12 October 2011

Nicola Gillies
Mallesons Stephen Jacques
Level 61, Governor Phillip Tower
1 Farrer Place, Sydney, NSW 2000

RE: AIR QUALITY IMPACTS OF PROPOSED FURTHER MODIFIED PREFERRED PROJECT TO DELLARA PTY LTD V MINISTER FOR PLANNING & PENRITH CITY COUNCIL – LAND AND ENVIRONMENT COURT CLASS ONE PROCEEDINGS 10928 OF 2010 – RESPONSE TO MINISTER

Dear Nicola

It is understood that subsequent to the provision of the following documents, additional information has been requested by the Minister for Planning:

- Statement of Evidence of Judith Cox (dated 24th June, 2011)
- Amendments addressed in a letter dated 13 July 2011 prepared by Judith Cox;
- Further amendments detailed in the Further Modified Preferred Project Report (FMPPR) (**R.W. Corkery & Co. Ltd, 2011**);
- Overview report for the FMPPR dated September 2011 and annexing letter prepared by Judith Cox dated 6 September 2011; and
- Response to Minister addressed in letter prepared by Judith Cox dated 22 September 2011.

In a letter dated 10 October 2011, the Minister for Planning raised the following in relation to air:

> **AIR QUALITY**
>
> Our letter dated 16 September 2011 requested that the Applicant provide:
>
> - *further detail and justification (including any modelling that may have been undertaken) to substantiate the conclusion that air quality impacts of the proposal remain unchanged.*
>
> **Overview Report**
>
> In response, a letter dated 22 September 2011 prepared by Ms Judith Cox of pae Holmes was provided in the report titled, "*Report for Modifications to Modified Preferred Project: Overview Report*" (September 2011) prepared by GHD. This letter confirms that no additional dispersion modelling has been completed in justification of conclusions that the air quality impacts of the proposal remain unchanged. We contend that this is not acceptable and updated modelling must be completed due to the scale of the modifications proposed.

As detailed in my letter dated 22 September, additional dispersion modelling is not considered necessary as in my professional opinion the proposed modifications are not significant with respect to the potential air quality impacts of the project. Additionally, it is considered that modelling completed to date has included adequate level of conservatism that more than compensates for the scale of the modifications. The following presents further justification for this conclusion.

PAEHolmes

SYDNEY

Suite 203, L2, Bld D
240 Beecroft Road
Epping NSW 2121

Ph: + 61 2 9870 0900
Fax: + 61 2 9870 0999

info@paeholmes.com
www.paeholmes.com

BRISBANE

GOLD COAST

TOOWOOMBA

A PEL COMPANY

Queensland Environment Pty Ltd
Trading as PAEHolmes
ABN: 86 127 101 642

1. *Reduction in height of the final landform:*

   - *a reduction in the finished level of the northern face from 55m AHD to approximately 44m AHD, 3-4m above the pre-existing ground levels (the interim acoustic mound would be at 53m AHD for acoustic purposes);*
   - *a reduction in the elevation of the northern face to a 5% slope profile to integrate more closely with the existing ground level; and*
   - *the substantial removal of the southwestern, southern and eastern bund walls and the forming of part of the final landform during the course of the project, to reduce visual impacts.*

This modification is related only to the final landform of the site and as such is not relevant to the Air Quality Impact Assessment (AQIA).

Whilst there may be potential for more material to be moved, these operations would take place over a relatively short period and as such any dust generation would be easily managed, in manner akin to any other construction activity.

2. *Increased extraction of clay/shale resources (as outlined in the Alternate Draft Conditions in Reply - Shale/Clay Resources filed with the Court):*

   - *extraction of additional clay/shale resources in Cell 2 by increasing the level of extraction from RL37 to RL28;*
   - *no emplacement of waste in Cell 4. Cell 4 is to be backfilled with clay/shale; and*

As presented in **Table 1**, when compared with the AQIA completed for the MPPR (**PAEHolmes, 2011**), there will be no increase in the annual amounts to be dispatched from the site compared with the original quantities proposed (and conservatively modelled). The additional clay/shale extracted over the life of the Project will be used for landfill lining, capping and daily covering of waste. Due to the high moisture content of clay/shale, the extraction and handling of these materials are not considered to be significantly dusty activities.

Table 1: Summary of material amounts

Activity	PAEHolmes 2011	R.W. Corkery & Co. Ltd, 2011
Landfill capacity	4.5 million	4.3 million
Maximum annual waste receipts (tons per annum)	450,000	450,000
Annual Throughput for Recycling and Re-processing (t)	350,000	350,000
Maximum annual quantity of extracted Clay/Shale dispatched from Site (t)	160,000[(a)]	160,000

a) It is noted that the AQIA assumed clay extraction would conservatively occur at a rate of 2,000 tonnes per day, equating to 624,000 tonnes per year.

To ensure the worst-case 24-hour impacts were assessed, the AQIA presented in **PAEHolmes 2011** conservatively assumed that the clay extraction rate would occur at a rate of 2,000 tonnes per day, which equates to an extraction rate of 624,000 tonnes per year (assuming 312 operational days per year).

This results in the predicted impacts of the operations being conservative as annual extraction rates will be approximately ¼ of this value. It is noted that there are no predicted exceedences of air quality criteria due to the operation of the site.

As noted in the letter dated 22 September 2011, my professional experience is that dispersion modelling is not sensitive to the relatively minor terrain changes proposed in **R.W. Corkery & Co. Ltd, 2011**.

3. *Contingency stockpile:*

- *a new contingency stockpiling area, which would be located in the southeastern corner of the site, enabling stockpiles of clay and shale destined for export to be stored as far from residents as possible; and*
- *consequential relocation of the site office.*

As noted in the letter dated 22 September 2011, the AQIA was conservative in the assessment of emissions due to wind erosion. The new contingency stockpile is approximately 2.5 hectares (ha) in size. The AQIA completed for the Modified Preferred Project (MPP) (**PAEHolmes, 2011**) assumed exposed areas of 25 ha and a stockpile of 0.4 ha, resulting in the assumption that a total of 25.4 hectares (ha) was releasing emissions due to wind erosion. In addition, as noted in response related to the extraction of additional clay/shale material, the dispersion modelling was based on a conservative amount of material movement. It is therefore considered that the potential dust impact of stockpiles on the site was adequately addressed in the AQIA presented in **PAEHolmes 2011**.

The assumed exposed area is effectively the majority of the site where operations take place and is considered to be extremely conservative. For example, this assumes the entire area where recycling and reprocessing would take place is a constant source of wind erosion emissions. In reality, appropriate operational dust management plans would be in place to ensure the recycling and reprocessing area is kept swept and clean and as such would not be significant source of dust. The emission estimation also took no account of control measures such as watering that will be applied to exposed areas and stockpiles.

In addition, the proposed contingency stockpile would be located in the southeastern corner of the site, with the closest residence approximately 1km to the southeast. The prevailing winds in the area are from the south and as such the impact on these residences from the contingency stockpile are considered to be minimal, particularly when the dust control strategies within a dust management plan are considered.

The relocation of the site office has no influence on the AQIA conclusions.

Further comments

As detailed in the letter dated 22 September 2011, the Air Quality Impact Assessment (AQIA) completed for the MPPR (**PAEHolmes, 2011**) concluded that the only exceedence of the air quality criteria may occur during the construction phase when existing background air quality concentrations were included. As presented in Table 5 of **PAEHolmes 2011**, the maximum predicted 24-hour average PM_{10} concentration at the residences due to the construction operations was 30 $\mu g/m^3$. The resultant cumulative impact when existing background levels were included was 51 $\mu g/m^3$ compared with the air quality impact assessment criterion of 50 $\mu g/m^3$. The highest predicted impact occurred on a day when the background concentrations were elevated across the region and as such indicates some regional event (e.g. bushfire) contributed to the elevated background concentrations on that day which are not typical of air quality in the area (see Table 7 of **PAEHolmes 2011**).

Figure 1 presents the 24-hour PM_{10} concentrations from the Office of Environment and Heritage (OEH) monitoring station located at St Marys for 2007. These data are contemporaneous with the meteorological data used in the AQIA. As these data show, almost 70% of the 24-hour average concentrations are less the 20 $\mu g/m^3$. The likelihood of the worst-case impacts due to construction occurring on the same day as the worst-case background are minimal. In addition the use of a real-time air quality monitoring system will provided further protection to the residents.

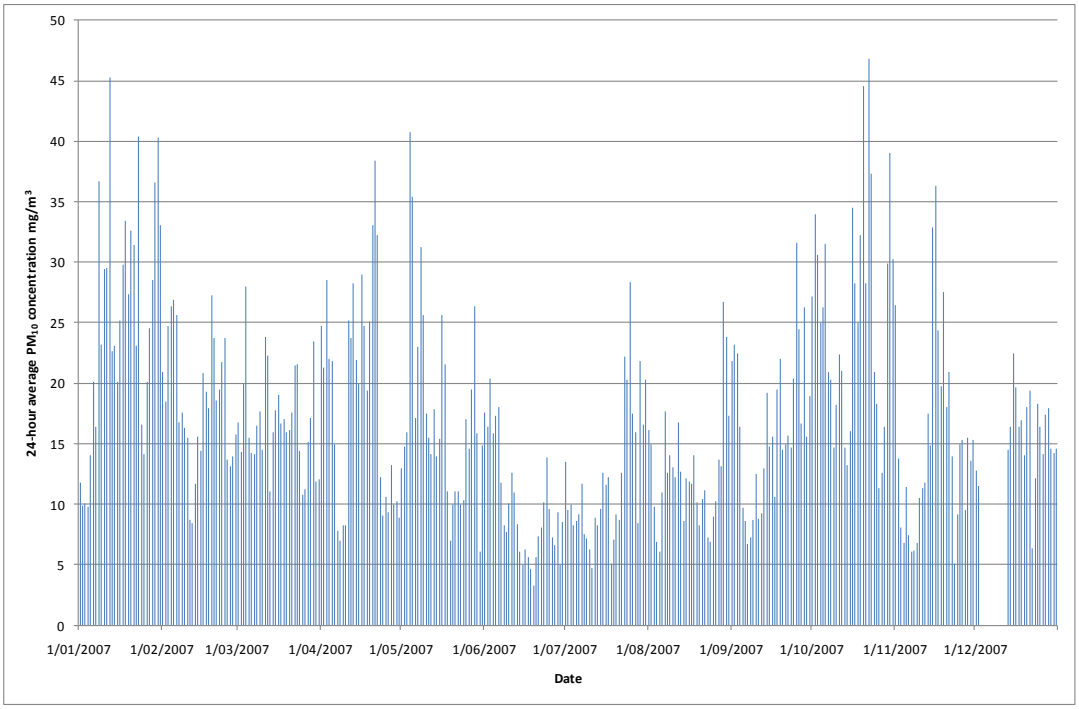

Figure 1: St Marys OEH 24-hour average PM_{10} concentrations 2007

In summary, it is my professional opinion that the AQIA completed for the MPPR contained a number of conservative estimates and as such the conclusions reached regarding predicted air quality impacts as presented **PAEHolmes 2011** remain unaltered in view of the relatively minor modifications proposed.

Kind regards

JUDITH COX – SENIOR ENVIRONMENTAL CONSULTANT

PAEHOLMES

REFERENCES

PAEHolmes (2011)

"Supplementary Air Quality Assessment. Modified Preferred Project. Orchard Hills Waste and Resource Management Facility, Air Quality Assessment", 19 May 2011. Prepared by PAEHolmes on behalf of Dellara Pty Ltd.

R.W. Corkery & Co. Ltd, 2011

"Further Modified Preferred Project Report. Orchard Hills Waste and Resource Management Facility, Air Quality Assessment", September 2011. Prepared by R.W. Corkery on behalf of Dellara Pty Ltd.