exceed 100,000 units, where units have the following equivalents: 1 broiler = 1 unit, 1 layer, turkey or other fowl = 2 units".
   - Planning and development Regulations 2001 (S.I. No. 600 of 2001). These regulations state that even if the development is under the relevant EIA threshold (i.e 100k places), the planning authority is required under article 103 to request an EIS where it considers that the proposed development is likely to have significant environmental effects.
   - Section 17: An Environmental Impact Assessment Report (E.I.A.R.) is required for "installations for the intensive rearing of poultry or pigs with more than: (a) 85,000 places for broilers, 60,000 places for hens".

1.1 Identification Of Likely Significant Impacts

Schedule 6 of the Planning and Development Regulations requires that the Environmental Impact Assessment Report (E.I.A.R.) describes likely, direct and indirect significant impacts of a proposed scheme. The EPA (Guidelines on the information to be contained in Environmental Impact Assessment Report (E.I.A.R.) defines an impact as "the degree of change in an environment resulting from a development" and goes on to elaborate on impacts in terms of quality (positive, neutral or negative), significance (imperceptible, slight, moderate, significant or profound), duration (temporary, permanent, short-term or long-term) and type (cumulative, indeterminable, irreversible, residual, synergistic or "worse case")

The following factors have been considered for this EIAR when determining the significance of the impacts, both positive and negative, of the proposed scheme on the various aspects of the receiving environment:-

- The quality and sensitivity of the existing/baseline receiving environment.

- The relative importance of the environment in terms of national, regional, or local importance.

These regulations also state that even if the development is under the relevant EIS threshold, the planning authority is required under Article 109(2) of the 2001 Planning and Development Regulations (as amended) to request a sub-threshold EIS where it considers that the development has the potential to adversely impact the environment.

This statement is drafted with particular regard to Article 94 and Schedule 6 in the 2001 regulations, and is submitted to provide information that may be helpful to the planning authority in making its decision on this application for planning permission.

The documents "Guidelines on the information to be contained in the Environmental Impact Statements" 2002 and "Advice Notes on Current Practice (in the Preparation of Environmental Impact Statements)" 2003 as prepared by the EPA were followed in the preparation of the EIS.

The guidelines state that in preparing an EIS, the Developer will carry out an analysis of the likely effects of the project (positive or negative) on the environment. The Environmental Impact Assessment procedure commences at the project design stage when the scope of the study is determined. Studies are then carried out to investigate, in detail, any potential environmental impacts. Where significant adverse impacts are identified, measures are recommended to mitigate or avoid the impact of the proposed development.

2.0 Non-Technical Summary

General

This Environmental Impact Assessment Report (E.I.A.R.) document has been prepared on behalf of and for the exclusive use of Mr. Finian O' Harte with respect to a Planning Application made to Monahan County Council for the proposed construction of a new poultry house with a total capacity of 50,000 places for broiler chickens, a new feed silo and all ancillary site works and services at Creevaghy Td., Clones, Co. Monaghan.

The proposed poultry house would have a capacity of 50,000 birds. Therefore, when taken in conjunction with the existing poultry units on site which hava a combined capacity of circa 140,000 birds, the scale of the proposed development would fall above the threshold of 40,000 bird capacity outlined in section 6.1(a) of the First Schedule of the EPA Acts 1992 to 2013 and would require an Industrial Emissions Licence.

The proposed development will be constructed at IGR [Irish Grid Reference] Grid reference X – 252811 & Y – 327916 .The proposed development will be located c. 3.5km North of the town of Clones, Co Monaghan, 5.0km South of the village of Smithborough & 12km South of the county town of Monaghan The proposed development will be on a brown field site. Mr. Finian O' Harte has substantial experience in the poultry industry and already operates a broiler house on this site.

The proposed poultry unit and surrounding hardened areas would have a footprint of approximately 2,900 m2 on a brown field site of approximately 2.2 hectares holding owned by Mr. O' Harte. The site would be accessed from the local road via an existing farm entrance lane on the western boundary. The site location map, proposed site layout and proposed construction plans are attached appendix No. 1

The site is in a rural area within an already established farm holding. The nearest dwelling to the proposed broiler house is located 172.0 metres to the south - east of the proposed development and another is located 208 meters to the east. The applicants dwelling is located 340.0 meters to the south west.The activity on the site would be farming activities appropriate to the area. The site is accessed off local road know as the "new line£ which connects to National primary road N54 which connects Monaghan Town & Clones Town, 390m to south east of the proposed development.

The main activities on the proposed site are summarised as follows:

- Bedding of houses with straw/wood shavings;
- Placing of day-old chicks in the broiler house;
- Feeding and rearing of birds for 8 weeks;
- Delivery of feed to farm;
- Removal of broilers for slaughter;
- Removal of litter (mixture of bedding material, feathers and manure) to a covered trailer for immediate removal by a Eamon Fitzpatrick licenced haulier;
- Washing of houses, between batches and collection, using wash-water stored in two underground tank;
- Removing of wash-water after the houses have been washed after the removal of every batch and landspread
- Disinfecting and drying of broiler house in preparation for next batch.

The construction phase is proposed to take place over 4-5 months, with any landscaping activities concluding shortly thereafter. When operational, it would provide full time work for 1-2 broiler house operators along with contract work for hauliers delivering feed, removing chickens, litter, wash-water, carcasses and general waste.

The principal inputs would be day-old hatchlings, feed (e.g. cereals, soya protein), water, veterinary medicines and a modest amount of energy (electricity and natural gas) for the automated feed system, lighting and heating. The outputs would be broiler chickens (primary product) and animal manure (by-product). The waste products would be domestic refuse, recyclable packaging waste and chicken carcasses (typical mortality 1-2 %).

Upon completion of the construction phase, there would be an average of 5.1 to 5.5 articulated truck journeys and 5.4 car journeys per week. It should be noted that many of the delivery services provided for above would occur in tandem with deliveries to other poultry units in the area and would not add to the existing traffic on local roads.

Air / Climate

The main potential sources of air pollutants from the proposed development would be the digestive processes, litter of the broilers and the burning of fuel for heating. Emissions from digestive processes and manure of broilers include primarily ammonia, nitrogen oxides and methane. Airborne dust and particulate matter can arise from broilers, litter and feed. Effects of the proposed development on air quality and climate are anticipated to be insignificant outside of the site boundary.

Maximum efficiency of fuel input is required to ensure profitability of the operation. The applicant intends to use LPG as a fuel source and already has a storage tank on site.

Earthworks during construction are a potential source of dust pollution. Minimal levels of dust would be expected to be generated during the construction phase given the confined area of earth-works and the short term of the construction phase. Greater levels of dust may be associated with the construction of an earth berm on the facility boundary.

It is proposed to adhere to standard good working practices and dust mitigation measures to ensure that the levels of dust generated would be minimal during the construction phase and are unlikely to cause any significant environmental nuisance.

All exposed soil within the site would be planted with grass and semi-mature trees within two weeks, or as soon as practically possible, upon completion of the construction phase to promote rapid stabilisation of soils.

Therefore, the effects of the proposed development on air quality and climate are anticipated to be insignificant outside of the site boundary.

Odour

The setback distances and orientation of surrounding odour sensitive locations, coupled with the surrounding topography serve to mitigate the potential for nuisance odour impacts.

As litter would be re-used for tillage farming, odour impacts associated with the spreading of litter on agricultural land would not be experienced. Should its reuse be changed to landspreading, it would also not be

expected to cause a significant odour nuisance off-site. Litter would be spread in accordance with a nutrient management plan. The spreading of organic fertilisers is commonplace in rural Ireland, being accepted as a part of the rural/agricultural environment, and is transitory in nature.

Assuming the mitigation measures are put in place, it is not anticipated that there would be significant impacts to the odour environment arising from the proposed development on its own or in combination with other developments in the area.

Noise

The closest noise sensitive location is 172m to the south east of the proposed operation and this is a private dwelling on a farm holding.

it is anticipated that the operational phase of the proposed development would have no significant impact upon the existing noise environment of the area.

Resultant noise levels from construction, maximum operation and typical operation at all noise sensitive locations are predicted to comply with EPA (NG4) 2016 guidance noise limits of 55dBA daytime and noise from maximum operation and typical operation are predicted to comply with the night time limit of 45dBA.

There would be a slight impact on the closest noise sensitive locations during the construction phase during activities such as excavation and intermittent impulsive noise events. This impact would be mitigated the short periods of time over which such construction activities are likely to occur, the limited timeframe (approx. 4-5 months) for construction, and the carrying out of these high noise producing construction activities during normal working hours (08:00am and 18:00pm Monday to Saturday).

Maximum noise levels at the site, from agricultural machinery and delivery trucks, are expected to be equivalent to noise levels currently in place during the operation of large agricultural machinery within the existing green field site. There is anticipated to be a slight additional impact from vehicle noise due to the increased frequency of large agricultural and delivery vehicles operating at the site.

Noise from the operation of proposed ventilation fans is predicted to be inaudible at the nearest noise sensitive locations while operating at maximum and normal fan speeds.

It is concluded that there would be a slight impact for a limited period of time at noise sensitive locations as a result of the construction phase and that there would be no significant additional noise impact during the operational phase at noise sensitive locations as a result of the proposed development at Lisnashannagh Td., Stranoodan, Co. Monaghan.

It has been recommended that all potentially high noise activities, during the construction and operation phases, are carried out during normal working hours (08:00am to 18:00pm Monday to Saturday).

In order to facilitate and promote good practice at the site, it is recommended that the applicant implement a noise management programme.

Visual Impact

The surrounding topography is composed of undulating hills which is typical of this part of Monaghan. The site is elevated and is surrounded by maryre trees which will serve as an effective natural screen for the development.

The proposed poultry house location is at a setback distance from local public to the east of approximately 410.0 m. Any visual impacts are considered negligible due to existing screening and the road profile

The existing farm entrance is well established. Any any gaps in hedgerows would be planted with semi-mature trees to minimise the impact on the visual amenity of the area.

Following the establishment of planting, screening from planted hedgerows would help to ensure the proposed development would be indistinguishable from the existing hedgerow-bounded pastureland aesthetic of the area. This would also serve to increase the ecological value of the area. It has been recommended that any planting which occurs be of native tree and shrub species, where possible, in order to conform with the existing character of the area and improve the biodiversity value of the site. The proposed poultry house roof and sides are finished in Green Agri-cladding.

Though the site would remain as a permanent feature, the impact of the proposed development on the visual amenity of the surrounding landscape in the longer term is considered to be slight. This is due to its comparability with the other agricultural buildings in the area, the proposed tree planting, the surrounding hedgerows, the topography of the site and surrounding area and the setback distance from the majority of private residences.

CLR Ltd. would collect all poultry litter from the proposed development. All wash-water would be collected by the applicant and landspread on available lands in compliance with the requirements of the Nitrates Regulations, SI 31 of 2014. Therefore, it is not anticipated that the proposed development, by itself or in combination with other developments, would impact negatively upon the Natura 2000 network during the construction or operational phases of the project.

The site is not anticipated to have a significant negative ecological impact upon the flora and fauna of the area. Where sensitive of protected species, such as nesting birds and bats are found during the construction phase of the project, an officer of the NPWS would be notified prior to the resumption of activities.

The impact on site boundaries in the vicinity of the access to the public road, including hedgerows and trees, would be negligible as the area has well mature trees and shrubs. Additional planting of semi-mature trees and shrubs along the amended site entrance and the planting of gaps in the treeline along the northern and eastern boundaries would improve the ecological value of the site.

It has been recommended that any planting which occurs be of native tree and shrub species, where possible, in order to improve the biodiversity value of the site.

Emissions to Water

There would be no process effluent associated with the operation of the facility. Therefore, there would be no effluent emissions to surface or groundwaters. Surface-water runoff from roofs and hardstanding areas would be discharged to ground via a silt trap, by-pass interceptor and percolation area. It is not proposed to store significant volumes of any chemicals or materials which could pose a significant spill risk to the aquatic environment.

The interceptor would be visually inspected frequently, emptied as necessary and the interceptor and wash-water tanks would be integrity tested 3-yearly, as per standard EPA licence requirements. Therefore, the risk

of contaminated stormwater from the proposed site impacting upon the quality of the aquatic environment would be low.

During the construction phase, risks would arise with potential increased sedimentation entering field drainage within the site during periods of heavy rainfall, feeding to local drainage network. Standard protection measures would be employed during construction works to ensure that the risk of sediment infiltration would be minimised.

Litter & Wash Water Management

Broiler litter is composed of a mixture of bedding material, feathers and manure. It is estimated that the quantity of manure by-product to be produced would be 170 tonnes per batch. This equates to an average of 1,105 tonnes per annum (6.5 batches) for this unit.

CLR Limited would be collecting the poultry litter from the proposed new. CLR are a registered contractor with the Department of Agriculture, Food and Marine for the transport of animal by-product DAFM Reference no: CLR

All manure collections from the site would be recorded in a log by the applicant, as per Nitrates Regulations (S.I. 31 of 2014).

Poultry Litter would be delivered to various mushroom composting fcailities such as Newry Organic Fertilisers, Custom Compost, Carberry Mushrooms & Kabeyun, Gibraltar, Castleshane, Co. Monaghan. See enclosed letter of confirmation at Appendix 2 of this report.

All wash-water would be removed from site by the applicant after the houses have been washed after the removal of every batch for application to lands held by the applicant in the area. Removal of wash-water would be documented as appropriate under the Nitrates Regulations (S.I. 31 of 2014).

Waste Material

All waste material would be stored as per the BREF Document on Emissions from Storage (July 2006) and removed from site by a licensed waste contractor as necessary. Removal of waste materials would be documented as appropriate.

Water Supply

A deep bore well is proposed to be used for stock drinking water and for cleaning of the houses. It is estimated that the proposed development would use 294 M3 of water per production batch and 1,911 M3 per year. This would include drinking water for stock and cleaning of the houses. The unit would require 12 M3 per day.

The use of natural resources

There are no significant negative effects expected in relation to the use of natural resources. Operations carried out on-site would lead to the consumption of water, feed, natural gas, electricity and medication during the operational phase of the proposed development. The main resource to be consumed would be feed, which is classifiable as a natural resource that is renewable. It is estimated that 3.8 - 4 tonnes of feed and

8.6 M3 of water would be used per 1,000 broilers produced per batch.

The proposed supplier of feed will be Kolbe Feeds, Shercock, Co. Cavan. Feed will be stored in the silos adjacent to the houses and fed down lines into the house in an auger style system. Feed wastage: as with the similar operations, feed wastage will be reduced through good practice, e.g., regular checking of the feeding lines to ensure adequate feed stock, no blockages, no contamination, etc. Water will be supplied from proposed deep bore well on site. Drinkers will be nipple style, which creates less wastage to the litter floor, with water being supplied from the mains. Drinkers will be checked regularly for leaks in the system, thus ensuring efficient and economical water consumption and minimal wastage of water.

Fuel requirement would be a maximum of 8,963 litres of LPG fuel per batch. Fuel requirements have been calculated using a conservative (i.e. likely an overstated) estimate based on a small scale study conducted by Teagasc in 2011 which calculated a fuel requirement of 0.71 kWh / bird.

There would be a modest input of electricity for the feed and watering system. There would be a modest input of LPG – for the heating system primarily during colder periods of the year and for new chicks. The proposed combined under-floor heating and wall heater system would be more efficient and require less fuel input than conventional wall heaters alone. The heating system would be used primarily during the winter, night-time and for new chicks.

Summary

The potential for the proposed development to cause adverse environmental impacts during the construction and operational phases, considering the proposed mitigation measures, is anticipated to be negligible. This is due to the nature, scale, high specification, management and location of the proposed development, due to all litter going to composting facilities and due to all wastes been removed from the site in a timely fashion by a licenced contractor for disposal or recovery.

3.0 ALTERNATIVE CONSIDERATIONS

3.1 Alternatives explored during the Design Process

The applicant chose this typical type of housing employed as it is the most modern design employed in the industry at present. The reasons as to why no alternative was chosen are as follows and based on knowledge provided by poultry farmers in the greater area. The applicant has experience of this type of house and has constructed similar type units in the past.

- The house type is found to be satisfactory as regards day to day running and its Conditions for the birds.
- No significant problems of operation have been encountered in the running of the proposed house type.
- The manufacturers of the house are constantly working to ensure their housing is designed to the highest specification in terms of energy efficiency and minimal environmental disruption.

3.2 Alternative location of site.

A review of all other lands in the ownership of the applicant was undertaken prior to selection of this site.. Other lands explored were of undulating profile and would require extensive remedial works. Furthermore, construction costs would increase as no access to the road infrastructure is readily available. Coupled with this, operational costs would increase when forming a transport route through these lands for meal, birds and litter would have to be provided. The electrical infrastructure would also have to be extended via a bespoke line to serve the development. With this in mind, the applicant chose this site for the following reasons.....

- The area of the farm holding lends itself to an additional poultry uint.
- The area has no signs of over development either from a domestic or agricultural perspective.
- An existing agricultural entrance onto public road can be utilised.
- Resources available at site.
- Existing drainage system capable of facilitating the development.
- The EPA's BATNEEC Guidance Note for the Poultry Sector advises that the developer should have ample land space in the vicinity of his poultry complex to be available for use as lined carcass disposal sites in the event of a disease outbreak.
- The site chosen is close to the applicants dwelling
- The site is substantially level and requires minimal excavation works.

3.3 Alternative activities/ processes

The developer has no reason to employ alternative operational procedures than those proposed in the new development for the following reasons:

- The nature of the operation is such that there is little alternative to the process in terms of how the business operates as there is required adherence to guidelines provided by the flock supplier, Bord Bia and the Department of Agriculture.

3.4 Final design choice

It was decided to construct the new development to the proposed design for the following reasons:

- Thermal efficiency / Running costs
- Appearance / profile in the landscape
- Economical efficiency
- Environmental efficiency
- Lack of alternatives available
- Requires less energy to heat [Metal v Wooden structure]
- No significant problems known with this type of unit.

Furthermore, the applicant is proposing the operational procedures for the following reasons:

- Existing farmland holding
- Environmental efficiency
- Lack of alternatives available

3.5 Difficulties encountered in compiling the required information:

The process and activities associated with developments of this nature are well established and understood. Examination was undertaken of all elements of the development such as site selection & integration, building type and style, waste disposal, vehicular access and impacts. No significant difficulties were encountered in compiling the required information.

3.6 Potential Impacts of the Proposed Scheme

The magnitude of the impacts outlined in the chapters which follow, take into account the guidelines given by the EPA and those scales used in other EIAR documents for significant developments in this country. A broad outline of the scale of impacts is given in the table below. Where mitigation in the form of design measures have been suggested throughout the evolution of the EIAR, these have been incorporated into the scheme design as far as is possible from an engineering perspective.

General Criteria used to quantify the Potential Impacts of the Proposed Scheme;

Degree of Impact/Significance level		Definition of Impact
Profound	Significant Impact	An impact, which obliterates sensitive characterisation

Major		An impact, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Moderate		An impact that alters the character of the environment in a manner that is consistent with existing and emerging trends
Slight		An impact, which causes noticeable changes in the character of the environment without affecting its sensitivities
Not significant	Neutral or imperceptible impact	An impact which does not change the quality of the environment is capable of being measured but without noticeable consequences and causes changes in the character of the environment which are not significant or profound

It is anticipated that following the construction of the proposed development, there will be no significant impact in an overall landscape context. The continued management of the hedgerows and the maintenance of the poultry houses will not have significant impact in terms of landscape and visual impact.

3.7 Construction Impacts

Construction activities e.g. excavations, earth moving etc. may generate quantities of construction dust, particularly in drier weather conditions. The extent of any construction dust generation depends on the nature of the construction dust (soils, sands, gravels, silts etc.) and the construction activity. The potential for construction dust dispersion depends on the local meteorological facts such as rainfall, wind speed and wind direction.

The issue of construction dust dispersion may be exaggerated with vehicles transporting sand/gravels/soils etc. to and from the site having the potential to cause an environmental nuisance.

The effect of construction activities on air quality, in particular construction dust, will not be significant following the implementation of the proposed mitigation measures outlined below. The main environmental nuisance associated with construction activities is dust. In this case, the base for the proposed poultry unit has already been formed on site during the construction phase of the adjacent unit.

3.7.1 Mitigation

It is proposed to adhere to good working practices and dust mitigation measures to ensure that the levels of dust generated will be minimal and are unlikely to cause any environmental nuisance.

Hard surface roads shall be swept to remove mud and aggregate materials from their surface. Any un-surfaced roads shall be restricted to essential site traffic only.

Public roads outside the site shall be regularly inspected for cleanliness, and cleaned as necessary.

Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind. Diesel engines of plant machinery and trucks shall be properly maintained so that they do not discharge excessive quantities of visible smoke likely to result in a local nuisance.

3.7.2 MONITORING

There is no proposed monitoring for dust or odour at the Poultry growing operation. If any complaints are received, a follow-up investigation will be initiated. This will be initiated as soon as feasible and all results made available to the Local Authority and EPA for inspection.

In the event that dust or odour from the proposed development is creating an environmental nuisance. An ambient dust deposition survey will be carried out by an aid quality specialist and mitigation measures will be developed to eliminate the nuisance. In the event of Odour nuisance an investigation following the EPA Air Guidance on Odour Assessment (AG5) will be initiated.

3.8 Construction

As a minimum, the contractor will comply with all legislative provisions relating to hedgerow/tree removal and the protection of birds and bats and shall have regard to reducing impacts on nesting birds and breeding/roosting bats. If badger sets are located, pre or during construction, they will be dealt with in accordance with advice from the local NPWS wildlife ranger.

3.9 Residual Impacts

There will be a minor loss of habitat from beneath the footprint of the proposed unit.

4.0 Description Of The Proposed Development

Mr. Finian O' Harte is proposing to construct a new poultry house with a total capacity of 50,000 places for broiler chickens along with a new feed silo and all ancillary site works At Creevaghy Td., Clones, Co. Monaghan The First Schedule of the EPA Act, 1992, as amended provides that an Industrial Emissions Licence would be required for;

6.1 (a) The rearing of poultry in installations where the capacity exceeds 40,000 places.

(b) In clause (a) „poultry" shall be construed in accordance with Regulation 2(2) of the European Communities (Poultry and Hatching Eggs) Regulations 2010 (S.I. No. 564 of 2010).

The proposed new poultry house would have a total capacity for 50,000 birds. In conjunction with the existing poultry units on and in proximity to the site (140,000 birds) the size of the proposed farm would fall above the threshold of 40,000 bird capacity, outlined in section 6.1(a) of the First Schedule of the EPA Acts 1992 to 2013, and would require an Industrial Emissions Licence.

The proposed development would provide employment during the construction and landscaping phase over a period of 4-5 months. When operational, it would provide full time work for 1-2 broiler house operators along with contract work for hauliers delivering feed, removing chickens, litter, wash-water, carcasses and general waste. It would provide contract work for rodent baiting. A contractor would also be employed between batches to wash and disinfect the broiler house.

4.1 Recent Planning History Of The Site

According to the Monaghan Co Co Interactive Mapping Planning Enquiry System https://monaghan.ie/planning/online-planning-tools/ the following grant of permission relates to this development .....

Reference No: 1274

Applicant Name: Finian O'Harte

App Type: Permission

Received Date: 28/03/2012

Status: Application Finalised

Decision: Granted with Conditions

Development Address: Creevaghy Td, Clones, Co Monaghan

Development Description: to erect 2 No. Poultry Units, underground washings storage tanks, vertical meal bins, use existing agricultural entrance & all ancillary site works within existing farmyard complex. The proposed development comprises or is for the purpose of an activity for which an integrated Pollution Prevention Control Licence is required. The Planning application is to be accompanied by and Environmental Impact Statement .

Reference No: 17282

Applicant Name: Finian O Harte

App Type: Retention

Received Date: 12/06/2017

Status: Decision Made

Decision: Granted with Conditions

Development Address: Creevaghy Td, Clones, Co Monaghan

Development Description: Retention of a constructed plant room together with all ancillary site works within existing farmyard complex. Significant information received. The onsite meal bin has been relocated and hardened areas extended.

4.2 Site Layout And Construction

4.2.1 Overview

The existing farm holding consists of circa 55.0 Acres (22.25 Hectares) and the proposed development will comprise of one number 50,00 bird capacity broiler unit adjacent to an existing similar unit already on site.The applicant is already an established poultry farmer and this unit will bring the combined capacity on site to circa 190,000 birds..

The proposed development will be constructed in the townland of Creevaghy, Clones, Co Monaghan.The development site is located c. 3.5km North of the town of Clones, Co Monaghan, 5.0km South of the village of Smithborough & 12km South of the county town of Monaghan. Grid reference X – 252811 & Y – 327916 relate to this development

The proposed development will be on a brown field site. Mr. Finian O' Harte has substantial experience in the poultry industry and already operates a broiler house on this site.

Within this unit, the broiler chickens would be accommodated on bedding made from straw / wood chippings and would be fed and medicated via automated and optimised feed and watering systems. Feed would be stored in the silos which would be located on a concrete apron external to the houses.

The proposed development would produce approximately 6.5 batches of broiler chickens per year for supply to the market.

The construction phase would extend over a period of about 4-5 months. All of the construction materials and equipment required would be acquired from local sources, where possible, and transported in to the site by road. The proposed new structure on the site would be effectively blended in to the surrounding landscape.

4.2.2 Description Of The Proposed Structures And Systems

Broiler House

The proposed broiler house design would be of the art for the industry. Structures of this type are common in Ireland and the best available techniques to minimise emissions and to maximise welfare conditions for animals and staff alike are standard.

The proposed broiler house would each measure 109.7 m x 21.3 m, covering an area of 2336.61 m2. The house walls would measure 3.745 m to the eaves, and 6.026 m at the roof apex. The feed silo would measure 2.7 metres in diameter and would be 8 metres high The floors would be built as a solid concrete slab a minimum of 125mm tick.

The design of the proposed poultry house complies with BAT housing systems for broiler chicken as identified in the IPPC Reference Document on BAT for Intensive Rearing of Poultry and Pigs (July 2003), i.e., *"well-insulated fan ventilated house with fully littered floor and equipped with non-leaking drinking systems".*

The walls would be constructed of concrete with the upper section constructed of selected metal cladding, metal finish to be agreed with Monaghan Co Co. The roof would be constructed of selected profiled metal roof cladding. Twelve ridge vents would be located along the apex of both roofs, allowing optimal ventilation.

Energy Usage

Optimising energy input in intensive poultry production is vital in order to reduce production costs, maintain financial viability and gain a marketing edge on competitors. The proposed LPG heating syetem is well established, commonly used and widely accepted as the most energy evvicient of its type for this operation

Broiler house energy usage in Ireland is estimated at 0.71kWh per bird. This is detailed in Energy Use in Agriculture, Teagasc 2011. Using this figure, total energy use per batch from the proposed development is estimated at 24,921 kWh.

It should be noted that the energy requirement estimates used in this EIS are likely to be conservative (i.e. overestimates) as the figures stated in the Teagasc study were taken from a small scale study conducted before 2011. No indication is given of the heating systems employed by the farms in question. As the proposed heating system would be designed for maximum efficiency of fuel input, it would likely require less fuel than the average determined by this study.

An example of the efficiency that could be attainable is from a larger survey conducted in the UK which estimated energy usage at 0.39kWh / bird. As the UK has a comparable climate, it is clear that there is scope to reduce energy usage per bird below 0.71kWh per bird in Irish poultry house.

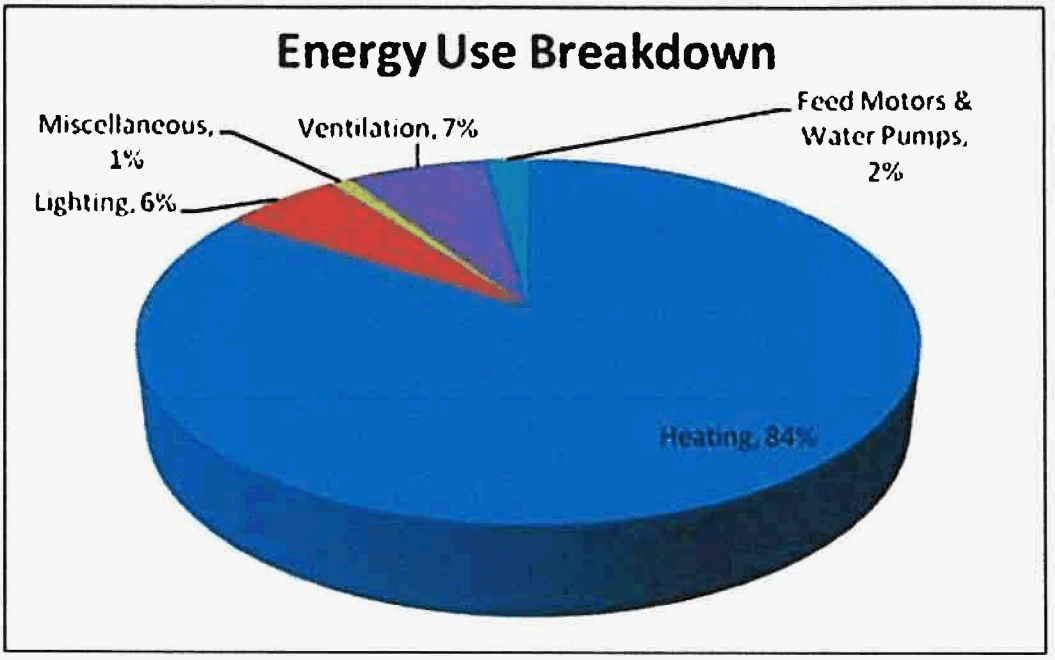
This can be achieved by high building and system design specifications - including whole-building insulation and optimal heating and ventilation systems. Optimal management practices are also necessary, these include on-going monitoring of bird health as well as feed, water, fuel and electricity input - all of which would be employed by the proposed development.

In addition, poorly maintained ventilation ducts and fans can increase running costs by 60%. Therefore, all fans and ducts would be included in the end-of-batch clean and filters would be replaced where necessary.

Winter ventilation would be monitored and controlled accurately where heating is used in the buildings. If the level is too high, heating costs increase significantly. Too low a level produces foul air conditions.

Energy saving LED lights would be used to light the broiler house. LED lights are the most energy efficient and practical lighting source. They are longer lasting than compact fluorescents (CFL) and incandescents - up to 10 times as long as compact fluorescents, and far longer than typical incandescents. They are less hazardous as they do not contain mercury. They give better quality light. They are more efficient - using only 2-17 watts of electricity (1/3rd to 1/30th of Incandescent or CFL).

Figure 4.1 :- Overall energy use breakdown for poultry farms. (Source: Energy Use in Agriculture, Teagasc 2011)



Heating

The proposed house would primarily require heating during the winter and during most nights. Mr. Finian O' Harte is considering installing indirect warm air blow heaters. As new chicks are particularly sensitive to cold and their most rapid growth phase is in their first week, it is important to adequately heat the floor (see Table 4.1).

Under-floor heating is seen as the most effective and fuel-efficient means of heating a broiler house. Heating through the floor provides a homogeneous distribution of temperature when compared with hood heating. The flow of heat is upwards. Therefore, the pectoral area of the bird, which has the most important heat requirement, is directly supplied with heat. Increased thermal comfort has the added benefit of delivering more efficient food to mass output ratio. Where chicks are raised in temperatures that are too cold, mortality is increased, surviving chicks eat more feed in order to maintain body heat, and suffer stunted development. Heating can be adjusted as necessary using the under-floor heating system. New chicks, particularly in winter months, require the highest input of heat energy.

Table 4.1: Examples of Required Temperature for Broiler Rearing (BREF 2013)

Ages (days)	Indoor environment Temperature (°C)		
	Portugal	UK	France
1-3	37-38	30-34	31-33
3-7	35	32	30-32
7-14	32	28-30	28-30
14-21	28	27	26-28
Adults: 21-29	No heating	18-21	26-23
28-35			20-23
Over 35			18-20

In contrast, ceiling and wall-mounted heating methods create temperature stratification, where the warm air is concentrated at the ceiling or in different heat pockets on the house floor, meaning the whole floor is not adequately heated. Additional circulation fans may be required, which partially mitigate temperature stratification. These add to energy input and noise emissions.

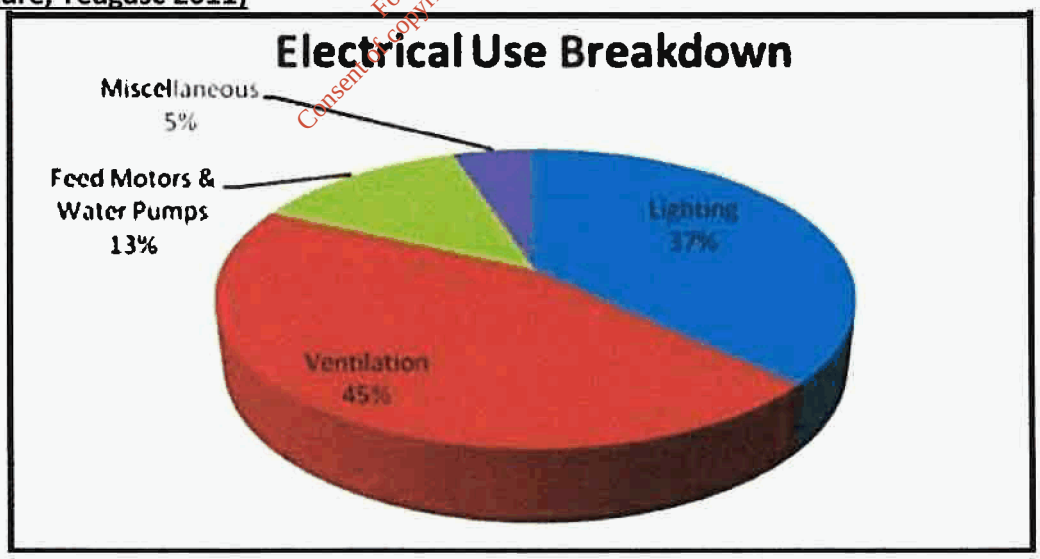
The fuel source for the heating system would be LPG. Using the figures specified in Teagasc‟s 2011 report and the SEAI‟s net calorific value coefficient for LPG fuel, the estimated fuel input requirements for the proposed development have been calculated.

Of this overall energy requirement, the required heating energy input would be 24,921 kWh per batch. This equates to 3,505.0 litres of LPG fuel per batch.

Ventilation

Ventilation is typically responsible for 45% of electrical input to a poultry house. During periods where extra ventilation is required (primarily during periods of warm weather) the ventilation systems would be automatically controlled and would be optimised for animal growth, energy efficiency, odour and noise considerations. All fans and ducts would be cleaned as part of the end of batch cleaning process.

Figure 4.2 :- Overall electrical use breakdown for poultry farms. (source: Energy Use in Agriculture, Teagasc 2011)

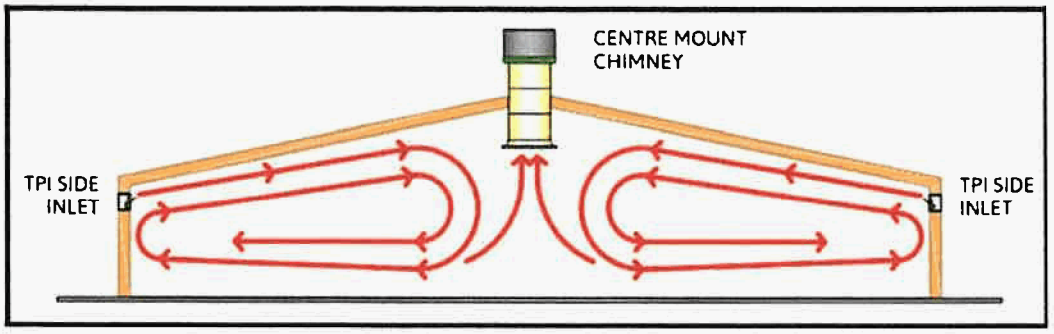


The suppliers, installers and maintainers of the ventilation systems would be the standard for the industry, such as SKOV or similar.

The SKOV ventilation system used in the house would be the conventional climate controlled automated ridge ventilation system. This consists of fans that are mounted in the roof chimneys along with wall inlets mounted along the two side walls of the house.

The system expels the stale air vertically into the atmosphere thus eliminating dust falling on the roof sheeting, which could be washed down to the gutters and foul the soil or surface water receptor. A diagram of the SKOV conventional ridge ventilation system is presented in Figure 4.3.

Figure 4.3: SKOV Conventional Ridge Ventilation System



The ventilation system used would be the low power ventilation (LPV) system. This has been designed for use in temperate climates and works in a similar manner to Fancom"s conventional ridge ventilation system. See Figure 4.4 for a diagram of the SKOV low power ventilation system. It consists of four components:

1. Air intake

Fresh air is supplied with wall inlets, type DA 1200/1211/1911. During cold periods, fresh air is directed towards the ceiling and mixed with the house air before it reaches the animal zone. In warm periods, the air is taken in the same way but is sucked into the livestock house at a higher speed. This creates air circulation around the birds and it stays cool without increased circulation to be perceived as draught.

2. Air outlet

Air exhaust is handled by DA 600 or DA 920 exhaust units. These are designed for high output with low power consumption. The exhaust units are aerodynamic and the exhaust unit and fan are optimised as a unit.

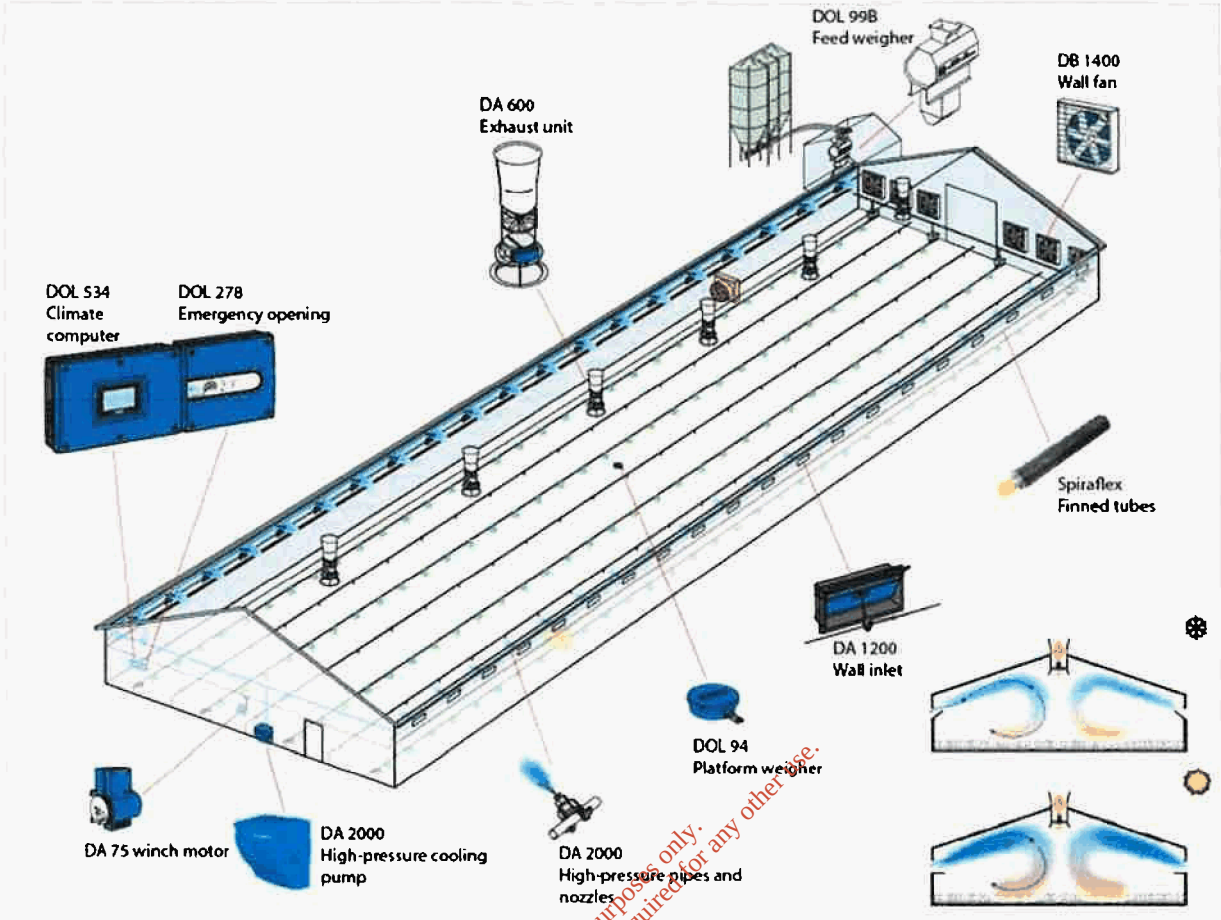
3. Controller

The LPV system is controlled by SKOV"s DOL 534/539 house computer. DOL 534/539 has a modular structure.

4. Interlinking

The open-close function of the system is handled by the winch motor DA 75, which is supplied with a complete mounting set.

Figure 4.4 :- SKOV low power ventilation system



Tanks

Wash-water generation would be minimised through the maximising of the effectiveness of the litter cleaning process and the efficient use of wash-water during cleaning. It is anticipated that a maximum of 20m3 of wash water would be produced at the site per batch.

A single 11.36m3 wash-water storage tanks would be located at the end of the proposed new poultry unit. Wash-water from the cleaning process between batches would be stored and removed from site by a registered contractor after the houses have been washed after the removal of every batch and landspread on the applicants lands lands.

The wash-water would be in compliance with the definition of „soiled water" under the Nitrates Directive Part 1, Section 4 (2), (b) whereby soiled water does not include any liquid where such liquid has either: (i) a biochemical oxygen demand exceeding 2,500 mg per litre, or (ii) a dry matter content exceeding 1% (10 g/L).

A preventative maintenance system would be in place for the wash water tanks, which would entail regular visual inspection and cleaning.

Water Provision

A maximum of 10 M3 (10,000 litres) of water would be used while washing the house. This would mean an estimated maximum annual usage for wash-water of 700 M3 (7 batches). It is estimated that 588M3 of

drinking water would be used per batch (0.2 M3/1,000 birds/day for 6 weeks housed). This would mean an estimated annual usage for drinking water of 3,822M3 (6.5 batches).

Water for stock and for washing would be acquired from a new proposed on-site deep bore well . There is also the option for a back-up connection to Stranoodan GWS in order to provide for emergency or supplementary supply of water.

Feed Silo

A new feed silo would be located on the northern corner of the broiler house on a concrete apron. It would measure 8 metres in height and 2.7 metres in diameter, with a metal finish. It is estimated that 3.8 - 4 tonnes of feed would be consumed per 1,000 birds per batch, equating to a total of 133.38 tonnes per batch and 866.97 tonnes per year (6.5 batches). Feed would be delivered to the site 1-2 times on average every week, with a total of 16 journeys per batch.

Drainage

There would be no process emissions to surface water or groundwaters from the proposed site. The only emission to water would be water run-off from the roofs broiler house and hard standing surfaces to groundwater.

The proposed poultry house is located 1.5 Km south east from Gortnawhinney Lough, separated by a local road. The site footprint would cover a total of c. 5,500 m2. This would consist of the proposed new poultry unit, existing unit, concrete apron and existing laneway.

Drainage from yard areas around the houses would pass through a silt trap and bypass interceptor, which would remove contaminants, before connection with the roof water drainage system. The sump would be visually inspected daily, emptied as necessary and hydrostatically tested 3-yearly.

All roof water & yard rain-water from the proposed development would be collected and passed through a sub-soil polishing filter located to the north-east of the sheds prior to discharge to groundwater. The storm-water drainage system is detailed in the site layout map

A drainage channel would also be provided prior to the exit onto the public road. This drainage channel would be an aco type, or similar, open channel covered by a grid, and would divert water flowing down the sloped access lane to an adjacent proposed soak-pit.

Waste Materials

Domestic refuse would be collected in a covered on-site skip and removed as necessary by a licenced waste contractor.

Packaging waste and other recyclable waste would be collected in a designated container and removed as necessary by a licensed waste contractor.

There would be expected to be a maximum operational mortality rate of approximately 1.5% of initial stock, which equates to 530 birds per batch. The carcass would be stored temporarily on-site in 240 litre or 660 litre wheelie bins and removes on a regular basis, typically fortnightly, to Michael Galligan, to their plant in Nobber, Co. Meath.

As medication is administered through the automated water system, no veterinary sharps would be produced as waste products.

Rodent Bating

It is important to control vermin, rodents and other pests on the site in order to prevent disease spread, particularly by contamination of feedstuffs. Rodent control on the farm would be managed by baiting in designated areas around the site. Pest Proof Ltd., Analore, Clones would be contracted to carrying out rodent control measures. This would involve the location of rodent baiting boxes at strategic locations throughout the site. Pest Proof Ltd. would inspect and remove boxes as necessary.
Baiting locations along with an accompanying map would be determined upon completion of the construction phase and consultation with Pest Proof Ltd..

Topsoil & Landscaping

It is planned that all of the soil that would be moved during the construction phase would be deposited and used within the site for land levelling and landscaping. The site is substantially level and minimal excavation will be required. The site is elevated but will be screened by the mature trees on site perimeter / boundary.
It will not be required to remove any hedgerows to facilitate the development.

Site Access

The site is an already established poultry operation. This access from the public road would remain if the proposed development gained planning permission. There is already a suitable hardened surface on this lanewa. Existing access from the farm laneway would be extended and improved as part of the construction phase and would be used for both the remainder of the construction and the operational phase of the development.

4.3 Production Processes And Management

4.3.1 Production Process

The objective of the proposed activities would be: the rearing of chickens specifically bred for efficient poultry meat production, from day-olds until they are removed off site to the processing facility. This must be carried out as efficiently and economically as possible. In poultry production, this is achieved by the efficient use of inputs (especially feed) and the best housing and management to sell the maximum output of lean carcass meat to the processing factory. The achievement of this objective requires:

1. Having optimal food conversion ratio (feed to lean meat conversion).

2. Having fast growth rate to slaughter weight.
3. Operating according to current Environmental Legislation.
4. To maximise output, the following are essential elements of the enterprise:
5. Good genetic potential of the stock.
6. Minimal disease status.
7. Good quality buildings and environments (i.e. optimal temperature control).
8. High quality feeds.
9. Good management and stockmanship.
10. The processes on the proposed site would consist of:
11. The bedding of the broiler house floors with straw/wood shavings;
12. The delivery of day-old chicks to the broiler house;
13. Feeding and rearing of birds for approximately six weeks at optimally controlled temperatures and with optimal amounts of feed and water;
14. Delivery of feed and LPG heating gas to farm;
15. Removal of chickens for slaughter at the end of each product batch;
16. Removal of litter (mixture of bedding material, feathers and manure) to a covered trailer for immediate removal by a CLR Co-Op licenced haulier;
17. Washing of house between batches and collection of wash-water in two underground tanks;
18. All wash-water would be land spread by the applicant after the houses have been washed after the removal of every batch;
19. Disinfecting and drying of the broiler house (1-2 weeks) in preparation for the next production batch.

The proposed house would comply with BAT housing systems for broilers as identified in the IPPC Reference Document on BAT for Intensive Rearing of Poultry and Pigs (July 2003), i.e., *"well-insulated fan ventilated house with fully littered floor and equipped with non-leaking drinking systems".*

The floor of the broiler house would be built as a solid concrete slab. The broiler chickens would be kept on litter, (straw or wood shavings), which is spread over the entire house floor area. Wet litter would be avoided both for stock health reasons and to minimise ammonia emissions. The dry matter content of the litter would be maximised by a well-insulated building, optimal temperature/humidity control and the use of a non-spill drinking system.

After removal of a batch following the 6-7 week production cycle, the floors would be brushed down, to minimise the quantity of washwater required, and litter would be collected to a covered trailer for immediate removal by a CLR Limited.

The house would then be washed with water. Wash-water from washing down of the house would be collected on-site in two wash-water storage tanks (11,360 litres) and removed from site by a registered contractor. The poultry rearing house would then be disinfected with interfarm disinfection chemical. The houses would then and left to dry for 1 to 2 weeks, at which stage the cycle would re-start.

Principal inputs would be feed, which is supplied by the processor (e.g. cereals, soya protein), water, veterinary medicines and a modest amount of energy for lighting and heating. Water for stock and for washing would be acquired from a new on-site well. The house would be insulated and temperature controlled to minimise use of heating fuel and electricity.

The outputs from the operation would be broiler chickens (primary product) and animal manure (by-product).

The traffic generated by the 35,100 broiler place activity, per 8 week batch, would be as follows;

Strict disease control procedures will be applied in the proposed development. Laws, Codes of Practice and Regulations regarding disease control are administered by the Department of Agriculture, Fisheries and Food under various EU directives. Stringent in-house procedures, monitoring and adherence to guidelines from Carton Group, Agrihealth Ltd [Veterinary Services] and Bord Bia ensure every effort is made to minimise the risk of disease outbreak. Also, the developer is familiar with the protocol in the event of a disease outbreak from his background in the agriculture industry. The Carton Group provides developers with a Code of Practice outlining various biosecurity guidelines, to ensure contamination is not brought to or from the operation – for example, details of vaccination, general hygiene, dead chickens, pest control, cleaning out and litter disposal.

The applicant will also be required to consult guidelines in relation to the use of disinfectant foot dip and cleaning agents, visitor restrictions, use of protective clothing, bird and catcher hygiene measures.

Agrihealth Ltd, Clones Road, Monaghan, works closely with the developer to minimise health risk to the flocks and provides procedures to be followed in the event of compromised health/welfare of the flock. They also provide a Health and Hygiene Programme involving guidelines on good practice in relation to Feeding, Catching, Culling, Ventilation and Temperature Control as well as guidelines on site biosecurity. Also provided is a "Terminal Hygiene Programme" and associated checklist to follow in the event of a disease outbreak, as part of a Biosecurity Programme. The development will be assigned its own Veterinary Adviser. The developer will also be required to consult "Chicken Quality Assurance Scheme - Code of Practice for Chicken Producers", Teagasc guidelines on Farm Safety and Disease Prevention and HACCP Principles for Poultry Farm Safety. Operational controls to reduce the risk of disease outbreak include.....

- Temperature Control: The temperature inside the house is strictly controlled, as it must be varied according to the stage of the birds' life cycle
- Ventilation checks and control
- Regular inspection of Feedlines and Drinkers
- Regular inspection of Appearance of Birds
- Regular inspection of Litter condition
- Strict visitor control- including the use of a visitor book, adequate protective clothing and footwear, disinfectant foot dip and hand wash where necessary.
- Rodent Control Programme- as described on the Flora and Fauna Section.

Strict feeding and drinking rituals are adhered to, and the condition of the birds is inspected at various intervals on a daily basis. Dead birds are stored in sealed containers and will be taken by Michael Galligan. The developer reports anything suspicious to Michael Galligan and Agrihealth Ltd, who send a vet to inspect the situation. The Department Veterinary Office is notified immediately of any matters arising, and all incidents are logged by the developer. In the event of a Class A disease outbreak, the Department of Agriculture takes

control of the site and associated surrounding lands and makes subsequent decisions regarding the future of the development, all determined by the extent of the outbreak.

In conclusion, given the stringent controls, procedures and checks proposed and regulated for this type of development, the new development would be adequately prepared for any disease outbreak among the flock.

Table 4.5: Estimated traffic journeys per 8 week batch

	Unit	Volume/Weight Transported per batch	HGV Journeys	Car Journeys
Litter Delivery	Tonnes	60	2	
Day Old Delivery	-	-	1 - 2	
Operator Visits	-	-		42
Waste / Carcass Collections	-		6	
Veterinary/DoAFM Visits	-	-		1-2
Feed Delivery	Tonnes	400	16	
LPG Heating Fuel Delivery	M3	9	1 - 2	
Finished Broiler Collection	Tonnes	182	6	
Litter Removal	Tonnes	246	8 - 9	
Wash-water removal	Tonnes	22	1	
TOTAL JOURNEYS			41– 44	43 - 44
WEEKLY AVERAGE			5.1– 5.5	5.4

It should be noted that many of the delivery services provided for above would occur in tandem with deliveries to other poultry units in the area and would not add to the existing traffic on local roads. Therefore, the above figures would be considered conservative (i.e. overestimated). The majority of HGV journeys would occur during the two week change-over periods between batches.

Management of Broiler Litter and Soiled Water

Broiler litter is composed of a mixture of bedding material, feathers and manure. Manure quantity, composition and volume are influenced by the species, age, diet and health of the birds and by farm management practices.

European Union (Good Agricultural Practice for Protection of Waters) Regulations 2014 (S.I. 31 of 2014) estimates the volume of manure/litter produced (@ 30% dry matter) in poultry operations to be 0.81M3/week/1,000 birds. However, at the date of removal, poultry litter is typically 60% dry matter, which equates to 0.41 M3/week/1,000 birds @ 60%DM. The following table calculates the resultant volumes of litter from the proposed development;

Table 4.2 Estimated litter by-product production

	Manure production rate	Weeks housed	Manure production
Units	M3/week	Week	M3 ≈ tonnes
Per Batch	28.33	6	170
Per Annum	28.33	39	1,105

The enterprise on the site would produce broiler chickens, with litter as a by-product. The only litter to be stored on site would be the litter on the broiler house floor during each batch, which would be removed from site between each production cycle.

All despatches of litter from the site would be in a covered trailer, loading to be conducted on the concrete turning apron to the front of the proposed broiler houses.

All wash-water, approximately 20 M3 per batch, would be removed from site by the applicant for land spreading after the house has been washed after the removal of every batch. Removal of wash-water would be documented as appropriate.

The use of poultry litter from this installation as an organic fertiliser is required to be in accordance with the terms prescribed in Fertilisers and Soil Improvers Order (S.I. 253 of 2008) and the Nitrates Regulations (S.I. 31 of 2014).

The system for the management of broiler litter from this unit and for the lawful transfer of litter to external parties who seek a supply from the farm would consist of:

- Where a site is regulated by the EPA under an IED licence, register litter and soiled water as a by-product under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. 126 of 2011).

- CLR Limited would be collecting the poultry litter from the proposed new development. Poultry Litter would be delivered to a number of farms for land spreading outside of the county

- Record all transfers of by-product from the farm/holding as is required by Article 23(1)(g) in S.I. 31 of 2014 and maintain the records for relevant inspectors; and

- Submit details of annual supplies of poultry litter to the Department of Agriculture, Food and the Marine.

- It is prescribed in Article 16 of SI 31 of 2014 that nutrient management planning is the responsibility of

each occupier of a holding. This would apply should the applicant decide to supply litter to farmers for landspreading or should he decide to spread litter on his own farmland.

4.3.2 Management Of Wastes

Management of Wastes Arising from the Proposed Operation

Measures to prevent any significant effect of the proposed installation and the proposed activity on environmental parameters would be directed towards ensuring that the systems for collecting wastes and removing them from the site for appropriate treatment in authorised waste treatment installations would be adequate for that purpose.

Waste materials generated would be collected and transported from the site by appropriately authorised waste contractors for disposal, recovery or recycling in appropriately authorised installations.

Implementation of the control measures proposed would ensure, in so far as it is possible, that significant adverse effects on environmental parameters would not occur and that accidental emissions are unlikely.

The expected waste materials that would result from the operation of the proposed development are set out in the table below. All waste materials would be transferred by a licensed haulier where appropriate.

Table 4.3 Expected waste generation and Disposal

WASTE MATERIALS	QUANTITY PER YEAR	ULTIMATE DESTINATION
Dead animals	Approx. 1,500 animals – primarily chicks	Michael Galligan
Veterinary –bottles Packaging Rodent waste	Combined with domestic refuse Approx. 150 kg ≤1kg	Civic Bring Centre Civic Bring Centre Pest Control

Dead animals

Dead animals and animal tissues would be accumulated in a strategically placed sealed water-proof steel container on site for collection at two-week intervals, or as appropriate for transport to an authorised rendering facility by an authorised waste collector, Micjhael Galligan. It is expected that stock mortality would be approximately 1,500 per batch, 1.5%.

Packaging Waste

Packaging (paper and cardboard) derived from the outer covers of various inputs such as veterinary medicine products, and minor feed ingredients would be the only "domestic-type" waste to be disposed from the site. This would be collected in a covered skip to await removal by a licensed waste contractor. It can be consigned for recovery to the local collector of recyclables.

Rodent Waste

Pest Control would carry out all baiting and removal from the site. Rodent waste would not be expected to be in excess of 1 kilogram per year.

Construction Wastes

All topsoil excavated during site preparation works would be deposited and used within the site for land levelling and landscaping. It is not intended to remove any soil/earth from the site. The construction contractor would be required to remove any construction wastes other than soil from the site for disposal or recovery in authorised sites.

5.0 Alternatives

5.1 Examination Of Possible Alternatives

Schedule 6, Article 94 of the Planning and Development Regulations 2001 requires that:
Information to be contained in an Environmental Impact Statement shall include –
(1d) an outline of the main alternatives studied by the developer and an indication of the main reasons for his or her choice, taking into account the effects on the environment.

5.2 Alternative Sites

A review of Mr. Finnian O' Hartes property was undertaken prior to selection of this site and it was considered that no appropriate site was available. The option of acquiring alternative lands was explored and, of the sites reviewed, it was considered that the proposed site was the most appropriate location for the construction of a broiler rearing operation for the following reasons:

- Construction of an intensive agriculture unit at an isolated location is current best practice for biosecurity. Risk due to locating closer to existing farm enterprises would come in the form of a heightened risk of transmission of bacterial infections such as Salmonella and Campylobacter which can be extremely detrimental in intensive farming settings. Bord Bia Poultry Products Quality Assurance Scheme requirements state the following;
- "The site must be isolated from other farm/poultry enterprises and protected by a physical barrier (i.e. a 2m perimeter fence) that precludes entry of other farm animals."
- The site for the proposed poultry house is located adjacent to an existing poultry unit where all services and hardened areas are already established. The existing agricultural entrance can also
- The undulating profile and treelined/hedgerow character of the area minimises the locations from which the proposed development can be viewed and provides ample opportunity for effectively blending the proposed development into the landscape.
- The proposed location is located approximately 1km from similar third-party developments which would currently be availing of similar trade services, (litter by-product collection, fuel, waste and pest services). The rural area would also provide sufficient farmers to ensure a demand for soiled water from the site, and litter fertiliser should this be provided to farmers in the future of the development.
- The existing agricultural access onto the public road can be used.
- The proposed site has good availability of services, with power lines and public water supply in the area.

The proposed site would allow for biosecurity quality management and animal welfare concerns to be met while maintaining supply to market as operations transfer to the new proposed broiler house.

5.3 Alternative Layouts

Best practice for intensive poultry sheds is to orient them parallel to the prevailing wind. This minimises heat loss and optimises energy inputs. The layout of the site was considered for the proposed development to minimise the operational cost of the development and to consider animal welfare. Minimization of visual impact was also considered in the site layout, orienting of the site to be visually screened low lying nature of

the site. However, the footprint of the proposed site is subject to a number of physical constraints such as land-take and the utilisation of existing landscape screening. The proposed layout and designs were selected after alternatives were thoroughly researched against a background of extensive experience in the design and operation of poultry units. The design of the new development takes into account European Communities (Welfare of Farmed Animals) Regulations (S.I. 311 of 2010) as amended. These regulations lay down standards for the protection of poultry kept in intensive or other systems of production.

5.4 Alternative Process Considered

The objective of the activities that would be carried out at this facility would be: the rearing of birds specifically bred for efficient poultry meat production, from day olds until they are removed off site to the processing facility. This must be carried out as efficiently and economically as possible to sell the maximum output of lean carcass meat to the processing factory. The proposed process would be to the industry standard, conforming to the requirements of best practice guidelines provided by the flock supplier, Bord Bia, the Department of Agriculture and the Environmental Protection Agency.

5.5 Alternative Management Of Litter/Manure By-Product

CLR Ltd. would be collecting the poultry litter from the proposed new development. CLR Ltd is a registered contractor with the Department of Agriculture, Food and Marine for the transport of animal by-product DAFM Reference no: CLR. Poultry Litter would be delivered to a number of mushroom composting facilities. Significant demand for this poultry litter it is intended that the additional litter generated on this poultry farm will be accommodated. This is therefore seen as the most suitable re-use of the poultry litter.

5.6 "Do-Nothing" Alternative

The "do-nothing" alternative consists of retaining the existing poultru development and overgrown low lying area without the proposed construction of the poultry unit. The "do-nothing" alternative would deny the locality the opportunity to gain from the improved economic benefits associated with the operation of the facility – namely the employment of construction workers for 4-5 months, continued employment of 1 - 2 full time broiler house operators and approximately eight on-going contractor jobs, which would feed into the local economy. The "do-nothing" alternative would deny local farmers of a potential valuable source of fertiliser. The former legal definition of organic fertilisers as a "waste" requiring disposal has changed and has been redefined as a by-product, indicating that this product is recognised as an economically valuable resource produced by the intensive agriculture industry. Due to increasing costs for chemical fertilisers, poultry and piggery organic fertiliser by-products are becoming an essential part of the agricultural industry in Ireland, particularly in tillage. Higher transportation costs in the future will make the availability of local organic fertiliser by-product producers an asset to local agri-business. This is particularly true of poultry litter, which is easily handled and high in nitrates, and piggery slurry, which is high in phosphates. An assessment on any potential impacts upon the integrity of the Natura 2000 network, residential amenity and visual amenity has been carried out. As discussed in further detail in the following sections of this statement and its attachments, the level of risk under these headings and to the environment in general would not increase significantly as a result of the proposed development. This is due to the proposed building design, operational and managerial standards, along with mitigation measures to be employed.

6.0 Environmental Impacts

This section of the EIAR describes the likely significant environmental impacts arising from the proposed construction of a new poultry house with a total capacity of 50,000 places for broiler chickens, A new feed silos and all ancillary site works and services at Creevaghy Td., Clonesn, Co. Monaghan. Where possible, design measures have been included to reduce or eliminate possible impacts. Where this has not been possible, mitigation measures have been suggested to reduce or eliminate the identified impacts of the proposed development.

6.1 Interactions And Inter-Relationships

In line with requirements of EC Directive 85/337/EC (as amended) and the Planning and Development Regulations 2001, any interactions/inter-relationship between the various environmental factors was also taken into account as part of the EIS scoping and assessment.

Where a potential exists for interaction between two or more environmental topics, the relevant specialists have taken the potential interactions into account when making their assessment and where possible complementary mitigation measures have been proposed. These interactions are discussed and summarised in **Table 6.1.**

To fully explain what is meant by an inter-relationship or interaction between environmental topics, an example is provided below:

Noise can interact with a number of environmental aspects. Noise issues primarily feature under the heading of Human Environment and most of the standards and guidelines on noise relate exclusively to human beings. However, noise can impact on terrestrial fauna such as birds and material assets in the form of commercial livestock and so it must also be taken into account as part of the any assessment.

6.2 Summary Of Potential Interaction / Inter Relationships

In line with requirements of EC Directive 85/337/EC (as amended) and the Planning and Development Regulations 2001, the interactions/inter-relationship between the various environmental factors was also taken into account as part of the EIS scoping and assessment. Where a potential exists for interaction between two or more environmental topics, the relevant specialists have taken the potential interactions into account when making their assessment and where possible complementary mitigation measures have been proposed. These interactions are discussed and summarised in the table below

To fully explain what is meant by an inter-relationship or interaction between environmental topics an example is provided. Noise can interact with a number of environmental aspects. Noise issues primarily feature under the heading of Human Environment and most of the standards and guidelines on noise relate exclusively to human beings. However, noise can impact on terrestrial fauna such as birds and material assets in the form of commercial livestock and so it must be taken into account as part of the agricultural and ecological assessment also.

Table 6.1 - Summary of Potential Interactions/Inter-relationships

SUBJECT	Interaction with	Interaction/inter-relationships
Air	Human beings	Air quality is not a concern both at the local community level and on a broader national/global scale. In terms of the proposed poultry housing, dust (both during the construction phase) and its impact on the communities and residents adjacent to the poultry housing will be the main issue.
	Flora & Fauna	Vegetation can act as a purifier for air in absorbing CO2 and giving out oxygen. Dust could affect fauna during construction phase.
	Water	No interactions/Inter-relationships
	Soils	Dust from exposed soils during construction could cause deterioration of air quality in the immediate vicinity of the development
	Climate	Local heating of air in the poultry houses of embankments could cause microclimate change in those areas.
	Material Assets	No interactions/Inter-relationships
Noise	Human Beings	Sensitive receptors located close to the proposed extension may experience some increase in noise particularly during the construction stage.
	Flora & Fauna	Construction proposals could result in significant noise disturbance which may impact on the birdlife currently using the area.
	Material Assets	No Interactions/Inter-relationships
Landscape	Human beings	The proposed development will have a minor actual and perceived landscape appearance in the area and directly impact on the local community and adjacent residences.
	Flora & Fauna	A small loss of hedgerow will occur and these are very important as wildlife corridors for animals. Improvement of the remaining hedgerow will be conducted post development
	Water	No Interaction/Inter-relationships
	Soils	Movement of significant quantities of soil from one area of another can affect the appearance of the landscape. This will be necessary as part of the construction when material is removed from the construction zone.
	Material Assets	No interactions/Inter-relationships
Flora & Fauna	Human beings	There will be minor impact on the fauna and flora of the area as they suffer habitat loss and dislocation due to the proposed scheme.
	Water	During construction there is a minor risk of disturbance of drainage channels need special precautions to avoid disturbance of sediments with consequent effects on fauna.

	Soils	Stabilisation methods for soft soil area could alter the pH balance with consequent change in flora cover and species of fauna supported.
	Climate	No Interactions/Inter-relationships
	Material Assets	Land take will cause some local loss of range area for terrestrial fauna
Water	Human Beings	No Interactions/Inter-relationships
	Soils	Rainfall runoff waters could cause deterioration of water quality of streams
	Material Assets	No Interactions/inter-relationships
Soils	Human Beings	Dust from exposed soils during the construction period can cause dust nuisance if not properly mitigated.
	Material Assets	Extraction, movement and placing of soils will have an energy input requirement.
Climate	Human Beings	No interactions/Inter-relationships
	Material Assets	No Interactions/Inter-relationships
Material Assets	Human Beings	Current land-use will be permanently altered including the loss of ecological habitat and farmland.

Part 2 (Second Schedule) of the above mentioned regulations requires that the interactions between human beings, flora and fauna, soil, water, air and climatic factors, landscape, material assets, cultural heritage, architectural & archaeological must be assessed.

The aspects of the environment likely to be significantly affected by the proposed development have been considered in the proceeding chapters of this EIS. In order to further demonstrate the areas in which significant interactions occur, a matrix has been prepared and is included below (Fig 6.2).

Where any environmental element is on the top row of the matrix (The Receptor) is likely to be affected in any way by any element in the left most column (The Impactor), which contains the list of environmental aspects most likely to be significantly affected by the proposed development

Fig. 6.2 - Matrix Indicating Inter-relationships between EIA Factors

	Soil	Water	Air & Climate	Landscape & Visual	Noise	Traffic
Soil		Neg	Neg	N/A	N/A	N/A
Water	Neg		N/A	N/A	N/A	N/A
Air & Climate	Neg	N/A		N/A	Neg	Neg
Landscape & Visual	N/A	N/A	N/A		N/A	Neg
Noise	N/A	N/A	N/A	N/A		Neg
Traffic	N/A	N/A	Neg	Neg	Neg	
Flora & Fauna	Neg	N/A	N/A	N/A	Neg	Neg
Human Beings	Neg	N/A	N/A	N/A	Neg	Neg
Cultural Heritage	N/A	N/A	N/A	N/A	N/A	N/A
Material Assets	N/A	N/A	N/A	N/A	N/A	N/A

Neutral	N
Positive	Pos
Negative	Neg
Not Applicable	N/A

7.0 Human Environment

This section of the Environmental Impact Statement deals with the potential effects of the proposed scheme on human beings.

These effects have been grouped into:-

Air Quality Impacts
The impact of emissions to air generated by the proposed development.

Odour Impacts
The impact of odours generated by the proposed development on nuisance odour in the general vicinity has been assessed.

Noise and Vibration Impacts

The impact of noise and vibration generated by the proposed development on noise and vibration levels in the general vicinity has been assessed.

Landscape and Visual Impacts

The impact of the proposed development on the visual amenity of the landscape has been assessed.

While human beings interact in some way with every aspect of the environment; the above interactions are considered the most significant in this case.

7.1 Air Quality

7.1.1 Introduction

This air quality study identifies, describes and assesses the impact of the proposed a new poultry house with a total capacity of 50,00 places for broiler chickens, a new feed silo and all ancillary site works and services at Creevaghy, CLones, Co. Monaghan.

Particular attention has been given to sensitive receptors, such as residential areas and to the extent of the exposure of these receptors to airborne pollutants derived as a result of the development. This assessment was prepared in accordance with the EPA document – Guidelines on the information to be contained in an Environmental Impact Statement (2002).

7.1.2 Air Emissions

Air quality is variable and subject to significant spatial and temporal variation. In relation to spatial variation in air quality, concentrations generally fall significantly with distance from major sources. Thus, residential exposure is determined by the location of sensitive receptors relative to major sources in the area. Temporally, air quality can vary significantly due to changes in traffic volumes, meteorological conditions and wind direction.

The main potential sources of air pollutants from the proposed development would be the digestive processes, litter of the broilers and the burning of fuel for heating.

Emissions from digestive processes and manure of broilers include primarily ammonia, nitrogen oxides and methane.Due to the high standard of design of the proposed house and requirement for maximum production efficiency, the burning of fuel for heating would be optimally balanced between ensuring optimal growth temperatures for broiler rearing and minimisation of fuel input. Therefore, this would ensure associated air emissions are minimised.

7.1.3 Dust

Any significant dust generation, dispersion and deposition operational activities are considered an environmental nuisance for sensitive receptors in the vicinity of a development.
Broiler dust is comprised of feather fragments, faecal material, skin debris or dander, feed particles, mould spores, bacteria, fungus fragments and litter fragments.

Dust levels in the unit vary with age of flock, the number of birds and the season of the year. Dust and gas concentrations increase with flock size and with flock age. Inside dust levels are higher in the winter because ventilation is decreased to conserve heat.Dust levels rise in the barns during clean-out and when birds are moved. Litter tilling can result in high levels of dust and odour in the barns.

7.2 Description Of Baseline Air Quality

7.2.1 Site Location And Access

The proposed development will be constructed in the townland of Creevaghy, Clones, Co Monaghan.The development site is located c. 3.5km North of the town of Clones, Co Monaghan, 5.0km South of the village of Smithborough & 12km South of the county town of Monaghan. Grid reference X – 252811 & Y – 327916 relate to this development. The proposed development will be on a brown field site. Mr. O' Harte has substantial experience in the poultry industry and already operates a broiler house on this site.

7.2.2 Existing Sources Of Air Emissions

The town-land of Creevaghy is a rural area. The dominant existing sources of air pollution in the area would be local road traffic, private residences and emissions from agricultural activities, such as housing of animals and spreading of organic fertilisers. However, the combined effect on air quality would be expected to be low. Dust would also be generated on local roads and from agricultural activities, particularly during dry periods.
The EPA has been monitoring national Air quality from a number of sites around the country. This information is available from the EPA"s website.

7.3 Impacts

7.3.1 Air Quality

Emissions to the atmosphere from the proposed development would consist of warm air from the ventilation system in the buildings and odour and gas volatilisation from the organic manure. Emissions of odour, dust (PM), ammonia, methane and nitrogen oxides would occur from the digestive processes and litter of the broilers
The annual production of air quality pollutants at this farm would be minor in a regional context.

Increased emissions may at times be associated with loading of poultry and/or the loading of poultry litter. The potential impact to air quality during the loading of poultry litter is deemed to be a minor issue as this occurs once per batch, after the removal of a production batch, which occurs after each 8 week cycle and takes approximately 6 hours.

Table 7.2 details the estimated emissions associated with the proposed 35,100 place poultry operation at Creevaghy, at 6.5 production cycles annually, with an average of 42 days per production cycle. The figures for ammonia, methane and nitrous oxide were obtained using the EPA"s AER PRTR Intensive Agriculture Emissions Calculation Tool.

Table 7.2: Proposed annual emissions of Ammonia, PM, Methane and Nitrous Oxide

Emission Parameter	Proposed (T (Total) KG/Year)
Ammonia (NH3)	7,293
Methane (CH4)	7,826
Nitrous oxide (N2O)	755

The fuel source for the heating system would be LPG. Using the figures specified in Teagasc"s 2011 report and the SEAI"s net calorific value coefficient for LPG fuel, the estimated fuel input requirements for the proposed development have been calculated. Of this overall energy requirement, the required heating energy input would be 59,640kWh per batch. This equates to 8,963 litres of LPG fuel per batch.

Table 7.3 Estimated annual emission from LPG fuel

Estimated Mass Balance of Emissions (CO2)		
LPG fuel	kgCO2/kWh	0.229
Mass Emission per batch	kgCO2/batch	13,658
Mass Emission per annum	kgCO2/year	88,777

The proposed level of annual production of air quality pollutants at this farm would be typical of the industry and would be anticipated to have no significant to slight air quality impacts in the regional context. Air quality in the vicinity of the development would be expected to continue to be good and would remain dominated by external traffic and agricultural sources within the region.

The cumulative impact on air quality of the proposed development with other intensive agriculture operations in the area is not deemed to be significant in the context of the existing agricultural operations in the area and the current "good" status of air quality.

As burning of fuel would be minimised and would use clean fuel sources (LPG), combustion products such as carbon monoxide, NOx, SOx and particulate matter would not be emitted in significant.

7.3.2 Dust

Dust levels generated by the development during the operational phase would be expected to be negligible. There are several sources of the enrichment of airborne particulate matter within livestock buildings. The feed itself and the feeding process may contribute to 80 to 90 % of the total dust generation. Bedding materials like straw or wood shavings can also have extraordinary effects on the particle concentration in the livestock air. Depending on the type and the amount of litter and its spreading, its contribution can be between 55 and 68 % of the total airborne particulates observed. The animal skin, fleece or plumage of housed animals and their faeces and urine cause dust emissions which may contribute up to 12 % of the total dust amounts released within livestock buildings. To a lesser extent, particles may originate from friction against floors, walls and other structural elements and from the air intake into the house. Animal activity may also lead to re-suspension into the livestock house atmosphere of dust already settled (re-entrainment).

The level of dust arising within the houses would be controlled primarily through feed and litter selection as a matter of animal husbandry to promote an optimal growing environment.

Minimal levels of dust would be expected to be generated during the construction phase. Due to the distance of the footprint from public roads, the majority of such dust would only be evident on the site and would not be expected to impact on dwellings and other buildings in the vicinity of the site, as these are situated far enough from the operation so as not to be effected by any dust generated.

It would be expected that traffic exiting the proposed construction site would result in increased levels of dust in the area of the exit onto the public road. Periodic rainfall would also mitigate dispersal of dust generated by site traffic.

7.4 Mitigation Measures

7.4.1 Litter Storage And Transport

There are a number of measures that would be taken to mitigate potential emissions associated with intensive broiler production. The use of appropriate bedding material and feed would minimise the potential quantity of dust generated. Stocking densities would be appropriate for the size of the house and nature of the operation. This would also ensure the standard of stock health is maintained to a high level, which would minimise carcasses.

In addition, good housekeeping practices would be employed throughout the site and would be required to be followed by contractors.No litter would be stored on site long-term, aside from within the house during each production cycle, minimising the emission of gasses within the site area, such as ammonia.

Upon the completion of each production cycle and removal of stock, litter from the shed floor would be collected in a covered container. Litter transport would not constitute a major potential source of emissions as it would take place once per 8 week cycle.

In addition, it would take no more than 6 hours to completely empty the litter from the house, therefore, this process, which would give rise to the most atmospheric emissions, would be short-lived.

7.4.2 Dusting

During operational phase of the proposed poultry houses, all efforts would be made to ensure no dusting occurs. Should a complaint be received, an investigation will be commenced.

Good housekeeping practices would be observed throughout the operation.

- Ensuring that pelleted feed is high quality. "Fines" in feed can contribute to higher dust levels.
- The feed used on this unit would be formulated to the optimum crude protein levels, thus minimizing nitrogen excretion. This would keep ammonia emissions from the ventilation system and from manure transport to a minimum.
- Automated ventilation would be used which ensures increased dust dispersion which minimises nuisance deposition.

- Ventilation ducts would be cleaned as part of the cleaning procedure at the end of each batch, preventing a build-up of dust.
- All machinery and equipment would be maintained to ensure efficiency of fuel use and minimisation of air emissions.
- Vehicle speeds within the site would be controlled to prevent the generation of dust.
- Where necessary, the laneway and the section of public road in the vicinity of the site entrance would be cleaned of dust.

7.5 Construction Impacts And Mitigation

The primary potential nuisance associated with construction activities is dust. Excavations and earth moving operations may generate quantities of construction dust, particularly in drier weather conditions. The extent of any construction dust generation depends on the nature of the construction dust (soils, sands, gravels, silts etc.) and the construction activity. The potential for construction dust dispersion depends on the local meteorological conditions such as rainfall, wind speed and wind direction.

7.5.1 Impacts

Emission of air pollutants would typically arise from the operation of plant onsite and emissions from delivery vehicles. It is anticipated that air emissions from these sources would have a negligible impact upon air quality in the area in the context of emissions from traffic on nearby roads.

It is proposed to use locally sourced rock and concrete for the supply of rock fill and processed aggregate, where practical. Earthworks during construction are a potential source of dust pollution. Minimal levels of dust would be expected to be generated during the construction phase given the confined area of earth-works and the short term of the construction phase.

The issue of construction dust dispersion may be exaggerated with vehicles transporting sand/gravels/concrete/etc. to and from the site having the potential to cause an environmental nuisance to use of the local road.

Construction dust control is a common part of construction management practices. The effect of construction activities on air quality, in particular construction dust, would not be significant following the implementation of the proposed mitigation measures outlined below.

Periodic rainfall, which is common in Ireland, would also mitigate the dispersal of dust generated by from the site.

7.5.2 Mitigation

It is proposed to adhere to good working practices and dust mitigation measures to ensure that the levels of dust generated would be minimal during the construction phase and are unlikely to cause any significant environmental nuisance. Top soil would be used in the levelling off and landscaping of the site. All exposed soil within the site would be planted with grass and semi-mature trees within two weeks, or as soon as practically possible, upon completion of the construction phase. This would promote rapid stabilisation of soils. Hard surface roads shall be swept to remove mud and aggregate materials from their surface.

Any un-surfaced roads shall be restricted to essential site traffic only. Public roads outside the site shall be regularly inspected for cleanliness, and cleaned as necessary.

Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind. Should construction activities occur during particularly dry weather, a water misting system should be installed to reduce the level of dust traveling offsite.

Vehicle engines shall be properly maintained so that they do not discharge excessive quantities of visible smoke likely to result in a local nuisance.

7.6 Residual Impacts

Upon completion of the development, it is not anticipated that it would result in any significant residual impacts to the air quality of the area. Assuming the measures outlined in Section 7.5 are put in place, it is not anticipated that there would be significant impacts to air quality arising from the cumulative effects of the operation of the proposed development in combination with other developments in the area.

8.0 Odour

8.1 Introduction

This section assesses the potential impact of the proposed development at Creevaghy, Co. Monaghan to the surrounding environmental in terms of odour. In particular, this section identifies the potential odour impacts on residential locations (sensitive receptors) in the vicinity of the proposed development.

It also outlines measures to be implemented to mitigate the potential environmental impacts of the development through odour.

The potential risk of odour impacts from the proposed development on the nearby odour sensitive locations would be determined by the following:

- The design of the proposed poultry shed,
- The distance from the nearest odour sensitive locations,
- The topography of the area surrounding the proposed broiler operation,
- Management of operation, including:
- Specification and management of ventilation system, Specification of feed,
- Stocking densities,
- Litter management standards and practices, Management of carcasses and other wastes,
- Awareness of odour considerations among management and operators,
- General housekeeping and hygiene standards inside and outside poultry shed.

The highest risk of odour emissions would be associated with the loading of poultry and poultry manure at the end of each batch.

Although odour generated in the operation may be more detectable at certain times, as partly influenced by prevailing weather conditions, the townland and surrounding townlands are well accustomed to occasional odour from agricultural developments. With this in mind however, odour levels generated do not cause significant nuisance in the surrounding area, as the operation is located in a predominately agricultural area and over 172.0 m distance from any the closest dwelling other than the developer's.

The poultry houses will be cleaned out between batches, approximately 6 times per year, and the cleared out litter and manure taken away by CLR Ltd. for composting use. Wash water from the cleaning of the house will be stored in a precast underground storage tank, 2500 gallon (11.36 m3) capacity at the end of each house. The proposed washings tanks will be precast concrete factory produced and not block built on site. Additionally, as the manure is scraped out of the houses with the litter between batches, the level of manure in the wash will be negligible.

The following measures will ensure little or no impact from odour on the surrounding environment: Good practice in terms of.....

- Poultry house temperature control
- Carcass storage and removal from the site

- Thorough cleaning out of the poultry house between batches
- Regular yard cleaning
- Strict adherence to good land spreading practice

Such measures will be taken by the developer in an effort to ensure the proposed poultry houses do not cause a nuisance in the surrounding area.

8.2 Existing Odour Climate

There are no significant dominant odour sources in the region as the local area is rural. Significant odours would generally be present during the slurry spreading season associated with the agricultural industry in the area.

Gortnawhinny Lough is located approximately 1.5 km to the east of the proposed development

8.2.1 Discussion of Potential Odour Impacts

Apart from the design and management of the proposed facility, site location and weather would play the most important role in determining the risk of odour impacts at the site. The setback distances to surrounding odour sensitive locations coupled with the surrounding topography also serve to mitigate potential nuisance odour impacts.

The principal time for a risk of odours from the proposed site would be during the removal of birds and litter from the site. This operation would occur over 1 day, once per batch, at the end of the each 8 week batch and would occur during normal working hours.

It is anticipated that the proposed development would comply with EPA guidelines for odour from intensive agriculture. Significant emission of odours during normal operations would only be expected in the event of abnormal conditions, such as poor housekeeping or insufficiently frequent waste pick-ups.

8.3 Mitigation Measures

Odour emissions from the site would be minimised through implementation of the following measures:-

- Litter management to be kept to a high standard.
- Adequate use of litter bedding material.
- Stocking density to be maintained at design level.
- Quality ventilation due to computerized/automated control.
- Quality house design with state of the art insulation standards.
- Minimisation of carcasses by keeping the flock health to the highest possible standard.

Any dead birds would be stored in a covered leak-proof container awaiting collection by Michael Galligan.

9.0 Noise

9.1 Introduction

The potential risk of noise impacts from the proposed development on the nearby noise sensitive locations would be determined by the following:

- The design of the proposed poultry shed, locating of equipment,
- The distance from the nearest noise sensitive locations,
- The topography of the area surrounding the proposed broiler operation,
- Management of operation, including:
- Maintenance of feed, heating and ventilation systems, Appropriate timing of operations,
- Awareness of noise considerations among management and operators,

The highest risk of noise emissions would be associated with the construction phase, the loading of poultry and poultry manure at the end of each batch and malfunctioning equipment.

9.2 Existing Noise Climate

While the proposed development is in a rural area, the influence of traffic from the local roads during the daytime was the dominant noise source in the area.

Additional occasional noise occurs from the operation of agricultural vehicles on local roads and surrounding farmlands. This noise source would be particularly notable during spring and autumn.

Potential Maximum Operational Phase Noise (Vehicles & Ventilation)

In order to predict the highest likely risk of impact from the operation of the farm during its operational phase, noise sources likely to contribute to the highest noise levels onsite at any one time were included in this assessment.

Farm vehicles (tractors) typically generate noise levels of 78 – 95 dBA, depending on their size. The source noise spectrum of a large agricultural tractor has been used in this assessment, with a single figure noise rating of 94dBA, relating to noise from such a tractor operating at high revolutions.

Maximum noise levels at the site, from agricultural machinery and delivery trucks, are expected to be equivalent to noise levels currently in place during the operation of large agricultural machinery and trucks within the existing green field site. However, the frequency of these vehicular noise sources would be expected to increase.

Day-time noise levels arising at noise sensitive locations (in particular due to vehicle noise), is anticipated to be -1.3 dBA to -8.6 dBA below existing background noise levels. Therefore, it would be expected that the maximum operating noise at the facility would be audible at the closest noise sensitive locations, but only intermittently dominant during periods of low background noise.

It should be noted that, as these maximum noise levels are predominantly due to noise from large delivery and agricultural vehicles, it is anticipated that such noise levels would only occur on a few days per month, and only for short periods of such days.

It is recommended that potentially noisy operational activities, such as the removal of litter and the delivery of feed, are restricted to normal working hours (08:00am to 18:00pm Monday to Saturday) during the operational phase of the proposed project.

Any operations which, by necessity, are required to be carried out outside of these times should be notified to relevant bodies, i.e. the local council or the EPA, and any potentially affected local residents, in good time and prior to specified works commencing. It should be noted that noise from agricultural vehicles and delivery/removal of materials from farms is a normal part of rural life and thus the subjective impact of noise from this source would not normally be expected to result in nuisance. Agricultural and other vehicle noise could result in disturbance where the engine noise is abnormal, particularly loud, occurring over a long period of time, occurring at unsociable hours or the activity being conducted is perceived to be unnecessary.

There is not predicted to be a significant increase in maximum noise levels generated onsite as a result of the proposed development during the operational phase of the project, as maximum noise levels from vehicles would be similar to those already in place at the site.

Therefore, due to the proposed restricted operation times for potentially noisy operations and such noise sources being typical in this environment, it is predicted that there would be an infrequent slight noise impact during peak noise periods at the proposed development.

Potential Maximum Operational Phase Noise (Maximum Ventilation Only)

The proposed house would be fitted with 10 ventilation fans each and controlled by a climate control system. The climate control system would monitor the internal air temperature of the house and modulate the speed of the fans.

Day-time noise levels arising at noise sensitive locations due to the operation of ventilation fans at maximum speed, is anticipated to be -10.1 dBA to - 17.4 dBA below existing background noise levels.

It is generally accepted that a predicted noise rating level which is 10dBA or more below the existing background L90 would not be audible at a receiver location.

It should also be noted that, as the fans are temperature controlled dependent on the external

Poultry sheds are typically kept to a high temperature, relative to ambient air temperature. Fans on poultry sheds would predominantly be used for the introduction of fresh air to the sheds and would not normally be required to regulate indoor temperature. Therefore, these fans would normally be operating at a steady state and would only operate at maximum during the hottest periods of summer days.

It is likely that ventilation fans would only be operating at maximum from May to September, for a number of days during these months and only for short periods of these days.

The source noise spectrum specification for a group of twelve ventilation fans, operating at maximum, has been used in this assessment, with a single figure noise rating of 87dBA.

It has been predicted that, during these infrequent periods of maximum ventilation noise from the site, the facility would not be audible at the nearest noise sensitive locations and, therefore, it is predicted that there would be no noise impact.

Therefore, it is predicted that ventilation noise from the farm would be inaudible at the closest noise sensitive locations during normal operating conditions.

9.3 Mitigation Measures

It is proposed to implement noise mitigation measures during the operational phase of the project. This should include:

- During the operational phase, potentially noisy activities, such as the removal of litter and the delivery of feed, should be restricted to normal working hours (08:00am to 18:00pm Monday to Saturday). Any operations which, by necessity, are required to be carried out outside of these times should be notified to any potentially affected local residents in good time and prior to specified works commencing.

- In addition to the above, good working practices would be maintained on site at all times, including the proper maintenance of all vehicles and equipment.
- All onsite workers, hauliers and contractors would be informed of noise considerations onsite and on public access roads.In order to facilitate and promote good practice at the site, it is recommended that the applicant implement a noise management programme.

9.4 Construction Impacts & Mitigation

9.4.1 Impacts

Noise levels are predicted to exceed existing background noise levels during the construction phase of the project. It is predicted to be -0.5 dBA to 6.7 dBA above the background noise level at noise sensitive locations. This is predominantly due to the noise levels associated with excavation works and the character penalty applied to account for the subjective impact of impulsive noise.

It is anticipated that peak construction noise would be a dominant source of noise at the closest noise sensitive locations during such works, with the character of construction type noise being more clearly audible during intermittent impulsive noise events.

It should be noted that these peak noise levels (103 dBA from excavation) would occur only during short periods during the construction phase. The construction phase itself would be temporary (4-5 months). Therefore, these peak noise works would be for limited periods of workdays and only during the construction phase of the project.

It is recommended that all construction works, in particular potentially high noise activities, are carried out during normal working hours (08:00am to 18:00pm Monday to Saturday). This would mitigate the perceived disturbance due to high noise activities as the majority of local residents would be at work or in school during these hours and these hours are normal for such works to take place.

Any construction works which, by necessity, are required to be carried out outside of these times should be notified to relevant bodies, i.e. the local council or the EPA, and any potentially affected local residents, in good time and prior to specified works commencing.

Therefore, due to the limited timescales involved in the construction phase, it is predicted that there would be slight impact for a limited period of time on noise sensitive locations as a result of the construction phase of the proposed development.

9.4.2 Mitigation Measures

To minimise noise impacts during the construction phase, the following mitigation measures would be implemented on site;

All construction activities should take place between 08:00am and 18:00pm, Monday to Saturday.

Any works which, by necessity, are required to be carried out outside of these times should be notified to any potentially effected local residents in good time and prior to specified works commencing.

Good working practices would be maintained on site at all times, including the proper maintenance of all vehicles and equipment.

All onsite workers, hauliers and contractors would be informed of noise considerations onsite and on public access roads.

10.0 Landscape and Visual

10.1 Introduction

The Landscape Chapter of the EIAR provides an assessment of the likely landscape and visual impacts of the proposed development at Creecaghy Td., CLones Co. Monaghan. This assessment involved a detailed review of all plans, sections and elevations of the existing and proposed scheme and various publications and reports, together with a visit to the proposed site and its environs.

10.2 Methodology

This assessment is made with regard to the vulnerability of the landscape to change and to the location of visual receptors relative to the proposed development. The methodology used in the assessment is based on the EPA Guidelines on the information to be contained in Environmental Impact Statements 2002 and Advice Notes on Current Practice in the preparation of Environmental Impact Statements 2003.

10.2.1 Baseline Study Methodology

In order to facilitate the assessment of the proposed development, the visual envelope was determined. The envelope defines the general area within which the development site may be visible, whether completely or slightly due to topography. Potential viewpoints of the proposed site were established using online mapping sources. These were investigated along with all other potential viewpoints identified during the site survey.
The site survey was carried in clear weather conditions. The visibility assessment concentrated on the publicly accessible areas such as road networks, residential and amenity areas. Desktop and field work was supported by online mapping tools from Bing, Google, OSI, Department of Communications, Energy and Natural Resources online mapping, and the Monaghan County Development plan 2013-2019 and County Monaghan Landscape Character Assessment 2008.

10.2.2 Landscape Assessment Criteria

With regard to landscape assessment, there are two separate but closely related aspects. The first aspect is visual impact, i.e. the extent to which a new structure in the landscape can be seen. Visual impacts may be categorised under "Visual intrusion" and "Visual Obstruction", where:

Visual intrusion is impact on a view without blocking, and
Visual obstruction is impact on a view involving blocking thereof.

In assessing visual impact, various aspects and stages are considered in detail including, impact during phasing, impact on completion and longer term established impact.
The second aspect is impact on landscape character, i.e. responses that are felt towards the landscape and drawn on the appearance of the land, including aspect, land-use topography, vegetative cover etc. and their interaction to create specific patterns and landscape units distinctive to particular localities. The character50

of the existing landscape setting is considered taking account of the various natural and man-made features, such as topography, landform, vegetation, land-use, built environment together with the visibility of and the views to and from the landscape.

The significance criteria used in the assessment are based on the impact levels suggested in the EPA Guidelines on the information to be contained in Environmental Impact Statements (2002) which are set out in this volume of the EIAR.

10.2.3 Landscape Planning

The Landscape Character Assessment of County Monaghan divides the landscape of Monaghan into Landscape Character Types and Landscape Character Area. Landscape Character Types are defined as distinct types of landscape that are relatively homogenous in character. They are generic in nature in that they may occur in different localities throughout any defined area. They commonly share similar combinations of geology, topography, land cover and historical land use.

Landscape Character Areas are the unique individual geographical areas in which landscape types occur. They share generic characteristics with other areas of the same type but also haveztheir own particular identity.

Under the Monaghan County Development Plan, the proposed site is not located in and does not impact upon of an area of primary or secondary amenity.The proposed site does not impact upon any Designated View from a Scenic Route.

10.2.4 Lanscape Setting Of The Propsoed Site

The proposed development is situated on low lying land to the nrth of an existing poultry unit. The proposed unit, whilst elevated, will be screened by natural vegetation and a boundary containing subctantially mature trees. Throughout the area, the land is farmed with fields enclosed with a varied mix of hedges, banks, drainage ditches and fences. Pasture for cattle and sheep is the primary agriculture type in the area.

10.2.5 "Do-Nothing" Scenario

Should the proposed development not proceed, the existing use of the site as improved agricultural grassland and landscape would remain unaltered. There would be no impact to the visual amenity of the area.

10.2.6 "Do-Something" Scenario

Should the proposed development proceed, the landscape would be altered with the permanent inclusion of an additional house, a meal silo, and screening plantations of additional semi-mature trees/shrubs. Following establishment of boundary planting, the development would not be visually prominent from public roadways or residences. The proposed development would not break the horizon due to the site being low lying and proposed screening by boundary planting.

The development would initially be visible from the public road to the south and of the site. Visibility from these points would diminish as the planted semi-mature boundary treeline and improved existing treelines, where additional planting is necessary, becomes more established.

10.3 Characteristics Of The Proposal

10.3.1 Introduction

The applicant proposes to carry out a series of modifications to the site which involves improvements to a low lying site an the provision of a new poultry unit, hardened area and vertical meal bin.

The proposed development entails the development on a overgrown site for a new poultry house with a total capacity of 50,000 places for broiler chickens, a new feed silo and all ancillary site works and services.

The feed silos would both measure 2.7 metres in diameter and would be 8 metres high.The floor would be built as a solid concrete slab a minimum of 125mm tick. No sections of hedgerow/treeline will be required to be removed to facilitate the development. If the development is visible public roadways or private residences the site boundary and any gaps in hedgerows would be planted with semi-mature trees to minimise the impact on the visual amenity of the area.

10.4 Impacts

10.4.1 Impact Assessment

The assessment of potential visual amenity impacts involved examining the location of the development from various locations mainly along the public roadway. In assessing the impact, potential impacts associated with both the construction and operational phases were considered.

10.4.2 Construction Phase

The construction phase would have a relatively low landscape and visual impact. Aspects which pertain to the construction phase proper include:

- General site works;
- Vegetation removal
- Excavation of stockpile, of topsoil and subsoil,
- Construction of foundations and roadways and
- The construction of the proposed broiler houses and feed silos.

By its nature, this phase would take place at a relatively low level. There would be no major visual impact from construction works at vantage points from the public roadway. This impact would be predominantly earthworks, construction vehicles and plant, such as excavators and delivery vehicles, and structures as they are erected. The low lying landscape along with the existing hedgerows to would screen construction works in all other areas and ensure no associated significant visual impact is observable. It is anticipated that the visual impact of the construction phase in all other areas would be slight to insignificant due to intervening topography and treelines.

10.4.3 Operational Phase

Undulating topography, as represented in much of the surrounding landscape, has the ability to both shelter and absorb the visual impact of developments. Firstly, the physical shielding of a built form given the low lying nature of the proposed site where it does not break the skyline renders it visually unobtrusive and reflective of landscape scale.

As mentioned, the topography of the landscape in the immediate vicinity of the proposed site is characterised by low-rise shallow hills– particularly to the north which serve to screen the proposed52

development from the majority of surrounding residences and public roads. In addition, the majority of the surrounding hedgerows are well-established, are high and are thick, providing good screening.

The proposed feed silos would be approximately 8m in height and would be well shielded from view by existing hedgerow along the existing roadside and site boundary. Therefore, the natural topography of the area would help to shield the proposed development from view at this location.

As natural growth and boundary planting becomes established on the eastern boundary, the proposed development would be indistinguishable from public road.

Following establishment of boundary planting the long term visual impact from the development is anticipated to be slight.

In the initial phase following construction, the visual impact at this location would be moderate, i.e. an impact that alters the character of the environment in a manner that is consistent with existing and emerging trends, in that visible and partially visible agricultural buildings in the short to middle distance are common in the area. However, following establishment of proposed planting on the southern boundary of the site, the long term impact of the development would be slight to moderate, with sections of the poultry houses remaining partially visible through the treeline. The use of dark coloured building materials helps to mitigate a site as a focus of attention. It is recommended that the proposed poultry house roofs and sides are finished in Green Agri-cladding. This would act to somewhat mitigate the visual impact of the development during the initial phase after construction. As boundary planting becomes established, the proposed development would become progressively less visible from this location, and would become indistinguishable from the tree-lined and dense hedgerow nature of the area.

Following establishment of boundary planting the long term visual impact from the development is anticipated to be slight.

10.4.4 Landscape And Visual Impact Summary

Given the nature, location and design features of the proposed site, and proposed mitigation measures, it is considered that the proposed development would result in no significant overall long–term negative landscape and visual impact following establishment of boundary plantings.

As a result, it is considered that the proposal may be viewed as having an acceptable level of landscape and visual impact.

10.6 Residual Impacts

The completed development, on its own or in combination with other developments, would result in no significant residual impact to the visual amenity of the landscape. The establishment and maintenance of the boundary trees and undergrowth would continue to ensure the proposed development would represent an indistinguishable landscape feature in the sporadic agricultural and residential development, screened by hedgerows and tree-lines, rural setting of the area.

11.0 FLORA AND FAUNA

11.1 Introduction

Currently the site of the proposed new poultry unit is a brownfield site with an already established poultry use. It is a mature site and trees surround the site and boundary of the proposed houses. The entrance to be used in the proposed development is the existing entrance to the site. Some levelling off of ground levels will be required to facilitate the new development and the developer will cooperate with any conditions specified by the Local Authority in relation to this. No perimeter drains will require to be rejuvenated. Stringent cleaning procedures, proper storage, disposal and transfer of wash water, and efficient site drainage will ensure the surrounding flora and fauna will not be adversely effected.

The proposed development is not situated within ASSI (Area Of Scientific Interest), so will therefore not impact on any rare flora or fauna.

11.2 Rodent Control Programme:

The procedure for pest control for the proposed development is a vital element of the management of the development. The system is a Bord Bia bait programme which will be enforced by the developer. The developer will set bait at various strategic locations around the new houses and maintain a weekly check and associated records. A map outlining the locations and numbers of baiting stations will be drawn up. A "Baiting Checklist" will be kept, recording details of Bait Station number, comments, actions and date. Recorded checks will be carried out on a weekly basis and ameliorative action taken when/if necessary.

12.0 Archeology

12.1 – Introduction And Overview Of Findings

An assessment of the impact on architectural, archaeological and cultural heritage was undertaken by the authorto assess the impact of the proposed development at Ceevaghy Td., CLones, Co. Monaghan.

This chapter outlines issues with respect to the proposed development on the receiving archaeological, architectural heritage and cultural heritage environment and proposes measures to safeguard any monuments, features or finds of antiquity.

There is no evidence of any archaeological features on the site of the proposed development. The proposed site is not likely to impact upon any monuments or sites of archaeological interest as identified in the Sites and Monuments Database of the Archaeological Inventory of Ireland.

According to the Monaghan County Council Record of Protected Structures and National Inventory of Architectural Heritage, there are no buildings/structures of architectural significance located on or adjacent to the proposed site. There are no known or recorded protected structures likely to be impacted by the proposed development.

The site is not located on or near a site of cultural interest and is not anticipated to impact upon any such site.

12.2 – Methodology

A combination of desk and field-based studies were undertaken in order to assess the potential impact resulting from the proposed construction of two new poultry houses with a total capacity of 100,000 places for broiler chickens, two new feed silos and all ancillary site works and services at Creevaghy Td., Clones, Co. Monaghan.

12.2.1 Desk Studies

SOURCE	DESCRIPTION
Monaghan County Council Development Plan 2013-2019	The Record of Protected Structures (Appendix 5) was consulted for a list of Protected Structures in the vicinity of the proposed development.
The National Inventory of Architectural Heritage	The National Inventory of Architectural Heritage webviewer (http://webgis.buildingsofireland.ie/niahviewer/) was consulted.
Record of Monuments and Places (RMP)	The Record of Monuments and Places (RMP) of the Department of the Environment, Heritage and Local Government, records known upstanding archaeological monuments, their original location and the position of possible sites.
The Topographical Files of the National Museum of Ireland	The topographical files identify recorded stray finds held in the NMI. The archive was studied for possible finds occurring in

(NMI)	town-lands associated with the proposed site
Documentary and Cartographic Sources	Documentary and literary references, including excavation bulletins and historic maps, were also consulted to predict likely archaeological remains surviving on site and to elucidate the development of the immediate environs of the study area. The maps consulted include, the Down Survey Map of 1656, the First Edition Map of the OS six inch series for Monaghan.
Previous Archaeological Excavations	Excavations, an annual bulletin and web-based database (www.excavations.ie) was consulted to establish whether excavations had been carried out in the vicinity of the proposed development.
Cultural Heritage	The County Monaghan Heritage Plan 2012-2017 was consulted to determine whether the proposed development has the potential to impact upon a site or area of cultural interest or upon the objectives of the Heritage Plan.

Topographical Files of the National Museum of Ireland

This is the archive of all known finds recorded by the National Museum. The archive primarily relates to artefacts but also includes references to monuments and previous excavations. The find spots of artefacts are important contributors to the knowledge of the archaeological landscape. Location information relating to finds is an important indicator of human activity.

Aerial Photography

The Ordnance survey of Ireland aerial photographs (www.osi.ie) were consulted to identify any archaeological features in the landscape which may not have been previously recorded.

There was no evidence of archaeological, architectural or cultural heritage features recorded on the aerial photographs within the area of the proposed development.

National Inventory of Architectural Heritage

The NIAH maintains a non-statutory register of buildings and structures recorded on a county basis. There are no structures recorded in the area of the proposed development. The NIAH also maintains a non-statutory register of historic gardens and designed landscapes recorded also on a county basis. There are no gardens on their records from the area of the proposed development.

Previous Archaeological Work in the Area

A search through the Irish excavations archive indicated no previous archaeological work in the area of the proposed development.

The area of the proposed development is situated on poor quality lowlying land that rises to the road at the south of the site . Access to the site is currently from the existing farm lane to the north.

The archaeological record indicates no designated features within or within 100m of the proposed development footprint.

A walkover survey of the proposed development site indicated no features of archaeological significance.

12.4 – Impacts

No features of archaeological significance were noted above ground in the walk-over survey. No archaeological artefacts are recorded from the townland of Lisnashannagh. Nothing of archaeological significance survives above ground in the area of the proposed development and the development will not impact on any known or recorded archaeological monuments or features.

12.5 – Mitigation Measures

12.5.1 – General

The developer"s attention is drawn to the National Monuments Legislation (1937-2004), which states in the event of the discovery of archaeological finds or remains, the Department of the Environment, Heritage and Local Government should be notified immediately. The developer would notify if any archaeological finds or remains are found during the project construction or operation.

12.5.2 – Arcaeological Heritage

Considering the landscape around the proposed existing site is flat and primarily used for grazing and other agricultural uses, it is not required to employ an archaeologist during excavation activities and construction.

13.0 Climate

13.1 Introduction

Climate can refer to both the long-term weather patterns in an area and also to localised atmospheric conditions in a given area, referred to as the microclimate. Climate has implications for many aspects of the environment from soils to biodiversity and land-use practices. In a global sense, much of the concern with facilities such as Finian O' Harte's proposed poultry rearing operation is the atmospheric emissions from the operation and the potential for increases in air pollutants, which may contribute to climate change. This section addresses the existing climate in the area and how the proposed scheme may impact on the microclimate.

The objective of this study was to:

Assess the prevailing climatic conditions of the region in which the development site is located. Determine the

13.2 Methodology

Ireland has a temperate oceanic climate according to the Koppen-Geiger Climate Classification System. This means, like most of North-West Europe it is mild, moist and changeable, with abundant rainfall and a lack of temperature extremes. Due to its proximity to the Atlantic Ocean, Ireland has mild damp summers and cool wet winters and does not experience the temperature extremes of other countries at similar latitudes.

Ireland"s weather patterns are characterised by the frequent passage of Atlantic low pressure weather systems and associated frontal rain belts from the South-West. These moisture-laden fronts break on the mountainous west coast, resulting in the highest rainfall levels in the west. Valentia Island of Kerry receives twice the level of rainfall to Dublin (1,684mm vs 884mm). In 2015, the closest Met Eireann station to the proposed site at Ballyhaise in Co. Cavan experienced rainfall levels approximately halfway between these levels at 1,269mm. In summer months, the influence of anti-cyclonic weather conditions results in drier continental air, in particular when winds are from an easterly direction are interspersed by the continuing passage of Atlantic frontal systems.

Occasionally, the establishment of a high pressure area over Ireland and the UK results in calm, dry conditions. In the winter these periods are characterised by the formation of low-level temperature inversions at night-time. Fog can occur in low-lying areas in the region under these conditions of slack winds and clear skies.

If anti-cyclonic conditions become established for a few days or more during the summer months, high daytime temperatures may be recorded, especially in Midland areas away from cooler coastal areas. Prolonged dry weather conditions are relatively infrequent but, should easterly continental airflows persist, drought conditions may result in the region which may last for up to 2 to 3 weeks.

The potential effects of climate change on a global scale have been investigated by the Intergovernmental Panel on Climate Change (IPCC). The resulting impacts in Ireland are outlined in the National Climate Change Strategy 2007-2012 (Department of Environment Heritage and Local Government, 2007) and by the EPA"s Climate Change Research Programme and include the following:

- Significant increases in winter rainfall, of the order of 10% in the southeast, with a corresponding increase in the water levels in rivers, lakes and soils.

- Lower summer rainfall, of the order of 10% in the southern half of the country. Less recharge of reservoirs in the summer.
- An overall annual increase in rainfall in the north and west. An overall decrease in rainfall in the east of the country and a resultant decrease in baseline river-flows.
- An overall mean temperature increase (0.7° between 1890 and 2008). This trend is set to continue and possibly accelerate.
- An increase in extreme weather events. Serious flooding more frequent than at present

Further adverse climate change impacts are projected to affect Ireland in the coming decades and during the rest of this century. Uncertainties remain in relation to the scale and extent of these impacts, particularly during the second half of the century. The greatest uncertainty lies in how effective global actions will be in reducing greenhouse gas emissions. Predicted adverse impacts include:

- Sea level rise,
- Further increase in intense storms and rainfall events,
- Water shortages in the summer in the east,
- Adverse impacts on water quality,
- Changes in distribution of plant and animal species
- Adverse effects on fisheries

The nearest MET Eireann weather station for which 30 year data was available was Mullingar. Therefore, 30 year data from the Mullingar station, Co. Westmeath (Lat: 53.537, Lon: -7.362, 101m above mean sea level) was used to determine 30-year monthly averages for rainfall, mean maximum temperature, mean minimum temperature and mean wind speed. This was compared with those of 2015. These measurements are representative of prevailing climatic conditions experienced in Co. Monaghan.

13.3 Description Of Existing Environment

Meteorological data from the Met Eireann station in Mullingar (Lat 53.537, Lon -7.362) during the baseline survey has been compiled. The 2015 total monthly rainfall, mean monthly maximum temperature, mean monthly minimum temperature and wind speed data from the Mullingar station has been compared to the 30-year averages for each month to determine the regional climatic trend. This comparison is presented in Table 12.1.

Table 12.1: 2015 and 30-year average meteorological conditions from Mullingar meteorological station

Month	Rainfall		Temperature				Wind Speed	
	2015 (mm)	Average (mm)	Mean Max 2015 (°C)	Mean Max Average (°C)	Mean Min 2015 (°C)	Mean Min Average (°C)	Mean 2015 (knots)	Mean Average (knots)
Jan	92.9	92.8	7.4	7.5	0.9	1.8	8.0	8.2
Feb	53.7	74.8	7.2	8.1	0.9	1.5	6.1	8.1
Mar*	73.2*	69.5	10.4*	10.0	2.6*	2.5	6.6*	8.2
Apr	64.2	67.3	13.8	12.4	1.7	3.6	5.5	7.2
May	135.3	68.9	13.6	15.1	5.3	6.2	7.2	7.0
Jun	37.1	74.5	17.4	17.6	8.0	8.8	6.1	6.1
Jul	76.5	77.7	17.5	19.2	9.4	10.8	6.1	6.0
Aug	97.1	84.6	18.1	18.8	8.7	10.3	5.4	5.8
Sept	39.3	69.8	15.9	16.8	7.3	8.3	5.0	6.0
Oct	57.6	106.8	13.9	13.4	5.6	6.0	5.2	6.8
Nov	184.4	94.0	11.6	10.0	4.2	3.5	7.5	7.1
Dec	274.3	99.3	10.6	7.8	4.1	2.0	9.3	7.6
Annual	1,185	980	13.1	13.0	4.9	5.4	6.5	7.0

*March figure for 2014 used as no data available for March 2015

On average, rainfall during 2015 was 205mm higher than the corresponding 30 year averages. May, November and December had considerably higher rainfall than the 30 year average, while February, June, September and October were considerably lower. Mean maximum temperature during 2015 was 0.1°C higher than the corresponding 30 year average. Mean minimum temperature during 2015 was 0.5°C less than the corresponding 30 year average. Recorded wind speed in 2015 was 0.5 knots less than the 30 year average.

13.4 Impacts

13.4.1 "Do-Nothing" Impact

If the proposed development does not go ahead, the green-field site would remain unaltered with the existing use as improved low lying land. The dominant greenhouse gas sources within the area, agriculture and vehicle traffic would not be altered.

13.4.2 "Do-Something" Impacts

The proposed development would slightly increase the volume of greenhouse gas emissions in the area. The construction phase would also lead to the presence of machinery and HGVs onsite.

Upon completion of the construction phase, there would be an average of 5.1 to 5.5 articulated truck journeys and 5.4 car journeys per week. It should be noted that many of the delivery services provided for above would occur in tandem with deliveries to other poultry units in the area and would not add to the existing traffic on local roads. Agriculture, residences and traffic within the area would remain the dominant sources of greenhouse gases – namely methane and carbon dioxide.

Due to the relatively small footprint of the proposed site, there would be no significant impact on the microclimate of the area. There are no significant direct impacts predicted on the macroclimate as a result of the proposed development.

13.5 Mitigation

AK Agriculture is aware of the necessity to ensure maximum efficiency in all areas of the proposed development. The proposed broiler house and the supporting systems would be designed to the highest industry standard to ensure maximum efficiency of input to product ratio. This would entail the input of heating energy at optimal levels, to allow the stock to grow and develop efficiently, while minimising associated fuel costs. The fuel source for the operation would be LPG. Of this overall energy requirement, the required heating energy input would be 59,640kWh per batch. This equates to 8,963 litres of LPG fuel per batch.

However, as mentioned, Finian O' Harte overall objective is to ensure maximum efficiency in terms of inputs into his system, and this would serve the dual purpose of minimising the overall carbon footprint of the site and the resource use of a non-renewable fuel.

Therefore, due to the small scale of the proposed development, the high design specification aimed at ensuring maximum efficiency of inputs and the proposed use of the most environmentally friendly fuel option reasonably available, the impact to the climate from the proposed development would be minor.

14.0 Material Assets – Agriculture

14.1 Introduction

This chapter outlines the potential agricultural impact of the proposed construction of a new poultry house with a total capacity of 50,000 places for broiler chickens, a new feed silos and all ancillary site works and services at Creevaghy Td., Clones, Co. Monaghan.

The proposed development is located within an existing poultry unit complex'

No additional holdings would be directly impacted through loss of land by the proposed development as all lands proposed for development are within the ownership of Finian O' Harte.

14.2 Methodology

Both a field survey and desktop study were carried out to assess the potential impact of the proposed installation on agriculture in the area. The field survey consisted of a walkover inspection of the site, which was conducted on Sat 9th September 2017.

The desktop survey assessed potential impacts using statistical information from the CSO (Central Statistics Office) and mapping data both from the 50,000 Discovery Series, 2,500 Ordnance Survey mapping and CORINE land use mapping.

14.3 Description of Existing Environment

14.3.1 Monaghan

According to the Census of Agriculture (2010), there are 106,288 hectares of agricultural land in County Monaghan. The average farm size in Monaghan is 23.3 hectares, which is below the national average of 32.7 hectares.

There are 4,565 farms in Monaghan, the majority (68%) are specialist beef production farms, 13% are specialist dairy, 6% are mixed field crops, 5% are mixed grazing livestock, 5% are classed as „other" and the remainder are specialist tillage, specialist sheep, and mixed crops and livestock

The CORINE data series shows that land within approximately 1km of the proposed site is primarily used for pasture (complex cultivation patterns). The other land cover in the region consists of land principally occupied by agriculture with areas of natural vegetation.

14.3.2 Creevaghy Td., Clones, Co. Monaghan

The townland of Creevaghy is composed of undulating hills of glacial origin. The hills are characterised by generally steep gradients and are covered by irregularly shaped fields. Land cover in this area is dominated by pasture land for cattle and sheep and a substantial amount of poultry (both broiler and free range).

Residential development in the area is predominantly linearly aligned along the existing road network. There is also a prevalence of farmyard complexes in the area, including agricultural sheds. One-off residences and

farmyard complexes are the dominantly visible man-made structures in the landscape. The fields and roads are bounded by a combination of well-established treelines, mixed hedgerows, banks, dry stone walls, drainage ditches and fences. The nearest town is Monaghan, approximately 5.3 km to the north.

Rural, agricultural land with undulating topographic relief leads from the site, particularly to the north, south and west.

The EPA"s ENVision soil group database has been reviewed for the soil and subsoil groups surrounding the site. The dominant soil on the site is described to be Surface water Gleys / Ground water Gleys (AminPD). All lands relating to the proposed development are owned by the applicant and are composed of pastureland. The site is accessed by a local secondary road which links, the N54

14.4 Impacts

14.4.1 "Do-Nothing"

Should the proposed extension not be built, the current practice of using the proposed site for pasture as improved agricultural grassland would continue

14.4.2 "Do Something"

If the proposed construction is granted planning permission, there would be a loss of improved agricultural grassland, as outlined in Table 14.1. The loss of improved grassland to the footprint of the proposed broiler unit and its ancillary structures and service areas would be small in a regional context. The replacing of this improved agricultural grassland with two chicken broiler units would benefit the local economy by creating employment as specified in Section 2.0.

Table 14.1: Proposed structures and their footprint

Structure	Measurement	Footprint (m^2)
Broiler house	109.73 m x 21.33 m	2,341.0
Hardcore/Concrete Area	60 x 20 m	1,200
Existing Road/Laneway	150m x 5m	750
Total	-	4,291.0

Noise from the operation of the proposed development may cause disturbance to livestock within grassland surrounding the site boundary, however this would not result in a decrease or loss of material assets. Animals would quickly become acclimatised to the new noise environment adjacent to the development, as with similar projects such as new roads and motorways.

There is predicted to be no significant increase in traffic volumes using the local road infrastructure as a result of the operation of the proposed development. As explained, in Section 2.3.1, upon completion of the construction phase, there would be an average of 5.1 to 5.5 articulated truck journeys and 5.4 car journeys per week. It should be noted that many of the delivery services provided for above would occur in tandem with deliveries to other poultry units in the area and would not add to the existing traffic on local roads

14.5 Mitigation Measures

No mitigation measures are required as the development of this land would increase its material value to the land owner and not cause significant impacts upon the agricultural material assets of other parties.

14.6 Construction Impacts And Mitigation

14.6.1 Construction Impacts

There are a number of specific issues that may impact on agriculture during the construction phase of the proposed development. These include:

Noise: Increased noise from construction machinery has the potential to be an issue with certain sensitive livestock such as dairy cows and horses.

Traffic: There would be construction-related traffic during the construction phase of the proposed development.

Dust: The proliferation of dust during construction has a nuisance value and livestock are at risk to eye irritation from high levels of wind blowing dust particles.

14.6.2 Mitigation

Noise: No mitigation is required; if a complaint is received, an investigation would be commenced.

Traffic: Discussions would take place with local landowners to ensure that construction traffic causes minimum interference with movements of stock and does not hinder farm operations.

Dust: Mitigation measures for construction dust are outlined in Section 5.5.2 above. These measures would be followed.

14.7 Residual Impacts

No significant residual impacts on agriculture as a result of the construction phase are expected.

15.0 Material Assets – Natural and Other Resources

15.1 Introduction

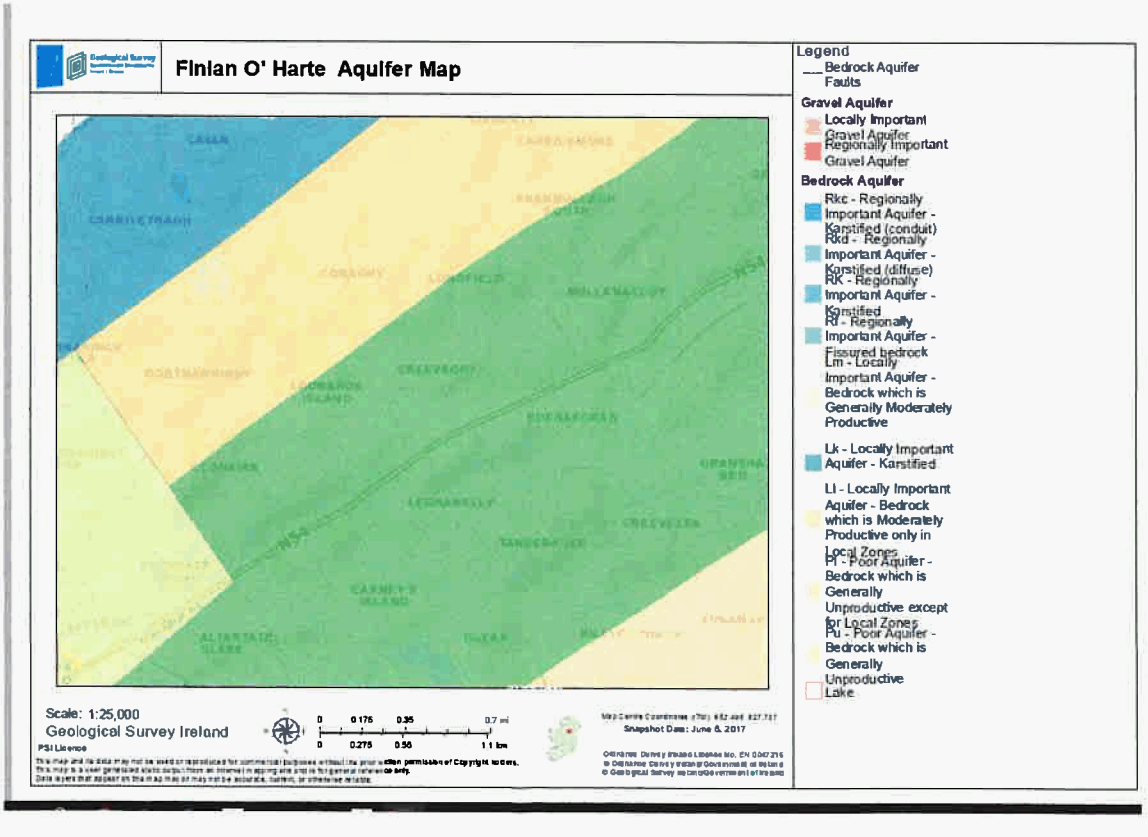
This chapter outlines the potential impacts on natural and other resources of the proposed construction of two new poultry houses with a total capacity of 50,000 places for broiler chickens, two new feed silos and all ancillary site works and services at Creevaghy Td., Clones, Co. Monaghan.

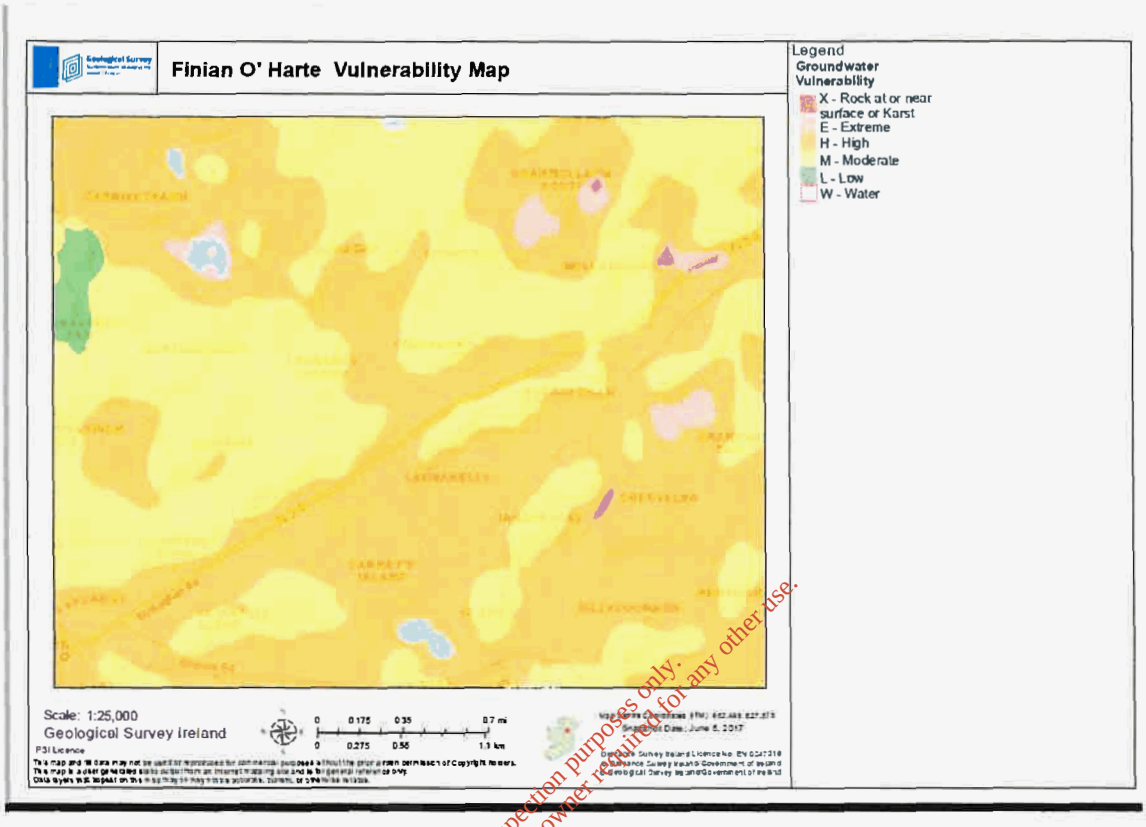
15.2 Description Of Existing Resources

The area in the immediate vicinity of the proposed operation is rural in nature, with much of the land in agricultural use. However, a network of utilities associated with residential houses, agricultural and commercial operations, marsh and bog land and water bodies are all available in the general hinterland.

15.2.1 Land Use and Soil

Following construction, the total surface area of the proposed site would cover approximately 5,500m2. The soil types occurring within the footprint of the proposed site are composed of soils in the subgroup. Aquifer is classified as Important and Vulnerability is classified as Moderate.





15.2.2 Transport Network

The development site is located c. 3.5km North of the town of Clones, Co Monaghan, 5.0km South of the village of Smithborough & 12km South of the county town of Monaghan. Grid reference X – 252811 & Y – 327916 relate to this development. The site has a link to N54 linking Monaghan to CLones

15.2.3 Utilities

Water for the stock and for cleaning is already on site via a deep bore well. There would be no planned impact upon municipally operated wastewater schemes from the proposed development. The site has good electrical network connectivity with 38kV and 10kV lines in the area. A back-up generator would also typically be used at such sites in the event of a power failure.

15.3 Impacts and Mitigation

Overall, the proposed development would have a minor negative impact on natural and other resources. Any disruption to services and existing transport networks would be minimal and of a temporary nature during the construction phase of the development.

15.3.1 Land Soils

In total, the proposed broiler house would occupy 2,341m2 of improved agricultural grassland for the main footprint and 5,500m2 in total including the surrounding hard-core and concrete areas. All of this is within land owned by the applicant. As such, it is considered that there would be no significant impact on land or soil material assets. Impacts on the agricultural use of land are discussed in Chapter 13 Material Assets – Agriculture.

15.3.2 Transport Networks

During the construction stage, the presence of HGVs and small commercial vehicles for deliveries of construction materials and transport of construction workers would be noted.

Upon completion of the construction phase, there would be an average of 5.1 to 5.5 articulated truck journeys and 5.4 car journeys per week. It should be noted that many of the delivery services provided for above would occur in tandem with deliveries to other poultry units in the area and would not add to the existing traffic on local roads. It is considered that this would result in a minor additional traffic impact upon the integrity of local roads.

Therefore, the expected volume of traffic on the road network would have a negligible additional effect on the structural integrity of the road network and its on-going maintenance costs.

15.3.3 Fuel Resources

As detailed in Section 2.3.1, the current proposed heating system is indirect blow heaters. This is seen as an efficient means of heating a broiler house. New chicks, particularly in winter months, would require the highest input of heat energy. As detailed in Section 12.5 and Section 2.3.1, the heating system would be fuelled by LPG. As the house would be insulated and the heating system would be of high specification, the development would not require a high input of LPG.

Electricity would be used for the feed and water delivery systems, the ventilation systems and lighting in the house. Due to the high standard of design and selection of materials and the requirement for maximum process efficiency, electricity input would be minimal.

15.3.4 Economic Minerals

It is considered that the proposed development would have no significant impact on mineral resources in the vicinity of the area.

15.3.5 Raw Materials Required

Construction

Construction material, when needed, would be brought in from nearby sources such as local quarries where practical.

15.3.6 Utilities

It is estimated that the proposed development would use 20 M3 of wash-water and 840 M 3 of drinking water per production batch. This would total 5,600 M3 per year for both drinking for stock and cleaning of the house (6.5 batches). The electrical use at the site would be expected to be relatively moderate and therefore no significant impact upon electrical supply would be anticipated.

15.4 Residual Impacts

No Significant residual impacts are predicted

16.0 TRANSBOUNDARY IMPACTS

Under Section (174) of the 2000 Planning & Development Act, where the site's location is close to Northern Ireland (or any other jurisdiction outside the state) and the development is likely to affect an adjoining member state of the E.U., there is an indication for a need to formally submit the application for observations to the relevant authorities in respect of any transfrontier environmental impacts identified. Notwithstanding the proximity of the site to the border, 4.1km at its nearest point, it is considered that the development will have a minimal impact on the frontier area. Northern Ireland company Moy Park is the biggest poultry producer on the island of Ireland by some distance. The firm processes twice as many birds each week at its plant in Dungannon in Co Tyrone, as their main competitors. Due to the small nature of the development within the Carton Group and existing competition in Northern Ireland, the operational activity will have no measurable effects on the frontier area.

It is considered that the majority of traffic accessing the site will enter the site from the Republic of Ireland road network. It is envisaged however that limited traffic, partly dependent on as yet undetermined suppliers and contractors, may access the site vis Roslea and thus the Northern Ireland road network.

Notwithstanding this, the transfrontier impact is deemed insignificant and it would be considered that there are no grounds to make reference to the Northern Ireland authorities in this matter as would be normally required under Section (174) of the 2000 Planning & Development of the Act where such effects are likely to prove measurable.

17.0 CONCLUSION OF REPORT

Following the examination of the processes and associated issues involved with the nature of the proposed development, no significant adverse impacts or areas of concern are predicted as arising during the construction or operational phases of the development.

Where real impacts are identified, mitigation measures will be put in place to reduce insofar as possible.

Given that the existence of agricultural activity and associated industry in the vicinity by the developer, it is proposed that the development of a poultry unit will have limited effects on the surrounding environment.

Appendix No. 1

Maps.....

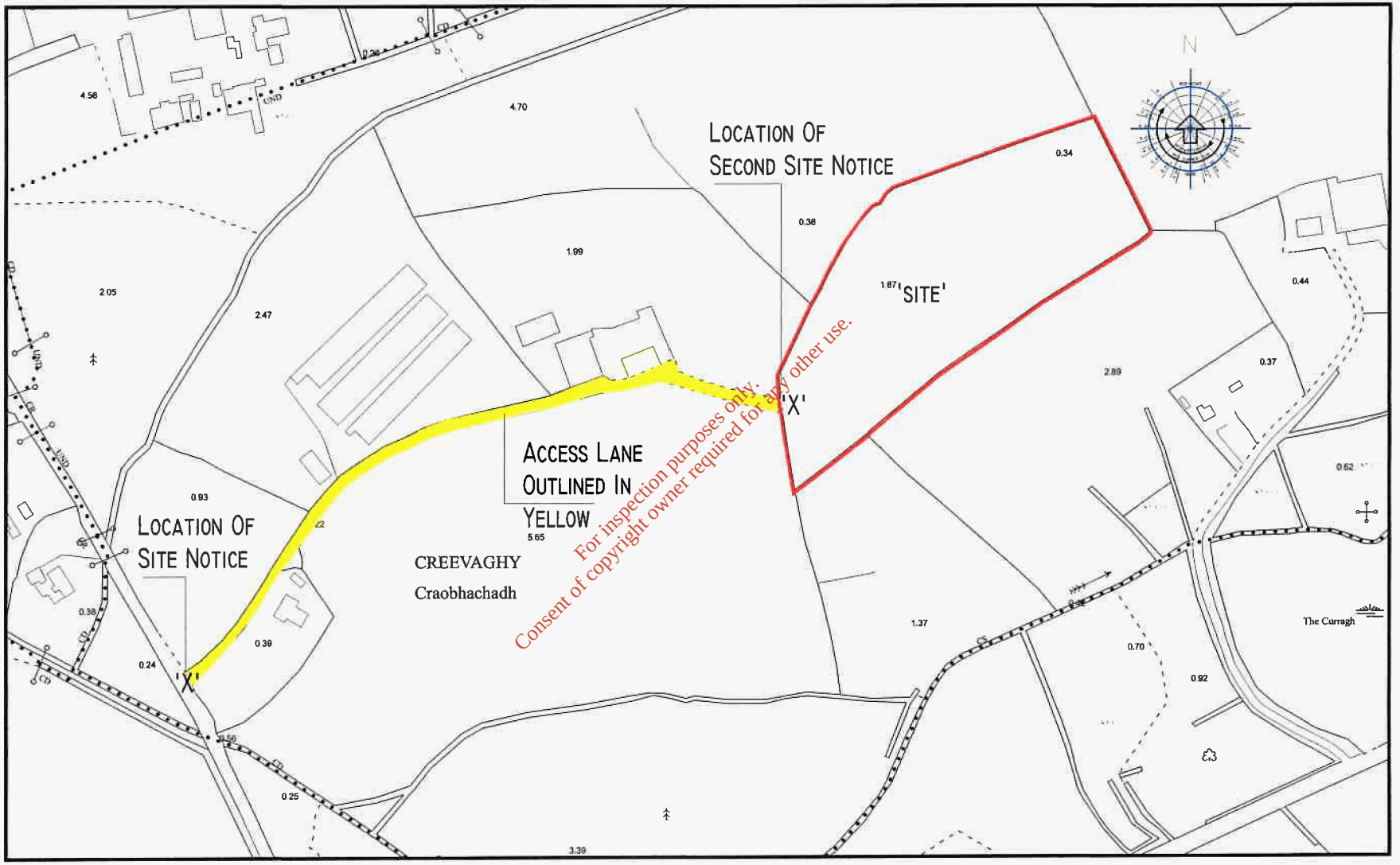
- **Site & environs Map – 1:2500**
- **Land Ownership Map – 1:10,560**
- **Site Layout Plan - 1:500**
- **Poultry Unit Plan**

FILE REF :-

SITE LOCATION
OUTLINED IN RED :-

CREEVAGHY TD,. CLONES CO. MONAGHAN

OS MAP REF.:- XII - 5 & 9



P R O J E C T

FINIAN O' HARTE - PROPOSED NEW POULTRY UNIT AT CREEVAGHY TD., CLONES, CO. MONAGHAN

DRAWING:- Site Location Map SCALE:- 1:2500 DATE:- Oct 2017 DRAWN BY:- JB CHECKED BY:- JB DRAWING NO.:- ENPL1817 - 03

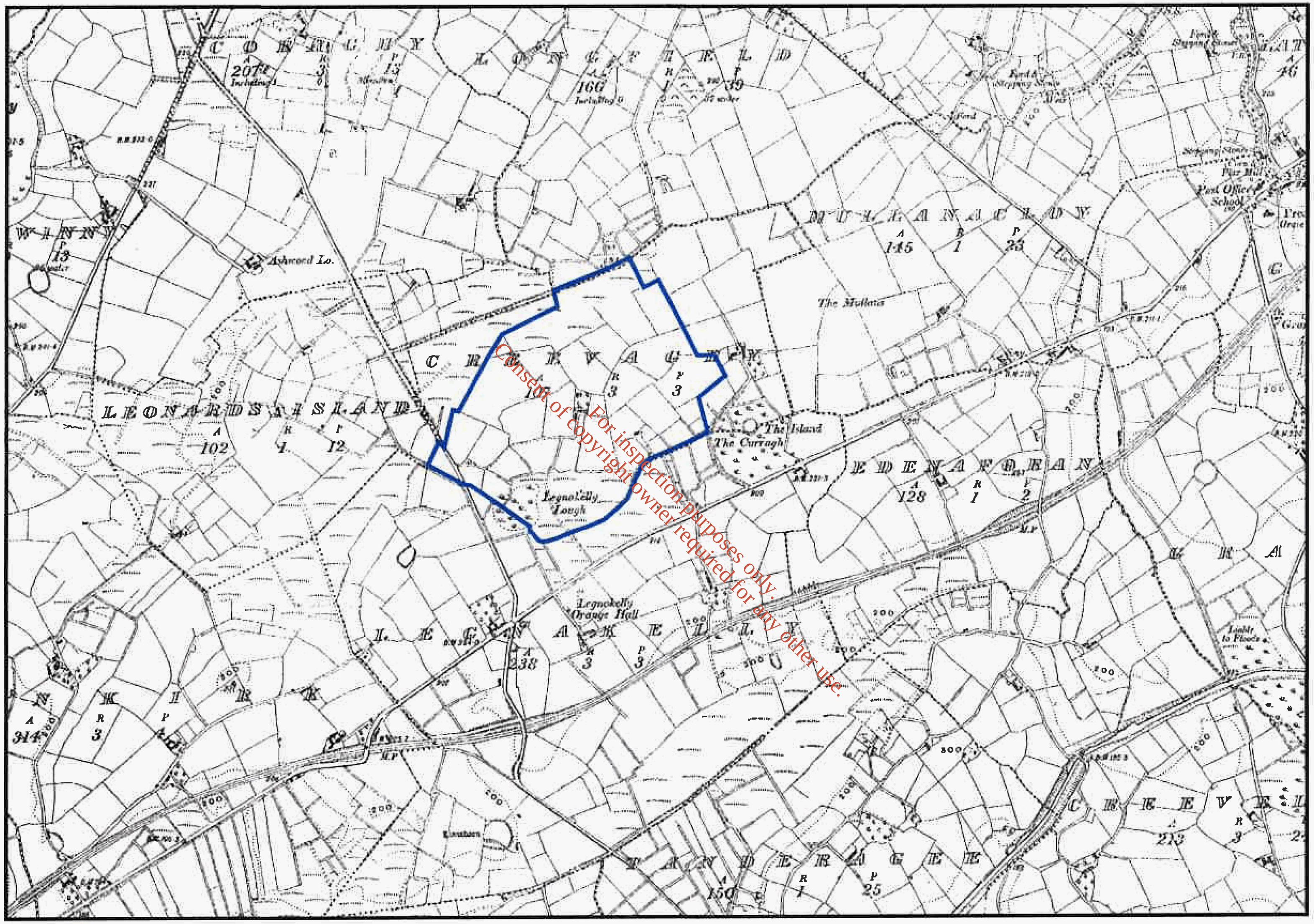
Joe Beggan
CLONKIRK, CLONES,
CO. MONAGHAN.
PH: 047-51847 / 087-2924047
E-MAIL: joebeggan@eircom.net
www.encore-consulting.com

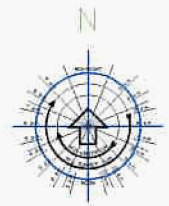
File Ref :-

Land Ownership
Outlined In Blue :-

Creevaghy Td,. Clones Co. Monaghan

OS Map Ref.:- XII - 5 & 9





P R O J E C T

Finian O' Harte - Proposed New Poultry Unit At Creevaghy Td., Clones, Co. Monaghan

Drawing:- Site Location Map | Scale:- 1:2500 | Date:- Oct 2017 | Drawn By:- JB | Checked By:- JB | Drawing No.:- ENPL1817 - 04

Joe Beggan
Clonkirk, Clones,
Co. Monaghan.
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www.encore-consulting.com

FILE REF :- File

Site Layout & Landscape Plan

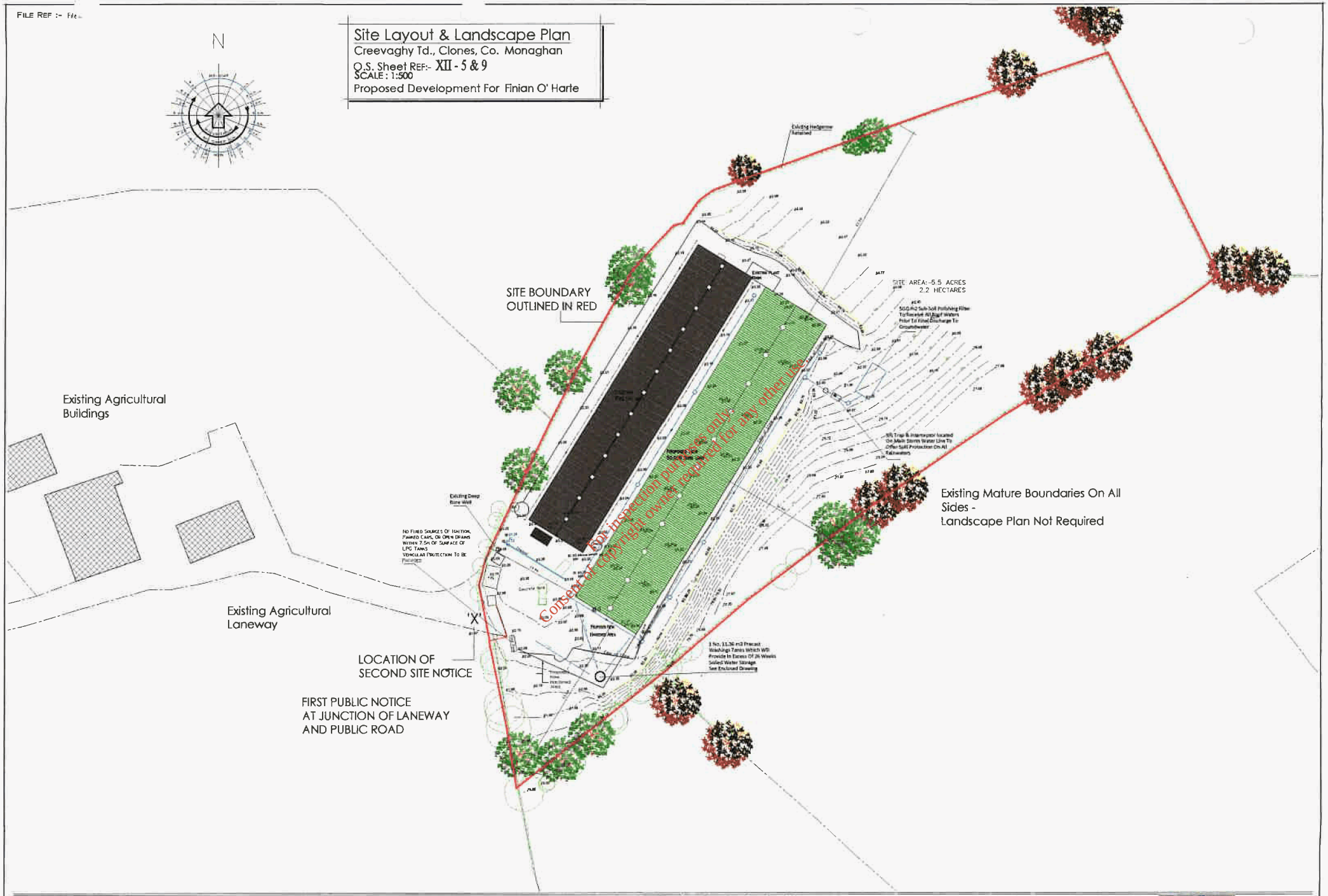
Creevaghy Td., Clones, Co. Monaghan

O.S. Sheet REF:- XII - 5 & 9

SCALE : 1:500

Proposed Development For Finian O' Harte

N



REVISIONS:-

PROJECT

FINIAN O' HARTE - PROPOSED NEW POULTRY UNIT AT CREEVAGHY TD., CLONES, CO. MONAGHAN

DRAWING:- Planning Drawing Only | SCALE:- As Shown | DATE:- October 2017 | DRAWN BY:- JB | CHECKED BY:- JB | DRAWING No.:- ENPL1817 - 02

Joe Beggan
CLONEERY, CLONES,
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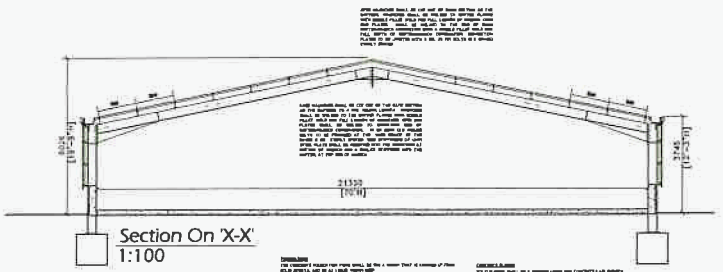
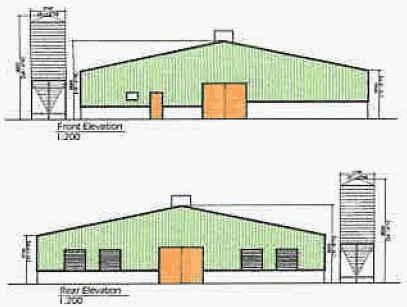
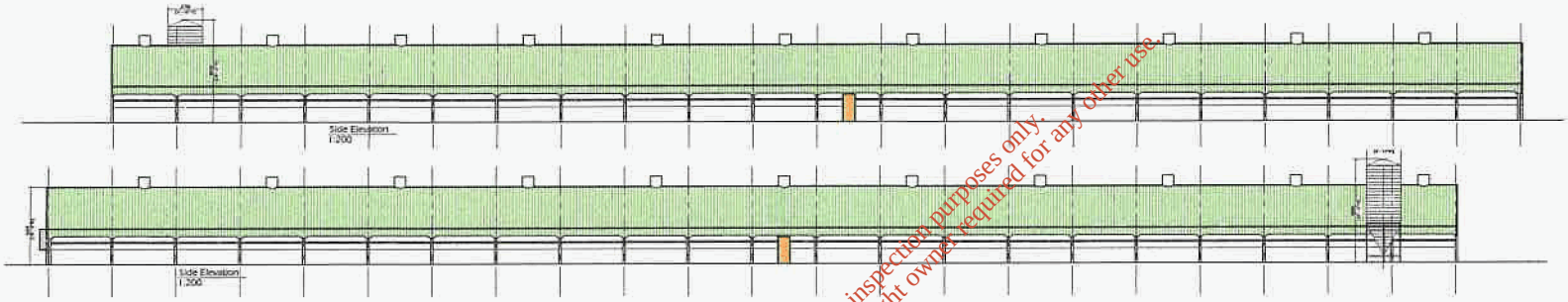
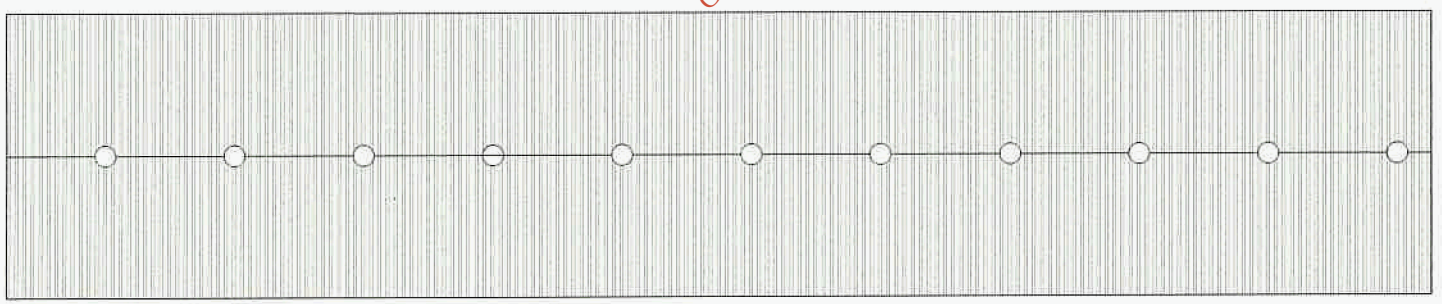
E-MAIL: joebeggan@eircom.net

FILE REF :- File Re.









REVISIONS:-

PROJECT

FINIAN O' HARTE - PROPOSED NEW POULTRY UNIT AT CREEVAGHY TD., CLONES, CO. MONAGHAN

DRAWING:- Planning Drawing Only | SCALE:- As Shown | DATE:- October 2017 | DRAWN BY:- JB | CHECKED BY:- JB | DRAWING NO.:- ENPL1817 - 01

Joe Beggan
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www.encore-consulting.com

Appendix No. 2

Letters.....

- **CLR Ltd,. – Letter Of Confirmation**
- **Michael Galligan – Letter Of Confirmation**

Chicken Litter Re-Cycling Co Op Society Limited

T/A Poultry Manure Supplies (PMS)
Mount Louise, Smithboro, Co Monaghan, Ireland.

Planning Application

03/07/2017

Dear Sir/Madame,

CLR Co-Op Ltd. currently collect litter from Finian O Harte, Creevaghy, Clones, Co. Monaghan. CLR Co-Op are a registered contractor with the Department of Agriculture, Food and The Marine for the transport of animal by-products (poultry litter) **DAFM Reference No. CLR.** All necessary paperwork is and will be maintained, including an annual Record 3 form submitted to Department of Agriculture, Food and the Marine.

CLR Co-Op are in a position to collect the additional litter which will be generated from the proposed development of 1 no. additional poultry house at Mr. O Harte,s farm.

Poultry litter is currently delivered to a number of mushroom compost yards, and with significant demand for this poultry litter it is intended that the additional litter generated on this poultry farm will be accommodated in these compost yards. The following yards are currently supplied by CLR Co-Op.

- Kabeyun , Gibralter, Casthleshane, Co. Monaghan.
- Carbury Mushrooms , Derrinturn, Carbury, Co. Kildare.
- Custom Compost, Gorey, Co. Wexford.
- Newry Organic Fertilisers, Mayobridge, Co. Down.

Poultry Litter is considered a much needed raw material for the mushroom industry with considerable demand at present.

Yours faithfully,

James O'Harte
CLR Co-Op Ltd

GORTNALECK, BALLYCONNELL,
CO. CAVAN.
TEL: 049 9527586
087 7616651

30-06-2017

To whom it may concern.

I Micheal Galligan, located at Gortnaleck Ballyconnell, Co Cavan is registered for the purpose of transporting animal by-products and processed products in accordance with article 23 of regulation (EC) No. 1069 of 2009.

Receptacle identification number: M.G.A 1

I undertake to remove all fallen-stock from the farm of Finian ó Harte, Creevaghy, Clones, Co Monaghan.

Yours faithfully

Micheal Galligan

Mr. Micheal Galligan
Gortnaleck
Ballyconnell
Co. Cavan

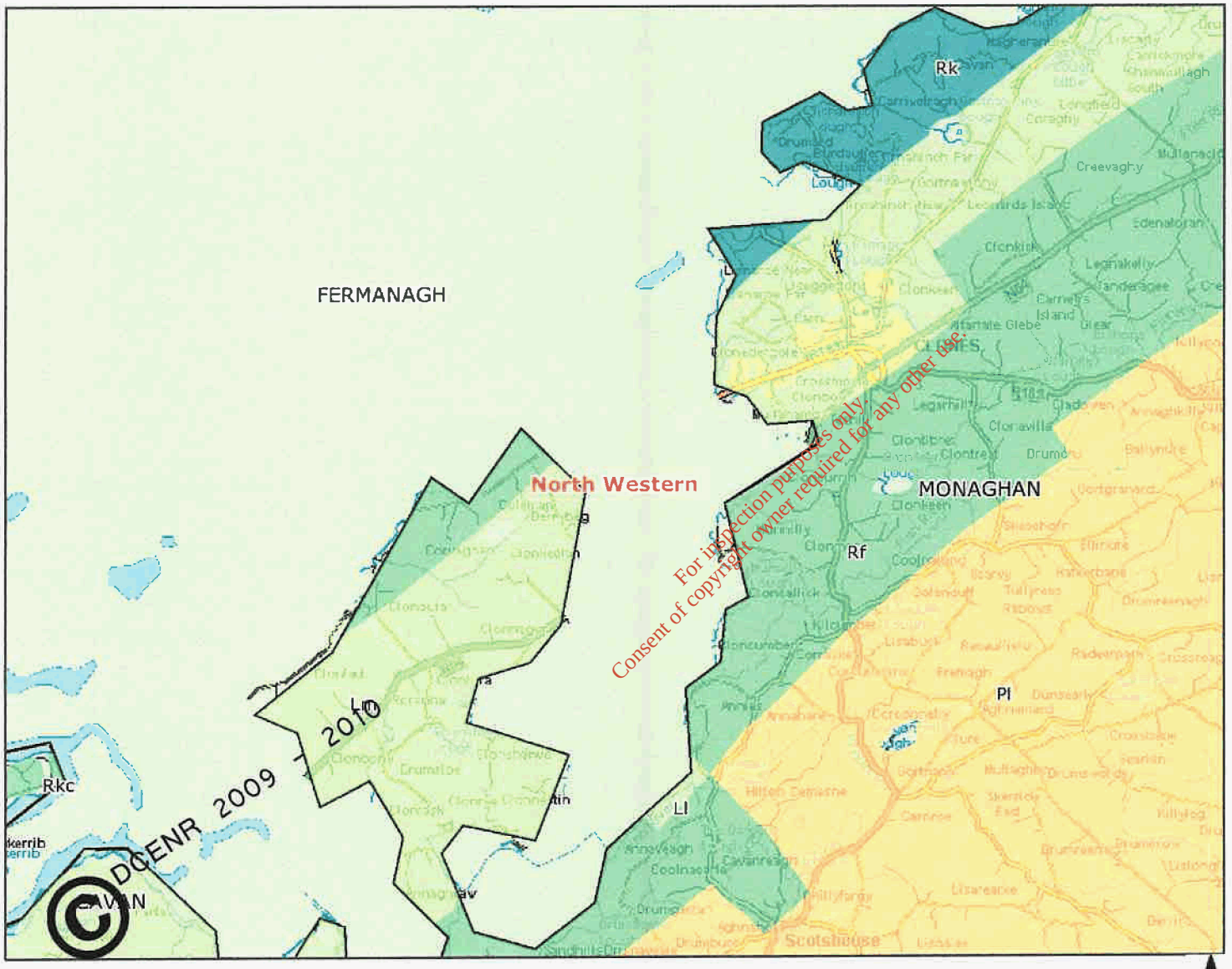
Appendix No. 3

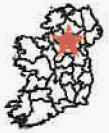
GIS Maps

Maps.....

- **Aquifer Map**
- **Bedrock Map**
- **Groundwater Vulnerability Map**
- **Teagasc Soils Map**

Finian O' Harte - Bedrock Map





Legend

National Draft Bedrock Aquifer Map

- Rf - Regionally Important Aquifer - Fissured bedrock
- Rk - Regionally Important Aquifer - Karstified
- Rkd - Regionally Important Aquifer - Karstified (diffuse)
- Rkc - Regionally Important Aquifer - Karstified (conduit)
- Lm - Locally Important Aquifer - Bedrock which is Generally Moderately Productive
- Lk - Locally Important Aquifer - Karstified
- Ll - Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones
- Pl - Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones
- Pu - Poor Aquifer - Bedrock which is Generally Unproductive
- Unclassified
- RBD Boundaries
- County Boundaries

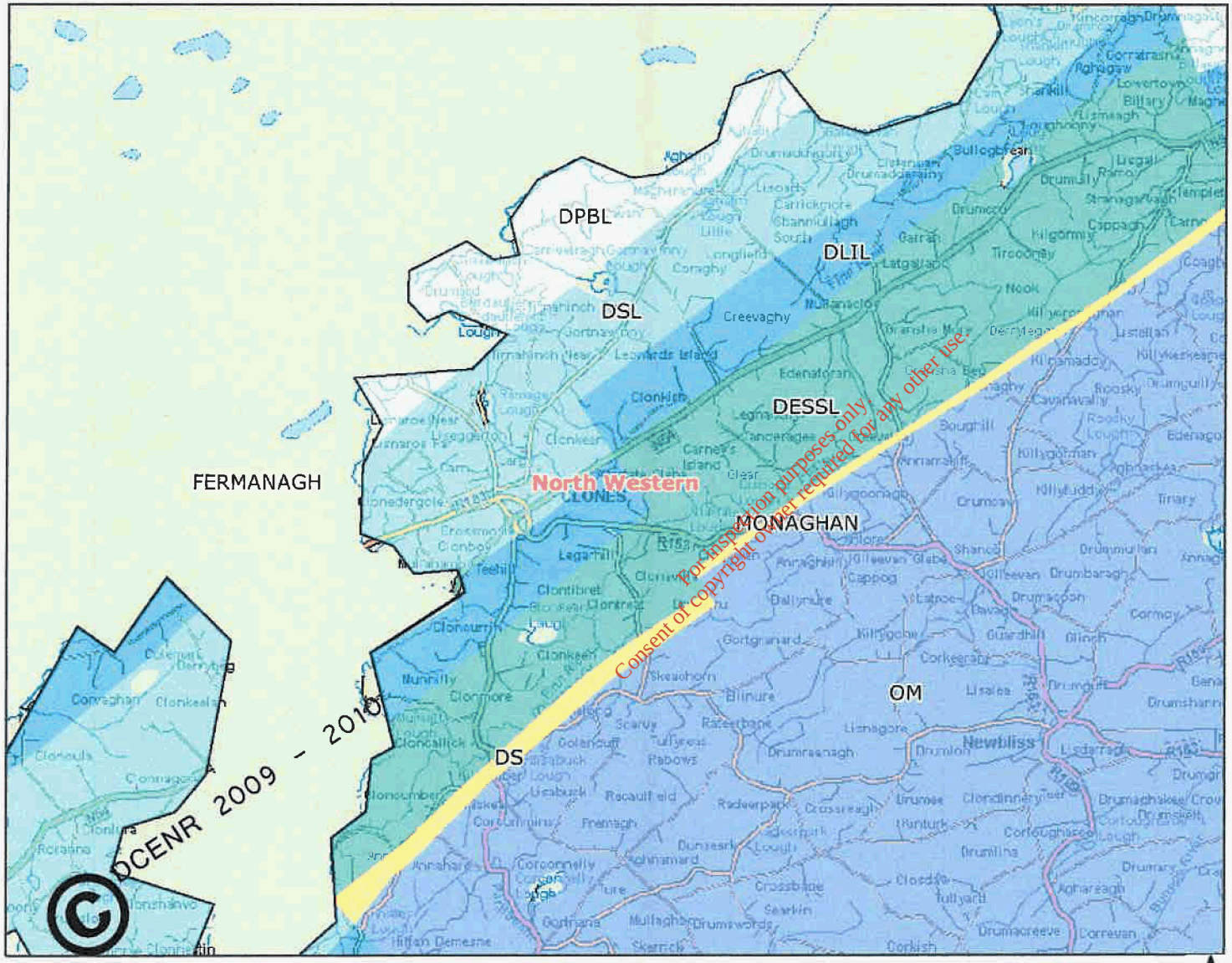
0 1.9 3.8 5.7 km.

Map center: 247361, 324586

Scale: 1:71,909

Snapshot Date: 24-Mar-2012

Finian O' Harte - Bedrock



Legend

National Draft Generalised Bedrock Map

- BV - Basalts and other Volcanic rocks
- CM - Cambrian Metasediments
- DDL - Dinantian Dolomitised Limestones
- DESSL - Dinantian early Sandstones, Shales and Limestones
- DKS - Devonian Kiltorcan type Sandstones
- DLIL - Dinantian Lower Impure Limestones
- DMSC - Dinantian Mudstones and Sandstones Cork Group
- MSSL - Dinantian Mixed Sandstones, Shales and Limestones
- DORS - Devonian Old Red Sandstones
- DPBL - Dinantian Pure Bedded Limestones
- DPUL - Dinantian Pure Unbedded Limestones
- DS - Dinantian Sandstones
- DSL - Dinantian Shales and Limestones
- DUIL - Dinantian Upper Impure Limestones
- GII - Granites and other Igneous Intrusive rocks
- NSA - Namurian Sandstones
- NSH - Namurian Shales
- NU - Namurian Undifferentiated
- OM - Ordovician Metasediments
- OV - Ordovician Volcanics
- PM - Precambrian Marbles
- PQGS - Precambrian Quartzites, Gneisses and Schists
- PTMG - Permo Triassic Mudstones and Gypsum
- PTS - Permo Triassic Sandstones
- SMV - Silurian Metasediments and Volcanics
- WSA - Westphalian Sandstones
- WSH - Westphalian Shales

- RBD Boundaries
- County Boundaries

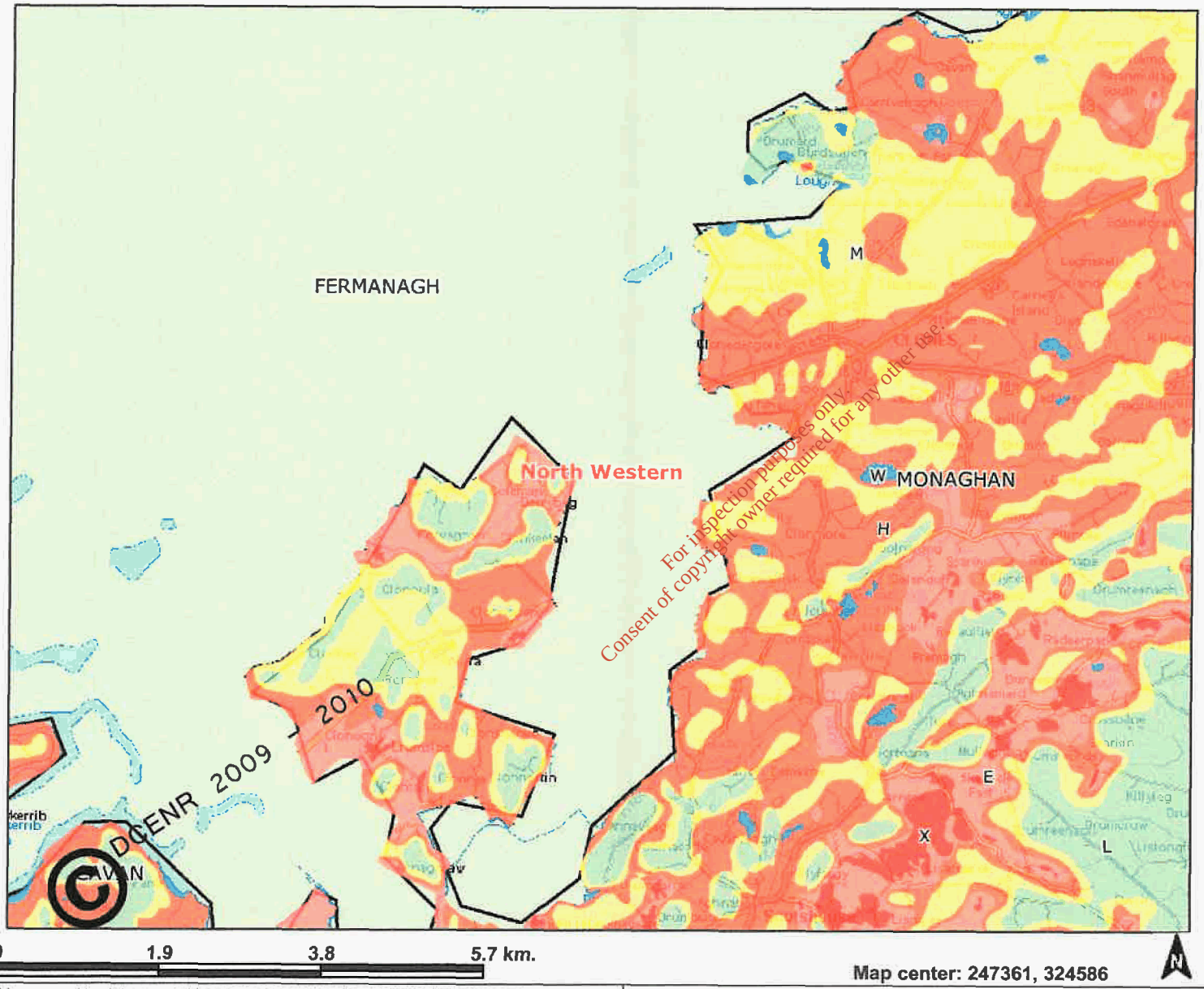
0 1.9 3.8 5.7 km.

Map center: 251394, 326293

Scale: 1:71,909

Snapshot Date: 24-Mar-2012

Finian O' Harte Vulnerability Map



Legend

Vulnerability

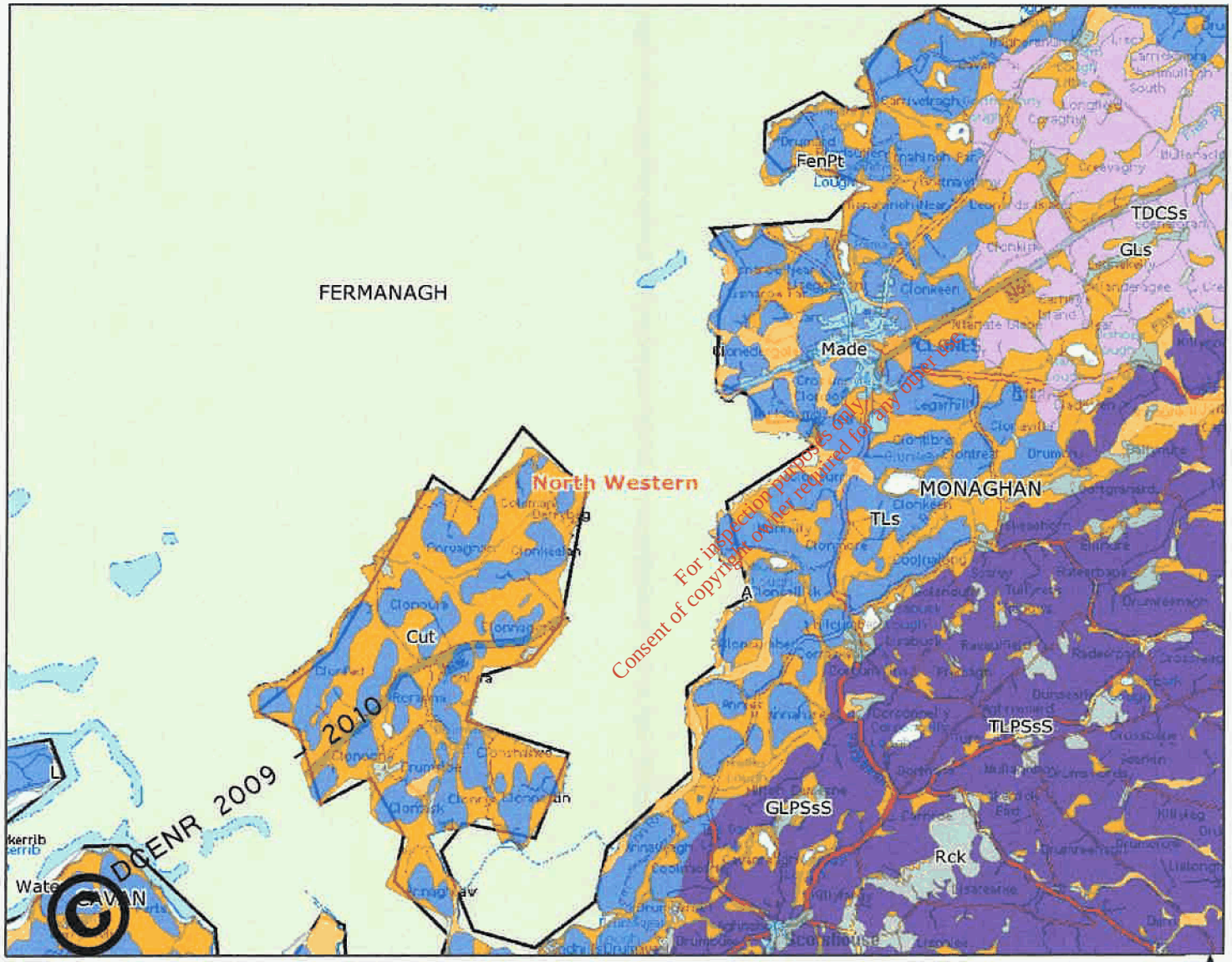
- X (Rock near Surface or Karst)
- E - Extreme
- H - High
- M - Moderate
- L - Low
- HL - High to Low. Only an interim study took place.
- Water
- No Data Available
- RBD Boundaries
- County Boundaries

Scale: 1:71,909

Map center: 247361, 324586

Snapshot Date: 24-Mar-2012

Finian O' Harte - Subsoils Map



Legend

RBD Subsoils

- Alluvium
- Beach sands and gravels
- Bedrock outcrop and subcrop
- Esker sands and gravels
- Glaciofluvial sands and gravels
- Lake sediments
- Made ground
- Marine/estuarine silts and clays
- Marsh
- Peat
- Scree
- Till derived chiefly from Devonian sandstones
- Till derived chiefly from Lower Palaeozoic rocks
- Till derived chiefly from Namurian rocks
- Till derived chiefly from granite
- Till derived chiefly from limestone
- Till derived chiefly from metamorphic rocks
- Till derived from metamorphic rocks
- Till derived from mixed Devonian and Carboniferous rocks
- Water
- Windblown sands
- RBD Boundaries
- County Boundaries

Scale: 1:71,909

Map center: 247361, 324586

Snapshot Date: 24-Mar-2012

Appendix No. 4
Washings Tank Details

Maps.....

- **Silt Trap Details**
- **Interceptor Details**
- **Washings Tank Details**

Cmd Environmental ltd

AQUAmax

2250 Ltrs silt trap

STANDARD DESIGN LOADS:

LID:
IMPOSED LOAD: 10 kN/m² UDL OR 5,850 kg WHEEL LOAD
DEAD LOAD: UP TO 1m OVERBURDEN

HEAVY DUTY OR CUSTOM LIDS CAN BE MANUFACTURED FOR MORE ONEROUS APPLICATIONS.

TANK:
IMPOSED SURCHARGE: 10 kN/m² UDL (HA LOADING EQUIVALENT TO BS 5400-2)

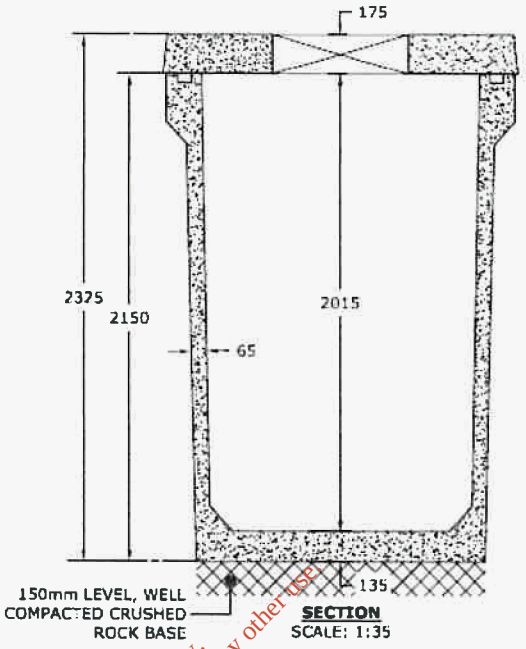
NOTE: VERY LARGE POINT LOADS SUCH AS THOSE FROM CRANE OUTRIGGERS SHOULD BE AVOIDED IN THE IMMEDIATE VICINITY OF THE TANK

STANDARD ACCESS OPENING SIZES:
- 1400mm x 850mm
- 900mm x 600mm
- 600mm x 600mm

NON STANDARD SIZES ARE AVAILABLE ON REQUEST

STANDARD UNIT WEIGHTS:

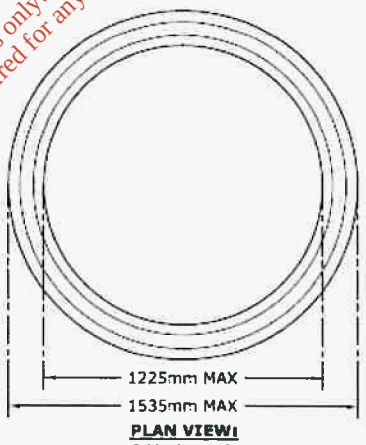
- TANK:	1.9 tonnes
- COVER SLAB:	0.85 tonnes



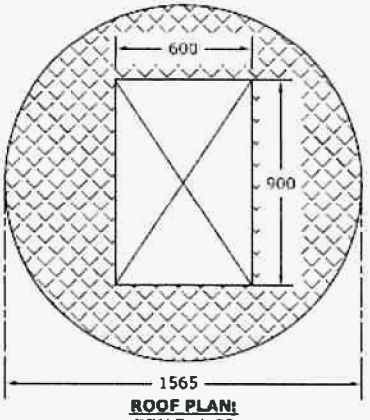
SECTION
SCALE: 1:35

Silt Capacity 1580 Ltrs.

ISOMETRIC VIEW:
SCALE: 1:50



PLAN VIEW:
SCALE: 1:25



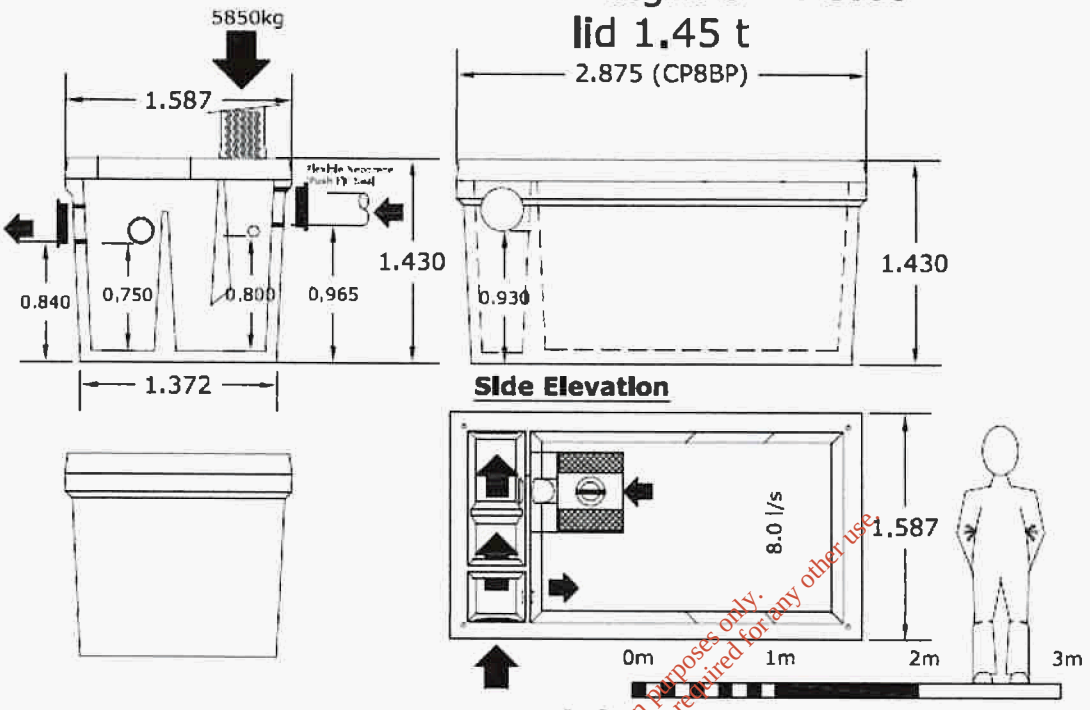
ROOF PLAN:
SCALE: 1:25

Cmd Environmental ltd

AQUAmax

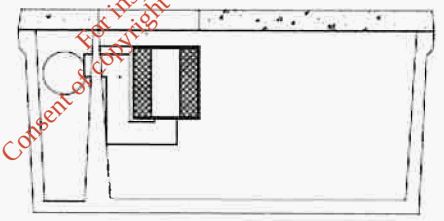
Modular Bypass Interceptor CP8BP

weight base 3.6t
lid 1.45 t

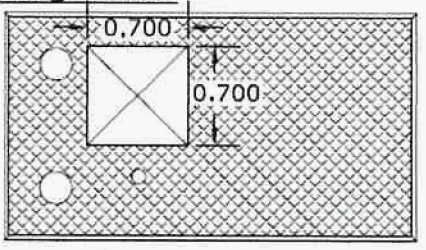


Side Elevation

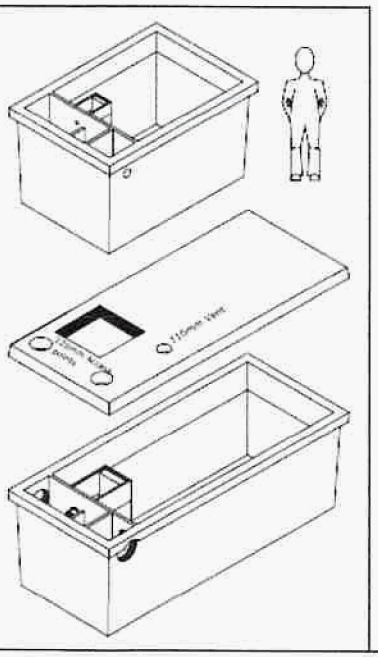
Internal Plan



Long Section



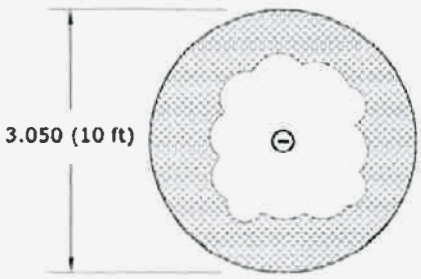
Roof Plan



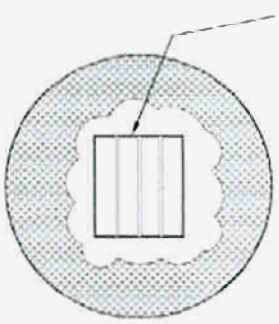
	Nominal Flow	Storm Flow	Area Drained (m2)	Standard Pipe Size	Crossfall	Invert to Base	Nominal Oil Storage
CP8BP	8,0l/s	80l/s	4400	225Dia	125mm	965mm	120 l

Carlow Concrete Tanks
Fax: + 353 (0)59 9159831
UK Mobile: + 44 (0) 7540 564 276
Email: sales@carlowtanks.com

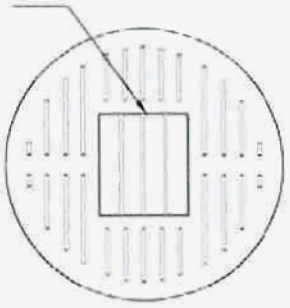
7500 GALLON (11.36 cubic metre) TANK



Lid with 9" pot

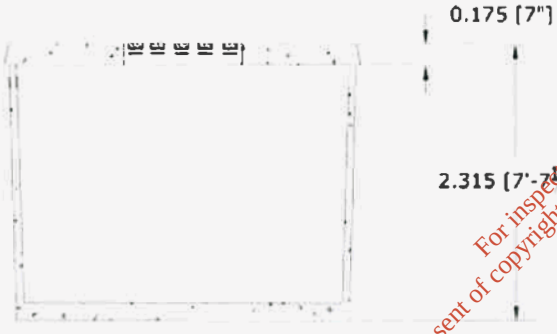


Lid with Standard Safety Manhole

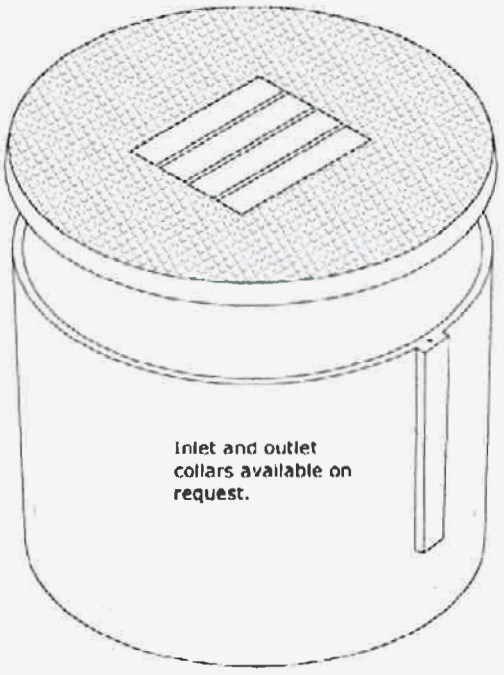


Lid with Slatted Cover with Standard Safety Manhole

Lid Plan Options



SECTION



3D VIEW

1. Select lid suitable to your application.
2. Select inlet and outlets location if desired, mark location and size of these on the drawing.
3. Fill out the farm order confirmation with drawings and post it to out office.

Tanks require a level, well compacted base of CI 804, thickness of which will depend on site conditions typically 150mm thick (1/2ft).

Lorry must be able to reverse to the edge of the excavation.

Tank is then installed by a crane at the rear of the lorry.

After installation we recommend filling the tank with water to prevent flotation until backfilling is complete (only in high water table areas).

Site with a high water table may require a hoop of concrete with rebar at the base of the tank to prevent flotation.

Tank should be backfilled with material free of boulders and large stones.

Weight of base 5.5 Te Weight of Lid 2.85 Te

Solid lids can carry 5.8 Te wheel load

Slatted lids can carry 4 Te wheel load