

Planning Scheme Amendment C129 Monash Planning Scheme

Planning Panels Victoria Hearing

Expert Witness Statement of Kenneth Neil Mival

5 October 2017

Expert Witness Report







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Letter of Instruction PPV Guide to Expert Evidence Qualifications



1.0 INTRODUCTION

- 1. I have been requested by Norton Rose Fulbright on behalf of Sterling Global Property Group Pty Ltd (**Sterling Global**) to prepare an Expert Witness Statement which addresses the following matters:
 - 1.1 clarification concerning my letter to Sinclair Brook Pty Ltd dated 28 November 2014;
 - my views concerning the content of section 2 of the letter from Norton Rose Fulbright to Planning Panels Victoria dated 1 September 2017;
 - 1.3 the proposal to rezone the site prior to completion of an environmental audit;
 - 1.4 the relationship between the SESP, the various ESAs and planning permit applications;
 - 1.5 whether the conclusory opinions expressed by Messrs Phil Sinclair and Ian Pedler in their respective expert witness statements are reasonable and appropriate; and
 - 1.6 other examples of which I am aware of residential development on former landfill sites.
- 2. In addition, I have been requested to appear at the hearing before Planning Panels Victoria for the purpose of presenting my expert opinion concerning these matters.
- 3. In providing this report I have read *The Guide to Expert Evidence* provided by Planning Panels Victoria and agree to be bound by the terms of the Expert Witness duties as detailed in the Guide.



2.0 DECLARATION OF EXPERT WITNESS

2.1 Report of Expert Witness Pursuant to the Guide to Planning Panels on Expert Evidence

- 4. I, Kenneth Neil Mival, Environmental Auditor employed by EHS Support Pty Ltd (EHS), of 55 Forest Road, Flowerdale, Victoria 3717, have been requested by Sterling Global in regard to Monash Planning Scheme Amendment C129, to prepare this report in relation to the matters which I have identified at Section 1.0.
- 5. I have read the Guide to Expert Evidence at Planning Panels (a copy of which appears at **Appendix B**) and agree to be bound by those guidelines.

2.2 Qualifications, Experience and Area of Expertise

- 6. I qualified with a Bachelor of Science (Hons) in Geology at Exeter University, Devon England in 1969 and have worked progressively as a geologist, engineering geologist and environmental auditor for the last 47 years.
- 7. I have over 45 years of experience in engineering geology and environmental consultancy, the last 24 as an Environmental Auditor appointed by EPA Victoria pursuant to the Environment Protection Act 1970, including management and/or environmental audit of the clean-up of numerous former industrial sites prior to development for sensitive uses, including residential use, and including the auditing of landfills.
- 8. I have extensive experience with geotechnical and environmental engineering, including environmental assessments, health risk assessments, contaminated land management, statutory and due diligence audits for many large and small projects (refer to CV attached). My specific areas of expertise relevant to this report includes the provision of consultancy advice and environmental auditor services in regard to contaminated land management and remediation of contaminated land for sensitive uses under Ministerial Direction No1 and the Planning Practice Note on Contaminated Land; landfill management and the auditing of landfills in regard to construction, operation and closure in relation to the BPEM guidelines; the closed landfill guidelines; and the requirements of the Environment Protection Act. This has included the auditing of land proposed for residential developments located within buffer zones in regard to landfill gas migration risk and odour risk from adjacent operating and closed landfills.
- 9. My experience has also included audit of many major development projects at Docklands including audits of the clean-up for the former West Melbourne Gasworks; for major road and infrastructure projects; and for the clean-up of major chemical and industrial sites including sewage farms and landfills. As the project manager I supervised the clean-up and disposal of lead contaminated soils and dusts from 63 properties at Suspension Street Ardeer for EPA in the early 1990s. My experience has also included historical research into, and advice on, the likely causes, impacts and costs of contamination by industrial chemicals, and of its remediation including the management of wastes in accordance with EPA regulations, for management decisions, litigation, and audit purposes.
- 10. Specific previous project experience relevant to the consideration of auditing of contaminated land and in relation to closed landfills to this proposed amendment includes:
 - Audit of the \$45m remediation of a large sewage treatment facility in Melbourne's east involving dioxin remediation that also included a 53V audit of the construction of a landfill containment facility to contain the contaminated sludges that included audits of liners; leachate management and gas collection systems;



- 53V Audit of a large landfill site at Springvalley Reserve for landfill gas risks for City of Greater Dandenong as part of the EPA investigation into potentially hazardous landfills following the Brookland Greens evacuation;
- Providing expert advice to EPA regarding landfill gas migration relating to Stevenson's Road Landfill at Cranbourne and its potential impact on the Brookland Greens estate in south east Melbourne, including informing EPA of the existence of an 'Imminent Environmental Hazard' at the site.
- Provision of consulting advice to the City of Casey in regard to ongoing landfill gas risk post-remediation of the site in 2014;
- Auditing of two large closed landfills (Sunshine and Huletts Road Landfills) for City of Brimbank at Energy Park and Carrington Drive Reserve and ongoing review of landfill gas risk to adjacent properties;
- Auditing of a number of proposed residential sub-divisions within the buffer zone in proximity to the SUEZ Environment (SITA) landfill at Hallam in regard to landfill gas risk and landfill odour that has been a significant ongoing problem with numerous complaints to EPA;
- 53X Audit of Tooronga Village, a former landfill developed for commercial and medium/high density residential use in multiple stages and audit areas and the bulk of the site now being sub-divided for a sports facility for St Kevin's High School;
- The provision of a gas risk assessment for multiple options to construct a Waste Transfer Facility on top of the Fraser Road Landfill at Clayton;
- Auditing of multi-use large developments including Victoria Harbour of Docklands for Vicurban (now Development Victoria); Lend Lease and Mirvac; and
- Ongoing Audit of a 20 ha site at Huntingdale Estate in South Oakleigh for a property developer that is located on former putrescible waste landfill, and sand quarries filled with clay and silt washings from processing of the sand. This has included review of a site remediation strategy; development designs including vapour barriers and leachate collection wells, and management plans for construction and on-going monitoring of the site (in progress 2013 to current 2017).
- 11. More details on my overall experience and qualifications are provided in Section 2.5 below and in my CV included in **Appendix B** of this report.

2.3 Instructions

- 12. I have been engaged by Norton Rose Fulbright Australia on behalf of Sterling Global, to prepare this witness statement and form an opinion on specific questions relating to this matter. The questions are detailed in Section 1.0 of this report and are contained in a letter of instructions dated 4 October 2017 forwarded to me by Norton Rose Fulbright Australia. A copy of the letter of instructions is included **Appendix A** of this report.
- 13. In the preparation of this statement, I have been directed to a number of documents which are listed in Section 3.2 of this statement.

2.4 Declaration

14. I declare that I have made all inquiries which I believe are desirable and appropriate and that no matters of significance which I regard as relevant, have to my knowledge been withheld from the Panel.



- 15. I declare that all opinions expressed in this report are not subject to any qualifications without which the report may be incomplete or inaccurate.
- 16. I declare that I had sufficient research and data and am satisfied that all opinions expressed in this report are conclusive.

Kenneth Neil Mival

Environmental Auditor (Contaminated Land) Victoria

2.5 Summary of Career Experience

Qualifications: BSc (Hons) Geology (Exeter UK 1969)

Areas of Experience: Engineering Geology, Instrumentation, Materials, Contaminated Land Management, Environmental Auditing, Landfill auditing.

Career Summary: Kenneth Mival is a Consultant Engineering Geologist with over 45 years of experience in the fields of mining, engineering geology, geotechnical and environmental engineering, and has worked on major projects in these fields in Central and Southern Africa, United Kingdom, Australia, New Zealand, Singapore and Papua New Guinea.

- 17. Ken has a wide experience in all aspects of engineering geological investigations, geotechnical instrumentation, and groundwater quality. He has managed many projects involving major infrastructure developments for industry and government including assessment of slope stability, foundations, materials, groundwater, and failure analysis. Projects have included roads, tunnels, harbours, pipelines, landfill permitting, electrical and telephone infrastructure developments, and building basements and foundations. In the last twenty-five years he has also been primarily involved in environmental assessments and audits; the management of contaminated land; and the auditing of construction of landfills and closed landfills.
- 18. Ken was accredited by the Environment Protection Authority (EPA) as an Environmental Auditor (Contaminated Land) in 1993. His accreditation has been continuous and remains current in Victoria until November 2020. He has undertaken environmental assessments, health risk assessments, contaminated land management, statutory and due diligence audits for many large and small projects. These include statutory environmental audits for several of the Melbourne Docklands Development Precincts including a \$60m remediation of the West Melbourne Gasworks; Victoria Harbour; Yarra's Edge; the Western Link of Melbourne City Link Elevated Freeway; a number of explosives and chemical sites; several landfill sites; and other major due diligence audits for the Commonwealth, and multinationals.
- 19. In 2011 he completed the environmental audit for Melbourne Water of the \$45m remediation of a large sewage treatment facility in Melbourne's east involving dioxin remediation for continued industrial commercial use, including a 53V audit of the construction of an 8 hectare, 6 celled landfill facility to contain the contaminated sludges. He also recently completed audits for the remediation of the final phases of development in Victoria Harbour, Melbourne Docklands for a developer; a former quarry filled with petroleum hydrocarbon wastes in Sydenham for ongoing use as a car park; other former gasworks sites in Melbourne; and a large former chemical works located adjacent to the Maribyrnong. He also completed Environmental Audits for the Westgate Freeway Upgrade including the management of contaminated soils on the site and previously the City Link Western Link; a large landfill site for landfill gas issues



- for City of Greater Dandenong; two large closed landfills for City of Brimbank; and provided expert advice to EPA and City of Casey regarding the Cranbourne landfill gas issues.
- 20. Ken has also previously developed guidelines for prevention and management of contamination for the Department of Defence, and undertook the Australian part of a worldwide study on the management of contaminated military sites, including explosives manufacturing sites, on behalf of the German Federal EPA. He has also appeared as Expert Witness at VCAT and in court cases relating to: dams; contaminated land management; and two instances of illegal landfills for EPA; and has provided expert opinion on: landfill gas issues; asbestos and PCB contamination; the potential cost for remediation of 75 city sites for continuing port use in a high court dispute; a supreme court action on compensation for land compulsorily purchased for the regional rail project based on the extent and likely cost for remediation; and for claims for variations on unforeseen ground conditions for dams, tunnelling and directional drilling in various jurisdictions.
- 21. Most recently he appeared as an Expert Witness in the Supreme Court in relation to coal tar wastes abandoned on the former Richmond Abattoir site purchased by the Metropolitan Fire and Emergency Services Board. He recently also appeared as an expert witness at Planning Panels Victoria in relation to Planning Scheme Amendment C173 that imposed Environmental Audit Overlays on a number of properties in the City of Brimbank Planning Scheme.Ken also appeared as an Expert Witness in regard to landfill gas risk at Planning Panels in relation to Planning Scheme Amendment C162 for the proposed development of residential and commercial land at Mt Atkinson and Tarniet Plains and subsequently, in consideration of Planning Permit Application PA2016/5118 and Works Approval Application 10022191 for the expansion of the Melbourne Regional Landfill at Ravenhall.
- 22. Ken is a past Chair of the Victoria Division of the Association of Consulting Engineers Australia (2008/2009) (now Consult Australia) and a committee member from 2004 to 2009. During 2009, Ken was invited to represent ACEA on the Building Commissioner's Bushfire Roundtable. He represented URS on the joint ACEA/Engineers Australia bushfire recovery committee for voluntary engineering support; in waste water studies; and assisted the local Flowerdale recovery committee to establish a temporary recovery village for those displaced by the February 2009 bushfires.
- 23. He was a member of EPA's Environmental Audit System Improvement Group (EASIG) from 2010 to 2013, and has been a member of the Victorian Planning and Environmental Law Association since 2001. He remains a member of EPA's Landfill Auditors Reference group and on their Groundwater Committee.
- 24. A full professional resume is included in **Appendix C** of this report.



3.0 MY ROLE AS AUDITOR OF THE SITE

- 25. On 31 July 2013, I was appointed by Mr Glen Slimmon of Sinclair Brook Pty Ltd (**Sinclair Brook**), on behalf of Sterling Global, to undertake a Section 53X Audit of the land at 1221 to 1249 Centre Road South Oakleigh. I notified this appointment to EPA on 2 August 2013 which was acknowledged by EPA on 5 August 2013.
- 26. I undertook a series of site visits to examine the current state of the site at the time I was appointed and at other occasions during the next 4 years as environmental assessment works proceeded on the site.
- 27. I have also attended several meetings with the client and their consultants during the last 4 years in regard to progress on the site and my considerations of a number of documents. This has included several meetings with Monash City Council where my views regarding the proposed development were discussed (for example meetings of 7November 2013 and 28 January 2016).
- 28. In addition, I provided a letter dated 28 November 2014 to Sinclair Brook which was, in turn, provided to Monash City Council which outlined my endorsement of the approach documented in the SESP.
- 29. Over the course of the period since my appointment I have reviewed the following key documents:
 - (a) Coffey Environments Draft Report for Talbot Road Finance Pty Ltd Issues Summary Report 1129 to 1149 Centre Road, & 22 Talbot Avenue, Oakleigh South, Vic (Coffey Ref. ENAUABTF00751AA R01) dated 3 Dec 2013;
 - (b) Coffey Environments "Remediation Options Report 1129 to 1149 Centre Road, & 22 Talbot Avenue, Oakleigh South, Vic" dated 3 December 2013, reference ENAUABTF00751AA_R04, subsequently finalised on 27 May 2014 (**ROR**);
 - (c) Coffey Environments "Workplan for Environmental Site Assessment: Zone 4 of 1129-1149 Centre Road, & 22 Talbot Avenue, Oakleigh South, Vic (Revised)" dated 14 February 2014, reference ENAUABTF00751AA_R05 rev 01;
 - (d) Coffey Environments Workplan for Supplementary Environmental Site Assessment dated 1 June 2015 (Coffey Reference: ENAUABTF00751AA R06 Rev02);
 - (e) Coffey Environments "Huntingdale Estate Environmental Site Assessment Zone 4 of 1221 to 1249 Centre Road and 22 Talbot Avenue, Oakleigh South, VIC" dated 15 May 2014, reference ENAUABTF00751AA_R07;
 - (f) Coffey Environments Draft Report "Soil, Groundwater and Landfill Gas Assessment 1121-1249 Centre Road & Talbot Avenue, Oakleigh South, Victoria: ref ENAUBTF00751AA_R08a dated 5 June 2014;
 - (g) Coffey Environments "Huntingdale Estate Development Proposal 1221-1249 Centre Road & 22 Talbot Avenue, Oakleigh South" as presented to Council 7 November 2013 prepared by Urbis & Coffey;
 - (h) Coffey Environments "Site Backfilling Protocol 1121-1249 Centre Road & Talbot Avenue, Oakleigh South, Victoria: ref ENAUBTF00751AA_R02 Final Dated 12 August 2013;
 - (i) Coffey Environments Site Environmental Strategy Plan 1221 to 1249 Centre Road, & 22 Talbot Avenue, Oakleigh South, Vic (Ref. ENAUABTF00751AA_R09_R03) dated 28 October 2014. My review of a subsequent version of the SESP reference R09 Rev04 (2) resulted in my endorsement of the SESP as described in my letter dated 28 November 2014. This followed a previous letter of 16 May to Monash City Council in which I accepted the proposed staging of the development as appropriate;



- (j) Coffey Geotechnics "Huntingdale Estate Oakleigh South Zone 4 Construction Quality Assurance Plan GEOTABTF09257AA-BB_rev2 Dated 4 December 2014; and
- (k) Many other minor documents including plans, figures and letter reports were also reviewed, in particular a number of reports relating to soils proposed to be imported to the site from off-site sources. I also reviewed proposed acceptance critera for those soils, proposed groundwater criteria and the results of landfill gas monitoring at the site on several occasions up to and including 2017.
- 30. In forming my opinions regarding the SESP, ROR and various Work Plans for environmental assessments at the site prepared by Coffey and during the initial reviews of Coffey Work Plans and proposals for remediaton, I was also provided with and reviewed at that time reports for the site prepared by others as listed in Section 1.6 of Mr Sinclair's Expert Witness Report including:
 - (a) Amal Black -2002;
 - (b) HLA 2004 2006;
 - (c) AECOM 2010;
 - (d) Lane Piper -2010; and
 - (e) Tonkin and Taylor -2011.
- 31. Over the course of my appointment as Auditor, I have been assisted in the review of many of these documents by my assistants previously at URS Ms Rebecca Jarvis (Environmental Scientist and Human Health Risk Assessor) and subsequently at EHS-Support by Dr Tiffany Gourley (Senior Hydrogeologist and Landfill Gas Risk Assessor).



4.0 INFORMATION CONSIDERED BY WITNESS

- 32. In preparing this Expert Witness Statement, I have had regard to a number of documents relating to the Planning Scheme Amendment C129 to the Monash Planning Scheme as follows:
 - (a) Schedule 2 to the Comprehensive Development Zone (CDZ2) Former Talbot Quarry and Landfill Comprehensive Development Plan (as provided to the Panel on 11 August 2017) (draft CDZ2);
 - (b) Huntingdale Estate: Site Environmental Strategy Plan 1221-1249 Centre Road & 22 Talbot Avenue dated 28 November 2014, referenced ENAUABTF00751AA_R09 Rev04 (2) (**SESP**);
 - (c) PPV Directions dated 17 August 2017;
 - (d) Letter from Norton Rose Fulbright to PPV dated 1 September 2017;
 - (e) Expert Witness Statement prepared by Mr Phil Sinclair dated 28 July 2017;
 - (f) Expert Witness Statement prepared by Mr Ian Peddler dated 1 August 2017;
 - (g) EPA Submission to Monash Planning Scheme Amendment C129 dated 10 August 2017; and
 - (h) Submission on behalf of the Planning Authority in relation to Monash Amendment C129, undated.
- 33. In preparing this Expert Witness Statement I have not re-reviewed all of the documentation described in Section 3.0 of this statement. The questions which I have been asked to address in my statement did not necessitate this.



5.0 SUMMARY OF OPINION

5.1 My letter to Sinclair Brook dated 28 November 2014

- 34. Having undertaken the review of the SESP documented in my letter dated 28 November 2014, I formed the view that the SESP outlined a suitable framework and strategy that, if implemented in accordance with the plan, would achieve an acceptable outcome for the site having regard to the proposed development.
- 35. At the time of reviewing the SESP, I understood from the plan that a range of future land uses were being proposed that included sensitive uses such as medium density and/or high density residential, as well as areas of roads, open space, commercial use and the installation of gas and groundwater management infrastructure.
- 36. Whilst I anticipated that the SESP and the locations of proposed land uses may change to some extent during implementation of the plan, I was confident at the time I drafted the letter and remain confident that, provided the plan is diligently followed in regard to remediation to achieve its objectives, then I would be able to complete environmental audits for each zone in general accordance with the land uses proposed.

5.2 <u>Letter from Norton Rose Fulbright to PPV dated 1 September 2017</u>

- 37. I agree with the comments made in the Norton Rose Fulbright letter regarding ESAs and the need to provide multiple ESAs to cover various parts of the site and various sources of contamination eg soils, landfill gas, leachate and groundwater.
- 38. I also agree with the approach that includes the development of a Site Remediation Strategy Plan as envisioned by the Advisory Committee on Potentially Contaminated Land, upon which the SESP for this site is based.
- 39. I can therefore endorse the Norton Rose Fulbright letter as adequately documenting the current status of assessment, investigations, reporting and remediation plans at the site as I understand them.
- 40. In addition and regarding the definitions for the terms "Site Environmental Strategy Plan", "Site Remediation Strategy Plan" and "Environmental Site Assessment" included in the letter, those definitions accord with my understanding of the function of each of those documents.

5.3 <u>Is it appropriate to rezone the site prior to completion of an environmental audit?</u>

- 41. I have reviewed the draft CDZ2.
- 42. The stated purposes of the draft CDZ2 includes identification of a range of land uses that may be suitable for potentially contaminated or filled land, to allow for an integrated residential and mixed use development, to provide for a range of housing densities and building types and to recognise and protect the lower density suburban amenity of existing residential properties on the east and north site boundaries.
- 43. I have reviewed the clauses of the CDZ2 and in particular, those clauses which acknowledge and address the contaminated nature of the site and the remediation which will be required to be undertaken together with the need for a Certificate or Statement of Audit to be issued before development which facilitates a sensitive use commences.



44. Having regard to the draft CDZ2 and in particular, the clauses that I have referred to in paragraphs 65 to 72 of my statement, I consider that there are sufficient checks and balances within the draft CDZ2 to allow a rezoning of the land prior to the completion of the environmental audit.

5.4 The relationship between the SESP, the various ESAs and the planning permit applications

- 45. Multiple ESAs will be prepared for different aspects of contamination and the different zones of the site and each must adequately address the relevant stage of the site development and must be endorsed by the Auditor. In order to complete the Environmental Audit and Statement of Environmental Audit for any part of the site the Auditor has to undertake a Total Assessment of the site as required by the EPA Guidelines. This will particularly require acceptance and eventual endorsement of an ESA that describes the final environmental status of that part of the site at the time of completion of the audit and and will be informed by the planning permit application(s) made relating to that portion of the site.
- 46. In order to finalise a Statement of Environmental Audit for each portion of the site which will be the subject of a planning permit application, it is essential that the Auditor understands from the ESA the nature of the proposed development and the proposed land uses of that portion of the land I do not consider it necessary that the ESA and SESP be 'finalized and verified by an Environmental Auditor and submitted to Council's satisfaction prior to this Amendment being approved'. I also consider it unnecessary for the SESP and ESA to be submitted to Council's approval before any planning permit is made or that would be better than if all three were submitted at the same time.
- 47. The draft CDZ2 makes it clear that no planning permit will be issued unless it is generally consistent with the approved ODP and the Auditor endorsed SESP and relevant ESA.

5.5 Are the conclusory opinions expressed by Messrs Sinclair and Peddler reasonable and appropriate?

- 48. I have read and considered the summary of opinions provided by Mr Sinclair at Section 1.1 of his Expert Witness Report dated 28 July 2017 and those of Mr Peddler at at Section 1.1 of his Expert Witness Report dated 1 August 2017.
- 49. In both cases, I accept these conclusions and the opinions expressed by Mr Sinclair and Mr Peddler as reasonable and appropriate in relation to the information so far provided and for the purposes of the Panel's consideration of the proposed rezoning.

5.6 Other examples of residential development on former landfill sites

50. In Section 6.6 of this statement, I provide examples of other sites where I have audited the suitability of the land over former landfills for sensitive uses including medium and high density and open space developments.



6.0 OPINION

6.1 My letter to Sinclair Brook dated 28 November 2014

- 51. On 28 November 2014 I wrote to Sinclair Brook in response to a request to review a document prepared by Coffey titled: *Huntingdale Estate: Site Environmental Strategy Plan* 1221-1249 *Centre Road & 22 Talbot Avenue" dated 28 November 2014, referenced ENAUABTF00751AA_R09 Rev04* (2) (**SESP**).
- 52. Prior to this, I had reviewed an earlier draft of the SESP and provided comments to Coffey concerning some aspects of the draft plan. In particular, my comments had focused on my understanding of the objectives and required results of the site remediation so as to enable an audit for the site to be finalised at the end of the remediation relevant to each zone.
- 53. As I stated in my letter:

"The final revision of the plan (Rev04(2)) is now considered to be a suitable framework to provide a strategy that, if implemented in accordance with the plan, is anticipated to achieve an acceptable outcome for the site for the proposed development".

- 54. At the time of reviewing the SESP, I understood from the plan that a range of future land uses were being proposed that included sensitive uses such as medium density and/or high density residential, as well as areas of roads, open space, commercial use and the installation of gas and groundwater management infrastructure.
- 55. Whilst I anticipated that the SESP and the locations of proposed land uses may change to some extent during implementation of the plan, I was confident at the time I drafted the letter and remain confident that, provided the plan is diligently followed in regard to remediation to achieve its objectives, then I would be able to complete environmental audits for each zone in general accordance with the land uses proposed.

6.2 <u>Letter from Norton Rose Fulbright to PPV dated 1 September 2017</u>

- 56. I have read the letter forwarded to Planning Panels Victoria by Norton Rose Fulbright dated 1 September 2017 and in particular, I have reviewed Section 2 of that letter which responds to Panel Direction 7.
- 57. I was involved in presentations and workshops with the Potentially Contaminated Land Advisory Committee and made comments on drafts of the committee's report to the Minister. I am familiar with the Advisory Committee's Report prepared in relation to Potentially Contaminated Land.
- 58. In my view, a Site Remediation Strategy Plan is an acceptable approach to the management of contamination and its remediation on large sites where an audit is required but cannot be provided until the remediation is completed. In my capacity as an auditor, I have accepted this approach on other sites, for example, the former Amcor Site at Alphington upon which the SESP is partly based.



- 59. At paragraph 2.10 of the Norton Rose Fulbright letter reference is made to a Remediation Options Report. I have reviewed this report and it was taken into account when I considered the SESP.
- 60. I agree with the comments made in the Norton Rose Fulbright letter regarding ESAs and the need to provide multiple ESAs to cover various parts of the site and various sources of contamination eg soils, landfill gas, leachate and groundwater. At this stage, I have reviewed a number of ESAs related to the site and in most cases, I have requested further investigation or information be provided. In all cases, that further investigation or information sought has or is in the process of being provided.
- 61. I can therefore endorse the Norton Rose Fulbright letter as adequately documenting the current status of assessment, investigations, reporting and remediation plans at the site as I understand them.
- 62. In addition and to the extent that the Norton Rose Fulbright letter contains definitions for the terms "Site Environmental Strategy Plan", "Site Remediation Strategy Plan" and "Environmental Site Assessment", those definitions accord with my understanding of the function of each of those documents.

6.3 Is it appropriate to rezone the site prior to completion of an environmental audit?

- 63. I have reviewed the draft Schedule 2 to the Comprehensive Development Zone *Former Talbot Quarry and Landfill* which I understand was provided to the Panel on 11 August 2017 and which has been prepared on behalf of Sterling Global (**draft CDZ2**).
- 64. The stated purposes of the draft CDZ2 includes identification of a range of land uses that may be suitable for potentially contaminated or filled land, to allow for an integrated residential and mixed use development, to provide for a range of housing densities and building types and to recognise and protect the lower density suburban amenity of existing residential properties on the east and north site boundaries.
- 65. In clause 1.0 Table of Uses in the draft CDZ2, I note that there are a very limited number of uses which are designated as "Permit Not Required" uses. Importantly, Section 2 "Permit Required" uses include Accommodation and Home occupation and for commercial operations such as food and drink premises and shops together with other commercial or utility type uses.
- 66. Clause 2 of the draft CDZ2 allows for a permit to be granted before the issue of a Certificate or Statement of Environmental Audit for, in broad terms, works required for site remediation provided those works are carried out under a Construction Management Plan (CMP). I note that remediation is defined to mean "all measures sufficient to protect human health and the environment".
- 67. Clause 3 of the draft CDZ2 requires the provision of an Overall Development Plan (**ODP**) before any decision is made in relation to an application for a planning permit for the use, development or subdivision of the site. Whilst I am not familiar with this type of planning document, I note that, amongst other things, the ODP will address the appropriate management of existing site issues in the context of surrounding land uses and the clear sequencing of land remediation consistent with the SESP.
- 68. Clause 3.3 of the draft CDZ2 addresses the approval of the SESP and ESA. It is noted that multiple ESAs will be prepared for different aspects of contamination and the different zones of the site and that they must adequately address the relevant stages of the site development and



- must be endorsed by the auditor. The draft CDZ2 requires that an auditor endorsed SESP and ESAs must be submitted to the Responsible Authority prior to any planning permit issuing.
- 69. Clause 4.4 of the draft CDZ2 requires that a certificate or statement of environmental audit must be provided prior to the commencement of any sensitive use. I note that the clause also includes a requirement for a Section 173 agreement in regard to the management of the land in accordance with the requirements and conditions of the audit.
- 70. Clause 6.1 of the draft CDZ2 states that a permit is required before construction of any building or works starts, including dwellings on lots less than 300m² and residential buildings or extensions to those buildings.
- 71. Clause 6.3 of the draft CDZ2 requires the Responsible Authority to consider the SESP and ESA prepared for the site or parts of the site together with the amenity impacts on adjoining residential properties.
- 72. Clause 6.4 of the draft CDZ2 requires that a planning permit permitting development for a sensitive use must contain conditions as reflected in Clause 4.4.
- 73. Having regard to the draft CDZ2 and in particular, the clauses that I have referred to in paragraphs 65 to 72 of my statement, I consider that there are sufficient checks and balances within the draft CDZ2 to allow a rezoning of the land prior to the completion of the environmental audit.
- 74. In particular, I note that no planning permit (other than one which addresses remediation works) can be issued unless the relevant ESA for the portion of the site the subject of the planning permit application has been endorsed by the Auditor.
- 75. Further, there is a requirement to provide a Certificate or Statement of Environmental Audit for the relevant segment of the environment before commencement of a sensitive use or development which facilitates a sensitive use commences. A Section 173 Agreement must also be prepared and approved by the Responsible Authority which will ensure conditions contained within the SoEA are implemented.

6.4 The relationship between the SESP, the various ESAs and the planning permit applications

- 76. Clause 4.2 of the draft CDZ2 requires that planning applications can be staged across the site and must be generally consistent with the approved ODP, SESP and ESA.
- 77. Clause 3 of the draft CDZ2 requires the provision and approval by the Responsible Authority of an ODP **before** there is any decision on a planning permit application for the use, development or subdivision of the site.
- 78. Clause 3.3 of the draft CDZ2 requires the submission of the auditor endorsed SESP and ESAs and must occur **before** any planning permit is issued.
- 79. As noted above, multiple ESAs will be prepared for different aspects of contamination and the different zones of the site and each must adequately address the relevant stage of the site development and must be endorsed by the auditor.
- 80. In order to complete the Environmental Audit Report and issue a Statement of Environmental Audit for any part of the site, the Auditor will need to undertake a Total Assessment of the site



as required by the EPA Auditor Guidelines including any ongoing risks relating to groundwater or landfill gas. This assessment will require consideration and eventual endorsement of an ESA that describes the final environmental status of that part of the site at the time of completion of the audit and will be informed by the planning permit application(s) made relating to that portion of the site.

- 81. In order to finalise a Statement of Environmental Audit for each portion of the site which will be the subject of a planning permit application, it is essential that the Auditor understands the nature of the proposed development and the proposed land use(s) for that portion of the land. It is the ESA which provides this information to an Auditor.
- 82. Before an Auditor can endorse the relevant ESA and complete the audit, the ESA must describe both the current environmental status of that portion of the land to which it relates and the detailed design of proposed buildings and infrastructure. Armed with this information, the Auditor can prepare an appropriate set of conditions relating to the development that will be given force by the imposition of the requirement for a Section 173 Agreement in the permit.
- 83. Accordingly, it can be seen that the ESA will be informed by the relevant planning permit application given that the ESA will be based on and informed by the proposed development and the proposed land uses for the relevant portion of the land as well as the environmental status of the land.
- 84. To the extent that I understand that the EPA is of the view that ... the ESA and SESP should be finalised and verified by an Environmental Auditor appointed under Part IXD of the EP Act Act, and submitted to Council's satisfaction prior to this Amendment being approved¹, I do not consider this to be necessary nor do I consider it to be practical.
- 85. As I have outlined, an ESA cannot be verified or endorsed by an Auditor in a factual vacuum. It is essential that the nature of the proposed development and land uses are known so that any remediation measures relevant to the portion of the site can be designed in concert with the proposed development. Further, the conditions of any SOEA will also be informed by these matters.
- 86. Insofar as Council's position is that the Auditor endorsed SESP and the ESA ought be submitted to it for approval before any planning permit application is made, I do not consider this necessary nor do I think it would result in a better outcome than if the package of the SESP, relevant ESA and the planning permit application were all submitted at the same time to Council.
- 87. Further, given that the SESP and relevant ESA will have been endorsed by the EPA accredited Auditor for the site, it is inappropriate for Council to "approve" those documents. To do so would be to undermine the EPA accredited auditor system where an auditor cannot pre-empt the outcome of an audit.
- 88. The draft CDZ2 makes it clear that no planning permit will issue unless it is generally consistent with the approved ODP and the Auditor endorsed SESP and relevant ESA.

-

Refer to page 3 of EPA's submission to the Panel.



6.5 Are the conclusory opinions expressed by Messrs Sinclair and Peddler reasonable and appropriate?

Expert Witness Statement of Mr Phil Sinclair

- 89. I have read and considered the summary of opinions provided by Mr Sinclair at Section 1.1 of his Expert Witness Report dated 28 July 2017.
- 90. I accept these conclusions and the opinions expressed by Mr Sinclair as reasonable and appropriate in relation to the information so far provided and for the purposes of the Panel's consideration of the proposed rezoning.
- 91. With regard to the proposed approach concerning the described increase in landfill gas risk, I consider that the proposed remedial options described by Mr Sinclair in his Expert Witness Report are acceptable.
 - Expert Witness Statement of Mr Ian Pedler
- 92. I have read and considered the summary of opinions provided by Mr Ian Peddler at Section 1.1 of his Expert Witness Report dated 1 August 2017.
- 93. I accept these conclusions and agree that the potential for settlement and the foundation methodology issues in the zones underlain by slimes must be managed appropriately.
- 94. I agree that Zone 4 is the simplest area to manage as the backfill in the former quarry can be adequately managed to minimise potential for later settlement.
- 95. I note that the slimes areas are considered to be manageable as settlement under load and surcharge can be adequately predicted, reducing the potential for disruptive on-going settlement after construction is completed.
- 96. With regard to Zone 1, the presence of putrescible waste means that ongoing settlement due to decomposition of the wastes can continue for a significant length of time. As a consequence, in this area of the site, vapour management measures must be integral to the housing design so as to minimise any potential for disruption of the vapour protection measures or the local infrastructure due to the total settlement and any differential settlement between piling solutions and adjacent infrastructure. Dynamic compaction as suggested by Mr Pedler will assist to minimise post construction settlement and in particular differential settlement, however this would need to be monitored closely to avoid disturbance to residential properties within the vicinity of that part of the site.

6.6 Other examples of residential development on former landfill sites

- 97. My experience with residential developments over landfills includes 1 Heller Street in Brunswick (10 townhouses over a former landfill with LFG protection and gas management infrastructure included), Tooronga Village site at Tooronga Road (a proposed residential development for Stockland) and the case to which I understand the Panel has been referred in Cheltenham.
- 98. In relation to the latter of the three examples, I have attended presentations on the methods and outcomes, including as part of this audit.



- 99. With regard to the Tooronga Village site, a car park and a large shopping centre/multi storey residential development were constructed over part of a former landfill where some putrescible waste had been deposited in parts of a former brick quarry. The larger part of the site was proposed for medium density townhouse developments with surcharging to minimise settlement and a vapour management layer constructed with a gas collection layer below it. An audit permitting construction of medium density townhouses over the whole of the former landfill was prepared by myself once I was satisfied that the gas control measures were adequately installed and had been monitored to demonstrate they were functioning. A construction management plan and ongoing EMP were part of the conditions of the audit.
- 100. In the end, the development stopped after construction of the high density residential building and car park as a result of the site being sold to St Kevin's Secondary College to use for a comprehensive sports facility including sports fields, running tracks, tennis courts and change room and administration facilities where there remained some consideration of the potential for gas accumulation. In my capacity as the auditor for the site, I recently signed off the site as having met all the provisions of the EMP and that it was suitable for use.
- 101. Additionally, I am also currently auditing a shopping centre at Epping Shopping Plaza at 571 to 583 High Street Epping that is located over a former landfill where the gas protection measures were incorporated into the design. In this case the proponent wants to install childcare facilities on an upper level. The audit is still progressing.
- 102. I am aware that there are examples from overseas where significant developments have occurred over former landfills. However, I have no direct experience of these.
- 103. It must be understood that no two landfills are the same and all have very different histories with unique issues to deal with. The site at Huntingdale also has very different risk profiles for each zone of the site and will require separate treatment of each area before they will be considered acceptable for issue of an Environmental Audit Report and Statement of Environmental Audit.



7.0 REFERENCES

104. The following publications have been directly or indirectly considered in the preparation of this report:

BS 8485:2015 - Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings June 2015;

EPA 1970 – Environment Protection Act 1970 No 8056 dated 22 Dec 1970;

EPA, 2012 - Environment Protection Authority (Victoria) Publication 1490 - Closed Landfill Guidelines - dated December 2012;

EPA, 2015 - Environment Protection Authority (Victoria) Publication No. 759.3: Environmental Auditor (Contaminated Land) Guidelines for Issue of Certificates and Statements of Environmental Audit;

EPA 2015, Environment Protection Authority (Victoria) Publication No 788.3; Best Practice Environmental Management on Siting, Design, Operation and Rehabilitation of Landfills, August 2015;

EPA 2016, Environment Protection Authority (Victoria) Publication No 1323.3 Guideline - Landfill Licensing;

EPA 2016, Environment Protection Authority (Victoria) Publication No 1625 Draft Guideline - Assessing Planning Proposals Near Landfills;

SEPP 2003, State Environmental Protection Policy - Variation to State Environment Protection Policy (Waters of Victoria), Victorian Government Gazette No. S107.

SEPP 2002, State Environmental Protection Policy - Prevention and Management of Contaminated Land, State Government of Victoria, No S95, Gazette 4 June 2002 as varied by Variation to the State Environment Protection Policy (Prevention and Management of Contamination of Land) No. G39, Gazette 26 September 2013.

SEPP 1997, State Environmental Protection Policy – Groundwaters of Victoria, State Government of Victoria, No S160, Gazette 17 December 1997

SEPP 2001, State Environmental Protection Policy – Air Quality Management, State Government of Victoria, No S240, Gazette 21 December 2001



APPENDIX A LETTER OF INSTRUCTION

4 October 2017

By email: ken.mival@ehs-support.com

Kenneth N Mival Environmental Auditor EHS Support Pty Ltd PO Box 2057 Hazeldene, Vic 3658



Norton Rose Fulbright Australia ABN 32 720 868 049 Level 15, RACV Tower 485 Bourke Street MELBOURNE VIC 3000 AUSTRALIA

Tel +61 3 8686 6000 Fax +61 3 8686 6505 GPO Box 4592, Melbourne VIC 3001 DX 445 Melbourne nortonrosefulbright.com

Direct line +61 3 8686 6068

Email

rory.oconnor@nortonrosefulbright.com

Your reference: Our reference:

2849696

Dear Ken

Monash Planning Scheme Amendment C129 Land: 1221-1249 Centre Road, Oakleigh South

We act for Sterling Global Property Group Pty Ltd in Planning Panels Victoria (**PPV**) in Monash Planning Scheme Amendment C129.

1 Background

- 1.1 On 2 August 2016, Urbis, on behalf of Sterling Global, submitted a planning scheme amendment request to the City of Monash (**Council**) to rezone the land at 1221-1249 Centre Road, Oakleigh South (**Land**) from Special Use Zone Schedule 2 and General Residential Zone Schedule 2 to Comprehensive Development Zone Schedule 2, and to add an incorporated document to the planning scheme in the form of a comprehensive development plan (**Amendment C129**).
- 1.2 As you are aware, the Land comprises the former Talbot Avenue Quarry, and the Proposal will facilitate the future renewal and transformation of the Land to a master-planned residential community.
- 1.3 The planning scheme amendment request was originally accompanied by a section 96A application for a planning permit in December 2014 (**Permit Application**), however the Permit Application was subsequently withdrawn due to concerns from the Council regarding the environmental assessment of the Land. The Council's position is that the appropriateness of the proposed residential use of the site cannot be confirmed before a full environmental assessment has been undertaken.
- 1.4 Amendment C129 has been part heard and has been listed for an additional hearing day on 12 October 2017.



2 Your engagement

- 2.1 Our client wishes to engage you to:
 - (1) review the background materials and documents sent to you;
 - (2) confer with instructing solicitors and counsel, Joanne Lardner, where necessary;
 - (3) prepare an expert report which addresses:
 - (a) clarification concerning your letter to Sinclair Brook Pty Ltd dated 28 November 2014:
 - (b) your views concerning the content of section 2 of the letter from Norton Rose Fulbright to Planning Panels Victoria dated 1 September 2017;
 - (c) the proposal to rezone the site prior to completion of an environmental audit;
 - (d) the relationship between the SESP, the various ESAs and planning permit applications;
 - (e) whether the conclusory opinions expressed by Messrs Phil Sinclair and Ian Pedler in their respective expert witness statements are reasonable and appropriate; and
 - (f) other examples of which you are aware of residential development on former landfill sites: and
 - (4) appear at the final day of the hearing of this matter on 12 October 2017 for the purpose of presenting your expert opinion concerning these matters.

3 The Land

3.1 The Land is:

- (1) partly in in the General Residential Zone Schedule 2 (**GRZ2**) and partly in the Special Use Zone Schedule 2 (**SUZ2**);
- (2) subject to the Environmental Audit Overlay (EAO);
- (3) located on the north-eastern corner of Huntingdale Road and Centre Road, Oakleigh South;
- (4) comprised of an irregularly shaped parcel, approximately 18.79 hectares in area;
- (5) currently accessed from Huntingdale Road and Centre Road, with no connections in place to the surrounding local street network;
- (6) the site of the former Talbot Avenue Quarry. Historically, sand quarrying operations on the land have been accompanied by associated uses, including concrete batching in the 1960s, and landfill operations during the 1970s and 1990s. The Land has been inactive for several decades. The quarry void is located in the southwest portion of the Land;
- (7) subject to a degree of soil, landfill gas, groundwater, quarry surface water and quarry sediment contamination, as set out in the Site Environmental Strategy Plan prepared by Coffey, a copy of which is included in the enclosed brief of documents;
- (8) subject in part to Covenant 1909682 (Lot 1 TP 803687U) requiring that no extractive activities be undertaken within 10 feet of the southern boundary of the lot;



- (9) subject to a number of Section 173 Agreements regarding the cessation of quarrying activities on various parts of the Land;
- (10) located within the Monash National Employment and Innovation Cluster as defined in Plan Melbourne:
- (11) surrounded by the following interfaces:
 - (a) North the Land is directly abutted by Davies Reserve, including an athletics track and local pavilion. The northern boundary of the Land also abuts the rear boundary of residential allotments fronting Sinclair Street. The residential allotments are within an established GRZ1 residential area:
 - (b) East the Land abuts an existing residential area characterised by single and double-storey brick dwellings with landscaped local streets. The former Clayton West Primary School, recently zoned for residential purposes, is to the northeast of the land;
 - (c) South the Land abuts an existing townhouse development which fronts Centre Road. The Land also abuts a site on the corner of Huntingdale Road and Centre Road over which a permit for a five-storey apartment complex has been granted. Clarinda Primary School is also to the south of the site on the opposite side of Centre Road;
 - (d) West Huntingdale Road lies to the immediate west of the Land. The Huntingdale Golf Club lies opposite the Land on the other side of Huntingdale Road. Further along Centre Road to the west is a Bunnings and which is located alongside a larger employment precinct.



4 Amendment C129

- 4.1 As per the Explanatory Report, Amendment C129 seeks to make the following changes to the Monash Planning Scheme:
 - (1) 'Rezones the land at 1221-1249 Centre Road, Oakleigh South from part Industrial 1 Zone Schedule 2 and General Residential Zone Schedule 2 to the Comprehensive Development Zone Schedule 2.
 - (2) Introduces Schedule 2 of the Comprehensive Development Zone to the Monash Planning Scheme.



- (3) Makes a minor correction to the boundary of the existing Environmental Audit Overlay to incorporate the whole of 1221-1249 Centre Road, Oakleigh South, within the Overlay.
- (4) Amends Clause 21.04 and Clause 22.04 within the Local Planning Policy Framework to refer to urban renewal sites, including the subject land.
- (5) Amends Schedule 81.01 (Incorporated Document) to include the Comprehensive Development Plan.'
- 4.2 The Explanatory Report details the reasons for Amendment C129 as follows:

'The Amendment is required because the use of the land for extractive industry and landfill purposes ceased over 20 years ago. The site has remained dormant since that time, and is in need of rehabilitation to improve the environmental condition of the site and enable a new urban use to be established. The current Special Use Zone – Earth and Energy Resources Industry - is no longer an appropriate zone for the site. Similarly the existing current residential zoning of the western part of the site should be changed to allow the environmental issues and constraints to be planned and managed in an appropriate way across the whole of the site.

However, until a full environmental assessment is undertaken, it cannot be confirmed whether the preferred use of the site – as a residential precinct with some mixed uses, and open space areas – is appropriate.

The rezoning to a Comprehensive Development Zone (CDZ) will allow the site to be considered for residential or other suitable urban uses. The CDZ will provide sufficient confidence to the land owner that the land can be used for some form of urban use. This will enable the completion of the environmental assessments and the undertaking of required levels of environmental works appropriate to the potential future uses. The proponent has prepared a Comprehensive Development Plan that identifies opportunities for an integrated residential development on the site.

The site is within an Environmental Audit Overlay and the requirements of the Overlay will need to be satisfied before any residential use or development on the site can commence. The Comprehensive Development Zone contains provisions to address the work required by the EAO in a staged manner. It is considered that the Amendment can proceed with a Comprehensive Development Plan based on preliminary assessments undertaken by the proponent. The proposal also provides for alternative uses should it not be possible to develop the land for residential purposes or other sensitive uses. The planning application process would require further details to be submitted to Council for consideration and this process would involve public consultation. The Schedule to the CDZ sets out issues that are to be addressed as part of the planning permit stage.'

5 Staged approach to remediation

- 5.1 A key facet of Amendment C129 is the proposed staged approach to remediation, which delays the completion of the environmental audit until prior to the commencement of redevelopment. This approach has been sought to provide the Applicant with certainty about the rezoning, and to allow planning permits to be issued for a range of uses, and to provide flexibility to progressively remediate the site to standard that suits the proposed uses.
- 5.2 To that end, the exhibited Schedule 2 to the Comprehensive Development Zone provides triggers for the provision of an SESP and ESA for permit applications for a sensitive use or for buildings and works to facilitate a sensitive use:

'3.2 Application requirements

Planning applications must include the following steps:

• A Site Environmental Strategy Plan (SESP): An application must include a Site Environmental Strategy Plan (SESP) for assessment by the responsible authority.



 Environmental Site Assessment: An application must include an Environmental Site Assessment (ESA) by a suitably qualified environmental consultant. This must be endorsed by an environmental auditor appointed under the Environmental Protection Act 1970. The endorsement must confirm that the ESA and SESP are consistent and adequately seek to address and manage the residual site contamination issues from the past land uses.

Planning applications can be staged across the site and must include an SESP for the site and an ESA pertaining to the relevant stage.'

. . .

3.4 Permit Conditions

A planning permit for a sensitive use (residential use, child care centre, pre-school centre or primary school) must contain the following conditions.

- Before the use permitted commences, the owner of the land must provide either:
 - A certificate of environmental audit must be issued for the land in accordance with Part IXD of the Environment Protection Act 1970, or
 - An environmental auditor appointed under the Environment Protection Act 1970 must make a statement in accordance with Part IXD of that Act that the environmental conditions of the land are suitable for the sensitive use.
- Before the use permitted commences the owner of the land must enter into and execute a Section 173 Agreement for the ongoing management of the site in accordance with the requirements of the certificate of environmental audit or the statement of audit and any conditions of permit use/operations.

. .

5.4 Permit Conditions

Requirement

A planning permit for development that facilitates a sensitive use (residential use, child care centre, pre-school centre or primary school) must contain the following conditions.

- Before the construction or carrying out of buildings and works in association with a sensitive use commences, the owner of the land must provide either:
 - A certificate of environmental audit must be issued for the land in accordance with Part IXD of the Environment Protection Act 1970, or
 - An environmental auditor appointed under the Environment Protection Act 1970 must make a statement in accordance with Part IXD of that Act that the environmental conditions of the land are suitable for the sensitive use.
- Before the construction or carrying out of buildings and works in association with a sensitive use commences the owner of the land must enter into and execute a Section 173 Agreement for the ongoing management of the site in accordance with the requirements of the certificate of environmental audit or the statement of audit and any conditions of permit use/operations.'
- 5.3 Under the exhibited Schedule 2 to the Comprehensive Development Zone, decision guidelines for permit applications for the use of land, subdivision and buildings and works also require consideration to be given to any SESP and ESA.

6 Submissions

- 6.1 The following submissions were received in response to the public exhibition of Amendment C129 between 2 February 2017 and 3 March 2017:
 - (1) Victorian Planning Authority;
 - (2) Environmental Protection Authority;
 - (3) South East Water:
 - (4) City of Kingston;
 - (5) Michael Bunter;
 - (6) Angelo Valente;
 - (7) Colin David Owen; and
 - (8) Anthony Phillip Sammut.
- 6.2 The submissions from the VPA and EPA addressed issues relating to site contamination, environmental assessment and remediation, and are discussed in further detail below.
- 6.3 We also note that the submission of Angelo Valente raises issues relating to potential disruption to surrounding residents as a result of remediation activities, and risks relating to future development on the Land as a consequence of the use of fill.

7 VPA Submission

- 7.1 The VPA's submission provides in-principle support for the Proposal, subject to certain recommendations. Among other things, the VPA's submission recommends that the Site Environmental Strategy Plan (**SESP**) and the Environmental Site Assessment (**ESA**) be required to be conducted and approved prior to the lodgement of a planning permit.
- 7.2 The VPA's submission states the following in relation to contamination, environmental assessment and remediation:

'The VPA supports a staged approach to planning and developing the site to manage the complexities and issues associated with contaminated land. From a process point of view the VPA submits that the following approaches may enhance the function of the draft provisions and achieve a coordinated approach:

- The Overall Development Plan (ODP) requirement within sub-clause 2.0 of the proposed Schedule 2 to the Comprehensive Development Zone (CDZ) should include the mandatory information under each of the sub-headings listed in Appendix A to this correspondence. This approach would reduce the ambiguity of the requirements and ensure the information necessary to assess the suitability of ODP;
- That the ODP should be sequenced to occur prior to the preparation of any planning application. Thus wording to the effect of '...the ODP must be approved prior to lodging an application for a planning permit'. This would ensure that an agreed development plan is in place before planning applications are prepared to provide more certainty. The VPA recommends that a time frame for considering the ODP should be included in this provision;
- The Site Environmental Strategy Plan (SESP) and the Environmental Site Assessment (ESA) should be conducted prior to the planning permit application stage. All references to 'applications' or 'planning applications' within sub-clause 3.2 should be amended so that the text refers to 'the Overall Development Plan'; and



...,

8 EPA Submission

8.1 You have been provided a copy of the EPA's submission to the Panel made in relation to the Amendment.

9 Council's Position

- 9.1 You have also been provided a copy of Council's submission to the Panel made in relation to the Amendment.
- 9.2 Two Council Officer's Reports were prepared in relation to Amendment C129 and put before the Council on 27 September 2016 and 30 May 2017.
- 9.3 The 27 September 2016 Officer's Report supported Amendment C129, including the proposed staged approach to remediation, and the Council resolved to request approval from the Minister to prepare and exhibit Amendment C129.
- 9.4 Subsequent to the receipt of submissions in response to the exhibition of Amendment C129, a revised Council Officer's Report was prepared and put before the Council at its meeting on 30 May 2017.
- 9.5 In the 30 May 2017 Council Officer's Report, the Council notes the concerns raised around the timing of the SESP and ESA, and the lack of information regarding the status of contamination on the Land. The 30 May 2017 Officer's Report proposes amendments to the exhibited version of Amendment C129, as summarised in the below table.
- 9.6 Key proposed changes are the insertion of a requirement to prepare an Overall Development Plan (**ODP**) prior to lodgement of a permit application, and the requirement for the SESP and ESA to be lodged with the ODP.

Stage	Exhibited process	Potential Alternative Process
Amendment C129	Draft SRS/SESP	Draft SRS/SESP
Rezoning land from		
SUZ to CDZ		
Overall Development	Not included –Basic plan	CDZ sets out detail for ODP
Plan – required in	included in CDZ with rezoning	No permit until ODP approved.
zone		Includes requirement for ESA/SESP
		to be signed off concurrently
SESP/ESA	Lodged with permit	Lodged with ODP prior to any
		permit application or permit issue
Permit	Requires audit as a permit	In accordance with ODP and
	condition	SRS/SESP
		Requires audit as a condition
Permit Condition	Works/use not commenced	Works/use not commenced until
	until Audit complete	Audit complete

10 Brief of documents

- 10.1 We confirm that you have been provided with an electronic brief of documents relevant to your evidence.
- 10.2 Please contact us if you require further information.



11 Client details, further information and site inspection

11.1 Please arrange for your fee estimate and accounts to be provided directly to our mutual client at the following address:

Brandon Yeoh
Development Director
Sterling Global
Level 50 Rialto South Tower, 525 Collins St
Melbourne VIC 3000

E-mail: brandon.yeoh@sterlingglobal.com.au

12 Confidentiality

- 12.1 This letter and enclosed documents and all future communications between us and between you are confidential (**Confidential Information**), and are subject to a claim for privilege and must not be disclosed without our consent or the consent of our client.
- 12.2 The duty of confidentiality will continue beyond the conclusion of your instructions.
- 12.3 If you are obliged by law to disclose Confidential Information, it is not a breach of this engagement if you first give written notice to us of that obligation, if you can do so without breach of any law.
- 12.4 You must return all documents and other media, including copies, which contain Confidential Information to us. You must delete all electronically stored material immediately when requested to do so by us.
- 12.5 You must take all steps necessary to maintain Confidential Information and notes in strictest confidence.

13 Change of opinion

13.1 If for some reason, you change your opinion after delivering your report, please advise us as soon as possible. If that change is material, a supplementary report will need to be prepared, which explains the reasons for the change in your opinion.

Should you require any further information, please call Rory O'Connor on (03) 8686 6068.

Yours faithfully

Rory O'Connor Special Counsel Norton Rose Fulbright Australia Partner: Sally Macindoe



APPENDIX B PPV GUIDE TO EXPERT EVIDENCE

Circulation of Expert Reports

Expert witness reports must be submitted five working days prior to the commencement of the Hearing, or another date directed by the Panel. An earlier date will be specified for more complex reports.

Parties must identify at the Directions Hearing, the evidence (if any) they will be calling at the Public Hearing.

Copies of witnesses' reports or statements must be circulated in accordance with Directions made at the Directions Hearing. If no specific directions are made, six copies of their reports or statements must be given to the Panel Coordinator at least five working days before the Hearing. Copies will be given to the Panel and to other parties as directed. Other people may obtain electronic copies by contacting the Panel Co-ordinator at Planning Panels Victoria (PPV) on 8392 6397.

A soft copy of reports should be provided as follows:

- as an unlocked 'pdf' or Microsoft Word format to PPV; and
- as a 'pdf' to the Planning Authority suitable for uploading in its website.

Before the Hearing, copies of witnesses' reports or statements will normally be available for perusal by submitters at the offices of the Planning Authority and PPV.

Expert's Duty to the Panel

An expert witness has a paramount duty to the Panel and not to the party retaining the expert.

An expert witness has an overriding duty to assist the Panel on matters relevant to the expert's expertise.

An expert witness is not an advocate for a party to a proceeding.

Content and form of Expert's Report

The report of an expert must include the following:

- the name and address of the expert;
- the expert's qualifications and experience;
- a statement identifying the expert's area of expertise to make the report;
- a statement identifying any other significant contributors to the report and where necessary outlining their expertise;
- all instructions that define the scope of the report (original and supplementary and whether in writing or oral); and
- the identity of the person who carried out any tests or experiments upon which the expert has relied on and the qualifications of that person.

Where an expert has prepared a report that has been used to inform the preparation of an amendment or proposal, the expert should not provide a revised version of that report. The expert should provide a brief report that includes:



- an unambiguous reference to the report, or reports that the expert relies upon;
- a statement identifying the role that the expert had in preparing or overseeing the exhibited report(s);
- a statement to the effect that the expert adopts the exhibited report and identifying:
 - any departure of the expert from the finding or opinions expressed in the exhibited report;
 - any questions falling outside the expert's expertise;
 - any key assumptions made in preparing the report; and
 - whether the exhibited report is incomplete or inaccurate in any respect.

Where a report has not been used to prepare an amendment or proposal, the report should include:

- the facts, matters and all assumptions upon which the report proceeds;
- reference to those documents and other materials the expert has been instructed to consider or take into account in preparing his or her report, and the literature or other material used in making the report;
- a summary of the opinion or opinions of the expert;
- a statement identifying any provisional opinions that are not fully researched for any reason (identifying the reason why such opinions have not been or cannot be fully researched); and
- a statement setting out:
 - any questions falling outside the expert's expertise, and
 - whether the report is incomplete or inaccurate in any respect.

The expert must declare at the end of the report:

'I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.'

Privacy

Expert witnesses need to be aware of their obligations under the *Information Privacy Act 2000*. Particularly when using personal information contained in submissions they have received as a third party.

Copies of witnesses' reports are usually posted on the Planning Authorities website. Where possible, the report of an expert should not refer to any individual submitter by name and if necessary, submitters should be referred to by submission number.

For more information on Privacy refer to the separate PPV **Guide to Privacy at Planning Panels Victoria.**

Where the expert changes his or her opinion on a material matter

An expert witness who changes an opinion on a material matter on the basis of another expert's report or for any other reason must communicate that change of opinion in writing to the party retaining the expert and that party must file with the Panel, notice of such change of opinion as soon as practicable.

Such a document must specify reasons why his or her opinion has changed.



Where the Panel directs expert witnesses to meet

Expert witnesses retained by parties are encouraged to meet to narrow any points of difference between them and to identify any remaining points of difference. The Panel may also direct that they meet.

If expert witnesses meet they must each set out in writing by a document filed with the Panel any agreed points and all remaining points of difference.

If any expert witness directed by the Panel to meet with any other expert is instructed not to reach agreement in respect of points of difference, the fact of such instructions must be reported in writing to the Panel by the expert witness.

Generally

Parties to a proceeding must ensure that any expert retained by them to provide a report for use in the proceeding is aware of the contents of this direction, at the time of such retainer.

Form of Report

Written material presented at the Hearing should be in the following form:

- Two-hole punched.
- Stapled, not bound.
- Photographs or other visual material should be presented in binders in A4 or A3 format, not on large boards. This makes the material easier to transport and file.

Further Information

Further information about Planning Panels Victoria can be found on the department's website:

http://www.dtpli.vic.gov.au/planning/panels-and-committees



APPENDIX C QUALIFICATIONS

..





ingredient of
success is not
knowing that
what you're
attempting can't
be done" — Terry
Pratchett

KEN MIVAL

ENVIRONMENTAL AUDITOR, CONTAMINATED LAND KEN.MIVAL@EHS-SUPPORT.COM • TEL: 0408 060 045 • HAZELDENE VICTORIA, AUSTRALIA

EXPERTISE

- Landfill Construction Auditing & Verification
- Environmental Auditing
- Expert Witness
- Engineering Geology
- Environmental Site Assessment
- Contaminated Land & Groundwater
 Management and Remediation
- Project Management and Direction

EDUCATION

Bachelor of Science (HONS), Geology, University of Exeter, 1966-1969

CERTIFICATIONS AND TRAINING

Environmental Auditor, Accredited by EPA Victoria, 1993-Current

Ken Mival is an EPA accredited Environmental Auditor (Contaminated Land) with over 45 years' experience in geology, engineering geology, environmental engineering and auditing, throughout Africa, UK, NZ, Singapore, PNG, and Australia. Over the past 25 years Ken has primarily focused on auditing and management of contaminated land and landfills. He has undertaken environmental audits for many large urban and iconic developments; large chemical and manufacturing plants; clean-up of dioxins; and landfill construction and landfill gas sites.

Ken has performed over 200 statutory environmental audits and due diligence and regulatory compliance audits for property transfers, factory shut downs, closed landfills and for operational landfills and clean-up of former industrial sites for residential and commercial developments. He has provided expert evidence to VCAT, Planning Panels Victoria, and the Magistrates, High and Supreme Courts, in several jurisdictions on: dam failure; contaminated land; illegal landfills; landfill gas risk; and the cost of remediation of, and responsibility for, contaminated land. Additionally, Ken has provided expert advice to EPA on landfill gas risks; human health risks, and risks to large animals relating to arsenic and mercury contamination from mining; and on clean-up criteria for dioxins.

He has taken part in numerous workshops and studies with EPA Victoria on improvements to the Victorian regulations and guidelines with regard to contaminated land management; groundwater and waste. Ken currently represents EHS Support at the Landfill Auditors Workshops (held quarterly) and on their Groundwater committee.

He is widely published and has contributed extensively to the regulatory environmental framework in Victoria and presented many papers and articles for books, conferences, and seminars on engineering geology, contaminated land clean-up, bushfire impacts and disaster planning.

Together with the consultants to Melbourne Water, Ken in his auditor capacity won the Consult Australia Engineering Excellence Gold Award in 2011 (Environmental Category) for the clean-up of Dioxins at the 180 hectare Dandenong Sewage Treatment Plant that included audit of the design and construction of a landfill containment for 600,000m³ of dioxin contaminated soils and sludges.



KEY EXPERIENCE

LANDFILL AUDITING EXPERIENCE

LANDFILL CONSTRUCTION AUDITS — COSGROVE LANDFILL —
CITY OF SHEPPARTON

LEAD AUDITOR

Currently (2017) continuing a 53V audit of the construction of the sideliner for the Cosgrove Landfill. This project includes the review and verification of changes to design to fit the former quarry metrics, approved as major variation by EPA.

BOWSER LANDFILL - CITY OF WANGARATTA

AUDITOR

Completed (2016) a 53V audit of the construction of the base liner for Cell 7 of the Bowser Landfill. This included a designed multilayered liner with HDPE, GCL and clay layers, as well as leachate collection. This also included the review and approval of minor variations to the design and review and approval of CQA testing data. Subsequent work has included verification of design of cap upgrade for closed portions of the landfill and the design of an organics processing facility.

CLOSED LANDFILL AUDITS & VERIFICATIONS — OAKLEIGH SOUTH

LEAD AUDITOR

Serves as the lead auditor of 20 hectares of former sand quarries and landfills at Oakleigh South including gas risk and leachate management for proposed residential development (2013 to present – ongoing).

CLOSED LANDFILL - MOIRA SHIRE - YARRAWONGA

LEAD AUDITOR

Verification of upgrade and construction of phyto-cap on Yarrawonga landfill (2017 – ongoing).

ENERGY PARK

AUDITOR

Audit of Energy Park former landfill in regard to landfill gas risk, leachate management and verification of aftercare management plan and hydrogeological assessment for City of Brimbank (2013/2016). Currently ongoing verification of construction of cap upgrade and LFG management (2017).

LANDFILL GAS RISK - CLARINDA

AUDITOR

Appointment as expert witness to VCAT in relation to overbuild of landfills at Clarinda and landfill gas risk to neighboring property (2017).

LANDFILL AT SYDENHAM

LEAD AUDITOR

Ken undertook the audit of this former landfill with hydrocarbon wastes (from 2000 to 2014), with clean-up to extent practicable completed in 2012 and 53X audit completed February 2014. Includes ongoing verification of annual reports (2017).

MULTIPLE LANDFILL SITES

AUDITOR VERIFICATION

Provided verification of hydrogeological assessments and aftercare management plans for several closed landfills at Reg Harris Reserve, Rowans Road, Heatherton Park and Springvalley for Cities of Greater Dandenong and Kingston. Includes ongoing review of landfill gas risk at Springvalley relating to off-site properties.

HELLER ST NORTH - MELBOURNE

AUDITOR

Conducted a closed landfill audit of the Quarry and Municipal Landfill site at the Heller St North Melbourne for residential development (2008-2010).



continued

FORMER BRICK QUARRY - EAST MELBOURNE

AUDITOR

Audit of closed landfill in former brick quarry at Tooronga, East Melbourne (2008 to 2011) and ongoing assessment of landfill gas risk for future residential developments (2013 – 2015) and recently included verification of LFG management at multistory car park and for sports field development (2017).

FORMER LANDFILL SITE - 16 LEIGH ST FOOTSCRAY

AUDIT & HEALTH RISK ASSESSMENT

Following identification of long-term contamination by the EPA, Ken conducted an audit of this closed landfill filled with foundry waste products. A health risk assessment was also conducted for surrounding residents (2012 – 2014).

LANDFILL AT CLAYTON

LEAD AUDITOR

Ken undertook the audit of this former landfill including a landfill gas risk assessment to provide advice to SUEZ Environment (TPI) on a proposed waste transfer facility to be located on top of the former landfill.

ENVIRONMENTAL AUDITING EXPERIENCE

MELBOURNE DOCKLANDS - MULTIPLE AUDITS

AUDITOR

Ken started auditing the former Docklands areas for the Docklands Authority in 1997, including the 63m clean-up of the former West Melbourne Gasworks completed in 2005. He has also completed audits for all developments within the 30 hectare Victoria Harbour Precinct; the Yarra's Edge Precinct and for much of the infrastructure up to 2014. He is currently (2017) reviewing the groundwater monitoring results to assist in close out of the conditions on the audits.

MELBOURNE WATER - DANDENONG TREATMENT PLANT

AUDITOR

Ken conducted an Environmental Audit under Section 53X of the EP Act of the Melbourne Water 193ha former Dandenong Treatment Plant, that included the establishment of criteria for remediation of Dioxins Remediation; then went on to complete audits for the residential area then the industrial zones from 2007 to 2011, plus a 53V Audit of construction of this 6 cell landfill as "CALM" repository for containment of dioxin wastes (2008/10). This included review of design and audit of construction of: leachate system; landfill gas management; cell base linings and cap construction.

FISHERMAN'S BEND - MULTIPLE AUDITS

AUDITOR

With the re-zoning of Fisherman's Bend into "Capital City Zones" Ken has been providing advice to EPA on what worked with Docklands and has also undertaken audits of two major properties. The first for a twin tower high rise on Lorimer St for Little Projects, and the second ongoing audit for over 300 townhouse lots on the former Symex Oleo Chemical site. This included approval of designs for vapour and odour management capping and the use of "Liquid Boot" inside a heritage building for 6 apartments (The Block). Stage 1 audit was completed in 2015 and Stage 2 in 2017.

BRAYBROOK CARPET MANUFACTURER

AUDITOR

Ken is undertaking a 53X audit of a former carpet manufacturing site that is under notice from EPA due to PCE pollution in groundwater. Multiple groundwater wells have identified the areas impacted and client is exploring remediation options. Remediation will start in the latter half of 2017 and is likely to continue to 2019/20.



continued

INDUSTRIAL SITES - 53V AUDITS - ORICA, YARRAVILLE

AUDITOR

Ken started auditing the 150yr old former ICI chemical factory site at Yarraville in 2000, completing an audit in 2005 followed by independent auditor review of on-going groundwater monitoring, assessment of organic chemical areas and work plans for a large scale clean up planned to occur in 2017/19. Contaminants included a large range of chlorinated organics, metals, aniline and monocyclic aromatics.

FISHERMAN'S BEND - SYMEX PLANT CLOSURE

AUDITOR

Prior to the demolition and audit for over 300 townhouse lots on the former Symex Oleo Chemical site, Ken undertook a section 53V audit to provide EPA with confidence that the site did not remain a significant source of pollution. This permitted the EPA to close the original scheduled premises license and the client to sell the site.

INFRASTRUCTURE AUDITS AND GEOTECHNICAL

With his combined geotechnical engineering and accredited auditor experience has Ken has undertaken audits and geotechnical reviews of several large-scale infrastructure projects on behalf of the contractors or clients. These have included:

- Audit of Western Link of Melbourne City Link Project, Victoria (1995-1997) the construction of 17 km of freeway and elevated road that is the main gateway to Melbourne;
- Audit for VicRoads of the Westgate Freeway Upgrade (2008/10) that included additional interchanges, road widening, and the reuse of soils in noise mounds;
- Audit of Docklands infrastructure that included a major by-pass (Wurundjeri Way) and storm water and cabling infrastructure.
- Review of tunnel condition of 8.5km of brick lined tunnels in CBD for Telstra and advice on remedial requirements.
- Advice to Utility company on removal of infrastructure from Yarra River prior to dredging 2007/2009.

- Confidential Project June 2004 Probabilistic Cost Analysis for, and Feasibility of, Construction of Major Infrastructure Project valued at >\$50 Billion, for Dept. of Finance, Victoria.
- Geological & geotechnical review, preliminary design and costing, and functional design for relocation of utilities under Yarra River by Horizontal Directional Drilling 2003 to 2006.
- Engineering Geological and Environmental Dredging Risk Review for power and communication cables beneath Yarra River 2003 prior to channel deepening for Port of Melbourne.

EXPERT WITNESS

Ken has provided expert evidence to several jurisdictions including in Victoria: VCAT, Planning Panels Victoria, and the Magistrates, High and Supreme Courts, contaminated land; illegal landfills; landfill gas risk; the cost of remediation of, and responsibility for, contaminated land; and unforeseen ground conditions. Additionally, he has provided expert reports on engineering geological and geotechnical issues including failure of dams and engineering structures in South Africa.

RICHMOND TAR PIT - SUPREME COURT VICTORIA 2015

LEAD AUDITOR

Ken was engaged in 2013 as an expert witness in the Victorian Supreme Court on the origin, hazards and impacts from Coal Tar wastes discovered during construction of a training facility on behalf of MFESB in 2005. Judgement given in December 2015 in favour of MFESB concluded that the former Council was liable for the clean-up costs related to abandonment of the former tar pit and wastes that it contained. He is still retained for expert opinion on the costs of remediation that are not yet settled (2017).

OTHER EXPERT WITNESS ROLES

LEAD EXPERT

Ken has also been engaged as an expert witness on a number of occasions, examples in Victoria include for:

 Planning Panel on Proposed Mt Atkinson and Tarneit sub-division for Victorian Planning Authority; and



continued

- Subsequent Planning Panel on gas risks relating to proposed extension of Melbourne Regional Landfill (adjacent to Mt Tarneit Development) also for VPA.
- Expert evidence for EPA Victoria on wastes illegally dumped at a landfill (2016).
- Multiple sites impacted by TCE vapour (2015).
- Planning Panel on suitability of sub-divisions at St Albans on former power company depot.
- Asbestos contamination delaying office building for SE Water (2015).
- Impact of contamination on land value on former tannery Maribyrnong, Vic (2013).
- Expert Review of data to identify source of PCB contamination for litigation (2012).
- Planning Panel on Lang Lang development adjacent to former landfill.
- Review of Management Plan and expert witness for illegal landfill (Greenvale) for EPA prosecution.
- High Court action on costs of contamination at 75 sites Port of Melbourne.
- VCAT on demolition and remediation of contaminated slipway site Williamstown.
- Review of Asbestos Contamination for Litigation at Defense Site Broadmeadows, Vic.

PREVIOUS EXPERIENCE

Ken has more than 20 years of previous experience as a geologist and engineering geologist in direction of, and as principal investigator for geological and engineering geological investigations, instrumentation and monitoring, field studies and teaching primarily in South & Central Africa and UK.

PUBLICATIONS AND PRESENTATIONS

K Mival – 1984 - Assistance to Editor (ABA Brink) on one chapter in "Engineering Geology of Southern Africa Vol IV – The Quaternary".

K Mival 1998 - A paper on a "Scheme for the rapid assessment of the structural integrity of lined tunnels" to the XI Australian tunneling conference.

K Mival -1996 - Author of the Australian chapter of the study on "International Experience and Expertise in Registration, Investigation, Assessment, and Clean-up of Contaminated Military Sites." published by German Federal EPA.

Ken has also presented and had published various scientific papers and articles locally and internationally on aspects of land reclamation; on clean-up of sites contaminated with heavy metals; risk based approaches to soil remediation; ground improvement; geology of cities; instrumentation & monitoring; penetration testing; slope stability; blasting trials for stabilisation of undermined ground, and aspects of climate change.

ENVIRONMENTAL PAPERS

Gorman J, Mival K, Wright J, and Howell M, - 2002 "Developing risk-based screening guidelines for dioxin management at a Melbourne Sewage Treatment Plant" Paper e20500a Enviro 02 Melbourne April 2002 (re-published in Water Science & Technology Journal, Vol 47 No 10 pp 1-7 by IWA publishing 2003).

Mival K, 2004 - "All that's Green is not Clean - Lessons from the Risk Based Management of a Gasworks Clean-up" Paper e4095, to Enviro 04 Sydney, March 2004.

Mival K, Pump W, Dixon G 2006 "From Wasteland to Green Parkland – The Clean-up of the West Melbourne Gasworks" presented to MGP06, Reading UK April 2006.

Mival K, 2011 "The Challenges for an Environmental Auditor of Dioxin Remediation on a Former Sewage Treatment Plant Site" presented to Ecoforum – Sydney March 2011 - also presented to ACLCA Adelaide 2013.

Mival K, 2016 "How did the Supreme Court of Victoria Decide that City of Yarra was Liable for Clean-up of Coal Tar Wastes after 60 years? (paper E0022)

Mival K, - 2016 – presented to Victorian Planning and Environmental Law Association on "Contaminated Land – What do Planners Need to Know?"

Mival K, - 2016 — presented on "Land use Planning and Controls" for ALGA Seminar on Vapour and Gas Mitigation.



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OTHERS

K Mival - 2009 - Presentation – "Living in a Bushfire Zone – Planning; Decisions; Actions" to VPELA Seminar June 2009.

K Mival – 2011- Presentation "Impact on land, groundwater and community and recovery from the 2009 Victorian Bushfires" to ALGA April 2011.

K Mival – 2014 - Presentation "Costs of Rebuilding in Bushfire Zones" to VPELA annual conference 2014.

K Mival – 2015 - Article "Re-assessing the Disappearance of the Clippership $Guiding\ Star''$ – published in The Great Circle – the biannual peer-reviewed journal of the Australian Association of Maritime History, Volume 37 No 2 pages 16-39.

