LENNON QUARRIES LTD

ECOLOGICAL ASSESSMENT AT A MATERIAL RECOVERY FACILITY IN TALLAGH, BELMULLET, CO. MAYO

JANUARY 2009

TOBIN CONSULTING ENGINEERS

TOBIN
Patrick J. Tobin & Co. Ltd.

REPORT

PROJECT: **Ecological Assessment at a material recovery facility in Tallagh, Belmullet, Co. Mayo.**

CLIENT: **Lennon Quarries Ltd**
Tallagh,
Belmullet
County Mayo

COMPANY: **TOBIN Consulting Engineers**
Block 10-4
Blanchardstown Corporate Park
Dublin 15

www.tobin.ie

DOCUMENT AMENDMENT RECORD

Client:	**Lennon Quarries Ltd**
Project:	**Ecological Assessment**
Title:	**Ecological Assessment at a material recovery facility in Tallagh, Belmullet, County Mayo**

PROJECT NUMBER: 2084				DOCUMENT REF: 2084-01			
B	Final Report	AA	12/01/09	RMn	12/01/09	DG	16/01/09
A	Draft Report	AA	5/01/09	RMn	12/11/09		
Revision	**Description & Rationale**	**Originated**	**Date**	**Checked**	**Date**	**Authorised**	**Date**
TOBIN Consulting Engineers							

TABLE OF CONTENTS

TABLES & APPENDICES

TABLES

FIGURES

APPENDICES

1 FLORA & FAUNA

1.1 INTRODUCTION

TOBIN Consulting Engineers were requested to undertake an ecological assessment of lands at Tallagh, Belmullet, County Mayo by Lennon Quarries Ltd. This ecological assessment updates an original ecological assessment undertaken by C.A. Farrell in June 2005, produced as part of the existing Waste Permit Application (Refer to Appendix 1).

This report will accompany a Waste Licence Application to the EPA for an inert material recovery facility on a 27.22ha (including entrance road) site. This site currently operates under a Waste Permit (Ref: PER 144) recovering material from within the local area, with a consequential benefit of improving land for agricultural use.

1.2 PROPOSED SITE WORKS

It is proposed to continue disposal of inert material within the site under the conditions of an EPA Waste Licence. The drainage pattern within the site will also be upgraded to provide for adequate runoff and treatment of waters draining the site. Settlement lagoons will be installed to ensure that any water draining the site will be treated before entering local watercourses. The placement of inert material will be restricted to the deposition area leaving a buffer zone to the north of the site (Refer to Drawing No. 2084 2603, of the main Waste Licence Application Drawings). The deposition of this material will be staggered over a number of years and at irregular intervals.

1.3 METHODOLOGY

This ecological assessment comprised both a desktop study and a field survey. The desk study comprised the following elements:

- Identification of all sites designated for nature conservation within 5km of the site.
- Review of Ordnance Survey maps and aerial photography in order to determine broad habitats that occur within the existing site.
- Review of relevant reports and literature (C.A Farrell, Ecological Impact Assessment of proposed waste disposal site at Tallagh, Belmullet, Co. Mayo. June 2005 – Appendix 1)

TOBIN Consulting Engineers undertook a site visit to carry out a habitat assessment along with a general mammal and bird assessment in January 2009.

The habitat assessment was conducted within the site boundary in accordance with The Heritage Council's draft methodology, A Standard Methodology for Habitat Survey and Mapping in Ireland (Natura Environmental Consultants, 2002) and habitats were classified according to The Heritage Council's A Guide to Habitats in Ireland (Fossitt, 2000). Aerial photography assisted habitat delineation and interpretation. Plant identification and nomenclature principally follows Webb *et al.* (1996) and Rose

(2006). The predominant plant species for each habitat type were recorded in order to accurately determine habitats present on the site.

Habitats were rated according to the Site Evaluation Scheme contained in the National Roads Authority's Guidelines for Assessment of Ecological Impacts of National Road Schemes (National Roads Authority, 2006). Refer to Appendix 2 for qualifying criteria.

The general mammal and bird survey primarily involved searching the site for evidence/signs of mammals and birds (e.g. tracks, scats, dwellings and occasionally direct sightings). An assessment of the habitats in terms of their importance for mammals and birds was also undertaken.

Survey Constraints

The habitat assessment took place on one date in January 2009, which is outside the flora growing season. It is possible, therefore, that some plant species may have been overlooked or under-recorded due to seasonal factors.

A comprehensive faunal survey was not a practical proposition due to natural mammalian behaviour. Most mammals are small and shy of human presence. Therefore, it would take a more detailed study to confirm their presence. Also mammals often tend to be more active at night making their presence more difficult to detect.

The survey was also undertaken outside the breeding bird season.

1.4 EXISTING ENVIRONMENT

1.4.1 Review of previous survey

An ecological assessment of the site was undertaken in June 2005 by C.A Farrell as part of a Waste Permit Application, which was subsequently granted (Mayo County Council Ref: PER 144). This assessment recorded that the site was degraded and was being used for peat cutting, a local gun club and grazing. Habitats similar to the present day were recorded with the overall site considered to have a negligible value. This includes low grade and widespread habitats. No mammals were recorded using the site. Several birds were recorded using the site including Skylark *(Alauda arvensis)* and Stonechat *(Saxicola torquata)* which are Amber listed bird species on the Birds of Conservation Concern in Ireland (Lynas P., Newton S.F. & Robinson J.A. 2007. The status of birds in Ireland: an analysis of conservation concern 2008-2013. *Irish Birds* 8 :149-166).

1.4.2 Nature Designated Areas

The National Parks and Wildlife Services database of designated nature conservation areas was reviewed. The database was searched for designated sites within 5km of the site location. The nearest designated site is the Broadhaven Bay Complex proposed Natural Heritage Area (pNHA) and Special Area of Conservation (SAC) which is located approximately 0.2km to the southeast of the site. Table 1.1 and Figure 1.1 present the designated areas within 5km of the site location.

Table 1-1 Nature Conservation Designations within 5 km of the site location

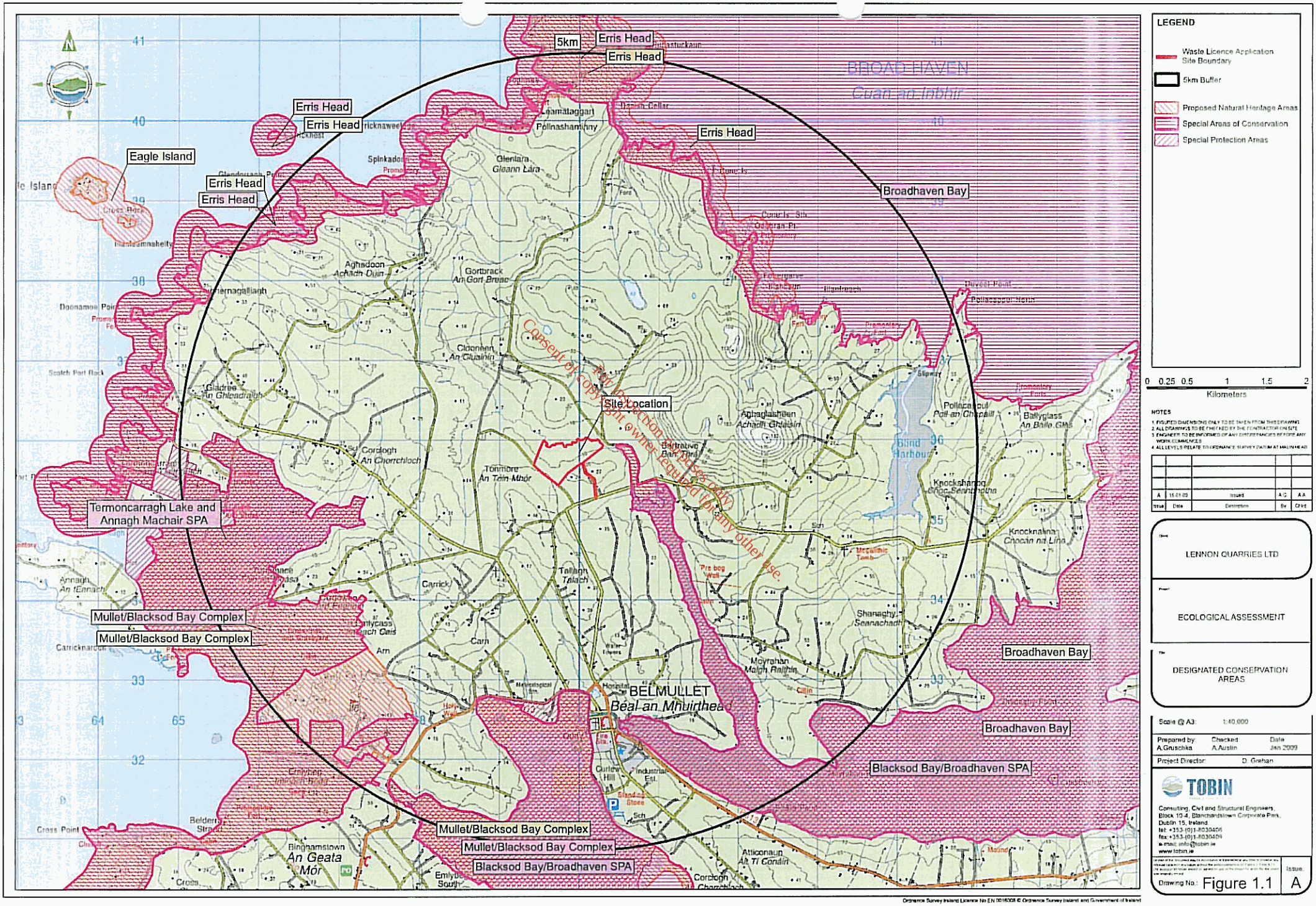
Name	Site Code	Designation	Distance from the site (km)
Broadhaven Bay	000472	pNHA	0.2
Broadhaven Bay	000472	SAC	0.2
Mullet / Blacksod Bay complex	000470	pNHA	2.1
Mullet / Blacksod Bay complex	000470	SAC	2.1
Blacksod Bay / Broadhaven	004037	SPA	0.5
Erris Head	001501	pNHA	3.2
Erris Head	001501	SAC	3.2
Termoncarragh Lake and Annagh Machair	004093	SPA	2.1

SPA = Special Protection Area
SAC = Special Area of Conservation
pNHA = proposed Natural Heritage Area

The site itself is not included within a conservation designated site but it is included within the catchment of the Broadhaven bay complex draining into Moyrahan Bay.

Designated sites detailed in the wider area are of high conservation importance as they are representative of a number of habitats listed on Annex I of the Habitats Directive (92/43/EEC), notably aquatic (large shallow bays, freshwater lakes and rivers, coastal dunes, marine caves, estuarine and marine habitats). In addition some of these areas have ornithological importance for breeding and wintering birds.

Site synopses from the National Parks and Wildlife Services (NPWS) database for sites proposed/designated for nature conservation are contained in Appendix 3 (downloaded from www.npws.ie).



LEGEND

- Waste Licence Application Site Boundary
- 5km Buffer
- Proposed Natural Heritage Areas
- Special Areas of Conservation
- Special Protection Areas

0 0.25 0.5 1 1.5 2
Kilometers

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd
A	15.01.09	Issued	AG	AA

Client: LENNON QUARRIES LTD

Project: ECOLOGICAL ASSESSMENT

Title: DESIGNATED CONSERVATION AREAS

Scale @ A3: 1:40,000

Prepared by	Checked	Date
A.Gruschka	A.Austin	Jan 2009

Project Director: D. Graham

TOBIN
Consulting, Civil and Structural Engineers
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland
tel: +353-(0)1-8030406
fax: +353-(0)1-8030409
e-mail: info@tobin.ie
www.tobin.ie

Drawing No.: Figure 1.1 | Issue: A

1.4.3 Habitat Assessment

General site description

The site is located approximately 3km north of Belmullet town centre, County Mayo. The location is rural in nature with low intensity housing scattered throughout the surrounding area. Access to the site is from an entrance road leading off a regional road, which runs from Belmullet to Ballyglass. The site is bordered to the north, south and west by adjacent bog habitat and to the immediate east by a mushroom factory. A derelict Roman Catholic chapel is also located to the immediately east of the entrance road. Planning permission is currently being sought to develop Gaelic Athletic Association (GAA) facilities immediately outside the western site boundary.

The site comprises approximately 27.22ha (including entrance road) of which will include a deposition area of approximately 20.48ha and a buffer zone adjacent the northern site boundary comprising approximately 4.46ha. The site is triangular in shape and slopes from the highest point in the south (105m) to the lowest point in the northeast (87m). A network of drainage ditches run through the site leaving it for the most part well drained. The site is dominated by cutover bog habitat containing a mosaic of habitats due to the landuse history, which has included widespread peat cutting, previous use as a firing range for the local gun club and sheep grazing. The site continues to be heavily sheep grazed.

6 No. habitat classes occur within the site and are as follows:

- Spoil and bare ground (ED2)
- Cutover bog (PB4)
- Dry humid acid grassland (GS3)
- Wet Grassland (GS4)
- Drainage ditches (FW4)
- Depositing / Lowland Rivers (FW2)

The location and extent of these habitats is presented on Figure 1.2.

Spoil and bare ground (ED2)

This habitat is present south of the site within the present deposition area. It is the current working area of the site and consists of recovered inert material that has been brought to the site. The recovered material is currently being levelled out onto the existing slope. This habitat also includes the site entrance road, which is unpaved. Due to the ongoing disturbance vegetation cover is very minimal with annual meadow grass *(Poa annua)*, Yorkshire fog *(Holcus lanatus)*, daisy *(Bellis perennis)*, creeping thistle *(Cirsium arvense)* and gorse *(Ulex europaeus)* beginning to re-colonise at the edge.

This habitat type is artificial and of low ecological value.

Cutover bog (PB4)

This is the dominant habitat type within the site. Prior to human activity this would have been Atlantic blanket bog. However, the land-use history of the site has resulted in the degradation of this habitat.

This habitat is currently characterised by a continuous mosaic of bare and vegetated peat with patches of acid grassland and wet grassland habitat occurring. Peat cutting on site has ceased with peat banks remaining a common feature. These are becoming re-vegetated with typical peatland vegetation grading to acid grassland, which is also present along drainage ditches. Wet grassland is present, predominantly along drainage ditches and the site boundary. Species present within this habitat include heather *(Calluna vulgaris)*, creeping bent *(Agrostis stolonifera)*, sweet vernal grass *(Anthoxanthum odoratum)*, bell heather *(Erica cinerea)* and purple moor grass *(Molina caerulea)*. Various Sphagnum moss species are found growing throughout the site.

This habitat is degraded with the occurrence of typical Atlantic blanket bog species being patchy and discontinuous throughout the site. The site also continues to be intensively grazed. This cutover bog habitat is therefore considered of low - moderate ecological value, locally important.

Dry-humid acid grassland (GS3)

This habitat is predominantly to the north of the site (within the buffer zone) and is intensively sheep grazed. This habitat also occurs within the cutover bog habitat in areas that are beginning to re-colonise after peat cutting and where grazing occurs. Species present are dominated by low growing grasses such as sweet vernal grass and mat grass *(Nardus stricta)*. Creeping bent, purple moor-grass and soft rush *(Junsus effusus)* also occur, along with occasional creeping buttercup *(Ranunculus repens)*, heather and gorse. Moss cover is often extensive.

This habitat is intensively grazed and is of low ecological value, locally important.

Wet Grassland (GS4)

This habitat covers a small area of the site, predominantly along drainage ditches and areas not intensively grazed. Soils are wet but not waterlogged as the site is fairly well drained. It appears to be present on material previously dredged from the adjacent ditches and as a result soon grades into acid grassland. Some rubbish is also present within this area. This habitat is dominated with soft rush, which is the main feature with tussocks ranging from 0.5- 1m in height. Jointed rush, creeping bent, Yorkshire fog, creeping thistle, creeping buttercup and purple moor-grass also occur.

This habitat is small and disturbed. It is considered of low ecological value, locally important.

Drainage Ditches (FW4)

This habitat forms the site boundaries along with several artificial drainages ditches running internally through the site in a south – north direction. These internal drainage ditches connect with a main interceptor drain, also artificial, to the north, which runs from west – east and connects with the small river forming the northern site boundary. The drainage ditches are generally 2-3m deep with an approximate width of 2m. The channels are intermittently dredged to maintain flow. During the habitat assessment water was present in a few of the channels ranging from 10-30cm. It is likely water levels within these channels fluctuate with seasonal rainfall. Species present within the drain and their banks include soft rush, which is encroaching in some, jointed rush *(Juncus articulatus)*, starwort sp., mosses,

carnation sedge *(Carex panicea)* and marsh thistle *(Cirsium palustre)*. Brambles *(Rumbus sp.)*, heather, ferns and gorse are also present along the western site boundary bank.

This habitat is artificial with no significant current fisheries value. It is considered of low ecological value, locally important.

Depositing / lowland rivers (FW2)

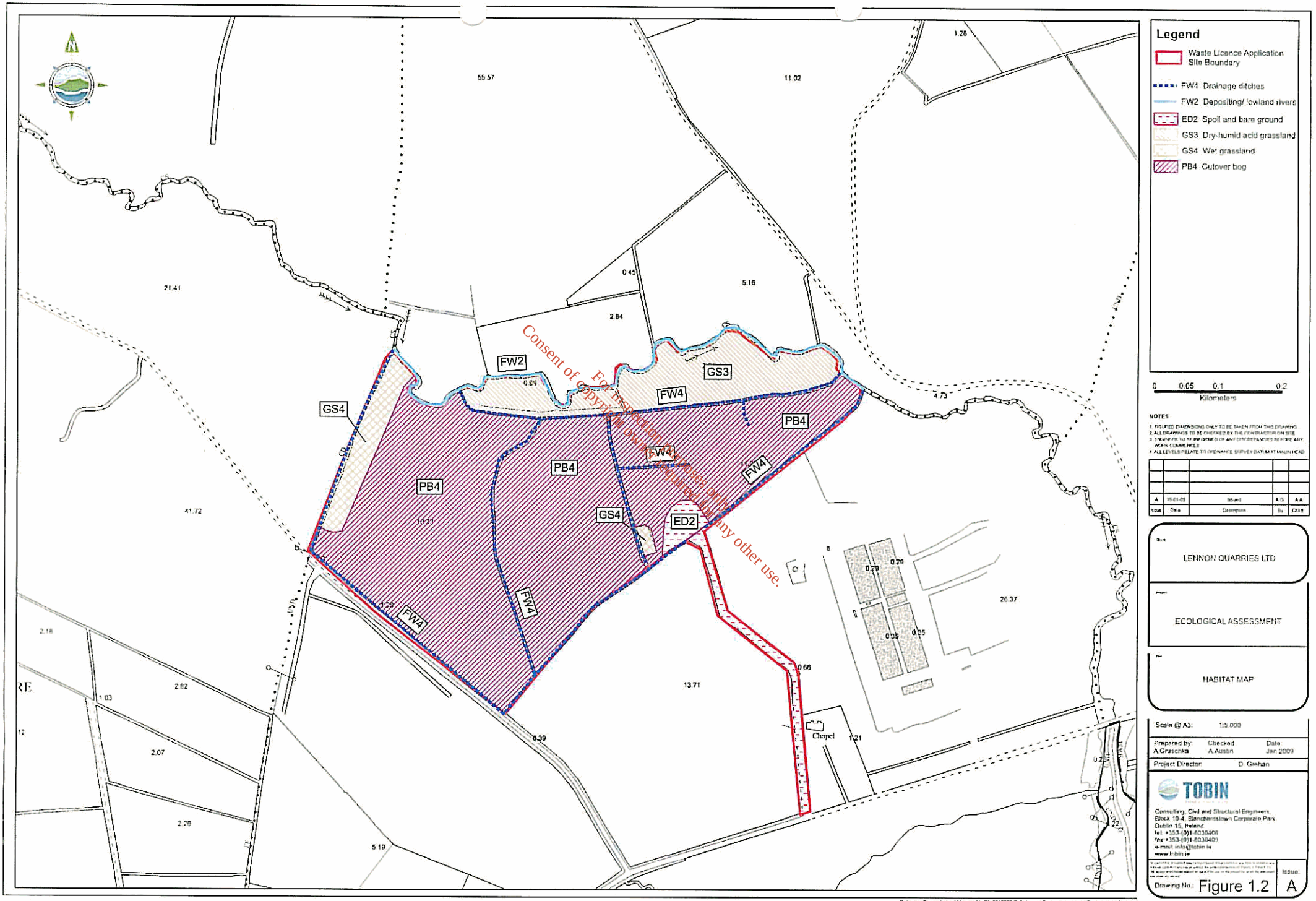
A small river forms the northern site boundary and flows in an easterly – south easterly direction. It comprises a meandering channel approximately 2-3m wide and is slow moving. Water depth varies from 10cm to pools up to 1m deep. It has a silt substrate with some gravel and larger stones in places. The banks of the river are predominantly grassy gradually sloping to a height of approximately 2m.

The stream is generally not shaded but little aquatic vegetation is present mainly floating reed grass (Glyceria fluitans) and starwort sp. in places.

Otter may utilise the river for commuting purposes but no breeding sites (holts) were noted during the survey. This river contains some semi-natural habitat and will potentially be utilised by brown trout although none were recorded.

This river eventually drains to the Moyrahan Bay which is within the catchment area of the Broadhaven Bay complex (pNHA & SAC) and therefore its importance needs considered.

This habitat contains semi-natural habitat and may be important for local wildlife. It is considered of moderate ecological value, locally important.



1.4.4 Faunal Assessment

Mammals

A rabbit (*Oryctolagus cuniculus*) burrow was identified to the southeast of the site. Rabbits are common and widespread in Ireland and often considered as pests (Hayden and Harrington, 2000). A fox *(Vulpes vulpes)* scat was also identified to the east of the site. Fox thrive in a variety of locations and have no particular habitat requirements (Hayden & Harrington, 2000). They are common and widespread in Ireland.

No protected mammals were recorded on site and the site has no potential for bat roosts, although the site may be utilised as foraging habitat particularly the stream.

No other signs of mammals were recorded. Other common species likely to occur include wood mouse (*Apodemus sylvatica*), pygmy shrew (*Sorex minutus*), hare *(Lepus timidus hibernicus)* and brown rat (*Rattus norvegicus*). The otter *(Lutra lutra)* may use the river to the north of the site for commuting purposes but it does not appear to offer any likely holting sites. No signs of otter were found.

Amphibians

Common frog *(Rana temporaria)* and Smooth newt *(Triturus vulgaris)* may use the site for feeding purposes but no potential breeding areas were noted during the survey as drains were mostly dry. Amphibians are protected under the Wildlife Acts (1976 and 2000). The Common Frog is also listed in the Red Data Book.

Birds

During the site visit several bird species were recorded. Species noted include Robin *(Erithacus rubecula)*, Wren *(Troglodytes troglodytes)*, *carduelis)*, Blackbird *(Turdus merula)*, Meadow pipit *(Anthus pratensis)* and Snipe *(Gallinago gallinago)*. Snipe is Amber listed breeding species on the Birds of Conservation Concern in Ireland.

The site may potentially be utilised by breeding bird species including snipe, skylark and meadow pipit.

All birds and their nesting places are protected under the Irish Wildlife Act (1976) and under the Irish Wildlife Amendment Act, (2000) (except for excluded species). It is an offence to kill, trap or harm these birds. It is also an offence to wilfully disturb these birds on or near a nest containing eggs or unfledged young.

1.4.5 Rare or Protected Flora

The site is located in the Ordnance Survey National Grid 10km squares F73. A plant species list for this 10km square was generated from the CD-Rom version of the New Atlas of British and Irish Flora (Preston *et al.*, 2002). This list was then compared to the list of species protected under the Flora (Protection) Order, 1999 and those which are included in the Irish Red Data Book (Curtis and McGough, 1988). There are no records for any rare or protected flora within this site or immediate surrounding area.

No rare or protected flora was recorded on site during the field survey.

1.4.6 Overall site evaluation

Six no. habitat types were identified within the site. These habitats are summarised in Table 1.2 together with their evaluation rating. Cutover bog habitat (PB4) occupies the greatest area within the site and is of low ecological value as it has been highly modified.

Table 1-2 Habitat Ratings

Habitat Classification	Rating	Evaluation
Spoil and bare ground (ED2)	E	Low Value, locally important
Cutover bog (PB4)	E-D	Low – Moderate Value, Locally Important
Acid Grassland (GS3)	E	Low Value, Locally Important
Wet Grassland (GS4)	E	Low Value, Locally Important
Drainage ditches (FW4)	E	Low Value, locally important
Depositing / Lowland Rivers (FW2)	D	Moderate Value, Locally Important

With the exception of the depositing / lowland rivers habitat which forms the northern site boundary, the site can be considered to have a low ecological value. This category includes highly modified habitats with a low species diversity with water bodies of no current fisheries value and no significant potential fisheries value. This assignment is justified for the following reasons:

1. There are no records for any rare or protected flora for this site or surrounding area.
2. No protected mammals were noted to be using the site.
3. The proposed site and immediate surrounding area are not designated for nature conservation or likely to be for their ecological value.
4. Previous land uses such as turf production and shooting are evident within the degraded habitats. The site continues to be intensively sheep grazed.
5. The greater part of the site comprises of degraded cutover bog habitat, which is not of conservation importance either at a national, regional or local context.
6. The cut over bog habitat has been well drained and is unlikely to revert to peat forming habitat without restoration measures. It is likely to remain degraded peatland habitat and with continued grazing it will convert to acid grassland.

However, the river forming the northern site boundary is of note as it drains to the Moyrahan Bay which is within the catchment area of the Broadhaven Bay complex (pNHA & SAC). The location and importance of this river must be taken into consideration when assessing the potential impacts of future works at the site.

1.5 POTENTIAL IMPACTS

1.5.1 Nature Designated Sites

There are 8 no. Nature Conservation Designated sites located within 5km of the site (Refer to Table 1.1). The nearest designated site is the Broadhaven Bay Complex (pNHA and SAC) which is located at a distance of approximately 0.2km There will be no direct impacts from the material recovery facility on these sites given the low- intensity of activity with inert material gradually being deposited over a number of years and an appropriate surface water treatment management plan being implemented.

1.5.2 Habitats

Future works will involve complete loss of existing habitats within the deposition area of the site. The recovered materials will be placed on the existing habitats, compacted and shaped. This will be a gradual loss of habitat as material is deposited within the site. Existing drainage channels will be directed and maintained to allow for the treatment of drainage waters in settlement lagoons. There will be no impact on habitats within the surrounding area given that the activity will be restricted within the deposition area of the site.

Table 1.3 lists the habitats directly affected and their impact evaluation.

Table 1-3 Habitats Directly Impacted by the proposed works

Habitat Classification	Evaluation	Impact
Cutover Bog (PB4)	Low - Moderate Value, locally important	Minor negative
Wet grassland (GS4)	Low Value, Locally Important	Neutral
Spoil and bareground	Low Value, locally important	Minor positive
Dry humid acid grassland (GS3)	Low Value, locally important	Neutral

*This assessment of the impact follows NRA guidance (NRA 2006).

Indirect impacts may occur on sections of drainage ditch habitat that is to be retained through damage and disturbance arising from vehicular activities and positioning of materials, incurring a neutral impact. Indirect impacts may also occur on the river habitat incurring a minor – neutral impact.

1.5.3 Rare or Protected Flora

There are no records for any rare or protected flora in this area and no rare or protected flora was recorded on site during the field survey. Therefore it is considered there will be no impact on rare or protected flora from site operations.

1.5.4 Fauna and Birds

The loss of habitat will reduce potential feeding and breeding areas for birds including skylark, meadow pipit and snipe within the local area. No protected mammals were recorded using the site. Snipe stonechat and skylark are recorded as Amber listed breeding species on the Birds of Conservation Concern list. These birds have been recorded using the site. Similar habitats are present immediately adjacent the site and within the surrounding area so the impact on mammals and birds will be minimal. The loss of habitat will also be gradual due to the low intensity of activity from proposed works.

1.6 MITIGATION MEASURES

Several mitigation measures are listed below in order to reduce the impact of proposed works on the site and surrounding area.

- Settlement lagoons should be installed and properly located to ensure that any water draining the site will be treated before entering the local watercourses.
- Regular sampling of treated waters should be carried out to ensure sediment levels remain within prescribed limits and that settlement lagoons are acting effectively. This will be subject to requirements set by the EPA in Waste Licence Conditions.
- A planned programme of material recovery should be put in place to reduce the impact of activities on the site, therefore reducing the disturbance to any mammal or bird life using the site.
- The deposited material should be allowed to re-colonise naturally to keep in character with the surrounding area.
- A yearly breeding bird survey would be recommended if material is to be placed on site between start April and the end of August as a number of birds of Conservation Concern in Ireland potentially breed on the site including skylark, stonechat and snipe. All birds and their nesting places are protected under the Irish Wildlife Act (1976) and under the Irish Wildlife Amendment Act, (2000) (except for excluded species). It is an offence to kill, trap or harm these birds. It is also an offence to wilfully disturb these birds on or near a nest containing eggs or unfledged young. Recommendations from this yearly survey will allow effective management of the site to comply with Irish wildlife legislation.

1.7 CONCLUSION

In conclusion the habitats on site are considered to be of low ecological value. Mitigation measures have been suggested to avoid impacts on the Broadhaven Bay complex (pNHA & SAC) which is the nearest designated site located at a distance of 0.2km from the site. Suggested mitigation measures will also minimise any impacts on local fauna, particularly as a number of Birds of Conservation Concern in Ireland including snipe, skylark and stonechat have been recorded utilising the site.

APPENDIX 1