

Attachment 4-8-4 Site Condition Report

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1. Introduction

This attachment addresses the requirements for a Site Condition Report which forms part of the Industrial Emissions (IE) Licence Application by Amazon Data Services Ireland Limited (ADSIL).

ADSIL (*‘the Applicant’*) is applying to the Environmental Protection Agency (*‘the Agency’*) for an IE Licence for its data storage facility (hereafter referred to as the *‘Installation’*) located at Data Centre Building B1, Kildare Innovation Campus (KIC), Barnhall Road, Leixlip, County Kildare, Ireland.

The proposed Installation site covers an area of c. 3.645 hectares (ha) in total and sits within a wider masterplan – the Kildare Innovation Campus (KIC) Masterplan site, which was granted planning permission in January 2024 under Kildare County Council (KCC) Planning Ref. 23/60047. An Environmental Impact Assessment Report (EIAR) and Appropriate Assessment (AA) Screening Report were prepared as part of the KIC Masterplan site planning application and have been submitted with this IE Licence application, refer to Attachment 6-2-1 AA-Screening-July-2023 and Attachment 6-3-6 EIAR-Planning-July-2023.

ADSIL holds a long-term lease that concerns lands within the IE licence site boundary, which sits in the northwest corner of the KIC Masterplan site. The proposed IE licence relates only to the area concerning the Installation. The remaining areas within the KIC Masterplan site are controlled by the KIC Masterplan site owner, hereafter referred to as *“the Landowner”*.

A Baseline Report has been prepared in accordance with the European Commission Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on industrial emissions¹, which is submitted under Attachment 4-8-2 Baseline Report.

The EPA’s Licence Application Form Guidance, 2021 (Version 2.1)² states that a baseline report may fulfil the requirements of the site condition report. As such, this assessment outlines where the reader can find the required information in the Baseline Assessment as well as including the current site condition regarding surface water, air and noise quality.

2. Previous Site Reports

There have been no prior Baseline Reports or Site Condition Reports completed for the Installation site since the change of ownership from Hewlett Packard (HP) to the current Landowner in 2019. Accordingly, a new Baseline Report been prepared as part of this IE licence application, refer to Attachment 4-8-2 Baseline Report.

The following Environmental Site Investigation Reports have been undertaken as part of the planning application for the KIC Masterplan site (KCC Planning Ref. 23/60047), and are considered as part of the Baseline Report:

- IGSL Limited (2020) Factual Ground Investigation Report – Liffey Technology Campus, O’Flynn Group & Arup
- RSK Limited (2018) Groundwater Monitoring Assessment – Hewlett Packard, Liffey Park, Leixlip, Co. Kildare

The environmental baseline condition of the Installation site for soil and groundwater is covered in Attachment 4-8-2 Baseline Report under *Stage 5 – Environmental Setting* and *Stage 7 – Site Investigation*.

¹ European Commission Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on industrial emissions (2014/C 136/03). Available at: [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0506\(01\)#:~:text=The%20baseline%20report%20shall%20contain,upon%20definitive%20cessation%20of%20activities.](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0506(01)#:~:text=The%20baseline%20report%20shall%20contain,upon%20definitive%20cessation%20of%20activities.)

² EPA (2021) Licence Application Form Guidance (Version 2.1). Available at: <https://www.epa.ie/publications/licensing--permitting/waste/Licence-Application-Form-Guidance---Version-2.1.pdf>

Summary details of the soil, ground and groundwater quality are discussed in relation to current quality standards. This includes details of all the major and minor surface water features in the area along with current quality status of these where applicable. Baseline air and noise quality monitoring has been undertaken as part of the EIAR and included as part of the Attachment 7-1-3-2 Air Emissions Impact Assessment Report and Attachment 7-1-3-2 Noise Emissions Impact Assessment Report.

3. Environmental Conditions of the Site

3.1 Soil

The Baseline Report (Attachment 4-8-2) has reviewed the soil and groundwater assessments included as part of the EIAR prepared for the KIC Masterplan site planning application (KCC Planning Ref. 23/60047). This report has concluded that no evidence of contamination was evident on the Installation site.

The Installation site is generally flat and has an elevation of approximately 51.0 m above Ordnance Datum (mAOD). The depth to bedrock was estimated as part of IGSL Limited's Factual Ground Investigation Report (IGSL Limited, 2020) and results are included in the Baseline Report (Attachment 4-8-2). The conceptual site model (CSM) prepared as part of the EIAR prepared for the KIC Masterplan site planning application has estimated depth to bedrock of approximately 6 to 7m below ground level (bgl). This has also been estimated based on Geological Survey of Ireland (GSI) online mapping data, indicating an aquifer vulnerability of Moderate Permeability and a corresponding depth to bedrock value of between 3 and 10m bgl.

The KIC Masterplan site includes the former Hewlett Packard (HP) site, which ceased operation in 2019. A review of the site history was undertaken as part of the EIAR submitted with the KCC Planning application (Planning Ref. 23/60047). The desktop review assessed the available historical maps and reports and this section of this reports includes a summary of those findings. The historic mapping below indicates the prior use of the Installation site from the earliest mapping available 1837-1842 through to present day.

A review of historic maps (1837-1842 and 1888-1913) shows the surrounding area as undeveloped agricultural land until the late 1900s. 1995 aerial imagery shows early signs of the construction of the HP facility and a number of residential dwellings to the east and south of the KIC Masterplan site along the River Liffey also appear around this time.

Anecdotal evidence indicates that the former HP site operated as an abattoir and meat packaging facility prior to the development of the HP facility in the mid-1990's. During redevelopment work for the HP facility, a significant volume of canned meat and animal carcasses were encountered and removed. No significantly contaminating historical site uses have been identified.

The 2000 aerial imagery shows the HP facility in its current configuration. The most recent aerial imagery available to date shows no great changes to surrounding land use from the period of the 2000s.

The only relevant hazardous substances (substances stored or used onsite and which are classified as hazardous by the EPA under the Groundwater Regulations and contained in bulk storage) that will be stored in notable quantities onsite will be HVO, diesel or a blend of HVO and diesel for the generators, and R32 refrigerant, stored within the enclosed cooling system.

The risk prevention measures present at the Installation will significantly reduce the potential for an environmental impact to soil or water to occur. These measures will include double contained fuel storage tanks, dual-contained fuel pipe system (when underground), spill management procedures and the incorporation of hydrocarbon interceptors on stormwater lines.

Source-pathway-receptor linkages were assessed for the bulk fuel storage areas. It was concluded that there are no direct pathways to either the soil or groundwater environment. Interceptors will be installed in the stormwater and foul drainage networks. Leakages will be fully contained in the double skinned lining of the top up tank and the storage tanks associated with each generator. Leaks during delivery will be fully contained within the continuous hard stand fuel delivery area. Any leakage outside of the fuel delivery area will be contained within the foul drainage system.

Refer to Attachment 4-8-2 Baseline Report for further details.

3.2 Groundwater

The Baseline Report (Attachment 4-8-2) reviewed the soil and groundwater assessments included as part of the EIAR prepared with the KIC Masterplan site planning application (KCC Planning Ref. 23/60047). This report has concluded that no evidence of contamination was evident on site at the Installation.

The groundwater body in which the Installation site is situated, Dublin groundwater body (GWB), is classified as 'Good' per the Water Framework Directive (WFD) Risk Score system. The Dublin GWB (Code: IE_EA_G_008) achieved 'Good Status' in the period 2016-2021.

There is no licencing system for wells in Ireland at present and as such no complete data set. The GSI Well Card Index is a record of wells drilled in Ireland, kept by the GSI, which was reviewed as part of the EIAR and Baseline Report. It is noted that this record is not comprehensive as licensing of wells is not currently a requirement in the Republic of Ireland. This current index, however, indicates there are 6 no. groundwater wells within the vicinity of the KIC Masterplan site, which includes the Installation site.

These wells are categorised as '*Agri and domestic use*' or '*other*' but they are likely to be inactive. The area is serviced by public mains therefore it is unlikely that any wells are used for potable supply. There are no ground water source protection areas within 10km radius of the KIC Masterplan site, which includes the Installation site.

A groundwater monitoring event was completed at the KIC Masterplan site during May 2018 by RSK Ireland Limited to confirm the contamination status of the groundwater underlying the KIC Masterplan site, which includes the Installation site. Laboratory analysis of groundwater samples reported that concentrations of contaminants of concern did not exceed the adopted Generic Assessment Criteria (GAC), which are criteria derived using the Contaminated Land Exposure Assessment (CLEA) model to be protective of human health for a number of different land uses. The groundwater underlying the KIC Masterplan site or Installation site is not considered to present a significant risk to human health or the environment.

The only relevant hazardous substances (substances stored or used onsite and which are classified as hazardous by the EPA under the Groundwater Regulations and contained in bulk storage) stored in notable quantities onsite will be HVO, diesel, or a blend of HVO and diesel, for generators, and R32 refrigerant held within the Installation site's enclosed cooling system.

The risk prevention measures present at the Installation will significantly reduce the potential for an environmental impact to soil or water to occur. These measures will include double contained fuel storage tanks, dual-contained fuel pipe system (when underground), spill management procedures and the incorporation of hydrocarbon interceptors on stormwater lines.

Source-pathway-receptor linkages were assessed for the bulk fuel storage areas. It was concluded that there are no direct pathways to either the soil or groundwater environment. Interceptors will be installed in the stormwater and foul drainage networks. Leakages will be fully contained in the double skinned lining of the top up tank and the storage tanks associated with each generator. Leaks during delivery will be fully contained within the continuous hard stand fuel delivery area. Any leakage outside of the fuel delivery area will be contained within the foul drainage system.

Refer to Attachment 4-8-2 Baseline Report for further details.

3.3 Surface Water

The topography of the Installation site is generally flat across the Installation site and has an elevation of approximately 51m above Ordnance Datum (mAOD).

The closest waterbody, the River Liffey, runs adjacent to the KIC Masterplan site in a south west to north east direction. There is an existing reservoir (Leixlip Reservoir) southeast of the Installation and KIC Masterplan site which forms part of the River Liffey. The Installation will discharge its stormwater runoff to the KIC Masterplan site's network, which will ultimately discharge into the Leixlip Reservoir at Celbridge Road following confirmation of water quality through online monitoring mechanisms operated by the KIC Masterplan site.

The Installation site is located within the Irish River Basin District, as defined under the European Communities Directive 2000/60/EC, establishing a framework for community action in the field of water policy – this is commonly known as the WFD. It is situated within Hydrometric Area No. 09 of the Irish River Network. The IE licence boundary is located within the sub-catchment Liffey_SC_080 (Catchment ID: 09).

The EPA assesses the water quality of rivers and streams across Ireland using a biological assessment method, which is regarded as a representative indicator of the status of such waters and reflects the overall trend in conditions of the watercourse. The biological indicators range from Q5 – Q1. Level Q5 denotes a watercourse with good water quality and high community diversity, whereas Level Q1 denotes very low community diversity and bad water quality.

With reference to the Installation setting, the nearest EPA Q value monitoring station is situated along the River Rye c. 1.6km north of the Installation. The EPA Q value monitoring station (Station Name: Br in Leixlip – Station Code: RS09R010600) obtained a Q3-4 Good Status in 2022.

In accordance with the WFD, each river catchment was assessed by the EPA and a water management plan detailing a programme of measures was put in place for each. Currently, the EPA classifies the WFD Ecological Status for the Liffey_150 and Rye Water_040 waterbodies as having a ‘Poor’ status (2016-2021) with the current WFD River Waterbody risk score being ‘Under Review’ for the Liffey_150 and ‘At Risk’ for the Ryewater_040. According to the EPA Map viewer, the Leixlip Reservoir also received a ‘Poor’ status (2016-2021) and the WFD Lake Waterbodies Risk score is currently ‘Under Review’.

Refer to Attachment 4-8-2 Baseline Report for further details.

3.4 Air

The Attachment 7-1-3-2 Air Emissions Impact Assessment Report submitted as part of this IE Licence Application provides a summary of the relevant air quality baseline conditions for the Installation site and models a potential worst-case scenario for the operation of the Installation site under abnormal conditions.

Under the Air Quality Framework Directive (Directive 96/62/EC)³ and the Clean Air for Europe Directive (2008/50/EC)⁴, EU member states must designate “Zones” for the purpose of managing air quality. For Ireland, four zones were defined in the Air Quality Standards Regulations (2022)⁵ defined as Zone A: Dublin, Zone B; Cork, Zone C: Other cities and large towns, and Zone D: Rural Ireland.

The Installation is situated within air quality Zone C.

Further details have been included in Attachment 7-1-3-2 Air Emissions Impact Assessment Report included with this IE licence application.

3.5 Noise

An environmental noise survey was conducted to quantify the existing noise environment of the Installation. The survey was conducted in accordance with guidance contained in the EPA *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* and ISO 1996-2:2017 *Acoustics - Description, Measurement and Assessment of Environmental Noise -Determination of Sound Pressure Levels*.

Based on the EPA NG4 Guidance the following Noise Criteria have been applied to Noise Sensitive Receptors (NSRs) used in Attachment 7-1-3-2 Noise Emissions Impact Assessment:

- Daytime (07:00 to 19:00): 55 dB L_{Ar} (15 mins)
- Evening (19:00 to 23:00): 50 dB L_{Ar} (15 mins)

³ Air Quality Framework Directive (Directive 96/62/EC). Available at: <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A31996L0062>

⁴ Clean Air for Europe Directive (2008/50/EC). Available at: <https://eur-lex.europa.eu/eli/dir/2008/50/oj>

⁵ Air Quality Standards Regulations 2022 (S.I. No. 739/2022). Available at: <https://www.irishstatutebook.ie/eli/2022/si/739/made/en/print>

- Night time (23:00 to 07:00): 45Db L_{Ar} (15 mins)

Baseline noise levels were measured at four NSRs (NSR01, NSR2, NSR3 and NSR4). Predicted noise levels at all NSRs are below the day, evening and night-time noise criteria.

Further details are set out in Attachment-7-1-3-2 Noise Emissions Impact Assessment included under Section 7 of this IE licence application.

4. Conclusions

As stated in Section 4.8 of the EPA's Licence Application Form Guidance, 2021 (Version 2.1)²:

"If a baseline report is submitted as part of this application this may also fulfil the requirements to describe the condition of the site. If this is the case, you are still required to upload a document to clarify this."

The Baseline Report submitted with this IE licence application (Attachment 4-8-2) and the information included within this document fulfils the requirements of the above Application Form Guidance, in relation to soil, surface water and groundwater. Further information on the site conditions in relation to Air and Noise have been included in Attachment 7-1-3-2 Air Emissions Impact Assessment and Attachment 7-1-3-2 Noise Impact Assessment included under Section 7 of this IE licence application.

5. References

Air Quality Standards Regulations 2022 (S.I. No. 739/2022). Available at: [S.I. No. 739/2022 - Ambient Air Quality Standards Regulations 2022](#)

EC (2014) *European Commission Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on industrial emissions (2014/C 136/03)*. Available at: [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0506\(01\)#:~:text=The%20baseline%20report%20shall%20contain,upon%20definitive%20cessation%20of%20activities](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0506(01)#:~:text=The%20baseline%20report%20shall%20contain,upon%20definitive%20cessation%20of%20activities)

EPA (2016) *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)*. Available at: [Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities \(NG4\) | Environmental Protection Agency](#)

EPA (2021) *Licence Application Form Guidance (Version 2.1)*. Available at: <https://www.epa.ie/publications/licensing--permitting/waste/Licence-Application-Form-Guidance---Version-2.1.pdf>

EPA (2024a) *Air Quality in Ireland 2023*. Available at: <https://www.epa.ie/publications/monitoring--assessment/air/air-quality-in-ireland-2023.php>

EPA (2024b) Air Quality Zones. Available at: [Air Quality Zones | AirQuality.ie](#).

EPA Air Quality Index for Health. Available at: <https://airquality.ie/information/air-quality-index-for-health>

IGSL Limited (2020) *Factual Ground Investigation Report – Liffey Technology Campus*, O'Flynn Group & Arup

ISO 1996-2:2017 *Acoustics - Description, Measurement and Assessment of Environmental Noise - Determination of Sound Pressure Levels*

RSK Limited (2018) *Groundwater Monitoring Assessment – Hewlett Packard, Liffey Park, Leixlip, Co. Kildare*