Contents

SUPPORTING INFORMATION SECTION 4

4. ENVIRONMENTAL RISK ASSESSMENTS

Introduction

Using the guidance Risk assessments for your environmental permit we have studied the guidance for bespoke installations. I'Anson Bros Ltd Dalton Mill is a completely new installation and the subject of this bespoke operational permit application. The operator intends to comply fully with all the appropriate requirements and to follow the guidance.

Current situation

Solmex were engaged to conduct a desk study of the new feedmill site in order to form a conceptual model. Solmex in turn commissioned Envirocheck and the Landmark information group to conduct the necessary searches to facilitate their work.
The work by Envirocheck on behalf of Solmex has established the status of the receptors in the vicinity of the application site.

Step 1 Consider the risks/hazards for the site.

Using the aspects register for the installation and site, the environmental risks have been identified.

Step 2 Identify the receptors.

By conducting a site survey, the receptors, (people, animals, property and anything else that could be affected by the hazard) at risk from site have been identified.

Step 3 Identify the pathways.

The pathways possible from the sources of the risks to the receptors have been identified.

Step 4 Assess risks relevant to the site's specific activity, and apply Risk control measures which incorporates Step 5

The relevant risks have been assessed and appropriate management techniques have been applied to manage/control the risks. The required risk control measures are stated in the assessments. It is considered that the activities to be undertaken at the Dalton mill have an insignificant impact upon the environment or nearby receptors and there is no conceivable risk to human health.

The application applies to I'Anson Bros Ltd new site Waterloo House Wellington Way Dalton Airfield Industrial Estate Dalton Thirsk North Yorkshire YO7 3SS. The site is located about 1km west of the village of Dalton, some 6 km South of Thirsk and about 14 km Northeast of Ripon. The site is located in the nearly flat low lying Vale of York about 27km Northwest of York. The site is accessed from Dalton Lane which is accessed from the A168 Dishforth to Thirsk trunk road. Dalton is a village and civil parish in the Hambleton District of North Yorkshire, England. It is about 6 km south of Thirsk and near the A168 road. It mainly consists of farmland as well as an industrial estate. It has a population of over five hundred. Postcode district: YO7. Map ref SE 41811 76298

The area surrounding the site and indeed the site itself has always been traditionally farmed. Until relatively recently there have been no industrial or non-farming activities undertaken anywhere near the site. During World War 2 an RAF airfield was constructed near the application site. After the airfield was decommissioned the land has been gradually transferred to an industrial estate. The land where the new installation will be constructed is the latest extension of the industrial estate. As explained in supporting information of section 2. It is generally accepted that future site activities will not have a significant impact upon sensitive features of interest. There will be a contribution to general air pollution from the installations-controlled emissions which is duly subjected to detailed modelling. The report from Air quality consultants is included in this section of the application.

Local residents are the principal receptors, and these are identified in Table 1 reproduced below and as shown on the receptor map which is included in supporting information section 1 of the application.

Table 1

Receptor	Location	Distance
1. Poultry houses	Southwest	270 - 400
2. YO7 Storage Solutions & Pullan Transport	East	150
3. Cod Beck Mill Chemicals & various other businesses.	Northeast	150 - 400
4. J S Transport office & warehouses	Northeast	250 - 400
5. AJS Vehicle Repairs	Northeast	375
6. Kariario domestic dwelling bungalow & stables	Northeast	430
7. Domestic dwelling bungalow	Northeast	450
8. National Tube Stockholders warehouse	Southwest	470 - 650
9. Dwelling house	West	580
10. Dalton Bridge Park static caravan dwellings	West	590 - 750
11. Broad Acres dwelling bungalow	East	650
12. Inspired Pet Nutrition warehouse	Southwest	690 - 840
13. The Bungalow dwelling	Southwest	720
14. Dalton Bridge house dwelling	West	740
15. Dalton Industrial Estate a swath of various industrial premises	South	750 - 1250
16. Dalton Transport & Storage	East	860
17. Manor Farm dwelling	East	900
18. Fox Field dwelling	East	930
19. Dalton Village	East	From 950

The industrial premises consist of transport, storage and warehousing concerns who would operate during the day and the heavier industrial premises, such as the cluster around Cod Beck Mill and the Dalton Industrial Estate concerns most if not all of whom operate on a 24/7 basis. Dalton village is quite a densely populated area of private dwellings and small shops etc.

There are a number of site plans 1.1.1. – 1.1.6. of section 1 of the supporting information to this application. The site plans identify the various point source emission points and where potential pollutants are stored / located.

4 ENVIRONMENTAL RISKS AND EFFECTS: AMENITY AND ACCIDENTS

4.1.1. This section provides an assessment of risks to environmental amenity and from potential accidents/incidents that could arise from the production activities. The assessment has been completed in accordance with the EA's Risk Assessments for your environmental permit.

4.1.2. The scope of the assessment has covered the following aspects:

- discharges to water course or ground
- odour;
- noise and vibration;
- fugitive emissions;
- visible emissions;
- accidents;
- particulate emissions;
- habitats

4.1.3. For each of the above, the approach to the assessment has followed the following four stage process:

1. identify the hazards;
2. assess the risks (assuming that any control measures proposed are in place);
3. choose appropriate further measures to control these risks (if required); and
4. present the assessment of overall risk.

4.1.4. Results of the assessment are provided in the following tables.

Table 4-1 Assessment of discharges to water risks
Table 4-2 Assessment of odour risks
Table 4-3 Assessment of noise and vibration risks
Table 4-4 Assessment of fugitive emission risks
Table 4-5 Assessment of visible emissions
Table 4-6 Accidents risk assessment and management plan
Table 4-7 Assessment of particulates emissions
Table 4-8 assessment of possible habitats disruption

4.1.5. The risk assessment methodology has used a scoring mechanism whereby scores are assigned to:

- the likelihood of the hazard occurring; and
- the consequence of the hazard to the environment or human health.

4.1.6 Scores are assigned as low, medium or high.

4.1.7 The risk assessment has been completed by scoring the hazard areas outlined above using a risk matrix as shown in Table 2:

Table 2

Consequence	Probability			
	High	Medium	Low	Very Low
High	High	Medium	Low	Low
Medium	Medium	Medium	Low	Not Significant
Low	Low	Low	Low	Not Significant
Very Low	Low	Not Significant	Not Significant	Not Significant

Discussions regarding receptors

We have considered the nearby receptors upon which the installations activities could impact as follows;

A number of activities and circumstances have been identified which could pose a risk to the environment;

The assessment of risks are explored in Tables 3.1 – 3.7 below. The hazards are explained in columns 1 – 3 of the tables The assessment of the risks following management is identified in columns from 4 - 7 of the tables.

4.1 Assessment of risks due to discharges to the water course

The site has a consent to discharge to the water course, the principal discharge is storm water from the roads and yards, with a smaller contribution of storm from the roofs. In addition this is the path for blowdown water from the steam boilers which is post treated by a pH correction system and air compressor condensate. The blowdown water will also be cooler in order to ensure its temperature is less than 40^{o}C. It is believed that this will ensure that migrator salmon will not be effected by its discharge. The storm water discharge to the water course is controlled by a valve and there is a shut off valve in case of emergency such as fire water or spillage. The discharge is also controlled by accumulation tanks provided against a 30 year storm event. The water course is protected by full retention interceptors complete with high level silt and oil alarms. There will be no products, by-products, wash-down water or wastewater from the process. These latter discharges do not occur in animal feed production. The foul comprises water from a private Klargester which processes the domestic waste. This

effluent flow will be discharged by an industrial effluent consent to the water course. See section 10 and form B6.

A stage 1-3 assessment has been duly completed (as detailed within the EC Commission Guidance 2014/C 136/-3).
Stage 1 – Identify hazardous substance(s) used / stored on site.
In common with most if not all provender installations, no 'Relevant Hazardous Substances' are incorporated into the product. In addition, no 'Relevant Hazardous Substances', (as defined in Article 3 of Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures), are used or stored for any purpose on site.
Therefore, there is no realistic possibility that any substance could contaminate either the ground, ground water or the water course because there are no pathways.

Table 4-1
Assessment of discharges to water risks

Hazard 1	Receptor 2	Pathway 3	Risk Assessment and Management Techniques 4	Exposure Probability 5	Consequence 6	Overall risk 7
Contamination of the water course by contaminated storm water run-off from yards and roads	Cod Beck	Drainage system	Control of process emissions to air. Cleaning program of roads and yards. Water course protected by interceptor	Full retention interceptor will protect drainage system and water course. Outlet to drain would be closed in the unlikely event of a failure. Low	None	Not Significant
Contamination of the water course by contaminated storm water run-off from roofs	Cod Beck	Roof storm water drainage system	Control of process emissions to air will ensure minimal contamination build up on roofs.	Outlet to drain would be closed in the unlikely event of a failure. Low	None	Not Significant
Contamination of the water course by boiler blowdown water	Cod Beck	Drainage system	Water treatment arranged by specialists. Chemicals used are food safe and the quality of the water is good, it is an innocuous discharge. Its flow through the drains dilutes the flow.	Full retention interceptor will protect drainage system and water course. outlet to drain would be closed in the unlikely event of a failure. Low	None	Not Significant
Contamination from discharge of vehicle wash water	Removed from site by tanker	Wash water Storage tank	This contaminated wash water is removed from site by a road tanker for compliant disposal	Minor risk of spillage during pumping	Virtually nil	Not significant
Contamination of the water course by process activities	Cod Beck	Drainage system	Process liquids adequately bunded, impermeable oversite, no drains in process areas. Internal cleaning program Water course protected by interceptor	Low	None	Not Significant
Contamination of ground water from process activities	Ground beneath site	Oversite and soft ground	Oversite is reinforced concrete. Soft ground is protected by standard curbs.	Low	No viable pathway. None	Not Significant
Contamination of ground water by domestic sewage	Ground beneath site	Klargester	The Klargester is purpose designed for the duty, daily discharge <1.25 m^3 liquor discharged to storm.	Low	No viable pathway. None	Not Significant
Impact up on migrating salmon	Cod Beck	Blowdown water temperature	The blowdown water represents a minor addition to the flow, also it will be cooler to at least 40^oC	Low	Virtually nil	Not significant

4.2 Assessment of odour risks from the installation

The likely impact of odour emissions as a result of both controlled continuous and fugitive emissions from the new compound mill are assessed in line with the ADMS-5 a new generation dispersion model that incorporates a state-of-the-art understanding of the dispersion processes within the atmospheric boundary layer.

The location of these receptors can be seen in Table 1 above and are also shown on the receptor map in the supporting information **Section 1**.

Emissions released from the four process extraction stacks, together with the 2 grinders and two boiler flues have all been considered; other potential sources of odour releases from the facility (judged to be limited to very minor fugitive sources) have not been included in the assessment.

The odour emissions have been extensively modelled by a specialist consultancy, 'Air Quality Consultants'. See appendix 2 for the full report.

The odour and PM_{10} emissions from these outlets together with particulates from the boiler flues have been modelled using the ADMS (version 5.2) dispersion model. This model is frequently accepted by local planning authorities and EA. Entrainment of the plume into the wake of the surrounding buildings has been simulated within the model.

There are currently no statutory standards in the UK covering the release and subsequent impacts of odours. This is due to complexities involved with measuring and assessing odours against compliance criteria, and the inherently subjective nature of odours.

It is recognised that odours have the potential to pose a nuisance for residents living near to an offensive source of odour. Determination of whether or not an odour constitutes a statutory nuisance in these cases is usually the responsibility of the local planning authority or environmental regulator. The Environmental Protection Act 1990 (1990) outlines that a regulatory body can require measures to be taken where any:

"dust, steam, smell or other effluvia arising on an industrial, trade and business premises and being prejudicial to health or a nuisance…" or

"fumes or gases are emitted from premises so as to be prejudicial to health or cause a nuisance."
Odour can also be controlled under the Statutory Nuisance provisions of Part III of the Environmental Protection Act. SEPA has released odour guidance (SEPA, 2010), which has been provided for regulators in Scotland who are engaged in regulating odorous activities and industries.

There are no formal assessment criteria for quantifying odours. In the absence of formal criteria, the significance of the impacts has been judged based on professional

experience and taking account of the odour guidance provided by the Environment Agency.

EAs odour guidance describes odours generated by livestock feed factories as *"moderately offensive"* (see below), and hence the odours generated by the facility in this assessment are to be assessed against the medium criterion of 3.0 OUE/m^3.

- 1.5 OUE/m3 for most offensive odours;
- 3 OUE/m3 for moderately offensive odours; and
- 6 OUE/m3 for less offensive odours

Due to The location of the facility; a predominantly rural area with a low-density population, it has been judged suitable to assess the odour impacts against the stated criterion.

The results of the detailed modelling indicate that there are no third-party receptors subjected to odour above the nationally accepted most stringent criterion.

The compound mill facility is located in a building north of the site. The fact that the intake of solid raw materials and loading of finished products are undertaken in a completely enclosed environment virtually eliminates fugitive emissions of either odour or particulates. The liquid intake area, also totally enclosed within the building envelope, is to the north of the factory, there are no line of sight receptors from the site. Fugitive emissions are minimal from either solid or liquid tanker deliveries so it is considered inconceivable that any nuisance will be generated by intake activities.

In summary the activities conducted at the installation are not thought likely to create an odour nuisance or lead to complaint.

Table 4.2
Odour risks from the installation

Hazard 1	Receptor 2	Pathway 3	Risk Assessment and Management Techniques 4	Probability of Exposure 5	Consequence 6	Overall risk 7
Transferring substances solid raw materials	Local residents. Employees and visitors to other sites	Air	All raw materials are stored in enclosed bins & silos so fugitive emissions are only from accidental spillage. Daily sniff regimen in place. Raw materials received during week-day day times so nuisance is most unlikely. The plant is totally enclosed.	Virtually nil Odours from materials used are regarded as inoffensive	Nearest receptors too far away to be affected.	Not significant
Transferring liquid raw materials	Local residents Employees and visitors to other sites	Air	All liquids stored in above ground tanks, so emissions limited to that from accidental spillage. Raw materials received during week-day day times so nuisance is most unlikely. The plant is totally enclosed.	Virtually nil Odours from materials used are regarded as inoffensive	Nearest receptors too far away to be affected.	Not significant
Over filling tanks	Local residents Employees and visitors to other sites	Air	High level alarm & controls will shut inlet pipe valve to limit overflow. Raw materials received during week-day day times so nuisance is most unlikely. The plant is totally enclosed.	Virtually nil Odours from materials used are regarded as inoffensive. The plant is totally enclosed.	Nearest receptors too distant to be affected.	Not significant

Plant or equipment failure	Local residents Employees and visitors to other sites	Air	Leaks are detected by pressure loss detectors & balance deficiency, so the plant shuts down and operatives follow up. EMS maintenance procedures require such equipment to be regularly inspected for faults. All the plant is enclosed within the building envelope, so any odour is contained.	Virtually nil Odours from materials used are regarded as inoffensive. Any accidental leaks are detected rapidly, and necessary actions taken to prevent or limit emissions	Nearest receptors too distant to be affected.	Not significant
Fugitive emissions from intake & bulk out-loading	Local residents Employees and visitors to other sites	Air	This is minor because these areas are enclosed and aspirated. Raw materials are received & finished products out-loaded during week-day day times so nuisance is most unlikely.	Virtually nil Odours from materials used are regarded as inoffensive	Nearest receptors too distant to be affected.	Not significant
Emissions from tank breathers	Local residents Employees and visitors to other sites	Air	Daily sniff test monitors this very low risk area	Virtually nil Odours from materials used are regarded as inoffensive.	Receptors too distant to be affected	Not significant
Emissions from the 8 high level emission points to air	Local residents Employees and visitors to other sites	Air	These are considered to be very low as the dispersion model attests. See the detailed report in appendix 1. Daily sniff tests will in addition monitor this low risk area	Virtually nil Odours from materials used are regarded as inoffensive	Receptors too distant to be affected	Not significant

4.3 Assessment of noise and vibration risks from the installation

Assessment of community noise and vibration impact from Dalton Mill. The likely impact of noise emissions from the new compound mill have been assessed prior to Planning Permission being granted. A detailed professional noise impact survey was conducted by Beechfield Design Consultancy Ltd. See appendix 3.

The assessment was a daytime and night-time noise impact assessment. This enabled the sound emanating from a proposed mill to be assessed, together with the likely effects on people who reside nearby. A BS4142-2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' assessment methodology was used. The survey assessed the specific sound emanating from the mill as a whole against the background sound levels allowing a rating level to be calculated. The nearest residential receptors are located about 430-450 metres to the east of the site. These receptors are numbers 6 & 7 in the receptors listed in Table 1 above.

The readings taken at point 3, together with the rated impact from the survey, strongly suggests the noise outbreak from the mill will have a low impact upon these nearest receptors. As the next closest domestic receptors are about twice the distance any impact will be negligible.

The location of these receptors are shown on the receptor map produced in section 1 of the supporting information and in Table 1 above.

Table 4.3
Noise and vibration risks from the installation

Hazard 1	Receptor 2	Pathway 3	Risk Assessment and Management Techniques 4	Exposure Probability 5	Consequence 6	Overall Risk 7
Transferring substances solid raw materials	Local residents Employees and visitors to other sites	Air	EMS daily spot samples. Industrial noise survey, plus subjective outbreak rational Raw materials received during week-day day times so nuisance is most unlikely.	Virtually nil	Nearest receptors too far away to be affected.	Not significant
Transferring liquid raw materials	Local residents Employees and visitors to other sites	Air	EMS daily spot samples. Industrial noise survey, plus subjective outbreak rational. Raw materials received during week-day day times so nuisance is most unlikely.	Virtually nil	Nearest receptors too far away to be affected.	Not significant
Delivery of raw materials from pressurised road vehicle tanker	Local residents Employees and visitors to other sites	Air	EMS daily spot samples. Industrial noise survey, plus subjective outbreak rational. Raw materials received during week-day day times so nuisance is most unlikely.	Virtually nil	Nearest receptors too far away to be affected.	Not significant
Plant or equipment failure	Local residents Employees and visitors to other sites	Air	EMS daily spot samples. Industrial noise survey, plus subjective outbreak rational. All the plant is enclosed within the building envelope, so any noise is attenuated. failures are prevented/attended to as per EMS maintenance plan	Virtually nil	Nearest receptors too far away to be affected.	Not significant
Vehicle movements within installation	Local residents Employees and visitors to other sites	Air	EMS daily spot samples. Industrial noise survey, plus subjective outbreak rational	Virtually nil	No adverse consequence because site isolated with wide boundaries.	Not significant
Vents from coolers	Local residents Employees and visitors to other sites	Air	EMS daily spot samples. Industrial noise survey, plus subjective outbreak rational	Virtually nil	Nearest receptors too far away to be affected. Outlets attenuated.	Not significant

4.4 Assessment of fugitive emission risks

I'Anson Bros Ltd new mill at Dalton benefits from all the BAT (Best available Technique) recommendations of the 2019 BREF conclusions. In addition, it is probably unique in the UK as every item of plant and equipment is housed within the building envelope. All deliveries of raw materials and equipment and collections of finished products will be made within the enclosed structure. In consequence of this fugitive emissions will be virtually nil. Given the distance of the installation from other buildings, domestic or commercial such limited emissions that might occur will not affect any neighbour. All the materials used in the production of animal feeds are organic and naturally occurring so will not harm the local environment, any such emission will be contained within the site boundary.

Table 4.4 Fugitive emissions

Hazard 1	Receptor 2	Pathway 3	Risk Assessment and Management Technique	Probability of Exposure 5	Consequence 6	Overall Risk

			4			7
Transferring substances solid raw materials	Local residents & or water course Employees and visitors to other sites	Drainage system or air	Raw materials are ordered based on stock checks, purpose designed and aspirated intake points. Raw materials received during week-day day times so nuisance is minimised. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	Fugitive Dust & Odours from materials are highly unlikely to travel as far as nearest receptors. The drains and gully's are arranged such that accidental spillage is most unlikely.	Nearest receptors too far away to be affected. Nuisance is most unlikely.	Not significant
Transferring liquid raw materials	Local residents & or water course Employees and visitors to other sites	Drainage system or air	Raw materials are ordered based on stock checks Raw materials received during week-day day times so nuisance is most unlikely. Tanks and connections in bunded areas, secondary spill kits and gully bungs available as part of the EMS. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	Fugitive liquids & Odours from liquid materials are highly unlikely to travel as far as nearest receptors. The drains and gully's are arranged such that accidental spillage is most unlikely.	Nearest receptors too far away to be affected. Nuisance is most unlikely.	Not significant
Plant or equipment failure	Local residents & or water course Employees and visitors to other sites	Drainage system or air	Plant is fully interlocked and shuts down automatically in the event of a failure; any materials will be fully contained and cannot leave the installation. All the plant is enclosed within the building envelope so any fugitive emissions will be contained.	There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse. Any accidental leaks would be detected rapidly, and necessary actions taken to prevent or limit emissions.	Fugitive Dust & Odours from materials are highly unlikely to travel as far as nearest receptors. Nuisance is most unlikely.	Not significant
Emissions from intake & bulk out-loading	Local residents & or water course Employees and visitors to other sites	Drainage system or air	The intake points are all contained within the building envelope Raw materials are received & finished products out-loaded during week-day day times so nuisance is most unlikely. Raw materials are ordered based on stock checks, Tanks and connections in bunded areas, secondary spill kits and gully bungs available as part of the EMS.	There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	Nearest receptors too far away to be affected. Nuisance is most unlikely.	Not significant
Emissions from tank breathers	Local residents Employees and visitors to other sites	Air	As for the solid raw materials the liquids are housed within the building envelope, thus odours will be contained.	Fugitive Odours from liquid materials are highly unlikely to travel as far as nearest receptors.	Receptors too distant to be affected. Nuisance is most unlikely.	Not significant

4.5 Assessment of visible emissions

I'Anson Bros Ltd new mill at Dalton benefits from all the BAT (Best available Technique) recommendations of the 2019 BREF conclusions. In addition, it is probably unique in the UK as every item of plant and equipment is housed within the building envelope. All deliveries of raw materials and equipment and collections of finished products will be made within the enclosed structure. In consequence of this there will be no visible emissions from vehicular deliveries or collections. There will be 8 controlled emission points associated with;

2 modestly sized steam boilers, these fire natural gas which ensures no visible emissions will occur.

2 hammer mill systems, the maximum emissions allowed under the current BREF conclusions is 5mg/m³. The abatement provided is reverse jet bag filters so emissions will be controlled within the prescribed limits. Control measures included as part of the EMS will ensure immediate shut down should a fault occur.

4 product cooler emission points, the maximum emissions allowed under the current Breff conclusions is 20mg/m³. The abatement provided is high efficiency cyclones so emissions will be controlled within the prescribed limits. The emissions are confirmed by annual M Certs sampling. Control measures included as part of the EMS will ensure immediate shut down should a fault occur.

Due to atmospheric conditions and ambient temperature, there will be a water vapour plume visible at times. This is due to the fact that the product which is being cooled is considerably hotter than the ambient temperature especially in the winter months. This water vapour is completely harmless and will be dispersed harmlessly as are the particulates as explained in the professional modelling by Air Quality Consultants. The report is included within the appendices to this application.

Table 4.5 Visible emissions

Hazard 1	Receptor 2	Pathway 3	Risk assessments and Management Techniques 4	Probability of Exposure 5	Consequence 6	Overall Risk 7
Plumes due to transferring substances solid raw materials	Local residents & or water course Employees and visitors to other sites	Drainage system or air	Raw material deliveries take place within the building envelope, so no visible plume is possible	Virtually nil	Little likelihood	Not significant
Plumes due to transferring liquid raw materials	Local residents & or water course Employees and visitors to other sites	Drainage system or air	Liquid raw material deliveries take place within the building envelope, so no visible plume is possible	Virtually nil	Little likelihood	Not significant
Emission plumes from intake & bulk out-loading	Local residents & or water course Employees and visitors to other sites	Drainage system or air	Finished product collections take place within the building envelope, so no visible plume is possible	Virtually nil	Little likelihood	Not significant
Emission plumes from tank breathers	Local residents Employees and visitors to other sites	Air	Visible plume highly unlikely, however liquids are housed within the building envelope, so no visible plume is possible	Virtually nil	Little likelihood	Not significant
Visible plumes from the 8 high level-	Local residents Employees and visitors to other	Air	Water vapour plumes will be visible from the cooler outlets during cold weather. This plume is harmless.	The dispersion will be similar to the particulates as	Relatively no consequence.	Not significant

controlled emission points	sites			explained in the professional modelling.		

4.6 Assessment of accident risks

The possible impacts resulting from accidents at the installation have been carefully assessed and appropriate containment measures are also discussed in supporting information **section 9** 'Accident Management Plan' of this application; Table 3.6 below summaries the various risks.

Table 4.6 Accidents and management

Hazard 1	Receptor 2	Pathway 3	Risk Assessment and Management techniques 4	Probability of Exposure 5	Consequence 6	Overall Risk 7
Transferring substances solid raw materials	Water course	Drainage system but site surfaces fully metalled	Raw materials are ordered based on stock checks, purpose designed and aspirated intake points. Leaks are unlikely but would be contained within the building envelope.	Virtually nil. Any accident in this area would have minor consequence which would be easily contained within the building.	No adverse consequence because outlet to drain would be closed in the unlikely event of a failure	Not significant
Overfilling bins and silos	Water course	Drainage system but site surfaces fully metalled	Raw materials are ordered based on stock checks, High-levels and interlocked system shuts down when bin or silo is full. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	Virtually nil. The control system would alarm to prevent an over-fill. Any spillage would have minor consequence which would be easily contained within the building.	No adverse consequence because outlet to drain would be closed in the unlikely event of a failure	Not significant
Transferring liquid raw materials	Water course	Drainage system but site surfaces fully metalled	Raw materials are ordered based on stock checks, Tanks and connections in bunded areas, secondary spill kits and gully bungs available, as per EMS. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	Virtually nil. Secondary containment would prevent leaks within the building. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	No adverse consequence because outlet to drain would be closed in the unlikely event of a failure	Not significant
Overfilling tanks	Water course	Drainage system but site surfaces fully metalled	Raw materials are ordered based on stock checks, Tanks fully bunded, secondary spill kits and gully bungs available as per EMS. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	Raw materials are ordered based on stock checks, Tanks fully bunded, secondary spill kits and gully bungs available as per EMS. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	No adverse consequence because outlet to drain would be closed in the unlikely event of a failure	Not significant
Plant or equipment failure	Water course	Drainage system but site surfaces	Plant is fully interlocked and shuts down automatically in the event of a failure; any	Virtually nil. Plant is fully interlocked and shuts down automatically in the event	No adverse consequence because outlet to drain would	Not significant

		fully metalled	materials will be fully contained and cannot leave the installation.	of a failure; any materials will be fully contained and cannot leave the installation.	be closed in the unlikely event of a failure	
Fires or failure to contain firewater	Water course	Drainage system site but surfaces fully metalled	Facilities exist to check firewater before allowing it to flow to drain. All raw materials are non-hazardous and fully biodegradable. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	Virtually nil. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	No adverse consequence because outlet to drain would be closed in the unlikely event of a failure	Not significant
Containment failure	Water course	Drainage system but site surfaces fully metalled	Facilities exist to prevent liquids entering the water course. Spill kits and gully bungs available, as per EMS. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	Virtually nil. Spill kits and gully bungs available. There is a full flow interceptor and slam shut valve to prevent a most unlikely spillage reaching the watercourse.	No adverse consequence because outlet to drain would be closed in the unlikely event of a failure	Not significant
Making wrong connections to drains	Water course	Drainage system site surfaces fully metalled	Drains have been carefully designed so there is no realistic possibility of a misconnection. The site expansion plans include any alterations to the drainage plan	Virtually nil	No adverse consequence because outlet to drain would be closed in the event of a failure	Not significant
Poor storage arrangements	Water course	Drainage system but site surfaces fully metalled	Materials are all stored as directed and in accordance with codes of practice. There is no realistic risk of adverse chemical or biological reactions.	Virtually nil. There is no realistic risk of adverse chemical or biological reactions.	No adverse consequence because outlet to drain would be closed in the unlikely event of a failure	Not significant
Incompatible substances	Water course	Drainage system but site surfaces fully metalled	Non compatible materials are not use in the installation.	Virtually nil. There is no realistic risk of adverse chemical or biological reactions.	No adverse consequence because outlet to drain would be closed in the unlikely event of a failure	Not significant
Accidental emission of uncontrolled effluent i.e., tipping lorry hydraulic hose failure	Water course	Drainage system but site surfaces fully metalled	Facilities exist to prevent liquids entering the water course. Spill kits and gully bungs available EMS work instruction operators fully trained in the correct actions and procedures. Slam shut valve in place to prevent accidental contamination of the water course.	Virtually nil. Vehicles tip within the building. Spill kits and gully bungs available EMS work instruction operators fully trained in the correct actions and procedures.	No adverse consequence because outlet to drain would be closed in the unlikely event of a failure	Not significant
Vandalism	Water course / atmosphere	Drainage system but site surfaces	The site is not accessible in silent periods, site is fenced gated and fully locked. CCTV	Virtually nil. Site is secure.	No adverse consequence because outlet to drain would	Not significant

	Local residents & or water course Employees and visitors to other sites	fully metalled / materials fully enclosed	installed.		be closed in the unlikely event of a failure. Receptors such as dwellings too distant to be affected.	
Flooding	Water course	Drainage system but site surfaces fully metalled	Site is self-draining, and any materials stored in buildings are palletised. The 100 year flood event has been factored into the drainage plan.	Virtually nil. Site is located about 10 metres above the water course Cod Beck and about 7 metres above the predicted 100 year flood event.	No adverse consequence because outlet to drain would be protected by purpose designed surge tank.	Not significant
Dust explosion	Water course / atmosphere Local residents & or water course Employees and visitors to other sites	Drainage system but site surfaces fully metalled	Buildings zones according DSEAR Regulations, all equipment appropriately ATEX rated, industry guidance and precautions all in place. Staff are trained in DSEAR compliance.	Virtually nil. The substances designated as dangerous are much less volatile in the form used for compound feeds than published figures suggest. Extensive testing has confirmed this together with an almost total lack of contra events in the industry.	No adverse consequence because site isolated with wide boundaries. Dwellings too distant to be affected.	Not significant
Washing down outside	Water course	Drainage system but site surfaces fully metalled	Facilities exist to prevent liquids entering the water course secondary spill kits and gully bungs available EMS work instruction operators fully trained in the correct actions and procedures. Emergency slam shut valve in place to prevent accidental contamination of the water course.	Virtually nil. No washing permitted except in a fully designed and approved wash area.	No adverse consequence because outlet to drain would be closed because this would be a planned event undertaken on a dry day.	Not significant

Comment
Accident risks and appropriate containment measures are discussed in the accident management plan. See supporting information Section 9.

4.7 Assessment of particulate emissions

The installation has two small package steam raising boilers with flues venting to atmosphere, due to their modest size 'gross thermal input' of 2.2 MW each, so the exhaust is subject to limited control under the regulations. However the component of these gas fired plants is included in the particulate modelling.

The installation also has 6 controlled vents to atmosphere; The source of the emissions will therefore be the 4 product coolers which draw ambient air through the hot product for cooling purposes as explained fully elsewhere in this application. The cooling air

entrains particulate matter although this is abated by cyclones a small quantity is emitted to atmosphere. This standard procedure is well understood and there is a benchmark maximum permitted level for particulate emissions of this sort of 20mg/m³. Controls are in place within the installation which ensures this emission limit is complied with. Annual independent sampling MCERTS standards are carried out by accredited third party specialists and submitted to the enforcement officer.

There are also 2 controlled vents to atmosphere associated with the 2 hammer mill systems. These emissions are abated by bag filters with reverse jet cleaning facilities. This standard procedure is well understood and there is a benchmark maximum permitted level for particulate emissions of this sort of 5mg/m³. Controls are in place within the installation which ensures this emission limit is complied with. Annual independent sampling M Certs standards are carried out by accredited third party specialists and submitted to the enforcement officer. The emissions of all 8 points have been modelled using the dispersion model and additional expert interpretations to ensure $PM_{2.5}$ & PM_{10} dispersions comply with air quality requirements.

The Environment Agency seeks to require all Part A installations with a controlled discharge of particulates to atmosphere to arrange for the ultimate discharge to be positioned at least 3 metres above the tallest part of the buildings. This requirement will be complied with. I'Anson Bros Ltd also engaged a specialist consultancy, expert in the discharge of odour and particulates to conduct detailed modelling. 'Air Quality Consultants' were duly instructed. Air Quality Consultants found that the emissions will be adequately dispersed by the proposed arrangements.

The data which describes the emissions assumes 20g/m³ discharge rate (the maximum allowed against rated capacity of the fan systems attached to the coolers, and 5g/m³ for the grinder filters. The modelling also assumes that total particulate emissions are $PM_{2.5}$ & PM_{10}, this has been convincingly proved incorrect by work carried out recently by the industry's trading body AIC.

Detailed Modelling

The report from the selected specialists 'Air Quality Consultants' is included below. The emission level used in the specialist report is a very significant overstatement

The modelling has been based on the assumption that all 8 vents will operate continuously throughout the year and emit at the maximum permitted rate. This is a very significant overestimate because the operational pattern of the installation reacts to customer demand and the emissions are significantly lower than the maximum allowed.

Table 4.7 Particulate emissions

Hazard 1	Receptor 2	Pathway 3	Risk assessments and Management Techniques 4	Probability of Exposure 5	Consequence 6	Overall Risk 7
Particulates due to transferring substances solid raw materials	Local residents & or water course Employees and visitors to other sites	Drainage system or air	Raw material deliveries take place within the building envelope, so no visible plume is possible	Virtually nil	Little likelihood	Not significant
Emission of particulates from intake & bulk out-loading	Local residents & or water course Employees and visitors to other sites	Drainage system or air	Finished product collections take place within the building envelope, so no visible plume is possible	Virtually nil	Little likelihood	Not significant
Particulate emissions from the 8 high level-controlled emission points	Local residents Employees and visitors to other sites	Air	Detailed modelling has confirmed that dispersion of particulate emissions will be well within guidance levels	Virtually nil	Relatively no consequence.	Not significant

Comment

An estimate of the actual hours that the emissions occur is 7,900 hours pa out of a possible 8,760 pa hours, the latter based on 365 x 24. The estimated proportion of the maximum operational hours that the plant is running is about 90%. The level of emission was assumed to be the maximum allowed. The actual losses to atmosphere based on industry experience and annual isokinetic tests are well within the limits for controlled emission points.

The full report from Air Quality Consultants Appendix 2 is reproduced below, the electronic version it is a separate pdf file.

4.8 Assessment of possible habitats disruption

Current situation

Solmex were engaged to conduct a desk study of the new feedmill site in order to form a conceptual model. Solmex in turn commissioned Envirocheck and the Landmark information group to conduct the necessary searches to facilitate their work. The full report is appendix 1 in a separate electronic file.
The work by Envirocheck on behalf of Solmex has established the status of the following;

Special Protection Areas within 10 km
Special Areas of Conservation within 10 km
Ramsar sites within 10 km
Sites of Special Scientific Interest within 2 km and
World Heritage sites

There are no such sites within the designated distances of the application site.
In addition, the site does not lie within a nitrate vulnerable zone or any designated sensitive area. This is no doubt why the Local Authority have designated the area north of the existing Dalton Airfield Industrial Estate as an extension which will benefit the local area and provide additional employment for local residents.

WEL (Wright Environment Limited) were engaged to conduct an Ecological Impact Assessment as part of the planning process, (see appendix 4) in line with planning and local authority requirements. The Environment Agency were amongst the consultees of the successful planning application. The installation a new feed mill for I'Anson Bros Ltd is to be located on the northern extension of the Dalton Airfield industrial Estate. The site is effectively a brown field development, although no actual built structures or ground works had historically extended to the actual site itself.

Survey of receptors requiring consideration.

In order to ensure that the installation has no detrimental effect upon existing habits and protected sites in the vicinity of the site a survey was conducted. The ecological zones of influence have been defined for this assessment as follows;

• International Statutory Designated Sites – 10km radius of the Application Site Boundary.
• National Statutory Designated Sites - 5km radius of the Application Site boundary.
• Non-Statutory Designated Sites - 2km radius of the Application Site boundary.
• Records of bat roosts and other mobile species – 2km radius of the Application Site boundary.
• Records of bats (not roosts) – 1km of the radius of the Application Site boundary.
• Records of legally protected species and/or Species of Principal Importance / UKBAP Species (excluding bats) - 500m radius of the Application Site boundary.

The assessment by WEL also considered protected species based on a desk and field survey work, the potential for the site to support birds, bats, badger, and great crested newt. It was noted that the site experienced reasonably high levels of human disturbance, for example regular cutting of grass, frequent commercial vehicle movements (including a small helicopter taking off from the adjacent hard standing) and dog walkers, and this is considered to reduce the potential of the site to support certain species. There were no built structures and few mature trees within the Application Site or within the immediate vicinity, and therefore limited potential for roosting bats.

Statutory Designated Sites: There were no internationally or nationally designated sites within the Application Site or within 2km of it.

Locally Designated and Non-Statutory Designated Sites: There were no locally designated sites or non-statutory designated sites such as Local Nature Reserves, North Yorkshire Sites of Importance for Nature Conservation (SINC) or Yorkshire Wildlife Trust Reserves within a 2km radius of the Application Site boundary.

Habitats: There were no ancient or semi-natural woodlands or planted ancient woodland sites within 2km of the Application Site. A number of deciduous woodlands occur within a 2km radius of the Application Site, the closest being about 1.3km northwest, as well as a single Traditional Orchard located on the opposite side of the village of Dalton at a distance of about 1.7km east. The locations and types of all Priority Habitats within 2km of the site are shown in Appendix B. of the WEL report which is included in this supporting information section 4.

Protected / Notable Species: The NEYEDC provided records of notable and protected species in the area of the site. The more recent records (i.e., those recorded within the last 10 years) for protected or notable (e.g., BAP species) within 2km of the site are summarised in the table below. Records of bat roosts within a 2km radius have been reproduced from data provided by the North Yorkshire Bat Group.
Complete lists of species are provided in Appendix B. It should be noted that the absence of records for a species does not mean the absence of the species.

The MAGIC website was used to identify the presence of Granted European Protected Species Applications within 2km of the site: There were none within 2km of the Application Site. The nearest was approximately 5km northwest of the site, granted in 2016 for a common pipistrelle and brown long eared bat roost.

This habitats assessment concludes that, for the most part, the new mill (the installation) will only affect those habitats and species which occur within the Application Site. However, the assessment has considered a wider area to ensure comprehensive coverage and compliance with the guidance.
The majority of the Application Site comprised a relatively species poor, grass field, with commercial activities on the Dalton Industrial Estate close by. The site was also used by dog walkers and experienced human disturbance.
The likely future baseline condition of the Application Site, had the Proposed Development been delayed or cancelled, was considered. It was concluded that the existing land uses would continue, and the anticipated future baseline would be broadly similar to the current baseline
Occupation of the Proposed Development is unlikely to present a significant detrimental effect to the poor semi-improved grassland which remains within the Application Site or adjacent to it, nor on the dependent wildlife, including foraging and commuting bats, hedgehog, and brown hare.

Mitigation by Design.

A number of detrimental effects to important ecological features were identified at an early stage of the planning process. However, these could be avoided or at least partially mitigated by introducing the following measures which have been adopted. Where such mitigation has been incorporated into the site layout they are termed Mitigation by Design.
These include;

• Retention of the deciduous woodland Priority Habitat along the eastern boundary of the site.
• Retention of the majority of the deciduous woodland along the northern boundary.
• Creation of a vegetated landscape strip adjacent to section of woodland lost in access creation, in order to mitigate the effects of this lost on habitat functionality.

The area will be managed in perpetuity to ensure diversity of. The creation and maintenance regime requirements will be included in the Ecological Management Plan (EMP). The EMP will form part of the site EMS in order to ensure compliance. This enhanced habitat is expected to result in an increase in floral species and invertebrates benefitting foraging bats, hedgehogs, and birds.

The potential for light pollution to impact bat foraging and commuting has been avoided by a creative lighting design which creates dark corridors around the perimeter through the use of illumination limits and zones of illumination to separate bat foraging and commuting habitats along the boundary woodland edges and new hedgerows from features which require essential lighting e.g., roads, parking, pedestrian zones, and entrances. The use of appropriate luminaires with minimal light spill behind each unit has been used to create and maintain the dark buffers required. The use of “forward throw” LED luminaires will reduce illumination behind the lighting columns, and with light spread below the horizontal in order to achieve a light level of 2 lux or below at the site boundaries.

Enhancement and Biodiversity Net Gain.

The avoidance and mitigation measures described above are expected to result in an overall positive impact on the ecological features identified in the assessment. In addition, opportunities for biodiversity enhancement are to be adopted as part of the development these include;
• Increased species and structural habitat diversity through the use of a diverse mix of native hedgerow species within the boundary hedges to be created over about 300m, with management to develop age structure and maximisation of wildlife habitat throughout the development lifetime.
• These hedgerows will form a wildlife corridor connecting the two boundary woodlands, extending habitat, and facilitating wildlife movement.
• Artificial bird nest boxes will be installed into selected parts of the boundary woodland belts to increase the nesting habitat available to woodland birds on the site.
• Artificial bat roost boxes will be installed into selected parts of the boundary woodland belts to increase the roosting habitat available on the site.

Table 4.8 Assessment of possible habitats disruption

Hazard	Receptor	Pathway	Risk assessments and Management	Probability of	Consequence	Overall Risk

1	2	3	Techniques 4	Exposure 5	6	7
Emissions due to transferring substances solid raw materials	Water course Application site and local area	Drainage system or air	Raw material deliveries take place within the building envelope, so no emissions will occur	Virtually nil	Little likelihood	Not significant
Emissions due to transferring liquid raw materials	Water course Application site and local area	Drainage system or air	Liquid raw material deliveries take place within the building envelope, so no emissions will occur	Virtually nil	Little likelihood	Not significant
Emissions from intake & bulk out-loading	Water course Application site and local area	Drainage system or air	Finished product collections take place within the building envelope, so no emissions will occur	Virtually nil	Little likelihood	Not significant
Emissions from tank breathers	Application site and local area	Air	No emissions will leave the building envelope	Virtually nil	Little likelihood	Not significant
Emissions from the 8 high level-controlled emission points	Application site and local area	Air	The emissions from the high-level controlled emission points are adequately dispersed. The emissions are very modest and are organic, so will not damage the environments or any natural habitat.	The dispersion will comply with guidance. Dispersion will ensure no damage will occur.	Relatively no consequence.	Not significant
Loss of habits on the application site	Application site	Ground	New hedges will be planted, together retention of existing hedges and landscape belt. The grounds will be managed as part of the EMS.	The new planting will enhance the environment, thus reversing any damage on site.	Relatively no consequence.	Not significant
Disruption of habitat due to site lighting plan	Application site	Air/ground around site.	The lighting plan has been selected to limit any disruption to nocturnal species	Any disruption will be limited by lighting plan advised by WEL	Relatively no consequence.	Not signicicant.

Conclusions

Given the fact that the application site currently has a relatively low value in terms of habits, flora and fauna, the change of use will not have any material effect on its value. The applicants have pledged to maintain the grounds and landscape belt which will actually enhance the ecological value of the site in perpetuity.

Global warming

The installation uses a significant quantity of energy, this is probably the reason the provender milling process is subject to the regulations. The principal form of energy consumed is imported electricity. The installation also raises a modest quantity of steam for conditioning process materials. The steam raising plant has a capacity of less than 2 MW so is only subject to the medium combustion plant directive. The site shall enter the current CCLA agreement through the sectors trading body AIC formerly (UKASTA), see section 8 of the supporting information for this application. Energy use and continuous

improvement in efficiency is monitored and controlled by this existing agreement, this is accepted for the purpose of this application.

Justifying the cost and benefit analysis of control measures

As the title in H1 suggests by the (if needed) all control measures are either already in-place in this on-going operation, or the measures planned are accepted as necessary in order to comply with essential aspects of PPC. We therefore feel the exercise is not necessary therefore none will be produced.

Health Statement

The installation will not present any human health hazard to third parties or create a nuisance or damage to the general environment. Essentially all the products manufactured at the installation will be consumed as animal feeds, which enter the human food chain. There are numerous quality and safety control systems in place to monitor quality and efficacy of the products. In addition, there are a number of official bodies that control practices at the establishment. Odour and particulates are authorised and controlled emissions, but these are well within the Environment Agency guidelines, so no respiratory impact is anticipated. Fugitive emissions are virtually non-existent as is explained above and in Section 5 of the supporting information.

There are a number of possible health issues to address with regard to the workforce employed at the installation; as such the operations will be subject to the appropriate enforcement by HSE. Industrial noise is limited as far as is practical by purchase of low noise plant. There will be hearing protection zones where workers will be required to wear the hearing protection provided as explained in the supporting information. Grain dust is well known as a respiratory irritant, but the workforce exposure will not exceed the required levels of 10mg/m^3 however due to good plant design. The design includes local exhaust ventilation to maintain the plant under a slight negative pressure thus avoiding dust leaks. This will be checked and tested by regular personal and static dust monitoring surveys carried out in order to comply with the COSHH Regulations. Certain feed ingredients are known sensitizers, these will be flagged up and the workforce will again be protected as required under the COSHH Regulations by engineering incorporation equipment and appropriate (PPE) personal protective equipment and training.

Conclusion

The various assessments detailed above identify the hazards, define the receptors, and propose a control system or control measures (either industry standard or as per the guidance where appropriate). The assessment exercise shows the risks to the environment are low thus justifying the assertion that the proposed measures are adequate. All of these measures will be in place before the plant is commissioned. A number of the measures are proposed in order to comply with BAT conclusions (best available practice) from the BREF 2019. This being a requirement for applications for a bespoke operating permit.

Appendix 1 Solmek Site Contamination Study, Phase 1 desk top study Landmark Historical Maps and Envirocheck Investigations, Phase 2 Site Investigation

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S190224 Phase 1 Desk Study I'Anson

S200601 Site Investigation Daltor

Appendix 2 Air Quality Consultants Particulates and Odour Modelling

AQC Hambleton Dalton Industrial es

Appendix 3 Beechfield Design and Consultancy Noise Assessment

Noise assesment.pdf

Appendix 4 WEL Wright Ecological Impact Assessment

Ecological Impact Assessment, Land at