ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD
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Mr. Brian Meaney
Environmental Protection Agency,
Licencing,
PO Box 3000,
Johnstown Castle,
Co. Wexford,

15th October 2013

RE: AES NAVAN W0131-02 – PROPOSED SITE REMEDIATION

Dear Mr. Meaney,

Further to our recent conversation relating to the above, AES intend on progressing the remediation of the Navan site. To date a Detailed Quantitative Risk Assessment (DQRA) has been submitted to the Agency, this included a restoration plan of which the enforcement section of the Agency are satisfied with, in principal, see enclosed letter from Mr. David Flynn dated the 19/08/2011.

However one of the issues identified in this letter is whether or not the remediation works can be accommodated under the conditions of the existing waste licence or whether either a licence review or technical amendment will be required in order to effect the works.

We also enclose correspondence from White Young Green which describes how the proposed works might be carried out. We would appreciate direction in relation to this issue from the licencing section. If you require any further information relating to this query or require a meeting to discuss, please let us know.

We trust that you find this in order..

Yours sincerely,

Garrett Leech
Environmental Manager
Advanced Environmental Solutions (Ireland) Ltd

Encl.

Directors: Emer Moran; Michael Barry; Gabriel D'Arcy; J G Ryan
Registered Office: Bord na Móna Offices, Main Street, Newbridge, Co. Kildare
Registered in Ireland No: 224173 V.A.T. No.: IE 8224173 C.

Office of
Environmental
Enforcement

Regional Inspectorate, McCumiskey House,
Richview, Clonskeagh Road,
Dublin 14, Ireland.

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Ms Linda Cahill,
Environmental Officer,
Midland Waste Disposal Company Limited,
Unit 1 Monread Commerical Park,
Monread Road,
Naas,
Co. Kildare.

19/08/2011 Our Ref: W0131-02 / RF06DF

Waste Licence Reg. No. W0131-02
Proposed Remediation of Lands at Midlands Waste Disposal Company Limited

Dear Ms Cahill,

I refer to your proposals for remediation of lands at Midlands Waste Disposal Company Limited facility as detailed in correspondence by White Young Green dated 14/01/2011.

Without prejudice to the Agency's assessment and determination of any technical amendment and/or review application, the Office of Environmental Enforcement is now satisfied in principle with the remediation works as proposed. The works cannot be accommodated under the conditions of your existing waste licence. Before commencing the works, you require either a Technical Amendment (Section 42(B) (1) of the Waste Management Acts) or a Review of your licence (Section 46(8) of the Waste Management Acts).

To determine if the proposed change can be accommodated by Technical Amendment you should submit the following information to the Agency's Environmental Licensing Programme, EPA, P.O. Box 3000, Johnstown Castle Estate, County Wexford;

- Details of the requested change(s),
- Reasons for the change(s) requested,
- Details of any increase or changes in emissions resulting from the change(s) and
- An assessment of the likely impacts of any increase/changes in emissions.

If the alteration is considered to be a significant change and cannot be accommodated by a Technical Amendment, ELP will notify you of the process for applying for a Review.

Please quote the above reference in any future correspondence in relation to this matter.

Yours sincerely,

David Flynn
Manager
Environmental Enforcement (Dublin)

Your Ref: W0131-02 /rfi08dh

14th January 2011

Mr. Donal Howley,
Environmental Protection Agency,
McCumiskey House,
Richview,
Clonskeagh,
Dublin 14

RE: Remediation at Midlands Waste Disposal Company Ltd., EPA Waste Licence Reg. W0131-02

Dear Mr. Howley

I am writing on behalf of AES Ltd. in response to your letter of 22/6/2010 requesting further information.

1 It is difficult to accurately define when the wastes were deposited at the site. Site staff who were with Midland Waste Disposal Ltd. when they started operating at the site have stated that the mortar deposits were already in place before they took possession of the site in 1990 and that it had been deposited there by Roadstone Ltd. in the 1980's during their quarrying operations. The C&D waste was subsequently deposited on top of the mortar deposits roughly between 1991 and 1997.

2 **Phasing Plan**

The following phasing plan is proposed.

(i) **Construct new waste recycling buildings and offices.**

As the waste materials to be removed are located under the southern part of the existing recycling buildings it will be necessary to demolish the buildings in order to access the waste deposits. In order to maintain normal site operations it will be necessary to construct new recycling buildings and structures prior to demolition of the existing structures. This element will also entail the relocation of existing weighbridge, wheelwash etc., installation of new wastewater treatment and

surface water drainage networks etc. Design plans for all new structures will be detailed. The new recycling buildings will be located along the western boundary of the site and will not be constructed on top of any waste materials. The Construction and Demolition programme will require planning permission from the planning authorities and a review of the current waste licence. It is considered that a timeframe of six months for obtaining planning permission/licence review and a further six months to construct the building should be adequate. Normal licensed operations will continue at the facility in the existing buildings during construction of the new buildings. The planning application and waste licence review will include a detailed Construction and Demolition Phase Waste Management Plan (CDWMP) that will detail the management of wastes arising during construction and demolition. The volume of wastes produced during the Construction and Demolition phases and from excavated materials to be processed at the site will be added to the licensed annual throughput to ensure that the total allowable throughput volume is not exceeded. If there is a potential for exceedance of the waste volumes then the planning application and review of licence will include for an increase in annual tonnages to allow for the remediation works. The licence review will also include for the recovery of inert soils at the site as restoration material above the mortar deposits. Environmental mitigation measures to be carried out during the Construction and Demolition phases including measures to control air quality and dust emissions, noise, water protection and traffic management will be detailed in the planning application and licence review submissions.

The new building and associated hardstand areas will not be located directly over the deposited wastes. It is planned that the restoration of the waste site will include for the covering of the mortar deposits with an LDPE liner, backfilled with inert clays and a hardcore surface for the storage and parking of skips and trucks. In the event that removal of the mortar wastes is required in the future it will be a relatively easy matter to excavate out the covering layers of unconsolidated materials without impacting on any permanent structures at the site.

(ii) **Demolition Phase.**

The existing buildings and concrete apron to the rear of the buildings will be demolished using normal demolition procedures. This will be started after the new recycling buildings have been constructed and commissioned and will be completed within 4 weeks. The normal waste recycling operations will be transferred to the newly constructed recycling building prior to demolition of the

existing buildings. Measures for the management of waste arisings and environmental mitigation will be detailed in the CDWMP to be provided in the planning application and waste licence review.

(iii) **Waste site Remediation Phasing.**

It is planned to remove the C&D wastes by excavating the wastes in two layers. The first layer will be approximately 3 to 4 metres deep and will not penetrate the water table. The second layer will comprise any wastes beneath the water table and will likely be accompanied by leachate pumping. It is planned to mark out the individual waste zones for each of these layers and excavate out each zone separately. Zones will be marked out by pegs and/or spray paint. In this way particular waste types can be dealt with by the site plant and machinery and transported off site (or stockpiled temporarily) before moving on to a different zone and waste type. The site remediation manager will be responsible for determining the actual extent of particular zones at the time of excavation and this will be based on visual examination and/or sample analysis. If the site manager observes anything unusual during the excavations from visual examinations, odours or other evidence that indicates a different waste type than that expected then that particular area of the site will be isolated for detailed assessment by sampling and analysis.

It is planned to carry out the excavations from the south to the north in two phases. Phase I will consist of the wastes beneath the southern part of the site, between the southern rock face and the southern end of the concrete apron. Phase II comprises the wastes beneath the concrete apron and beneath the southern part of the existing recycling building. In this way the concrete surface covering the northern part of the site will be maintained to provide a solid and clean working surface for much of the work programme. Each phase will be excavated from the surface down to the base of the C&D waste in two layers as described above prior to moving on to the next phase. Each layer will be removed starting at the southern boundary and moving northwards to the northern boundary.

It is planned to restore the site in a series of steps as the excavations progress. For example, the southern part of Phase I will be restored while excavations are progressing on the northern part of Phase I. In this way the remediation/restoration process will be carried out more or less concurrently. This will also provide a working/storage surface at the southern end of the site which will be required while works are progressing at the northern part of the site in Phase II. Restoration will be carried out at the southern boundary initially in order to provide a hydraulic barrier to

groundwater flow. This will be effected as much as is practically possible by compacting the backfilled clays along this boundary and should have the effect of reducing groundwater inflows to some degree.

If water or leachate is encountered during site excavations then it will be pumped out to the onsite interceptor and road tankers for appropriate treatment to maintain dry working conditions during the excavation process. The restoration of the site concurrently with the excavation process will likely reduce the overall volumes of water requiring treatment and backfilling from south to north will ensure that contaminated water does not come into contact with the restoration materials.

It is estimated that site preparatory works will take two weeks and each Phase will take approximately six weeks to excavate giving a total of c. 14 weeks and a further four weeks for full restoration. Normal licensed site operations will be carried out at the new recycling buildings during waste site remediation and restoration.

(iv) **Restoration Phase.**

Once the C&D waste materials have been fully removed the sides and base of the excavation will be scraped to ensure the vast bulk of the wastes have been removed. A topographic survey will be carried out and this will be used to determine the true void space of the excavation, the volume of materials removed and the volume of clean materials required to restore the void space. Only clean inert clays and soils will be used to backfill in and restore the quarry. Some of the materials removed and screened during the excavation process may be reused in the restoration programme assuming that they meet the inert criteria and are screened to the extent that they comprise in excess of 95% of clean clays, soils and stones. However, it is envisaged that much of the materials required to restore the quarry will come from an external source such as a local development or road cutting exercise where clean clays and soils (subsoils) are being excavated for site levelling, cutting, trenching works etc. These will be sampled and analysed to ensure they meet the requirements for backfill material i.e. that they consist of clean inert clays, soils and stones. The quarry will be backfilled from south to north and clays will be placed initially at the base of the excavation and then the clay levels raised to within 1 metre of the local ground surface levels. Light compaction will be carried out on the backfilled material to avoid future settlement or slumping. The clays deposited along the boundaries will be heavily compacted to provide a hydraulic barrier to groundwater flow. The restoration programme will be carried out in accordance with the EPA manuals for Landfill Restoration and Aftercare. An LDPE liner will be installed on top of the clay

and about 1 m below final grade. This will act as an impermeable barrier to rainwater infiltration. This will be covered with 1m of low permeability soils and the surface will be dressed as required, likely with hardcore materials to provide a firm working surface for the restored site. The restored surface can be topographically surveyed to confirm that the site has been fully restored and blends in with local surface levels. The survey will be used to design permanent land drains around the perimeter of the site which will be designed to prevent surface water run-off to the restored site. Drainage above the LDPE liner (e.g. standard land drains) will be tied into local surface water drains to ensure that water levels are not allowed to build up above the liner and to avoid ponding on site. All plant and equipment used in the remediation/restoration programme will be washed and removed off site.

(v) **Groundwater Monitoring.**

Groundwater monitoring will be undertaken at a minimum of one monitoring borehole up gradient (GW4) and at monitoring boreholes down gradient (GW1, GW2, GW5, GW6 and the Kilsaran well) of the waste body on a weekly basis. Samples will be analysed for a broad range of parameters to include the following;

- pH, conductivity, temperature (Daily)
- BOD, TOC, chloride, ammonia, nitrite, nitrate, potassium, sodium, sulphate, nickel, selenium, total dissolved solids and COD (weekly)
- A range of Organic Parameters (monthly)
- A range of Inorganic Parameters (monthly)
- A range of Hydrocarbons to include TPH and mineral oil (monthly)

Monitoring should be carried out for a minimum of two weeks prior to site works and during the entire remediation/restoration work programme. Monitoring will continue on a weekly basis for one month following completion of the work programme, fortnightly for one month, monthly for six months and then quarterly for the following year. The monitoring programme should be reviewed on an ongoing basis and amended depending on the results obtained. A detailed review should be carried out every six months. Any monitoring programme will be agreed in advance with the Agency and this will cover items such as parameters, monitoring locations and frequency of analysis.

(vi) **Waste Destinations.**

The destinations for excavated wastes that are to be exported off site will be to facilities as detailed in the current waste licence. These include the following disposal facilities:

Residual Waste to Drehid and Knockharley (Greenstar Ltd.) Landfills
Recyclables to AES Ltd. Tullamore and Thorntons Recycling Ltd., Killeen Rd, Dublin 12
Timber to Wilton Waste, Ballyjamesduff, Co. Cavan.
Metals to MultiMetals, Murrough, Co. Wicklow.
C&D Waste for recovey at Drehid.

Leachate will be tankered off site to either the Meath Co. Co. WWTP at Navan or the Dublin City Council WWTP at Ringsend subject to analysis and their agreement.

3 AES reserve the right to appoint independent consultants to supervise and report the excavation, remediation and restoration operations. Details of the names and qualifications of the consultants will be forwarded to the Agency in advance for their agreement. AES are agreeable to funding the provision of site agents to independently observe the works on behalf of the Agency.

I hope this meets with your satisfaction and if you have any queries please do not hesitate to contact me.

On behalf of Midland Waste Disposal Company Ltd.

Yours Faithfully,

Donal Marron BSc MSc PGeo
Regional Director
For and on behalf of WYG