

Report

Phase 1 Contamination Assessment

1-17 Grey Street and 32-48 Silverwater Road, Silverwater NSW

16 MAY 2018

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Project No. SES_481

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Executive Summary

Sullivan-ES was engaged by Pacific Planning, on behalf of Sonsari Pty Ltd, to conduct a Phase 1 Contamination Assessment (the Phase 1) for the properties known as 1 to 17 Grey Street and 32 to 48 Silverwater Road, Silverwater NSW; henceforth referred to as 'the site'.

The site consists of a cluster of 17 individual properties that are bound by Silverwater Road, Carnarvon Street, Grey Street and Bligh Street.

It is understood that the site is the subject of a planning proposal and earmarked for future development to consist of a mixed ground floor commercial retail with high-density residential units and basement car parking.

The objectives of the Phase 1 were to assess for potential contamination at the site from past and present activities in consideration of SEPP55, and to provide recommendations for further detailed assessment work and or contamination management, if required, such that the site can be made suitable for the proposed mixed use of commercial retail and high-density residential purposes.

The scope of work included: a review of background documents and historical information; a detailed site inspection; and preparation of an assessment report in consideration of the Guidelines for Consultants Reporting on Contaminated Sites, 2011 (OEH 2011), Schedule B2 of the National Environment Protection (Assessment of Site Contamination) Measure 2013 (ASC NEPM 2013), and the State Environmental Planning Policy 55 – Remediation of Land (SEPP55).

The following conclusions are made based on the findings of this Phase 1 assessment. Our conclusions are subject to the limitations presented in Section 6.

The site was predominately used for low-density residential purposes since it was first developed before the 1930s until as recently as 2014 when the majority of residential buildings were demolished. There would have been limited potential for residential activities to contaminate residential areas during that time, which is supported by soil analytical results from the previous report (WSP, Nov 2012). The results showed concentrations of contaminants below residential land use criteria, with the exception of one localised area for lead (Pb) (BH06).

Given that residential structures predate 1990, there is a potential for the presence of asbestos materials and lead-based paints within the structures. Demolition of these structures may have caused an increased risk of surface soil contamination within those areas where demolition occurred.

The properties at #15 and #17 Grey Street in the northern corner of the site and #48 Silverwater Road in the north eastern corner were not previous assessed (WSP, Nov 2012); however, historical information shows these properties were used for low-density residential purposes and therefore present a low risk of contamination. Given the age of the structures, there is a potential contamination risk to localised surface soils caused by degradation and weathering of asbestos and lead-based paints around the fringes of structures.

A corner shop currently exists at #15 Grey Street and anecdotally has operated for many years from that location. Of note is the use of a grease trap system that may cause an increased contamination risk within that locality.

The southern corner of the site at #32-36 Silverwater Road has been used for commercial/industrial purposes since the early 1960s. Most recently this area was used as a dry-cleaning business. EPA records showed that the site was subject to a clean-up notice issued on 1 June 2012 to Finhaven Pty Ltd the operators of the dry-cleaning business (Paleys Dry Cleaners). The clean-up was specific to removal of "a very large stockpile of PERC dry cleaning waste (PERC waste)" that was being stored

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inside a building on the north-western side of the premises. While previous sampling in 2012 was limited within this area, Tetrachloroethene (PCE) was detected in groundwater at 1,900ug/L along with other volatile hydrocarbons, indicating that past dry-cleaning activities have caused contamination of the land. The nature and extent of contamination within this area of the site warrants further assessment, noting that the past report recommended further investigation of the impacted groundwater at that time.

Since demolition of the residential buildings in 2014, the southern portion of the site, including the former dry-cleaners, has been leased and is used to storing rental vehicles, trucks, trailers and various related equipment. These commercial activities pose an increased risk of contamination from leaks/spills of fuel-based chemicals.

Based on current evidence, the majority of the site, excluding the former dry-cleaning property, is considered suitable for a mixed-use commercial/residential development. However, we recommend conducting verification sampling to fill information data gaps as listed below.

The contamination risk caused by PCE in site groundwater within the former dry-cleaning property has not been quantified. This area requires further investigation as recommended below. However, based on our current knowledge of the issue and the contaminants of concern, this area of the site can be made suitable for a mixed-use commercial/residential development.

Recommendations

We recommend conducting the following works to fill the identified information gaps to verify the site suitability status.

PCE Contamination – Former Dry-Cleaning Property

Further investigation of the PCE contaminated groundwater should be conducted as a priority for planning purposes.

- As required under section 60 (CLM Act 1997), notify the EPA of the PCE impacted groundwater on the site. This must be done in writing using the approved forms, along with a plan to assess the significance of contamination. In this regard, prepare a sampling plan to clearly document the proposed method to investigate the extent of contamination. Investigation works should include:
 - Sampling soils in and around the former dry-cleaning business at locations shown on Figure 3 (Appendix A). Consideration should be given to target areas known to have stored PERC waste, and around underground stormwater drains, sumps and sewerage pipes. Analysis should include TRHs, VOCs and metals.
 - Installing a series of new groundwater monitoring wells at locations shown on Figure 3.
 - Collect groundwater samples from the new wells and all existing wells (if they can be located and accessed). Analysis should include TRHs, VOCs and metals.
- Prepare a contamination investigation report for issue to the EPA that assesses current and future risk to potential receptors. The report should be approved by a certified contamination consultant as required under NSW EPA policy.

Other Data Gaps

Additional sampling of the remaining site areas can be conducted once all tenants and related equipment has been removed from the site, so as not to cause recontamination during their occupancy.

• Conduct an inspection and collect limited verification surface soil samples from across the unsealed leased area used for storing rental vehicles and related equipment. Samples should be

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analysed for petroleum hydrocarbons and metals. Inspect the nature of dumped waste piles and collect verification samples if necessary.

- Conduct an inspection and collect limited verification surface soil samples from across the unsealed vacant area where demolition of residential structures has occurred. Samples should be analysed for asbestos and lead.
- Collect limited verification surface soil samples from around the existing structures at #15 and #17 Grey Street where weathering of old building materials containing asbestos and lead-based paints; or use of pesticides or grease trap leaks/spills may have caused surface soil impacts. Samples should be analysed for petroleum hydrocarbons, metals, asbestos and pesticides.

Further Consideration

Once additional information is obtained with respect to PCE contamination, consideration should be given to assessing potential vapour inhalation exposure pathways. Consideration should be given to collecting a targeted set of soil vapour samples from locations showing elevated concentrations of volatile chemicals including the existing location at MW03.

Introduction

Sullivan-ES was engaged by Pacific Planning, on behalf of Sonsari Pty Ltd, to conduct a Phase 1 Contamination Assessment (the Phase 1) for the properties known as 1 to 17 Grey Street and 32 to 48 Silverwater Road, Silverwater NSW; henceforth referred to as 'the site' (Figure 1 **Appendix A**).

The site consists of a cluster of 17 individual properties that are bound by Silverwater Road, Carnarvon Street, Grey Street and Bligh Street.

It is understood that the site is the subject of a planning proposal and earmarked for future development to consist of a mixed ground floor commercial retail with high-density residential units and basement car parking.

1.1 Objectives of Assessment

The objectives of the Phase 1 were to assess for potential contamination at the site from past and present activities in consideration of SEPP55, and to provide recommendations for further detailed assessment work and or contamination management, if required, such that the site can be made suitable for a mixed use of commercial retail and high-density residential purposes.

1.2 Scope of Work

The scope of work for the Phase 1 consisted of the following:

- Reviewing available records and information relevant to the site including:
 - o Historical aerial photographs
 - NSW Safework register of chemical storage
 - The previous contamination report (WSP Nov 2012)¹
 - o Available Council building and development works
 - o Groundwater bore registers
 - NSW EPA registers
 - o Published geological and soil maps
 - o Available records of site hazards and risks.
- Conducting a detailed site inspection to document current site conditions, surrounding environments and any environmental impediments pertaining to land contamination.
- Preparing a Phase 1 Contamination Assessment report in consideration of the NSW OEH Guidelines for Consultants Reporting on Contaminated Land 2011 (OEH 2011), the State Environmental Planning Policy 55 (SEPP55), and the National Environment Protection (Assessment of Site Contamination) Measure 2013 (ASC NEPM 2013).

1.3 Regulatory Framework

The Phase 1 was conducted in consideration of the following regulatory framework and guideline documents:

- Contaminated Land Management Act 1997 NSW (CLM Act).
- State Environmental Planning Policy No.55 Remediation of Land (SEPP55).

¹ WSP Environmental Pty Ltd "Phase 1 and 2 Environmental Site Investigation, 1-13 Grey Street and 32-46 Silverwater Road, Silverwater NSW", 2 November 2012, Project 34924.

1 Introduction

- National Environment Protection (Assessment of Site Contamination) Measure 2013 (ASC NEPM 2013).
- Guidelines for Consultants Reporting on Contaminated Sites, 2011 (OEH 2011).
- Guidelines for the NSW Site Auditor Scheme (3rd Edition), 2017 (NSW EPA 2017).

1.4 Consultants Certification and Competency

The contamination assessment was performed by Sullivan-ES. The Principal Scientist for Sullivan-ES (Mr Adam Sullivan) is a certified Site Contamination Specialist (CEnvP-SC40944) under the EIANZ Certified Environmental Practitioner Scheme. This report has been approved by Mr Adam Sullivan.

The information provided in this section is summarised from the following:

- Information provided by Pacific Planning.
- The site inspection undertaken by Adam Sullivan (Principal Scientist of Sullivan-ES) on 18 April 2018.
- Internet accessible web-based NSW Government and Local Council information sources.
- NSW Government published maps and records.
- NSW Department of Primary Industries Office of Water groundwater database.
- NSW Planning Portal website (www.planningportal.nsw.gov.au).
- Auburn Local Environmental Plan (LEP) 2010.

2.1 Site Description

2.1.1 Identification

The site is a rectangular-shaped block with a total area of approximately 7,480m² (as measured from six maps (maps.six.nsw.gov.au)) as shown on Figure 2 (**Appendix A**).

At the time of this Phase 1, the site was identified by the addresses and land titles listed in Table 2-1 below.

Property Address	Property Land Title	Property Address	Property Land Title
1 Grey Street	Lot 18 DP77341	17 Grey Street	Lot 10 Section 5 DP979426
3 Grey Street	Lot 17 Section 5 DP979426	32-36 Silverwater Road	Lot 1 & 2 DP1110059, and Part Lot 1 DP90071
5 Grey Street	Lot 16 Section 5 DP979426	38 Silverwater Road	Part Lot 1 DP90071
7 Grey Street	Lot 15 Section 5 DP979426	40 Silverwater Road	Lot 5 DP89550
9 Grey Street	Lot 14 Section 5 DP979426	42 Silverwater Road	Lot 6 DP89550
11 Grey Street	Lot 13 Section 5 DP75209	44 Silverwater Road	Lot 7 DP89550
13 Grey Street	Lot 12 DP76894	46 Silverwater Road	Lot 8 Section 5 DP979426
15 Grey Street	Lot 11 Section 5 DP979426	48 Silverwater Road	Lot 9 Section 5 DP979426

Table 2-1 Properties being assessed under the Phase 1

2.1.2 Site Features

The following features were observed during the site inspection conducted on 18 April 2018. The site layout is presented on Figure 2 in **Appendix A** and photos of the site are presented in **Appendix B**.

The site currently consists of the following main features:

- The southern half of the site is leased by a car and truck rental company, the southern corner of which is a former dry-cleaning business.
- A corner shop (Mekhael's Fast Food) exists in the northern corner of the site alongside a residential building.
- The remaining land within the site is vacant and unused.

The leased area and vacant land are surrounded by a security chain-wire fence.

Leased Area (including Former Dry-Cleaning Business)

Three buildings presently exist in the southern corner relating to a former dry-cleaning business. These are annotated on Figure 2 as Buildings A, B and C. Building A appeared to be used for vehicle maintenance, storage of various equipment and probably the main operations area of the former dry-cleaning business. Of note were concrete block plinths that may be evidence of machine foundations and infilled and sealed drainage lines and drain openings. Building B is being used as a vehicle parts storage area and appeared damaged by a recent fire. Building C was used as a store room for various equipment and parts for the rental business with a wash room and toilet facilities at the north end.

Other prominent features of this area were:

- No stored dry-cleaning chemicals or any other related chemicals were observed anywhere in this part of the site. A few large tins of paint were noted.
- No indications of underground tanks were observed.
- One empty aboveground tank (2,000 litre capacity).
- Rental vehicles, truck cabins, trailers and various other vehicle apparatus are positioned in rows that cover most of the leased area external to the buildings. These areas are unsealed and overgrown with grass/weeds.
- The leased area is poorly kept with numerous piles of haphazardly stored materials such as car bodies, metal and timber framework, palates, tyres, dead vegetation, general refuse (mattresses, rubbish, plastic), rusted empty drums, and bricks.
- There are two or three shipping containers located between the buildings. These were not accessible for inspection.
- Oil staining was observed in some localised areas on sealed and unsealed ground.
- Fragments of fibro were observed in random locations on the ground surface.
- An existing groundwater monitoring well (MW03) was observed on the sealed entry driveway to the former dry-cleaning business. Other groundwater wells MW01, MW02 and MW04 that were previously installed (WSP, Nov 2012) were not observed.

Vacant Land

The vacant land area was inaccessible and was inspected from the boundary fences. The vacant land is the former location of residential buildings that have now been demolished. The area is unsealed and overgrown with grass and weeds. Minor building materials such as bricks were observed on the ground surfaces. This area has also been subject to illegal waste dumping of general waste along the fence lines inside the site.

Corner Shop and Residential Building

The Corner Shop appears to be a former residential building converted into a fast food outlet and convenience store, with possibly rear living quarters. The building is a single-storey brick construction with fibro cement panels and sheets in various locations. It is assumed these materials contain asbestos given the age of the building. There is an operating grease trap system located in the rear yard.

The existing residential house next-door to the Corner Shop is a single-storey timber weatherboard cottage style house on brick footings. A garage is accessed from Carnarvon Street and there is a fibro cement shed in the rear yard, assumed to contain asbestos material.

2.1.3 Land Zones Onsite and Surrounding Offsite

At the time of this Phase 1, the site was zoned B6 – Enterprise Corridor in accordance with Auburn LEP 2010.

The site is bordered by the following land uses:

- North: Carnarvon Street (zoned B6 Enterprise Corridor) then commercial/industrial properties (zoned IN1 General Industrial).
- South: Bligh Street, then low-density residential buildings (all zoned B6 Enterprise Corridor).
- East: Silverwater Road (zoned SP2 Infrastructure) then commercial and low-density residential buildings (all zoned B6 Enterprise Corridor).

Grey Street, then low-density residential buildings (zoned B6 - Enterprise Corridor,

West: and RE1 – Public Recreation), a butcher's retail shop is also present at the southern end of Grey Street.

2.2 Environmental Setting

2.2.1 Topography and Drainage

The site elevation is approximately 10mAHD (metres Australian Height Datum) (NSW Department of Land and Property Information). The ground surface slopes gently down to the west. It is assumed that all surface runoff drains to the west toward Grey Street, enters the stormwater system and drains to Duck River located approximately 900m north of the site.

2.2.2 Geology and Soils

The site is situated on Triassic Period Ashfield Shale of the Wianamatta Group consisting of black to dark grey shale and laminite (Sydney 1:100,000 Geological Series Sheet 9130, Edition 1, NSW Department of Mineral Resources, 1983).

The site is underlain by the Blacktown Landscape which is characterised by shallow to moderately deep (<100cm) red and brown podzolic soils on crests, upper slopes and well drained areas; and characterised by deep (150-300cm) yellow podzolic soils and Soloths on lower slopes and in areas of poor drainage. These soils are limited by moderately reactive highly plastic subsoil, low soil fertility and poor soil drainage. (1:100,000 Sydney Soil Landscape Series Sheet 9130 (Third Edition)).

The previous investigation (WSP, Nov 2012) found the soil profile to generally comprise gravelly sand and clay fill material to a maximum depth of 1.3m (BH10), that was underlain by natural clays and shales.

2.2.3 Acid Sulfate Soils

The site is not located on land that would comprise acid sulfate soils. The site is located on land regarded as Class 5 acid sulfate soil risk in accordance with Auburn LEP 2010 and therefore the risk posed by acid sulfate soils at the site is negligible.

2.2.4 Groundwater

The site is located in the Bankstown Hydrogeological Landscape (HGL). Groundwater predominantly moves laterally through the shale layers (although vertical movement through fracturing does occur) and vertically through inter-bedded sandstone and sandstone fracturing (primary and secondary porosity). Water is likely to move relatively slowly through this landscape due to the low gradient.

The aquifer type is described as unconfined in unconsolidated alluvial sediments, and unconfined to semi-confined in fractured rock along structures. The depth to the water table typically ranges between 2m-6m deep. The hydraulic conductivity is typically low to moderate in the range of $<10^{-2}m-10$ m/day (http://www.environment.nsw.gov.au/eSpade2WebApp).

There are no registered groundwater bores within 500m of the site (Department of Primary Industries – Office of Water: <u>http://allwaterdata.water.nsw.gov.au/water.stm</u>, access 4 May 2018).

2.3 **Previous Contamination Report**

Sullivan-ES was provided with a scanned copy of the previous report (WSP, Nov 2012). The laboratory reports were not included in the report and were therefore not reviewed.

The objectives of the previous investigation were to:

- "Assess the nature and extent of contamination in soil and groundwater at the site and determine its suitability for ongoing commercial landuse, as the current zoning permits.
- Investigate historical land use at the site.
- Assess the likely nature and extent of soil and groundwater contamination at the site by conducting intrusive soil and groundwater investigations on site.
- Assess the site suitability for potential future residential landuse.
- Recommend management or remediation works (if required) to allow the site to be used for the permitted commercial land use."

The main conclusions of the report are condensed as follows:

- "The inferred GW (groundwater) flow direction was generally to the west and north-west, with some groundwater flow in the south east portion of the site identified to be occurring in a southerly direction.
- The property at 32-36 Silverwater Road has undergone several redevelopments and the current property configuration has existed since prior to 1961.
- Industrial processes have previously been conducted at 32-36 Silverwater Rd. A dry cleaning business was operated at the property.
- Packaged liquid chemicals were observed to be stored in a bund area adjacent the Bligh Street site access driveway and in the western warehouse in various containers and drums. The chemicals included tetrachloroethene (PCE) which is a chlorinated solvent.
- The results of the analysis for soils are below either the adopted commercial/industrial (HIL-F) site criteria or laboratory detection limits.
- With the exception of the concentration of lead in sample BH6 (0.2m), analytical results were reported below HIL-A residential criteria.

- Groundwater collected from monitoring well MW03 was impacted by tetrachlorethene PCE (a chlorinated solvent) at a concentration exceeding the adopted site criteria. Other volatile hydrocarbons were also detected at MW03.
- While the possibility of offsite migration of PCE cannot be ruled out, it is noted that no other groundwater wells are impacted with PCE.
- No volatile vapour monitoring is considered necessary at this stage as chlorinated solvents have been detected beneath an outdoor area and adjacent to a large open plan warehouse building that is likely to limit the potential for volatile vapours to accumulate. However, if the extent of chlorinated hydrocarbons is identified as being more widespread, this potential exposure pathway will require further consideration.
- WSP considers that the site is suitable for on-going commercial/industrial land use with the following recommended works to manage the identified impacts:
 - Delineate the extent of chlorinated solvent and hydrocarbon contamination in groundwater down gradient and in the vicinity of MW03.
- If the site layout is changed or a more sensitive land use is proposed then a reassessment of the contamination status of the site will be required."

After reviewing the report, we agree with the conclusion that detectable chlorinated compounds in groundwater at MW03 warrant further investigation; however, we note that the conclusion regarding site suitability for ongoing commercial/industrial land use is caveated by the recommendation to conduct further investigation of contaminated groundwater. We also note that the report is silent on the suitability of the site for potential future residential land use as is listed in the objectives of the report.

A summary of the detected contaminants in groundwater is presented in Table 2-2 below. The detected concentrations are compared to investigation criteria used under current regulations and guidelines. We note that there was also an elevated concentration of volatile hydrocarbons TPH (C_6 - C_9) detected in groundwater at MW03 along with PCE and other chlorinated compounds. Detections of volatile hydrocarbons at MW01 and MW04 are also noted that were not discussed in the WSP report.

Groundwater Well	Chemicals Detected	Concentration (ug/L)	Health Screening Criteria (ug/L)
MW01	TPH (C ₆ -C ₉)	11	1,000 ¹
MW02	None detected		
	TPH (C6-C9)	2,200	1,000 ¹
	Tetrachloroethene (PCE)	1,900	50 ²
MW03	Trichloroethene (TCE)	4	330 ³
	Xylene (total)	3	200 ⁴
	Cis 1,2-dichloroethene (cis-1,2-DCE)	1	60 ²
MW04	TPH (C ₆ -C ₉)	14	1,000 ¹
1010004	Cyclohexane	1	

Table 2-2 Summary of Detected Contaminants in Groundwater (WSP, Nov 2012)

(1) Using TRH C6-C10 fraction from ASC NEPM 2013 for residential (in sandy matrix). (2) Drinking water criteria from ASC NEPM 2013. (3) ANZECC 2000 low reliability trigger value. (4) ASC NEPM 2013 Freshwater protection level.

2.3.1 Further Characterisation of Chlorinated Contaminants

We note that the previous report did not discuss other identified chlorinated contaminants linked to dry cleaning products and the association between these chemicals. In particular, the detection of Trichloroethene (TCE) and Cis-1,2-dichloroethene (cis-1,2-DCE) are indications of anaerobic degradation of PCE as shown in the flow chart below. PCE degrades via an anaerobic process to TCE, which degrades further to other chlorinated substances including cis-1,2-DCE. Degradation continues to the final step where vinyl chloride (VC) is produced. VC is a highly volatile, known human carcinogen and should be considered in the context of the presence of PCE on the site.

The concentrations of each contaminant from the previous WSP report shown on the left of the flowchart suggest that limited degradation of PCE was occurring at the time of sampling based on by-product concentrations. It could be assumed that site conditions at the time were not conducive to breaking down PCE into its by-products. Coupled with the likely offsite migration of contaminated groundwater, there are potential receptor exposure pathways that warrant further investigation in this area.



2.3.2 Duty to Report Contamination

The previous report did not consider evaluating the requirement to report the identified PCE contaminated groundwater to the EPA as part of the duty to report under section 60 of the CLM Act 1997. As such, the EPA has no awareness of the previous and existing status of this issue.

Under current environmental regulations, the concentration of PCE at MW03 in groundwater is significant enough to trigger notification to the EPA under Section 60. We recommend that the site is

reported to the EPA under the required regulations. Table 2-3 below outlines the triggers and the rationale behind the need to notify under these circumstances.

Table 2-3 Triggers to Report Contamination of Groundwater

Section 60 Triggers - section 60(3)(a) of the CLM Act (NSW)	Rationale to meet notification
<i>(i)</i> The substance contaminating the land (the contaminant) or any by-product of the contaminant has entered or will foreseeably enter neighbouring land, the atmosphere, groundwater or surface water.	<u>True:</u> PCE has entered groundwater and has been analytically detected on the site at a concentration of 1,900ug/L within the former dry- cleaning business on the southern site boundary, and groundwater flow contours show groundwater migrating offsite and entering neighbouring land.
(ii) The regulations prescribe for the purposes of this subparagraph, or the guidelines specify, a level of the contaminant or by-product in the neighbouring land, atmosphere, groundwater or surface water.	<u>True:</u> The ASC NEPM 2013 prescribes a groundwater investigation level (GIL) of 50ug/L for PCE.
(iii) The level of the contaminant or by-product after that entry is, or will foreseeably be, above the level prescribed or specified and will foreseeably continue to remain above that level.	<u>True:</u> The detected concentration of PCE in the site groundwater (1,900ug/L) exceeds the GIL for PCE (50ug/L). PCE will continue to remain at elevated concentrations because:
	1) the contamination source/s may still remain on the site, and
	2) PCE is persistent and shows very limited break down to its by-products of TCE (4ug/L) and cis 1,2-dichloroethene (1ug/L) as shown above.

Site History

3.1 Aerial Images

The table below presents the details of observations made from each aerial photograph reviewed. Historical aerial imagery is presented in **Appendix C**.

Table 3-1	Aerial	Images	Summary	Notes
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Year	Observation Notes
1930	The image is very grainy, but residential houses can be seen occupying most of the lots along Grey Street, and the southern end of Silverwater Road lots (#32-38).
(black & white)	All surrounding roads have been constructed and pockets of residential homes have been constructed in neighbouring lands. A creek can be clearly seen west of the site that connects to Duck River to the north.
1943	There appears to be two sheds constructed on #32 Silverwater Road and #17 Grey Street has been demolished. No other changes are apparent.
(black & white)	Surrounding areas shows gradual residential development but appear relatively unchanged. The creek to the west is now a stormwater channel drain that becomes encased further north.
1951 (black 8 white)	New residential homes have been built in the Silverwater Road lots. #32-36 contains sheds or a small warehouse and shed. A hummocked surface is visible in the northwest portion of #32-36 resembling small piles of soil and the ground appears unsealed. New residential homes now occupy #1 and #7 Grey Street.
(black & white)	Immediately surrounding land shows signs of greater urbanisation with many residential homes occupying the area. Commercial development is visible to the north east of the site.
1961	The buildings on #32-36 have been constructed and resemble present day buildings of the former dry-cleaning business. All remaining lots within the site are occupied by residential homes.
(black & white)	Significant development has occurred in surrounding areas particularly north of the site that is predominately commercial uses now.
1970 (block & white)	The site appears relatively unchanged since the previous image. The residential home at #13 Grey Street has been demolished.
(black & white)	Surrounding lands appear relatively unchanged.
1986 (colour)	The site appears relatively unchanged since the previous image. The residential home at #13 Grey Street has been rebuilt. The house at #3 Grey Street has been demolished and rebuilt.
	Surrounding lands appear relatively unchanged. The M4 motorway has been constructed south of the site.

3 Site History

Year	Observation Notes
1994 (colour)	The site appears relatively unchanged since the previous image with the site predominately occupied by residential homes. The house at #3 Grey Street has been demolished and rebuilt again.
	Surrounding lands appear relatively unchanged.
Jan 2007 – Google Earth (colour)	The site appears relatively unchanged since the previous image. Large shade sails have been erected on the driveway areas of #32-36 Silverwater Road.
	Surrounding lands appear relatively unchanged.
Jan 2014 – Google Earth (colour)	The site appears relatively unchanged since the previous image. The shade sails have been removed from #32-36 Silverwater Road. The residential house at #48 Silverwater Road has been demolished.
	Surrounding lands appear relatively unchanged.
Dec 2015 – Google Earth (colour)	All residential homes have been demolished with the exception of #15 Grey Street (the corner store) and #17 Grey Street. The buildings at #32-36 also remain. The site surface is unsealed.
	Surrounding lands appear relatively unchanged.
Dec 2017 – Google Earth (colour)	The site appears as it did in the site inspection on 18 April 2018. The southern portion of the site is being leased and the image shows numerous vehicles, trailers and other equipment covering the majority of the leased area. Piles of presumably waste are visible on the vacant land. #15 and #17 Grey Street remain unchanged. Surrounding lands appear relatively unchanged.

3.2 NSW EPA Records

A review of the NSW EPA list of sites declared under the CLM Act 1997 as well as the list of sites notified to the EPA under the duty to report requirements (section 60) (accessed on 4/5/18) showed that <u>the site</u> is not registered as a significantly contaminated site and <u>the site is not notified</u> as a potentially contaminated site.

A review of the NSW EPA public register (accessed on 4/5/18) of Environment Protection Licences (EPL), applications and environmental notices shows that <u>the site was subject to a clean-up notice</u> issued on 1 June 2012 to Finhaven Pty Ltd the operators of the dry-cleaning business (Paleys Dry Cleaners) at 32-36 Silverwater Road. The clean up was specific to removal of "a very large stockpile of PERC dry cleaning waste (PERC waste)" that was being stored inside a building on the north-western side of the premises. The clean-up notice is presented in **Appendix D**.

3.3 Regulated Development

A review of Parramatta Council's development application records (which includes the former Auburn Council records) reported no applications on any lot within the site (accessed 04/05/18).

3.4 SafeWork NSW Database

A search for information on storage of hazardous chemicals on the site was requested from SafeWork NSW on their Stored Chemical Information Database (SCID) and microfiche records. The search did

3 Site History

not show any records of information for storing hazardous chemicals on the site. The SafeWork NSW search documents are presented in **Appendix E**.

3.5 **NSW DPE Planning Portal**

Information presented on the planning layers map² of the NSW DPE Planning Portal showed that the site:

- poses a low risk of Acid Sulfate Soils (ASS)
- is not in a drinking water catchment
- is not in an environmental conservation area
- is not in a flood prone area
- is not in a groundwater vulnerability area
- is not in a wetlands or terrestrial biodiversity area
- does not contain a heritage item or is of heritage conservation.

² https://www.planningportal.nsw.gov.au/find-a-property/1324793_2_DP1110059.

Conceptual Site Model

4.1 Preliminary Conceptual Site Model

The preliminary Conceptual Site Model (CSM) has been developed in consideration of the findings of this Phase 1. The CSM identifies potential contamination sources and site-specific receptors, then identifies possible pathways (linkages) whereby receptors could be exposed to contamination.

The CSM takes into account the existing vacant land, as well as the intended future use of the land as a mixed-use site for ground floor commercial retail with high-density residential units above and basement car parking below and potential offsite receptors to contamination.

4.1.1 Potential Contamination Sources

We consider potential contamination sources to be:

- Storage, spills and leakage of dry cleaning chemicals (primary source) from #32-36 Silverwater Road. Including identified stored PERC waste in containers within the western building of this area (refer to EPA clean up notice – Appendix D).
- Soils contaminated by dry cleaning chemicals (secondary source) within #32-36 Silverwater Road.
- Leaking oils, fuels, coolant and lubricants from stored vehicles and equipment within the leased area.
- Deposition on ground surfaces of asbestos materials and lead-based paints after demolition of the residential buildings and other various structures within the vacant area.
- Degradation/deposition on ground surfaces of asbestos materials and lead-based paints around existing buildings that predate 1990. This includes buildings within the Corner Shop (#15 Grey Street) and at #17 Grey Street.
- Localised leaks/spills from the grease trap system within the Corner Shop lot (#15 Grey Street).
- Use of pesticides within the Corner Shop (#15 Grey Street) and existing residential building at #17 Grey Street.
- Uncontrolled fill material and dumped wastes within various parts of the site.

4.1.2 Contaminants of Potential Concern

- Chlorinated compounds used in dry cleaning (PCE, TCE, cis-I,2-DCE and VC).
- Total recoverable hydrocarbons (TRH).
- BTEX (benzene, toluene, ethylbenzene and xylenes).
- Asbestos.
- Heavy metals.
- Polycyclic aromatic hydrocarbons (PAH).
- Pesticides.

4.1.3 Potentially Contaminated Media

- Onsite surface and near surface soils.
- Onsite and offsite groundwater.
- Onsite and offsite soil vapour.

4.1.4 Potential Exposure Pathways and Receptors

Vapour intrusion by volatile compounds and inhalation by either:

4 Conceptual Site Model

- offsite road workers on Bligh Street within service trenches and excavated areas;
- future construction workers for the proposed onsite building during basement earthworks;
- future commercial workers, residents and maintenance workers of the proposed building particularly within basements; and
- neighbouring residential houses.

Inhalation of asbestos fibres by either:

- future construction workers for the proposed onsite building; and
- future commercial workers and residents of the proposed building.

Direct contact (ingestion, consumption and dermal contact) with contaminated soils and water by either:

- Onsite construction workers;
- Onsite future commercial workers/residents and maintenance workers;
- offsite road workers;
- offsite neighbouring residents;
- offsite groundwater aquatic ecosystems receiving surface water and groundwater discharge.

4.2 Data Gaps

Based on the preliminary CSM and potential pathway linkages between contamination sources and receptors, the following data gaps are presented that should be filled:

- Unknown The extent of groundwater impacted by chlorinated compounds onsite around MW03 within the former dry-cleaning business at #32-36 Silverwater Road and immediately offsite to the south/southwest.
- Insufficient Investigation of soils underneath and proximal to PCE contamination source areas within the former dry-cleaning business at #32-36 Silverwater Road.
- Unknown Contamination of soils caused by the activities within the leased area.
- Unknown Contamination of soils caused by recent demolition of structures potentially containing asbestos and lead-based paints within the vacant land area.
- Unknown Contamination of soils caused by degradation of buildings and structures potentially containing asbestos and lead-based paints, and the use of pesticides around residential buildings and other structures within the Corner Shop (#15 Grey Street) and the residential building at #17 Grey Street.
- Unknown Contamination of localised soils around the grease trap system on #15 Grey Street.
- Insufficient The nature of dumped wastes in various parts of the site.

Conclusions

The following conclusions are made based on the findings of this Phase 1 assessment. Our conclusions are subject to the limitations presented in Section 6.

The site was predominately used for low-density residential purposes since it was first developed before the 1930s until as recently as 2014 when the majority of residential buildings were demolished. There would have been limited potential for residential activities to contaminate residential areas during that time, which is supported by soil analytical results from the previous report (WSP, Nov 2012). The results showed concentrations of contaminants below residential land use criteria, with the exception of one localised area for lead (Pb) (BH06).

Given that residential structures predate 1990, there is a potential for the presence of asbestos materials and lead-based paints within the structures. Demolition of these structures may have caused an increased risk of surface soil contamination within those areas where demolition occurred.

The properties at #15 and #17 Grey Street in the northern corner of the site and #48 Silverwater Road in the north eastern corner were not previous assessed (WSP, Nov 2012); however, historical information shows these properties were used for low-density residential purposes and therefore present a low risk of contamination. Given the age of the structures, there is a potential contamination risk to localised surface soils caused by degradation and weathering of asbestos and lead-based paints around the fringes of structures.

A corner shop currently exists at #15 Grey Street and anecdotally has operated for many years from that location. Of note is the use of a grease trap system that may cause an increased contamination risk within that locality.

The southern corner of the site at #32-36 Silverwater Road has been used for commercial/industrial purposes since the early 1960s. Most recently this area was used as a dry-cleaning business. EPA records showed that the site was subject to a clean-up notice issued on 1 June 2012 to Finhaven Pty Ltd the operators of the dry-cleaning business (Paleys Dry Cleaners). The clean-up was specific to removal of "a very large stockpile of PERC dry cleaning waste (PERC waste)" that was being stored inside a building on the north-western side of the premises. While previous sampling in 2012 was limited within this area, Tetrachloroethene (PCE) was detected in groundwater at 1,900ug/L along with other volatile hydrocarbons, indicating that past dry-cleaning activities have caused contamination of the land. The nature and extent of contamination within this area of the site warrants further assessment, noting that the past report recommended further investigation of the impacted groundwater at that time.

Since demolition of the residential buildings in 2014, the southern portion of the site, including the former dry-cleaners, has been leased and is used to storing rental vehicles, trucks, trailers and various related equipment. These commercial activities pose an increased risk of contamination from leaks/spills of fuel-based chemicals.

Based on current evidence, the majority of the site, excluding the former dry-cleaning property, is considered suitable for a mixed-use commercial/residential development. However, we recommend conducting verification sampling to fill information data gaps as listed below.

The contamination risk caused by PCE in site groundwater within the former dry-cleaning property has not been quantified. This area requires further investigation as recommended below. However, based on our current knowledge of the issue and the contaminants of concern, this area of the site can be made suitable for a mixed-use commercial/residential development.

5 Conclusions

5.1 Recommendations

We recommend conducting the following works to fill the identified information gaps to verify the site suitability status.

5.1.1 PCE Contamination – Former Dry-Cleaning Property

Further investigation of the PCE contaminated groundwater should be conducted as a priority for planning purposes.

- As required under section 60 (CLM Act 1997), notify the EPA of the PCE impacted groundwater on the site. This must be done in writing using the approved forms, along with a plan to assess the significance of contamination. In this regard, prepare a sampling plan to clearly document the proposed method to investigate the extent of contamination. Investigation works should include:
 - Sampling soils in and around the former dry-cleaning business at locations shown on Figure 3 (Appendix A). Consideration should be given to target areas known to have stored PERC waste, and around underground stormwater drains, sumps and sewerage pipes. Analysis should include TRHs, VOCs and metals.
 - Installing a series of new groundwater monitoring wells at locations shown on Figure 3.
 - Collect groundwater samples from the new wells and all existing wells (if they can be located and accessed). Analysis should include TRHs, VOCs and metals.
- Prepare a contamination investigation report for issue to the EPA that assesses current and future risk to potential receptors. The report should be approved by a certified contamination consultant as required under NSW EPA policy.

5.1.2 Other Data Gaps

Additional sampling of the remaining site areas can be conducted once all tenants and related equipment has been removed from the site, so as not to cause recontamination during their occupancy.

- Conduct an inspection and collect limited verification surface soil samples from across the unsealed leased area used for storing rental vehicles and related equipment. Samples should be analysed for petroleum hydrocarbons and metals. Inspect the nature of dumped waste piles and collect verification samples if necessary.
- Conduct an inspection and collect limited verification surface soil samples from across the unsealed vacant area where demolition of residential structures has occurred. Samples should be analysed for asbestos and lead.
- Collect limited verification surface soil samples from around the existing structures at #15 and #17 Grey Street where weathering of old building materials containing asbestos and lead-based paints; or use of pesticides or grease trap leaks/spills may have caused surface soil impacts. Samples should be analysed for petroleum hydrocarbons, metals, asbestos and pesticides.

5.1.3 Further Consideration

Once additional information is obtained with respect to PCE contamination, consideration should be given to assessing potential vapour inhalation exposure pathways. Consideration should be given to collecting a targeted set of soil vapour samples from locations showing elevated concentrations of volatile chemicals including the existing location at MW03.

References

Contaminated Land Management Act 1997 (NSW).

Auburn Local Environmental Plan (LEP) 2010.

National Environment Protection (Assessment of Site Contamination) Measure, 2013.

NSW EPA, Guidelines for the NSW Site Auditor Scheme (3rd Edition), 2017.

NSW OEH Guidelines for Consultants Reporting on Contaminated Sites, 2011.

State Environmental Planning Policy No.55 - Remediation of Land, 1998.

WSP Environmental Pty Ltd "Phase 1 and 2 Environmental Site Investigation, 1-13 Grey Street and 32-46 Silverwater Road, Silverwater NSW", 2 November 2012, Project 34924.

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Limitations

Sullivan Environmental Sciences Pty Ltd (Sullivan-ES) has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Sonsari Pty Ltd and only those third parties who have been authorised in writing by Sullivan-ES to rely on this Report.

It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Report.

Where this Report indicates that information has been provided to Sullivan-ES by third parties, Sullivan-ES has made no independent verification of this information except as expressly stated in the Report. Sullivan-ES assumes no liability for any inaccuracies in or omissions to that information.

This Report was prepared between 12 April 2018 and 16 May 2018 and is based on the conditions encountered and information reviewed at the time of preparation. Sullivan-ES disclaims responsibility for any changes that may have occurred after this time.

Investigations undertaken in respect of this Report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and contamination may have been identified in this Report.

Subsurface conditions can vary across a particular site and cannot be exhaustively defined by the investigations described in this Report.

This Report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This Report does not purport to give legal advice.

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It is the responsibility of third parties to independently make inquiries or seek advice in relation to their particular requirements and proposed use of the site.

Appendix A Figures







Figure 2:	Site Layout	Address: 1-17 Grey Street and 32-48 Silverwater Road, Silverwater NSW
•		



Eiguro 2.	Recommended
Figure 3:	Delineation Sampling

Address: 1-17 Grey Street and 32-48 Silverwater Road, Silverwater NSW
B

Appendix B Site Photographs





Leased area yard storage facing Building C with Building A on the left.



Leased area yard storage.

Entry to former dry cleaner off Bligh Street. Note groundwater well cap on driveway (MW03).



Leased area storage of rental vehicles behind Building B.



Piles of waste in leased area behind Building B and C.





Building A interior – raised plinth and infilled drain and opening.



Building C interior – north end.



Building B interior.



 Project:
 SES_481
 Title:
 Phase 1 Contamination Assessment - Site Photographs

 Address:
 1-17 Grey Street and 32-48 Silverwater Road, Silverwater NSW



Vacant land area north of the leased area (in background). Note rows of rental vehicles and trailers.





Grease trap system at the rear of the Corner Shop.

Vacant land area (#46 Silverwater Road) behind the Corner Shop and remaining residential building.



Appendix C Aerial Images

















Dec 2015 – Google Earth



Jan 2007 – Google Earth



Dec 2017 – Google Earth



Jan 2014 – Google Earth



Appendix D Clean Up Notice

Clean-Up Notice



FINHAVEN PTY. LIMITED Trading as Paleys Dry Cleaners ABN 64 003 928 158 32-36 Silverwater Road SILVERWATER NSW 2264

Attention: Mr John Paley

Notice Number	1506389
File Number	FIL12/2097
Date	01-Jun-2012

NOTICE OF CLEAN-UP ACTION

BACKGROUND

The Accountable Party FINHAVEN PTY LIMITED trading as "Paleys Dry Cleaners" conducts dry cleaning operations at 32-36 Silverwater Road, SILVERWATER NSW 2264 (the premises).

On 10 May 2012 Mr Luke Formosa and Mr Trevor Solomon conducted a site inspection of the premises. PERC contaminated dry cleaning waste (PERC waste) was being stored inside a building on the north-western side of the premises and there were about 30 (15L) containers stacked on top of a pallet. This is a very large stockpile of PERC waste and must be removed for legal disposal at an appropriately licensed waste facility.

DIRECTION TO TAKE CLEAN-UP ACTION

- 1. The Environment Protection Authority (the EPA) directs FINHAVEN PTY. LIMITED to take the following clean-up action:
- To engage the services of a licensed waste removalist company to remove all PERC waste currently at the premises. All PERC waste must be taken off "the premises" to an appropriately licensed waste facility by no later than **Friday 21 September 2012**.
- To advise the EPA when appropriate solvent and waste storage has been put into place by no later than **29 June 2012**.
- The EPA must be notified immediately after PERC waste is removed from "the premises".

Clean-Up Notice



Andrew Hawkins Manager Chemicals Regulation Unit HazMat, Chemicals and Radiation

.....

(by Delegation)

INFORMATION ABOUT THIS CLEAN-UP NOTICE

- This notice is issued under section 91 of the Protection of the Environment Operations Act 1997.
- It is an offence against the Act not to comply with a clean-up notice unless you have a reasonable excuse.

Penalty for not complying with this notice

• The maximum penalty for a corporation is \$1,000,000 and a further \$120,000 for each day the offence continues. The maximum penalty for an individual is \$250,000 and a further \$60,000 for each day the offence continues.

Cost recovery from the person who caused the incident

• If you comply with this clean-up notice but you are not the person who caused the pollution incident to which the notice relates, you have a right to go to court to recover your costs of complying with the notice from the person who caused the incident.

Other costs

 The Protection of the Environment Operations Act allows the EPA to recover from you reasonable costs and expenses it incurs in monitoring action taken under this notice, ensuring the notice is complied with and associated matters. (If you are going to be required to pay these costs and expenses you will later be sent a separate notice called a "Notice Requiring Payment of Reasonable Costs and Expenses").

Continuing obligation

• Under section 319A of the Act, your obligation to comply with the requirements of this notice continues until the notice is complied with, even if the due date for compliance has passed.

Variation of this notice

• This notice may only be varied by subsequent notices issued by the EPA.

Ε

Appendix E SafeWork NSW Hazardous Chemicals Search



Locked Bag 2906, Lisarow NSW 2252 Customer Experience 13 10 50 ABN 81 913 830 179 | www.safework.nsw.gov.au

Our Ref: D18/111333 Your Ref: Adam Sullivan 30 April 2018

Attention: Adam Sullivan Sullivan Environmental Sciences PO Box 5248 Turramurra NSW 2074

Dear Mr Sullivan

RE SITE: 32-36 Silverwater Rd Silverwater NSW

I refer to your site search request received by SafeWork NSW on 13 April 2018 requesting information on Storage of Hazardous Chemicals for the above site.

A search of the records held by SafeWork NSW has not located any records pertaining to the above mentioned premises.

For further information or if you have any questions, please call us on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely

Customer Service Officer Customer Experience - Operations SafeWork NSW