

Swadlincote Energy Recovery Facility (SERF)

Site Condition Report

on behalf of R&P Clean Power Limited

Application for Environmental Permit

May 2024

Prepared by Stantec

Revision	Author	Date	Quality Check	Date	Review	Date
1	PH	Sept. 2023	JC	Nov. 2023	CJB	Nov. 2023

Disclaimer

This document is part of the Swadlincote Energy Recovery Facility (SERF) Environmental Permit Application and was prepared by Stantec UK Limited (Stantec) for the account of R&P Clean Power Limited (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment considering the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Swadlincote Energy Recovery Facility – Site Condition Report

1.0 SITE DETAILS	
Name of the applicant	R&P Clean Power Limited
Activity address	Burton Road, Swadlincote, DE11 9EL
National grid reference	426947, 319035.
Document reference and dates for Site Condition Report at permit application and surrender	Swadlincote ERF Site Condition Report
Document references for site plans (including location and boundaries)	<p>ERF Building Layout Drawing no: 21-137-SGP-OS-ZZ-DR-A- 131101 dated 10/06/2022 (available on request)</p> <p>Planning_SRRP_Masterplan Drawing no: 21-137-SGP-01- ZZ-DR-A- 131011 dated 10/05/22 (available on request)</p>

Note:

In Part A of the application form you must give us details of the site's location and provide us with a site plan. We need a detailed site plan (or plans) showing:

- Site location, the area covered by the site condition report, and the location and nature of the activities and/or waste facilities on the site.
- Locations of receptors, sources of emissions/releases, and monitoring points.
- Site drainage.
- Site surfacing.

If this information is not shown on the site plan required by Part A of the application form, then you should submit the additional plan or plans with this site condition report.

2.0 Condition of the land at permit issue	
<p>Hydrock Swadlincote Resource & Recovery Park (SRRP) Desk Study ref: 15659-HYD-XX-ZZ-RP-DS-0001 dated 21/09/2022 & Appraisal Cadley Hill, Swadlincote ref: GRO-20195-1699 dated 21/09/2020 (available on request)</p> <p>Environmental setting including:</p>	<p><u>Desk Study information</u></p> <p>The Site at present is undeveloped covering approximately 2Ha and is covered with dense vegetation and woodland. The Site does not lie within a Source Protection Zone (SPZ); the nearest groundwater abstraction licence is >1km from the Site boundary.</p> <p>Land beyond the Sites northern boundary is occupied by Willshee's Waste and Recycling yard (Materials Recycling Facility MRF). The land to the south and west comprises of agricultural fields and several residential dwellings, while the land to the east is occupied by Optimum Business Park</p> <p>Made Ground:</p>

Swadlincote Energy Recovery Facility – Site Condition Report

<p>Geology</p>	<p>Made Ground materials are indicated to be present within the north western sector of the Site</p> <p>Superficial: Alluvial deposits are indicated to be located within the north-western sector of the Site, bordering the northern boundary, and marginally encroaching towards the northeastern boundary.</p> <p>Head deposits are shown to be located towards the eastern boundary of the Site</p> <p>Solid: The Site is underlain by three separate solid geology strata separated by two faults; the strata are discussed below.</p> <p>Bromsgrove Sandstone Formation – Mudstone located within the western and central sectors of the Site.</p> <p>Polesworth Formation - Interbedded Sandstone and Conglomerate, located with the eastern sector of the Site.</p> <p>Polesworth Formation – Mudstone, located within the north eastern tip of the Site</p> <p>Coal Mining A Coal Authority report details that the Site is in a surface area that could be affected by underground mining in 5 seams of coal at 130m to 260m depth, which were last worked in 1956. Any movement in the ground due to coal mining activity associated with these workings, should have ceased by now.</p> <p>The Site is not within a surface area that could be affected by present underground mining.</p> <p>The Site is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence, to remove or work coal by underground methods. The Site is not in an area where a licence has been granted to remove or otherwise work coal, using underground methods. The Site is not in an area likely to be affected from any planned future underground coal mining. However, reserves of coal exist in the local area which could be worked at some time in the future.</p> <p>There are no recorded mine entries known to the Coal Authority within 20m of the Site boundary and the Coal Authority is not aware of any damage due to geological faults or other lines of weakness affected by coal mining.</p>
----------------	--

Swadlincote Energy Recovery Facility – Site Condition Report

<p>Hydrogeology</p> <p>Surface waters</p> <p>Information from Site Investigation Groundtech Consulting Geo-Environmental Appraisal Cadley Hill, Swadlincote ref: GRO-20195-1699 dated 21/09/2020 (available on request)</p>	<p>The Site is not within the boundary of any historical opencast site or within 200m of any present open cast site. There are no licence requests to remove coal by opencast within 800m of the Site.</p> <p>The Coal Authority has not received a damage notice or claim for the Site, or any property within 50 metres of the enquiry boundary since 31 October 1994. There is no current Stop Notice delaying the start of remedial works or repairs to the property.</p> <p>Hydrogeology: The superficial alluvial deposit is considered to be Secondary A Aquifer, comprising Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.</p> <p>The Head deposit is considered to be a Secondary Undifferentiated aquifer – This is assigned where it is not possible to attribute either category A or B to a rock type. In general, these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.</p> <p>Surface waters: The nearest surface watercourse (Darklands Brook) is immediately northeast of the Site and is thought to contain water all year round (in normal circumstances). The channel is not influenced by tidal action and is a tributary of the River Trent.</p> <p>There is an active surface water abstraction present 234m south west of site associated with Breach Farm – Dark lands Brook</p> <p><u>Groundtech Site Investigation (2020)</u></p> <p>Ground conditions Made Ground: Identified in three locations between depths of 0.55 and 2.60m bgl (WS05 – 2.6m, WS07 -0.55 and WS09 – 0.80m). All these locations were positioned along the northern boundary of the Site.</p> <p>Made Ground comprised of topsoil over gravelly sand and gravelly clay. Gravel comprised of mixed lithologies including brick and concrete.</p>
--	---

Swadlincote Energy Recovery Facility – Site Condition Report

	<p>Natural strata comprised of light brown, brown and red brown clayey gravelly sand. Firm to stiff grey mottled orange gravelly sandy clay and light brown, brown and red brown clayey sand and gravel.</p> <p>Bedrock comprised of extremely weak to weak mudstone and weathered brown sandstone.</p> <p>Groundwater</p> <p>Groundwater strikes were identified within 3 locations between 2.10m bgl 7 2.70m bgl, all within natural sand and sandy clay deposits.</p>												
<p>Pollution history including:</p> <ul style="list-style-type: none"> • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures <p>Information obtained from Groundtech Consulting Geo-Environmental Appraisal Cadley Hill, Swadlincote ref: GRO-20195-1699 and Hydrock Swadlincote Resource & Recovery Park (SRRP) Desk Study ref: 15659-HYD-XX-ZZ-RP-DS-0001 dated 21/09/2022 (available on request)</p>	<p>Pollution Incidents</p> <p>There are no known pollution incidents within 250m of the Site. The closest is located approximately 360m south of the Site which include a Category 3 (minor impact to water and no impact to land or air).</p> <p>There are no known licenced discharges to controlled waters within 500m of the Site.</p> <p>Historical land uses</p> <p>The Site has remained undeveloped since at least 1883 where it was identified as a field system and later woodland. However, the area surrounding the Site has evolved:</p> <p>1883 - Railway line located 80m to the north 1955 - Sewage works located 20m north 1969-1974 railway sidings c.20m north east 1991-1993 Railway to north dismantled. 2001 - Sewage works to the north no longer shown.</p>												
<p>Evidence of historic contamination, for example, historical site investigation, assessment, remediation, and verification reports (where available)</p> <p>Groundtech Consulting Geo-Environmental Appraisal Cadley Hill, Swadlincote ref: GRO-20195-1699 (available on request)</p>	<p>Groundtech Site Investigation</p> <p>No visual or olfactory evidence of contamination was noted during the Site investigation. Limited Made Ground on Site along the northern boundary.</p>												
<p>Baseline soil and groundwater reference data</p> <p>Hydrock Swadlincote Resource & Recovery Park (SRRP) Desk Study ref: 15659-HYD-XX-ZZ-RP-DS-0001 dated 21/09/2022 (available on request)</p>	<p>Desk Study information</p> <p>BGS estimated background soil chemistry is detailed below. It is noted that the estimated values are primarily from rural topsoil data or from stream sediment data.</p> <table border="1"> <thead> <tr> <th>Determinant</th> <th>Estimated concentration mg/kg</th> </tr> </thead> <tbody> <tr> <td>Arsenic</td> <td>15-25</td> </tr> <tr> <td>Lead</td> <td>100-600</td> </tr> <tr> <td>Bio accessible Lead</td> <td>60-360</td> </tr> <tr> <td>Cadmium</td> <td>1.8–6.0</td> </tr> <tr> <td>Chromium</td> <td>40-90</td> </tr> </tbody> </table>	Determinant	Estimated concentration mg/kg	Arsenic	15-25	Lead	100-600	Bio accessible Lead	60-360	Cadmium	1.8–6.0	Chromium	40-90
Determinant	Estimated concentration mg/kg												
Arsenic	15-25												
Lead	100-600												
Bio accessible Lead	60-360												
Cadmium	1.8–6.0												
Chromium	40-90												

Swadlincote Energy Recovery Facility – Site Condition Report

<p>Groundtech Consulting Geo-Environmental Appraisal Cadley Hill, Swadlincote ref: GRO-20195-1699 dated 21/09/2020 (available on request)</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">Nickle</td> <td style="width: 70%; padding: 2px;">15-30</td> </tr> </table> <p><u>Groundtech Site Investigation</u></p> <p>Site Investigation undertaken by Groundtech between 27-29 August 2020.</p> <p>15 windowless sampling location (WS01 – WS15)</p> <p>Soil samples were screened against commercial land-use, with 15 samples subjected to analysis. 5no. samples from the Made Ground and 10no. samples from natural soils.</p> <p>No elevated concentrations above the commercial screening value guidelines were identified. No asbestos was detected within any of the samples submitted for analysis.</p> <p>Groundwater was not tested during the Site Investigation.</p> <p>Should it be required, site investigations can be carried out before commencement of construction/during construction, and the base line report updated accordingly.</p>	Nickle	15-30
Nickle	15-30		
<p>Supporting information</p>	<ul style="list-style-type: none"> • Aardvark EM ref: 2087-R001 dated 27/10/2022 • Groundtech Consulting Geo-Environmental Appraisal Cadley Hill, Swadlincote ref: GRO-20195-1699 • Groundsure Enviro+Geo Insight ref: EMS_626310_833860 dated 07/08/2020 • Hydrock Swadlincote Resource & Recovery Park (SRRP) Desk Study ref: 15659-HYD-XX-ZZ-RP-DS-0001 dated 21/09/2022 <p>(All available on request)</p>		

<h3>3.0 Permitted activities</h3>	
<p>Permitted activities</p> <p>Data Source: Aardvark EM SRRP Planning Statement ref 2087 – R003 dated 29/09/2022 (available on request)</p>	<p>At present the Site remains undeveloped. The intended development at the Site, is an Energy Recovery Facility (ERF), comprising a multifueled conventional combustion plant having a gross electricity generating capacity of approximately 20.5 MW. It has been designed to provide combined heat and power being capable of supplying heat to local consumers by means of a future heat network. The anticipated fuel throughput would be a maximum of 230,000 tonnes per annum (tpa) of non-hazardous residual (post-recycled) waste including the following:</p>

Swadlincote Energy Recovery Facility – Site Condition Report

<p>Environment Agency - Notice of variation and consolidation with introductory note Permit number EPR/FB3707GV</p>	<ul style="list-style-type: none"> • 19 12 10 - Combustible Waste (Refuse Derived Fuel) • 19 12 12 - Other Wastes (Including Mixtures of Materials) from Mechanical Treatment of Wastes other than those mentioned in 19 12 11 • 20 03 01 - Mixed Municipal Waste • Other wastes listed in Table 1b of Form B3 <p>The adjacent Wilshees Materials Recycling Facility (MRF) currently operates under The Environmental Permitting (England & Wales) Regulations 2016 (Permit number EPR/FB3707GV as varied). The original permit was for a wood recycling and an inert waste recycling facility which was subsequently varied to include RDF as an additional activity. The permit allows physical treatment including manual and mechanical sorting/separation, baling, screening, shredding, and crushing of non-hazardous waste for disposal or recovery. The permit allows for suitable waste management processes aligned with the proposed use of this material in the energy recovery process, as proposed by this ERF application.</p> <p>The MRF permit allows physical treatment including manual and mechanical sorting/serration, baling, screening, shredding, and crushing of non-hazardous waste for disposal or recovery.</p> <p>Subject to any other requirements of this permit, wastes shall be stored for no longer than 1 year prior to disposal or 3 years prior to recovery.</p> <p>No more than 50 tonnes per day of non-hazardous waste to be treated at the site.</p> <p>The permit allows for suitable waste management processes aligned with the proposed use of this material in the energy recovery process, as proposed by this ERF application.</p>
<p>Non-permitted activities undertaken</p>	<p>N/A</p>
<p>Document references for:</p> <ul style="list-style-type: none"> • plan showing activity layout; and • environmental risk assessment. 	<p>ERF Building Layout Drawing no: 21-137-SGP-OS-ZZ-DR-A- 131101 dated 10/06/2022 (available on request)</p>

Note:

In Part B of the application form you must tell us about the activities that you will undertake at the site. You must also give us an environmental risk assessment. This risk assessment must be

Swadlincote Energy Recovery Facility – Site Condition Report

based on our guidance (*Environmental Risk Assessment - EPR H1*) or use an equivalent approach.

It is essential that you identify in your environmental risk assessment all the substances used and produced that could pollute the soil or groundwater if there were an accident, or if measures to protect land fail.

These include substances that would be classified as 'dangerous' under the Control of Major Accident Hazards (COMAH) regulations and also raw materials, fuels, intermediates, products, wastes and effluents.

If your submitted environmental risk assessment does not adequately address the risks to soil and groundwater we may need to request further information from you or even refuse your permit application.

Swadlincote Energy Recovery Facility – Site Condition Report

4.0 Changes to the activity	
Have there been any changes to the activity boundary?	As far as known, the Site boundary remains the same.
Have there been any changes to the permitted activities?	The Site is at present undeveloped and permitted activities are as yet to commence.
Have any ‘dangerous substances’ not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	N/A
Checklist of supporting information	<ul style="list-style-type: none"> • Plan showing any changes to the boundary (where relevant) • Description of the changes to the permitted activities (where relevant) • List of ‘dangerous substances’ used/produced by the permitted activities that were not identified in the Application Site Condition Report (where relevant)

5.0 Measures taken to protect land
<p>Site is at present undeveloped and as such, any protection measures are yet to be put in place. However, details given within Aardvark EM SRRP Planning Statement ref 2087 – R003 dated 29/09/2022 indicate that the SRRP Proposed Development, has incorporated the hazard prevention mitigation measures within its design to appropriate Environment Agency standards.</p> <p>A fire water tank, sprinkler system and sealed drainage has been included as part of the Design.</p> <p>Monitoring of the development will take place under the permit requirements as issued by the EA.</p> <p>Major Plant maintenance programme will be required for approximately 14 days every year.</p> <p>Minor Plant maintenance programme will be required for approximately 7 days twice a year.</p> <p>A diesel generator will be used for start-up and emergency shutdowns, the annual operating/testing of the generator is expected to be approximately 168 hours per annum. The diesel generator will have secondary containment in place.</p> <p>The SRRP Proposed Development has been designed to hold ca. 4 days of fuel at any given period. This allows the Operator to operate outside permitted delivery periods and in the event of emergency shut-downs and ensures that the facility is not at risk of fire.</p> <p>This accords with the Environment Agencies stringent requirements.</p>

Swadlincote Energy Recovery Facility – Site Condition Report

Checklist of supporting information	<ul style="list-style-type: none"> • Aardvark EM SRRP Planning Statement ref 2087 – R003 dated 29/09/2022 (available on request)
--	--

6.0 Pollution incidents that may have had an impact on land, and their remediation	
Site is at present undeveloped; as such the planned ERF has no current impact on the Site.	
Checklist of supporting information	<ul style="list-style-type: none"> • Records of pollution incidents that may have impacted on land • Records of their investigation and remediation

7.0 Soil gas and water quality monitoring (where undertaken)	
No known additional site investigations have been undertaken post planning.	
Checklist of supporting information	<ul style="list-style-type: none"> • Description of soil gas and/or water monitoring undertaken • Monitoring results (including graphs)

8.0 Decommissioning and removal of pollution risk	
N/A – At present this document relates to a proposed development. (Aardvark EM SRRP Planning Statement ref 2087 – R003 dated 29/09/2022 states that Planning Permission is sought for permanent development within the SRRP Application Boundary and therefore it is not considered necessary to consider the impacts of the decommissioning of the SRRP Proposed Development).	
Checklist of supporting information	<ul style="list-style-type: none"> • Aardvark EM SRRP Planning Statement ref 2087 – R003 dated 29/09/2022 (available on request)

9.0 Reference data and remediation (where relevant)	
N/A	
Checklist of supporting information	<ul style="list-style-type: none"> • Land and/or groundwater data collected at application (if collected) • Land and/or groundwater data collected at surrender (where needed) • Assessment of satisfactory state • Remediation and verification reports (where undertaken)

Swadlincote Energy Recovery Facility – Site Condition Report

10.0 Statement of site condition

- N/A