

9. Land, Soils & Geology

9.1. Introduction

This chapter describes the type of soils and geology likely to be encountered beneath and in the general area of the proposed development. It also addresses the potential impact of the proposed development on land, soils and geology together with the mitigation measures that will be employed to eliminate or reduce any potential impacts.

This proposed development comprises the construction of 483no. housing units in addition to a crèche facility and associated infrastructure on a 17.9ha Site north of Blackrock Dundalk Co. Louth. A detailed description of the proposed development is presented in Chapter 2 - Project Description.

9.2. Study Assessment and Methodology

The following scope of works were undertaken by Atkins in order to complete the land, soils and geology assessment presented in this chapter;

- Desk-based study including review of available historical information;
- Site Walkover Survey by an experienced Geo-environmental Scientist; and,
- Site attendance during the Ground Investigation.

This assessment has been completed in accordance with relevant best practice guidance from the Institute of Geologists of Ireland, 'Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements' (IGI, 2013). The IGI guidance document is an updated version of the 2002 guidelines, 'Geology in Environmental Impact Statements, A Guide' (IGI, 2002), which was revised to take account of legislative changes, and the operational experience developed by geoscientists in the production of relevant environmental assessments.

The desk-based study involved reviewing information from the following sources: -

- GSI Datasets Public Viewer and Groundwater webmapping (consulted 20th July 2019);
- EPA Public Viewer and webmapping (consulted 20th July 2019); and,
- Ordnance Survey webmapping to assess the surface topography and landforms (consulted 20th July 2019).

Ground investigations for the proposed development were carried out by Geotechnical Environmental Services Ltd between 12th to 14th June 2018 and comprised the following scope of work:

- 20no. Trial pits using a 13tonne tracked excavator.
- 5no. Percussive Boreholes using a Geoprobe 6620DT drill rig.

A combined Preliminary Risk Assessment and Generic Quantitative Risk Assessment was carried out by Cove Environmental Consulting.

The Ground Investigation Factual and Interpretative Report including the Preliminary Risk Assessment and Generic Quantitative Risk Assessment is presented in Appendix G.

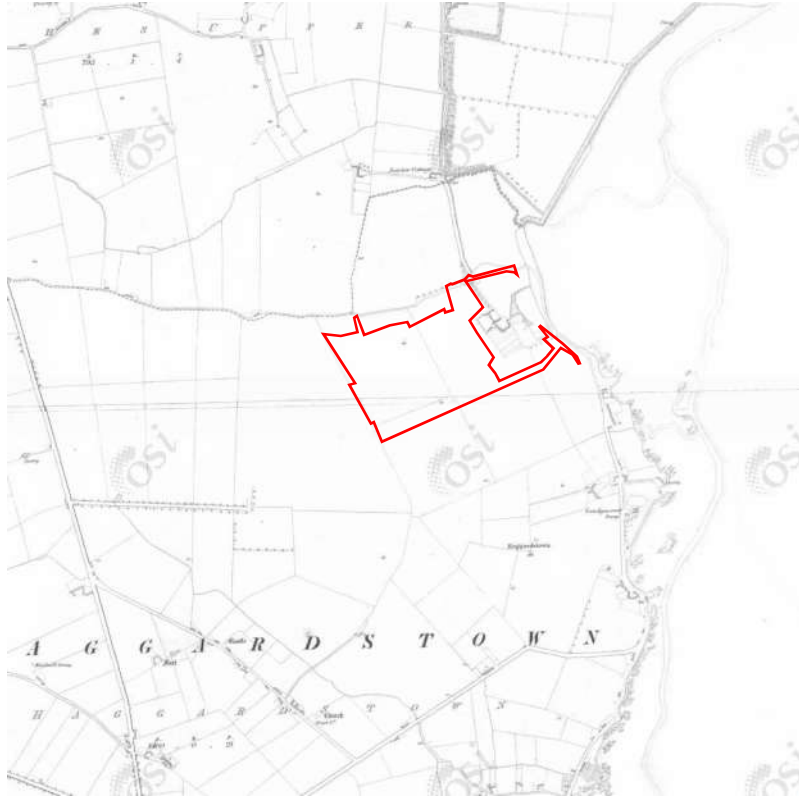
9.3. Receiving Environment

This section provides a description of the land, soils and geology in the general region of the proposed development and also takes account of the current and historic uses of the proposed development (hereafter referred to as the Site).

9.3.1. Site Development

A review of historic maps and aerial photographs from the Ordnance Survey of Ireland (OSI) 2019 has been carried out. This consisted of a review of 6 inch and aerial maps from 1837 through to present day. The mapping shows significant changes in commercial, industrial and recreational uses on the surrounding areas whilst the Site itself appears to have always been used for agricultural

purposes. The development of the Site is outlined below. Dundalk Bay SAC, SPA and proposed NHA is c. 80m to the east of the main body of the Site.

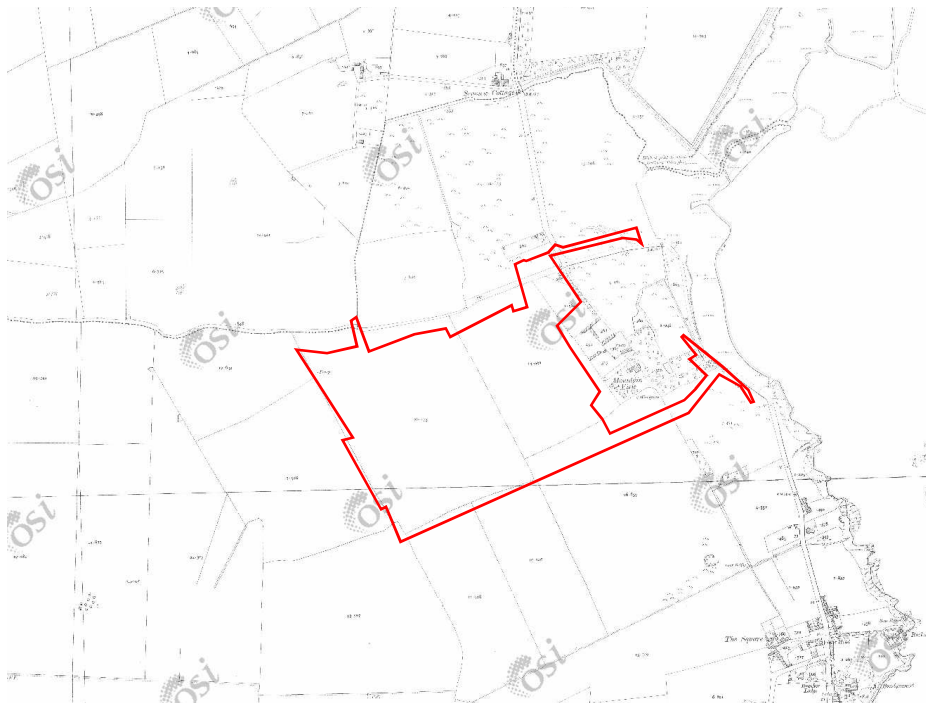


1837-1842

Agricultural buildings are indicated off the eastern boundary to the Site with possible ponds noted.

Sandymount pump is indicated to the south in addition to a quarry immediately adjacent to the sea.

The general surrounding area is agricultural with Blackrock village noted further south.



1888-1913

A number of agricultural buildings are still shown beyond the east of the Site surrounded by a forested area. They are now labelled Mountainview.

2no. pumps are also recorded in this area.

The map shows the expansion of Blackrock village to the south.

1995

The 1995 aerial maps show the development of a golf course to the west of the Site. A line of houses has been constructed to the south of Bóthar Maol beyond the northern boundary of the Site with the IDA industrial estate constructed to the north of Bóthar Maol along with other industrial developments in the vicinity of Dundalk town. A significant number of houses have been constructed along the Dublin Road. Blackrock village is expanding to the south east. A significant number of houses have been constructed along the Old Golf Links Road south of the golf course



2000

Minor changes are noted on the 2000 aerial maps is the industrial developments to the west which is the Site of the Xerox facility. A new housing estate to the north of Blackrock village is under construction. Additional housing construction along the Old Golf Links Road.



2005

The 2005 maps show the completion of the housing development to the north of Blackrock village beyond the south east of the Site. Beauparc housing development to the north east of the Site has been constructed.



2012

Blackrock village continues to expand to the south.



9.3.2. Site Topography

A Site walkover survey was carried out on 29th August 2018. The Site generally falls from the south-west to the north-east of the Site. The Site was observed to have been recently harvested with stubble noted across the Site. Ground conditions across the Site were observed to be generally good. There were a number of uncultivated areas across the Site. These were noted to contain evidence of rock outcropping, consisting of a probable greywacke bedrock.

Available topographic levels across the Site range from c. 23 metres above ordnance datum (mOD) in the south-west, to c. 6.08mOD in the north-east.

9.3.3. Ground Investigation

5no. boreholes and 20no. trial pits were carried out across the Site as outlined in Figure 9.1 and listed in Table 9.1.



Figure 9.1 - Environmental Sampling and Gas Monitoring Locations

Table 9.1 - Ground Investigation: Inventory of Exploratory Locations

BH / TP ID No.	Ground Level (mOD)	Depth to Base (mbgl)	Base Level (mOD)
BH01	16.98	3.74	13.24
BH02	21.20	4.37	16.83
BH03	12.60	3.40	9.20
BH04	9.88	2.23	7.65
BH05	13.86	3.27	10.59
TP01	15.20	2.90	12.30
TP02	16.78	1.60	15.18
TP03	18.61	2.60	16.01
TP04	21.22	2.40	18.82
TP05	20.52	3.10	17.42
TP06	19.24	2.00	17.24
TP07	17.63	0.40	17.23
TP08	15.28	3.10	12.18
TP09	11.61	2.80	8.81
TP10	8.72	3.10	5.62
TP11	15.38	2.70	12.68
TP12	16.07	3.10	12.97
TP13	15.28	2.80	12.48
TP14	14.06	1.05	13.01
TP15	10.82	3.00	7.82
TP16	10.01	0.60	9.41
TP17	9.38	3.10	6.28
TP18	9.09	2.30	6.79
TP19	10.12	2.40	7.72
TP20	13.06	1.40	11.66

9.3.4. Soils

The Teagasc soil maps indicate that the soil underlying the Site generally comprises shallow and deep well drained mineral soils. The access road to the Site encroaches onto an area defined as urban soils or made ground. Refer to Figure 9.2 (GSI 2019).

Further beneath the Site, subsoils comprise till derived from Lower Palaeozoic sandstones and shales. Part of the access road to the Site is underlain by marine gravel and sands. Bedrock outcrops or sub crops are noted on the Site as shown in Figure 9.3 (GSI, 2019).

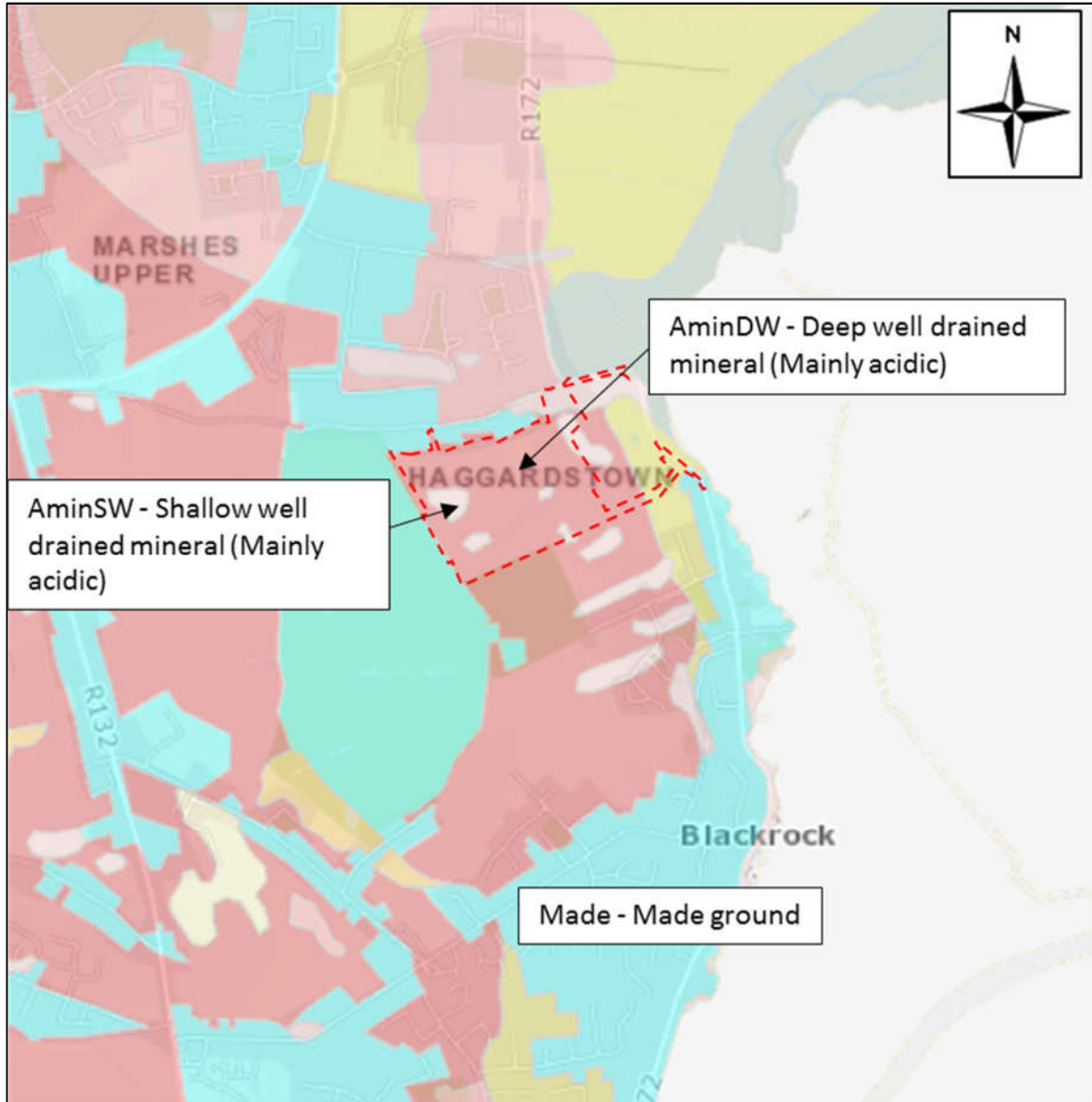


Figure 9.2 - Teagasc Soil Map

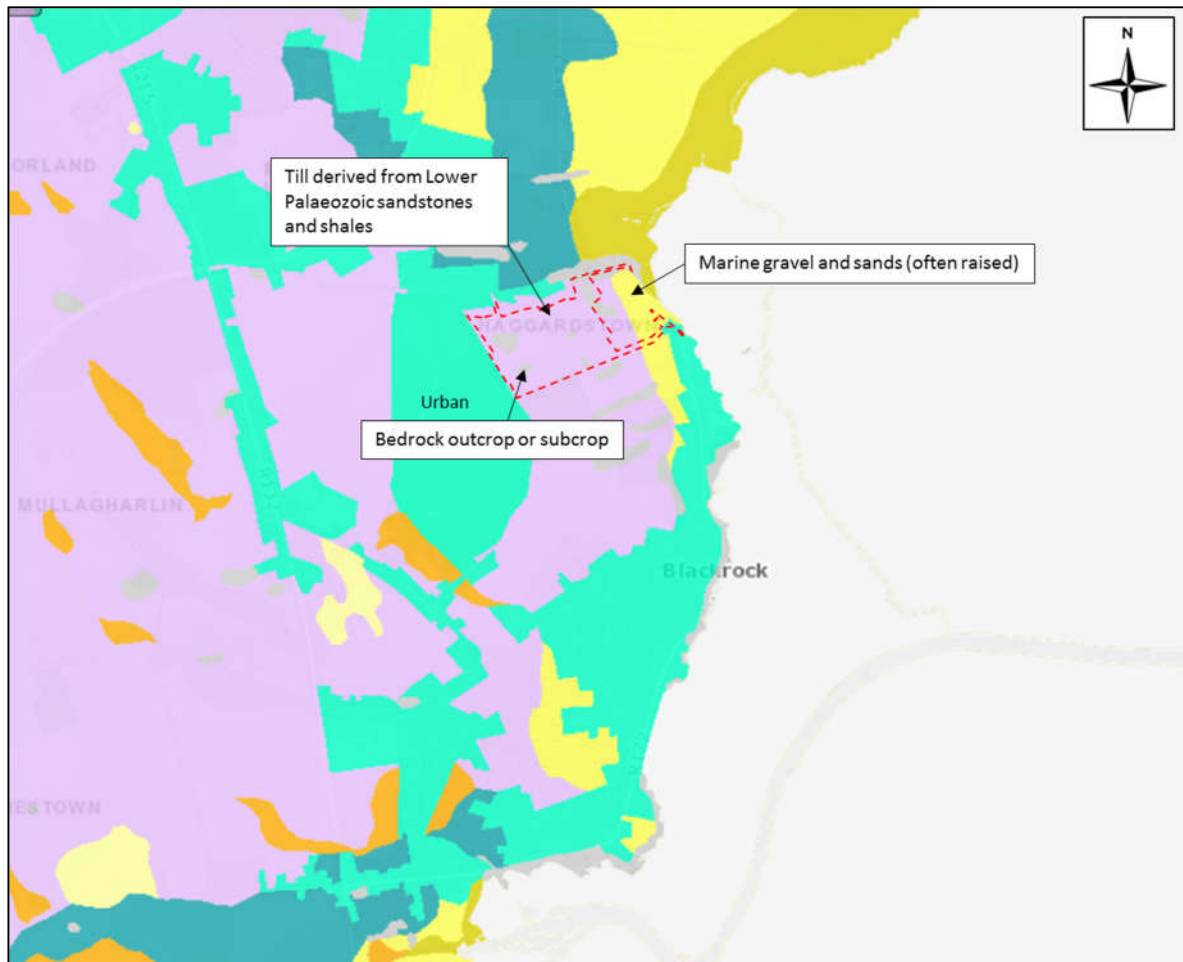


Figure 9.3 - Quaternary Sediments

The regional geological descriptions were verified by Site-specific ground investigation. Site specific soils records, as observed during the ground investigation, were relatively consistent and are summarised as follows;

- Topsoil was encountered at all locations across the Site and ranged from 0.2 to 0.4 meters below ground level (m bgl) across the Site.
- Till encountered across the Site has been described as firm to very stiff sandy gravelly silty clay with isolated pockets of sand and gravel. Depth of till was generally encountered to depths of 1.8 to 3.6m bgl.
- A localised area of gravel was encountered in BH3 from 1 to 1.3m bgl and was described as medium dense silty fine to medium gravel.
- Made ground was encountered in TP19 between 0.3 to 1.1m bgl, described as sandy silty clay with occasional glass and ceramic fragments.

Ground investigation records confirm that no visual or olfactory evidence of contamination was encountered at any of the exploratory locations across the Site. A site-specific geological cross-section has been prepared showing the general soil and rock profile for the Site and is presented in Figure 9.4.

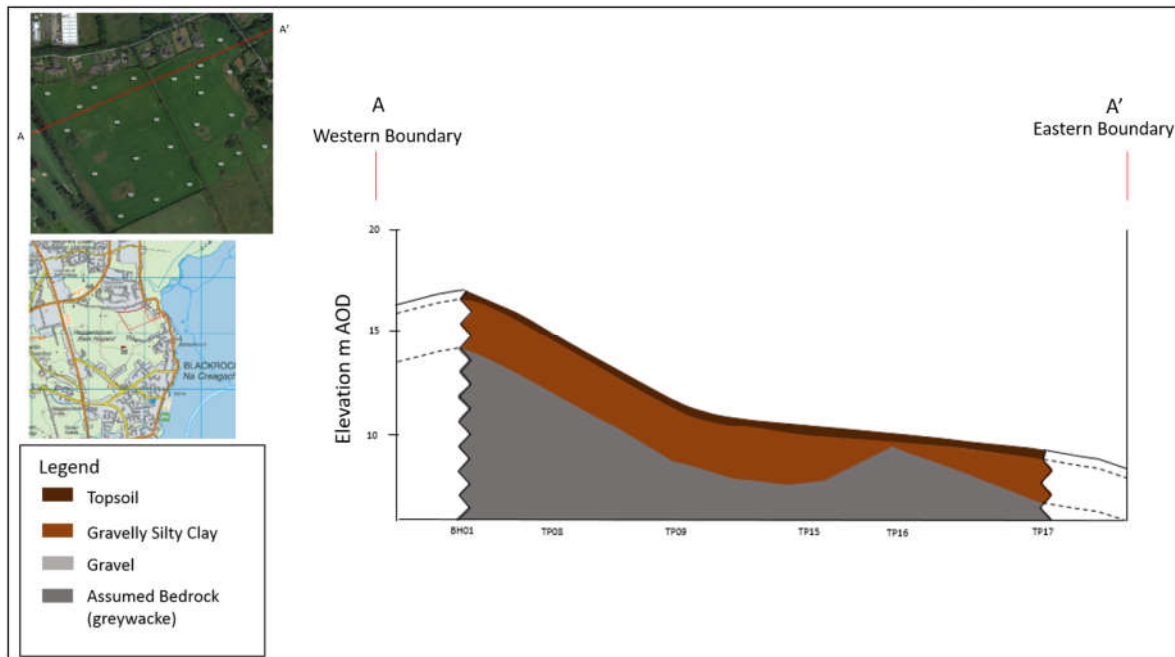


Figure 9.4 - Cross Section A-A'

9.3.4.1. Soil Quality / Contaminated Land

On a regional scale, the closest EPA licenced facility is c. 1.5km west of the Site. There are 6no. EPA licenced facilities in the general area (2no. EPA waste licences, 3no. IPC licences and 1no. IED licence) and 5no. Local Authority waste permitted Sites as shown on Figure 9.5 (EPA 2019). Surrounding land-use in the vicinity of the Site is described as follows. There are a number of industrial facilities associated with the Finnabair industrial estate 100m to the north of the Site. There are a number of low-density houses along Bóthar Maol immediately north of the Site. Dundalk golf course neighbours the Site to the west with associated driving range to the south. There is an additional area of rough grazing land to the south. There is a farmstead and low-density housing to the east of the Site.

The extensive ground investigation across the Site verify the results of the historical mapping review, namely that the Site has been used historically for agricultural purposes; land-use which continues to the present day. There are no known areas of soil contamination on the Site. During the Site walkover survey no areas of concern were identified with respect to potential contamination.

Nonetheless, as a due diligence exercise, 10no. representative environmental samples were collected across the Site. A combined Preliminary Risk Assessment (PRA) - Tier 1 Assessment and Generic Quantitative Risk Assessment (GQRA) - Tier 2 Assessment was prepared by Cove Environmental Consulting, following the ground investigation. Refer to Appendix G. The assessment confirms that the Site has always been used for agricultural purposes and as such there are no sources of potential contamination linked to the Site itself, including the localised area of made ground. The surrounding area is a mix of residential, recreational and industrial land-use.

The assessment identifies the following potential sources of contamination associated with offsite sources;

- Potential for hydrocarbons to be present in the shallow soils as a result of historic spills/ leakages from residential heating oils (hydrocarbons).
- Potential spillages and leakages from the industrial activities to the north of the Site (hydrocarbons, metals).

Potential receptors and pathways were identified for human health, building and services, environmental receptors and off-Site migration. Identified potential Human Health risks included;

- Dermal absorption
- Inhalation of soil/ dust or volatilised compounds (vapours) / ground gases
- Soil ingestion
- Plant uptake of contaminants followed by human consumption.

Identified potential building and services risks included;

- Ingress to onsite buildings of ground gas.
- Contaminant impaction upon the integrity of concrete, metal, rubber and plastic building fabrics.

Environmental receptors and offsite migration were not considered a significant risk. 10no. soil samples from across the Site were analysed for a range of contaminants including heavy metals, petroleum hydrocarbons and polyaromatic hydrocarbons (PAHs). The values were screened against LQM/CIH in conjunction with ATRISK^{SOIL} values for residential with homegrown produce. None of the soil samples analysed exceeded guideline values for residential land-use with homegrown produce.

Gas sampling was carried out in 3no. boreholes as shown on Figure 9.1. The gas monitoring results were classified according to the Characteristic Situations outlined in CIRIA C665 documentation 'Assessing Risks Posed by Hazardous Ground Gases to Buildings'. Based on the results of the gas monitoring programme, the Site is deemed to be at 'very low risk' with respect to ground gases.

Accordingly, based on all available evidence, soils beneath the greenfield Site are not considered to pose an unacceptable risk to human health, building and services, environmental receptors or third-party Sites.

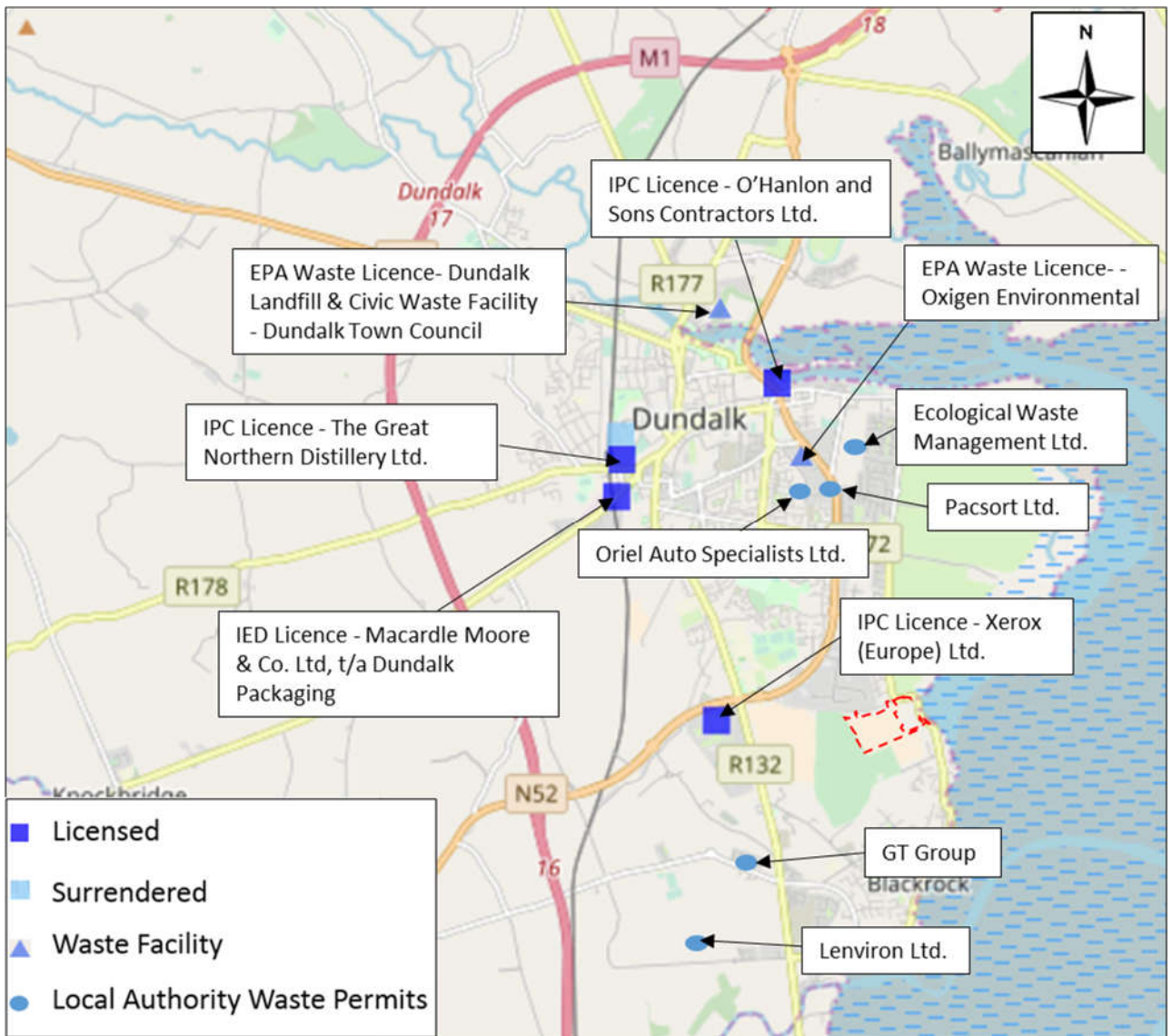


Figure 9.5 - EPA Licenced Facilities and Local Authority Waste Permitted Facilities

9.3.5. Bedrock Geology

Published geology shows that the Site is underlain by greywacke of the Clontail formation as shown in Figure 9.6 (GSI 2019). The formation is described by GSI as green-grey, medium to thickly bedded, coarse and very fine-grained greywackes, with dark grey, thinly bedded, poorly graded, quartzose fine sandstone to siltstone units. Both lithologies contain distinctive brown-red coloured biotite.

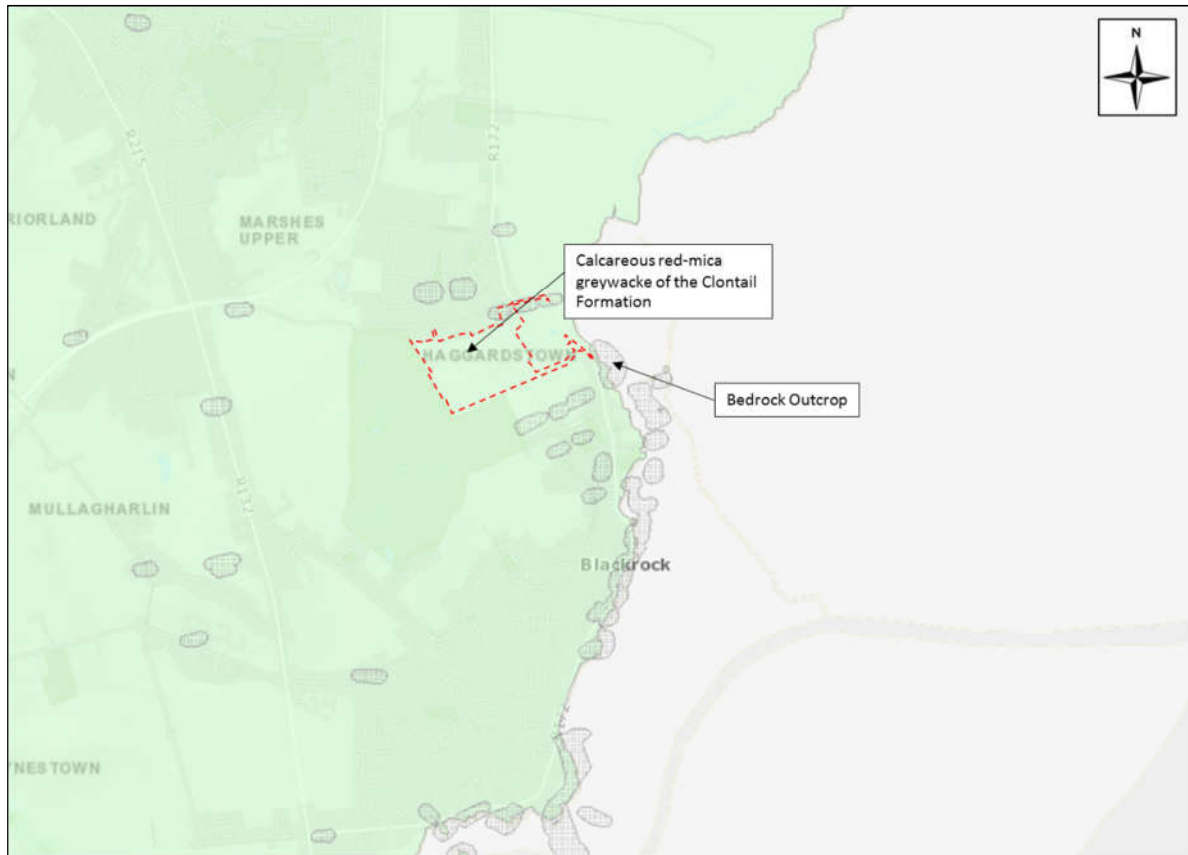


Figure 9.6 - Bedrock Geology

There is 1 no. designated Geological Heritage Site within a 2m radius of the Site. Dundalk Bay is located c. 80m east of the main body of the Site. The bay is almost perfectly symmetrical and is bordered on the northeast by the Castletown River Estuary and to the south by the Glyde Estuary at Annagassan. Freshwater feeds into the bay via the Glyde, Fane and Castletown Rivers, which flow through Annagassan, Blackrock and Dundalk respectively. The central portion of the bay comprises mud, silt and sand flats, which dry out at low tide. Extensive salt marshes and intertidal sand/mudflats also occur in pockets around the edge of the bay and there is a narrow sand or gravel beach in places also. Shingle beaches are particularly well represented in Dundalk Bay, occurring more or less continuously from Salterstown to Lurgan White House in the south, and from Jenkinstown to east of Giles Quay in the north. The shingle is mostly stable, occurring on post-glacial raised beaches. The shingle often occurs in association with intertidal shingle, salt marsh and or shingle-based grassland. Refer to Figure 9.7 (GSI, 2019).

No karst features have been noted within 200m of the Site as shown in Figure 9.8 (GSI, 2019) below.

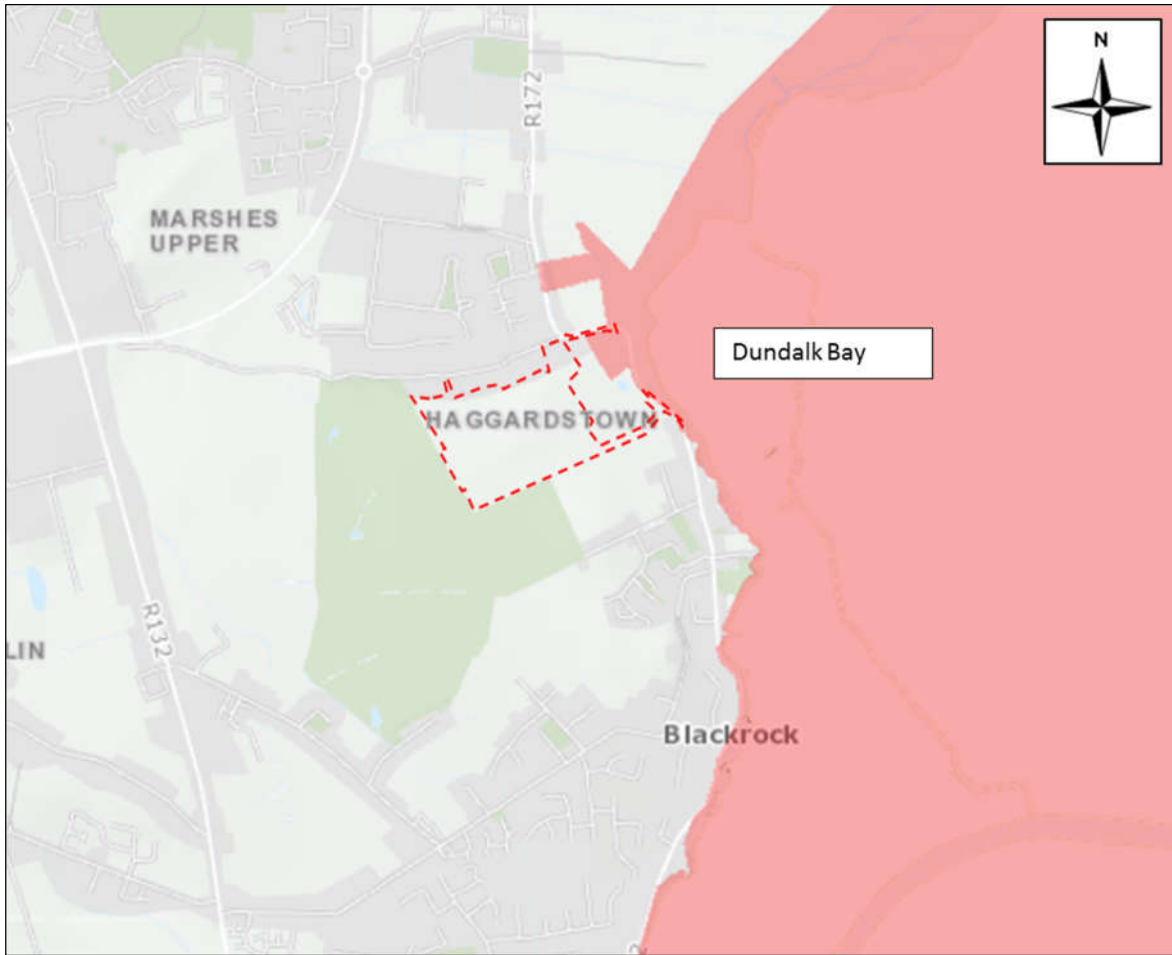


Figure 9.7 - Geological Heritage Areas

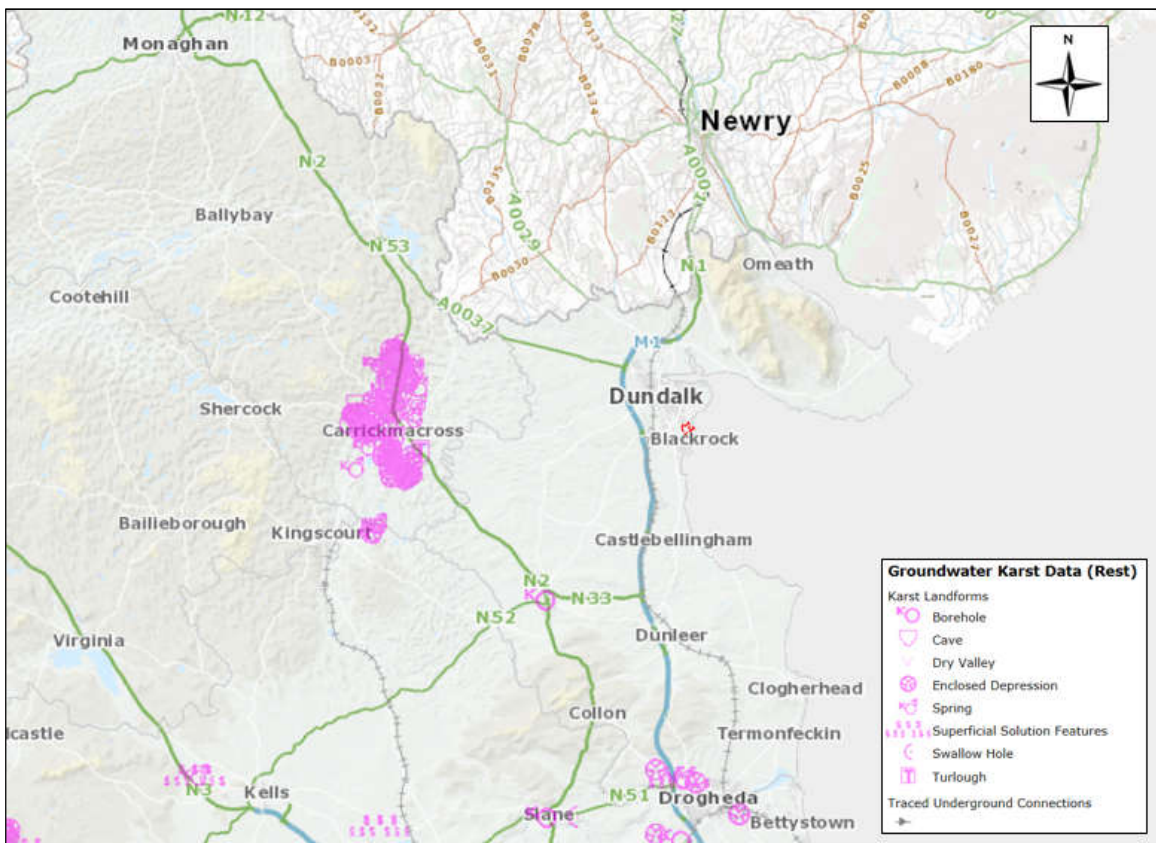


Figure 9.8 - Karst Features

No rotary coring was carried out during the ground investigation. Presumed bedrock was recorded in the 5no. boreholes carried out across the Site, in addition to 10no. out of 20no. trial pits excavated. Bedrock beneath the Site was described by Geotechnical Environmental Services Limited, as a highly weathered greywacke recovered as a light grey brown angular gravel in a silt clay matrix. Depth to bedrock was recorded to generally range between 1.1m to 3.6m. The presumed bedrock profiles are included in the cross section in Figure 9.4.

9.3.6. Economic Geology

The GSI online database indicates that there are no quarries within the proposed development area as shown on Figure 9.9. The GSI database also indicates that there is no significant mineral or aggregate potential within the Site boundary. There is one occurrence of non-metallic mineral locality indicated to the east of the Site.

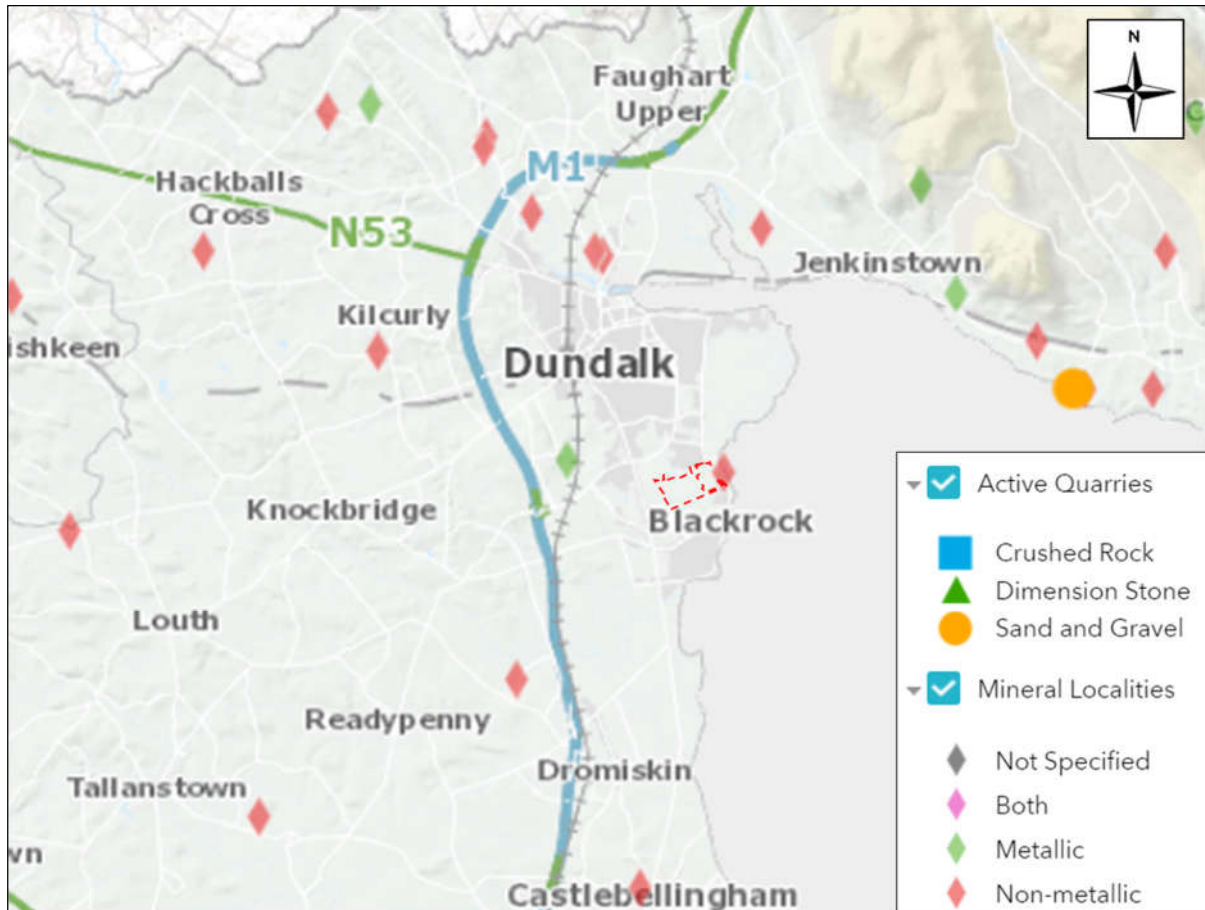


Figure 9.9 - Mining Features

9.4. Potential Impacts of the Proposed Development

9.4.1. Construction Phase

9.4.1.1. Land (including Land take)

Approximately 17.9ha of good quality agricultural land will be taken out of agricultural production. The area is zoned residential and is located between the residential area of Blackrock to the south and the employment mixed use area of Dundalk to the north. The Site will consist of approximately 5Ha of public open space.

The impact on the land take is likely to have a moderate negative impact on the environment of the area, in that it alters the character of the environment, albeit in a manner consistent with existing and emerging trends. This will be a permanent impact. However, the proposed residential development is in a zoned residential area with existing low-density housing and higher density housing under construction further south.

9.4.1.2. Soils & Geology

Stripping of topsoil will be required across the Site. It is expected that all stripped topsoil will be reused on Site (incorporated into landscaping of back gardens and public open spaces). Excavation of existing subsoil layers will be required in order to allow road construction, foundation excavation, drainage and utility installation and provision of surface water attenuation facilities. Where feasible, excavated material will be reused as part of the Site development works (e.g. use as fill material beneath houses and roads) however should some subsoils prove not suitable for engineering reuse onsite, such material may need to be removed and disposed offsite to a suitably licenced waste recovery / disposal facility.

Soils and potentially bedrock will be excavated during the construction of the foundations for the housing units and the drainage infrastructure. This is a direct, permanent impact on the soils and geology, however, it is not considered to be a significant adverse impact as the removal will have a negligible influence on the overall landform morphology.

Activities during construction will primarily comprise the excavation and pouring of foundations for the housing units, installation of the storm water and foul water drainage works, watermains and laying of cable ducts. Tracked excavators and rock-breakers will likely be sufficient to excavate soils and potentially weathered/ fractured bedrock for subsequent relocation to facilitate construction works. The extent of the foundations for the housing units is likely to be less than 1m deep and may locally encounter weathered bedrock. The proposed drainage system is expected to be constructed up to 5m bgl and will encounter weathered bedrock across some of its extent. The extent of excavation for service / utility trenches will vary; however, the general depth will be in the region of 1m. The maximum depth of excavation is expected to be 7m (for the proposed wastewater pumping station that will be located within the eastern portion of the Site).

The total volume of material comprising soil and potentially weathered bedrock requiring excavation is expected to be in the range of 46,929m³. It is anticipated that most of this material will be used onsite for landscaping areas and the weathered rock may be used beneath hardstanding areas on the Site.

During the construction phase of the development, the following potential impacts on soils and bedrock could occur and have been assessed accordingly:

- Stripping of topsoil will result in exposure of the underlying subsoil layers to the impacts of weather and construction traffic and may result in subsoil erosion and generation of sediment laden runoff.
- Soils beneath the proposed development may become unnecessarily compacted by machinery during construction.
- Topsoil and subsoil may become rutted and deterioration of the topsoil layer and any exposed subsoil layers, resulting in erosion and generation of sediment laden runoff.
- Dust generation can also occur during extended dry weather periods as a result of construction traffic.
- Soils and bedrock may be at risk of becoming contaminated through Site construction activity; in particular the risk of fuel spillages and leakage. There is a risk of direct contact, ingestion or inhalation of volatile hydrocarbons from localised contamination (to onsite construction and maintenance workers) via. potential onsite leaks.
- Given the historic and current Site use as agricultural land, and taking account of baseline soil quality, there is minimal potential for contaminated soils to be encountered beneath the Site during the Site development phase.

These are likely to result in a moderate negative impact on receiving soils and bedrock; however, any impacts are considered to be short-term and localised. Furthermore, mitigation measures will be implemented during the construction phase to avoid these potential impacts, and to address any potential waste management issues.

9.4.1.3. Ground Stability

There is no evidence of significant historic landslides and there are no known karst features within the proposed development boundary. Industry standard practices will be implemented during the construction phase to address any potential ground stability issues associated with excavations and trenching works. Therefore, no significant negative impact, associated with ground stability, is likely.

9.4.2. Operational Phase

The development will have an imperceptible, permanent impact on soils and geology during the operational phase. The operational stage of the residential development consists of the typical activities in a residential area and will not involve further disturbance to the topsoil, subsoils and geology of the area. No significant cumulative impacts on the land, soils and geology environment are envisaged during the operational stage.

9.4.3. Cumulative Impacts

All relevant developments in the immediate environs of the proposed development, which have been approved but are not yet built or operational, have been reviewed as part of this assessment and key developments are summarised below;

- Planning permission has been granted for 137 housing units c. 200m south of the Site to Shannon Homes under planning reference number 17/784. This development is currently under construction.
- There is a planning application submitted for 16 housing units for Michael White immediately north of Bóthar Maol under planning reference number 18/157.
- There is currently planning permission to convert out buildings into a domestic dwelling immediately east of the Site and outline planning permission granted for two domestic houses north of Bóthar Maol under planning reference number 11/462 and 12/213.

No significant cumulative impacts on land, soils and geology environment are anticipated during the construction or operation phases. The remainder of committed developments in the vicinity generally comprise the redevelopment or extension of existing properties.

9.5. Mitigation Measures

9.5.1. Construction Phase

Stripping of topsoil will be carried out in a controlled and carefully managed way and coordinated with the proposed staging for the development. At any given time, the extent of topsoil strip (and consequent exposure of subsoil) will be limited to the immediate vicinity of active work areas. Topsoil stockpiles will be protected for the duration of the works and will be located so as not to necessitate double handling.

The design of road levels and finished floor levels has been carried out in such a way as to minimise cut/fill type earthworks operations. The duration that subsoil layers are exposed to the impacts of weather will be minimised. Disturbed subsoil layers will be stabilised as soon as practicable (e.g. backfill of service trenches, construction of road capping layers, construction of building foundations and completion of landscaping). Similar to comments regarding stripped topsoil, stockpiles of excavated subsoil material will be protected for the duration of the works. Stockpiles of subsoil material will be located separately from topsoil stockpiles.

The excavation of material will be minimised as much as possible to reduce the impact on soils and geology. Topsoil and any native soils that can be used for amenity purposes will be stockpiled on the proposed development area for use as required in the final landscaping of the development.

Any surplus material, or materials which are deemed not suitable for onsite reuse will be managed, transported and disposed of in accordance with the requirements of the Waste Management Act 1996, as amended, and the Waste Framework Directive 2008/98/EC of the European Parliament and Council on waste. A project specific Detailed Waste Management Plan will be fully implemented onsite for the duration of the project.

The mitigation measures for prevention of soil / bedrock contamination during construction are proposed below. Mitigation measures outlined in Chapter 10 - Water are also applicable to the protection of soils and geology during the construction phase;

- Earthworks plant and vehicles delivering construction materials to Site will be confined to predetermined haul routes around the Site.

- Vehicle wheel wash facilities will be installed in the vicinity of the Site entrance and road sweeping implemented as necessary in order to maintain the road network in the immediate vicinity of the Site.
- Dust suppression measures (e.g. dampening down) will be implemented as necessary during dry periods.
- The employment of good construction management practices will serve to minimise the risk of pollution from construction activities at the proposed development in line with the Construction Industry Research and Information Association (CIRIA) publication entitled, Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, CIRIA - C532 (2001) which are also detailed in Chapter 10 - Water. Specifically, with regard to soils and geology, the following will be adhered to:
 - Fuels, lubricants and hydraulic fluids for equipment used on the construction Site, as well as any solvents, oils, and paints will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to best codes of practice;
 - Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the proposed development for disposal or re-cycling;
 - Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the proposed development and properly disposed of;
 - All Site vehicles used will be refuelled in bunded and adequately sealed and covered areas in the construction compound area.
 - All plant and machinery will be serviced before being mobilised to Site;
 - No plant maintenance will be completed on Site, any broken-down plant will be removed from Site to be fixed;
 - Refuelling will be completed in a controlled manner using drip trays at all times;
 - Mobile bowsers, tanks and drums will be stored in secure, impermeable storage areas away from open water;
 - Fuel containers will be stored within a secondary containment system, e.g. bunds for static tanks or a drip tray for mobile stores;
 - Containers and bunding for storage of hydrocarbons and other chemicals will have a holding capacity of 110% of the volume to be stored;
 - Ancillary equipment such as hoses and pipes will be contained within the bund;
 - Taps, nozzles or valves will be fitted with a lock system;
 - Fuel and chemical stores including tanks and drums will be regularly inspected for leaks and signs of damage;
 - Drip-trays will be used for fixed or mobile plant such as pumps and generators in order to retain oil leaks and spills;
 - Only designated trained operators will be authorised to refuel plant on Site;
 - Procedures and contingency plans will be set up to deal with emergency accidents or spills; and,
 - An emergency spill kit with oil boom, absorbers etc. will be kept on-Site for use in the event of an accidental spill. A specific team of staff will be trained in the use of spill containment.
 - Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised on-Site is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the Site. This will minimise the risk of soils and bedrock becoming contaminated through Site activity.
 - Highest standards of Site management will be maintained and utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the Site and surrounding environment during construction. A named person will be given the task of overseeing the pollution prevention measures agreed for the Site to ensure that they are operating safely and effectively.
- All Site workers will use appropriate PPE if required to clean up any potential fuel spillage onsite including gloves and dust masks to minimise contact with contaminated soil.
- All excavated materials will be stored away from the excavations, in an appropriate manner at a safe and stable location. The maximum height of temporary stockpiles will be 3m.

- A comprehensive monitoring and supervisory regime including monitoring of all excavations and stability assessments as required will be put in place to ensure that the proposed construction works do not constitute a risk to the stability of the Site.

All of the above mitigation measures will form part of a site-specific Detailed Construction Environmental Management Plan (CEMP) which will be in operation during the construction phase.

9.5.2. Operational Phase

No mitigation measures are warranted during the operational phase as there will be no impact on soils and the geological environment.

9.6. Residual Impacts

9.6.1. Construction Phase

Implementation of the measures outlined above will ensure that the potential impacts of the proposed development on soils and the geological environment are less likely to occur during the construction phase and that any residual impacts be slight negative and short term in duration. The primary residual impact is the potential removal of material unsuitable for reuse as fill material; however, the residual impact is likely to be slight negative and permanent.

9.6.2. Operational Phase

There are no predicted residual impacts arising from the operational phase.

9.6.3. Land, Soils and Geology and Human Health

Potential human health risks associated with quality impacts to soils arising from the proposed development during the construction phase have been identified as follows;

- Potential risk to receptors (i.e. construction workers) through direct contact, ingestion or inhalation with any soils which may potentially contain low level hydrocarbon concentrations from Site activities (potential minor leaks and spills of fuels, oils and paint) during the construction phase.

Taking account of the baseline environmental setting and the above proposed mitigation measures during the construction phase, any human health risks to onsite receptors as a result of potential contaminated soil impacts will be imperceptible. No human health risks associated with long term exposure to contaminants (via. direct contact, ingestion or inhalation) resulting from the proposed development are anticipated.

9.7. Reinstatement

All temporary construction compounds are to be removed upon completion of the construction phase. Such areas are to be reinstated in accordance with the landscape architects plan and engineer's drawings. All construction waste and / or scrapped building materials are to be removed from Site on completion of the construction phase. Oil, fuel etc. storage areas are to be decommissioned on completion of the construction phase. Any remaining liquids are to be removed from Site and disposed of at an appropriate licenced facility.