



ROS/STS/P/T22-006

Date: 29th August 2022

The Parish Clerk
Mr C Fribbins
Cliffe & Cliffe Woods Parish Council
42 Quickrells Avenue
Cliffe
Rochester
Kent ME3 7RB

Pace House
Little Balmer
Buckingham Ind. Park
Buckingham
MK18 1TF

T: 01280 852296
E: info@reesonshoreseismic.co.uk
W: rees-os.com

By E-Mail Only

Dear Mr Fribbins.

The Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended)

**Proposed '2D' Geophysical Seismic Survey for Statera Energy Ltd
Land Within the Parish of Cliffe and Cliffe Woods and the River Thames**

In accordance with Schedule 2 Part 17 Class K of the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended), Rees Onshore Seismic Ltd (ROS) as acting agent and contractor for Statera Energy Ltd (Statera), wishes to give formal written notification to Cliffe and Cliffe Woods Parish Council of its intention to undertake a 'two dimensional' ('2D') geophysical seismic survey within that 'Area of Interest' ('AOI') as outlined on the enclosed plan drawing (reference Ph20p1).

Such notification will likewise be submitted to Medway Council, as acting Minerals Planning Authority for the area, and a request sought for confirmation that such a survey falls under Permitted Development.

The survey will straddle the administrative boundaries of Medway, Kent and Thurrock Councils, and comprise of 21 individual traverse lines totally an approximate combined 95 kilometres in length. The majority of the proposed programme of works will fall on land immediately north and south of the River Thames. However further elements of traverse line are positioned on shoreline mud flats and within the main channel of the River Thames.

The positioning of the individual traverses has been determined by Statera in order to achieve the best imagery of the near surface structural setting within the 'AOI', especially that of a previously identified anticlinal feature. The objective of the seismic acquisition programme is to further enhance the understanding of this structure and confirm whether it is affected by any faulting trends. The resultant information will then enable Statera to determine whether the structural integrity is such that it can be used as a means of future 'green energy' hydrogen gas storage.

Seismic acquisition is a transient process by which detailed imagery of the underlying subsurface geology can be produced by recording the time it takes for energy or 'source' signals, generated on or near surface, to be reflected off the varying rock interfaces back to the surface where they are detected by a temporary surface laid data recording spread. This spread comprises of a number of small individual stand-alone 'receiver' nodes ('RN') which are positioned along each traverse line in turn.' A node, an example of which is shown within the Survey Information Pack provided, comprises of an internal microphone (geophone) and data logger.

The proposal for 'source' generation will be the deployment of a small gravity propelled weight drop attached to a medium sized tractor, as further shown within the Information Pack. Each such source generation position is called a vibration point or 'VP'. However, where it is known this weight drop technique will not provide the quality of data required, and allied to any restricted or difficult tractor access, then an alternative 'source' generation will be deployed, this being the use of a small impulsive seismic charge, loaded to the base of individual shot point or 'SP' holes, and fired on an individual 'SP' by 'SP' basis.

With reference to the mud flats and main river channel area it is proposed to use a towed streamer up to 300 metres in length with air guns mounted at the sides of a locally sourced shallow draft vessel. Operating at around high tide the marine elements of the survey will be efficiently undertaken, and where traverse lines merge with those on land, the vessel will operate as close as practically possible to the land before turning back into the main channel. Land based 'RN's will also be active for the time each traverse line is being recorded.

Operational Stages & Survey Methodology

Stage 1. Permit – Access Agreement and Stakeholder Consultation:

ROS is currently engaging with individual owners and occupiers affected to explain the works proposal and seek access and entry consent. No such entry will be undertaken until appropriate approval and agreement has been granted. Following discussion with such individuals, it may be necessary to slightly readjust traverse line positioning from that shown on the plan drawing, this being to accommodate any specific requirements and/or physical obstructions met.

Those named Stakeholders as detailed on the 'Contacts Schedule' enclosed are presently being consulted, and any specific instruction that might be imposed on the survey will be strictly adhered to.

Stage 2. Topographical Setting Out:

For each of those whole traverse lines or part lines positioned on land, individual 'RN', 'VP' and 'SP' positions falling along an individual traverse line will be 'marked out' by means of placing a small wooden peg or bamboo cane in the ground and accurately topographically surveyed using hand carried 'GPS technology. All such markers will be speedily retrieved once survey acquisition is complete.

For those elements of traverse line falling within the mud flats, it is proposed to deploy 'RN' on foot using mud shoes where practically possible, to reduce the gap between land and marine sources. The 'RN's will be fitted with 50 centimetre spikes to ensure good coupling and will be secured by interconnecting rope to assist in their recovery.

Stage 3. Shot Point Augering:

A 'SP' will comprise of a single hole, a maximum 2 metres in depth by 10 centimetres in diameter, with consecutive 'SP's being spaced 10 metres apart. Each hole will be temporary cased using plastic piping, sealed at surface and not loaded with the seismic charge until the day of data acquisition. Holes, once prepared, will be further surveyed using 'GPS' technology, in order to allow ready relocation during the loading process and avoid any risk of points being lost.

Augering of holes will be conducted a number of days prior to data acquisition, and undertaken using a specially adapted and lightweight 'Utility Terrain Vehicle' ('UTV') such as a Polaris, an example of which is shown within the Information Pack.

Stage 4. Data Acquisition:

For each of the river to land ties, 'RN' deployment will occur along the initial 500 metres of solely land based traverse line. It is anticipated this activity will be separate from the main land acquisition as the river surveying can be conducted quicker than its land counterpart.

For purely the land element of the survey, as previously stated, the loading of 'SP's will be undertaken on an individual 'SP' by 'SP' basis and will only be conducted along a single traverse line at any one time. All plastic piping will be removed, followed by a seismic charge, no greater than 150 grammes in size, being 'poled' to the base of each hole and then secured in place by 'tamping' the hole with auger spoil and/or washed 10 millimetre sized pea gravel. Immediately post shooting, each hole will be made safe.

In tandem with 'SP' loading, the recording spread will be laid out with individual 'RN's being positioned on the ground surface at a regular 5 metre interval along the traverse line. Coupling to the surface will be made by means of pushing the small metal spike located at the base of the 'RN' into the ground. Lay out will be conducted predominantly on foot but will be serviced by 4x4 or 'UTV' vehicles, these being used to transport equipment and field personnel. These vehicles will remain on public highway and track. **NO** equipment will be laid directly within any carriageway, bridleway or footpath. It is anticipated recording spread will be left in situ for an approximate 2 to 3 day duration before being retrieved. Throughout this period the equipment will be monitored and checked on a regular basis and will be left in position entirely at ROS's own risk. Should a node be inadvertently touched by a member of the public, it will pose no risk or danger.

Once sufficient recording spread is in position individual 'SP's will be fired on a 'SP' by 'SP' basis. A slight background muffled thud might be heard in the immediate vicinity after each such firing.

The weight drop operation will involve the use of a single tractor. Like the 'SP' firing process detailed above, once sufficient recording spread is in place, the unit will be positioned on an individual marked 'VP', followed by a pad being placed on the surface upon which the dropping of the weight will be undertaken with 5 or 6 strikes being required to complete the process. The tractor will then move 10 metres to the next consecutive 'VP' and repeat the process. Both this operation and/or 'SP' firing process will continue along the individual traverse line until the data acquisition process is complete.

Should any road signage and highway safety management be required, these will comply with the 'Mobile Works' requirements as set out in the 'Safety at Street Works and Road Works Code of Practice 2013'. ROS will ensure the survey operation is serviced by an accredited traffic management team who will undertake safety signage and 'stop/go' lollipop traffic management along all road affected.

Engagement of 24-hour field security may be undertaken to monitor for any disturbance or protest, and to deter against tampering and/or theft of field equipment.

Stage 5. Restoration & Clean-Up:

Restoration and clean-up will commence as soon as data acquisition allows. Survey marker pegs and canes will be removed together with all 'SP' locations being cleared of casing and detonator wire, in addition to holes being fully backfilled and sealed using surplus auger spoil and/or pea gravel where necessary.

Ecology Appraisal – Habitats Regulations Assessment Report

As the 'AOI' is characterised by a number of protected UK, European and Internationally designated areas of conservation, namely the **South Thames Estuary and Marshes SSSI, Mucking Flats and Marshes SSSI, Thames Estuary and Marshes RAMSAR**, plus areas of **SPA** designation, an independent ecological consultancy will be commissioned to produce a Habitats Regulations Assessment Report covering the entire 'AOI'. A copy of the Report will form an integral part of the notification to Medway Council.

All operational elements of the survey will fully comply with those recommendations and mitigation measures contained within this Report.

The Historic Environment

Three Scheduled Ancient Monument sites have been identified as falling within that area of the Parish encompassed by the 'AOI', these being Cliffe Fort (SM Reference 1003403), Cliffe Explosive Works (SM Reference 1428315) and Cooling Castle (SM Reference 1009018). For all three sites positioning of traverse lines will be undertaken to avoid any survey encroachment within their respective scheduled areas.

Unexploded Ordnance

The engagement of a specialist Explosive Ordnance Disposal Company will be undertaken to conduct a thorough investigation covering the entire 'AOI', and to advise (and supervise if necessary) on safety measures and recommendations to ensure the survey can be performed in a safe manner without any risk to both field personnel and the general public.

Proposed Operational Timings

The anticipated start of operations is late September 2022, initially with the river and land tie operations, followed shortly afterwards with the main land acquisition element which should take approximately 30 working days to complete.

Confirmation is further given covering the following points in relation to the survey operation:

- ROS has all necessary certification in place to acquire and transfer seismic charges, and all its field personnel involved in the handling and loading process are both experienced and 'ADR' qualified. Seismic charges will be brought direct to site on a daily basis either direct from the manufacturer or from an approved storage facility. In the unlikely event that any charges remain unloaded, these will be returned to the manufacturer or storage facility and not held in the 'AOI' overnight.
- In line with Environment Agency requirements, no augering of 'SP's will be undertaken within the 8 metre easement of a 'main river'.
- No 'SP' will be augered within 5 metres of a public highway or footpath.
- It is the norm for all surveying operations to be conducted on a 7 day a week basis normally between the hours of 0730 and 1800 or dusk. Subject to daylight hours allowing, ROS may wish to extend the working day beyond 1800 hours if it is deemed an operational necessity. **NO** land surveying activity will be conducted between dusk and daybreak.
- In advance of data acquisition, the 'AOI' will be covered by an information leaflet drop explaining survey operations and confirming local field office contact details. These details will additionally be provided to all parties concerned as soon as a field office is established. In addition to the leaflet drop the survey will be advertised in the local press.
- Survey operations undertaken within the 'UK' adhere to strict Industry Standards with regards to 'VP' and 'SP' safe operating distances from residential housing, industrial buildings, pipelines and utility assets etc. No 'VP' or 'SP' will therefore be positioned within those Safe Distance Charts provided within the Information Pack. Some variation to these safety distances might be applicable, this being dependant on specific requirements stipulated by the various utility companies and/or any pipeline operators.
- Peak Particle Velocity ('PPV') monitoring will be undertaken throughout the data acquisition phase to ensure 'PPV' levels remained on or below an upper safe operating limit of 5mm/s (as guided by British Standards BS7385 part 2 and BS5228 part 2).
- ROS has in place all necessary insurance, including adequate third-party cover. A copy of this can be provided on request.
- Formal written notification of the proposed survey will be submitted to both neighbouring Councils, namely Kent and Thurrock, in addition to Cooling Parish Council (Medway), Gravesham Borough Council (Kent), Shorne Parish Council (Kent) and Higham Parish Council (Kent).

ROS trusts the Parish Council has all the relevant information to understand the various processes involved in the survey, but should any additional detail or clarification be required, then please do not hesitate to contact the undersigned on 01280 852296.

Thanking the Parish Council for its anticipated co-operation in this matter.

Yours sincerely.

A handwritten signature in black ink, appearing to read 'M Rees', enclosed within a large, loopy circular flourish.

Mark Rees
Managing Director
Rees Onshore Seismic Ltd

Enclosures:

'Area of interest' Plan Drawing (Ref: Ph20p1)

Survey Information Pack

'Contacts Schedule'