 <p>Environmental Protection Agency An Ghníomhaireacht um Chaomhnú Comhshaoil</p>	OFFICE OF ENVIRONMENTAL SUSTAINABILITY
ENVIRONMENTAL LICENSING PROGRAMME	
TO:	Micheál Lehane, Director
FROM:	Anna Barry, Inspector, Environmental Licensing Programme
DATE:	30 th November 2023
RE:	Technical Amendment to Industrial Emissions Register Number: P0048-03, held by Dawn Meats Ireland Unlimited Company, for an installation located at Hazel Hill, Ballyhaunis, County Mayo.

The Agency received a request on 21 April 2023 from Dawn Meats Ireland Unlimited Company, Licence Reg. No. P0048-03 to technically amend its Licence. The request received on 21 April 2023 relates to the following:

1. The use of Meat and Bone Meal (MBM) as an alternative solid fuel type in the boiler associated with emission point A1-1.

A further request from Dawn Meats Ireland Unlimited Company was received on 02 October 2023 and 03 October 2023 to technically amend the licence. The request received on 02 October 2023 relates to the following:

2. (a) The operation of the MBM boiler and existing boiler in tandem via emission point A1-1.

The request received on 03 October 2023 relates to the following:

2. (b) The use of LPG as an additional fuel.

This memo recommends that the change in request 1 may be accommodated by a Technical Amendment, in accordance with Section 96(1)(c) of Environmental Protection Agency Act 1992 as amended (hereafter referred to as the EPA Act).

This memo recommends that the change in request 2 may not be accommodated by a Technical Amendment, in accordance with Section 96(1)(a), (b) or (c) of the EPA Act.

1. Background

Licence Reg. No. P0048-01, was granted to Irish Country Meats Ltd. on 01 August 1997 for a slaughtering and rendering activity located at Hazel Hill, Ballyhaunis, County Mayo.

A revised licence, Licence Reg. No. P0048-02 was issued to Dawn Country Meats Limited t/a Western Proteins on 23 May 2007. The review was for the purposes of compliance with the IPPC Directive (96/61/EC), as well as accommodating changes in raw material usage. A further

revised licence, Licence Reg. No. P0048-03 was issued on 19 November 2012 to bring their licence into compliance with EO Regulations¹.

Licence Reg. No. P0048-03 was amended for the purposes of Section 82A(11) of the EPA Act 1992 as amended, on 18 December 2013. This amendment gives effect to the requirements of Directive 2010/75/EU (Industrial Emissions Directive).

The licence was further amended on the 09 May 2014 (Technical Amendment A) to incorporate the use of biomass as an alternative solid fuel in the boiler associated with emission point A1-1.

The Inspector notes that on 07 November 2016 the company's registration name for the Licensee was updated to Dawn Meats Ireland Unlimited Company.

The installation is licenced under Classes 7.4.1², 7.7.1³ and 7.8(a)(i)⁴ of the First Schedule to the EPA Act as amended. The installation operates as a beef and sheep slaughtering and processing unit and an affiliated animal by-product rendering plant and associated abatement plant (waste water treatment plant, biofilters, humidifiers, etc.) The beef and sheep slaughtering installation receives livestock from farmers, while the rendering installation accepts animal by-products from slaughtering activities and butchers. The products of the licensed activity are bone-in beef and lamb, vacuum packed cuts of prime meat, MBM, and tallow.

2. Technical Amendment Request

On 21 April 2023, the Agency received a request for a Technical Amendment of Licence Reg. No. P0048-03, in order to allow for:

1. The use of MBM as an alternative solid fuel type in a boiler associated with emission point A1-1.

In support of the amendment application, the Licensee submitted:

- An Air Dispersion Model (ADM) as submitted previously with Technical Amendment A.
- Site plans confirming the location of A1-1.
- A letter from the Department of Agriculture, Food and the Marine (DAFM) providing approval in principle for the operation of a MBM boiler and a copy of the associated *CN60: Conditions for Approval of a Combustion Plant (Category 1 Meat and Bonemeal (MBM))*.
- A Certificate of Incorporation On Change Of Name demonstrating that the Licensee's name changed from Dawn Meats Ireland to Dawn Meats Ireland Unlimited Company on 07 November 2016.
- Further clarification in relation to the proposed use of MBM as a fuel at rendering plant.

¹ European Communities Environmental Objectives (Surface Waters) Regulations 2009, S.I. No. 272 of 2009 and the European Communities Environmental Objectives (Ground water) Regulations 2010, S.I. No. 9 of 2010.

² The operation of slaughterhouses with a carcass production capacity greater than 50 tonnes per day.

³ The disposal or recycling of animal carcasses or animal waste with a treatment capacity exceeding 10 tonnes per day.

⁴ The treatment and processing, other than exclusively packaging, of the following raw materials, whether previously processed or unprocessed, intended for the production of food or feed from: only raw animal materials (other than exclusively milk) with a finished product production capacity greater than 75 tonnes per day; For the purposes of clause (a), packaging shall not be included in the final weight of the product. Clause (a) shall not apply where the raw material is milk only.

The Licensee refers to Technical Amendment A, which accommodated a biomass boiler at this location. The Licensee now wishes to use MBM as a fuel instead due to its high calorific value and as a move towards using a carbon neutral fuel. They note that Commission Regulation (EU) 2020/735 of 2 June 2020 amending Regulation (EU) No. 142/2011⁵ facilitates the use of MBM as a fuel in combustion plants.

The Licensee intends to utilise a fluidised bed combustion (FBC) furnace or a rotary kiln furnace connected to a new 12MW boiler. They state that they intend to use MBM as a fuel in accordance with the *CN60: Conditions for Approval of a Combustion Plant (Category 1 Meat and Bonemeal (MBM))* issued by DAFM. The emissions will discharge through the existing stack at emission point A1-1. The Licensee notes that Planning Permission for the building which will house the boiler was granted previously (Planning ref. 1370). They note that this building and stack were considered at the time Technical Amendment A was issued.

The Licensee states that the emissions to air arising from the MBM boiler will remain below the emission limit values (ELVs) set out in the existing licence. They confirm that the operational emissions from the boiler will remain below the limits set for new combustion plant in S.I. No. 595 of 2017 European Union (Medium Combustion Plants) Regulations 2017 (hereafter referred to as the MCP Regulations). Abatement of particulate emissions will be provided by a reverse jet pulsing bag filter system. They note that animal by-product (ABP) material will be handled in accordance with the existing conditions of the licence and in accordance with the ABP Regulations^{5,6,7}.

On 02 October 2023 and 03 October 2023, the Agency received a request for a Technical Amendment of Licence Reg. No. P0048-03, in order to allow for:

2. The operation of two boilers in tandem via emission point A1-1 and the use of LPG as an additional fuel.

The Licensee provided information in relation to the proposed operation of the two boilers at emission point A1-1. The Licensee proposed that the existing boiler will now be required to support the MBM boiler as the reactivity time of MBM is slow relative to gas or oil. In addition to this the existing boiler is required to operate during periods where the MBM boiler is out of operation.

No further supporting information was submitted by the Licensee in relation to this request.

3. Consultation with the Office of Environmental Enforcement (OEE)

I have consulted with the OEE Inspector, Simon Buckley, in relation to this technical amendment request. The OEE have confirmed that the proposed amendments cannot be

⁵ Commission Regulation (EU) 2020/735 of 2 June 2020 amending Regulation (EU) No 142/2011 as regards the use of meat-and-bone meal as a fuel in combustion plants.

⁶ Regulation (EC) No 1069/2009 of the European Parliament and of the Council of 21 October 2009 laying down health rules as regards animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 1774/2002 (Animal by-products Regulation).

⁷ Commission Regulation (EU) No 142/2011 of 25 February 2011 implementing Regulation (EC) No 1069/2009 of the European Parliament and of the Council laying down health rules as regards animal by-products and derived products not intended for human consumption and implementing Council Directive 97/78/EC as regards certain samples and items exempt from veterinary checks at the border under that Directive.

accommodated under the existing licence. OEE has confirmed that there are no legal proceedings in train in respect of this licence.

4. Assessment

Section 96(1) of the EPA Act:

Section 96(1) of the EPA Act states that

“The Agency may amend a licence or revised licence for the purposes of -

- (a) correcting any clerical error therein,
- (b) facilitating the doing of anything pursuant to a condition attached to the licence where the doing of that thing may reasonably be regarded as having been contemplated by the terms of the condition or the terms of the licence taken as a whole but which was not expressly provided for in the condition, or
- (c) otherwise facilitating the operation of the licence and the making of the amendment does not result in the relevant requirements of section 83(5) ceasing to be satisfied”.

Each proposed amendment has been considered against Section 96(1) (a), (b), or (c) of the EPA Act, as relevant.

1. The use of Meat and Bone Meal (MBM) as an alternative solid fuel type in the boiler associated with Emission Point A1-1.

While Technical Amendment A facilitated the Licensee to move from Heavy Fuel Oil (HFO) to biomass as a fuel at A1-1, the Licensee did not implement this change. They now propose to change the fuel type from HFO to MBM, necessitating a change to the type of boiler at A1-1, as described above and the addition of a bag filter system.

The ADM report provided in support of the amendment request is the same model that was carried out in support of Technical Amendment A. The model demonstrated that an emission to air at the ELVs in the existing licence will give rise to maximum predicted ground level concentrations of SO_x, NO_x, Carbon Monoxide and Particulates (PM₁₀) that are all below the relevant Air Quality Standards.

There is no change proposed to flow rate or emission limits for any of the parameters specified in *Schedule B.1 Emissions to Air* of the existing licence. However the limits specified for the combustion of “other solid fuels” in a new combustion unit (12MW), as specified in the MCP Regulations, are lower than those specified in the existing licence. These lower limits apply from the date of operation of the new boiler on MBM in accordance with the MCP Regulations. The Licensee has demonstrated that the boiler at A1-1 can comply with these lower limits. In addition, limits specified for “liquid fuels other than gas oil” for existing medium combustion plants in accordance with the MCP Regulations will be applied from the date of grant of this Technical Amendment for A1-1. These limits will apply until the commencement of operation of boiler A1-1 on MBM and reflect the current use of HFO as the primary fuel associated with the boiler.

I am satisfied that Licensee has demonstrated that the replacement of the HFO boiler with an MBM boiler will not lead to an increase in emissions from the installation and is therefore not considered significant.

The ABP Regulations provide that MBM can be used as a fuel in combustion plants subject to specified requirements.

DAFM have provided approval in principle for the operation of the MBM boiler subject to the conditions of *CN60: Conditions for Approval of a Combustion Plant (Category 1 Meat and Bonemeal (MBM))*. While the ABP Regulations provides that both Category 1 and Category 2 MBM may be used as a fuel, the DAFM approval permits the combustion of Category 1 MBM only.

Therefore, I am satisfied that Category 1 MBM can be combusted safely and appropriately if done so in accordance with DAFM requirements.

It is considered that the proposed amendment request no. 1) may be accommodated under Section 96(1)(c). To amend the licence under this criterion, two parts need to be satisfied, Part (i) otherwise facilitating the operation of the licence and Part (ii) does not result in the relevant requirements of Section 83(5) ceasing to be satisfied. The proposed change of fuel and emission limits in line with the MCP Regulations can be considered as otherwise facilitating the operation of the Licence. There will be a reduction in mass emissions and as such this amendment will not result in the relevant requirements of Section 83(5) ceasing to be satisfied. Therefore, the proposed amendments satisfy the criteria under Section 96(1)(c) of the EPA Act, allowing the Agency to amend a licence or revised licence.

Based on the above assessment, it is recommended that the changes to the licence to accommodate the use of MBM as a solid fuel source be accommodated by Technical Amendment. It is considered that the proposed revisions are in accordance with Agency guidelines for licence amendments⁸. The reduction in mass emissions to air will ensure emissions will not cause an exceedance of the relevant air quality standards.

The existing licence contains controls in relation to the handling of ABP:

- Maintenance of negative pressure throughout all buildings where animal by-products, intermediates or finished products are deposited, stored, processed or manufactured to ensure that there is no significant escape of odours.
- Keeping doors closed when not in use.
- Maintenance of impervious surfaces where ABP is deposited/stored, laid to fall to drains and associated collection tanks.
- Odour and dust management.

It is considered that these conditions are sufficient and applicable to the handling and storage of MBM as a fuel on site. The existing conditions relating to boiler inspection, maintenance and monitoring are also applicable. However, some Condition/Schedule amendments are required to reflect the use of MBM as a fuel and MCP Regulation requirements. In addition, as some of the requirements specified by DAFM in *CN60: Conditions for Approval of a Combustion Plant (Category 1 Meat and Bonemeal (MBM))* include environmental related controls (e.g. the operating temperature of the boiler and handling of combustion residue), it is considered that these should be incorporated into the licence.

⁸ Guidance for Licensee on Request for Alterations to a Licensed Industrial or Waste Activity (EPA, June 2019).

Therefore, the recommended amendment (RA) includes the following specific changes to the licence:

- Glossary: Definition of MBM and Derived Products added as per DAFM *CN60: Conditions for Approval of a Combustion Plant (Category 1 Meat and Bonemeal (MBM))*. Definition of Licensee amended to reflect new Licensee name, as registered with CRO.
- Condition 3.20 - New condition to control total organic content of slags and bottom ashes, as per DAFM requirements.
- Conditions 5.7, 5.8 and 5.9 - Updated to include reference to MBM.
- Condition 6.19 – Amended to require a test programme for new emissions abatement equipment (e.g. the proposed new bag filter at A1-1).
- Schedule B.1 – Addition of minimum treatment time and temperature in boiler A1-1 as per DAFM requirements and a reduction in ELVs to match MCP Regulation requirements.
- Schedule C.1.1. – Addition of temperature measurement controls as per DAFM requirements, insertion of controls to accommodate the proposed fabric filter to be installed for the abatement of particulates at A1-1, and continuous monitoring of boiler emissions.
- Schedule C.1.2 – Addition of frequency of monitoring for combustion plant and fabric filter for A1-1.

2. The operation of two boilers in tandem via emission point A1-1 and the use of LPG as an additional fuel in the existing boiler.

The Licensee provided information in relation to the proposed operation of the two boilers at emission point A1-1. The Licensee proposed that the existing boiler will now be required to support the new MBM boiler as it states that the reactivity time of MBM is slow relative to gas or oil. In addition to this the Licensee wishes to operate the existing boiler during periods where the MBM boiler is out of operation.

The Inspector notes the existing licence does not provide for two boilers to operate together via emission point A1-1. The Licensee did not provide any additional supporting information in relation to the proposed operation of the two boilers in tandem or the use of LPG. The Licensee has not provided information as part of the request as to what limits will be applied to the new boiler, how monitoring of separate emissions from two different boilers running in tandem will be undertaken, how the proposed operation of such a system of two boilers with two different fuel types exiting via a single stack would be controlled, monitored, or compliance demonstrated with the MCP Regulations. The Licensee also did not provide an assessment of the likely environmental impact as a result of the requested amendment and did not demonstrate how the mass emissions from the installation will not increase as a result of the proposed change.

The Inspector notes Technical Amendment A issued in 2014 previously provided for the operation of a biomass boiler associated with emission point A1-1, this amendment provided that the existing boiler associated with A1-1 would provide for outages of the biomass boiler. Technical Amendment A did not provide for the two boilers to be run in tandem.

Based on the information provided, the amendment request to operate the new MBM boiler and existing boiler (on LPG) in tandem via emission point A1-1 cannot be considered to be (a) correcting any clerical error or (b) facilitating the doing of anything pursuant to a condition

attached to a licence where the doing of that things may reasonably be regarded as having been contemplated by the terms of the condition or terms of the licence when taken as a whole.

It is also considered that the amendment cannot be accommodated by way of Section 96(1)(c). For an amendment to be accommodated under Section 96(1)(c) it must satisfy both criteria Part (i) otherwise facilitating the operation of the licence and Part (ii) does not result in Section 83(5) failing to be satisfied.

In relation to Part (i) there is insufficient information for the Inspector to assess and determine that the proposed operation of two boilers in tandem and the use of LPG in the existing boiler could be interpreted as facilitating the operation of the licence.

In relation to Part (ii) the Licensee has failed to provide sufficient supporting information, to demonstrate that Section 83(5) will continue to be satisfied.

It is therefore considered that the proposed amendment cannot be accommodated by way of a Technical Amendment as it cannot be considered to fulfil criteria (a), (b), or (c) set out in Section 96(1).

5. Appropriate Assessment

Appendix 1 lists the European Sites assessed, their associated qualifying interests and conservation objectives.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activities, individually or in combination with other plans or projects are likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites at River Moy SAC (002298), Errit Lough SAC (000607), Carrowbehy/Caher Bog SAC (000597), Drumalough Bog SAC (002338), Cloonchambers Bog SAC (000600), Derrinea Bog SAC (000604), Urlaur Lakes SAC (001571), Williamstown Turloughs SAC (002296), Croaghill Turlough (000255), Coolcam Turlough SAC (000218) and Lough Corrib SAC (000297).

The activities are not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it can be excluded, on the basis of objective information, that the activities, individually or in combination with other plans or projects, will not have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activities was not required.

This determination is based on the following reasons:

- The installation is not located within any European site;
- The ELVs for emissions to air will be reduced, resulting in a decrease in mass emissions from the installation from what was considered during the assessment conducted for Licence Reg. No. P0048-03.

There are no other changes to the nature or extent of emissions at the installation.

6. Recommendation

This memo recommends that the following requested change be accommodated by a Technical Amendment of Licence P0048-03 (held by Dawn Meats Ireland Unlimited Company), in accordance with Section 96(1)(c) of the EPA Act 1992 as amended:

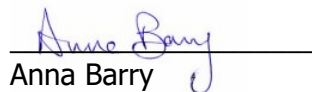
- The use of Meat and Bone Meal (MBM) as an alternative solid fuel type in the boiler associated with emission point A1-1.

I recommend that the licence amendment be approved as set out in the attached recommended Technical Amendment. The making of the amendment will not result in the relevant requirements of Section 83(5) of the EPA Act 1992 as amended, ceasing to be satisfied.

This memo recommends that the following requested change **cannot** be accommodated by way of a Technical Amendment as it cannot be considered to fulfil criteria (a), (b), or (c) set out in Section 96(1):

- The operation of two boilers in tandem via emission point A1-1 and the use of LPG as an additional fuel.

Signed,



Anna Barry
Inspector
Environmental Licensing Programme

Appendix 1: List of European Sites assessed, their associated qualifying interests and conservation objectives.

	European Site (Site Code)	Distance from Installation	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives
1	River Moy SAC (002298)	2.8 km north-west of the installation	<p>Habitats</p> <p>6510 Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)</p> <p>7110 Active raised bogs*</p> <p>7120 Degraded raised bogs still capable of natural regeneration</p> <p>7150 Depressions on peat substrates of the Rhynchosporion</p> <p>7230 Alkaline fens</p> <p>91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles</p> <p>91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)*</p> <p>Species</p> <p>1095 Sea Lamprey (<i>Petromyzon marinus</i>)</p> <p>1106 Salmon (<i>Salmo salar</i>)</p> <p>1092 White-clawed Crayfish (<i>Austropotamobius pallipes</i>)</p> <p>1355 Otter (<i>Lutra lutra</i>)</p> <p>1096 Brook Lamprey (<i>Lampetra planeri</i>)</p>	As per NPWS (2016) Conservation Objectives: River Moy SAC 002298. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs (dated 03/08/2016).
2	Errit Lough SAC (000607)	7 km north-east of the installation	<p>Habitats</p> <p>3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.</p>	As per NPWS (2017) Conservation Objectives: Errit Lough SAC 000607. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht (dated 18/12/2017).

3	Lough Corrib SAC (000297)	7 km south-west of the installation	<p>Habitats</p> <p>3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)</p> <p>3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea</p> <p>3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.</p> <p>3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation</p> <p>6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)</p> <p>6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)</p> <p>7110 Active raised bogs*</p> <p>7120 Degraded raised bogs still capable of natural regeneration</p> <p>7150 Depressions on peat substrates of the Rhynchosporion</p> <p>7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae*</p> <p>7220 Petrifying springs with tufa formation (Cratoneurion)*</p> <p>7230 Alkaline fens</p> <p>8240 Limestone pavements*</p> <p>91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles</p> <p>91D0 Bog woodland*</p>	As per NPWS (2017) Conservation Objectives: Lough Corrib SAC 000297. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs (dated 28/04/2017).
---	---------------------------	-------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

			<p>Species</p> <p>1096 Brook Lamprey (<i>Lampetra planeri</i>)</p> <p>1095 Sea Lamprey (<i>Petromyzon marinus</i>)</p> <p>1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)</p> <p>1106 Salmon (<i>Salmo salar</i>)</p> <p>1092 White-clawed Crayfish (<i>Austropotamobius pallipes</i>)</p> <p>1029 Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)</p> <p>1355 Otter (<i>Lutra lutra</i>)</p> <p>6216 Slender Green Feather-moss (<i>Hamatocaulis vernicosus</i>)</p> <p>1833 Slender Naiad (<i>Najas flexilis</i>)</p>	
4	Carrowbehy/Caher Bog SAC (000597)	7.7 km east of the installation	<p>Habitats</p> <p>7110 Active raised bogs*</p> <p>7120 Degraded raised bogs still capable of natural regeneration</p> <p>7150 Depressions on peat substrates of the Rhynchosporion</p>	As per NPWS (2015) Conservation Objectives: Carrowbehy/Caher Bog SAC 000597. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht (dated 09/11/2015).
5	Urlaur Lakes SAC (001571)	9 km north of the installation	<p>Habitats</p> <p>3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.</p>	As per NPWS (2017) Conservation Objectives: Urlaur Lakes SAC 001571. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht (dated 15/12/2017).
6	Derrinea Bog SAC (000604)	9.8 km north-east of the installation	<p>Habitats</p> <p>7110 Active raised bogs*</p> <p>7120 Degraded raised bogs still capable of natural regeneration</p> <p>7150 Depressions on peat substrates of the Rhynchosporion</p>	As per NPWS (2015) Conservation Objectives: Derrinea Bog SAC 000604. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht (dated 02/11/2015).

7	Drumalough Bog SAC (002338)	10 km east of the installation	Habitats 7110 Active raised bogs* 7120 Degraded raised bogs still capable of natural regeneration 7150 Depressions on peat substrates of the Rhynchosporion	As per NPWS (2016) Conservation Objectives: Drumalough Bog SAC 002338. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs (dated 03/08/2016).
8	Coolcam Turlough SAC (000218)	10.5km south-east of the installation	Habitats 3180 Turloughs*	As per NPWS (2017) Conservation Objectives: Coolcam Turlough SAC 000218. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht (dated 07/11/2017).
9	Cloonchambers Bog SAC (000600)	11.4 km east of the installation	Habitats 7110 Active raised bogs* 7120 Degraded raised bogs still capable of natural regeneration 7150 Depressions on peat substrates of the Rhynchosporion	As per NPWS (2016) Conservation Objectives: Cloonchambers Bog SAC 000600. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht (dated 18/01/2016).
10	Williamstown Turloughs SAC (002296)	12.2 km south-east of the installation	Habitats 3180 Turloughs*	As per NPWS (2018) Conservation Objectives: Williamstown Turloughs SAC 002296. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht (dated 31/01/2018).
11	Croaghill Turlough SAC (000255)	12.4 km south-east of the installation	Habitats 3180 Turloughs*	As per NPWS (2017) Conservation Objectives: Croaghill Turlough SAC 000255. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht (dated 20/11/2017).