

13.0 Appendix 3: EPA – Clean Up Notice

VHR H 0703
Pre-Application Submission p31711

Hoffman Brickworks
Buildings 5 and 6
72 – 106 Dawson Street, Brunswick

CLEAN UP NOTICE

Dean Rzechta
SUNGROVE CORPORATION PTY LTD
Level 1, 1127 High Street
ARMADALE VIC 3143

TO: SUNGROVE CORPORATION PTY LTD

ADDRESS: Level 1, 1127 High Street, ARMADALE VIC 3143

PREMISES: Buildings 5 and 6, 72-106 Dawson Street, BRUNSWICK VIC 3056

LEGAL REFERENCE: EP Act 1970 s.62A(1) Clean up and ongoing management measures required

Who we are: Environment Protection Authority (EPA) Victoria is an independent statutory authority established under the *Environment Protection Act 1970* (the EP Act). Our purpose is to protect and improve our environment by preventing harm to the environment and human health.

Why we serve remedial notices: Remedial notices are served to prevent or remedy actual or likely pollution, environmental hazards and a range of non-compliances with the EP Act.

What you are required to do: Section 62A(1) of the EP Act requires you to comply with the requirements in this notice with one or more actions to prevent or remedy an actual or likely non-compliance. Under section 60A(1), if someone plans to take control of your premises, you must notify them of this notice and your progress towards compliance.

When you are required to act: Immediately, from the date below.

If you want compliance dates extended: An application to extend a compliance date listed in Section 3 of this notice must be received *at least 10 working days prior to the compliance date*. Application forms, available at www.epa.vic.gov.au/business-and-industry/forms must be addressed to the Manager of the EPA office listed on this notice with the subject line: "Notice amendment application". Your served notice remains legally binding until EPA advises of any change. Refer to the Remedial notices policy (publication 1418) for further information on amendment applications.

What happens if you don't comply: If found guilty of contravening a requirement of this notice, you may be ordered to pay a fine of up to 2400 penalty units (\$396,528).

What your review rights are: An application for review of this notice can be made to EPA and/or the Supreme Court. Applications for an EPA review must be made within 7 calendar days from the notice issue date (below). Application forms are available at www.epa.vic.gov.au/business-and-industry/forms, or from our offices. For more information on your review rights, refer to the Remedial notice review policy (publication 1531) or contact us on 1300 EPA VIC (1300 372 842).

For the purpose of this notice 'You' means the recipient of this notice and 'Premises' means the site at the premises address, as identified above.



Paul Stacchino

DELEGATE OF THE ENVIRONMENT PROTECTION AUTHORITY

DATE OF ISSUE: 03/02/2020

NOTICE STRUCTURE

1 EPA OBSERVATIONS

This section details what was observed during the inspection.

2 REASONS FOR VIEW FORMED

This section interprets the observations and articulates why the authorised officer believes a clean up notice should be issued in accordance with section 62A of the EP Act.

3 REQUIREMENTS - WHAT OUTCOMES ARE REQUIRED TO COMPLY?

Considering the view that has been formed, this section lists the requirements or actions to address the environmental risk(s) or impact(s).

4 AN EXAMPLE OF HOW YOU CAN COMPLY

This section provides an example of how you may achieve compliance with the requirements of this notice.

1 EPA OBSERVATIONS

1.1 EPA reviewed a report titled “DRAFT Review of Environmental Condition Buildings 5, 6A and 6, Former Hoffman Brickworks, 72 – 106 Dawson Street Brunswick Victoria” which was prepared for Hoffman Brickworks Pty Ltd, prepared by Compass Environmental Pty Ltd, dated 8 July 2015. The report outlined the following:

1.1.1 Read that Compass Environmental has been engaged by Hoffman Brickworks Pty Ltd to undertake a review of the environmental condition of Buildings 5, 6A and 6 (“the premises”) at the former Hoffman Brickworks site located at 72-106 Dawson Street, Brunswick VIC (page 8).

1.1.2 Read that the residential development of the remainder of the former Hoffman Brickworks site had been completed under five previous Environmental Audits, as listed below:

1.1.2.1 Statement 51415-4 Part of Lot S, Stage 1, Former Hoffman Brickworks Brunswick, Victoria, 16 October 2012 undertaken by Mr Luke Cattlin of Tonkin and Taylor.

1.1.2.2 Statement 51415-3 Lot O Stage 2 Area, Former Hoffman Brickworks Brunswick, Victoria, 18 Apr 2005 undertaken by Mr Jim Mantle of PB.

1.1.2.3 Statement 51415-2 Lot N Stage 2 Area, Former Hoffman Brickworks Brunswick, Victoria, 02 Mar 2004 undertaken by Mr Jim Mantle of PB.

1.1.2.4 Statement 51415-1 Lot L Stage 2 Area, Former Hoffman Brickworks Brunswick, Victoria, 29 Dec 2003, undertaken by Mr Jim Mantle of PB.

1.1.2.5 Statement 40625-1 Lots A-D, Former Hoffman Brickworks Brunswick, Victoria, 19 Jul 2002 undertaken by Mr Phil Sinclair of Coffey Environments (page 10).

1.1.3 Read that the premises include a former brick pressing shed (known as Building 5) and a former steam engine house (known as Building 6). A grinding shed (known as Building 6A) was previously located immediately north of Building 6 and east of Building 5 (page 10).

1.1.4 Read that Building 5 represented the former brick pressing shed, which comprised a tall gabled structure built in 1884 surrounded by lean-to extensions. It was noted that nine brick presses, which operated to the Bradley and Craven principal, were located on the ground floor of the building, which dated from the 1920s, 1960s and 1970s. Seven of the presses showed evidence of the original use of steam power, including large fly wheels. Two presses in the northern part of the building were installed in the 1970s (page 10).

1.1.5 Read that all presses were operated by electric motors and the upper level of Building 5 contained a system of conveyor belts and hoppers to feed the brick presses below (page 10-11).

1.1.6 Read that Building 6 was constructed between 1904 and 1909. It was noted that this building was labelled on a 1942 plan as a ‘store’ and on a 1958 plan as a ‘machine room’. Adjacent to the west side of this building was the boiler house (Building 8). A former substation was located to the south of the building (page 11).

1.1.7 Read that Building 6A was partially constructed prior to 1904 and was demolished post 2000. It was noted that the building contained an edge runner mill and a range of hoppers and conveyors used for transporting the clay from storage in Building 9 (immediately west) to mills for grinding and then into hoppers and brick presses in Building 5 (page 11).

1.1.8 Read that Building 6A was reported to have had an earth floor (page 11).

1.1.9 Read that anecdotal information indicated that by the 1960s there was an earth pit occupying most of the area immediately adjacent to the building which included the clay crushing machines (which appears to refer to Building 6A). The earth pit encompassed part of Lot O immediately north of Building 5 and 6A (page

11).

1.1.10 Read that the clay crushing machines were reported to have been water-cooled and runoff sludge from the machines drained into the pit. The sludge contained lubricating oils and diesel from the machines. With the decline in processing of raw clay, the pit was filled with waste bricks and other fill of unknown origin (page 11).

1.1.11 Read that Investigations completed at the site have identified a layer of heterogeneous fill extending to depths ranging generally between 1.0 and >2.0 m beneath Building 5 and 6, with deeper filling up to 6 m identified beneath the former Building 6A (page 12).

1.1.12 Read that the fill has been described to typically comprise silty and sandy clays and clayey sands with crushed rock, brick, concrete fragments and charcoal, with a layer of sandy gravel with slag and crushed brick (page 13).

1.1.13 Read that perched water was encountered within the fill beneath Building 5 and 6A (page 13).

1.1.14 Read that based on the available well network, the groundwater flow was interpreted to be predominantly in a south and south-westerly direction. It was noted that the overall direction of groundwater flow was consistent with the fall of the land to the south and southwest towards Moonee Ponds Creek (page 13).

1.1.15 Read that previous assessments showed widespread contamination by petroleum and polyaromatic hydrocarbons within the fill and the underlying natural soils. It was noted that these impacts were likely to be sourced from brick manufacturing operations, including oil leaks from brick presses and associated sumps and disposal of contaminated waste waters with oils and diesel into a former pit beneath Building 6A (page 17).

1.1.16 Read that Total Recoverable Hydrocarbons (TRH) >C9 concentrations of up to 135,700 mg/kg and Polyaromatic Hydrocarbons (PAH) concentrations of up to 1,600 mg/kg (naphthalene up to 900 mg/kg) were identified in the fill (page 17).

1.1.17 Read that petroleum hydrocarbon impacts were found to extend to a depth of at least 5 m into the natural soils in some areas of the premises (page 17).

1.1.18 Read that during drilling contaminated perched water and non-aqueous phase liquids (NAPL) was observed at locations B22, B23, B57, B58, B59 and B60 within Building 5, with its presence further confirmed by standpipes installed at B58 and B60 (page 17).

1.1.19 Read that the laboratory analysis data indicated a more widespread presence of NAPL (potentially in a residual form) also within Building 6, based on concentrations of petroleum hydrocarbons that exceeded hydrocarbon saturation limits (page 17).

1.1.20 Read that the presence of NAPL beneath Building 5 and 6 is consistent with the observed evidence of NAPL seepage from building foundations along Dawson Street footpath. It was noted that there was evidence of NAPL during drilling of bore B46 (GW14), immediately south of Building 5 and 6, from 13.5 to the base of the bore at 14.65 m bgl (page 17).

1.1.21 Read that the NAPL present in the fill underlying the site, which includes a dense non-aqueous phase liquids (DNAPL), poses a high risk to the underlying groundwater. It was noted that the existing soil data shows evidence of significant downward contaminant movement into the underlying natural soils, with the presence of DNAPL confirmed in two regional wells, which were identified as GW11 and GW14 (page 17).

1.1.22 Read that the NAPL represents an ongoing source of groundwater impacts (page 17).

1.1.23 Read that the remaining DNAPL reservoir within the fill is expected to continue to slowly migrate downwards unless it is removed, with the proposed re-development works increasing the risk of DNAPL mobilisation (page 17).

1.1.24 Read that there was no access for a drill rig capable of installing groundwater wells within the existing Buildings 5 and 6 and therefore no groundwater data is available for these areas (page 17).

1.1.25 Read that the perched water well GW12 showed measured NAPL thickness of 0.02 m. NAPL was also observed during gauging and sampling of the regional aquifer well GW11 (with both the interface probe and bailer covered by thick product), it was noted that the thickness could not be measured (page 18).

1.1.26 Read that the laboratory analysis of groundwater beneath the LNAPL showed TRHC10-C14 of 12 mg/L, TRHC15-C28 of 37 mg/L and TRHC29-C36 of 6.1 mg/L. Detectable MAH compounds at GW12 included ethylbenzene of 0.001 mg/L, xylenes of 0.003 mg/L and 1,2,4-trimethylbenzene of 0.003 mg/L. Associated with the elevated petroleum hydrocarbon concentrations at this location were elevated concentrations of PAH was a low detectable phenol concentration of 0.001 mg/L (page 18).

1.1.27 Read that groundwater monitoring well GW14 detected a hydrocarbon odour during sampling and a detectable concentration of polyaromatic hydrocarbons was reported (page 18).

1.1.28 Read that the groundwater also showed elevated concentrations of some metals (arsenic, boron, chromium, copper, iron, lead, manganese, nickel, mercury, selenium and zinc) generally above the adopted water quality criteria for the protection of aquatic ecosystems. Iron and manganese at some locations exceeded the adopted water quality criteria for the protection of primary contact recreation (page 18).

1.1.29 Read that there was a widespread presence of viscous heavy/tarry oil NAPL that was identified within the fill layer below Building 5, 6 and 6A. Laboratory analysis of bore B57 showed the product composition to include TPH C9 to C32 fractions (with dominant fractions in the range of C10 to C22), various polyaromatic hydrocarbon compounds, which were mainly anthracene, fluorene, naphthalene and phenanthrene (page 18).

1.1.30 Read that benzene, toluene, ethylbenzene and xylene (BTEX) compounds were generally below the laboratory reporting limit of 1 mg/kg, with only very minor concentrations of ethylbenzene and xylenes detected (page 18).

1.1.31 Read that no polychlorinated biphenyl (PCBs) have been detected at the premises (page 18).

1.1.32 Read that gauging and sampling of well GW11 in 2014 showed the presence of 15 mm of LNAPL floating on the top of the water column and almost 0.9 m of DNAPL at the base of the well (page 19).

1.1.33 Read that the following exceedances of the adopted water quality criteria have been identified, suggesting potential risk to the protected beneficial uses of the groundwater:

1.1.33.1 Maintenance of ecosystems: petroleum hydrocarbons (including NAPL), naphthalene, arsenic, boron, chromium, copper, lead, mercury, nickel, selenium and zinc.

1.1.33.2 Primary contact recreation: petroleum hydrocarbons (including NAPL), sodium, chloride, sulphate, iron and manganese.

1.1.33.3 Stock water: petroleum hydrocarbons (including NAPL).

1.1.33.4 Industrial water: petroleum hydrocarbons (including NAPL). It is noted that this beneficial use is likely to be also precluded by natural groundwater salinity levels.

1.1.34 Read that the identified NAPL and associated dissolved concentrations of petroleum hydrocarbons and naphthalene, potentially preclude all of the protected extractive beneficial uses of the groundwater (page 19).

21).

1.1.35 Read that the identified NAPL and dissolved hydrocarbon impacts within the regional aquifer may potentially affect the beneficial uses of the surrounding land, mainly via vapour intrusion pathway (page 21).

1.1.36 Read that the contamination is deemed as a high risk classification for NAPL, contaminated perched water and adsorbed hydrocarbon contamination present within the fill and potentially underlying natural clays across the site, which pose potentially unacceptable risk to on-site and off-site human receptors (mainly via vapour intrusion and seepage to adjacent structures), underground services and the underlying regional groundwater (due to downward migration of contaminants, with higher risk of downward mobilisation due to subsurface construction works (page 26).

1.1.37 Read that the most effective option for removal of NAPL that is present within the upper soil profile in the fill material underlying the site would be excavation of the entire site to depths ranging as a minimum between 2 and 6 m below ground level. It was also noted that there would be an area where a number of in-situ options could potentially be adopted for the removal of NAPL they would not likely be effective given the properties of NAPL and the high heterogeneity and limited permeability of the fill matrix (page 34).

1.1.38 Read that the removal of NAPL from the aquifer matrix is likely not to be practicable (as any in-situ method will experience similar technical limitations as listed above), which further emphasises the need to remove NAPL from the overlying soils and limit further impacts. The management requirements for NAPL within the aquifer and associated dissolved groundwater contamination will need to be considered in the context of the extent of the impacts (currently unknown) and associated risks (page 34).

2 REASONS FOR VIEW FORMED

Buildings 5 and 6 is located at 72-106 Dawson Street, BRUNSWICK ("the premises") is the remaining section of land requiring a 53X Audit under the Environment Protection Act 1970. The 53X Audit was undertaken as a staged audit, with sections assessed, cleaned up and verified as suitable for residential land use. The premises formed part of the former Hoffman Brickworks which operated from 1884 and included a former brick pressing shed (known as Building 5), a former steam engine house (known as Building 6) and a grinding shed (known as Building 6A). No clean-up works have been undertaken and further assessment and clean-up is required.

Historically, there was an earth pit occupying most of the area immediately adjacent to Building 6, which included the clay crushing machines. The earth pit encompassed part of the area north of Building 5 and 6A. Building 5 represented the former brick pressing shed, which comprised a tall gabled structure built in 1884 surrounded by lean-to extensions. It was noted that nine brick presses, were located on the ground floor of the building, of which seven of the presses showed evidence of the original use of steam power, including large fly wheels.

The premises is contaminated by petroleum and polyaromatic hydrocarbons within the fill layer and the underlying natural soils. It was noted that these impacts were likely to be sourced from brick manufacturing operations, including oil leaks from brick presses and associated sumps and disposal of contaminated waste waters with oils and diesel into a former pit beneath Building 6A. Contaminated perched water and non-aqueous phase liquids (NAPL) was observed in groundwater monitoring wells at the premises and the NAPL represents an ongoing source of groundwater impacts.

The following protected beneficial uses of the groundwater have been precluded which includes maintenance of ecosystems for petroleum hydrocarbons (including NAPL), naphthalene, arsenic, boron, chromium, copper, lead, mercury, nickel, selenium and zinc. The stock water for petroleum hydrocarbons (including NAPL) and primary contact recreation for petroleum hydrocarbons (including NAPL), sodium, chloride, sulphate, iron and manganese have precluded the beneficial uses of groundwater.

On this basis, and considering the observations previously stated, I have formed a view and I am satisfied that you are the occupier of the premises upon or from which pollution has occurred or been permitted to occur, as per section 62A(1)(a) of the EP Act.

In order to address this, you must take the clean up and ongoing management measures listed in this notice.



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Hjordir Russell
AUTHORISED OFFICER
EPA Metropolitan West
EPA Victoria
DATE OF ISSUE: 03/02/2020

3

REQUIREMENTS - WHAT OUTCOMES ARE REQUIRED TO COMPLY?

General Requirements

CONFIRM ENGAGEMENT OF AN ENVIRONMENTAL AUDITOR

3.1 By 24 February 2020, you must supply to the EPA, addressed to the authorised officer listed on page 7 of this notice, confirmation in writing that you have engaged an EPA-appointed Environmental Auditor to:

- a) undertake an environmental audit of the premises in accordance with section 53 of the Act;
- b) verify the Sampling Analysis Quality Plan (SAQP) as per requirement 3.3 below; and
- c) verify a clean up plan as per requirement 3.4 below.

AUDITOR-VERIFIED SAMPLING ANALYTICAL AND QUALITY PLAN

3.2 By 27 April 2020, you must, in writing to the authorised officer listed on page 7 of this notice, submit a Sampling Analysis Quality Plan (SAQP), verified by an EPA-appointed Environmental Auditor, that details the staging of environmental investigation and assessment activities for soil and groundwater at and from the premises, in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999, in particular Schedule B1 Guideline on Investigation Levels for Soil and Groundwater and Schedule B2 Guideline on Site Characterisation. The SAQP should include:

- (a) a soil sampling plan based on the site history at a sampling density consistent with “AS 4482.1, Australia Standard Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds”; and
- (b) groundwater sampling consistent with “EPA Publication 669 – Groundwater Sampling Guidelines”.

AUDITOR-VERIFIED CLEAN UP PLAN

3.3 By 14 December 2020, you must submit to EPA for approval, a Clean-Up Plan (CUP) to remediate contamination identified in the soil and ground water areas of the premises following the sampling conducted in accordance with the SAQP and restore beneficial use of the premises to the extent practicable, which includes:

- a) clean-up goals
- b) plans, including dates, on the removal or remediation of contaminants on and extending beyond the boundary of the premises
- c) details of contingency plans and associated monitoring programs and reporting dates
- d) anticipated completion date of clean-up
- e) verification by an EPA-Appointed Auditor

ENVIRONMENTAL AUDITOR TO PREPARE AUDIT REPORT 53X

3.4 By 22 March 2023, you must supply to EPA an environmental audit report, prepared in accordance with section 53X of the Act. Accompanying this report must be either:

- a) a Certificate of Environmental Audit in accordance with section 53X of the Act; or

b) a Statement of Environmental Audit in accordance with section 53X of the Act.

Reporting Requirements

PROGRESS REPORTING

3.5 By 1 March 2021, submit to EPA in writing to the authorised officer listed on page 7, a written progress report in relation to requirements of this notice, and every six months thereafter until the audit report as per requirement 3.4 (the final audit report) is completed, [including on 1 September 2021; 1 March 2022; 1 September 2022; 1 March 2023], which reports must include, but not be limited to:

- a) Summary of all groundwater monitoring results;
- b) Summary of all soil sampling results;
- c) Summary of any actions undertaken as part of the Clean Up Plan;
- d) Summary of any additional works required to complete the section 53X audit for the premises; and
- e) Each such progress report must be verified by the EPA-Appointed Environmental Auditor.

FINAL REPORTING

3.6 By 31 March 2023, submit to EPA in writing to the authorised officer listed on page 7, provide a report (including any documentation relating to the summaries of the sampling results and summary of actions and additional works as specified in requirement 3.5) that:

- a) specifies how the clean up or on-going management of the premises has been or is likely to be achieved, and
- b) is signed by your managing director, most senior executive, or a person authorised to sign on behalf of the notice recipient.

4

AN EXAMPLE OF HOW YOU CAN COMPLY

One way of achieving compliance with this notice would be to:

4.1 By the date specified in requirement 3.1, submit to EPA in writing to the authorised officer listed on page 7, engage an EPA environmental auditor who is able to perform an environmental audit in accordance with section 53X, verify the SAQP as per requirement 3.3 and the Clean up Plan as per requirement 3.4; and verify that engagement in writing to the EPA.

4.2 By the date specified in requirement 3.2:

- a) engage a suitably qualified person with experience in assessing contaminated land and groundwater (the engaged person) to prepare a Sampling and Analysis Quality Plan (SAQP) in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999, in particular Schedule B1 Guideline on Investigation Levels for Soil and Groundwater and Schedule B2 Guideline on Site Characterisation; and
- b) submit to EPA in writing to the authorised officer listed on page 7 the SAQP completed by the engaged person, which should:
 - i) be verified by an EPA-appointed Environmental Auditor; details on how to appoint an auditor can be found on the EPA website: <http://www.epa.vic.gov.au/our-work/environmental-auditing/environmental-auditors/list-of-environmental-auditors>;
 - ii) include a soil sampling plan based on the site history at a sampling density consistent with “AS 4482.1, Australia Standard Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds”; and
 - iii) include groundwater sampling consistent with “EPA Publication 669 – Groundwater Sampling Guidelines”.

4.3 By the date specified in requirement 3.3, submit to EPA in writing to the authorised officer listed on page 7, a written Clean Up Plan that details the level and extent of contamination in soil and groundwater areas of the premises and the plan to remediate, clean-up and/or monitor these areas, verified by an EPA-appointed Environmental Auditor

4.4 By the date specified in requirement 3.4, submit to EPA in writing to the authorised officer listed on page 7, an environmental audit report for the premises that has been overseen by an EPA-Appointed Environmental Auditor and that has been prepared in accordance with Section 53X of the Act. This could include, but not be limited to, verification of contamination levels at the premises, and confirmation of clean-up activities undertaken at the premises.

4.5 By the dates and at the intervals specified in requirement 3.5, submit to EPA in writing to the authorised officer listed on page 7, a report detailing the progress against the requirements of this notice, including the results of any assessment, remediation and/or monitoring, and an indication of additional works required to complete the 53X audit for the premises.

4.6 By the date specified in requirement 3.6, submit to the authorised officer listed on page 7, a final report detailing how you achieved compliance with this notice. This should include supporting documentation which verifies actions taken to comply with this notice and specifies how the clean-up or on-going management of the premises has been or is likely to be achieved.