

Pure Data Centre – Permit Variation

784-B047734

Environmental Risk Assessment

Environmental Permit Variation Application

PDCG (GROUP SERVICES LIMITED)

September 2023

Document prepared on behalf of Tetra Tech Limited. Registered in England number: 01959704

DOCUMENT CONTROL

Document:	Environmental Risk Assessment
Project:	Pure Data Centre – Permit Variation
Client:	PDCG (GROUP SERVICES LIMITED)
Project Number:	784-B047734
File Origin:	\\lds-dc-vm-101\Data\Projects\784-B047734_Pure_DCG_Permit_Variation\60 Project Output\61 Work in Progress\Finals\PDF\Appendix C - Environmental Risk Assessment\Environmental Risk Assessment.docx

Revision:		Prepared by:	Michaela Fry
Date:	September 2023	Checked by:	Andrew Bowker
Status:	Draft	Approved By:	
Description of Revision:			

Revision:		Prepared by:	Gemma Allan
Date:	September 2023	Checked by:	Andrew Bowker
Status:	Final	Approved By:	Andrew Bowker
Description of Revision:			

Revision:		Prepared by:	
Date:		Checked by:	
Status:		Approved By:	
Description of Revision:			

Revision:		Prepared by:	
Date:		Checked by:	
Status:		Approved By:	
Description of Revision:			

TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	ENVIRONMENTAL RISK ASSESSMENT	2
3.0	AMENITY AND ACCIDENTS	2
4.0	SURFACE WATER DISCHARGES	7
5.0	AIR	8
6.0	WASTE OUTPUT	10
7.0	GLOBAL WARMING POTENTIAL	11

LIST OF TABLES

Table 1: Potential Pathways.....	3
Table 2: Receptors Within 1Km of the Site.....	3
Table 3 Waste Recovery and Disposal Methods	10
Table 4: Annual Production of NOx at Each Emission Point	11
Table 5: Annual Impact of Emissions on Global Warming.....	12

DRAWINGS

Environmental Permit Boundary - PURE/B047734/GEN/01
Site Layout Plan - GA PROPOSED SITE PLAN (EAST AND WEST)- PHASE 02
Emission Points to Air - PURE/B047734/EPA/01
Environmental Receptor Plan - PURE/B047734/REC/01

APPENDICES

Appendix A - Environmental Risk Assessment
Appendix B – EcoloGy Statement
Appendix C – Nature and Heritage Report (EPR/QP3706LH/V002)

1.0 INTRODUCTION

1.1 REPORT SCOPE

- 1.1.1 This section of the Environmental Permit Variation Application corresponds to Section 6 of Part C2 of the Environmental Permit application forms, and has been prepared on behalf of the operator, PDCG (Group Services Limited) (PDCG).
- 1.1.2 PDCG currently operate a site known as Pure Data Centre, JVC Business Park, Staples Corner, London, NW2 7BA. The site is centred at approximate National Grid Reference (NGR) TQ 22296 87216. The site operates under permit EPR/QP3706LH granted on 05/09/2022.
- 1.1.3 The data centre comprises permanent buildings that contain data storage and associated IT infrastructure. The facility will under normal operating conditions be powered by grid supplied electricity. A contingency standby power solution, comprising multiple liquid-fuelled engines provides onsite electrical generating capacity to be used in the event of power outages to the site.
- 1.1.4 The data centre is required to be permanently online and will be powered by the national electricity supply grid. In consultation with relevant stakeholders and following a review of historic electricity outages and forecast ongoing grid resilience it is considered that the electricity supply grid will remain sufficiently stable to enable the data centre to operate on grid supplied electricity only. However, the provision of standby power generating plant is essential in accordance with best practice and contractual obligations.
- 1.1.5 The existing permit (EPR/QP3706LH) authorises the operation of 16 standby electric generating plant in the event of a National Grid failure and for testing purposes.
- 1.1.6 PDCG are now seeking to expand the site and subsequently the quantity of generators on site, by constructing a further 40 gas engines each rated at 3.3MW.
- 1.1.7 The new generators will be located adjacent to the western side of building LON1B1 as shown on Drawing Numbers PURE/B047734/GEN/01 and GA PROPOSED SITE PLAN (EAST AND WEST)- PHASE 02. The Generators will be over five floors and will be fully enclosed. The generators will be situated in pairs totalling eight per floor with the fuel stores located below on the ground floor.
- 1.1.8 This Environmental Risk Assessment (ERA) is limited to a qualitative assessment of the potential risks to the environment and human health specifically related to the proposed activity. This report will identify any significant risk and demonstrate that the risk of pollution will be acceptable by taking the appropriate measures to manage the risk.

2.0 ENVIRONMENTAL RISK ASSESSMENT

2.1 METHODOLOGY

- 2.1.1 This report has been prepared following the Environment Agency's (EA) Risk Assessment guidance. It specifically relates to the potential risks associated with the following risk types: -
- Amenity and accidents;
 - Surface water discharges;
 - Air;
 - Site waste; and,
 - Global warming potential
- 2.1.2 This risk assessment addresses the above, and is based on the following methodology: -
- Identification of potential sources of risks;
 - Identification of all potential receptors to risk; and,
 - Risk assessment of each risk type.
- 2.1.3 The ERA is a tool used to identify the pollutant linkage i.e., source-pathway-receptor. For most risks, the atmosphere is the main pathway and will always exist. Therefore, the ERA deals primarily with the sources and receptors and is provided in Appendix A and summarised below.

3.0 AMENITY AND ACCIDENTS

3.1 SOURCES

- 3.1.1 The potential sources of risks have been considered for each risk type, as provided in Appendix A and summarised below:

Odour

- Waste materials.

Noise and Vibration

- Engine noise from vehicles;
- Use of reverse vehicle warnings;
- Use of plant and machinery; and,
- Engineering works.

Fugitive emissions

- Particulate matter i.e. dust;
- Scavenging birds;
- Mud; and,
- Litter.

Accidents

- Fire or failure to contain firewater;
- Leaks and spillages;
- Flooding; and,
- Vandalism

3.2 PATHWAYS

3.2.1 The pathways have been identified for each risk type as shown in Table 1 below.

Table 1: Potential Pathways

Risk Type	Pathway
Odour	Atmosphere
Noise and vibration	Atmosphere
Fugitive emissions	Atmosphere
Accidents	Atmosphere
	Surface water run-off
	Infiltration
	Percolation

3.3 RECEPTORS

3.3.1 Receptors within 1km of the proposed application boundary have been listed in Table 2 and are shown on Drawing Number PUR/B047734/REC/01. A Nature and Heritage Screening Report was acquired from the EA (EPR/QP3706LH/V002) to identify protected habitats and species, these are detailed in the table below and the report is provided as Appendix C of this Report. The main pathway for the identified sources will be atmosphere and as such, atmospheric conditions can affect dispersion rates and hence potential risk. As a result, the location of each receptor in relation to the site may influence the potential impact of the risk, as summarised in Table 2.

Table 2: Receptors Within 1Km of the Site

ID	Receptor	Direction from Operational Area	Minimum Distance from the Permit Application Boundary (approx. m)
Domestic Dwellings			
1	Properties to the south of the North Circular Road (A406)	S SW	340
2	Properties to the Northeast of Brent Reservoir	N	250
3	Properties to the East of the M1	NE	460
Commercial and Industrial Premises			
4	Vanguard Self Storage	W	Adjacent
5	London Group Business Park	W	Adjacent

6	Harp View business Park	E	Adjacent
7	Commercial and Industrial properties South of the North Circular Road (A406)	S	55
8	Commercial and Industrial Properties East of the A5	NE	230
9	Industrial Properties North of Cool Oak Lane	N	545
10	Greenmantle Landscape	NW	765
11	Staples Corner Retail Park	E	412
12	Brent South Shopping Park	E	750
13	Brent Cross Shopping Centre	NE	900

Recreational

14	Neasden Recreation Ground	W	266
15	Woodfield Park	NW	474
16	West Hendon Playing Fields	NW	849
17	Welsh Harp Open Space	NW	420
18	Princess Park Youth Football Club	NW	630
19	Phoenix Canoe Club	NW	560
20	Welsh Harp Green Valley	W	820
21	York Park	N	500
22	Claremount Park	SE	895

Schools / Hospitals / Shops/Amenities

23	Travelodge Brent Cross	E	240
24	Parkfield Primary School	NE	636
25	Braintcroft Primary School	SW	701
26	The Crest Academy	SW	760
27	Menorah Girls School	S	805
28	Holiday Inn Brent Cross	E	945
29	Torah-Vodaas	NE	275
30	Princess Park Youth Football Club	NW	600
31	ICIS School	S	230
32	Ambulance Transfer Service	S	150
33	Harley Street Ambulance Service	W	130
34	Neasden Room	SW	580
35	The Crest Boys Academy	SW	785
36	Our Lady of Grace Roman Catholic School	S	960
37	Parkfield Primary School and Childrens Centre	NW	670
38	West Hendon Pre-School	NW	865
39	Al Naseeha Saturday School	NW	955
40	Barnet Hill Academy	NW	970
41	Aplomb Day and Pre-School	N	745

42	Woodfield School	NW	970
Highway or Minor Roads			
43	North Circular Road A406	S	Adjacent
44	Edgware Road A5	E	205
45	M1	E	410
Railway Infrastructure			
46	Rail Line	E	350
47	Hendon Rail Transfer Station	SE	915
48	Hendon Train Station	N	990
Sensitive Land Uses e.g. farmland, allotments, commercial fish farms			
49	West Hendon Allotment Society	NW	642
50	Nutfield Road Allotments	S	760
51	Thames Water - Dollis Hill Reservoir	S	780
Protected Habitats			
52	Priority Habitat Deciduous Woodland	N	Adjacent
53	Priority Habitat Deciduous Woodland West of Brent Reservoir	N	463
54	Priority Habitat Deciduous Woodland	N	565
55	Priority Habitat Deciduous Woodland	NE	670
56	Priority Habitat Deciduous Woodland – Thames Water Utilities (Dollis Hill Reservoir)	S	805
57	Priority Habitat Deciduous Woodland – Brent Terrace	SE	879
Nature and Heritage Conservation Sites – SSSI / LNR / RAMSAR/ LWS			
58	Brent Reservoir/Welsh Harp (SSSI & LNR)	N/NW	120
59	Dollis Hill Reservoir (LNR)	S	805
60	Reed Beds	N/NW	110
Surface Water e.g. rivers and streams			
61	Brent Reservoir	N/NW	120
62	River Brent	N	65
Groundwater (sensitivity)			

According to the Multi-Agency Geographic Information for the Countryside's (MAGIC) website, the site is not situated within a Groundwater Source Protection Zone.

- 3.3.2 As shown in Table 2, there are no statutory designated sites (i.e., Special Protection Areas, Special Areas of Conservation or Ramsar sites) within 1km of the site. However, the Environment Agency's OPRA Scheme for Installations guidance provides that consideration be given to statutory designated sites within the following distances: -
- Sites of Special Scientific Interest (SSSI) = 2km; and,
 - Ramsar Sites, Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Marine Protection Areas (MPA) = 10km.
- 3.3.3 With reference to the Multi-Agency Geographic Information for the Countryside (MAGIC) website, the Brent Reservoir SSSI was the only statutory site that is located within 10km of the site boundary.

- 3.3.4 As stipulated in the guidance, if an installation is located within the relevant distance criteria of a statutory designated site, such as sites designated under the Habitats Directive and/or the Countryside Rights of Way Act (2000), then the impact of emissions on the conservation areas must be assessed during the determination of the permit. The predicted operational impact on the habitat sites located within 2km of the site are considered within the Air Quality Assessment.

3.4 RISK ASSESSMENT

- 3.4.1 The ERA (Appendix A) looks at each specific hazard identified and assesses the likelihood of those hazards impacting on the receptors. This is achieved by fulfilling the following objectives: -
- Identify the location and nature of each hazard;
 - Identify the specific receptors potentially at risk and assess the sensitivity of each receptor;
 - Provide a qualitative assessment of the risk posed to each sensitive receptor;
 - Identify management and monitoring techniques; and,
 - Provide recommendations for more detailed assessments where necessary.

3.5 SUMMARY OF ERA

- 3.5.1 The ERA (Appendix A) indicates that the proposed development will have no significant impact in terms of odour, noise and fugitive emissions, and the likelihood of accidents is minimal.

4.0 SURFACE WATER DISCHARGES

4.1 METHODOLOGY

- 4.1.1 This section aims to assess the risks to surface water from the activities proposed within this application.
- 4.1.2 PDCG is currently permitted to discharge uncontaminated site surface water via oil-water separators at emissions points W1 to the Thames Water drain and W2 to Private surface water drainage.
- 4.1.3 There will be no proposed changes to this activity as a result of this variation application.
- 4.1.4 As it is considered that there is no increased risk of contaminated surface water as a result of the proposed activity and therefore no further assessment is required.

5.0 AIR

5.1 METHODOLOGY

- 5.1.1 This section aims to assess the risks to the environment and human health from the activities proposed in the application in terms of emissions to air.
- 5.1.2 The Environment Agency's guidance requires the identification of any substances released to the air, the quantification of the emissions, and an evaluation of the potential environmental impact of the emissions.
- 5.1.3 A full Air Quality Assessment (AQA) has been undertaken and is provided in Appendix E of the environmental permit application. The following section summarises the findings of the AQA.
- 5.1.4 New Medium Combustion Plants which operate less than 500 hours per year as a 3-year rolling average are exempt from meeting MCPD ELVs. Monitoring of the emissions from the units will be consistent with the currently permitted frequencies and standards within the extant Environmental Permit.
- 5.1.5 The additional 40 generators will be utilised to maintain power in the event of a National Grid outage and will be tested (in groups of up to 8) for up to 30 minutes every month for ten months at up to 50% load, and up to four hours, twice per year at up to 100% load. This assessment has modelled generator emissions under the assumption of diesel fuel, when in reality the generators will be run on hydrotreated vegetable oil (HVO 100) fuel, which has a lower emission rate for oxides of nitrogen. Each generator will have an individual flue, these will be grouped into four groups of ten flues, all of which will terminate at a height of 43.1 m.
- 5.1.6 The AQA considers the potential impacts associated with nitrogen dioxide, particulate matter, sulphur dioxide, carbon monoxide, and total organic carbon as benzene on 17 human health receptors and 15 ecological sites for both the two testing scenarios, which follows the routine testing schedule, and the outage scenario, which represent a 48-hour National Grid outage.
- 5.1.7 The emissions have been modelled using ADMS-5 to screen the significance of impacts against the Environment Agency (EA) screening process. The predicted environmental concentration (PEC) from the Phase 1 assessment (existing 16 generators on site) has been used at the background concentration for this assessment to represent cumulative impacts. Within the model it has been assumed that there has been no improvement since the Phase 1 assessment, which used 2019 as a background year, and the worst-case meteorological year of 2017 has been used to ensure a worst case, robust assessment.
- 5.1.8 The impacts at all human health receptors during both the two testing scenarios and the outage scenario were screened out at all receptors for all pollutants within the testing and outage scenario except for the annual mean and 1-hour mean NO₂ within the outage scenario. However, the outage scenario is highly unlikely to occur over a 48-hour period, as the longest outage from Elstree Substation in the last ten years was less than 3 minutes, therefore impacts can be considered to be not significant. Subsequently, annual mean and short-term impacts at all receptors are either screened out and insignificant or assessed as not significant.
- 5.1.9 Impacts as a result of the six monthly and monthly testing scenarios on ecological receptors were screened to be insignificant and all but the annual mean NO_x and nutrient nitrogen deposition at E1 within the six-monthly testing scenario. To ensure a conservative approach, the background concentration from 2019 being used and concentrations in the opening year likely to be lower, as well as the impact due to the background concentration already exceeding the AQO. Furthermore, NO_x airborne pollutants are likely to have little impact on E1, as stated by the Air Pollution Information System (APIS). Subsequently, NO_x concentrations are not considered to be an issue for the habitat types within E1. As such, the annual mean NO_x impacts and nutrient nitrogen deposition impacts are considered to be not significant.

- 5.1.10 During the outage scenario, impacts were screened to be insignificant for all receptors except at E1 for annual mean NOx and nutrient nitrogen deposition as well as E1, E6, E9 and E10 for 24-hour mean NOx. However, these impacts were all determined to be not significant as it is highly unlikely that an outage will occur for a length of 48 hours, as the longest outage at Elstree substation was less than 3 minutes in the past ten years. As such the impact at ecological sites, where not able to be screened as insignificant, have been determined to be not significant in the outage scenario due to the unlikelihood of the outage scenario occurring.
- 5.1.11 As the impacts on human and ecological sites have been screened out as insignificant or determined to be not significant where screening out is not possible, mitigation measures are not considered necessary.
- 5.1.12 Though not required to mitigate against impacts as a result of the operation of the backup generators, a green wall has been included as part of the design of the site. One of the benefits of which, will be to provide positive impacts on air quality surrounding the installation.

6.0 WASTE OUTPUT

6.1 METHODOLOGY

- 6.1.1 The recommended approach for a site waste assessment is detailed in the Environment Agency's risk assessment guidance.
- 6.1.2 Due to the nature of the process (combustion of gas oil), the majority of the wastes generated at the facility will derive from routine maintenance and will comprise used engine air inlets, waste oil filters, waste oils and maintenance chemicals. As part of the existing operating procedures, these wastes will be stored on site before they are removed by an authorised waste disposal contractor, engine manufacturer or their agent, as appropriate.
- 6.1.3 Used chemical drums and barrels will be returned to the supplier or disposed of via a suitably licenced disposal contractor.
- 6.1.4 As mentioned in Section 4 above, uncontaminated site surface water via oil-water separators will be discharged at emissions points W1 to the Thames Water drain and W2 to Private surface water drainage.
- 6.1.5 The following table details the proposed destination of the waste streams and the relevant impact score.

Table 3 Waste Recovery and Disposal Methods

Description of Waste Stream	Nature of waste	Disposal or Recovery Option	Impact Score
Filters	Mirror Hazardous (8)	R7 (4)	32
Lubricant Oil (Mineral)	Hazardous (10)	D5 (30)	300
Glycol Solution	Hazardous (10)	R2 (R4)	40
Oily wastes	Hazardous (10)	D5 (30)	300
Batteries	Absolute Hazardous (10)	R8 (4)	40
Mechanical and electrical components	Mirror Hazardous (8)	R4 (3)	24
Total			736

- 6.1.6 To ensure that all plant is maintained in accordance with the manufacturer's requirements, the manufacturer will specify the types of chemicals and quantities required for the plant. As such, there is little potential to minimise the amount of waste that is generated from maintenance procedures.
- 6.1.7 Furthermore, in accordance with the impact scores provided in the Environment Agency's guidance, the proposed disposal/recovery methods for the wastes generated from routine maintenance comprise the lowest impact scores that are provided in the guidance. As such, it is considered that the risk of the proposed disposal/recovery methods are low and that there is little potential to further minimise the impact of these waste streams.

7.0 GLOBAL WARMING POTENTIAL

7.1 METHODOLOGY

- 7.1.1 The global warming potential (GWP) of the proposed activities has been considered, with reference to the Environment Agency's 'Assess the Impact of Air Emissions on Global Warming' guidance published in February 2016. The guidance requires the identification of greenhouse gas emissions resulting from the proposed activity that contribute to global warming, and to quantify the impact of these emissions. This assessment is limited to those engines and boilers which are being replaced and does not consider those to be retained as a function of this variation.
- 7.1.2 The energy use on site will be monitored via comparing electricity generated to the electricity exported and the gas purchased. Imported electricity is used during start up only and as such the plant is a net contributor of energy.
- 7.1.3 The assessment takes the following two step approach: -
- Identify greenhouse gas emissions; and,
 - Calculate the global warming potential of emissions.

7.2 IDENTIFYING GREENHOUSE GAS EMISSIONS

Methodology

- 7.2.1 In order to assess the emissions that will be associated with the site, it is necessary to identify the energy needs of the facility. The existing facility is an energy-generating operation which is regulated for the release of both NOx emissions which have been evaluated through the Air Quality Assessment (Appendix E of the Environmental Permit Application). There are no further greenhouses gases which are considered to be released by the activity.
- 7.2.2 The annual production of each emission point for NOx has been calculated in the table below based on an average emission rate provided by the manufacturer in g/s and an assumed worst case scenario of running of the plant for 500 hours per year.
- 7.2.3 The annual production of each emission point for NOx has been calculated in the table below based on an average emission rate provided by the manufacturer in g/s:-

Table 4: Annual Production of NOx at Each Emission Point

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
NOx g/s	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051
NOx T/yr	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491

	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A24
NOx g/s	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051
NOx T/yr	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491

	A25	A26	A27	A28	A29	A30	A31	A32	A33	A34	A35	A36
NOx g/s	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051	7.051
NOx T/yr	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491

	A37	A38	A39	A40
NOx g/s	7.051	7.051	7.051	7.051
NOx T/yr	12.491	12.491	12.491	12.491

Impact of Emissions on Global Warming

7.2.4 The annual impact on global warming of each emission point for NOx has been calculated in the table below in accordance with Environment Agency Guidance “Assess the impact of air emissions on global warming”:

-

Table 5: Annual Impact of Emissions on Global Warming

	A1	A2	A3	A4	A5	A6	A7	A8	A9
NOx T/yr	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491
Impact of Emissions NOx T/yr	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21

	A10	A11	A12	A13	A14	A15	A16	A17	A18
NOx g/s	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491
Impact of Emissions NOx T/yr	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21

	A19	A20	A21	A22	A23	A24	A25	A26	A27
NOx g/s	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491
Impact of Emissions NOx T/yr	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21

	A28	A29	A30	A31	A32	A33	A34	A35	A36
NOx g/s	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491	12.491
Impact of Emissions NOx T/yr	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21	3,872.21

	A37	A38	A39	A40
NOx g/s	12.491	12.491	12.491	12.491
Impact of Emissions NOx T/yr	3,872.21	3,872.21	3,872.21	3,872.21

Summary

- 7.2.5 The proposed plant is not to be operated on a regular basis but instead the new generators are there as a backup in case of national grid failure. Whilst these are not anticipated to be operational year-round, in order to minimise the global warming potential of activities carried out on site, energy efficiency measures will be implemented where necessary.
- 7.2.6 The site typically takes power from the national grid, however, the new generators proposed within this variation application are only to be used in case of grid failure and thus the newly proposed plant are back up diesel generators.

- 7.2.7 It is further noted that the proposed generators are only to be operated in the event of power failure, and continued operation in the event of prolonged power outages thus acting as a contingency standby power solution. The above statistics are noted as being “worst case scenario” and are based off a maximum 500hr/yr usage. It is however noted that the new engines will not be operated for more than 500hours/year including any testing requirements.
- 7.2.8 The new generators are identified on Drawing Number PURE/B047734/GEN/01 and the air emission points for the new plant, detailed in Tables 4 and 5, are detailed on Drawing Number PURE/B047734/EPA/01.

DRAWINGS

Environmental Permit Boundary - PURE/B047734/GEN/01
Site Layout Plan - GA PROPOSED SITE PLAN (EAST AND WEST)- PHASE 02
Emission Points to Air - PURE/B047734/EPA/01
Environmental Receptor Plan - PURE/B047734/REC/01

APPENDIX A - ENVIRONMENTAL RISK ASSESSMENT

Table A1: Odour Risk Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Odorous emissions	Occupiers of domestic dwellings listed in Table 2 above. Workforce in commercial and industrial properties adjacent to the site listed in Table 2. Amenities listed in Table 2 above.	Atmosphere	Integrated double-bunded tanks to be used. Automated leak detection system installed in secondary containment chamber. Remote monitoring of tank levels, with linked alarm notifying out of specification changes to levels. Daily visual inspection of tank external integrity Appropriate training to staff operatives re use of spill kits, and reporting / post incident learning. All containment for the storage of fuel, oil and lubricants will be stored within the confines of a building. This will minimise the impact of odours generated from waste oils and chemicals to impact upon receptors beyond the site boundary.	Unlikely due to the nature of the proposed measures in place.	Odour annoyance	Not significant due to management techniques employed.

Table A2: Noise and Vibration Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Use of plant and machinery	Occupiers of domestic dwellings listed in Table 2 above.	Atmosphere.	Testing of the generators shall only take place during the hours stipulated in Table S1.1 of the permit (08:00 and 20:000)	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.
Vehicle movements to/from the site	Workforce in commercial and industrial properties adjacent to the site listed in Table 2.		Acoustic baffles around perimeter of building roof, enclosing stack.			
Noise from reversing vehicles	Amenities listed in Table 2 above.		Fans enclosed within structure affording acoustic suppression.			
	Priority habitats listed in Table 2.		Limited use of external alarms (security and safety systems only; operational alarms internal only)			
	Local Wildlife Sites listed in Table 2.					

Table A3: Fugitive Emissions Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Hazard	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What has the potential to cause harm?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
To Air						
Emissions to air from the operation of the proposed plant and equipment	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties adjacent to the site listed in Table 2. Amenities listed in Table 2. Priority habitats listed in Table 2. Local Wildlife Sites listed in Table 2.	Atmosphere	Atmospheric emissions regulated under Environmental Permit. Contractual requirement limits standby power generator operating duration (<48hrs continual operation). Documented operational controls implemented to minimise emissions (including process specification and design; routine servicing and maintenance). Routine test regime structured to minimise cumulative impact of emissions. Engine start-up sequence to be automated and process controlled to minimise conditions resulting in formation of dark smoke. Appropriate training for staff.	Unlikely due to proposed measures in place.	Local nuisance Potential respiratory health risk to public and staff.	Not significant due to management techniques employed.
To Water						

Pure Data Centre – Permit Variation
Environmental Risk Assessment

Contaminated rainwater run-off.	Groundwater. Surface water features listed in Table 2. Priority habitats listed in Table 2. Local Wildlife Sites listed in Table 2.	Direct surface water run-off from site. Infiltration. Percolation.	Integrated double-bunded tanks to be used. Use of drip trays and appropriately stocked spill kits to be stored in accessible location near to fill points. Appropriate training to staff operatives re use of spill kits, and reporting / post incident learning. Documented processes Routine visual inspection of ground integrity, and other relevant infrastructure. All containment for the storage of fuel, oil and lubricants will be stored within the confines of a building to ensure that the material does not come into contact with incidental rainfall. All areas where the proposed activities will be undertaken will benefit from impervious surfacing with an appropriate drainage system that contains runoff.	Unlikely due to the proposed measures in place.	Contamination of surface water bodies and groundwater.	Not significant due to management techniques employed.
Litter						
Litter windblown from storage areas into environment.	All receptors listed in Table 2.	Air	All waste will be stored within enclosed storage areas that can be closed when being accessed. Documented waste management processes A vigilant watch for litter will be undertaken by site operatives. In the unlikely event that litter is generated by the activity, the Site Supervisor will implement a litter collection as necessary.	Very unlikely due to measures in place.	Local nuisance.	Not significant due to the management techniques employed.

Table A4: Accident and Incident Risk and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Fire or failure to contain firewater.	Groundwater. Surface water features listed in Table 2. Occupiers of domestic dwellings listed in Table 2 above. Workforce in commercial and industrial properties adjacent to the site listed in Table 2. Priority Habitats listed in Table 2 above. Local Wildlife Sites listed in Table 2.	Infiltration. Contaminated rainwater runoff.	Fire and gas alarms are installed throughout the facility to alert site operatives of a potential gas leak or fire. In the event of a gas leak, the alarms will ensure that, the Site Manager will ensure that the issue is addressed as soon as practicable to minimise the subsequent risk of a fire. Separation of incompatible materials and of combustible materials and ignition sources. The facility will benefit from an impermeable surface and a suitable drainage system which will allow for the containment of fire water. All drainage infrastructure and areas of impermeable surfaces will be regularly inspected in to ensure continuing integrity and fitness for purpose. A 'No smoking' policy will be employed on all storage and processing areas. Smoking on site will only be permitted in designated areas. The operator will undertake regular maintenance of plant and equipment in accordance with manufacturer's guidance. Provision of fire training and emergency drills.	Very unlikely due to the measures in place.	Contamination of local groundwater and/or surface water. Local nuisance from smoke.	Not significant due to the likelihood of a fire on site.
Leaks/spillages of fuel/oil.	Groundwater.	Surface run-off. Infiltration.	The operator will undertake regular maintenance of plant equipment in accordance with manufacturer's	Unlikely due to	Contamination of land and watercourses.	Not significant due to management

Pure Data Centre – Permit Variation
Environmental Risk Assessment

	Surface waters listed in Table 2. Priority Habitats listed in Table 2 above. Local Wildlife Sites listed in Table 2.	Percolation	guidance. This will minimise the risk of mechanical failure which may result in leaks. Integrated double-bunded tanks to be used. Use of drip trays and appropriately stocked spill kits to be stored in accessible location near to fill points. Appropriate training to staff operatives re use of spill kits, and reporting / post incident learning. Daily vehicle / plant checks to ensure any fuel/oil leaks etc. are repaired as soon as possible. The Site Manager will be responsible for ensuring effective remediation and documenting any incident.	measures in place.		techniques employed.
Vandalism.	Groundwater. Surface water features listed in Table 2. Occupiers of domestic dwellings listed in Table 2 above. Workforce in commercial and industrial properties adjacent to the site listed in Table 2. Priority Habitats listed in Table 2 above. Local Wildlife Sites listed in Table 2.	Unauthorised entry to the site.	The site will be secure from public access by lockable gates at the site entrance. Any identified damage to the gate that could compromise the site security will be recorded and temporarily repaired as soon as practicable. Permanent repair or replacement will be undertaken as soon as practicable. There will be procedures in place which will require all visitors to the site to sign in on arrival and sign out on departure.	Unlikely due to measures in place.	Release of polluting materials to air (smokes or fumes) water or land.	Not significant due to management techniques employed.

APPENDIX B – ECOLOGY STATEMENT

APPENDIX C – NATURE AND HERITAGE REPORT (EPR/QP3706LH/V002)