

## SRAHMORE PEAT DEPOSITION SITE

### NON TECHNICAL SUMMARY



MAY 2009

**Srahmore Peat Deposition Site**

**Environmental Impact Statement  
Non Technical Summary**

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**DOCUMENT AMENDMENT RECORD**

<b>Applicant:</b>	Shell E & P Ireland Limited
<b>Operator:</b>	Bord na Móna
<b>Project:</b>	Corrib On-shore Upstream Gas Pipeline
<b>Aspect:</b>	Srahmore Peat Deposition Site
<b>Title:</b>	Non Technical Summary

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PROJECT NUMBER: 4903				DOCUMENT REF: Srahmore NTS B			
Revision	Description & Rationale	Originated	Date	Checked	Date	Authorised	Date
C	Non Technical Summary	ED	13-05-09	MC	13-05-09	DG	14-05-09
B	Non Technical Summary	ED	27-01-09	MC	29-01-09	DG	29-01-09
A	Non Technical Summary	ED	10-11-08	MC	14-11-08	DG	14-11-08
<b>TOBIN Consulting Engineers</b>							

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## 1 INTRODUCTION

Bord na Móna are the owners of a site located in An Srath Mór (Srahmore), and Áit an Bhaile (Attavally), Iorras-Baingear (Bangor-Erris), I gContae Maigh Eo (County Mayo) (the 'Srahmore Peat Deposition Site'). The development of the Srahmore Peat Deposition site, together with ancillary reception and administration facilities, previously formed part of a Planning Application to Mayo County Council associated with the development of the Bellanaboy Bridge Gas Terminal. Planning permission for these facilities was granted by Mayo County Council in April 2004 (Ref. P03/3343) and An Bord Pleanála in October 2004 (Ref. PL16.207212). The Srahmore Peat Deposition site was, and continues to be, operated, managed and controlled in accordance with the requirements of the planning permission issued by An Bord Pleanála in October 2004 (Ref.: PL16.207212) and its current waste licence issued by the Environmental Protection Agency (EPA) in October 2004 (Licence Ref: W0199-01).

The location of the Srahmore Peat Deposition site in relation to the surrounding region is shown on Figure 1.

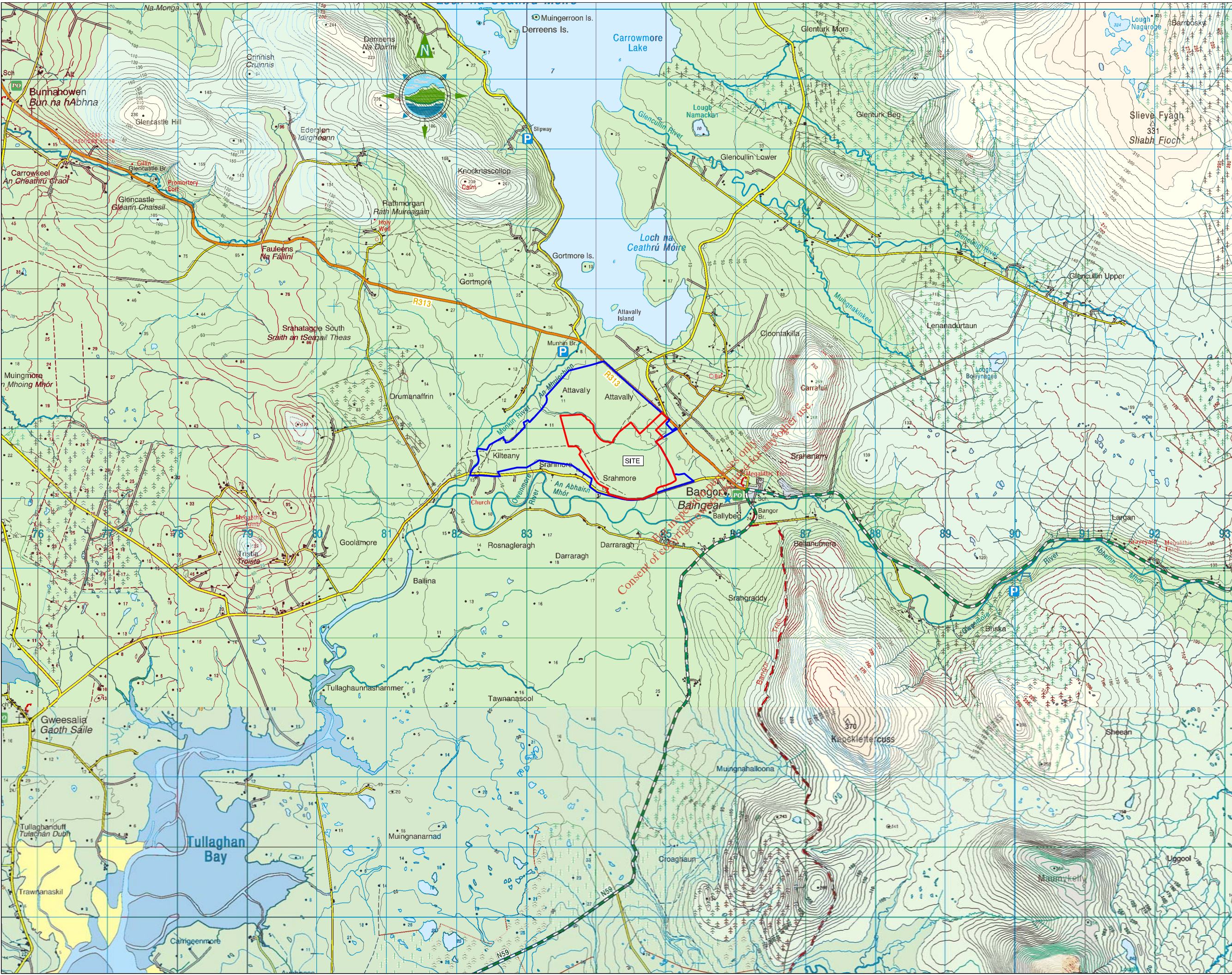
During the construction of the Shell E&P Ireland Ltd Bellanaboy Bridge Terminal Site, approximately 448,000m<sup>3</sup> peat was excavated, then transported and deposited within the Srahmore Peat Deposition Site during 2005 and 2007. This peat was transported by public road from the Terminal Site and deposited in a controlled and co-ordinated manner, in accordance with the requirements of both the planning permission and the waste licence; and in a manner to enhance drainage, stabilise the peat and allow for natural revegetation. The peat was transported to the Srahmore Peat Deposition site by an approved contractor. All operations within Srahmore were managed and undertaken by Bord na Móna.

As part of the overall proposed Corrib Onshore Pipeline development, approval is now sought under the *Planning and Development (Strategic Infrastructure) Act, 2006*, for the acceptance and deposition of up to 75,000m<sup>3</sup> of peat within the existing activity boundary of the Srahmore Peat Deposition site, which is to be sourced from the proposed route of the On-Shore Corrib Gas Pipeline (referred to as the 'on-shore pipeline development').

The on-shore pipeline development will link the Off-shore Pipeline from the Corrib Gas Field to the Bellanaboy Bridge Gas Terminal Site. The construction of the on-shore pipeline will necessitate the removal and permanent storage of up to 75,000m<sup>3</sup> of peat material from along the pipeline route.

This Volume 3 of the Environmental Impact Statement (EIS), details the environmental characteristics of the Srahmore Peat Deposition site and the potential impact resulting from the planned deposition of up to 75,000m<sup>3</sup> of peat. Volumes 1 and 2 of the EIS detail the environmental characteristics and the potential impact associated with the construction of the Onshore Pipeline development.





**GENERAL LEGEND**

LANDS UNDER CONTROL OF DEVELOPER

SITE ACTIVITY BOUNDARY

- 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 BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
  4. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD
  5. OS DISCOVERY SHEET NO: F - 0832

Rev	Date	Description	By	Chkd
E	01-02-09	ISSUED FOR RE-SUBMISSION	VB	MC
D	10-11-08	ISSUED FOR SUBMISSION	VB	MC

Applicant: Shell E&P Ireland Limited  
Corrib House, 52 Leeson Street Lower,  
Dublin 2, Republic of Ireland.

Operator: **BORD NA MÓNA**

Project: **CORRIB ONSHORE PIPELINE DEVELOPMENT**

Aspect: **SRAHMORE PEAT DEPOSITION SITE**

Title: **REGIONAL SITE LOCATION MAP**

Scale @ A1: **1:50,000 @ A3**

Prepared by: V. Bonney      Checked: M. Nolan      Date: Feb 2009

Project Director: S. Finlay

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Drawing No.: **Figure 1**      Revision: **E**

## 2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The Srahmore Peat Deposition site is situated approximately 1km northwest of the village of Bangor-Iorras (Bangor-Erris), I gContae Maigh Eo (County Mayo) and comprises a cutover peatland which is part of the Oweninny bog complex. The Bangor region of the Oweninny Bog complex consists of eight separate areas of cutover peatland, numbered Area 1 – Area 8 (inclusive), each of which was assessed for suitability for development at the time of the application to which the existing planning permission relates. Each of these cutover Areas is further subdivided into internal bays for working purposes.

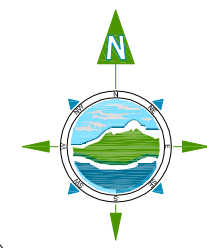
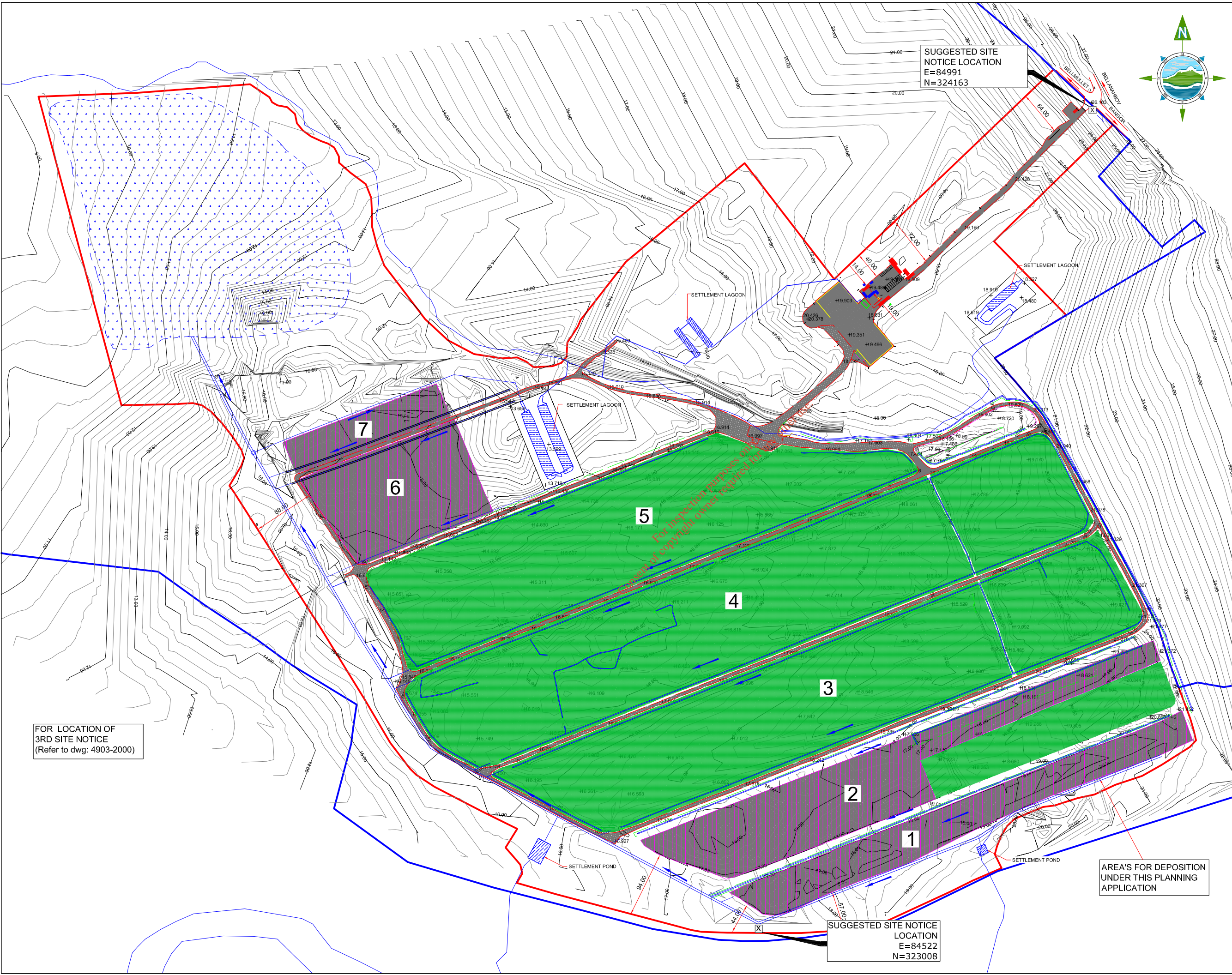
With specific reference to the Srahmore Peat Deposition site, specific areas were designated for activity. Area 5 was selected as the peat reception area, to provide access onto the Srahmore site from the R313. All required peat unloading facilities are provided for within Area 5, which were constructed as part of the previous peat deposition operations on-site in 2005.

Area 6 was selected for the actual deposition of peat. During previous activities on site in 2005 and 2007, approximately 448,000m<sup>3</sup> of peat from the Bellanaboy Bridge Terminal Site was deposited within Bay 2 (20-25% of potential area currently occupied), Bay 3 (100% occupied), Bay 4 (100% occupied) and Bay 5 (100% occupied). No peat from the terminal site was deposited in Bay 1, Bay 6 or Bay 7. A section of Area 7 was designated previously, and is again included in this proposal, as a “controlled overflow area” in the event of exceedence of the design rainfall.

Area 6 has been infilled with approximately 448,000m<sup>3</sup> of peat from the Bellanaboy Bridge Gas Terminal site. However, remaining void space exists. This is because a smaller volume of infill area was required to accommodate the peat from the terminal site than designs predicted. The reasons for the smaller area is attributable to conservative design assumptions and the fact that the peat was better drained when imported than originally anticipated, due to extended delay in excavation between 2005 and 2007, resulting in a lower moisture content/higher density, thereby reducing the required infill area.

Under the current development proposal it is proposed to utilise some of the remaining void space within the permitted activity boundary of the Srahmore Peat Deposition Site to accommodate up to 75,000m<sup>3</sup> of peat from the on-shore pipeline construction.

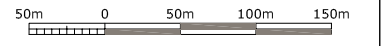
Deposition of peat will take place within the available void area of approximately 5ha of Bay 2, 3.4ha of Bay 1 and 3.6ha of Bay 6. A reserve area of 1.3ha is available in Bay 7, if required. The bay locations within Area 6 are shown on Figure 2.



**GENERAL LEGEND**

LANDS UNDER CONTROL OF DEVELOPER	SITE ACTIVITY BOUNDARY
CURRENT APPLICATION AREA	EXISTING MAJOR CONTOUR 40.00m
PUBLIC ROAD	DRAINAGE
EXISTING TEMPORARY BUILDING/STRUCTURE	PROPOSED TEMPORARY BUILDING/STRUCTURE
TOP OF BANK	FENCING
BOTTOM OF BANK	WALL
SETTLEMENT LAGOON	SPOT LEVEL +###.##
INTERNAL ACCESS ROAD	AREAS FOR DEPOSITION
AREAS FILLED WITH PEAT 2005/2007	EXISTING TREE
SUGGESTED SITE NOTICE LOCATION	LAMP STANDS

- NOTES**
- FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
  - ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
  - ENGINEER TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
  - ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD
  - OS 6" SHEET NO'S: MAYO 18 & 26



Rev	Date	Description	By	Chkd.
E	01-02-09	ISSUED FOR RE_SUBMISSION	VB	MC
D	10-11-08	ISSUED FOR SUBMISSION	VB	MC

FOR LOCATION OF 3RD SITE NOTICE (Refer to dwg: 4903-2000)

AREA'S FOR DEPOSITION UNDER THIS PLANNING APPLICATION

SUGGESTED SITE NOTICE LOCATION  
E=84522  
N=323008

SUGGESTED SITE NOTICE LOCATION  
E=84991  
N=324163

Applicant: Shell E&P Ireland Limited  
Corrib House, 52 Leeson Street Lower,  
Dublin 2, Republic of Ireland.

Operator: **BORD NA MÓNA**

Project: CORRIB ONSHORE PIPELINE DEVELOPMENT

Aspect: SRAHMORE PEAT DEPOSITION SITE

Title: SITE LOCATION MAP (Survey 2008)

Scale @ A1: 1:5,000 @ A3

Prepared by: V.Bonney    Checked: M.Nolan    Date: Feb 2009

Project Director: S.Finlay

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Drawing No: **FIGURE 2 E**

The proposed activity at Srahmore is a continuation of use of the site, with all activities located within the activity boundary of the Srahmore Peat Deposition site which was previously granted Planning Permission and a Waste Licence by An Bord Pleanála and the EPA respectively. The enabling infrastructure required for peat deposition now proposed was previously constructed prior to the import of the 448,000m<sup>3</sup> of peat from the Terminal Site in 2005 and 2007. An additional internal Bay access road will be constructed within the deposition area to facilitate traffic movements on site. In the case of temporary facilities and structures (removed at the completion of the previous peat deposition operations), these can readily be reinstalled to the site for the purpose of the proposed peat deposition.

The proposed deposition works at Srahmore Peat Deposition site of up to 75,000m<sup>3</sup> of peat from the on-shore pipeline development will be carried out by an approved contractor, under the management of Bord na Móna, in accordance with the requirements of any planning conditions, together with the requirements of the Waste Licence issued by the EPA.

The drainage scheme constructed and installed at the site sought to eliminate any water build-up and remove excessive water from the site, particularly during periods of high rainfall. This drainage system conveys water to the Owenmore and Munhin River via settlement lagoons at controlled and regulated rates of discharge. This drainage system ensures that surface water runoff from Areas 5 and 6 is effectively treated before reaching the Munhin River and Owenmore River to prevent excessive suspended sediment from entering the river.

During the road haulage phase of the project, trucks (which will be managed by an approved contractor) will deliver and unload the peat at the existing Peat Reception Hardstand Area. Once the road haulage vehicles enter the Srahmore Peat Deposition site from the R313 they will be managed in accordance with Bord na Móna requirements.

The peat will be transferred from the road vehicles onto the Peat Reception Hardstand Area. The unloaded road vehicles will then directly exit the site from the Peat Reception Hardstand Area. The peat will then be loaded into low ground bearing pressure trailers (Haku Trailers) by loading shovels (front-end industrial loaders) operating on the Reception Hardstand. The transfer of peat from road haulage vehicles to Haku Trailers for dispersal within the deposition site was found to be the optimum peat transportation method during the previous peat deposition operations in 2005 and 2007.



**Plate 1: Loading of Haku Trailers from the Peat Reception Hardstand (as part of the previous peat deposition operation on site, 2005 & 2007)**

The Haku trailers will be driven out to the deposition area via the existing internal haul roads and will access the deposition areas within the bays via access routes.



**Plate 2: Peat unloading from Haku trailers onto deposition area (as part of the previous peat deposition operation on site, 2005 & 2007)**

It is proposed to construct an internal access route within Bay 2, in order to minimise the handling and disturbance of the peat. A central rock fill road will be constructed on a geotextile base. This will allow tractors and Haku trailers to travel along the central spine of Bay 2. The road will be constructed by laying a geotextile reinforcing material directly on the native peat and depositing compacted rockfill to form the haul road. Temporary timber mat roads will be laid adjacent and parallel to the central rock road. These timber

mats will be moved as required to facilitate the filling and shaping of the peat. Owing to ground conditions within Bay 1 and Bay 6, internal circulation will be facilitated by means of timber mat placement directly onto the existing ground.

As well as utilising the existing facilities on site (including administration buildings located within Area 5), the proposed deposition activity will necessitate the installation of ancillary infrastructure including Contractor's temporary office / canteen / toilet and security kiosk buildings; wheelwash; and weighbridge.

The time envisaged for actual peat deposition is an approximate 3 to 4 month operation programme. However, the actual acceptance and deposition rates will be dictated by climatic conditions. Peat excavation from the on-shore pipeline development, transport to the Srahmore Peat Deposition site and deposition could be delayed in the event of very wet conditions. Notwithstanding climatic conditions, based on previous experience of the site and deposition rates, it is envisaged that all works would be completed within the late spring/summer/early autumn operating season.

In order to facilitate the on-going study and monitoring of the Srahmore Peat Deposition site, the site access infrastructure will remain in-situ post the peat stabilisation phase to allow for access and movement within the site. The Contractor's temporary buildings, wheelwash and weighbridge will be removed within 6 months of the completion of the deposition phase. Similarly, the existing temporary buildings will be removed within 6 months of the completion of the stabilisation programme, which is envisaged to be five years after the peat deposition is complete. The peat reception hardstand will be decommissioned within a similar timeframe, with the final decommissioning option to be agreed following discussions with the EPA and Mayo County Council during the peat stabilisation programme.

### 3 SITE OPERATING INFRASTRUCTURE

The site at An Srath Mór (Srahmore), Bangor-Iorras (Bangor-Erris), I gContae Maigh Eo (Co. Mayo) was developed for the purpose of accommodating the deposition of approximately 450,000m<sup>3</sup> of peat, which was transported from the Bellanaboy Bridge terminal site to the Srahmore Peat Deposition site in 2005 and 2007.

In advance of the peat import from the terminal site, the enabling infrastructure required to safely and appropriately accept this material was constructed in late 2004 and 2005.

Owing to the existing infrastructure within the site, there is a minor requirement for further enabling construction within the site to facilitate the import and deposition of a further 75,000m<sup>3</sup> of peat from the onshore pipeline development. A stone access road will be constructed within Bay 2. Some further minor maintenance may be required to upkeep certain aspects of the site, which includes surface dressing of the Bay 2 access road and the internal haul roads where activity will occur. Some additional temporary contractor buildings will be required for the duration of peat deposition.

The entrance to the site is from the R313, via the existing access road to the reception area, which is suitable for construction traffic. The entrance was constructed in 2005, as part of the previous operation, to be suitable for the turning of long trailer and multi-axle vehicles, according to the National Road Authorities guidelines.

The access to the site is opposite the junction between the R313 and the L1204 and during previous peat import activities this was successfully controlled. Warning signs were installed on the roadside to the east and west of the site entrance on the R313 and on the L1204.

It is proposed to import the peat from the on-shore pipeline development to the peat reception area (Area 5) by means of road haulage vehicles. This peat will be internally transported, with the Srahmore site, in Haku trailers to the peat deposition area (Bay 2, Bay 1 & Bay 6 (Bay 7 is available if required) of Area 6).

#### 4 ALTERNATIVES

The Srahmore Peat Deposition Site has proven to be an effective and sustainable solution to the question of peat deposition from the Bellanaboy Bridge Gas Terminal Site.

Peat from the Terminal Site has been safely transported to Srahmore Peat Deposition and placed there in an orderly manner. The resulting landforms have, as predicted, revegetated successfully and no deleterious matter has been released to the surrounding environment.

Consequently, it is proposed to utilise the unused and available storage capacity at the Srahmore Peat Deposition site to deposit the surplus peat from the proposed on-shore pipeline development. This deposition will employ similar operating and management techniques used during the previous peat deposition activities carried out in 2005 and 2007.

In terms of potential alternative disposal sites to the Srahmore Peat Deposition site, there are two licensed landfill disposal facilities in I gContae Maigh Eo (County Mayo) that could potentially accept the peat from the on-shore pipeline development. These licensed landfills are located at Doire an Iomaire (Derrinmera) (north of Castlebar) and Ráth Ruain (Rathroeen) (north of Ballina). Export of the peat to these facilities, while technically feasible, would require significantly greater haul distances (40-50km in the case of Ráth Ruain (Rathroeen) and 80-90km in the case of Doire an Iomaire) (Derrinmera) and would also occupy up to 75,000m<sup>3</sup> of landfill capacity, thereby reducing the available capacity for residual municipal waste. The utilisation of municipal waste void space at these facilities is not considered an appropriate solution for peat storage and is not considered an improved alternative solution to the use of the Srahmore Peat Deposition site.

Similarly, the alternative options to disposal of the peat that were investigated – including use of the excavated peat for fuel in power stations / for domestic purposes or for gardening / horticultural purposes – were not considered to offer an improved alternative option.



## 5 HUMAN BEINGS

There are approximately 40 residences located immediately north of the Srahmore Peat Deposition site, distributed linearly along the R313 and the county road heading north along the eastern shores of the Carrowmore lake. South of the existing site, there are approximately 30 dwellings located along a county road, along with a number of agricultural buildings and several derelict houses. The majority of these dwellings are located to the south of the Owenmore River. There are no dwellings located immediately west of the site, between the bog complex and the Munhin River.

A number of tourism centres have been identified in the county. However, most major attractions are sufficiently remote from the existing Peat Deposition Site for their associated visitors to be unaffected by the peat deposition activity. During the deposition period, visitors to the local area who have to pass by the Srahmore Peat Deposition site will notice site activity. It is not envisaged that the local fishing industry and angling attractions will be disturbed by the peat deposition operation at the Srahmore Peat Deposition site. The operation of this facility will not affect any known recreational routes. The site is currently not used for any form of recreational activity. In this regard, it is not expected that there will be any significant negative impact on local recreation or sporting facilities, as a result of the proposed peat transfer and deposition activities.

Peat transfer and deposition activities at the Srahmore Peat Deposition site will be subject to Bord na Móna health and safety procedures, carried out according to best practice guidelines. There will be minor traffic delays at the temporary signalling arrangement proposed at the junction of the county road linking Bellanaboy Bridge to the Srahmore Peat Deposition site. There will be increased traffic movements on the haul routes during the deposition period with the movement of heavy goods vehicles to and from the site. These increased traffic levels should not impact significantly on local tourism.

The long term effects of the peat transfer and deposition activities on population, language and culture are negligible.

In the long term this development will not negatively impact on the visual amenity in the Srahmore area, as the cutover peatland will revegetate naturally as has been the case previously. This will have an overall positive impact on visual amenity and therefore on tourism. Other than minor traffic delays due to operational traffic, which may occur during the tourist season, there will be no negative impact. There are no significant tourist attractions that will be visually impacted upon directly.

The transfer and deposition of peat to the Srahmore Peat Deposition site will, in the short term, create and sustain an estimated 50 jobs. However, there will be no significant long-term impact on employment due to the peat deposition activity.

## 6 TERRESTRIAL ECOLOGY

There will be a number of temporary impacts on the site during the actual deposition of the peat material onto the cutover bog.

The main habitat present on the site is the cutover bog class, PB4. This habitat type has low local ecological value, particularly when considered within the context of the extensive surrounding cutover bog landscape in Baingear (Bangor). In the short term, the temporary impact will be neutral, in that it will be bare peat covering bare peat. In the medium term, the peat deposition site will have revegetated and the impact will be positive. This will continue into the long-term temporary impact scale, as successional development will allow the area to develop a range of micro-habitats and contribute to biodiversity and habitat value at the local level.

There will be no negative permanent impact on faunal activity in the area. The establishment of poor fen or wet grassland will continue to improve the foraging and refuge opportunities for non-avian and avian fauna, aspects within the development site that were previously lacking.

The deposited peat within the development site will gradually blend with the surrounding landscape over time. This is already in process as a result of the regeneration of vegetation on those areas of peat spread from previous peat deposition. The vegetation succession will lead to a more varied habitat which will contribute to local biodiversity and complement the ecological value of the adjacent rehabilitated cutover areas. Over time the habitats will blend with the existing fringe habitats that currently border the development site. The long term prospect is therefore considered to be positive, with permanent beneficial impacts on the development site.

Designated areas in the locality will not be impacted upon by the proposed development. The proposed peat deposition will result in the creation of additional peatland habitat, to that already being established as a result of the deposition of peat from the Terminal Site. It will benefit species in the area which will have the opportunity to expand into these newly created habitats, thus increasing the overall potential biodiversity of the area.

## 7 AQUATIC ECOLOGY

The aquatic habitats include the Munhin River, Owenmore River and Tullaghan Bay, which combined form the lower stretch of the Owenmore Catchment. The Owenmore Catchment covers an area of 340km<sup>2</sup> and stretches from the tributaries entering the Oweninny River at Knockmoyle (cSAC), the Altnabrocky River that flows north through the Bellacorick Bog complex (cSAC) and those entering Lough Carrowmore (cSAC).

The North West Mayo coastline, and in particular the Erris peninsula and its associated coastal habitats is recognised as being of significant ecological value. Coastal areas, potentially connected to the site include Broadhaven Bay and Blacksod Bay. Another aquatic system of significant conservation value is Carrowmore Lake, which is an important salmon fishery.

The main drain on site has been heavily impacted by past Bord na Móna peat cutting and associated drainage activities, pre recent peat deposition licensing. It is unlikely that the stream was ever a significant spawning or feeding area and its current status remains as such. The same applies to the other two drains within the development site.

There are no indirect impacts envisaged in the temporary medium to long-term. Revegetation and rewetting of the peat deposition area and rehabilitation of Area 5 may lead to expansion of wetland habitat for wetland bird species. There is no anticipated indirect effect on productivity of salmonids within the Owenmore catchment. Therefore, indirect temporary medium and long-term impacts will be of a negligible magnitude.

Any permanent impacts of the development will be of a very low magnitude, following from revegetation of the site and stabilisation of the peat and rehabilitation of the activity areas and maintenance of sedimentation ponds to work at maximum efficiency. Once the peat is stabilised and the site naturalises there should be a negligible permanent impact, both direct and indirect. There will be replacement freshwater habitats within drainage channels and sedimentation ponds that naturalise, will revert to sedge and/or reedswamp vegetation that will further contribute to the biodiversity of the site through enhancement of aquatic vegetative complexes. This would contribute to an overall positive impact with respect to aquatic habitats on the development site with negligible impacts off-site.

## 8 SOILS AND GEOLOGY

A site investigation programme was designed and undertaken within the site, that included topographic surveys, trial pitting of soils/subsoils, drilling into subsoils/bedrock, laboratory and field testing of the various materials and sampling.

With respect to the regional soil and geology environment, the past industrial activity has resulted in a permanent and significant impact on the geological environment, in the form of removal of peat from the surface. This activity has impacted the shallow geological environment. The peat harvesting has resulted in a change in the topographic landform and the lowering of the topographic elevation within worked areas.

This peat deposition activity, involving the deposition of up to 75,000m<sup>3</sup> of peat from the on-shore pipeline development, will not impact on the surrounding environment outside the boundary of the proposed peat deposition site. All peat acceptance handling and deposition will be undertaken within the boundary of the Srahmore Peat Deposition site.

In order to minimise any potential impact on the environment, including the soil and geological environment, 'Avoidance of Impact' was incorporated into the design of the development. Bord na Móna has extensive experience of the handling and deposition/storage of peat, especially through the recent deposition of 448,000m<sup>3</sup> of peat from the Bellanaboy Bridge Terminal Site. The experience gained through this operation will be used to ensure that the continued deposition works are undertaken in an environmentally sound manner.

Due to the nature of the development, i.e. importation and deposition of peat, there is the potential for impacting the shallow soil and geology environment within the site. The magnitude of the potential impact is considered low. The assessment of the magnitude has taken account of the deposition of peat on peat previously. The deposition of peat onto an exposed peat surface will not significantly impact the geological environment, other than to raise the topographic elevation.

The impact on the mineral subsoil and the bedrock environment is considered negligible, as these strata are not exposed on-site and the peat will be deposited directly onto the native peat.

The aquifer potential of the mineral subsoil and the bedrock has been demonstrated to be poor. The deposition of peat material within areas of exposed peat surface would be considered to pose a negligible impact to hydrogeology of the area.

Based on the water levels recorded from the boreholes installed within the site, the watertable varies in depth from 2.2m bgl to 3.2m bgl, and is located in the mineral subsoil

layer. Any historical natural perched watertable associated with virgin blanket bogs has been removed as a result of historical drainage and peat extraction within the site.

The principal mitigation measure to ensure that the activity does not impact on the soil and geology environment is that all works associated with any further peat deposition will be undertaken during appropriate weather conditions and will be undertaken over a relatively limited timeframe (3 to 4 months) during the construction of the on-shore pipeline (which in itself is weather dependent).

All peat will be inspected within the reception area to ensure it is appropriate for deposition. The operations will be undertaken by an appointed contractor, but overseen and dictated by a Bord na Móna management team. Peat will not be deposited until Bord na Móna are satisfied as to its suitability for deposition.

All potentially polluting materials, including hydraulic fluid, engine oil and fuel, will be stored in specified areas, which will be bunded to ensure total containment in the unlikely event of total failure of the storage tank. This will reduce the risk of soil contamination due to activity of plant and equipment.

The predicted impact due to the placement of up to 75,000m<sup>3</sup> of peat, in a site previously successfully used for mass storage of 448,000m<sup>3</sup> of peat will represent a minor but permanent predicted impact on the existing geological environment. However, the predicted permanent impact involves the raising of topographic elevations within an industrially worked out peatland and within a relatively small area of the overall site. This predicted permanent impact is not considered significant and does not represent a risk to the soil and geology environment.

## 9 HYDROLOGY AND DRAINAGE

The proposed peat deposition area at Srahmore is situated within the catchment of the Owenmore River. This watercourse flows approximately 140m to the south of the nearest edge of the proposed peat deposition area.

The proposed peat deposition area is located at the lower catchment zone of the river, approximately 3km from the discharge point of the watercourse at Tullaghan Bay.

A tributary of the Owenmore River, the Munhin River flows in a southerly direction and joins the Owenmore River approximately 1.2km to the west of the proposed peat deposition area. The Munhin River flows through the blanket bog terrain that has been subject to peat extraction in the past. The closest edge of the proposed peat deposition area to the Munhin River is approximately 750m.

The main water drain channel from the Srahmore property discharges to the Munhin River approximately 1km south of the R313. This main drain is a man made feature, excavated to facilitate the large scale drainage of the bog. This main drain separates the proposed peat reception area (Area 5) and the peat deposition area (Area 6). The main drain converges with the Munhin River approximately 920m to the west of the western extent of Area 6.

The drainage system is entirely a gravity feed system, which is designed such that all rainwater falling within the site and collected in the drainage channels will flow by gravity to the collection swale and thereafter to the settlement ponds in a controlled manner.

All discharges from the site to the receiving environment are regulated and controlled, as required by the waste licence. This is achieved by appropriate sizing of the perimeter swale and field drains, to facilitate temporarily storage of water and allow a gradual throttled drainage to the settlement ponds, at a regulated flow rate. This throttling of the drainage ensures that the settlement ponds are not overwhelmed and the appropriate level of treatment is afforded all water discharged from the site.

The runoff of sediment laden water from the peat deposition site has the potential to adversely impact upon the aquatic environment. Sedimentation of watercourses results in loss of diversity and abundance of aquatic invertebrates and vertebrate communities. It also has the potential to directly impact upon fish populations by reducing spawning and nursery grounds.

A second significant potential impact is the stability of the peat mounds when placed in the site. The effective drainage of the peat mounds, the limiting infiltration of rainwater

into the mounds and the revegetation of the peat to anchor surfaces will significantly reduce the risk of the deposited peat impacting on the surrounding aquatic environment.

The design of the facility has taken account of the potential impacts of the development and the risks to the surface water environment.

The site was designed and constructed to accommodate the peat from the Terminal Site. The required drainage infrastructure and treatment systems operated effectively during the deposition of the 448,000m<sup>3</sup> of peat in 2005 and 2007. The same drainage infrastructure has been maintained in the intervening period, under the requirements of the existing waste licence. It is therefore submitted that owing to the similarity of the operations, the drainage infrastructure existing within the site will be equally effective in treating water run-off generated during the deposition of up to 75,000m<sup>3</sup> of peat from the on-shore pipeline development.

Based on the results of previous monitoring during the operation of the previous peat deposition operation, the risk to the surface water environment following treatment within the drainage infrastructure, is not significant.

Monitoring within the site will continue in compliance with the Waste Licence for the facility.

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## 10 EFFLUENT

During the previous operations on site, during the deposition of the 448,000m<sup>3</sup> of peat from the terminal site in 2005 and 2007, an effluent containment system was utilised for the management of effluent. All effluent and wastewater was drained to a holding tank and this tank was periodically emptied by a waste haulier and exported to an approved wastewater treatment plant. This system eliminated impacts on the receiving environment during periods of activity within the site.

During operations within the site, up to 50 people will utilise the site during the normal working day. Sanitary and canteen facilities are proposed for these employees, resulting in an induced effluent load of approximately 20 PE, during the operational day.

It is proposed that during the proposed future operations, associated with the import and deposition of peat, all wastewater generated within the site will be collected in a holding tank. The effluent will be periodically emptied and exported from the site by a permitted haulier to an approved wastewater treatment plant. Therefore, during operation there will be no discharges of effluent to the receiving environment.

The reception area will be the interface between the import of peat from the pipeline development and the transport of peat to the deposition area. The vehicular activity in this area poses a risk with respect to uncontrolled emissions, through leakages or accidental spillage of potentially polluting material. The potential impact of such an event would adversely impact the aquatic environment.

In order to minimise the generation of effluent within the site a number of measures have been incorporated into the design of the facility. These measures are of proven technology and will ensure minimal impact on the surrounding environment.

The toilet and canteen facilities will be inspected on a daily basis to ensure they are of a good and appropriate standard of hygiene. The waste will be exported from the site on a regular basis.

The deep settlement tank/the grit trap and the oil interceptor will be inspected on a weekly basis to ensure that they are operating efficiently. These will be periodically emptied to appropriate facilities based on the monitoring undertaken.

All vehicles used on site will be regularly visually assessed to ensure there are no leakages. All leakage of fluid will be immediately reported and the vehicle will be diverted for service.



## 11 AIR

Potential emissions during the peat deposition phase will include dust generation from the activities, including vehicle movements and wind blowing over open ground or dusty materials. Potential emissions may also include fine particles of a size that can be inhaled into the lungs (PM<sub>10</sub>) if not effectively controlled. Vehicle movement and activity will also result in emissions from combustion of fuel.

Dust will be mitigated by the continued application of best practice dust suppression and containment techniques including the prevention of dust accumulation and ensuring dusty materials are either moist or sheeted.

Control measures which were utilised previously and which will continue to be employed will include where necessary:

- The surface of roads around the construction area will be sprayed with water during dry periods;
- Haul roads have been surfaced and road sweepers will be employed to ensure spillages of materials are collected and a build up of mud or dusty material does not occur;
- Speed restrictions onsite will apply, particularly where travelling on unpaved areas;
- Vehicles will preferentially have upward-directed exhausts to reduce disturbance;
- Where mud can be transferred to vehicles, a wheel wash system will be provided to prevent the subsequent transfer of mud onto local roads;
- Existing trees and shrubs provide filtering of wind-borne dust and reduce near-ground wind speeds (and subsequent dust entrainment); and
- Vehicles will be maintained and serviced as required.

The continued monitoring of dust deposition at the site will assess the effectiveness of the mitigation measures introduced (as prescribed by the regulatory body).

Controlling the flow of vehicles can help minimise emissions from traffic. To assist in the prevention of congestion, a traffic management plan has been developed to manage the movements of heavy goods vehicles (HGV) during peat removal from the Corrib on-shore pipeline development and transfer to the peat deposition site.

The deposition of 75,000m<sup>3</sup> of peat at Srahmore (even with on-site activity) from the on-shore pipeline would produce lower emissions than the exportation of this peat to the next nearest permitted facility.

Atmospheric emissions resulting from the peat deposition site are not deemed likely to have a significant impact on the local environment either through emissions from vehicles or from dust generation.

## 12 NOISE

The development proposals will involve the transfer, deposition and spreading of 75,000m<sup>3</sup> of peat from the onshore pipeline development to the Srahmore site. There is the potential for a noise impact generated by the transfer of material to the site and movement within the site.

Existing daytime noise levels around the Srahmore site are dominated by existing background traffic movements along the R313, which carries significant volumes of traffic, with a significant proportion of heavy goods vehicles and agricultural machinery. Proximity to this and the Geesala road determines ambient noise levels in the area around the Srahmore deposition site.

The closest, and potentially most affected, noise sensitive receptors to the Srahmore site are residential properties. These properties are located adjacent to the public road network and are subject to exposure to the existing daytime traffic noise sources.

Existing hardstanding and site infrastructure will be used throughout the deposition phase, with only limited importation of temporary contractor facilities, a wheelwash and weighbridge requiring importation to facilitate the operation. Therefore the construction phase of the Srahmore site will primarily consist of the construction of the internal stone access road and the importation of the peat (involving internal trafficking on a small number of access roads to facilitate peat deposition). Therefore, having regard to the above as well as the relatively large separation distance to existing residential properties, there will be very little noise impact from the construction phase of the project. Therefore no modelling of construction emissions is considered necessary.

The magnitude of traffic and the peat to be transported on the public haul road is far less than that already successfully completed for the original operation in 2005 and 2007 on the same haul route, without significant impact. As such it is not predicted that there will be a significant noise and vibration impact, particularly as the timescale involved is of much shorter duration than the original development.

The predicted noise contribution from the operational phase of the proposed development at the nearest sensitive receptors is less than the existing ambient noise levels in the area.

In accordance with methodologies recommended by several authorities within the Republic, general control of noise emissions from the site will be provided by observing the guidance given in BS5228 'Noise Control on Construction and Open Sites', and by using modern and well maintained plant and vehicles.

### 13 LANDSCAPE AND VISUAL

Traffic and working activities associated with the proposed peat transfer and deposition will have a temporary slight negative visual impact. Peat deposition within the larger Srahmore site associated with the development of the Bellanaboy Bridge Gas Terminal Site has had an overall positive landscape and visual impact in gradually reinstating an appropriate landscape cover over areas of cutaway peatland. While the proposed project is of a significantly smaller scale it will have a similarly slight positive impact in terms of reinstatement of landscape and visual amenity.

The greatest potential for visual impact arises from the temporary traffic aspects of the peat transfer to the site. This will be most prominent along the L1204 Bangor – Bellanaboy Road and adjoining areas. However, this is a temporary aspect of the development. The actual peat handling and deposition may have some initial impacts especially from elevated landscape at Attavally, Cloontakilla and less so, from more distant elevated locations at Carrafull and Knocklettercuss, *etc.* However, in the short, medium and longer-term, the proposal will have an overall positive impact in terms of reinstatement of landscape and visual amenity.

The overall effect is to ensure no adverse landscape and/or visual impact from the proposed development after cessation of peat deposition works. After a short period, vegetative cover will integrate the site within its peatland surrounds ensuring that only a positive impact remains. No additional mitigation measures are envisaged as necessary regarding this aspect of the development.

Following deposition and stabilisation process all temporary infrastructure will be removed, including lighting standards. The maintaining of the existing entrance and access roads will have a slight negative impact from immediately along the R313 Bangor – Belmullet Road. However, the impact will not be significant within the wider rehabilitated peatland context. Likewise, if it is found appropriate to allow the peat reception area to remain in-situ, ameliorative options will be employed to rehabilitate the edge of the retained area into the surrounding peatland landscape to alleviate any slight negative impact which may otherwise occur.

## 14 CLIMATE

Potential impacts associated with the peat deposition site mainly relate to potential emissions associated with the activities that have the potential to affect on the climate, through the release of 'greenhouse gases'.

There will be no direct impacts on the climate as a result of deposition of peat. No other releases are anticipated that can lead to other regional or global climatic impact issues.

It is proposed to deposit the peat material at the Srahmore site in a manner to maximise stability and to allow bog regeneration following the stabilisation phase. The loss of carbon from the peat, owing to the deposition and regeneration programme are predicted to cause a negligible carbon loss.

It is proposed to implement a programme to monitor Carbon Dioxide and Methane emission levels.

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## 15 ARCHAEOLOGY

Monitoring of groundworks associated with this development was undertaken from December 2004 to March 2005. This monitoring work consisted of excavations of five settlement ponds, access roads, administrative area, peat reception area and three major drains. Nothing of archaeological interest was noted in this area during these excavations, in addition no deposits or objects were found during any of the drainage works.

This study has shown that there are no recorded monuments on or in the immediate vicinity of the development. The nearest recorded monuments is located approximately 300m from the boundary to the existing development.

Archaeological attendance will be provided for any new excavations associated with the development. A suitably qualified archaeologist with relevant wetland experience will be employed to carry out the archaeological monitoring as part of any earth excavations.

It is predicted that the development will not have a significant archaeological impact during its operation and use. It is possible however that some stray finds may be uncovered during this work. The spreading of the imported peat is unlikely to impact on any un-recorded archaeological features or artefacts. The imported peat will provide extra cover for any potential archaeological material as well as guaranteeing long-term preservation in situ.

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## 16 MATERIAL ASSETS

The volumes of surplus peat to be removed from the onshore pipeline development working area have already been included in the overall volumes of construction materials flows which underpin the Traffic Impact Assessment in Volume 3 of the EIS (i.e. this Volume) and Section 7 of Volume 1 (the On-shore Pipeline aspect). Both these sections are complementary and, in common, reference information from the overall Traffic Management Plan for the Onshore Pipeline Development.

The R313 is the primary access to the Srahmore Peat Deposition site, and peat will be transported across this road to the existing access road to Srahmore. Further north, the R314 will initially direct and focus these peat loads from the on-shore pipeline working areas served by the L1203 (Rosssport side) and L1202 (Aghoos side) onto the L1204. These four roads are the main haul routes for peat from the on-shore pipeline development, with secondary roads to the working area in Rosssport.

The main traffic impact will be in relation to the haulage of peat within traffic movements associated with the pipeline development generally.

The haul road network in Rosssport and Aghoos will be assessed and preventative maintenance and repairs will be undertaken as required to mitigate against the effects of the HGV's on the road pavement and structures along the route. The L1204 was already strengthened prior to the earlier transportation of peat from the terminal site. Strengthening works and general improvements have been undertaken elsewhere along the proposed haul route by Mayo County Council

An on-shore pipeline Traffic Management Plan has been prepared to assess and control the movement of vehicles during the construction phase. It is planned to use a fleet of 18-20 trucks to carry the peat from the On-Shore pipeline route to the Srahmore site. These vehicles will be loaded with peat following the unloading of stone import (needed for the construction of the pipeline route) to reduce the number and impact of HGV numbers on the haul route (i.e. dual use of vehicles will occur where possible).

The Traffic Management Plan for the on-shore pipeline outlines extensive controls for HGVs on the public road network. To minimise the effects of heavy vehicles on the wearing course of the roadway, the Contractor appointed by SEPIL will ensure that the maximum legal load of each vehicle will not be exceeded and documentation to demonstrate such compliance is available for inspection. This will be strictly monitored on-site by the recording of tare weights and payloads on the weighbridge.

It is estimated that up to 12,000m<sup>3</sup> of construction materials (mainly rock and maintenance material) will be required to develop circulation roads in the deposition facility. The majority of importation of this construction material will take place before any peat is moved from the pipeline site. It is anticipated that this material will be imported from a local quarry.

In the Traffic Impact Assessment it has been demonstrated that, subject to successful implementation of the traffic control measures, the road network can adequately cater for the traffic volumes generated by the proposed development, having regard to HGV volumes already successfully accommodated during the peat importation and deposition activities associated with the construction of the Bellanaboy Bridge Gas Terminal Site.

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## 17 CUMULATIVE IMPACTS

Potential impacts of each aspect considered under the scope of the EIA, which culminated in this EIS, have been outlined individually in this report. Mitigation measures have been identified and outlined. However, in any development with the potential for environmental impact there is also potential for interaction between impacts of each environmental aspect. The results of these interactions may either exacerbate the magnitude of the impact or may in fact ameliorate it. As part of the requirements of an Environmental Impact Statement the interaction of the various environmental criteria and their resultant impacts on the surrounding environment needs to be addressed.

A cumulative impact assessment of the Corrib Gas Field Development, which includes the deposition of peat at Srahmore, has been compiled and is provided in Chapter 17 of Volume 1 of the EIS. The cumulative impact assessment in Volume 3 (i.e. this EIS) is specific to transportation of peat to, and the deposition of peat within, the Srahmore site.

While there is potential for the above impacts to interact and result in a cumulative impact, it is unlikely, as a result of the various mitigation measures proposed, that any of these cumulative impacts will result in significant environmental degradation. The duration of works associated with the Peat Deposition is relatively short and the volume of peat relatively low. The level of cumulative impact on human beings and the natural environment is assessed as low.

The Traffic Management Plan for the On-shore Pipeline and the Overall Corrib Gas Field development provide operating procedures and protocols to ensure operations do not impact on users of the public road network and ultimately on human beings. Extensive environmental studies and impact assessments have been undertaken for the various aspects of the on-shore pipeline development (including the Srahmore Peat Deposition site). Extensive mitigation measures and operating procedures are proposed to ameliorate the impact of the development on the environment. With respect to the Srahmore Peat Deposition site, environmental monitoring is established and on-going to assess the performance of the site, to review impacts and to assess other issues arising during the operation and stabilisation phases. This is reported to the EPA in the form of Annual Environmental Reports.



## 18 ENVIRONMENTAL MANAGEMENT SYSTEMS

Bord na Móna seeks to conduct all aspects of its business in an environmentally sensitive manner. It is committed to the compilation of information on all aspects of its impact on the environment, and making this information available to the public.

An Environmental Management System (EMS) has been prepared for the site at Srahmore. The EMS for this development specifically addresses the following impacts:

- Discharges to water
- Emissions to atmosphere
- Waste disposal/minimisation
- Noise, vibration, odour, dust and visual effects
- Use of natural resources
- Natural environment and ecosystem effects
- Continuous environmental improvement programmes

The environmental management system is monitored and continually improved. A system of regular environmental audits has been established, and the company will continue to invest in research into its impact on the natural environment.

The EMS will be updated in line with any future planning conditions and review of the existing waste licence conditions.

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