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J Sheils Planning & Environmental Ltd

CLASHFORD RECOVERY FACILITY LTD.

NAUL TOWNLAND

NAUL

Co. MEATH

Waste Management Licence Application

W0265-01

Non-Technical Summary

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1 NTRODUCTION

1.1 GENERAL BACKGROUND

Projects likely to have significant effects on the environment *by virtue of their nature, size and location* are subject to the requirement for an Environmental Impact Assessment (EIA). The EIA is a systematic process undertaken to identify and evaluate the potential environmental impact of proposed projects. The EIA also seeks to consider alternatives and propose mitigation measures to ensure the development is carried out within recognised and accepted standards. This EIS pertains to the continued operation of a Waste Recovery Facility (WRF) located at Clashford quarry in the Townland of Naul, Co. Meath.

The lands have a history of sand and gravel working and were worked under a succession of planning permissions. The quarry and WRF operate under the terms and conditions imposed under P.A. Reg. Ref.QY36, QC 17.QC2085 and P.A. Reg. Ref. 85/512, PL.17/5/72181. Since 2001, the quarry site is being progressively restored in accordance with a Phased Restoration Scheme using imported soil and stone subject to successive Waste Management Permits granted by Meath County Council (e.g., Waste Permit Reg. No. WMP 2005/25). The principal activity is recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.

The nature of the development is the continued phased restoration of a sand and gravel pit using imported inert soil and stone, and recovery of inert construction and demolition (C&D) waste. It is proposed in the Waste Licence Application that circa 90,000 cubic metres per annum of inert materials will be accepted to site. It was estimated that c. 20,000 tonnes per annum of inert C&D waste was to be recovered at the facility. Due to the economic recession the actual volumes received to date were less than originally envisaged.

Changes in Waste Management legislation which came into effect in 2008 and now require a Waste Management Licence issued by the Environmental Protection Agency (EPA) in order to operate a waste recovery facility with a lifetime total intake volume in excess of 100,000 tonnes. The waste licence application (W0265-01) was submitted on 13/02/2009. The Agency considers that the application must be made subject to an environmental impact assessment. As such the EIS will be submitted to the Agency with the application.

1.2 SITE LOCATION

The site is located within the Townland of Naul, c. 300m north of the village of Naul on the east side of Regional Road R108 (Refer to Figure A1.0). The R108 connects with the R122 in village of Naul, which connects with the M1 (Dublin-Drogheda-Dundalk) motorway c. 5km to the east, and to the town of Balbriggan c. 7km to the east. Dublin lies c. 25km to the south, whereas Drogheda lies c. 15 km to the north.

The site of the quarry and Waste Recovery Facility (WRF) is on a landholding of c. 33.4 ha, owned by the applicant Clashford Recovery Facility Ltd. There are several nearby residences

and commercial enterprises on the R108, including the adjacent Kilsaran concrete plant immediately south of the site.

1.3 APPLICANT

Clashford Recovery Facility Ltd is an established small family run business based in Naul, Co Meath.

Clashford Recovery Facility Ltd employs four people directly and a number of others indirectly, with the majority of the employees being local people. An additional two temporary staff are hired occasionally.

The WRF will require one person operating a bull-dozer/back-hoe excavator, one general foreman to monitor and inspect the quality and suitability of imported materials being brought to the site for recovery, and two other general site operatives.

1.4 ANY DIFFICULTIES IN COMPILING SPECIFIED INFORMATION

No major difficulties arising from either deficiencies in technology, knowledge or expertise were encountered in the preparation of the EIS. The EIS has been prepared by consultants with considerable experience in the compilation of waste licence applications and the carrying out of Environmental Impact Assessments (EIA's) for waste management developments.

2 DESCRIPTION OF THE DEVELOPMENT

2.1 ALTERNATIVES EXAMINED

It is standard practice in the preparation of an EIS to consider alternative project locations, designs and processes with regards to environmental effects.

The existing quarry is being operated and restored using imported inert soils under the terms and conditions imposed under P.A. Reg. Ref.QY36, QC 17.QC2085 and P.A. Reg. Ref. 85/512, PL.17/5/72181 and as such it was not considered particularly relevant in this case for the applicant to identify and appraise the merits of alternative sites for the proposed material recovery activity. It is the existence of this requirement for reinstatement using inert materials, and the environmental gain derived therefrom, that constitutes the principal qualification of the application site.

Existing quarries and pits whether worked out or in operation are potentially useful sites for the management of C&D waste. The inert soil can be used to restore the topographical contours. Local authorities should therefore encourage the use of quarries / pits for sustainable management of C&D waste as opposed to using agricultural land, with an emphasis on resource recovery. Reclamation of the Clashford quarry will result in infilling of a large exposed void and restoration of the disturbed landscape to its original pre-extraction condition, with emplacement of soil cover to protect the underlying groundwater.

The design of the facility is driven by the basic processes of recovery of C&D waste, with the recovery by backfilling of otherwise unusable materials to meet the requirement to reclaim the quarry back to the pre-extraction condition. Because the waste recovery facility will share much of the infrastructure of the quarry, design alternatives are constrained by the design of the existing facility and the imperative of achieving maximum synergy. The design and siting of areas for inspection of intake material, quarantine material, and residual waste is driven by the need to maximise operational efficiencies and economic return, and offers the greatest latitude in facility design.

Alternative processes for the recovery of C&D waste other than by simple combinations of mechanical separation, sorting, crushing, screening and/or washing, are not apparent. Waste recovery lies at the second lowest tier in the European Waste Hierarchy, and as such is the process of last resort prior to disposal. Process alternatives diminish as we descend the tiers of the hierarchy from prevention to reduction, reuse, recycling, recovery and ultimately to disposal/landfill.

Waste recovery by simple mechanical means of usable product, and backfilling unusable waste represents the optimum economic utilisation of inert C&D waste. Diverting waste material out of the disposal stream into reuse off-site including secondary aggregates, and the improvement of land as part of the reinstatement of a quarry, offer significant environmental gains.

2.2 CHARACTERISTICS OF THE PROJECT

2.2.1 THE EXISTING SITE

The site is located within the Townland of Naul, c. 300m north of the village of Naul, on the east side of Regional Road R108 (Refer to Figure A1.0). The Delvin River flows roughly SW-NE and flanks the southern boundary of the site, whilst an unnamed tributary stream of the Delvin River flanks the northern boundary of the site, and joins the river at the northeastern terminus of the quarry site. The western boundary of the quarry site is defined by the R108 and the party boundary with several residential properties on the east side of the R108.

The village of Naul is situated 300m south of the application site. Residential property in the area typically comprises one-off single residences and farmsteads along public roads.

The site of the quarry and WRF is on a landholding of c. 33.4 ha, owned by the applicant Clashford Recovery Facility Ltd. Although there are no residences within the landholding, there are several nearby residences within 50-100m on the R108. In addition, there are several commercial enterprises on the R108, including the adjacent Kilsaran concrete plant immediately south of the site.

2.2.2 THE PROPOSED DEVELOPMENT

Clashford Recovery Facility Ltd., Ring Commons, Balbriggan, County Dublin has applied to the Environmental Protection Agency for a waste licence for the continued operation of its existing waste recovery facility on lands at Naul, Naul Townland, Co. Meath. The lands have been progressively restored subject to successive WMP's dating back to 2001.

The nature of the development is the continued phased restoration of a sand and gravel pit using imported inert soil and stone, and recovery of inert C&D waste. It is proposed in the Waste Licence Application that circa 90,000 cubic metres per annum of inert materials will be accepted to site. It was estimated that c. 20,000 tonnes per annum of inert C&D waste was to be recovered at the facility.

Due to the economic recession the actual volumes received to date were less than originally envisaged. A total of c. 618,000 tonnes (309,000 m^3) has been received to data at an average rate of c. 124,000 tonnes (62,000 m^3) per annum. It is now estimated that only c. 10,000 tonnes per annum of inert construction and demolition waste will be recovered at the facility. Recovered material will be used for internal haul roads and/or dispatched off site. Any small quantities of timber, plastic, paper and steel will be separated for recovery and/or disposal offsite.

Given the length of time since the submission of the original waste management licence application in February 2009 it has been considered necessary to update the survey plan and proposed restoration scheme. The existing site layout is shown by the revised site plan Figure B 2.1 Rev A. This plan shows that Phase 1 is now completely restored, together with lands previously restored under previous waste permits for the site. Phase 2 is also nearing completion.

The intention is to develop the lands for agricultural use/woodland, and to this end, the lands previously restored including Phase 1 are now being grazed by sheep and horses. A large section of Phase 2 is also currently nearing completion. Redundant structures, plant equipment and stockpiles will be removed from site on cessation of quarry activity.

Mitigation measures to alleviate any adverse impacts from the facility on the environment have been incorporated into the design to ensure that the facility can be operated within the accepted standards for this type of development.

It was originally envisaged (February 2009) that the restoration of the quarry would take 5 years based on backfilling c. 80,000 cubic metres per annum. Due to the economic recession the actual volumes received to date were less than originally envisaged. It has been assessed that a void space of c. 309,000 m^3 has been backfilled since submission of the waste licence application at an average rate of c. 62,000 m^3 per annum. It is expected that volumes will increase as the economic recovery continues.

A revised restoration scheme has been prepared. Based on the proposed scheme and an expected backfilling rate of between 70,000 to c. 85,000 cubic metres per annum, it is considered that it will take about 4 years to complete the backfilling operations. An additional 6 months to a year should be allowed to complete final restoration to agricultural/amenity use. Ultimately the life of the WRF will be determined by demand for recovery of inert C&D waste, and therefore be dependent on future market conditions.

The nature of the development is the continued phased restoration of a sand and gravel pit using imported inert soil and stone, and recovery of inert construction and demolition waste. As such all of the necessary infrastructure in relation to the operation of the WRF is in place. The location of all activities, buildings and facilities at the Recovery Facility are shown on the Site Plan Figure B 2.1 - Rev A.

2.3 DESCRIPTION OF THE PROPOSED OPERATIONS

Clashford Recovery Facility Ltd is an established small family run business based in Naul, Co Meath.

It is proposed that working hours at the application site will be that waste is only accepted at the site between the hours of 08:00 hours to 18:00 hours Monday to Friday inclusive (excluding Bank and National Holidays) and between 08:00 hours to 14:00 hours on Saturday. No waste shall be accepted on Sundays. These hours of operation are as stipulated in the existing Waste Management Permit No. 2005/25 and in compliance with conditions imposed under P.A Reg. Ref. QY36, QC 17.QC2085.

Clashford Recovery Facility Ltd employs four people directly and a number of others indirectly, with the majority of the employees being local people. An additional two temporary staff are hired occasionally. The WRF will require one person operating a bull-dozer/back-hoe excavator, one general foreman to monitor and inspect the quality and suitability of imported materials being brought to the site for recovery/sorting/transfer, and two other general site operatives.

The facility's infrastructural requirements includes internal roads, plant and machinery, site office, bunded fuel storage, wheelwash, settlement lagoons, etc. All of these are already in place and represent common infrastructure shared between the quarry and WRF. Provision of hard standing areas for quarantine material and residual waste is an additional requirement of the WRF, and have been sited to maximise operational efficiencies. The existing quarry plant including mobile crushing and screening plant will be utilised to process C&D waste to produce saleable aggregates.

Access to the site will be gained through the existing entrance onto the Regional R108 Naul to Drogheda Road. All materials will be transported the site using heavy goods vehicles (HGV's). The site access road between the site entrance and wheelwash has been provided with an asphalt surface. Imported clean construction and demolition waste (concrete and brick) is used to construct internal haul roads as required.

Recovery and re-cycling activities at the application site involves tipping of previously stockpiled 'unprocessed' material into a mobile crushing & processing plant using a front-end loader. Material produced by the plant is then transported by front-end loader to 'processed' stockpiles. Recycled material is used for internal haul roads and/or dispatched offsite.

No sorting of materials other than separation of rebar from concrete will be undertaken on site as all material will be sorted and segregated at source before being brought to the application site. Rebar (reinforced steel) separated from concrete will be stored in the designated quarantine area awaiting removal off-site by a licensed scrap merchant.

The nature of the development is the continued phased restoration of a sand and gravel pit using imported inert soil and stone, and recovery of inert construction and demolition waste. The lands have been progressively restored subject to successive Waste Management Permits (WMP's) dating back to 2001.

The lands are to be restored to agriculture/forestry by importation and recovery of inert materials in accordance with a phased restoration scheme.

On completion of each phase of development final restoration including grading, seeding and landscaping will be carried out. Once the topsoil is re-instated, it will be seeded with a mix of grasses suitable for pasture in order to quickly stabilise the topsoil. Once the grass sward has become established the restored farmland can be kept either as pasture, hay meadow or arable land. Part of the area has already been restored to pasture.

During the course of restoration of Phase 2, an additional small area of failed forestry was included together with some lesser additions due to linking up agricultural tracks and temporary topsoil storage to the north east.

Restoration of Phase 2 is also nearing completion and it is expected that backfilling of this area will be completed within the next year.

The Phase 3 area comprises the active pit area. Extraction of sand and gravel within this area is limited to removing 1 to 1.5 metres of sand and gravel which was left in-situ below the old fixed processing plant area on site. This area also contains the necessary site infrastructure including site office, waste quarantine and inspection area, wheelwash, bunded fuel storage, etc. As such this area constitutes the final phase for restoration.

Redundant structures, plant equipment and stockpiles will be removed from site on cessation of pit activity. Plant and machinery will either be utilised by the operators on other sites, or be sold as working machinery or scrap. The hard standing areas will be broken up and the material incorporated into the final restoration scheme. The site access will be retained as agricultural access to the restored lands. As part of the decommissioning process, all fuel and oil storage tanks will be removed from the site by a licensed waste contractor.

It was estimated that c. 20,000 tonnes per annum of inert construction and demolition waste would be recovered at the facility. It is now estimated that only c. 10,000 tonnes per annum of inert construction and demolition waste will be recovered at the facility. Clean construction and demolition waste will either be placed directly on haul roads or temporarily placed in storage awaiting recovery.

The main potential sources of emissions from an inert waste recovery facility would be from noise or dust associated with the movement, handling and placement of materials. Possible other emissions to the atmosphere would be from machinery exhaust fumes and also possible emissions to surface and/or groundwater in the event of a fuel spillage.

3 ENVIRONMENTAL CONSIDERATIONS

3.1 HUMAN BEINGS

The impact on human's beings forms one of the most important aspects to be considered in an EIS. The principal concern in respect to this proposed development is that human beings should experience no significant unacceptable diminution in an aspect, or aspects of 'quality of life' as a consequence of the construction and operation of the proposed development.

The Clashford site is located in the valley of the Delvin River, known as Roche Valley (elev. c. 60-90m OAD), with the Delvin River flowing roughly SW-NE and flanking the southern

boundary of the site, whilst an unnamed tributary stream of the Delvin River flanks the northern boundary of the site.

The northeastern (Restored Lands) and the south central (P1) sectors of the quarry site have been restored to agricultural use, and are currently supporting livestock, while a plantation of broadleaf forest fringes much of the eastern half of the quarry site. The sector designated as P2 is currently being restored, whilst the sector designated P3 houses all of the site infrastructure and is yet to be restored.

There are numerous established individual residences within a 500m radius of the site, particularly in the village of Naul, as shown on Figures B 2.1 – Rev A and B 2.2 – Rev A. There are no dwellings on the site or landholding, although several dwellings are located to the immediate west of the site on the R108, and across the Delvin River on the R122.

Meath benefits from this proximity to Ireland's primary economic hub and National Gateway, and the largest market in the State. Meath also benefits from its strategic location on the Dublin-Belfast international corridor linking both capital cities and international airports. The excellent, multi-modal transport infrastructure which provides ready access to Dublin Airport and Dublin Port also delivers strong connectivity throughout the county with four national primary routes, three of which are motorway (i.e., M1, M3 and M4).

During the recession Meath's unemployment levels rose dramatically from the end of 2007 to 2010, and remained a factor of about 3 times the pre-recession levels at c. 12,000 during 2010 and 2011. The dramatic increase in unemployment has been largely associated with the collapse of the construction industry and the associated service industries. The recent improvement in unemployment figures probably reflects stabilisation in job losses combined with the historical pressure valve of emigration.

Employment in the village of Naul is very limited, and the nearest major commercial and industrial centre being the Stephenstown industrial estate in Balbriggan. The major employment opportunities for the workforce resident in the Stamullin ED are in Dublin.

Clashford is located in County Meath c. 300m north of the village of Naul. Naul village and its environs are steeped in history and have a wealth of historical and archaeological sites.

Operations within the quarry site, which includes the WRF, are carried out in accordance with all relevant legislation/ regulations and with the best work practices for the industry.

Adequate fencing, signage and other barriers have been erected around the quarry site, which will also encloses the WRF, for the safety of the general public and to prevent livestock straying into the development. Large lockable gates are in place to guard against unauthorised and unsupervised entry to the site outside of working hours.

The proposed continued operation of the WRF at Clashford arises from: (1) the continued demand of human beings to have their buildings, roads and structures, modified and improved, resulting in the generation of large volumes of inert C&D waste, including soil and stone; and (2) the requirement to restore land, previously disturbed and degraded by sand and gravel extraction at the Clashford quarry, through backfilling with recovered inert soil and stone. The recycling and recovery of C&D waste is essential to reduce resource utilisation and divert reusable inert waste from landfill.

The strategic location of Clashford with access directly onto regional road R108, and c. 5km from junction 6 on the M1, and c. 7km from Balbriggan, via the R122, renders the WRF well positioned to deliver recovery of inert soil and stone from a large catchment area. There is also a preference for the deposition of soil and stone to be underpinned by a beneficial use in order to be considered waste recovery. Consequently, co-location of a waste recovery facility at Clashford quarry has significant positive impacts, and is thus environmentally preferred.

It is expected that the potential negative impacts on human beings and amenity of the area arising from the WRF, above those already arising from the quarry, relate mainly to nuisance from noise, dust and traffic.

The existing quarry development has been undergoing progressive reinstatement to agricultural/woodland using imported material for at least 15 years. The impact of the restoration works to date has had a positive impact on the environment in returning these lands to beneficial use including establishing new woodland habitat along the Delvin River valley. The visual amenity of the locality has also benefited from the restoration works being undertaken. The quarry has put in place a number of mitigation measures with respect to environmental management and monitoring to ensure that operations do not result in significant impacts on the surroundings, including the human environment. The site will be reinstated in accordance with the phased restoration scheme for the quarry, and thus integrated back into the surrounding landscape with the attendant improvement to the visual amenity of the area.

The quarry has contributed indirectly to sustaining and developing the local and regional economy through the supply of building products, recovery of inert C&D waste, and has provided employment for local people, both directly and indirectly.

The proposed continuation of the WRF would provide a valuable and necessary resource to the county and wider region, providing a beneficial use for the recovery of inert soil and stone as an alternative to landfill. The WRF already exists and has an established record of meeting its regulatory obligations and current environmental standards.

Traffic entering and leaving the site will use the existing established quarry site access. The road servicing the site is generally in good condition.

As the WRF is co-located within the existing quarry, there is negligible additional visual intrusion. Nonetheless, there is a Protected View and Prospect, designated as 71, on a county road off the R108 at Snowtown north of the site (Meath County Council 2013).

Upon decommissioning, the site will be restored in accordance with the approved restoration scheme for the quarry. Therefore in the long term, the site will be assimilated back into the landscape in a planned manner.

There are potential impacts arising from the operational phase of the WRF, and these include dust, noise, and traffic. No additional construction related to the WRF is envisaged, and thus construction will have an imperceptible impact on the human environment.

There are no Protected Structures, Architectural Conservation Areas, NIAH structures or NIAH historic gardens or designed landscapes within the proposed development area. As a result there will be no direct or indirect construction impact on the recorded or unrecorded archaeological, architectural or cultural heritage resource.

There will be no construction or operational visual impact on the archaeological, architectural or cultural heritage resource. There will be no construction noise impact on the archaeological, architectural or cultural heritage resource. There will be a negligible operational noise impact on the archaeological and architectural resource.

The impact of inert waste recovery on this site will be considerable in local terms but will not result in any loss of heritage values in the locality. The changes will be both positive (gain of woodland) and negative (loss of open habitats).

The surrounding habitat has a low level of ecological interest except in the valley of the Delvin River and the continuance of infill and re-afforestation will have a significant positive impact on it. Sediment control measures will prevent any impact on the nearby river.

If the proposed continuation of the WRF did not proceed, the recovery of inert soil and stone at the WRF would not occur, and result in the failure to divert these volumes from disposal in landfill, as required under the Waste Framework Directive 2008. Furthermore, the Clashford site would be unable to complete the phased restoration of the quarry void and the reinstatement of the land to its former topographic profile. Additionally, the existing WRF would be forced to cease operations resulting in the loss of employment. This would have a significant and direct negative impact on the local human environment.

Any impact on the natural environment will be mitigated against to the greatest degree practical, thereby minimising any associated impact on the "human" environment. The Clashford Recovery Facility has established an on-going environmental monitoring programme for the quarry and WRF site. The programme will allow on-going monitoring of environmental emissions (e.g., noise, dust, water) from the site, thereby assisting in ensuring compliance with any future requirements or regulations. The results of this monitoring will be made available to the EPA and the Local Authority on a regular basis, where members of the public may examine it. The future monitoring programme will be revised accordingly, subject to compliance with any conditions attached to a decision to grant a Waste Management License.

The development can be controlled and regularised in accordance with the scheme as outlined in this document, through continued environmental monitoring and by conditions imposed by the EPA. The proposal will have no major and/or long-term effect on the human environment.

Once the proposed continued operation of the WRF is authorised with a Waste Management License, and mitigation measures provided for, there are no significant residual impacts envisaged in terms of community and other socio-economic issues.

3.2 FLORA & FAUNA

The site is an extensive sand and gravel quarry dug in glacial material on the northern side of the Delvin River, northeast of Naul village. It is partly reclaimed to agricultural or forestry land so has some improved agricultural grassland and broad-leaved woodland as well as the more typical quarry habitats of spoil and bare ground and recolonising bare ground. To the south the land falls into the Delvin valley which carries an eroding upland river with artificial margins. The slope above supports dry meadows and grassy verges with incipient scrub while the fields

are edged by young treelines/hedgerows of planted alder and hawthorn. An older treeline defines the northern boundary which is a small tributary of the Delvin River.

There were few signs of wild mammals present in the quarry area and only rabbit tracks were at all common. Otherwise the site is probably visited by scavenging foxes and occasionally badgers though there were no overt signs of this species. Bats are likely to be seen along the river valley as there is good habitat on the southern side. A few would be found in the ash woodlands but these would develop more significant populations as they mature.

The birds seen were those of open habitats, in particular pied wagtail and linnet, both of which would feed within the quarry to some extent. Other species in the surrounding area which could make some use of the habitat were woodpigeon, magpie, hooded crow, rook, jackdaw and pheasant. The gorse areas are likely to hold stonechat while chiffchaffs were heard in the river area. Grey wagtail and dipper would also be expected here also. There were no sand martin burrows in the side walls and this species does not seem to occur.

The vegetation is diverse enough to support a good range of insects and there were a number of bumble bees (*Bombus terrestris*) flying during the site visit. The common blue is a likely butterfly as there are records in Nash *et al* (2012) for this 10km square. The more frequent species such as small tortoiseshell, small white and meadow brown are also probable.

The overall site is relatively diverse having typical quarry habitats as well as restored land.

There is no feature of the fauna that is of significant interest as far as is known.

The only Natura 2000 sites within 15km of Naul are the Laytown Dunes/Nanny Estuary cSAC (Site Code 0554), the River Nanny and Shore SPA (Site Code 4158) and the Skerries Island SPA (Site Code 4122). The nearest pNHA site is the Bog of the Ring (Site Code 001204), Ring Commons, Co. Dublin at c. 3km, whilst Cromwell's Bush Fen pNHA (Side Code 001576), Greenanstown, Co. Meath is c. 4.5 km.

The quarry site at Clashford, which includes the application site, is not included in any area with an ecological designation (NHA, cSAC or SPA).

Screening for Appropriate Assessment was carried out with respect to the proposed development and a copy of this report is included with the planning application. The findings of the assessment, were, in view of best scientific knowledge, it is concluded that the activity, individually or in combination with other plans or projects is not likely to have a significant effect on the Natura 2000 network, and the conservation objectives of the sites. A Stage 2 Appropriate Assessment is therefore not required.

The nearest pNHA site is the Bog of the Ring (Site Code 001204), Ring Commons, Co. Dublin at c. 3km, whilst Cromwell's Bush Fen pNHA (Side Code 001576), Greenanstown, Co. Meath is c. 4.5 km. There will no direct or indirect impact on these sites as a result of the continued operation of the WRF at Clashford. The Delvin River discharges to the sea south of the Laytown Dunes, below Julianstown.

The impact of the continued recovery of inert waste in the quarry is considerable in local terms as it will lead to the disappearance of a good part of the existing flora (with its dependant insects) – those species that require open soils and disturbance to grow. However the development of woodland elsewhere on site will tend to diversify the larger fauna such as birds and mammals so that there will be gains as well as losses. At a landscape scale the restoration

will be beneficial as it is creating a nucleus of woodland with links to the existing similar habitat in the Delvin River valley.

The surrounding habitat has a low level of ecological interest except in the valley of the Delvin River and the continuance of infill and re-afforestation will have a significant positive impact on it.

3.3 SOIL & GEOLOGY

The sand and gravel extraction at Clashford exploited a glacial feature that consists of glaciofluvial outwash.

The quarry resource has been worked-out, and the quarry void is in the process of being backfilled with imported soil and stone, capped with topsoil, as per the phased restoration scheme. Most of the original topsoil has already been utilised together with imported topsoil to restore previous sections of the site.

Observations from site visits and information obtained from the facility operators, indicate that there is approximately 8 m of boulder clay overlying the bedrock in the quarry site. The quarry pit excavations extend to approximately 10m to 15m below the surrounding ground level, and thus indicate substantial thickness of subsoils/soils, sand and gravel, and boulder clay overlying the bedrock in the quarry site.

The Clashford House Formation underlies much of the site, and consists of 100m thick sequence of micaceous green- to brown-grey mudstones and siltstones with interfingering sheets of andesite

A search of the GSI Geological Heritage Database indicates that there are no sites of geological heritage within or near the site of the WRF. The nearest site occurs c. 3.5km to the NNE at Laytown-Gormanstown (Site Code: MH008)

The nature of the WRF involves the importation and placement of inert soil and stone as backfill in the quarry void. The application site for the WRF occupies the unrestored areas, or areas containing failed forestry within the worked-out quarry area, and as such will have no impact on virgin soils, sands and gravels, which have already been stripped, disturbed or extracted. As a result of backfilling using inert soils and stones, the WRF will continue to progress the reinstatement of the quarry back to land suitable for agricultural and silviculture, and thus will have a positive impact.

The WRF will have no indirect impact on the local or regional geology, as placement of the inert soil and stone will not release contaminants onto the lands, whilst dust from the WRF will be tightly controlled.

The WRF recovers significant quantities of inert soil and stone through backfilling in the quarry void. Failure to recover soil and stone for the beneficial use of land improvement, specifically reinstatement of a quarry, could result in unnecessary exhaustion of landfill space. Thus, it is considered that the proposed continuation of the WRF will have a positive impact.

The interaction of the quarry and proposed WRF is seen as ‘symbiotic’ and positive, with no negative cumulative impacts on the geological environment identified.

There is no bedrock exposed within the quarry or the site of the WRF, and as such no impact on bedrock geology as a result of the WRF is expected. The WRF is also not expected to have any significant negative impact on the surficial geology of the site or surrounding area, and thus no mitigation measures are proposed. Ultimately, after final land reclamation of the quarry site, with the land restored principally to agricultural use and forestry, there will be no residual impact on the surrounding environment from the WRF.

3.4 WATER

The primary objective of the hydrogeological assessment is to assess the impact posed to surface water and groundwater by the on-going waste recovery of inert material and by the infilling and restoration of an area of the existing quarry using inert waste. Where appropriate, mitigation measures are recommended.

The nature of the development is the continued phased restoration of a sand and gravel pit using imported inert construction and demolition (C&D) waste, mainly soil and stone.

The only other discharge from the site area is surface water run-off. The reclamation scheme has been designed to drain surface water run-off to the northern boundary area of the site. Currently all surface water runoff from the pit/recovery area of the site passes through two settlement lagoons prior to discharge to the tributary of the Delvin River. The settlement lagoons were dry during the site walkover.

In a regional context, the site is situated in the Eastern River Basin District (ERBD). The Delvin River, which forms the southern and south eastern boundaries of the site, flows in a north-easterly direction to its discharge point to the Irish Sea, approximately 7 km north-east of the site. An un-named tributary of the Delvin River forms the northern boundary of the site (referred to as Tributary 1). The source of this stream is a spring located approximately 1.2 km to the north-west. Tributary 1 discharges to the Delvin River at the most north eastern point of the site.

Surface water runoff from the existing pit area is directed via the surface water management system to Tributary 1 to the north of the site. Surface water runoff from the current restoration area recharges to ground or runs off towards Tributary 1.

Two downgradient boreholes were installed on-site to serve as long-term groundwater monitoring points in addition to the existing site wells, GW1 and GW2. The additional boreholes are labelled GW3 and GW4.

In the context of the Eastern River Basin Management Plan the Delvin River has been assigned an overall “Poor” status result. On this basis, the surface water body has been assigned a score of 1a, indicating that the water body is at risk of failing to meet good status in 2015.

The groundwater contour map indicates that the groundwater flow direction is to the southeast, where it discharges to the Delvin River as baseflow.

The vulnerability of groundwater beneath the site is classified as High (H) to Extreme and the subsoil permeability is also mapped as High. However, most of the natural subsoil has been excavated at the site and replaced with soil and stone, and other types of imported inert C&D waste used for construction of haul roads.

In order to reduce the impact of the ongoing restoration works on groundwater and surface water receptors, the following are proposed details of measures/procedures to be implemented at the site in order to ensure that the source and/or the pathway is removed. In this way, the potential risk for groundwater/surface water contamination and groundwater flow regime alteration at the site is minimised.

The most effective mitigations measures for the site are:

- Adequate containment of site fuels and oils, to prevent any accidental spillages which may migrate to the subsoils and underlying groundwater;
- A double skinned mobile fuel bowser is used to refuel plant and machinery. Spill trays and spill kits should be provided at all times;
- Adequate drainage network for the interception and treatment of runoff prior to entry into surface water drains, i.e., a drainage network that is not overwhelmed by runoff;
- Strict control measures to ensure only suitable material is allowed onto the site, i.e., thorough inspection of waste loads entering the site to confirm inert nature prior to deposition on-site;
- Only granular wastes should be deposited into areas immediately above the groundwater table to prevent the influx of suspended solids into groundwater;
- A Drainage channel has been provided along the Northwestern boundary of the P2 restored area, to intercept any surface run-off and direct it into the settlement lagoons before discharge to Tributary 1. This drainage channel needs to be extended northwards as restoration of Phase 2 progresses.
- The specific mitigation measures could be included in an Environmental Management Plan as part of the conditions for the site waste licence.

It is proposed that Tributary 1 and the Delvin River should be monitored frequently during the on-going site works in Phase 2 and future site works planned in Phase 3 to ensure that the water quality is not adversely affected by on-site activities.

It is proposed that on-going groundwater monitoring is conducted at GW3 and GW4 to confirm possible contamination in these boreholes.

Hydrocarbon spill kits and drip trays will be maintained on site. The operator has in place an Emergency Response Procedure for hydrocarbon spills and appropriate training of site staff in its implementation. All waste oils are collected and removed off-site by an approved licensed waste collection contractor in the area.

The area that is to be restored as part of Phase 2 is located in the northern area of the site. The Phase 3 restoration area is the pit area in the southwestern area of the site. All material to be used for the restoration should be thoroughly inspected to ensure only suitably permeable, inert material is deposited.

It is proposed that groundwater monitoring be carried out biannually. This is recommended to ensure that the restoration of the site is not impacting on the groundwater beneath the site and to establish on-going trends in the groundwater monitoring boreholes.

The evidence to date indicates that the existing excavation and restoration area has not impacted significantly on surface water quality downstream of the site.

It appears that groundwater quality has been indirectly affected as a result of the restoration of the site to agricultural land. This may be as a result of the agricultural practices applied to the restored P1 area of the site. Modification of the current agricultural practices is expected to improve the groundwater quality.

Any potential and existing risks to groundwater and surface water from the on-going restoration works in this location will be minimised/ prevented through the adherence to the proposed mitigation measures.

3.5 CLIMATE

The quarry development, including a co-located WRF handling only inert soil and stone, is not of sufficient scale to have any direct or indirect impacts on the regional or local climatic conditions.

If the WRF is not licensed to continue operations, then inert soils and stone waste materials may have to be transported further afield with a consequential impact in terms of increased exhaust emissions for transport of materials to more removed WRF facilities and/or landfill sites. It is considered that the proposed continued operation of the WRF will have a slight to imperceptible positive impact with respect to climate due to restoration of the lands to agriculture/woodland.

3.6 AIR QUALITY

The principle concern in respect of potential airborne dust emissions from the proposed development is the effect on residential amenity. Properties within the vicinity of the development are shown on Figures B.2.1 – Rev A and B.2.2 – Rev A,

The materials to be recovered are principally “soils and stone” and inert construction and demolition waste. Any dust generated by the operation will comprise inert particulate matter.

Experience of reclamation workings indicates that mechanical activity is the most significant factor in material erosion and dust generation. Dust emanates from the placement of materials, the movement of vehicles on internal roads, loading and processing operations. However the effect of wind is also an important factor in dust generation and problems may arise at reclamation workings when both factors arise simultaneously.

The current air quality in the region is known to be “good” and thus the impact on air quality with respect to the existing quarry/WRF is considered to be negligible.

There are no other major quarries or waste recovery facilities in the locality. As such it is considered there is no significant cumulative impact with respect to the operation of the proposed WRF within the existing quarry.

The restoration works using imported “soil and stone” are no different from normal quarry restoration operations. As such there is no cumulative impact with respect to the movement and placement of materials during the progressive restoration of the quarry development.

The proposed development will also be operated within acceptable standards for this type of development.

A number of measures have been adopted to minimise dust emissions to the atmosphere from general site activity, internal haulage, processing and tipping operations as follows:

- During dry weather the haul roads and stockpiles are sprayed with water to dampen any likely dust blows. A water bowser is maintained on site for this purpose.
- Consideration will be given to location of mobile plant so as to ensure that any principle dust sources cannot adversely affect sensitive off-site locations.
- Static and mobile wet dust suppression systems will be located at strategic points in the process if required.
- Drop heights are kept to a minimum by using short conveyors and maintaining stocks under the head drum load out points.
- A wheel wash facility has been installed on site and all vehicles are required to pass through the wheel wash on exiting the site.
- A sprinkler system has been installed on the site access road and is in operation during periods of dry weather.
- Main site haulage routes within the site shall be maintained with a good temporary surface, as is the case at present.
- All internal roadways will be adequately drained, to prevent ponding.
- The operator has purchased a road sweeper and ensures that the site entrance and adjoining public roadway is regularly cleaned. The sweeper is readily available at short notice to sweep up any materials which may accidentally fall onto the public roadway.
- Suitable vegetation is to be provided on restored areas at the earliest opportunity.
- Ongoing dust monitoring to ensure threshold limits are not exceeded.

Dust emissions from the facility will be controlled and monitored. Dust emissions and their management will be addressed in the 'Environmental Management System' (EMS) for the Clashford site.

It is considered given the nature of the activity, control and abatement measures and management of the existing quarry that emissions of pollutants to the atmosphere are not likely to degrade the environment (i.e., be injurious to public health, or have a deleterious effect on flora or fauna or damage property, or impair or interfere with amenities or with the environment).

3.7 NOISE

The principle concern in respect of potential noise emissions from the development is the effect on residential amenity. Properties within the vicinity of the development are shown on Figure B.2.2 – Rev A. As shown the nearest noise sensitive locations are along the R108 Regional road to the west of the existing site.

Noise monitoring to date has shown that noise levels due to site activity are within acceptable thresholds for this type of development.

Noise resulting from the operations can be kept to acceptable levels by the implementation of good design, effective operation and management and by the adoption of 'best practices'. Reducing noise at source wherever possible is the most effective way of minimising the impact but barriers and screens between noise source and receptor can also be used to very good effect.

The type of mitigation techniques implemented to reduce noise are detailed below:

- The provision of temporary peripheral screen banks to screen site activities from outside views.
- General site activity will be within the existing pit and below the level of the nearest residences.
- The use of designated haul roads to ensure that site traffic is removed from nearest noise sensitive receptors.
- Regular maintenance of all plant and machinery is an integral part of site management and is important in helping to minimise noise impact.
- All plant and equipment will conform to noise emission limits set out in Statutory Instrument No. 320 of 1998 European Communities Construction Plant and Equipment-Permissible Noise Levels (Regulations, 1998) and amendment set out in Statutory Instrument No. 359 of 1996.

The operator has established an environmental monitoring programme to include noise monitoring.

The results of monitoring to date shows that the development can comply with the noise level threshold as specified and as a consequence the development will have no significant effects regards noise levels in the area. Noise emissions and their management will be addressed in the 'Environmental Management System' (EMS) for the Clashford site.

This programme will allow on-going monitoring of noise emissions from the site, thereby assisting in ensuring compliance with any future requirements or regulations.

Through implementation of the proposed mitigation measures it is considered the development will continue to have no significant effects with regard to noise levels on the local residences, their property, livestock and amenity.

3.8 LANDSCAPE

Meath possesses a diverse range of landscapes, including coastline, drumlins in the north, rich pastures, tracts of peatland and raised bog in the southwest, and the central upland area that includes Tara - the ancient capital of Ireland.

The Meath Landscape Character Assessment, which constitutes part of the Meath County Development Plan (CDP) 2013-2019, identifies and describes the landscape character of the entire county. It also evaluates the capacity of different areas to accept change, without

disproportionate effects and proposes a series of policies and recommendations to guide developments in each type of landscape.

The site for the WRF relates to a subordinate site co-located within the Clashford quarry site. The quarry has been developed on a c. 1km long mound of sand and gravel within a southwest-northeast oriented ribbon of glacial deposits. The topography of the quarry site is thus elevated above the valley floor, and occurs at approximately 60-80m AOD.

The unrestored quarry area is dominated by bare, exposed ground and scrub with fragments of grassland and scrub at the edges and undeveloped areas. Overburden stripped to access sand and gravel resource has been used for restoration of completed sections of the excavation. Planted mixed broadleaf forest fringe the eastern half of the quarry site, while the other boundaries are largely maintained with hedgerows and stock fencing.

The area has an established history of sand and gravel working, and these activities have co-existed with other predominantly agricultural land uses in the area, principally medium-high intensity farming. The predominant land use within the WRF site, which is to be co-located within the quarry site, is by definition that of quarrying activities and associated operations. On completion of site activities, the site of the quarry and WRF will be decommissioned and reinstated in accordance with the approved quarry restoration scheme, and thus integrated back into the surrounding landscape. Thus, the land use will revert to agricultural use, primarily as arable and grassland.

There are two protected views and prospects near the site, of which one will be affected in the short term by continued WRF operations. The Protected View and Prospect designated as 71, is on a county road off the R108 at Snowtown north of the site.

Residential development consists of isolated farm dwellings and of owner occupied bungalow/houses along public roads, occasionally in clusters and graigs, such as at Moonlane. Roads are of a local character and typical of a rural location.

The site at Clashford lies on the boundary between LCA 7: Coastal Plain and LCA 9: Bellewstown Hills, although it has characteristics more closely related to, and is contiguous with the latter.

The landscape of LCA 9 is described as generally in good condition, and is rated as being of very high value and of regional importance, whilst the sensitivity of the LCA is rated as being medium. The capacity of LCA 9 to absorb most indicative developments was determined to be medium to low. Interestingly, low potential capacity indicates high sensitivity to the type of proposed development, which could have detrimental effect on landscape character or value, such as forestry in LCA 9.

Although there are no designated Scenic Routes within the general area (i.e., <5km radius) of Clashford, there are two protected views and prospects in the Clashford area, one of which is oriented across the WRF site.

The results of the visual field survey have shown that due to intervening topography, screening, and vegetation, views towards the WRF site are generally limited to restricted views from elevated ground to the north and southeast. The quarry and WRF are open to partial views from distant viewpoints from gaps in hedgerows and some residences on elevated ground along Regional road R108 and R122, and on roads and lanes off these.

Mitigation measures include avoidance, reduction, compensation and remedy of potential impacts. The primary means of mitigation involves an efficient design and layout for the WRF that optimises use of existing infrastructure and plant, discrete placement of imported materials, screening using hedgerows and trees, and progressive restoration of the quarry.

Because the WRF is co-located within the Clashford quarry site, it will benefit from existing mitigation measures. The quarry is not a skyline feature, occupying a low field of view from distant receptors; with field boundaries and trees forming the background. The views are mostly obscured by intervening topography, hedgerows and forestry.

In the vicinity of the Clashford, the WRF is well screened from public view on the R108 by existing hedgerow on the roadside and intervening boundaries of properties on the east side of the R108. Mature broadleaf woodland and hedgerow fringes the Delvin River to the south of the landholding, and along the tributary to the north of the landholding, whilst a broad swathe of planted mixed broadleaf forest fringes the eastern half of the quarry site.

The existing restored quarry lands to the west and Phase 1 to the south along the banks of the Delvin have significantly improved the visual amenity of the locality and also act as a substantial buffer to the current restoration works.

The viewshed from elevated ground to the north on the R108, and on roads and lanes off it, is intermittent in nature, where views are typically only afforded by gaps in hedgerows. Thus, the view of the site from the north is largely screened by mature and generally well-managed hedgerows. The site is screened from the west and southwest, including the majority of the village of Naul, by intervening topography and mature woodland and hedgerows. There are rare views of the site from the R122 within the village limits, and a largely uninterrupted viewshed of the WRF site from the R122 near the village limits and continuing east approximately 700m to Naul House.

Backfilling work to reinstate the original topographic profile increases the visibility of the operation temporarily, until such time as the land is restored and returned to agricultural use. In particular, large stockpiles of topsoil and subsoil intended for capping purposes for Phase 2 are visible from elevated viewpoints, and in most cases are the most prominent feature of the WRF. Phase 2 is substantially completed and the existing visible topsoil/subsoil mounds are to be used to complete restoration during next earthworks season and area grassed. This will result in a significant improvement with respect to the visual amenity of the locality in a relatively short time frame. The final phase 3 of the restoration works will largely be screened from outside views by intervening topography and vegetation.

Phase 1 of the quarry restoration is complete, whilst Phase 2 is on-going and will result in the restoration of eastern section of the site, which will further mitigate the existing views. Ultimately, on cessation of operations at the quarry and WRF, the infrastructure will be decommissioned and the site will be fully reinstated back to agricultural land.

The restoration plan involves the progressive backfilling of the quarry void on a phased basis, with natural inert soil and stone sourced externally and imported. Topsoil will be seeded and the area returned to useable agricultural grassland for livestock grazing with substantial wooded habitat (Refer to Figure B 2.4 Rev A – Site Restoration Plan).

3.9 CULTURAL HERITAGE

There are no archaeological, architectural or cultural heritage features recorded on the Ordnance Survey maps within the area of proposed land take. There was no evidence of any archaeological, architectural or cultural heritage features recorded on aerial photographs within the proposed development area. No archaeological, architectural or cultural heritage features were revealed within the area of proposed land take as a result of carrying out the walkover survey.

The site of an unclassified megalithic tomb (RMP ME034-012) is recorded within the proposed development area. This monument or possible associated archaeological features no longer survives above or below ground. There are no Protected Structures, Architectural Conservation Areas, NIAH structures or NIAH historic gardens or designed landscapes within the proposed development area. As a result there will be no direct or indirect construction impact on the recorded or unrecorded archaeological, architectural or cultural heritage resource.

There will be no construction or operational visual impact on the archaeological, architectural or cultural heritage resource.

There will be no construction noise impact on the archaeological, architectural or cultural heritage resource.

There will be a negligible operational noise impact on the archaeological and architectural resource.

There will be no residual impact on the archaeological, architectural or cultural heritage resource.

There will be no cumulative impacts on the archaeological, architectural or cultural heritage resource.

There will be no direct or indirect construction impact on the recorded or unrecorded archaeological, architectural or cultural heritage resource. As such, no mitigation measures are required.

There will be no construction or operational visual impact on the archaeological, architectural or cultural heritage resource. As such, no mitigation measures are required.

There will be no construction noise impact on the archaeological, architectural or cultural heritage resource. As such, no mitigation measures are required.

There are no mitigation measures available to offset the negligible operational noise impact on the archaeological and architectural resource.

3.10 MATERIAL ASSESTS

Meath has significant resources in terms of aggregates, a resource that had come under pressure due to increased demand prior to the collapse of the construction industry in 2008. Since aggregates can only be worked where they occur, it is important to identify the location

of these resources with a view to safeguarding them, coupled with the protection of amenities, prevention of pollution and the safeguarding of aquifers and ground water.

The area around Clashford has a history of sand and gravel working, with extraction from the glacial deposits (most probably glaciofluvial outwash) within the Delvin River valley. These activities, including the existing quarry and adjacent concrete manufacturing facilities, have co-existed with other land uses in the area mainly agriculture. Neither Meath nor Fingal local authorities recognise geological heritage sites within or near the site of the quarry and co-located WRF at Clashford.

Clashford Recovery Facility Ltd employs four people directly and a number of others indirectly, with the majority of the employees being local people. An additional two temporary staff are hired occasionally. The WRF will help sustain employment in the local area while beneficially restoring the quarry back to agricultural use

Residential development predominantly consists of isolated farm dwellings and of owner occupied bungalow/houses along public roads (Refer to Figures B 2.1 – Rev A and B 2.2 – Rev A,). Naul lies c. 300m to the south of Clashford, and has a population of c. 200. There is also a suburban style graig or hamlet on Moonlone Lane off the R122, c. 1.5km east of Naul. Beyond the village of Naul, there are no large residential settlements close to the site, with Stamullin c. 5km to the northeast, and Balbriggan c. 7km to the east.

With the exception of the N-S oriented R108 and the E-W oriented R122 Secondary National Road, the roads in the area are of a local character and typical of a rural location. The M1 motorway lies c. 5km to the east, whilst the Dublin-Belfast mainline railway runs along the coast at Balbriggan c. 7.5km to the east.

The predominant land use within the WRF site, which is to be co-located within the quarry site, is by definition that of quarrying activities related to the extraction of sand and gravel and associated operations. Prior to the commencement of quarrying in 1980s, the lands had been kept in agriculture land for pasture and arable. Ultimately, the site will be reclaimed in accordance with the approved quarry restoration scheme, and thus undergo a change of land use back to agricultural land with some broadleaf forestation.

As the WRF is already co-located within the existing quarry, it is considered that the proposed continuation of the WRF will result in a change in land cover, on completion of the restoration of the quarry and its return to agricultural land with woodland habitat.

The traffic impact of the quarry is at present considerably less than it was at full production in the period prior to 2008. During that period the traffic generated by the quarry had no adverse effect on traffic movement on the surrounding road networks. The traffic arising from the proposal to continue operating the WRF and importing soil and stone into the quarry will not increase traffic above the 2008 levels. The traffic impact of the WRF and quarry on the surrounding road network, including the R108 and R122, is considered minimal.

The mains water supply runs along the R108 roadway and is sourced from the Hollywood Reservoir c. 4km south of Naul. There are also houses in the area served by bored wells. Most rural houses are serviced by septic tank systems and proprietary effluent treatment systems. Power to local residences is provided by overhead lines, which form part of ESB's country-wide, medium and low voltage, electricity distribution network.

The WRF will also have no direct or indirect impact on items of cultural heritage, archaeological sites or monuments, protected structures or non-designated structures of heritage value in the vicinity of the application site.

The impact of inert waste recovery will be considerable in local terms, but will not result in any loss of heritage values in the locality. The changes will be both positive (gain of woodland) and negative (loss of open habitats). The surrounding habitat has a low level of ecological interest except in the valley of the Delvin River and the continuance of infill and re-afforestation will have a significant positive impact on it. Sediment control measures will prevent any impact on the nearby river.

The locality is noted for amenities/activities such as fishing, walking, cycling and other outdoor pursuits. There is one Protected View and Prospect, on a county road off the R108 at Snowtown north of the Clashford site (Meath County Council 2013). The view is to the South East across the WRF, and is of the "extensive tillage landscape, visible settlement and infrastructure".

On completion of waste recovery activities at the WRF, the entire site will be reinstated in accordance with the approved quarry restoration scheme. Therefore in the short term, the site will be assimilated back into the landscape in a planned manner, with the attendant improvement to the visual amenity of the area.

The proposed continued operation of the WRF at Clashford arises from: (1) the continued generation of large volumes of inert C&D waste, including soil and stone; and (2) the requirement to restore land, previously disturbed and degraded by sand and gravel extraction at the Clashford quarry, through backfilling with recovered inert soil and stone. The recycling and recovery of C&D waste is essential to reduce resource utilisation and divert reusable inert waste from disposal in landfill, as required under the Waste Framework Directive 2008 (2008/98/EC), and the European Communities (Waste Directive) Regulations, 2011 (S.I. 126 of 2011).

The location of the Clashford site with access directly onto regional road R108, and c. 5km from junction 6 on the M1, and c. 7km from Balbriggan, via the R122, renders the WRF well positioned to deliver recovery of inert soil and stone from a large catchment area. There is a preference for the deposition of soil and stone to be underpinned by a beneficial use in order to be considered waste recovery. Consequently, co-location of a waste recovery facility at Clashford quarry, has significant positive impacts, and is thus environmentally preferred.

It is expected that the potential negative impacts on material assets of the area arising from the WRF, will relate primarily to nuisance from noise, dust and traffic. Indirect or cumulative impacts associated with other similar developments within the area are dealt with where necessary under the respective topic in the EIS.

Clashford Recovery Facilities Ltd. has established an on-going environmental monitoring programme on site. This programme will allow on-going monitoring of environmental emissions (noise, dust, water) from the site, thereby assisting in ensuring compliance with any future requirements or regulations. The results of this monitoring will be made available to the EPA and the Local Authority on a regular basis, where members of the public may examine

it. The future monitoring programme will be revised accordingly, subject to compliance with any conditions attached to a decision to grant a Waste Management License.

The development can be controlled and regularised in accordance with the scheme as outlined in this document, through continued environmental monitoring and by conditions imposed by the EPA. The development does not have a significant impact on lands, property or amenity within the area and hence there will be no significant effect on material assets.

3.11 TRAFFIC

The access to the Waste Recovery Facility (WRF) is from the R108 Regional Road. This entrance serves as a dual entrance. The entrance on the North side leads to the WRF and the entrance on the South side to Kilsaran Concrete depot.

The R108 is a north/south traffic artery in the area, providing access to Drogheda to the North and Naul to the south. Naul in turn provides access to the M1 and beyond to the east.

The existing traffic volumes on the road network in the vicinity of the WRF are lower than the peak flow volumes in 2007/2008.

The volume of peak hour traffic generated by the development is the determining factor of the impact of the development. The projected import of material for recovery into the WRF is estimated to be up to 180,000 tonne per annum of inert materials. It is estimated that only c. 10,000 tonnes per annum of inert construction and demolition waste will be recovered at the facility. Recovered material will be used for internal haul roads and/or 50% dispatched off site.

The maximum importation period for the WRF was in 2007/2008. According to the WRF operators the importation at this time was 248,000 tonnes.

As construction activity has reduced since 2008 the present traffic generated by the WRF is reduced. The proposal is to continue to import material for infill and to export recovered material which will generate traffic as follows.

The import of 180,000 tonne per annum of inert materials represents an average weekly import of 3600 tonnes, or 33 inward truck movements per day. The export of 5,000 tonne per annum of recovered materials represents an average weekly export of 100 tonnes or 1 outward truck movements per day. This results in 68 two-way truck movements per day, this is rounded up to 70 movements to cater for any spikes in traffic.

It can be seen therefore at peak of production in 2008 the traffic was greater than the proposed 2014 peak values that will be generated.

The generated low volume split of existing WRF related traffic at the R108/WRF junction is estimated as 90% southwards and 10% northwards (local needs only) along the R108 Regional road for peak WRF traffic. The proposed import traffic will not change these percentages. While these percentages may change in the future they will not adversely affect the traffic distribution.

The WRF has been in operation since 2002. Expansion of the WRF took place in 2006 and reached peak production in 2008. The WRF will continue to import material for infill until the infill area is exhausted.

The following are the conclusions of the analysis of the traffic impact of WRF:

1. The capacity of the R108 at the WRF site is between 600 and 1035 pcu's/hr and the existing volume on the R108 falls within this envelop of the available capacity.
2. The traffic impact of the WRF on the surrounding road R108 network is considered minimal, (on average the projected WRF traffic is 8% of the total traffic at the peak hour) given the present and forecasted level of activity at the WRF.
3. The traffic impact of the WRF is at present considerably less than it was at full production prior to 2008. During this period the traffic generated by WRF had little adverse effect on traffic movements on the surrounding road networks. The continued use of the WRF at the predicted level will not increase the traffic over the present level.
4. The level of turning movements at the R108/WRF Access junction are of a low volume within the total capacity of the road network and the proposed WRF traffic represents 22.25% peak hour average of these low volume movements.
5. The R108 is an unaligned single carriageway road with verges stretching to the north and south of the WRF Access junction with the R108. The quality of the R108 pavement in the vicinity of the WRF entrance is at present in good condition.
6. The R108 and the adjacent road receiving network is of a medium quality but is capable to cater for the Waste Recovery Facility generated traffic.

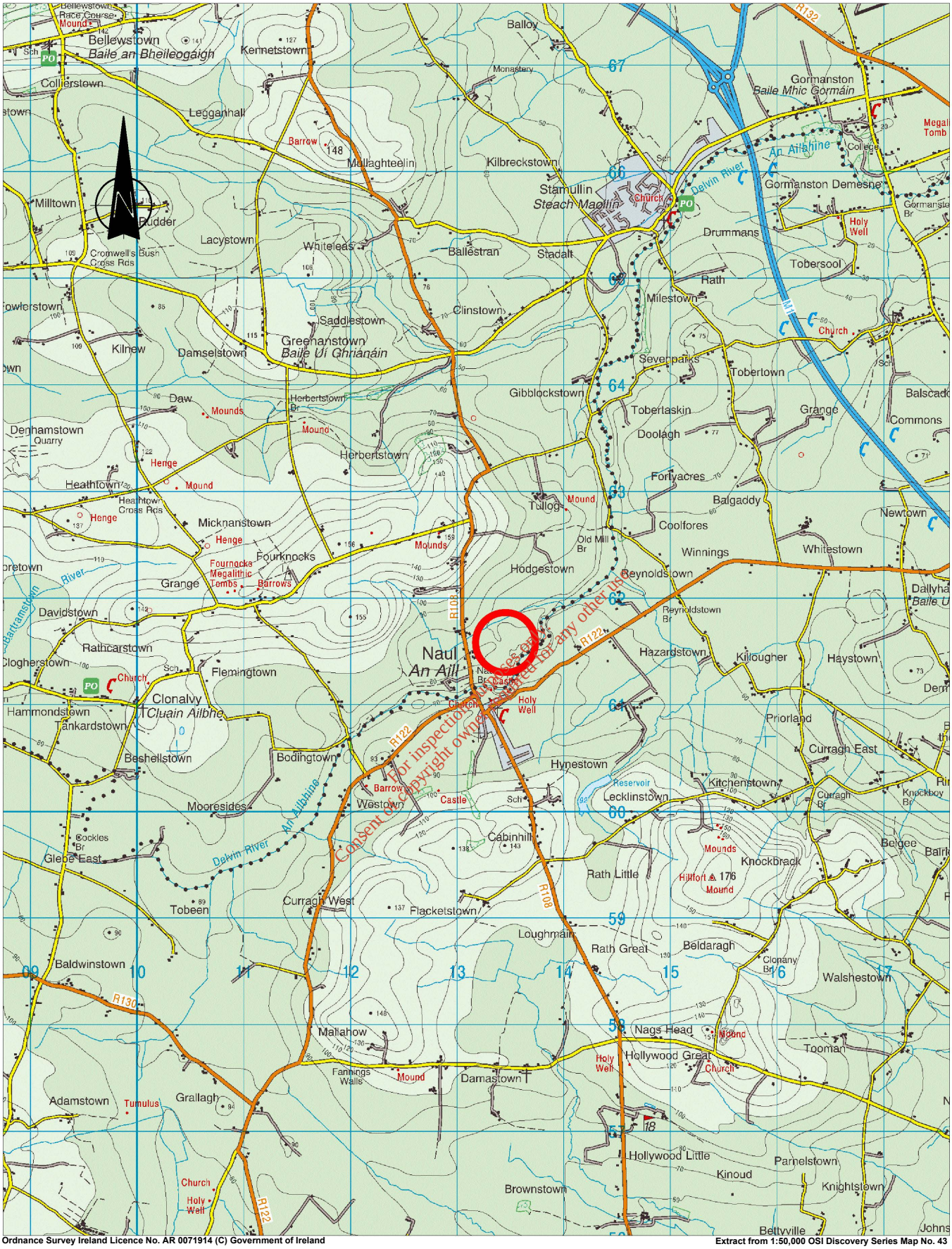
3.12 INTERACTION OF THE FOREGOING

The interactions of the impacts and mitigation measures between one topic and another, where applicable, are discussed under the respective sub-sections within Section 3 of the EIS.

In terms of protecting the environment, the impacts of the proposed development of a Waste Recovery Facility (WRF) at Clashford have been assessed and where required, appropriate mitigation measures provided to remedy any significant adverse effects on the environment.

4 FIGURES

Figure No.	Revision	Title	Scale	Size
A 1.0	-	Site Location Map	50000	A4
B 2.1	A	Site Plan	3500	A3
B 2.2	A	Location Map @500	6000	A3
B 2.4	A	Site Restoration Plan	3500	A3
B 2.5	A	Site Cross Sections	3500	A3
D 1.1	A	Site infrastructure	1000	A3
F 1.0	A	Environmental Monitoring Plan	3500	A3



Ordnance Survey Ireland Licence No. AR 0071914 (C) Government of Ireland

Extract from 1:50,000 OSI Discovery Series Map No. 43

Scale: 1:50,000

0m 500m 1km 2km

Legend

Site Location

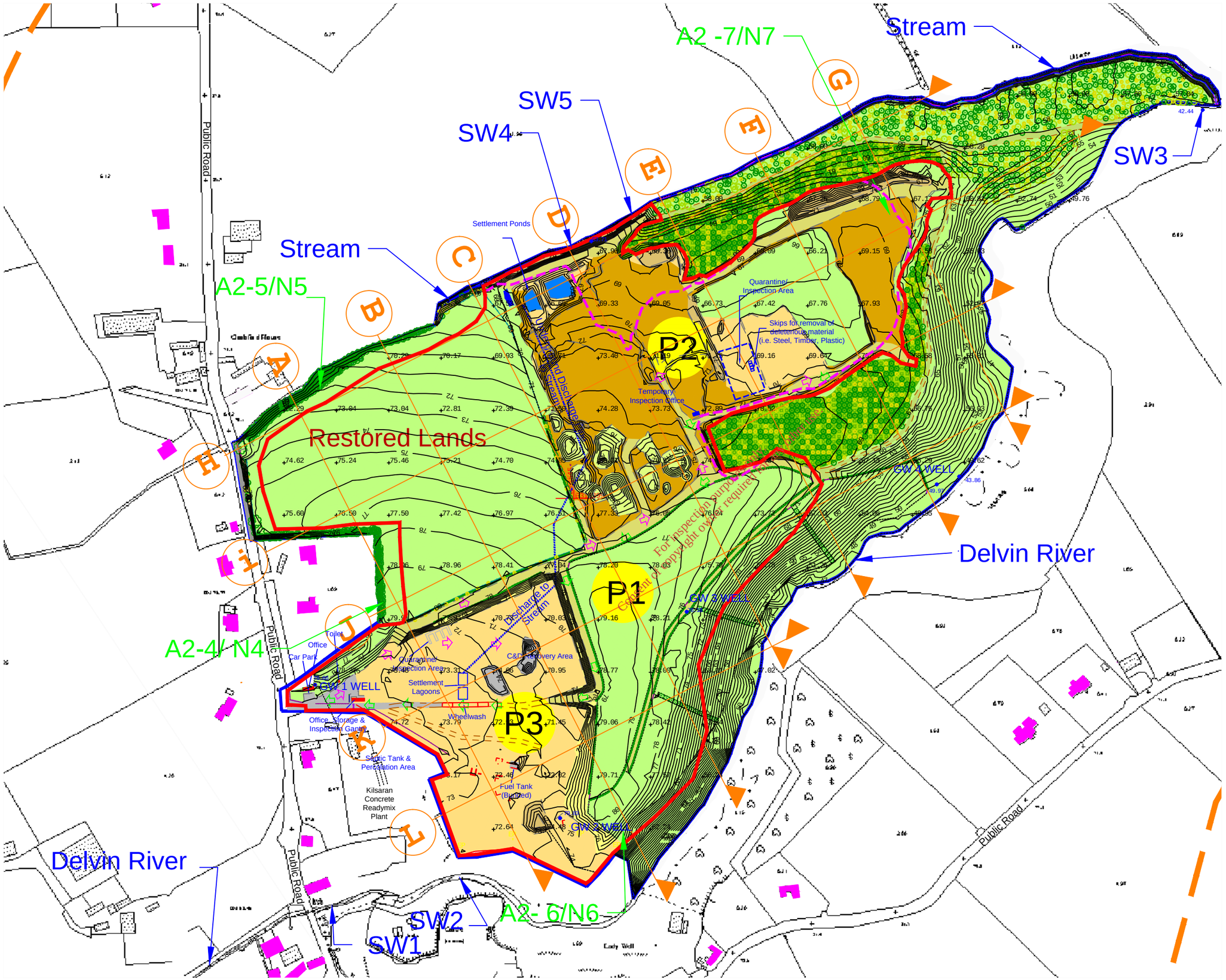
JSPE

31 Athlumney Castle,
Navan, Co Meath
Phone/Fax: 046 9073997
Mobile: John Sheils 087/ 273 0087
Email: john.sheils@jspe.ie

J SHEILS PLANNING & ENVIRONMENTAL LTD

Site Location Map
Clashford Recovery Facility
Naul
Co. Meath

Author: John Sheils	Job No. JSPE 170
Date: 22/09/14	Ref No. A 1.0



Application Area(c.22.3 ha)

2009 Application Area (c. 20.8 ha)

Applicants Ownership(c.33.4 ha)

Residences

500m from Site Boundary

P1 Phasing

Active Pit Area

Backfilling Area

Restored Area

Restored Area (Planted)

Contours

Spot Levels (mAOD)

Cross Sections

GW 1 WELL Well

Digital Raster Extract Ordnance Survey Data 2500 mapping
OS Sheets 2649 - A & B, 2582 - C & D
NG Centre Point Coords X, Y = 313399, 261545

Scale 1:3500

0m 40m 120m

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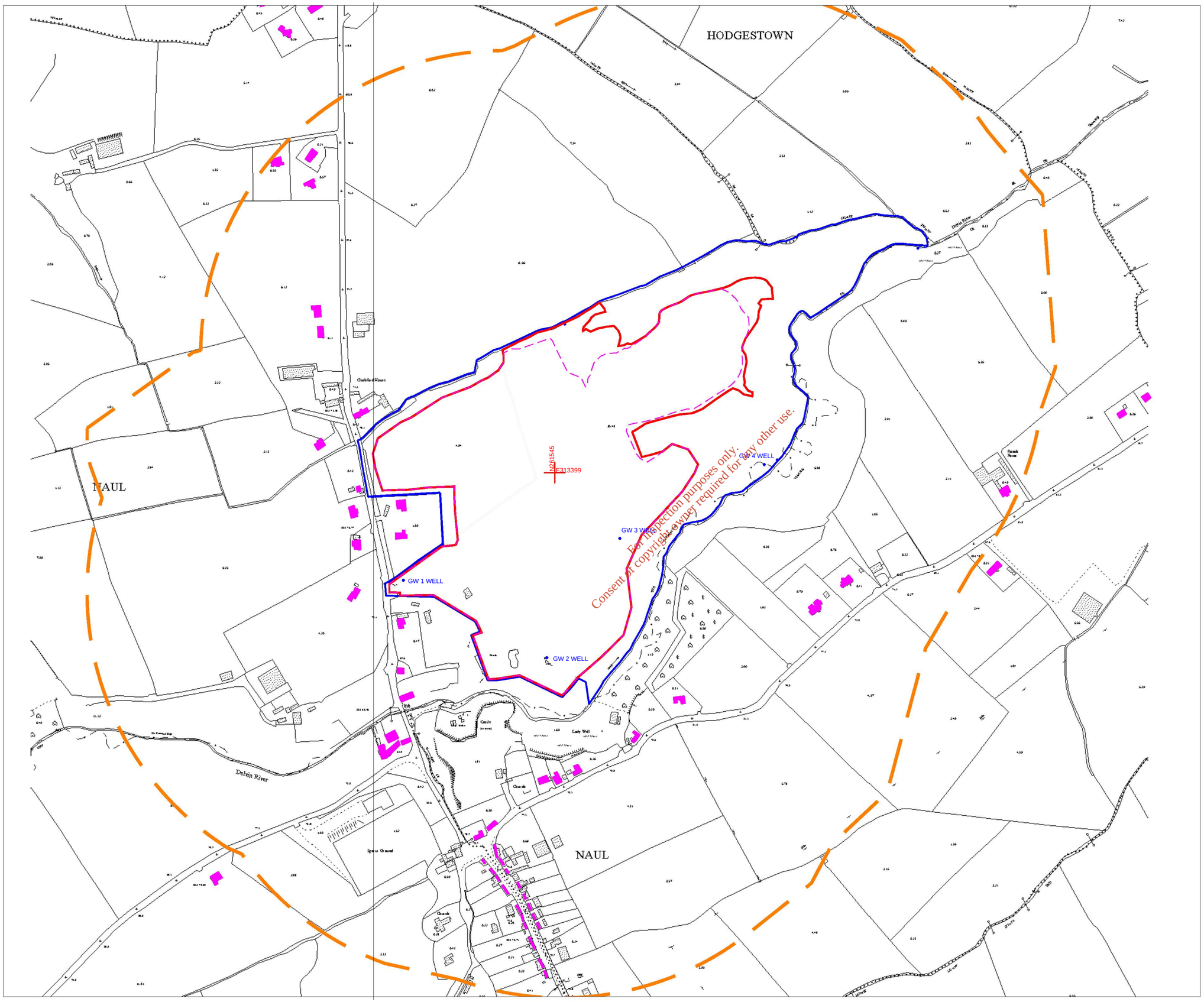
CLIENT **Clashford Recovery Facility Ltd**

DRAWING **SITE PLAN**

LOCATION **NAUL TOWNLAND
Naul, Co. Meath.**

Drawn by	Scale	
John Sheils	1 /3500	
Checked by	Job No.	
John Sheils	JSPE 173	
Date	Figure No.	Rev.
8/07/14	B 2.1	A



Application Area(c.22.3 ha)

2009 Application Area (c. 20.8 ha)

Applicants Ownership(c.33.4 ha)

Residences

GW 1 WELL Well

500m from Site Boundary

Digital Raster Extract Ordnance Survey Data 2500 mapping
OS Sheets 2649 - A & B, 2582 - C & D
NG Centre Point Coords X, Y = 313399, 261545

Scale 1:6000

0m 80m 240m

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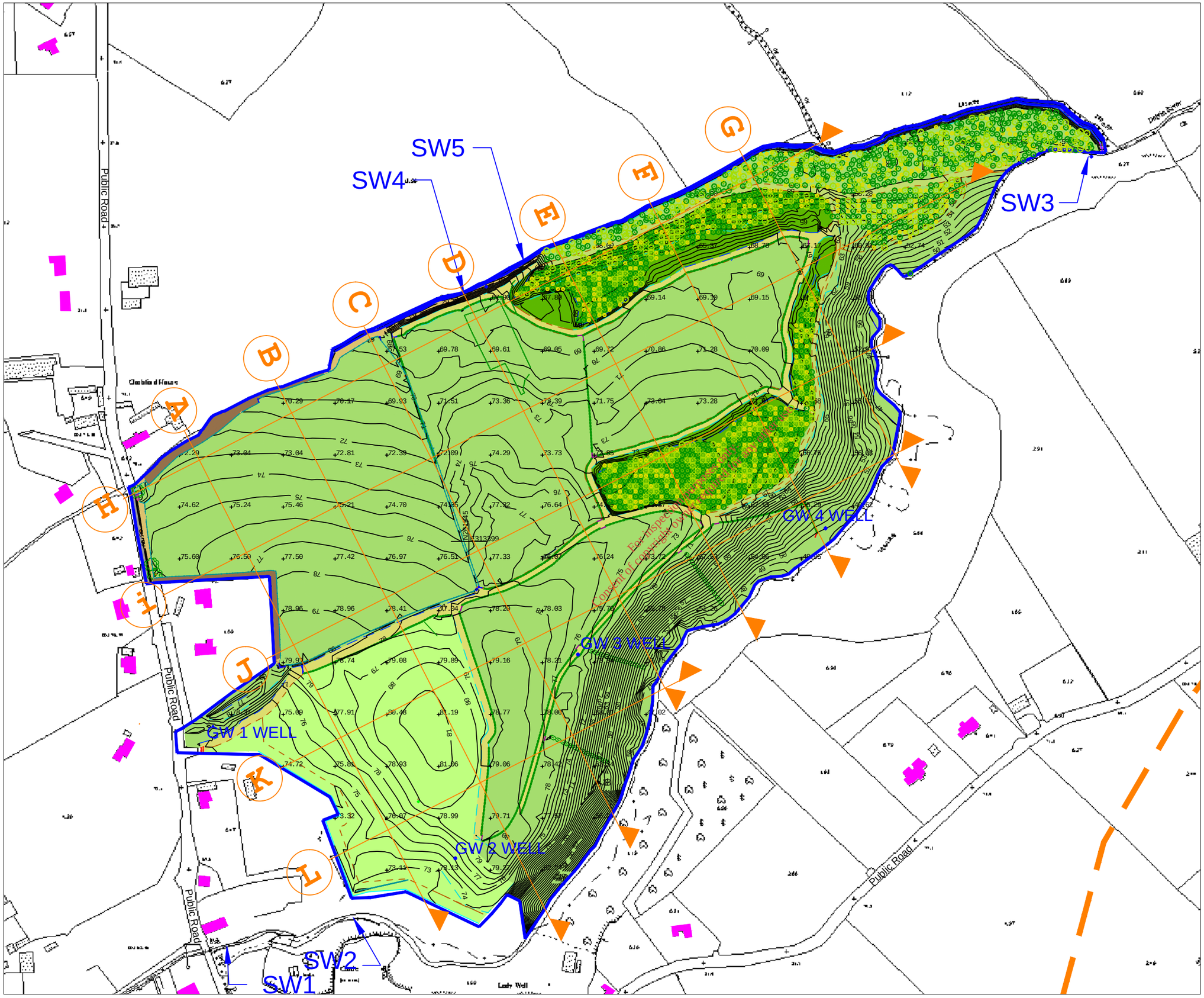
J SHEILS PLANNING & ENVIRONMENTAL LTD

CLIENT: **Clashford Recovery Facility Ltd**

DRAWING: **LOCATION MAP (500m)**

LOCATION: **NAUL TOWNLAND
Naul, Co. Meath.**

Drawn by: John Sheils	Scale: 1 /6000	
Checked by: John Sheils	Job No.: JSPE 173	
Date: 22/09/14	Figure No.: B 2.2	Rev.: A



Landholding (33.4 ha)

Residences

500m from Site Boundary

Restored Area

Restored Area (Planted)

Contours

Spot Levels (mAOD)

Sections

GW 1 WELL Groundwater Monitoring

SW Surfacewater Monitoring

Monitoring Points National Grid Coordinates

GW1 = IG Coords E313153, N261367
GW2 = IG Coords E313392, N261238
GW3 = IG Coords E313508, N261457
GW4 = IG Coords E313747, N261559
SW1 = IG Coords E313170, N261158
SW2 = IG Coords E313291, N261184
SW3 = IG Coords E313400, N261917
SW4 = IG Coords E313399, N261785
SW5 = IG Coords E313456, N261816

Digital Raster Extract Ordnance Survey Data 2500 mapping
OS Sheets 2649 - A & B, 2582 - C & D
NG Centre Point Coords X, Y = 313399, 261545

Scale 1:3500

0m 40m 120m

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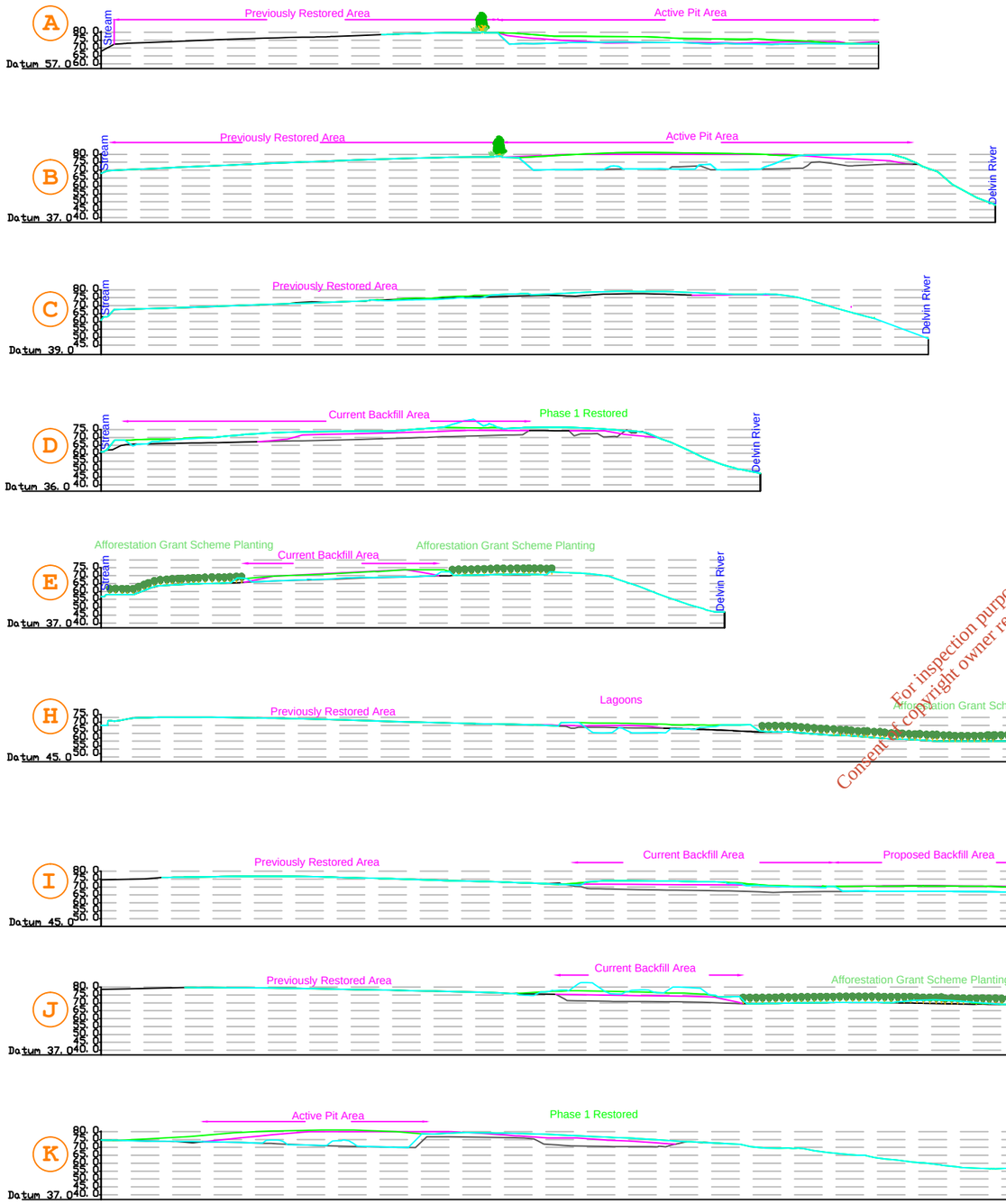
CLIENT **Clashford Recovery Facility Ltd**

DRAWING **SITE RESTORATION PLAN**

LOCATION **NAUL TOWNLAND**
Naul, Co. Meath.

Drawn by	Scale	
John Sheils	1 /3500	
Checked by	Job No.	
John Sheils	JSPE 170	
Date	Figure No.	Rev.
22/09/14	B 2.4	A



Legend

- Final Landform Profile (mAOD) (Proposed 2009)
- Final Landform Profile (mAOD) (Proposed 2014)
- Existing Ground Profile (mAOD) - 2009
- Existing Ground Profile (mAOD) - 2014

Minimum Fill Depth <1m
Maximum Fill Depth 10m
Average Fill Depth 4 to 5m

Scale 1:3500

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CLIENT: **Clashford Recovery Facility Ltd**

DRAWING: **CROSS SECTIONS**

LOCATION: **NAUL TOWNLAND**
Naul, Co. Meath.

Drawn by: John Sheils	Scale: 1 /3500	
Checked by: John Sheils	Job No.: JSPE 173	
Date: 22/09/14	Figure No.: B 2.5	Rev.: A

Toilet
Office
Car Park
GW 1 WELL
Quarantine/
Inspection Area
Settlement
Lagoons
C&D Recovery Area
Discharge to
Stream
Wheelwash
Office, Storage &
Inspection Gantry
Septic Tank &
Percolation Area
Kilsaran
Concrete
Readymix
Plant
Fuel Tank
(Bunded)
GW 2 WELL
79.83
79.9
77.94
70.73
70.03
79.16
78.37
76.66
73.48
73.31
74.66
70.95
78.77
74.72
73.79
72.93
71.45
79.06
73.17
72.46
72.02
79.71
72.64
74.48
77.99
EP
Publ

Application Area(c.22.3 ha)
2009 Application Area
(c. 20.8 ha)
Applicants
Ownership(c.33.4 ha)
Residences
Active Pit Area
Backfilling Area
Restored Area
Restored Area (Planted)
Contours
Spot Levels (mAOD)
Asphalt Surface
Traffic Out
Traffic In
GW 1 WELL Well

Digital Raster Extract Ordnance Survey Data 2500 mapping
OS Sheets 2649 - A & B, 2582 - C & D
NG Centre Point Coords X, Y = 313399, 261545

Scale 1:1000

0m 20m 60m

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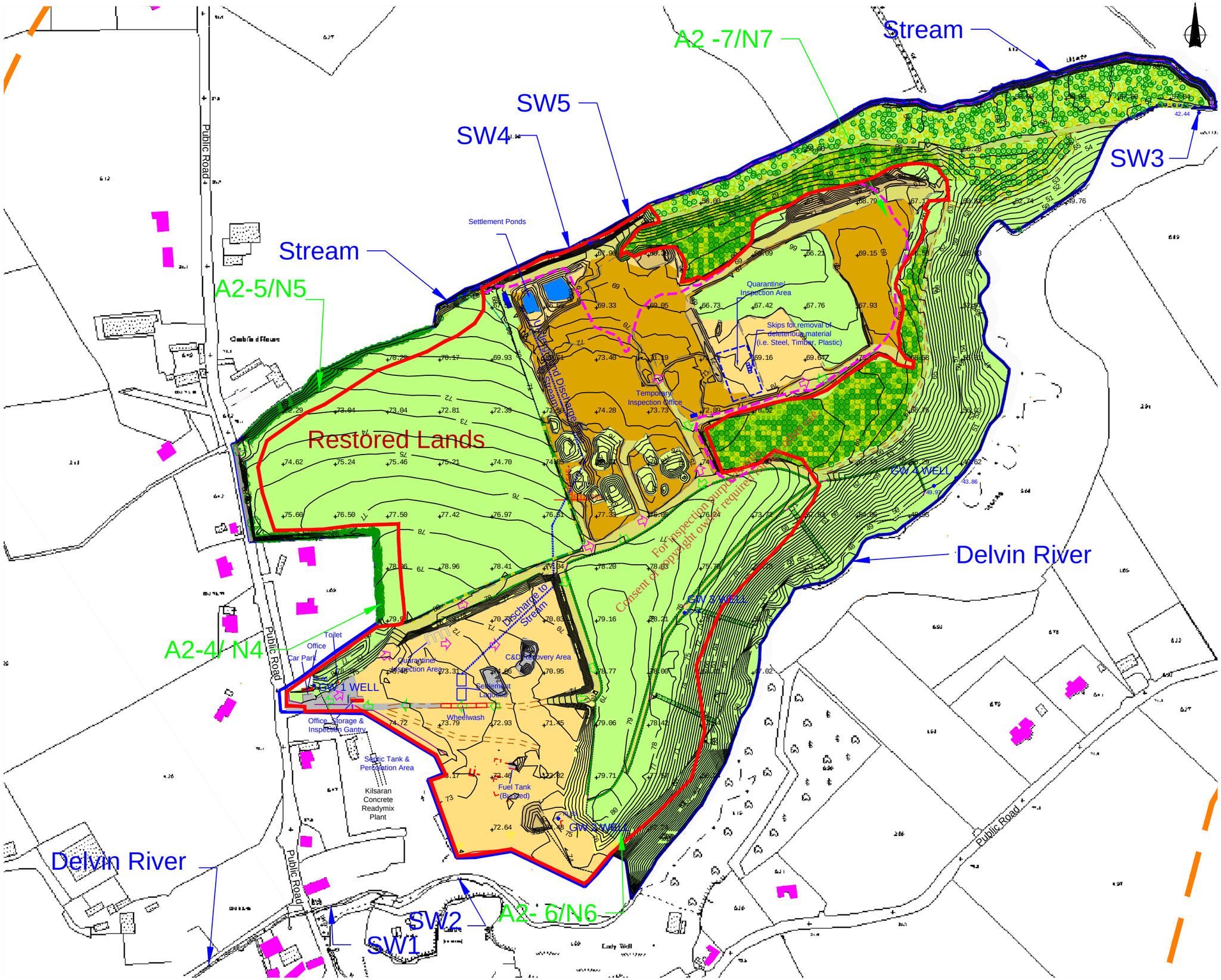
CLIENT: Clashford Recovery Facility Ltd

DRAWING: SITE INFRASTRUCTURE PLAN

LOCATION: NAUL TOWNLAND
Naul, Co. Meath.

Drawn by: John Sheils	Scale: 1 /1000	
Checked by: John Sheils	Job No.: JSPE 173	
Date: 8/07/14	Figure No.: D 1.1	Rev.: A



Application Area(c.22.3 ha)

2009 Application Area (c. 20.8 ha)

Applicants Ownership(c.33.4 ha)

Residences

Active Pit Area

Backfilling Area

Restored Area

Restored Area (Planted)

Contours

Spot Levels (mAOD)

SW1 Surface Water monitoring point

GW1 Ground Water monitoring point

A2 -4 Dust monitoring point

N1 Noise monitoring point

Monitoring Points National Grid Coordinates

A2-4/ N4 = IG Coords E313217, N261445
A2-5/N5 = IG Coords E313157, N261649
A2-6/N6 = IG Coords E313447, N261227
A2-7/N7 = IG Coords E313701, N261817
GW1 = IG Coords E313153, N261367
GW2 = IG Coords E313392, N261238
GW3 = IG Coords E313508, N261457
GW4 = IG Coords E313747, N261559
SW1 = IG Coords E313170, N261158
SW2 = IG Coords E313291, N261184
SW3 = IG Coords E313400, N261917
SW4 = IG Coords E313399, N261785
SW5 = IG Coords E313456, N261816

Digital Raster Extract Ordnance Survey Data 2500 mapping
OS Sheets 2649 - A & B, 2582 - C & D
NG Centre Point Coords X, Y = 313399, 261545

Scale 1:3500

0m 40m 120m

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CLIENT: **Clashford Recovery Facility Ltd**

DRAWING: **ENVIRONMENTAL MONITORING PLAN**

LOCATION: **NAUL TOWNLAND
Naul, Co. Meath.**

Drawn by	Scale	
John Sheils	1 /3500	
Checked by	Job No.	
John Sheils	JSPE 173	
Date	Figure No.	Rev.
8/07/14	F 1.0	A