coffey geotechnics
SPECIALISTS MANAGING THE EARTH

23 October 2006

Jones Lang LaSalle Pty Ltd
Level 18, 400 George Street
SYDNEY NSW 2000

Attention: Jimmy Ling

Dear Sir

RE: DOLPHIN BLUE DEVELOPMENT AT YAMBA ROAD YAMBA

1 INTRODUCTION

As requested by Mr Jimmy Ling of Jones Lang LaSalle Pty Ltd, Coffey Geotechnics Pty Ltd (Coffey) has assessed the need for further environmental assessments at the Dolphin Blue development site on Yamba Road, Yamba NSW.

The Blue Dolphin Resort (BDR) site is identified as Lot 1 and Lot 2 of DP706628. The site is currently a caravan park located between Yamba Road and the Clarence River, in Yamba NSW. Part of the site is used as a service station. It is understood that the proposed development of the site will include removal of the service station and caravan park infrastructure, and construction of residential and resort style accommodation.

Coffey have previously carried out work on the site, which included a geotechnical investigation, a dewatering investigation and a site contamination assessment for the existing service station development. Further details of these are given in Section 2 below.

This letter discusses whether further environmental investigations are required in accordance with the definitions given in NSW Department of Urban Affairs & Planning (1998) 'SEPP 55 – Remediation of Land' (referred to as SEPP 55 in this letter).

2 BACKGROUND INFORMATION

2.1 Geotechnical Investigations

Coffey has previously carried out a geotechnical and a dewatering investigation at the site. A brief summary of the contents of each report is given below.

Report GEOTCOFH01613AA-AG (18 October 2006) – *Dewatering Management Statement*

This report contained information about groundwater levels, groundwater flows, and the permeability of the site soils, in order to make recommendations on how best to manage dewatering of proposed excavations. Generally this report contained little relevant information on contamination conditions at the site but indicated that groundwater was shallow (within 1.8m of the ground surface).

Report GEOTCOFH01613AA-AF (18 October 2006) – *Phase 1 Geotechnical Investigation*

This report contained information on the subsurface geotechnical conditions, alternative footing types and bearing pressures, excavation retention, excavation conditions, site preparation and other geotechnical related issues. The report also contained information on acid sulphate soils, and provided an Acid Sulphate Soils Management Plan for management of acid sulphate soils during excavation of the site soils. Generally this report contained little relevant information on contamination conditions at the site apart from inferring that ASS could impact on groundwater and excavated soil should underground storage tanks be removed.

2.2 Site Contamination Assessment

2.2.1 Stage 1 and Stage 2 Assessment of Existing Service Station

Report CH1613/2-AC (5 June 2006) – *Site Contamination Assessment*

A Site Contamination Assessment of the service station portion of the BDR site (approximately 1,700m^2 located near the eastern end of the Yamba Road site boundary) was carried out in accordance with the relevant sections of the NSW EPA (1997) Guidelines for Consultants Reporting on Contaminated Sites and the NSW EPA (1995) Sampling Design Guidelines. This contamination assessment, for the service station portion, would be referred to as a combined Stage 1 'Preliminary Investigation' and 'Stage 2 – Detailed Investigation' in accordance with SEPP 55.

The assessment included a site history assessment plus sampling and analysis from nine (9) boreholes drilled at the existing service station. Aspects of the site history study, such as aerial photo review, Council record search, EPA notices and interviews, covered the whole BDR site area as it proved impractical to separate the service station as a single item. It should be noted that the site visit carried out as part of the site contamination assessment to confirm areas of environmental concern and observe potential contaminating activities, covered the service station only.

The findings were reported in the Site Contamination Assessment report, reference number CH1613/2-AC, dated 5 June 2006, and the report should be read in conjunction with this letter.

The field investigations and laboratory analysis identified contamination in both the soils and groundwater, which were likely to have been caused by the underground fuel storage tanks (USTs) and bowsers. At least one UST was considered to be causing significant contamination which may extend beyond the service stations boundaries, and it was recommended that the UST(s) be removed as a matter of urgency.

The findings of the site history assessment are presented in the previous report, and are not summarised here in detail. Generally the site history assessment indicated that the service station had been constructed in about 1961, and parts of the site had been used for the caravan park since about 1956. Prior to becoming a caravan park, the site was natural bushland, and over time the caravan park extended, until it covered the whole of Lot 1 and Lot 2 of DP706628.

For further details of the findings of the site history, reference should be made to report CH1613/2-AC.

3 STAGE 1 ASSESSMENT OF BDR SITE

The results of the site history assessment for the BDR site are presented in report CH1613/1-AB discussed above. In order to complete a Stage 1 assessment of the BDR site with reference to SEPP 55, it was considered that a site walkover would need to be carried out to make observations of the site with respect to areas of environmental concern.

A site walkover assessment was carried out by a Scientist from Coffey in June 2006 to make observations of the BDR site with respect to potential contamination. The results of the walkover assessment are discussed below.

The site of about 5.2Ha is situated at lot 1 and 2 in DP706628 Yamba Road, Yamba. The site is situated on the north-eastern side of Yamba Road and is bounded by low rise detached dwellings to the south-west, the Clarence River to the north-east, the 'Moby Dick' motel to the south-east and the Clarence Valley Nature Reserve to the north-west.

Regionally the site is situated within a flat alluvial floodplain area of the Clarence River. Locally, the ground surface is generally flat. Some low rise, man made landscaping soil mounds are located on the site. Existing developments at the existing caravan park comprise numerous demountable cabins, brick amenities buildings and several in ground swimming pools. Vegetation on the site consists mainly of mowed lawns and scattered trees. No evidence of soil contamination was observed during the walkover assessment.

A machinery depot area, which included a metal clad shed, was observed near the western end of the site. The shed floor was concrete paved, as was part of the depot area. The outdoor depot area was used to store machinery. The shed was used to store smaller machinery (lawn mowers and the like) and chemicals and products associated with the site maintenance, including grease and oils, paints and herbicides and pesticides which are used on the BDR site. No evidence of soil contamination was observed in the depot area during the walkover assessment.

4 COMMENTS AND RECOMMENDATIONS

It is possible that localised point sources of contamination could be present on the BDR site, including localised oil spills from parked cars, trailers and machinery maintenance, or buried domestic wastes. Given that caravan parks are not a known contaminating activity it is expected that these areas, if identified, would be relatively small and of limited extent, and could be remediated/managed during the re-development of the site. During any demolition/construction activities, it is recommended that site observations are made, from a contamination point of view, at the BDR site. Should areas of environmental concern be identified, then some sampling and analysis would be required to help define the lateral and vertical extent. The contaminations would then need to be remediated and validated in accordance with an appropriate Remediation Action Plan (RAP) as defined in SEPP 55.

It is possible that the contamination identified at the service station could extend beyond the service station boundaries and be present in the soils and groundwater on the BDR site. Further investigations to identify the extent of the groundwater plume beyond the service station boundaries were recommended in the contamination assessment report.

We would highly recommend that the above additional investigations, plus the removal of the service station infrastructure followed by remediation and validation, be carried out before any construction activities proceed. As stated in report CH1613/2-AC, remediation should be carried out in accordance with a RAP as defined in SEPP 55. Provided that the above additional investigations are carried out appropriately, and that the site contamination is remediated and validated to an acceptable standard in accordance with a suitable RAP, it is considered that the site would be suitable for the proposed development with respect to contamination from past activities.

5 LIMITATIONS

The findings contained in this letter and the previous reports are the result of discrete/specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points.

We draw your attention to the attached document entitled "Important Information about your Coffey Environmental Site Assessment" which should be read in conjunction with the report.

This letter does not address issues relating to potentially hazardous building materials or services which may be present on the site. This letter does not address geotechnical issues at the site.

For and on behalf of Coffey Geotechnics Pty Ltd

David Barker

Senior Geotechnical Engineer

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Important information about your **Coffey** Environmental Site Assessment

Uncertainties as to what lies below the ground on potentially contaminated sites can lead to remediation costs blow outs, reduction in the value of the land and to delays in the redevelopment of land. These uncertainties are an inherent part of dealing with land contamination. The following notes have been prepared by Coffey to help you interpret and understand the limitations of your environmental site assessment report.

Your report has been written for a specific purpose

Your report has been developed on the basis of a specific purpose as understood by Coffey and applies only to the site or area investigated. For example, the purpose of your report may be:

- To assess the environmental effects of an on-going operation.
- To provide due diligence on behalf of a property vendor.
- To provide due diligence on behalf of a property purchaser.
- To provide information related to redevelopment of the site due to a proposed change in use, for example, industrial use to a residential use.
- To assess the existing baseline environmental, and sometimes geological and hydrological conditions or constraints of a site prior to an activity which may alter the sites environmental, geological or hydrological condition.

For each purpose, a specific approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible, quantify risks that both recognised and unrecognised contamination pose to the proposed activity. Such risks may be both financial (for example, clean up costs or limitations to the site use) and physical (for example, potential health risks to users of the site or the general public).

Subsurface conditions can change

Subsurface conditions are created by natural processes and the activity of man and may change with time. For example, groundwater levels can vary with time, fill may be placed on a site and pollutants may migrate with time. Because a report is based on conditions which existed at the time of the subsurface exploration, decisions should not be based on a report whose adequacy may have been affected by time. Consult Coffey to be advised how time may have impacted on the project and/or on the property.

Interpretation of factual data

Environmental site assessments identify actual subsurface conditions only at those points where samples are taken and when they are taken. Data derived from indirect field measurements and sometimes other reports on the site are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions. Actual conditions may differ from those inferred to exist, because no professional, no matter how well qualified, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions. For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of Coffey through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other problems encountered on site.

Your report will only give preliminary recommendations

Your report is based on the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until project implementation has commenced and therefore your report recommendations can only be regarded as preliminary. Only Coffey, who prepared the report, is fully familiar with the background information needed to assess whether or not the report's recommendations are valid and whether or not changes should be considered with redevelopment or on-going use of the site. If another party undertakes the implementation of the recommendations of this report there is a risk that the report will be misinterpreted and Coffey cannot be held responsible for such misinterpretation.

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Important information about your **Coffey** Environmental Site Assessment

Your report is prepared for specific purposes and persons

To avoid misuse of the information contained in your report it is recommended that you confer with Coffey before passing your report on to another party who may not be familiar with the background and the purpose of the report. In particular, a due diligence report for a property vendor may not be suitable for satisfying the needs of a purchaser. Your report should not be applied for any purpose other than that originally specified at the time the report was issued.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, retain Coffey to work with other professionals who are affected by the report. Have Coffey explain the report implications to professionals affected by them and then review plans and specifications produced to see how they have incorporated the report findings.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists, engineers or geologists based on their interpretation of field logs (assembled by field personnel), field testing and laboratory evaluation of field samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

Contact Coffey for additional assistance

Coffey is familiar with a variety of techniques and approaches that can be used to helo reduce risks for all parties to land development and land use. It is common that not all approaches will be necessarily dealt with in your environmental site assessment report due to concepts proposed at that time. As a project progresses through planning and design toward construction and/or maintenance, speak with Coffey to develop alternative approaches to problems that may be of genuine benefit both in time and cost.

Responsibility

Environmental reporting relies on interpretation of factual information based on judgement and opinion and has a level of uncertainty attached to it, which is far less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. To help prevent this problem, a number of clauses have been developed for use in contracts, reports and other documents. Responsibility clauses do not transfer appropriate liabilities from Coffey to other parties but are included to identify where Coffey's responsibilities begin and end. Their use is intended to help all parties involved to recognise their individual responsibilities. Read all documents from Coffey closely and do not hesitate to ask any questions you may have.