

## 14 Summary of Mitigation and Monitoring

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### 14.1 Introduction

14.1.1 The EIA process is an integral part of the project appraisal and design process. During the EIA process for the 3Rs Facility, environmental issues have been taken into account as part of an ongoing design process. The process of EIA has therefore been used as a means of informing the design.

14.1.2 The proposed facility assessed within this ES therefore includes a range of measures that have been designed to reduce or prevent significant adverse effects arising. In some cases, these measures result in enhancement of environmental conditions.

14.1.3 The topic chapters set out the measures that form part of the project and that have been taken into account in the assessment of effects for that topic. These include:

- Measures included as part of the design of the proposed facility;
- Measures to be adopted during construction to avoid and minimise environmental effects such as pollution control measures. These measures would be implemented through the Construction Environmental Management plan (CEMP); and
- Measures required as a result of legislative requirements.

14.1.4 In addition, the chapters have considered the need for monitoring during either the construction, operational or decommissioning phases of the project.

14.1.5 This chapter of the ES presents a summary of the key mitigation and monitoring measures identified during the EIA process in table 14.1. Full details can be found within the ES topic chapters (Chapters 5 – 13).

Table 14.1: Summary of Mitigation and Monitoring Measures

Reason	Mitigation Measures
<b>Design Measures</b>	
<i>Landscape and Visual Assessment</i>	
Minimise visual effects and integrate the proposed facility with the surroundings	<ul style="list-style-type: none"> <li>The facility would include a curved roof, referred to as 'curvilinear', incorporating a large sweeping curve across the facility. The curve would start at the bunker hall, cross the bunker and boiler halls and then cover the air cooled condensers and flue gas treatment area. The purpose of the curve is to visually bring all of the separate elements of the facility together as one structure and to visually reduce the building's height. The design builds on the reduction in height achieved from sinking the building into the ground.</li> <li>On the advice of West Sussex County Council's planning and landscape officers, the High Weald AONB 'Guidance on the selection and use of colour in development' has been used in selecting the colours for the 3Rs Facility. The Western High Weald Woodland and Heath Sub Palette was considered the most appropriate for the proposed development. Muted greys, greens and browns have been used, as described in the Design and Access Statement.</li> <li>The landscape proposals (Figure 5.38) are designed to assist in screening low level clutter, such as vehicles in the car park, giving a simplicity to the front of the facility and providing as much screening of as much 'human-scale' activity as possible.</li> </ul>
<i>Traffic and Transport</i>	
Provision of suitable parking and internal network	Design includes 31 parking spaces, with 2 accessible spaces and coach parking. Design has taken into account HGV movement around the site.
<i>Air Quality and Odour</i>	
Mitigation of significant adverse effects from stack emissions	The assessment of stack emissions has informed the design of the stack height in order to ensure suitable dispersion. Mitigation measures have been informed by the stack height determination at Appendix 7.2 of the ES.
<i>Noise and Vibration</i>	
To ensure no significant noise increase at sensitive receptors	<ul style="list-style-type: none"> <li>Plant would be designed to present Best Available Techniques (BAT). The air cooled condensers would be selected such that they would not exceed a sound power level of 97 dB(A).</li> <li>Acoustic screening would be installed around the perimeter of the air cooled condensers.</li> <li>Other significant items of plant would be located within buildings or enclosures which would be designed to reduce noise levels, as required. Specifically, the turbine hall, which contains the highest noise generating plant would be designed with a high specification façade and roof to reduce the noise levels emitted from these buildings.</li> <li>Furthermore, the plant would be designed such that it would not be tonal in character at the nearest NVSRs.</li> <li>Plant to be designed such that the rating level L<sub>Ar,Tr</sub> of the noise emitted from it shall not exceed the existing representative background sound levels LA<sub>90,T</sub>, by more than 3 dB during the appropriate time period at the nearest noise sensitive receptors. The assessment shall be carried out in accordance with BS4142:2014 'Methods for rating and assessing industrial and commercial sound'. Noise monitoring will be carried out post completion to ensure that the operational plant complies with the design requirement presented in this condition. The monitoring procedure will be discussed and agreed with the case officer at WSCC (and/or their consultee on noise) in advance.</li> </ul>
<i>Archaeology and Cultural Heritage</i>	
Avoidance of adverse effects on	The location of the proposed facility seeks to minimise or remove the effects on the settings of designated assets, being located on previously

Reason	Mitigation Measures
heritage assets	developed land within the context of an industrial development. The remaining boundary alignments around the proposed facility would be preserved <i>in situ</i> and the landscape pattern would remain unchanged.
<i>Hydrology and Flood Risk</i>	
Control of surface water runoff	Drainage strategy designed to ensure that runoff rates to the surrounding water environment which seeks to replicate the existing catchment areas as far as practically possible and also seeks to maintain surface discharge rates and volumes. Drainage Strategy at Appendix 10.4 of the ES.
<i>Hydrogeology and Ground Conditions</i>	
Avoidance of effects on groundwater	Detailed design to take into account existing groundwater levels (to be confirmed through site investigation prior to construction) and avoid any effects on groundwater flow, where possible.
<i>Ecology and Nature Conservation</i>	
Retention and introduction of habitats	<ul style="list-style-type: none"> <li>• Native trees and scrub/shrubs would be retained where possible mainly along the northern boundary, ensuring that a minimum 20 m vegetation buffer between the development and off-site ponds;</li> <li>• New trees would be planted along this buffer zone, and along the eastern boundary towards the south of the site to provide suitable foraging and nesting habitat for birds and bats. The new trees on the northern boundary would also act as a vegetated corridor, creating a link between the existing ponds and the corridor along the railway to the west of the site; and</li> <li>• Grassland for birds, mammals, invertebrates and great crested newts (when in their terrestrial stage), would be created in the north and west of the facility without the use of fertiliser.</li> </ul>
<i>Population and Health</i>	
Minimise risk to occupational public health	The stack design is based on the stack height assessment to ensure effective dispersion of pollutants (see air quality, above)
<b>Construction Measures</b>	
<b>Overarching Construction Measures</b>	
Minimising temporary construction disturbance	<p>Construction would be undertaken in accordance with a Construction Environmental Management Plan (CEMP), which will set out the key management measures that contractors would be required to adopt and implement</p> <p>Working hours would be 07:30 to 19:00 hours Monday to Friday, 08:00 to 16:00 hours on Saturday and at no time on Sundays or Bank Holidays. These hours would be subject to agreement with the local planning authority. In the event that works are required outside of these hours in exceptional circumstances, this would be agreed with the local planning authority prior to commencement of the activity.</p>
<b>Topic-specific Construction Phase Measures</b>	
<i>Landscape and Visual Effects</i>	
Control of lighting effects	<ul style="list-style-type: none"> <li>• Lighting of the proposed facility would be kept to a minimum;</li> <li>• Focussed lighting would be used where illumination of the proposed facility is required; and</li> <li>• Night time construction works would be limited to the minimum required and only conducted where necessary.</li> </ul>
<i>Traffic and Transport</i>	
Construction access	Approved access during the construction phase would be via the existing site access with necessary restrictions.

Reason	Mitigation Measures
Road safety and conditions	<ul style="list-style-type: none"> <li>• Temporary signage in the vicinity of the site warning road users of construction traffic;</li> <li>• Arrangements for road maintenance and cleaning would be made; and</li> <li>• Wheel cleaning arrangements and regular road sweeping runs (to ensure dust and dirt is not transported onto the public roads etc.).</li> </ul>
Reduced construction traffic	Car sharing would be encouraged to reduce car trips to and from the site, and to reduce traffic ant peak flow times.
<i>Air Quality and Odour</i>	
Control of dust and emissions generated by construction	<ul style="list-style-type: none"> <li>• Implementation of a Dust Management Plan (DMP) (which may include measures to control other emissions), approved by the local authority;</li> <li>• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;</li> <li>• Make the complaints log available to the local authority when asked;</li> <li>• Record any exceptional incidents that cause dust and/or emissions, either on or off site, and the action taken to resolve the situation in the log book;</li> <li>• Carry out regular dust soiling checks pf surfaces such as street furniture, cars and window sills within 100 m of the site boundary;</li> <li>• Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions;</li> <li>• Agree dust deposition, dust flux, or real-time PM<sub>10</sub> continuous monitoring locations with the Local Authority;</li> <li>• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;</li> <li>• Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible;</li> <li>• Use enclosed chutes, conveyors and covered skips, where practicable;</li> <li>• Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods;</li> <li>• Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;</li> <li>• Use water-assisted dust sweeper(s) on the access and local roads, to remove, as soon as practicable any material tracked out of the site. This may require the sweeper being continuously in use;</li> <li>• Avoid dry sweeping of large areas;</li> <li>• Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;</li> <li>• Record all inspections of haul routes and any subsequent action in a site log book; and</li> <li>• Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.</li> </ul>
Dust management during site	<ul style="list-style-type: none"> <li>• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. Use screening</li> </ul>

Reason	Mitigation Measures
preparation	<p>intelligently where possible – e.g. locating site offices between potentially dusty activities and the receptors;</p> <ul style="list-style-type: none"> <li>• Erect solid screens or barriers around the site boundary;</li> <li>• Avoid site runoff of water or mud;</li> <li>• Keep site fencing, barriers and scaffolding clean;</li> <li>• Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; and</li> <li>• Depending on the duration that stockpiles will be present and their size - cover, seed, fence or water to prevent wind whipping.</li> </ul>
Control of emissions from construction vehicles	<ul style="list-style-type: none"> <li>• Ensure all vehicles switch off engine when stationary – no idling vehicles;</li> <li>• Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable; and</li> <li>• Produce a Construction Logistics Plan to management sustainable delivery of good and materials.</li> </ul>
Mitigation of emissions from waste management	Avoid bonfires and burning of waste on site.
Mitigation of emissions from demolition	<ul style="list-style-type: none"> <li>• Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground;</li> <li>• Avoid explosive blasting, using appropriate manual or mechanical alternatives; and</li> <li>• Bag and remove any biological debris or damp down such material before demolition.</li> </ul>
Mitigation of dust and emissions from trackout	<ul style="list-style-type: none"> <li>• Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as practicable;</li> <li>• Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site);</li> <li>• Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits; and</li> <li>• Access gates to be located at least 10 metres from receptors where possible.</li> </ul>
<i>Noise and Vibration</i>	
To avoid significant adverse noise and vibration effects	<ul style="list-style-type: none"> <li>• Mitigation for noise and vibration from construction activities would be based upon the guidance in BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014.</li> <li>• Construction works would follow Best Practicable Means (BPM) outlined in Section 72 of the Control of Pollution Act 1974 (as amended) to minimise noise and vibration effects.</li> <li>• HGVs would follow the approved access routes to and from site.</li> <li>• In the event that noise generating works are required outside of core working hours, this would be agreed with the local authority prior to commencement of the activity.</li> <li>• Portable acoustic enclosures/screens would be used, as required.</li> <li>• All vehicles, plant and equipment will be maintained and operated in an appropriate manner, to ensure that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum.</li> </ul>

Reason	Mitigation Measures
<i>Archaeology and Cultural Heritage</i>	
Archaeological remains	A programme of excavation and recording of the asset would take place prior to construction of the proposed facility.
<i>Hydrology and Flood Risk</i>	
Pollution prevention measures	<ul style="list-style-type: none"> <li>• Refuelling of machinery would be undertaken within designated areas where spillages can be easily contained. Machinery would be routinely checked to ensure it is in good working condition;</li> <li>• Any tanks and associated pipe work containing substances included in List 1 of the Groundwater Directive would be double skinned and be provided with intermediate leak detection equipment;</li> <li>• The following specific mitigation measures for the protection of surface water during construction activities would be implemented: <ul style="list-style-type: none"> <li>○ Management of construction works to comply with the necessary standards and consent conditions as identified by the Environment Agency;</li> <li>○ A briefing highlighting the importance of water quality, the location of watercourses and pollution prevention included within the site induction;</li> <li>○ Areas with prevalent run-off to be identified and drainage actively managed, e.g. through bunding and/or temporary drainage;</li> <li>○ Areas at risk of spillage, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) to be bunded and carefully sited to minimise the risk of hazardous substances entering the drainage system or the local watercourses. Additionally, the bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater following any leakage/spillage. Bunds used to store fuel, oil etc. to have a 110% capacity;</li> <li>○ Disturbance to areas close to watercourses reduced to the minimum necessary for the work;</li> <li>○ Excavated material to be placed in such a way as to avoid any disturbance of areas near to the banks of watercourses and any spillage into the watercourses;</li> <li>○ Construction materials to be managed in such a way as to effectively minimise the risk posed to the aquatic environment;</li> <li>○ All plant machinery and vehicles to be maintained in a good condition to reduce the risk of fuel leaks;</li> <li>○ Drainage works to be constructed to relevant statutory guidance and approved via the Lead Local Flood Authority prior to the commencement of construction; and</li> <li>○ Consultation with the EA to be ongoing throughout the construction period to promote best practice and to implement proposed mitigation measures.</li> </ul> </li> </ul>
<i>Hydrogeology and Ground Conditions</i>	
Exposure of construction workers	<p>Chemical contamination of soil and groundwater:</p> <ul style="list-style-type: none"> <li>• Appropriate use of Personal Protective equipment (PPE);</li> <li>• Appropriate segregation of 'dirty' and 'clean' working areas and the establishment of appropriate washing facilities for construction workers;</li> <li>• Appropriate briefing to site staff; and</li> <li>• Implementation of Personal hygiene protocols.</li> </ul> <p>Ground gases:</p> <ul style="list-style-type: none"> <li>• Recognition of confined space, and use of safe entry procedures;</li> </ul>

Reason	Mitigation Measures
	<ul style="list-style-type: none"> <li>• Appropriate use of PPE; and</li> <li>• Appropriate training and briefing to staff.</li> </ul> <p>Asbestos (if applicable):</p> <ul style="list-style-type: none"> <li>• Asbestos strip from buildings prior to site clearance and demolition;</li> <li>• Airborne asbestos monitoring and personal asbestos monitoring;</li> <li>• Appropriate use of PPE, to include but not restricted to masks (P3 rated), coveralls, boot covers and gloves;</li> <li>• Appropriate segregation of the asbestos effected area (considered a 'dirty' area) from the remainder of the site and the implementation of appropriate decontamination measures;</li> <li>• Appropriate training and briefing of site staff; and</li> <li>• Implementation of personal hygiene protocols.</li> <li>• Airborne particles will be controlled through dust suppression measures such as damping. Removal of asbestos or asbestos contaminated materials shall be undertaken by suitably experienced specialist contractors.</li> </ul>
Contamination to surface water and adjacent land uses	<ul style="list-style-type: none"> <li>• Damping down of exposed formations and stockpiles during dry conditions;</li> <li>• Covering of contaminated stockpiles arising during remediation;</li> <li>• Appropriate location of stockpile away from sensitive receptors;</li> <li>• Restriction of works which are likely to generate dusts during windy conditions;</li> <li>• Wheel washing of vehicles leaving site;</li> <li>• Creation of temporary haul roads away from sensitive receptors;</li> <li>• Controlled excavation of known localised contaminated soils prior to bulk excavation works;</li> <li>• The control of waters entering any excavation;</li> <li>• The periodic inspection of excavations to identify significant water build up and the implementation of measures to prevent water flow from excavations;</li> <li>• Periodic inspection of excavations to identify residual contamination if required, and allow its removal prior to deepening of excavations;</li> <li>• Stockpiling of contaminated materials away from water courses/drains; and</li> <li>• Covering of stockpiles to prevent leaching of contaminants.</li> </ul>
Creation of new areas of contamination	<p>It is considered that the potential for accidental spillage of site process materials can be mitigated through appropriate storage and handling of materials in designated areas, with appropriate infrastructure and drainage systems in place. Any chemical and material storage on the proposed site will be undertaken in accordance with the Environment Agency guidance in order to avoid pollution.</p> <p>Control measures include:</p> <ul style="list-style-type: none"> <li>• Regular servicing and inspection of vehicles used on site;</li> <li>• The restriction of refuelling of vehicles to bunded areas underlain by hardstanding, or other impermeable materials; and</li> <li>• Deployment of spill kits to immediately control any spills that do occur.</li> </ul>
Mitigation of impact to controlled	Completion of a piling risk assessment in advance of construction would be undertaken and would identify the most appropriate piling method to

Reason	Mitigation Measures
waters	minimise the generation of vertical contaminant migration pathways.
<i>Ecology and Nature Conservation</i>	
Protection of fauna	<ul style="list-style-type: none"> <li>Any vegetation clearance would be carried out outside of the breeding bird season (March-September inclusive), where practicable. If this is not possible, any vegetation to be removed would be checked for nesting birds by a suitably qualified ecologist immediately prior to their removal. If any nests are found, they would be left undisturbed until the chicks have fledged (usually around six weeks);</li> <li>It would be necessary to undertake a programme of trapping from within the site to move animals out of the dense scrub into areas of retained habitat. This is particularly in relation to great-crested newts. The trapping would be done via fencing the site with amphibian-proof fencing and the use of pitfall traps and artificial refugia.</li> <li>Lighting outside the standard construction working hours would be restricted to that necessary for individual tasks and would be directional to avoid light spill onto areas where lighting is not required. Construction lighting would be designed to ensure there would be minimal artificial light spill to the railway corridor during the period when bats would be foraging / commuting.</li> </ul>
<i>Population and Health</i>	
Minimisation or avoidance of risk to construction workers and members of the public	Further mitigation in relation to health would involve ongoing engagement with local communities to raise awareness of any particularly disruptive construction activities, to monitor and feedback the effectiveness of mitigation and respond to community concerns.
<i>Operational Measures</i>	
<i>Landscape and Visual Assessment</i>	
Minimisation of visual effects	Lighting design has been based on the use of appropriate lighting to provide safe working conditions in all areas of the site, whilst minimising light pollution and the visual effect on the local environment. This would be achieved by the use of luminaries that eliminate the upward escape of light. Details of the proposed site lighting are provided in Appendix 2.2.
<i>Traffic and Transport</i>	
Avoidance of changes in traffic flow.	Operational traffic flows not exceed existing consent. Vehicles to use existing access route.
<i>Air Quality and Odour</i>	
Minimisation of significant adverse effects from stack emissions	Stack emissions monitoring to demonstrate compliance with the terms of the environmental permit. The permit will set out details of the type of monitoring and the frequency of data collection and reporting.
<i>Noise and Vibration</i>	
Monitoring requirements	Noise monitoring would be required to demonstrate compliance with the terms of the Environmental Permit. The permit will set out details of the type of monitoring and the frequency of data collection and reporting.
<i>Hydrology and Flood Risk</i>	
Pollution prevention	Operational practices to incorporate measures to prevent pollution and increased flood risk, to include emergency spill response procedures, clean up and remediation of contaminated water run-off.
<i>Ecology and Nature Conservation</i>	
Habitat management	Grasses would only be cut annually in late summer to avoid impacts on the newts.
Protection of fauna	<ul style="list-style-type: none"> <li>Five bird nest boxes could be provided. These would help mitigate for the loss of breeding bird habitat from clearance of existing dense scrub</li> </ul>



Reason	Mitigation Measures
	<p>in the short term while replacement planting established. A possible combination for this development includes two Schwegler 1SP sparrow terraces, and three Schwegler bird houses.</p> <ul style="list-style-type: none"> <li>An ecologically sensitive artificial lighting scheme has been designed for the site during its operational phase to minimise impacts on retained ecological features (including the adjacent railway corridor). Artificial light spill onto retained features and new grassland has been kept (where possible) to a maximum of 1 lux. Appropriate use of lighting technologies, such as direction lighting, would assist this. Where possible, the use of white LED lamps with a 'cool' colour temperature would be selected as this has lower attractiveness to insects and would be less likely to attract bats away from darker areas where they will more routinely forage.</li> </ul>
Decommissioning Measures	
To be undertaken in accordance with a decommissioning environmental management plan, prepared in line with good practice and legislative requirements applicable at that time.	