APPENDIX 13-1

APPENDIX 13-1 ARCHAEOLOGICAL MONITORING (LICENSE NO. 05E1062)

TABLE OF CONTENTS

1. Introduction

This report details the results of archaeological monitoring of groundworks associated with a wind farm near Kealkill, Bantry, Co. Cork (Planning reference PL W/00/6590 and ABP ref. PL127297). The development consists of the construction of a 10 turbine wind farm, substation and associated site works. Monitoring of ground works associated with the development was undertaken under licence from the Department of the Environment, Heritage and Local Government (Licence No. 05E1062) to ensure that any archaeological features or deposits uncovered on the site could be adequately protected and recorded. The current wind farm development is not located within the constraint zone for any recorded archaeological monuments, although a number of recorded monuments are located at the west side of the development area (Figs 4 and 5).

2. Planning Conditions

The granting of planning permission for the wind farm at Kealkill (Ref. No. PL W/00/6590 and ABP ref. PL127297) was subject to conditions relating to archaeology:

'The developer shall facilitate the planning authority in the archaeological appraisal of the site and in preserving and recording or otherwise protecting archaeological materials or features which may exist within the site. In this regard the developer shall;

A. notify the planning authority writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development and:
B. employ a suitably qualified archaeologist prior to the commencement of the development. The archaeologist shall assess the site and monitor all site development works.

The assessment shall address the following issues-

1. the nature and location of archaeological material on the site and

2. the impact of the proposed development on such archaeological material.

Prior to the commencement of the development, a report containing the results of the assessment shall be submitted to the planning authority. Arising from this assessment, the developer shall agree with the planning authority details regarding ay further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works.

An assessment of the proposed development site was submitted to the Planning Authority prior to the development (Eachtra Archaeological Projects) and *Tobar Archaeological Services* was contracted by the developer to carry out archaeological monitoring of ground works (this report).

Report Distribution

A copy of this report will be distributed to the licensing section of the Department of the Environment, Heritage and Local Government, the National Museum of Ireland, The Planning Authority (Cork County Council), Emmet Byrnes, *Archaeologist (Forest Service)* and the *Archaeological Survey of Ireland*, Dublin.

3. The Site and Receiving Environment

The development site is located 5-6km to the north of Kealkill Village, in West Cork (Fig. 1). It is situated in the heart of the Shehy Mountains in the townlands of Curraglass and Cappaboy Beg. The surrounding topography is dominated by the Shehy Mountains and is largely covered by boggy peat and rock outcrops. A large portion of the site is covered in large tracts of coniferous forestry which are also visible on the mountain slopes. The site itself consists of a long stretch of land measuring 3km north-south by 1km east-west (approx.) at an elevation of

between 200m and 400m above Ordnance Datum. The site was initially accessed from the south-west side of the site across a ford which became flooded in heavy rain. An alternative access road was then utilized having upgraded an existing Coillte forestry road which was located at the eastern side of the development site. The majority of the site has been planted with coniferous forestry in recent years and some trees were removed during the ground works for the wind farm. The site is bound to the north, west and east by mountainous terrain and to the south and south-west by the Lackavane River and low-lying rough farmland.

4. Development Proposal

The development consists of the construction of a wind farm comprised of 10 wind turbines, electricity substation and access roadways (Fig. 2). The development involved ground disturbance in the form of peat removal to facilitate the construction of turbine bases and access roads as well as the removal of small tracts of coniferous forestry along the route of the latter. The removal of peat in some areas revealed extensive rock underneath. Rock breaking was therefore necessary in some places to facilitate the construction of the access roadways. As the development site consisted of undulating terrain in places, it was also necessary to infill areas with excavated rock in order to raise the level of the ground.

5. Archaeological and Historical Background

The development site is located within the constraint zone for five recorded archaeological monuments as defined by the Record of Monuments and Places for County Cork (CO092-057, CO092-058, CO092-059, CO080-029 and CO080-030). These structures were detected during an initial assessment of the development site by Eachtra Archaeological Projects (see below).

Monuments recorded during initial site assessment

Six ruined structures were detected during an initial site walkover/assessment (J. Kiely, *Archaeological Impact Assessment*) and are described in detail in the assessment report. They consisted of ruined stone hut sites, all of which are located at the west side of the development site close to the western site boundary. Five of the six structures were assigned SMR/RMP numbers by the Cork Archaeological Survey and are indicated on Figure 5. The wind farm development is located towards the east side of the site *c*. 1km from the aforementioned monuments.

Recorded Archaeological Monuments outside the development site

A stone circle (RMP CO092-004) is located just outside the development site, approximately 120m to the south of the southern site boundary (Figs 3 and 5). It is described in the *Archaeological Inventory of County Cork* (Power *et al*. 1992, 23) as 'a five stone circle located in tillage on the shoulder of a SE facing slope near the head of the Owenbeg River valley. The internal measurement along the main axis aligned NE-SW is 2.3m (*ibid*, 23 after Ó Nuallain 1984a, 39, no. 7)'.

Stone circles form a distinctive group in the megalithic tradition of Irish monuments and a large number of these sites are located in West Cork mainly on the lower slopes and foothills of mountains. A distinctive type of stone circle with an uneven number of stones occurs in the south-west of Ireland and does not occur elsewhere in Ireland or Britain (Power *et al*. 1997, 10). This group can be divided into those comprised of five stones, known as five-stone circles and those comprised of a greater number of stones, known as multiple-stone circles.

Radiocarbon dates for such stone circles suggest a middle-late Bronze Age date (1500-800 BC) (*ibid*.).

6. Results of Archaeological Monitoring

Archaeological monitoring of ground works took place as a condition of planning permission as outlined in section 2. The monitoring of ground works ensured the adequate protection and recording of any finds or features of archaeological significance which may have been present on the site.

Bogs, Peat land and Archaeological potential

The development site at Kealkill is located within peaty mountainous terrain. Thousands of archaeological sites and objects may survive within and under peat and bogs. The most common type of site which will be encountered is the trackway, or togher, which can be made of planks, roundwoods, brushwood, gravel or flagstones. Brushwood platforms, rows of wooden posts and traces of timber huts may also be discovered. Ancient cooking places (*fulachta fiadh*) are often found close to bog margins, and can be recognised by the presence of large quantities of burnt stone. Sites are also found on the mineral soil underneath the peat, particularly under the blanket peats. These include stone banks, mounds, megalithic tombs, standing stones, and stone circles and rows.

Many archaeological objects have either been lost or deposited in bogs over the centuries. These include tools, implements and weapons made from wood, stone or metal; ornaments made from bronze or even gold; wooden vessels, which sometimes contain bog butter; wooden deer traps and wheels and items of clothing made from leather or textile. Occasionally human

bodies, or parts of bodies, as well as animal remains are found preserved in the peat. Archaeological monitoring of peat removal was therefore undertaken over a number of months in late 2005 (Licence No. 05E1062).

Access Roads

A number of internal access roads/passageways existed on the site prior to the commencement of any development (Fig. 2). These roads were subsequently widened and upgraded to facilitate heavy machinery and to provide adequate access to turbine bases. The existing roadways were located at the south/south-west of the site and extended in a north-easterly direction towards the electricity sub-station and then in a northerly direction towards the location of Turbine 7. Another existing road was located along the eastern approach to the site from a *Coillte* owned forestry plantation. The latter began at the main road along the Pass of Keimaneigh and extended in a westerly direction to join up with the aforementioned existing road. A small portion of new road was excavated therefore as part of the development and was archaeologically monitored. Peat deposits in these areas measured between 0.5m in depth to 1m in depth (Plate 1) and no archaeological finds or features were noted during peat removal.

Turbine Bases and Substation

The removal of peat from 10 turbine bases and associated access roads was archaeologically monitored. The turbines were to be located mainly along the eastern side of the development site in a linear arrangement from south to north (1-10 respectively) (Figs 3 and 4).

Turbine 1 (Plates 2 and 3)

Turbine 1 was located at the south end of the development site at the end of a newly excavated portion of roadway. Peat was removed from an area measuring *c*. 225m in length between Turbine 1 and 2 (N-S). Peat deposits here were relatively shallow measuring a maximum of 0.5m in depth. Removal of the peat and boggy grass revealed a stoney purple shale natural boulder clay. No archaeological finds or features were uncovered during groundworks for Turbine 1.

Turbine 2 (Plate 4)

Turbine 2 was located *c*. 225m north of Turbine 1. Peat removal took place over an area measuring 101m in length in an easterly direction to allow access to Turbine 2. The peat in this area measured 0.5m-0.6m in thickness and overlay an orange stony natural. No archaeological finds or features were noted during ground works for Turbine 2.

Turbine 3

Turbine 3 was located north of Turbine 2 *c*. 80m east of the access road. Approximately 205m of roadway was excavated between Turbine 2 and 3 to facilitate access to the latter. Peat in this area measured 0.5m – 0.6m in thickness. No archaeological finds or features were uncovered during the extraction of peat in this area.

Turbine 4 (Plate 5)

Turbine 4 was located N of Turbine 3 and 48m east of the newly excavated access road. Ground works in this area consisted of the removal of peat over a length of *c*. 48m (NE-SW).

The peat in this area measured 0.6m - 0.7m in thickness and overlay a stony shale. No archaeological finds or features were uncovered.

Turbine 5 (Plate 6)

Turbine 5 was located just off the excavated access road north of Turbine 4. The peat in this area varied between 0.5m to 0.8m in thickness and overlay a gravely natural with several boulders within the latter. No archaeological finds or features were uncovered.

Turbine 6 (Plate 7)

Turbine 6 was located north of Turbine 5 and was located just to the west of the existing portion of access road. Peat in this area was relatively shallow measuring 0.3m-0.5m in thickness. A gravely stony natural was uncovered on removal of the peat and no archaeological finds or features were noted.

Turbine 7

Turbine 7 was located north of Turbine 6 to the west of the junction between the existing road and the newly excavated portion. Peat was removed to a depth of 0.8m (max.) in this area and was very waterlogged. No archaeological finds or features were uncovered.

Turbine 8 (Plates 8-10)

Turbine 8 was located *c*. 184m to the north-west of Turbine 7 along the newly excavated portion of access road. Peat along the access road was shallow measuring 0.1m - 0.2m in depth and on removal revealed an orange gravely boulder clay. No finds or features were recovered in this area.

Turbine 9 (Plates 11 and 12)

Turbine 9 was located to the north of Turbine 8 along the newly excavated portion of roadway. This area was notably waterlogged due to its proximity to a tributary of the Lackavane river. The ground in this area consisted of pockets of peat and large boulders. The peat therefore was relatively shallow in places due to the underlying rock and measured 0.3m – 0.4m in thickness. The access road measuring 300m in length was excavated to Turbine 10. No archaeological finds or features were uncovered during this work.

Turbine 10

Turbine 10 was located to the north-west of Turbine 9 along the end of the newly excavated portion of road. This turbine was located in an area which had been planted with conifers therefore some ground disturbance had already taken place. No archaeological finds or features were uncovered during groundworks for Turbine 10.

Substation

The electricity substation was located adjacent to an existing road and an upgraded access roadway to the west of Turbine 3. A gravely and stony natural was exposed on removal of the peat in this area. No archaeological finds or features were noted during peat extraction.

Possible archaeological features noted during monitoring

Two possible standing stones were noted during an inspection of the planted area of conifers to the south of the access road between Turbines 9 and 10. This area was previously disturbed by the planting of trees and the excavation of linear drainage channels as part of the afforestation of the development site. These stones are tentatively described as standing

stones as the area in which they are located has a large number of naturally occurring boulders and numerous natural rock outcrops. Although the stones are currently in an upright position adjacent to drainage channels it is possible that they were upturned during the excavation of the latter. A national grid reference was taken for each of the possible standing stones using a Garmin hand-held GPS and a recommendation has been made to fence off an area around the stones to ensure their future protection.

Stone 1: NGR E108812, N63520 (Plate 13)

Located adjacent to drainage channel and embedded in peat. Small area surrounding this stone remains unplanted with conifers.

Stone 2: NGR E108746, N63505 (Plate 14)

Located adjacent to a drainage channel and surrounded by conifers. Angular upright stone with several small stones at base which appear in section of drainage channel. Embedded in peat.

7. Conclusions and Recommendations

Archaeological monitoring of peat removal for a wind farm site near Kealkill, Co. Cork was undertaken over a period of two months. No archaeological finds, features or deposits were uncovered during ground works associated with the site during this time. Two possible standing stones were noted, however, during an inspection of the area to the south of Turbine bases 9 and 10 (Fig. 2). The following recommendation has been made therefore to ensure the adequate protection of the stones.

- A buffer zone of 15m should be established around the possible standing stones to ensure their future protection. No machinery should operate within these buffer zones and tree removal should be monitored by an archaeologist under license from the Department of the Environment, Heritage and Local Government.

8. References

Draft Wind Energy Guidelines, 2004, Department of the Environment, Heritage and Local Government.

Power, D., *et al*., 1992, *Archaeological Inventory of County Cork Vol. I – West Cork*. The Stationery Office, Dublin.

Framework and Principles for the Protection of the Archaeological Heritage, 1999, Department of the Arts, Heritage, Gaeltacht and the Islands.

Cartographic Sources

Record of Monuments and Places (RMP) for County Cork

Sites and Monuments Record (SMR) for County Cork