



**BASEMENT IMPACT ASSESSMENT
at
31A Riverside Road
London
N15 6DA**

Ref 18.0282

CLIENT: Award Properties Ltd



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1.0 INTRODUCTION

Ammro Consulting Ltd (ACL) has been commissioned by Award Properties Ltd, to carry out a Basement Impact Assessment of the proposed property to be known as 31A Riverside Road, Haringey, London, N15 6BX, Coordinates 534351E, 188397N., in accordance with guidelines from London Borough of Haringey ("the Council") in support of a planning application.

A Desk Study and Ground Investigation has also been completed by ACL.

1.1 Proposed Development

It is proposed to demolish an existing garage and construct a new dwelling with a basement all adjoining the existing property. Underpinning of the existing property will be required to create a residential space.

1.2 Scope and Purpose of Work

The work carried out comprises a Basement Impact Assessment which is in accordance to procedures specified in the London Borough of Haringey Local Plan Policy SP11, DM18.

The aim of the work is to assess if the proposed deepening of the existing basement will have a detrimental impact on the surroundings with respect to groundwater and land stability and in particular to assess whether the development will affect the stability of neighbouring properties, local and regional hydrogeology and whether any identified impacts can be appropriately mitigated by the design of the development.

1.3 Qualifications

This assessment has been carried out by Mark Fouweather, AMIStructE, IEng, member of the Institution of Structural Engineers who has over 30 years of experience in engineering.

1.4 Limitations

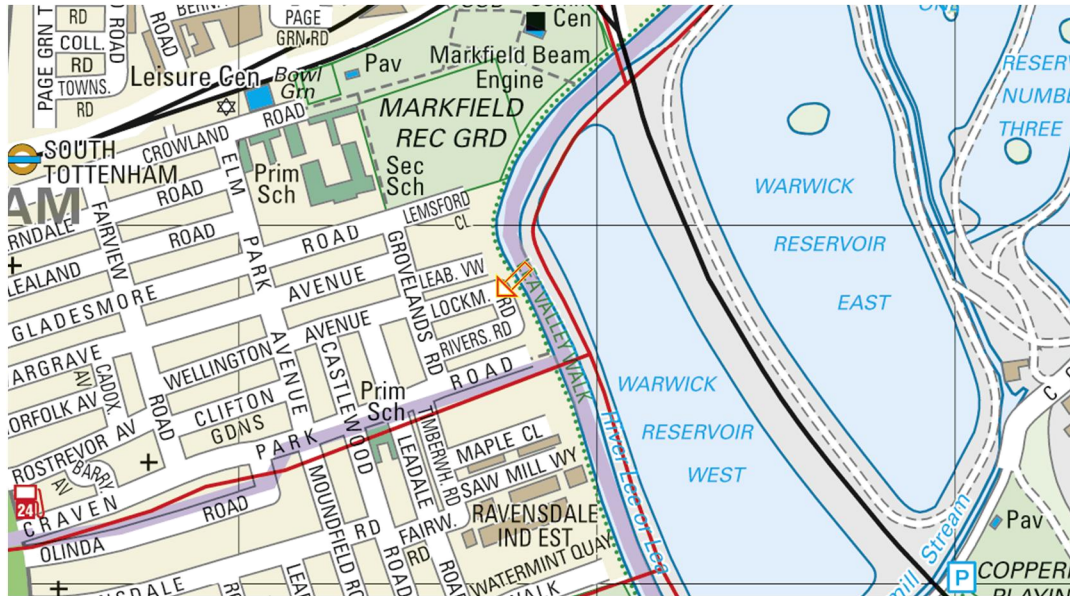
The conclusions and recommendations made in this report are limited to those that can be made on the basis of the research carried out. The results of the research should be viewed in the context of the work that has been carried out and no liability can be accepted for matters outside the stated scope of the research. Any comments made on the basis of information obtained from third parties are given in good faith on the assumption that the information is accurate. No independent validation of third party information has been made by ACL.

2.0 THE PROPERTY

2.1 Property Description

The property is located at the corner of Riverside road and Lockmead Road, Adjacent to the Warwick Reservoir West

The property may also be located by National Grid Reference 534351E, 188397N, and is shown on the map below.

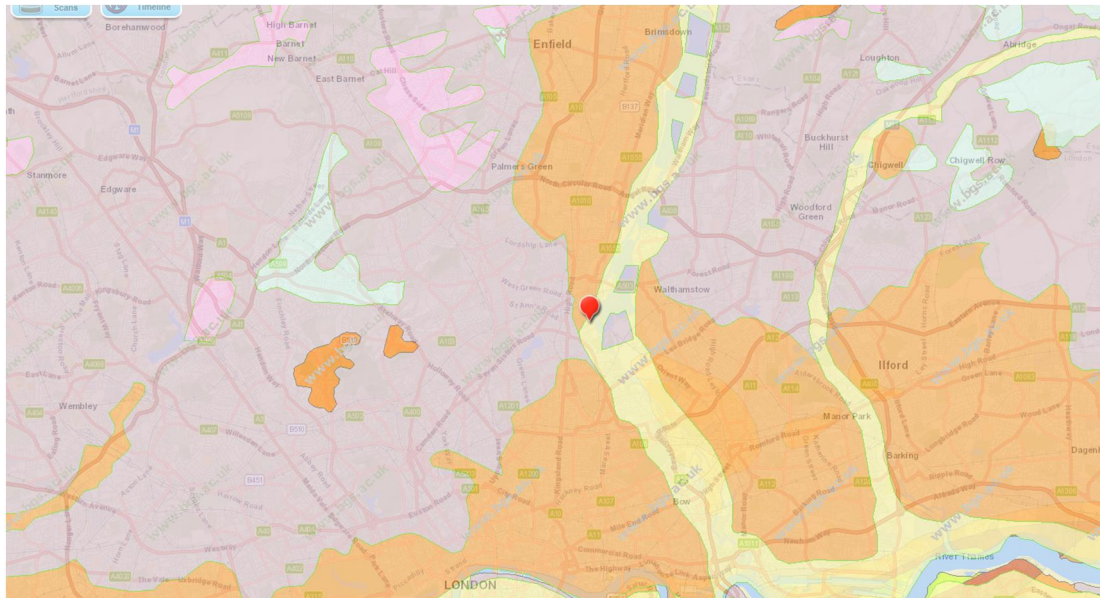


The proposed property will be a traditionally built end terrace, constructed from masonry walls and timber floors with a flat roof. The site is level with an existing property as the Northern boundary and the footpath as the southern Boundary.

3.0 GROUND CONDITIONS

3.1 Soil Conditions

The Geological Survey map of the area (below) indicates that the site bedrock geology description is London Clay Formation - Clay, Silt And Sand. Sedimentary Bedrock formed approximately 48 to 56 million years ago in the Palaeogene Period. Local environment previously dominated by deep seas.



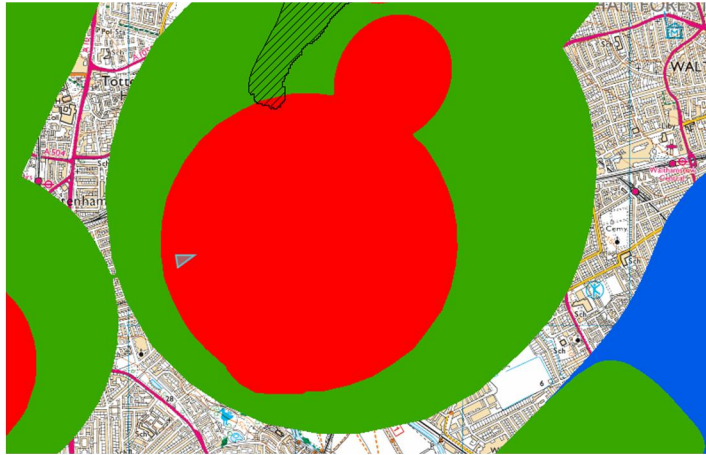
These rocks were formed in shallow seas with mainly siliciclastic sediments (comprising of fragments or clasts of silicate minerals) deposited as mud, silt, sand and gravel.

The London Clay mainly comprises bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay. It commonly contains thin courses of carbonate concretions ('cementstone nodules') and disseminated pyrite. It also includes a few thin beds of shells and fine sand partings or pockets of sand, which commonly increase towards the base and towards the top of the formation. At the base, and at some other levels, thin beds of black rounded flint gravel occurs in places. Glauconite is present in some of the sands and in some clay beds, and white mica occurs at some levels.

A trial hole will be excavated on site adjacent to the existing property to establish the depth of the existing foundations.

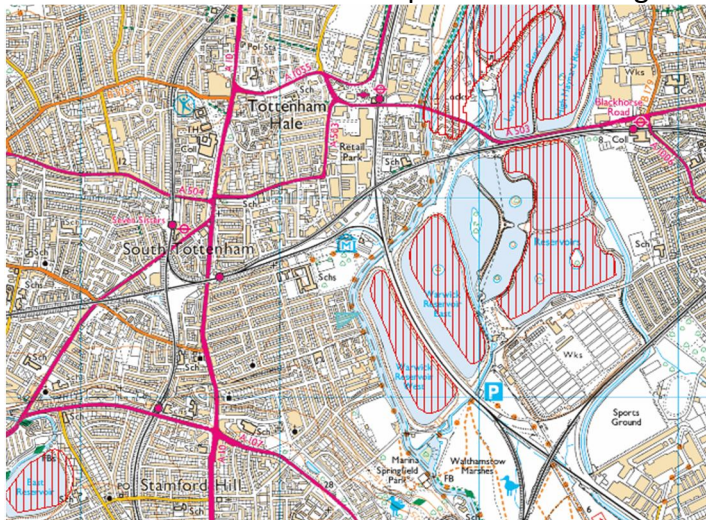
3.2 Groundwater Conditions

The Property is in an area identified as Zone 1: (Inner Protection Zone) - This zone is defined by a travel time of 50-days or less from any point within the zone at, or below, the water table. Additionally, the zone has as a minimum a 50-metre radius. It is based principally on biological decay criteria and is designed to protect against the transmission of toxic chemicals and water-borne disease. defined by the Environment Agency (EA) see maps below.



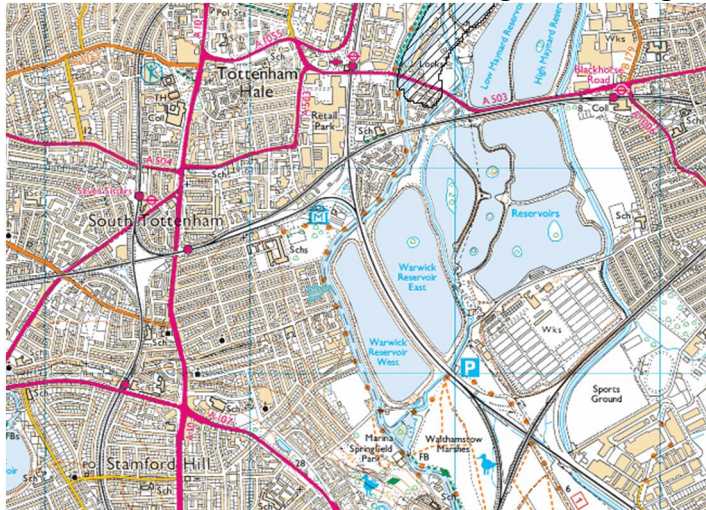
Ground source Protected Zones

Site is not identified as area of protected drinking water



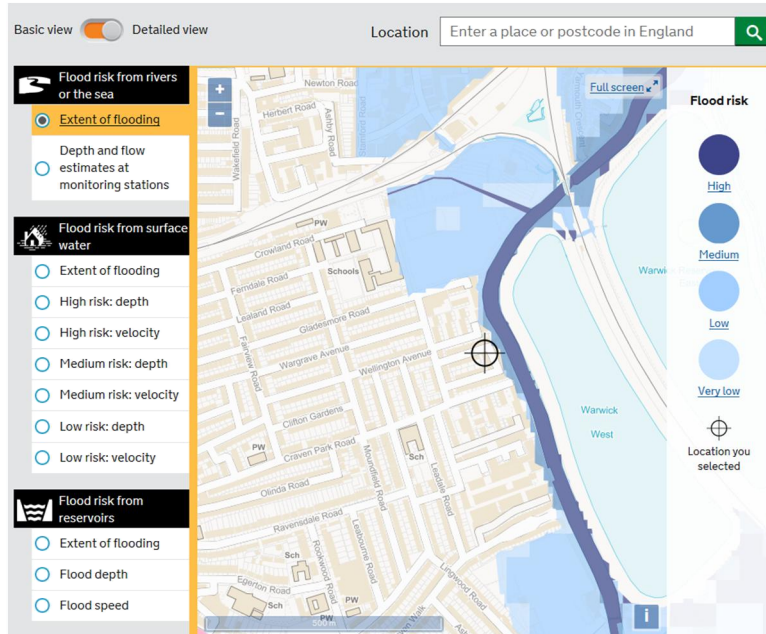
Drinking Water Protected Areas (surface water)

Site is not identified as area of drinking water Safeguard Zone



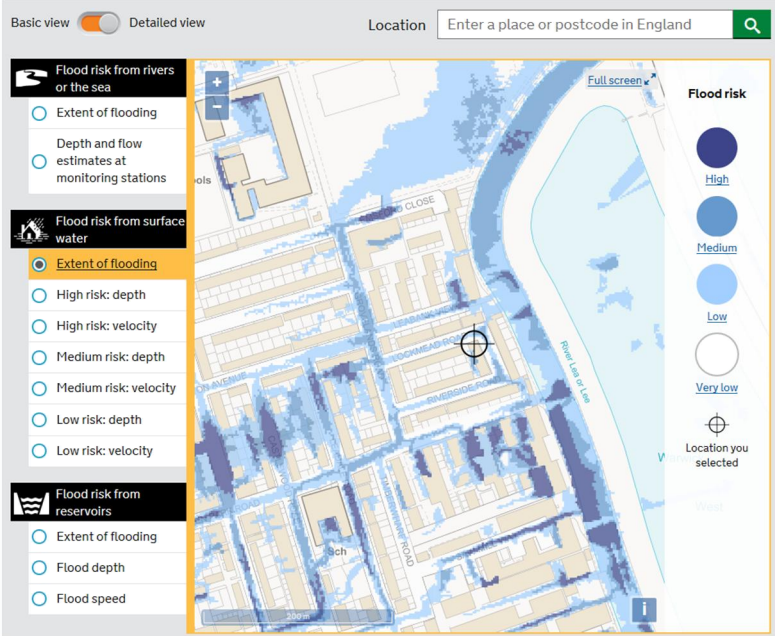
Drinking Water Safeguard Zones (surface and ground water)

The site is not in an area at risk of flooding from rivers or sea



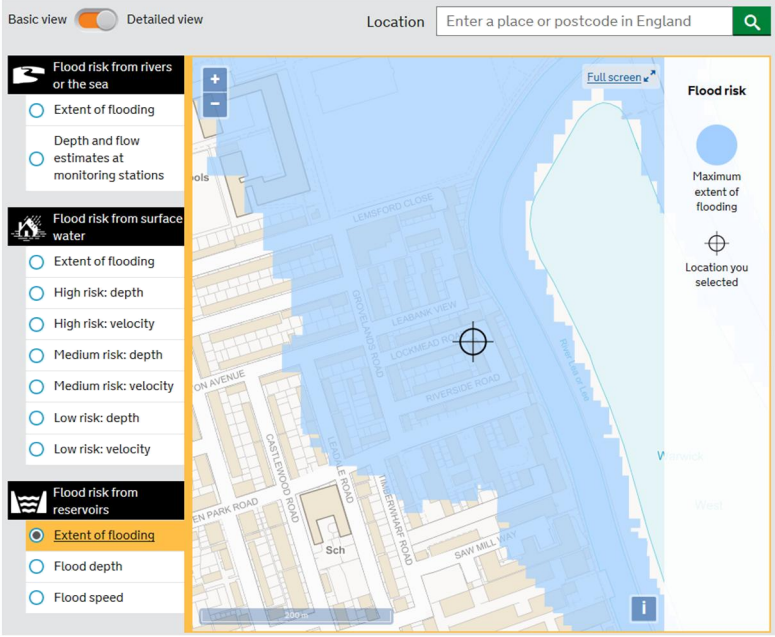
Flooding from rivers

The site is not in an area at risk of flooding from surface water although Lockmead Road and Riverside Road have some Low risk points.



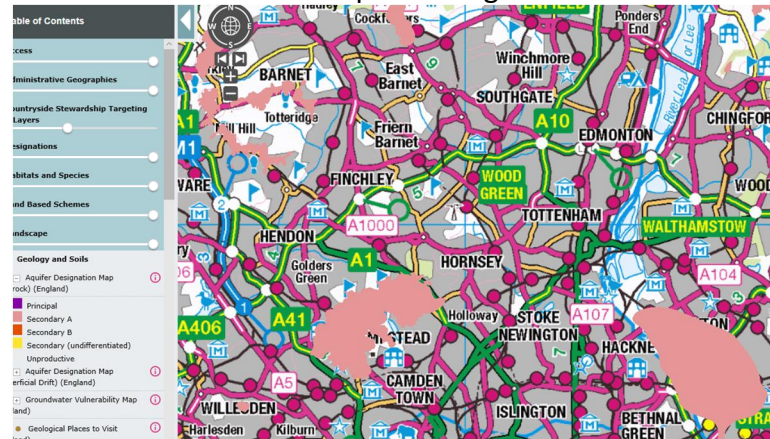
Flooding from Surface Water

The site is in an area at risk of flooding from reservoir



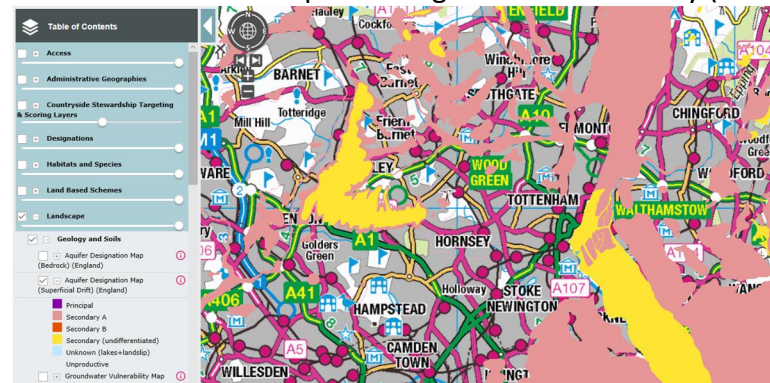
Flooding from Reservoirs

The site is not above an Aquifer designation at Bedrock



Aquifer designation (bedrock)

The site is above an Aquifer designated as Secondary (undifferentiated)



Aquifer designation (Superficial Drift)

3.0 SCREENING

The building Regulation guidance suggests that any development proposal that includes a subterranean basement should be screened to determine whether or not a full BIA is required.

4.1 Screening Assessment

A number of screening tools are included in the Arup document and for the purposes of this report reference has been made to Appendix E which includes a series of questions within a screening flowchart for three categories; groundwater flow; land stability; and surface water flow. Responses to the questions are tabulated below.

4.1.1 Subterranean (groundwater) Screening Assessment

QUESTION	RESPONSE
1a. Is the site located directly above an aquifer?	Yes but only secondary
1b. Will the proposed basement extend beneath the water table?	unknown
2. Is the site within 100m of a watercourse, well (used/disused) or potential spring line?	Yes
3. Is the site within the catchment of the pond chains on Hampstead Heath?	No
4. Will the proposed basement development result in a change on the proportion of hard surfaced/paved areas?	No
5. As part of the site drainage, will more surface water (eg. Rainfall and run-off) than at present be discharged to the ground (eg. Via soakaways and/or SUDS)	No, an existing building currently occupies the site.
6. Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to or lower than, the mean water level in any local pond or spring Line?	No

The above assessment has identified the following potential issues that need to be assessed:

Q1a. The Aquifer is designated as Secondary

Q1b. Water table is unknown but is expected to be higher than the Basement level due to the proximity of the River. With Standard building practices this can be managed and mitigated.

Q2. There is a River 40m from the site, but the Reservoir is 101m away.

4.1.2 Stability Screening Assessment

QUESTION	RESPONSE
1.Does the existing site include slopes	No
2. Will the proposed involve any re-profiling of the existing landscaping.	No
3.Does the site neighbour railway land	No
4. Is the site within a wider hillside setting.	No
5. Is the London Clay the shallowest strata at the site	No
6.Will any trees be felled as part of the proposal/any works within tree protection zones of retained trees.	No
7.Is there any history of seasonal shrink/swell subsidence in the local area and/or such effects at the site.	No
8. Is the site within 100mm of a water course or potential Spring line?	Yes. River Lea
9. Is the site in an area of previously worked land	No
10. Is the site within an aquifer?	Yes, only secondary
11. Is the site within 50m of Hampstead Heath Ponds?	No
12. Is the site within 5m of a highway or pedestrian right of way	Yes. 0.3m from back of footpath
13. Will the proposed basement significantly increase The differential depth of foundations relative to Neighbouring properties.	Yes. The basement will require underpinning of neighbouring property
14. Is the site over (or within the exclusion zone of) any Tunnels eg railway lines?	No

The above assessment has identified the following potential issues that need to be assessed:

- Q8 The site is 40m from the river Lea.
- Q10 The Aquifer is designated as Secondary.
- Q12 The site is within 0.3m of a public highway.
- Q13 The site will be constructed by specialist contractors who are experienced in basement construction.

4.1.3 Surface Flow and Flooding Screening Assessment

This element of the BIA is provided for guidance only and should be confirmed by a suitably qualified engineer experienced in carrying out surface water assessments.

QUESTION	RESPONSE
1. Is the site within the catchment of the pond chains on Hampstead Heath?	No
2. As part of the proposed site drainage, will surface water flows (eg volume of rainfall and peak run-off) be materially changed from existing	No, existing building currently occupying the site
3. Will the proposed basement development result in a change in the proportion of hard surfaced/paved areas?	No
4. Will the proposed basement development result in changes to the profile of the inflows (instantaneous and long term) of surface water being received by adjacent properties or downstream watercourses?	No
5. Will the proposed basement result in changes to the quantity of surface water being received received by adjacent properties or downstream watercourses?	No
6. Is the site in an area known to be at risk from surface water flooding.	No, however the surface water flooding risk is LOW as EA flood maps along Riverside Road next to the property.

The above assessment has identified the following potential issues that need to be assessed:

- Q6 Site is next to in an area known to be LOW risk of surface water flooding but is not in the flood area itself.

5.0 SCOPING AND SITE INVESTIGATION

The purpose of scoping is to assess in more detail the factors to be investigated in the impact assessment. Potential consequences are assessed for each of the identified potential impact factors.

The investigation of the potential impacts is carried out through a suitable site investigation and this has been carried out by ACL in November 2018. It is considered that the scope of the investigation a suitable basis on which to assess the potential impacts.

5.1 Potential Impacts

The following potential impacts have been identified.

POTENTIAL IMPACT	POSSIBLE CONSEQUENCES
. Is the site within 5m of a highway or pedestrian right of way	Yes, basement is 0.3m from back of footpath. Collapse from excavation
. Is the site in an area known to be at risk from surface water flooding.	No, however the surface water flooding risk is LOW as EA flood maps along Riverside Road

These potential impacts have been investigated through the site investigation, as detailed below.

6.0 BASEMENT IMPACT ASSESSMENT

The screening identified a number of potential impacts. The desk study and ground investigation information has been used below to review the potential impacts, to assess the likelihood of them occurring and the scope for reasonable engineering mitigation.

The table below summarises the previously identified potential impacts and the additional information that is now available from the site investigation in consideration of each impact.

POTENTIAL IMPACT	SITE INVESTIGATION CONCLUSIONS
Location of Public Highway	Excavations and construction methods to be Approved by Structural Engineer

Location of public highway

Retaining walls forming the basement and within 5m of the public Highway will be constructed by an experienced contractor in accordance to Engineers design and will not have a detrimental impact on the stability of adjacent highways.

The basement excavation will be approximately 0.3m from the nearest public highway, suitable construction methods will ensure the construction of the basement will not have a detrimental effect on the stability of adjacent highways.

With regards to the LOW risk of flooding along Riverside Road (less than 300mm), although the site is outside this zone it may be advisable to provide a small upstand around the proposed basement of approximately 200mm.

7.0 CONCLUSIONS

A Basement Impact Assessment has been carried out following the information and guidance published by the London Borough of Haringey.

It is concluded that the proposed development will not result in any specific issues relating to land or slope stability, the hydrogeology and hydrology of the site. There should not be any negative impact on the groundwater.