

**Document Review Assessing  
HDD through QEP  
Comments appertaining to  
ESSO's Site Specific Plans  
for QEP**

**Application by ESSO Petroleum Company Ltd  
for an Order Granting Development  
Consent for the Southampton to London  
Pipeline Project**

**Application Reference EN070005**

**Interested Party Reference 20022787**

**Internal Reference 19/00432/PINS**

## Queen Elizabeth Park

### **1. Document Review Assessing the suitability of using HDD through Queen Elizabeth Park as part of the SLP project.**

- 1.1.1 It is Rushmoor Borough Council's view that the plans promoted by ESSO will cause irrevocable harm to the 200 – 300 year old beech woodland habitats within Queen Elizabeth Park, due to tree loss and impact to multiple Root Protection Zones (RPZs). As the ExA will be aware, RBC have never objected to the route through QEP, but merely wish to ensure that damage is limited as much as possible. The council have promoted Horizontal Directional Drilling (HDD) rather than open cut as the construction method that would cause the least ecological damage.
- 1.1.2 HDD was not explored as an option within the original EIA documents, despite the ecological impact that will be caused by open cut. Within their responses to the ExA, the applicant has stated that open cut rather than HDD has been selected due to the *"risk of encountering difficult unknown geology which can cause delays and even failure of the HDD."* However this consideration would likely to be pertinent to any project and can only be ascertained by appropriate studies and therefore it was RBC's view that this was not a valid reason to exclude HDD.
- 1.1.3 Within previous meetings held between the applicant and RBC the applicant has refused to discuss the option of HDD, or the reasons why this construction method was not being considered. However within a meeting held between ESSO, RBC and the Friends of Queen Elizabeth Park on 26<sup>th</sup> February 2020, the applicant did explain that HDD could not be undertaken due to the sandy geology of QEP, which could cause the drill hole to collapse and the curvature that would be required to HDD which would be too great to accommodate the pipe.
- 1.1.4 In response to a request from the ExA, ESSO did provide two HDD options at Deadline 3. They stated that as 600m was required for stringing out within the school Option 1 would lead to the loss of a number of trees, including two veteran trees, with Option 2 avoiding the veteran trees but leading to shortfall of 150m.
- 1.1.5 Due to our concerns regarding the ecological damage to be caused by open cut and the lack of information as to why HDD could not be undertaken, RBC has decided to commission GEO Drilling Solutions to provide a study as to whether HDD could be undertaken through the Park. As the applicant stated within their deadline 3 response that *The Applicant has undertaken studies of the potential to undertake a trenchless section of the route from the play area in QEP through to Farnborough Hill School*, the council originally requested a full feasibility report. However this proved to be impossible as studies essential to this assessment had not been published. The studies required to make an assessment included: topographical, geophysical and geotechnical reports, laboratory testing of samples, photographs of soil samples taken, particle size distribution analysis and groundwater testing. As a minimum GEO Drilling Solutions would have expected a constructability review report to have been prepared. Despite repeatedly requesting the above information from the applicant no information has been forthcoming and therefore RBC has no option but to

conclude that the appropriate assessments were not undertaken and the information would not have been available to make an informed assessment of the feasibility of HDD.

- 1.1.6 Due to the lack of site specific information GEO Drilling Solutions have been unable to ascertain with certainty that HDD could or could not be undertaken through QEP. In relation to the claim HDD cannot be undertaken within sandy soils, within section 4.3 GEO Drilling Solutions quote a number of sources that confirm the HDD within sandy soils usually has a good to excellent result, and point out that the geology of TC018 appears to be similar to that within the park and yet HDD is planned in this location. They state that *“The predominant ground conditions present according to the boreholes provided is Medium Dense to Dense Silty Fine to Medium SAND (assumed as Camberley Sands)... This type of ground is considered to be suitable for HDD.”*
- 1.1.7 In relation to the two options presented, GEO Drilling Solutions is of the view that these options have not been optimised. Pipelines could be split; the radius and curvature of the pipeline string could be reduced with current figures appearing to be set high. Splitting the pipeline would also reduce the curvature of the stringing out area leading to less tree loss or disturbance within the SE corner of the park.
- 1.1.8 In relation to the applicant’s claim that unknown geology could cause the failure of the HDD, GEO Drilling Solutions has stated that this is *an extremely rare event*. In the worst case scenario the site could be re-drilled with two re-drills being able to be accommodated in many cases.
- 1.1.9 In response to the applicant’s claim that stringing out would be required within the park from Stakes Lane leading to loss of trees, RBC would question this claim as ESSO have since stated there would be no loss of trees within the stringing out area from Stakes Lane. As the impact from Stakes Lane would not change, whatever construction method was undertaken within QEP, clarity is needed as to which of the above statements is accurate. GEO Drilling Solutions have stated that by reversing the stringing out process, with the strings being laid adjacent to the railway, tree loss within the park due to this operation could be reduced. In response to the applicant’s claim that more plant would be required GEO Drilling Solutions has stated these could be double stacked to save room and to preserve the trees within the South East corner of the park.
- 1.1.10 The applicant did acknowledge that the string could be split into two lengths but stated that *“welding, testing, & coating does take a number of days and whilst it is possible to restart a HDD string pull (it is standard practice to pull a string back in one continuous operation).”* Splitting the string *“has a higher risk of failure which could extend the installation period significantly and could require work to extend into the school term.”* time.” Although GEO Drilling Solutions acknowledge that it is preferable to perform a single pull there is the option of splitting the string and having multiple changes in direction. They feel it would be possible to tighten the curvature of the drill and thus avoid the ecologically sensitive features such as the veteran trees and remain within the current red line boundary. GEO Drilling Solutions have commented that *“If the pipeline string was split into 2 strings, for example, the pipeline installation operation should only need to be paused for up to 6 hours maximum in order to perform the tie-in weld between the 2 strings.”*

- 1.1.11 In regards to Option 1 GEO Drilling Solutions has concerns that *the radius of curvature appears to be larger than necessary*” and if shortened could be accommodated within the existing order limits. They feel *“There may be opportunity to reduce the minimum radius of curvature further. The HDD exit point site (‘receiving compound’) can potentially be moved further West, and the length of the HDD crossing increased”*
- 1.1.12 The report submitted, although limited by the lack of baseline information, indicates that it would be possible to undertaken HDD through QEP. Sandy soils, known to be present within the park are assessed as good to excellent and splitting the strings and adapting the curvature would overcome the concerns in regards to loss of veteran trees and impacts on private property. Failure of the drill due to splitting the string appears to be extremely rare and the timing of welding would take 6 hours rather than days as stated by the applicant.
- 1.1.13 RBC support and welcome the new requirement suggested by the inspector and would be happy to reassess the feasibility of HDD within the detailed stages once the required studies have been undertaken or made available.

*(For the full GEO drilling report see appendix A)*

## **2. Queen Elizabeth Site Specific Plan**

### **2.1 Construction Techniques**

- 2.1.1 RBC cannot support this document as it advocates open cut construction techniques, digging, in one case 3m down within the RPZ of significant trees and the ability to cut trees not in the order limits whenever the site arboriculture expert permits it. Throughout the examination process the council has promoted the used of HDD through the park as this will ensure minimal damage to the ecological habitat present.
- 2.1.2 The council also continues to be concerned that the works are likely to take a total of two years. Although we understand that the car park and play ground will be lost for the duration of the project, it is the council's view that that the period taken to complete works required within QEP should be reduced to enable the park to again be opened to the public. The HDD TC018 should have no impact on the use of the footpath and if HDD is undertaken there will be no need for either the auger bore or the reinstatement works. Therefore the timetable indicates that the path should not be closed for more than 5 months.

### **2.2 Description of Works (Access)**

- 2.2.1 Although public access will not be prevented from the park during the project, movement will be severely limited. The loss of the car park within Cabrol Road will mean that many people will not be able to access the site by car. Although another car park is present just off Farnborough Road this is much smaller and is already busy. It is also in a poor state of repair. A visitor survey undertaken by Friends of Elizabeth Park shows that Cabrol Road receives 26 visitors per hour whilst Farnborough Road only receives 10 visitors / hour. This means 71% of the visitors currently use Cabrol Road. RBC have requested that the Farnborough Road car park and the access road be brought up to the standard of the Cabrol road site, with pot holes being filled, porous resurfacing, and enlargement by removal of rhododendron. Currently ESSO have stated they are not willing to undertake this work but they have agreed to reconsider in the light of the minimal works to be undertaken. We await ESSO's response but it is the council's view that as with the playground, ESSO should be obligated to provide a useable alternative vehicular access point and car park whilst Cabrol Road is out of use.
- 2.2.2 In relation to the southern path this is the main cycle and pedestrian access to the site. There is an alternative path but this is more naturalised and runs through sensitive habitats such as untouched beech woodland and the glade. For ecological reasons the council would not wish this path to be formalised or lit as suggested by the applicant as this would lead to further ecological harm. Hard surfacing of the southern path could lead to loss of acidic grassland within the glade, with lighting causing disturbance to roosting and foraging bats. To ensure as little impact as possible to the cyclists and pedestrians as possible, RBC continues to promote the limitation of the main path closure to the shortest time possible. If HDD were used through the park, it is our understanding that the timing of the works would be much reduced with only the playground and car park needing to be closed in the long term.

- 2.2.3 In recompense for the loss of vehicular access to Cabrol Road and loss of cycle and pedestrian access for the duration of the works, and the increase in noise in what is a place of tranquillity and peace, RBC has promoted improvements to the park to enhance the visitor experience in the longer term. The council is of the view that these enhancements should be secured as part of a s106 agreement rather than through the Environmental Improvements project. The applicant has refused to discuss a s106 agreement but is discussing limited enhancements funded by the EIP. *(For further details of the enhancement project promoted by RBC see appendix B)*

### **2.3 Description of Works (Security)**

- 2.3.1 Although the council understands the need for security, the lighting and the security guard will impact on both the visitor experience and the use of the site by nocturnal wildlife, in particular bat species. This can be compensated in the longer term by the funding of the project in Appendix B.

### **2.4 Description of Works (Vegetation Removal)**

- 2.4.1 If HDD is agreed within the detailed phases then there will be very little vegetation removal required. There could be some loss of trees within the stringing out area though reversal of the string from TC018 would limit this loss.
- 2.4.2 The tree schedule produced by the applicant still identifies no notable trees within the order limits, despite the commitment to follow BS 5837 2012 British Standards, with only three of the four veteran trees are identified within the tree schedule. The council also notes that there are a number of semi mature and early mature trees to be felled, some of which are Oak trees. These trees will be of significant size with semi mature trees have reached 2/3 of their final height and early mature trees having reached their full height with the remaining years to maturity leading to broadening of the trunk and canopy. Loss of these trees will have a significant impact on the woodland, leaving large gaps within the canopy and depriving the area of the woodland within the order limits of the tree age variation which is so vital for woodland survival and biodiversity value in future years.
- 2.4.3 Regardless of the severity of the tree loss, throughout the examination process RBC's concerns have been in relation to impact on the root zones, rather than extensive tree loss. Open cut trenching will lead to the disturbance of many root zones of mature, notable and veteran trees. In discussions with GEO Drilling Solutions they have stated that hand digging with air spades may preserve the roots whilst digging but once the pipe is dropped into the trench all roots will be severed. This is due to the fact that the pipe cannot fit between the densely packed roots present in the first meter of soil of a mature notable or veteran tree. As the most essential roots for tree survival are within the first meter of soil, severance is likely to lead to significant damage to the trees and could cause trees to die.
- 2.4.4 HDD or other trenchless techniques such as micro-tunnelling would alleviate this risk and the council welcomes the new requirement to resolve this issue at the detailed stages.

## **2.5 Enabling works**

- 2.5.1 RBC is concerned that the compound and the playground are classed as enabling works as the applicant has stated that these works will be undertaken before the DCO is agreed. The council would not wish damage to be done to the site if the DCO were refused and therefore RBC is of the view that a requirement should be put in place that no works should be undertaken within QEP until the DCO is granted. The council is happy for the playground to be dismantled and provision of a temporary playground within the glade as this is being agreed through the land agreement.
- 2.5.2 RBC continues to have serious concerns regarding the siting of the compound within the grassed area to the south of the car park. This is a very sensitive area of the park containing a white willow in the centre of the area. This tree, although not a veteran tree, only just missed out on that designation. This is an important feature of the park providing a feature tree at the entrance. The proposed plan would lead to the cutting back of this tree, would place surfacing over the top of a significant proportion of the roots and would be compacted due to buildings being built within the root zone and heavy vehicles constantly driving over the RPZ.

## **2.6 Open Cut**

- 2.6.1 RBC does not agree that open cut should be used within the park. We also note that the new requirement states that the construction technique will now be decided at the detailed stage and therefore this section should be removed from the document until such time as a decision is made as whether HDD or open cut will be used.
- 2.6.2 The council also has a number of concerns about the methodology. The British standards advocate remaining outside any RPZ; therefore if this guidance is to be used HDD should be undertaken.
- 2.6.3 RBC as landowners would not be happy for decisions to be made on the ground regarding branch cutting in QEP as suggested in paragraph 3.5.6. The council would expect all works on site to be agreed with RBC's ecologist. As the council is promoting HDD little branch cutting should be required.

## **2.7 TC018 Installation (HDD Receiving Area and Stringing)**

- 2.7.1 Within the GEO Drilling Solutions report a recommendation is made to reverse the HDD drill to limit the damage to the habitat due to the stringing out area. The string could be laid adjacent to the railway line and pulled through from Cove Brook Greenways. It is RBC's view that this should be able to be accomplished on the railway without loss of trees as a footpath is present parallel with the railway line and the trees are quite widely spaced along the railway corridor
- 2.7.2 In relation to the stepovers within the stringing out area RBC would expect an assessment to be undertaken regarding any ecological damage these will cause with habitat restoration provided once they are removed.

## **2.8 TC019 Installation (Auger Bore Receiving Area for A325 Crossing)**

- 2.8.1 The council questions the claim that no mature trees are to be lost as there are a number of mature trees within the area to be used for the Farnborough Road auger drill. RBC questions how the auger pit, Farnborough Road compound and access track, are to be constructed without removal of the mature trees within this area.
- 2.8.2 The applicant is planning to dig a deep auger pit in this area 5m wide, 6m long and 3m deep. As this area is within the root zones of a number of significant trees that are important not only for QEP but also provide a backdrop to Farnborough Road and the conservation area the loss of these trees would be highly significant to the landscape of this area. The deep excavations and the compaction from heavy vehicles will be likely to lead to severe impact on the mature tree along Farnborough Road and within the woodland and are likely to be lead to them failing. A mature tree is unlikely to survive a three meter deep hole adjacent to and surrounding its trunk and annihilating all important roots. HDD or some other trenchless technique will avoid this damage.

## **2.9 Reinstatement**

- 2.9.1 RBC is happy with the reinstatement of the playground but at present there is no legal mechanism through which to secure either the temporary play area or the replacement of the permeant playground. RBC would prefer that this be secured through a s106 agreement but the applicant will not agree to this.
- 2.9.2 As stated many times before there is no eastern pond to reinstate. The council would not want a pond in this area as this would further impact on RPZ. It appears that the applicant wishes to create a pond here so they do not have to fully restore the auger pit. This is not desirable and if an auger bore were delivered in this area the council would expect full restoration to pre-construction levels.
- 2.9.3 The council are not happy with the reinstatement plans. As a number of semi mature and early mature trees would be lost, significant trees in their own right, RBC would expect a biodiversity offsetting calculation to be undertaken with trees or other habitat enhancement being provided within the park and the locality to ensure no biodiversity loss as a result of the development. We welcome the removal of Rhododendron but as stated many times before this is beech woodland and so has no shrub layer naturally. Therefore the council would not want woodland shrub planting other than to shield any property where the rhododendron has been removed.

## **2.10 Conclusion**

- 2.10.1 In conclusion, RBC objects to the QEP site specific plan as we feel it would lead to extensive and long lasting ecological damage to the woodland, and impact on visitor enjoyment for years to come. The council would promote either HDD or some other trenchless technique under the park. We welcome the inspectors support within this matter and agree with the new requirement drafted which enables further studies to be undertaken and decisions to be delayed to the detailed stages when all background studies should have been completed and a full assessment can be made as to the feasibility of trenchless techniques.



2.10.2 Appendix B contains the compensation the council feel is required whatever the construction technique to ensure full recompense to the visitors for any inconvenience caused. The council is of the view that this should be delivered under s106 agreement.

**Appendix A**

*Please see Rushmoor Borough Council\_ Queen Elizabeth Park HDD high level review. Rev01 (1)*

## Appendix B Compensation plan for Queen Elizabeth Park

<b>Compensation</b>
Biodiversity offsetting calculation for the loss of trees with appropriate mitigation
Phase 1 Habitat surveys and protected species surveys
Preparation of a 10 year management plan
Localised clearance of Rhododendron
Enhancement of the Cabrol road pond
Funding of the Friends of QEP community group
Funding of council management of the site for a specified period