Nearshore Pipelay and Pull-In

Report to the Environmental Monitoring Group

June 2009

1. Works undertaken

Landfall site establishment operations commenced on 22 nd of April. The following construction operations were carried out at Glengad Landfall Site from 22nd April to present:

- Mobilisation to site.
- Install security compound.
- Installation of Welfare Facilities.
- Installation of temporary site fencing.
- Cliff cut
- Intertidal fencing
- Installation of pipe pull-in winch and anchors
- Wire-lay
- Pipe-pull ashore
- De-mobilisation of winch and reels

2. Hours worked during May

Date	Day	Start	Finish	Hours
01/06/09	Monday	21.30	00.00	2hr30m
02/06/09	Tuesday	00.00 03.05 05.00 08.05 13.15 17.00	02.35 04.40 07.30 12.55 16.35 18.25	16h05m
03/06/09	Wednesday	04.20 05.30 10.15	04.50 09.45 00.00	18h30m
04/06/09	Thursday	00.00	00.00	24h
05/06/09	Friday	00.00	05.00	5h
06/06/09	Saturday	-	-	
07/06/09	Sunday	15.45	00.00	8h15m
08/06/09	Monday	00.20 13.50	13.30 23.45	13h10m
09/06/09	Tuesday	00.00 07.00 14.25 17.45	06.15 13.30 16.55 00.00	21h30m
10/06/09	Wednesday	00.00 01.15 07.55 09.30 16.10	01.00 06.55 09.15 15.10 00.00	21h30m
11/06/09	Thursday	00.00 02.40 05.30 05.50 10.20 16.00	02.15 04.50 05.40 09.20 15.35 00.00	21h20m

12/06/09	Friday	00.00 03.25 09.15 19.05	03.00 08.50 18.40 00.00	22h45m
13/06/09	Saturday	00.00 04.10 17.00	03.40 15.20 00.00	21h50m
14/06/09	Sunday	00.00 19.00	15.20 00.00	20h20m
15/06/09	Monday	00.00 10.10	09.50 00.00	23h40m
16/06/09	Tuesday	00.00 05.40 13.10	05.15 08.50 14.40	9h55m
17/06/09	Wednesday	-	-	-
18/06/09	Thursday	-	-	-
19/06/09	Friday	-	-	-
20/06/09	Saturday	-	-	-
21/06/09	Sunday	-	-	-
22/06/09	Monday	10.15	00.00	11h45m
23/06/09	Tuesday	00.00	05.30	5hr30m
24/06/09	Wednesday	-	-	-
25/06/09	Thursday	-	-	-
26/06/09	Friday	-	-	-
27/06/09	Saturday	-	-	-
28/06/09	Sunday	-	-	-
29/06/09	Monday	-	-	-
30/06/09	Tuesday	-	-	-

Table 1– Hours worked at Razende Bol (Back Hoe Dredger)

Date	Day	Start	Finish	Hours
01/06/09	Monday	20.35	23.10	2h45m
02/06/09	Tuesday	01.15 06.45 08.30 11.50 14.20 22.15 22.35	06.40 08.05 09.30 13.40 17.50 22.25 00.00	14h40m
03/06/09	Wednesday	00.00	19.15	19h15m
04/06/09	Thursday	02.30 16.00 18.45	04.30 18.30 00.00	
05/06/09	Friday	00.00 08.20	05.15 09.00	5h55m
06/06/09	Saturday	-	-	-
07/06/09	Sunday	22.10	00.00	1h50m
08/06/09	Monday	00.00	05.15	20h55m

		06.30 10.30 13.50	09.00 13.30 00.00	
09/06/09	Tuesday	00.00 14.10	13.30 00.00	23h20m
10/06/09	Wednesday	00.00 07.00	06.35 00.00	23h35m
11/06/09	Thursday	00.00 05.30 05.50 06.55	04.50 05.40 06.40 00.00	22h55m
12/06/09	Friday	00.20 02.10 06.00 17.45	01.45 05.00 17.30 00.00	22h
13/06/09	Saturday	00.00 02.40	02.10 00.00	23h30m
14/06/09	Sunday	00.00 08.10 17.00	06.20 08.40 00.00	8h50m
15/06/09	Monday	05.15 22.00	06.10 00.00	2h55m
16/06/09	Tuesday	00.00 10.55 13.45	08.40 12.15 14.00	10h15m
17/06/09	Wednesday	-	-	-
18/06/09	Thursday	-	-	-
19/06/09	Friday	-	-	-
20/06/09	Saturday	-	-	-
21/06/09	Sunday	-	-	-
22/06/09	Monday	10.40	00.00	13h20m
23/06/09	Tuesday	00.00	03.30	3h30m
24/06/09	Wednesday	-	-	-
25/06/09	Thursday	-	-	-
26/06/09	Friday	-	-	-
27/06/09	Saturday	-	-	-
28/06/09	Sunday	-	-	-
29/06/09	Monday	-	-	-
30/06/09	Tuesday	-	-	-

Table 2 Hours worked by Abeko Server (Back Hoe Dredger)

Date	Day	Start	Finish	Hours
01/06/09	Monday	-	-	-
02/06/09	Tuesday	-	-	-
03/06/09	Wednesday	07.15	21.30	14h15m
04/06/09	Thursday	00.00	01.25	1h25m
05/06/09	Friday	-	-	-
06/06/09	Saturday	-	-	-

07/06/09	Sunday	-	-	-
08/06/09	Monday	-	-	-
09/06/09	Tuesday	-	-	-
10/06/09	Wednesday	-	-	-
11/06/09	Thursday	-	-	-
12/06/09	Friday	-	-	-
13/06/09	Saturday	-	-	-
14/06/09	Sunday	-	-	-
15/06/09	Monday	-	-	-
16/06/09	Tuesday	-	-	-
17/06/09	Wednesday	-	-	-
18/06/09	Thursday	-	-	-
19/06/09	Friday	-	-	-
20/06/09	Saturday	-	-	-
21/06/09	Sunday	-	-	-
22/06/09	Monday	07.40	16.35	8h55m
23/06/09	Tuesday	07.40	16.35	8h55m
24/06/09	Wednesday	-	-	-
25/06/09	Thursday	-	-	-
26/06/09	Friday	-	-	-
27/06/09	Saturday	-	-	-
28/06/09	Sunday	-	-	-
29/06/09	Monday	-	-	-
30/06/09	Tuesday	-	-	-

Table 3 Hours worked by HAM 311 (Trailer Suction Hopper Dredger)

Date		Start	Finish	Hours
01/06/2009	Monday			
02/06/2009	Tuesday	08:00	18:00	10
03/06/2009	Wednesday	08:00	18:00	10
04/06/2009	Thursday	08:00	18:00	10
05/06/2009	Friday	08:00	18:00	10
06/06/2009	Saturday			
07/06/2009	Sunday			
08/06/2009	Monday	08:00	18:00	10
09/06/2009	Tuesday	08:00	18:00	10
10/06/2009	Wednesday	08:00	18:00	10
11/06/2009	Thursday	08:00	18:00	10
12/06/2009	Friday	08:00	18:00	10
13/06/2009	Saturday			
14/06/2009	Sunday			
15/06/2009	Monday	08:00	18:00	10
16/06/2009	Tuesday	08:00	18:00	10

17/06/2009	Wednesday	08:00	18:00	10
18/06/2009	Thursday	08:00	18:00	10
19/06/2009	Friday	08:00	18:00	10
20/06/2009	Saturday			
21/06/2009	Sunday			
22/06/2009	Monday	07:00	19:00	12
23/06/2009	Tuesday	07:00	19:00	12
24/06/2009	Wednesday	07:00	07:00	24
25/06/2009	Thursday	07:00	07:00	24
26/06/2009	Friday	07:00	07:00	24
27/06/2009	Saturday	07:00	07:00	24
28/06/2009	Sunday	07:00	07:00	24
29/06/2009	Monday	07:00	19:00	12
30/06/2009	Tuesday	07:00	19:00	12

Table 4– Hours worked at Glengad Landfall Site by Roadbridge

3. ENVIRONMENTAL REPORT

a) Dust

Rainfall levels for June recorded at Belmullet meteorological station were 73 % of the mean monthly rainfall. As a result dust suppression using the water bowser was ongoing throughout the month. Dust monitoring was carried out between 13/05/09 and 16/06/09 at two locations (D1 and D2) on the landfall site at Glengad.

Settleable dust results were 316 and 235 mg/m^2/day for D1 and D2 respectively which is below dust deposition limits (350 mg/m^2/day) set by the EPA for Licensed Waste Facilities.

b) Noise

Noise monitoring had been taking place since 15th May.

There were 2 No. Primary monitoring points on site last year:

N1 in the Airlock at the front gate
N6 In Sweeneys field

These were relocated for the following reasons:

N1 Now approximately 5 m outside the airlock on the Eastern Side of the access road
There are more cabins in place in the air lock so there is not a large enough area within the airlock to carry out monitoring

N6 Now on the Southern corner by the fence where the fence widens (next to stockpiles)
Relocated to the closest point within the fenceline - estimate a distance of >50m from the original Monitoring point.

Below is a breakdown of the noise monitoring results for May and June.

Location	Date	Time		Duration (hours)	Wind Speed (m/s)	Wind Direction	L_{aeq} (dB)
N1	14/05/2009	04:51:55	Night	03:09:00	4.9	East South East	53.1
N6	14/05/2009	04:50:33	Night	03:10:00	4.9	East South East	63.6
N1	15/05/2009	07:59:55	Day	14:01:00	4.9	East South East	53.8
N1	15/05/2009	21:59:55	Night	10:01:00	**6.6**	East South East	41.9
N6	15/05/2009	07:59:33	Day	14:01:00	4.9	East South East	70.2
N6	15/05/2009	21:59:33	Night	10:01:09	**6.6**	East South East	51.1
N1	16/05/2009	07:59:55	Day	14:01:00	**6.6**	East South East	47.0
N1	16/05/2009	21:59:55	Night	10:01:00	**5.5**	East South East	43.8
N6	16/05/2009	07:59:33	Day	14:01:00	**6.6**	East South East	51.4
N6	16/05/2009	21:59:33	Night	10:01:09	**5.5**	East South East	51.8
N1	17/05/2009	07:59:55	Day	14:01:00	**5.5**	East South East	44.9
N1	17/05/2009	21:59:55	Night	10:01:00	1.6	South South West	46.6

N6	17/05/2009	07:59:33	Day	14:01:00	**5.5**	East South East	50.1
N6	17/05/2009	21:59:33	Night	10:01:09	1.6	South South West	65.0
N1	18/05/2009	07:59:55	Day	14:01:00	1.6	South South West	54.6
N1	18/05/2009	21:59:55	Night	10:01:00	3.3	South West	50.3
N6	18/05/2009	07:59:33	Day	14:01:00	1.6	South South West	71.8
N6	18/05/2009	21:59:33	Night	10:01:09	3.3	South West	59.2
N1	19/05/2009	07:59:55	Day	14:01:00	3.3	South West	56.0
N1	19/05/2009	21:59:55	Night	10:01:00	4.5	West South West	47.9
N6	19/05/2009	07:59:33	Day	13:59:00	3.3	South West	70.0
N6	19/05/2009	21:59:33	Night	10:01:09	4.5	West South West	59.5
N1	20/05/2009	07:59:55	Day	14:01:00	4.5	West South West	56.5
N1	20/05/2009	21:59:55	Night	10:01:00	4.4	West South West	48.6
N6	20/05/2009	07:59:33	Day	14:01:00	4.5	West South West	72.7
N6	20/05/2009	21:59:33	Night	10:01:09	4.4	West South West	62.3
N1	21/05/2009	07:59:55	Day	14:01:00	4.4	West South West	53.8
N1	21/05/2009	21:59:55	Night	10:01:00	**5.3**	South	50.9
N6	21/05/2009	07:59:33	Day	14:01:00	4.4	West South West	71.1
N6	21/05/2009	21:59:33	Night	10:01:09	**5.3**	South	57.4
N1	22/05/2009	07:59:55	Day	14:01:00	**5.3**	South	65.1
N1	22/05/2009	21:59:55	Night	10:01:00	**6.7**	West South West	47.8
N6	22/05/2009	07:59:33	Day	06:56:00	**5.3**	South	81
N1	23/05/2009	07:59:55	Day	14:01:00	**6.7**	West South West	48.6
N1	23/05/2009	21:59:55	Night	10:01:00	**9.4**	South South West	48.8
N1	24/05/2009	07:59:55	Day	14:01:00	**9.4**	South South West	50.4
N1	24/05/2009	21:59:55	Night	10:01:00	**5.4**	West South West	48.4
N1	25/05/2009	07:59:55	Day	14:01:00	**5.4**	West South West	55.1
N1	25/05/2009	21:59:55	Night	10:01:00	**7.9**	West South West	51.1
N1	26/05/2009	07:59:55	Day	14:01:00	**7.9**	West South West	58.3
N1	26/05/2009	21:59:55	Night	10:01:00	**8.0**	West South West	51.9
N1	27/05/2009	07:59:55	Day	14:01:00	**8.0**	West South West	59.6
N1	27/05/2009	21:59:55	Night	10:01:00	**7.9**	South South West	50.9
N1	28/05/2009	07:59:55	Day	14:01:00	**7.9**	South South West	59.1
N1	28/05/2009	21:59:55	Night	10:01:00	**5.7**	South South East	47.1
N1	29/05/2009	07:59:55	Day	05:25:00	**5.7**	South South East	52.5

N1	03/06/2009	17:20:12	Day	04:40:00	**6.2**	East	51.4
N1	03/06/2009	21:59:12	Night	10:01:00	**6.6**	North East	44.3
N1	04/06/2009	07:59:12	Day	14:01:00	**6.6**	North East	54.5
N1	04/06/2009	21:59:12	Night	03:55:00	**7.6**	North East	43.8
N1	17/06/2009	19:04:57	Day	00:24:00	**6.3**	West	64.7
N1	20/06/2009	17:25:21	Day	04:35:00	**5.2**	West North West	54.5
N1	21/06/2009	22:01:21	Night	08:54:00	2.3	South West	47.7
N1	22/06/2009	09:08:07	Day	12:52:00	2.3	South West	54.0
N1	22/06/2009	21:59:07	Night	10:01:00	2.4	South West	46.6
N1	23/06/2009	07:59:07	Day	14:01:01	2.4	South West	54.4
N1	23/06/2009	21:59:07	Night	10:01:00	2.1	South East	47.5
N1	24/06/2009	07:59:07	Day	14:01:01	2.1	South East	55.6
N1	24/06/2009	21:59:07	Night	10:01:00	2.9	East South East	47.7
N1	25/06/2009	07:59:07	Day	14:01:01	2.9	East South East	54.8
N1	25/06/2009	21:59:07	Night	10:01:00	3.0	East South East	47.5
N1	26/06/2009	07:59:07	Day	14:01:01	3.0	East South East	55.4
N1	26/06/2009	21:59:07	Night	10:01:00	2.1	South	50.6
N1	27/06/2009	07:59:07	Day	14:01:01	2.1	South	55.9
N1	27/06/2009	21:59:07	Night	10:01:00	4.9	South East	48.8
N1	28/06/2009	07:59:07	Day	14:01:01	4.9	South East	56.8
N1	28/06/2009	21:59:07	Night	10:01:00	3.4	South South East	50.5
N1	29/06/2009	07:59:07	Day	14:01:01	3.4	South South East	55.5
N1	29/06/2009	21:59:07	Night	10:01:00	3.6	South	45.3
N1	30/06/2009	07:59:07	Day	14:01:01	3.6	South	54.1
N1	30/06/2009	21:59:07	Night	10:01:00	2.3	South South East	45.2
N1	01/07/2009	08:09:31	Day	13:51:00	2.3	South South East	55.3
N1	01/07/2009	21:59:34	Night	10:01:00	1.1	West	46.9

N1

Levels are slightly higher than you would expect at an operating plant (55 & 45 respectively for day and night) but only very occasionally do they exceed the limits usually applied to a construction site (65 & 55 respectively for day and night).

N6

Results generally exceed 55 dBa Day and Night. Monitoring point adjacent to the active work area with machines tracking by, results not indicative of levels at the nearest noise receptors

c) Traffic

A total of 48,922 km were completed during the month of May.

Total vehicle movements were 228 HGV movements and 1710 other transport vehicle movements.

d) Fuel

Approximately 14,998 litres of fuel have been delivered to the landfall site in June. Vessels were fully fuelled prior to leaving Killybegs in order to minimise fuel transfers in Broadhaven Bay.

e) Waste

Due to the intensity of activity at the site during the month of June there was an increase in the volume of waste requiring disposal and recycling. Three no. skips of recyclable materials comprising of timber, metal, plastic and paper/cardboard) were removed for appropriate disposal by the waste contractor. Three skips of non hazardous waste were also removed for landfilling during June. One drum of hazardous waste.composed of used oil absorbent material was generated as a result of an oil spill which occurred on the foreshore on June 24th.

f) Marine Mammal Observations April

Coastal & Marine Research Centre (CRMC) have been monitoring mammalian activity in Broadhaven Bay for approximately 5 months using visual and acoustic methods (Timing POrpoise Detector or T-POD). A preliminary summary report has been issued by CMRC providing a summary of the marine mammal monitoring in Broadhaven Bay for the period January to June 2009.

Marine Mammal Observers (MMOs) carry out start up procedures prior to dredging operations commencing and provide details of weekly sightings of marine mammals. In total, 101 marine mammal sightings were made in June consisting of approximately 270 individuals. The largest number of individuals in any one sighting was 24 + unidentified dolphins, recorded during pipeline touchdown from the Solitaire on the 29th of June.

From June 14th to 15th , three Bottlenose Dolphin sightings (15 –20 individuals/sighting) were recorded by MMOs 400m from the dredging vessels along the pipeline route. During the same period, twelve sightings of grey and unidentified seals were recorded, ranging in distance from 80–400m from the dredging site.

On June 2nd an unidentified whale species was sighted by an MMO during a pipeline survey on board the Manta III.

g) Faunal sightings at Landfall site

None to date. Badger gates installed at 50 m intervals along temporary fence are now open continuously.

h) Avian sightings at Landfall site

The Sand Martin breeding season has been somewhat later than is typical at other colonies monitored elsewhere in Ireland. Certainly, the numbers of Sand Martin present at both Glengad and Rinroe were visibly down in early May from observations in 2008.

In 2008, a small number of nesting Sand Martin were recorded in the vicinity of Rinroe strand (pers. comm.. NPWS) and a total of 8 active burrows were observed in this area. This area has been kept under observation in 2009 and the number of burrows present has increased throughout the 2009 breeding season. On June 24, 2009 a full audit of the burrows present was conducted and a photographic record was taken. In total, 49 viable burrows were present between Rinroe Pier and the dunes by the rock gabions on the strand. Most were concentrated on the dunes (37 total - with 34 in close concentration and three more remote from these), with 12 newly discovered burrows present on the cliffs facing Glengad below the road to Rinroe pier. At least 30 of these burrows were confirmed as active.

With the establishment and growth of the Rinroe nesting areas the number of active nests is substantially increased from 2008. It is also worth noting that birds breeding in the dunes at Rinroe were observed making foraging flights across the water to Glengad - the areas around the exposed algal beds are clearly important for locally feeding Sand Martins. The number of viable burrows at Rinroe continues to increase. As of Wednesday the 1st of July there were 53 viable burrows at Rinroe. 12 Burrows in the harder substrate near the road to the pier and 41 burrows spread out across the dunes (38 pretty closely packed).

Date	Confirmed Active Nests	
	Glengad Colony A (original to north of the landfall)	Glengad Colony B (c. 200m to the SW of the landfall)
09/06/2009	14	1
15/06/2009	14	3
23-24/06/2009	15†	3
1-2/07/2009	19	2[§]

i) Archaeological Remains

No Archaeological remains have been recorded during offshore activities. Archaeologists are stationed on board the split hopper barges during backfilling of the pipeline trench.

j) Fisheries Liaison

The Shell Fisheries Liaison Officer has ongoing liaison with the fishing community and other users of the area in relation to the marine side of the works.

k) Community Liaison

There is ongoing communication between Shell and the local community through Shells Community Liaison Officers.

Visits and correspondence to residents in Glengad have been ongoing to inform them of the commencement of works at the landfall site.

l) NPWS

Weekly work updates provided to NPWS to ensure that they are kept informed of the progress of the work.

m) Statutory Bodies site visits

There were five no. Statutory body visits during June:

1. 03/06/09 – DCENR Ecologist
2. 08/06/09 – DCENR Ecologist
3. 16/06/09 – DCENR Ecologist
4. 26/06/09 – DCENR Ecologist
5. 30/06/09 – DCENR Ecologist

n) Complaints

There were no formal environmental complaints logged with SEPIL in June related to construction activities at Glengad Landfall:

o) Incidents

One environmental incident took place on June 24th:

An excavator working at the base of the ramp burst a hydraulic hose within the engine compartment with the loss of 5 litres of oil to the foreshore. The incident was reported immediately and absorbent matting was used to stop any further release of oil. A small quanitity entered the water and a boom was used to skim the surface for contaminants. Sand contaminated by the spill was skimmed and placed in 1 m^3 bags for removal off-site.

2 no. minor oil spills, classified as near misses, occurred on the landfall site on Saturday the 27th ,one associated with a loose connection on a bowser and the other while refueling a lighting tower.

1 minor oil spill was reported on the 4th of June from the Abeko Server 2 when a hydraulic oil hose burst releasing oil onto the deck. Less than 0.5 litres of oil entered the water and the oil spill response vessels were at the incident location to provide assistance. It was decided not to deploy the booms as the quantity of oil was too small. The deck was thoroughly cleaned and a new hose fitted.

p) Water Quality

Water quality monitoring at the landfall site was carried out in June.

Sample Location	**L1** (on foreshore)	**L2** (50 m off shore)
Parameters		
BOD (mg/l)	<1	<1
Suspended Solids (mg/l)	<2 to 413	52
Turbidity (NTU)	9.3	28.6
pH	8	8
Ammonical Nitrogen(mg/l)	0.016	0.027
Nitrate(mg/l)	0.008	0.008

The results of water samples taken at L1 and L2 on in June, shown in Table 6, indicate an increase in suspended solids at L1 due to construction works on the foreshore. The high suspended solids result of 413mg/l was due to the fact that the sample was taken beside the dredger whilst dredging operations were ongoing.The results for pH, Nitrate and Ammonical Nitrogen are low indicating no deleterious impact due to the use of welfare facilities on the landfall site.

Water monitoring will continue throughout the backfilling works.