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28 March 2013

Melanie Attwell and Associates  
Heritage Consultants  
2 Caxton Close  
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Re.: Independent expert opinion: Options associated with Interpretive Centre: Precinct One, incorporating Quarry E: West Coast Fossil Park.

Dear Ms Attwell,

Thank you for giving me the opportunity to provide my opinion on the above matter. I know the site of Langebaanweg (LBW)E Quarry well, as I have both excavated and analysed fossil material from here since 2007. I have also published several articles on a range of LBW fossils. Therefore I feel that I am qualified to give an opinion.

I've read through the various documents and e-mail correspondences that you've sent me regarding the two options proposed to anchor and stabilise the new West Coast Fossil Park Interpretive Centre building and its foundations, namely piling and dynamic compaction. I've also done some background reading on the effects of both methods on surrounding sediments and their contents.

I understand that the geotechnical engineers prefer the dynamic compaction option as it is thought that this option would have no impact on the *in situ* fossiliferous levels below the overburden mound. I agree with them on this, however with a reservation. From what I've read, depending on the weight that is used and the height that it is dropped from, stress waves can penetrate up to 10m in all directions from the point of impact. The distance between the top of the cutting into the overburden mound on which the building is to be built and the *in situ* fossiliferous levels, looks to be less than 10m. If this is so, how sure are the engineers that

stress wave penetration depth will not reach their *in situ* fossil-bearing horizons? This issue will have to be clarified with them prior to any final decision being made.

Stress waves generated by dynamic compaction are likely to destroy or at least badly fragment fossil and archaeological material left behind in the overburden mounds. From a research point of view, losing any fossils or archaeological material in an assemblage is not ideal, even *ex situ* material. However, it is true that if material is to be lost, losing material without any context is preferable as these obviously preserve less information than *in situ* material. For this reason, I do not support the piling option. If the piling extends into the undisturbed fossiliferous levels, as suggested it would have to, *in situ* fossils would almost certainly be destroyed given the high densities at which fossils occur in parts of E Quarry. To get an idea of this, one would just have to look at the Sivatherebone bed in the exhibition tunnel.

So in sum, I support the dynamic compaction method as the one that would cause least damage to valuable *in situ* fossil material during the construction of the West Coast Fossil Park Interpretive Centre. However, the geotechnical engineers would have to be absolutely certain about stress wave penetration depth to prevent destruction of fossil material below the overburden mound.

Please do not hesitate to contact me if you require clarity on certain points or if you have any other questions regarding this issue.

Yours sincerely

Deano Stynder

A handwritten signature in black ink, appearing to read 'Deano Stynder', with a long horizontal flourish extending to the right.