



Appendix D – Preliminary Site Investigation

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surveying – irrigation – environmental – planning

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348 Meadows Lane, Warral NSW 2340

Preliminary Contaminated Site Investigation

Prepared for:

Bath Stewart Associates Pty Ltd,
239 Marius St, Tamworth NSW 2340

February 2025

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1 Introduction

SMK Consultants were commissioned by the Bath Stewart Associates to undertake a preliminary contaminated site investigation for the proposed subdivision of the property situated at 348 Meadows Lane, Warral on Lot 41 DP 634499 and Lot 441 DP 807359. The proposal involves a fourteen lot large lot rural residential subdivision.

A preliminary contaminated site assessment is required as part of the Statement of Environmental Effects to be lodged with the development application for the subdivision.

This report provides field and laboratory results, analyses, and recommendations from the investigation.

1.1 Objective

The objective of this investigation is to determine whether the site has any contamination constraints from the historical use of the property that could affect the proposed property development as a residential subdivision.

1.2 Scope of work

The scope of works adopted for this investigation follows the NSW EPA Guideline for Consultants Reporting on Contaminated Sites (2020).

The primary scope of this investigation involved the following steps:

- Desktop assessment of available information about the site;
- Review of historical aerial photographs of the property and surrounds;
- Onsite assessment of visible landscape to identify any potential contamination of historical activity on site;
- Risk assessment of the previous land use;
- Sampling of soils to determine whether contamination is present;
- Analysis of samples by a NATA Laboratory, including screening for a range of relevant contaminants of concern from the previous land use;
- Review of results to compare standard threshold levels for analytes;
- Prepare a Preliminary Site Investigation Report to outline the investigation and provide recommendation for development of the site.

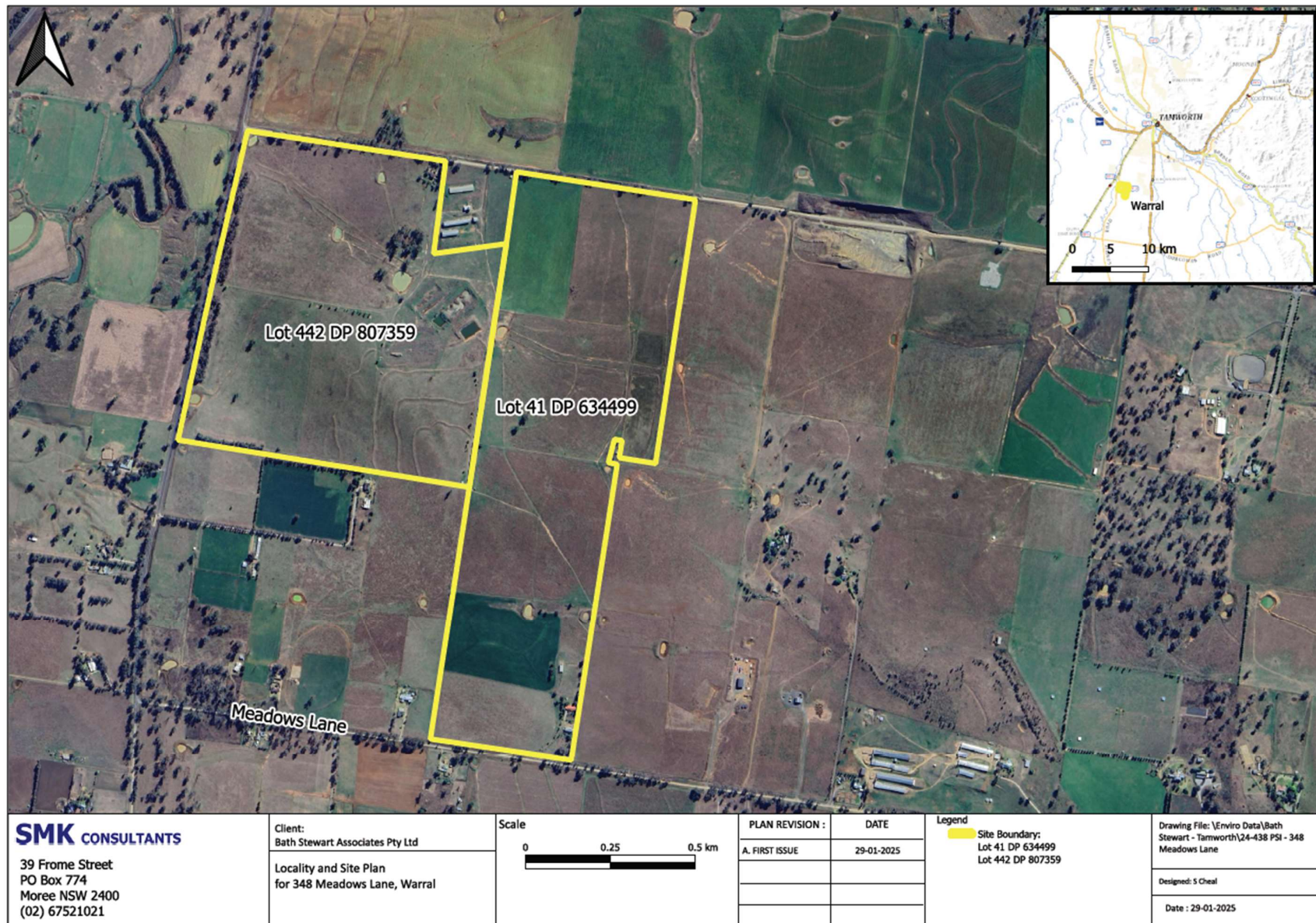
2 The Site

2.1 Site Details

The address of the site is 348 Meadows Lane, Warral on Lot 41 DP 634499 and lot 441 DP 807359. The total site area is approximately 153.1 ha. The land is located within the locality of Warral in the Tamworth Shire (Figure 1) approximately 10 km south of the Tamworth central business district.

The Tamworth Regional Local Environmental Plan 2010 zones the site as RU4 (Primary Production Small Lots).

Figure 1: Site and Locality Plan – 348 Meadows Lane, Warral



2.2 Site History

A review of historic imagery was conducted for the site and the local area (Appendix A).

The historic imagery for the site shows that the predominantly land use of the site has been agricultural production up to the present time. Broad acre grazing and cropping appear to be the main land uses. Aerial photos from 1976 show no residences or other buildings prior to this time. One residence on the northern boundary was constructed in the mid-1980s, while a second residence on the southern boundary was constructed in the early 1990s.

Historic imagery does not suggest any dumping or storage of materials that may give rise to potential soil contamination. The old piggery site has been used as a stockpile sight for gravel which has been utilised from time to time. Imagery shows the property has been consistently kept well and maintained.

The site has also included a piggery consisting of three large sheds which was constructed in the mid-1980s. The piggery was decommissioned and removed in the mid-2000s, however effluent ponds associated with the old piggery are still present. These ponds were dry at the time of inspection. One of these ponds has been used for receiving general non-organic waste covering an area of approximately 20 x 6 m. Historic imagery does not otherwise reveal any evidence of dumping or storage across the property of any materials of concern for potential contamination.

Between 1976 and 1984 three poultry sheds have been constructed on a neighbouring lot (not part of the subject site) on the northern boundary of the property. Poultry production ceased sometime between 2006 and 2013. Waste discharge from these sheds was directed to effluent ponds on the same lot, however any overflow from these ponds would have travelled into the subject property and be captured in the dam downstream of the piggery effluent ponds. Overflow from the old piggery site is also captured in this dam, which is adjacent to soil sample point 24-438-02 (Figure 9).

2.3 Site Condition

The site currently has two residences and associated sheds located on it. The site also has various agricultural infrastructure including fences, dams, soil erosion and contouring works, yards and water supply works. The property is predominantly used for grazing and cropping, with pastures in good condition and generally uniform cover. The land is substantially cleared with permanent pasture/grass cover and occasional stands of mature paddock trees. No bare areas or areas of poor growth were observed that may indicate site contamination.

The area of the site downstream of the neighbouring decommissioned poultry sheds is well grassed and showed no surface evidence of contamination.

Two of the remaining piggery effluent ponds are internally draining and do not generally receive external storm water runoff. The remaining most upstream pond receives external stormwater runoff from time to time from a relatively small catchment.

The following images provide recent photos of the property.

Figure 2: View from western boundary (Gowrie Rd) – looking east.



Figure 3: View from western boundary (Gowrie Rd) – looking south



Figure 4: View from Southern boundary (Meadows Lane) – looking north



Figure 5: View from northern boundary (Spains Lane) – looking south



Figure 6: General household hard waste dump in old piggery effluent pond



Figure 7: Remnant Effluent Ponds



Figure 8: Drainage line from neighbouring decommissioned poultry sheds into subject site – facing north east



2.4 Areas of Environmental Concern

Table 1 describes potentially contaminating materials that could be present on the site as a result of site history and risks associated with land use on and off the property.

Table 1: Risk Assessment Table

Location	Material Status	Potential Concern	Risk Class	Comment
Intensive Agricultural Production	Residual soil Contamination Risk	Heavy metals	Low	There is a possibility of surface contamination due to disposal of effluent.
	Surface contamination	Contaminated topsoil	Low	Waste material, rubbish and debris associated with intensive production systems may contain persistent substances.
Building/ sheds	Building material	Asbestos fibre & lead paint	Low	Most old buildings included some asbestos-containing materials and old lead paint with a high lead content.
Agricultural Land	Residual Contamination Risk	Residual pesticides and herbicides	Low	Persistence of some agricultural chemical in the landscape.

2.5 Assessment of Potential Contamination

2.5.1 Contaminated Land Record

A search of the NSW EPA contaminated land register was conducted. No contamination record for the site was found in the register.

2.5.2 Protection of the Environment Operations Act (POEO) Public Register

A search on the POEO public register was conducted for environmental protection licences, applications, notices, audits, pollution studies, and reduction programs. No result was found for this site.

2.5.3 Acid Sulphate and Saline Soils

There are no acid sulphate soils in the Moonbi region and the subject site is not considered to have any existing salinity issues.

2.6 Contaminants of Concern

Potentially concerning contaminants for this site include:

- chemical residues from the application of herbicides and pesticides associated with agricultural production
- potential residual contamination due to historic runoff from neighbouring poultry sheds.
- potential residual contamination due to historic runoff from old piggery.
- potential waste material, rubbish and debris associated with old piggery

2.7 Migration Pathways

The primary health risks for contaminants from this site are dermal contact, cross-contamination, inhalation, and ingestion of particulates when in contact with surface soil. This is of concern where children are involved.

2.8 Human and Ecological Receptors

Human receptors include owners/occupiers, workers, site visitors, trespassers, future owners/occupiers, and adjacent properties.

Ecological receptors exposed to runoff from this site would be limited.

3 Adopted Assessment Criteria

The National Environmental Protection Measure 2013 (NEPM) provides a nationally consistent approach for the assessment of site contamination. NEPM presents parameters for a range of soil parameters and contaminants thresholds in the soil before they have the potential to affect health or the environment. The guideline values or site criteria are referred to as Health-Based Screening Levels (HSL's). NSW EPA and National Authorities have prepared other similar documents to provide additional threshold levels for contaminants.

Schedule B (1) – Guidelines on Investigation Levels for Soil (NEPC 2011) were used to establish the appropriate threshold levels for contamination on this site.

The subject site is to be used for a residential subdivision. For a residential area the HSL recommended in a Health Investigation Level A - 'Residential A'. HIL A includes: *Residential with*

garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools).

This is the most stringent classification and has been adopted for this site.

4 Sampling and Analysis

4.1 Sample Program

A Preliminary Site Investigation was undertaken in December 2024. The purpose of the inspection was to identify any material or object of environmental concern present on the site. If materials of concern or unexplained bare ground or dead vegetation were present, the inspection was to involve sampling of the soil and further investigation of the source of the material and the potential extent of the contamination.

The pattern and number of samples to be obtained would be determined by the presence of contamination. If no detectable or minor contamination was present, selective sampling patterns were to be used to target the contamination. If extensive contamination were identified, a pattern of sampling would be adopted from NSW Contaminated Site Guideline Sampling Procedures which determines the number of samples, depth of samples, and requirements for re-sampling.

A selective sampling protocol was implemented based on the site's specific conditions. Figure 9 shows the chosen sampling locations. Table 2 provides descriptions of the soil sampling sites. The soil samples were taken as composite samples, including samples mixed from depths between 0 - 300 mm at each location. The samples were labelled and placed in prepared sample bottles.

The samples were sent to a NATA Accredited Laboratory for analysis.

The test parameters chosen for the soils obtained from the site include common heavy metals (As, Cd, Cr, Cu, Ni, Pb, Zn), organochlorides and organophosphates. The selection of these parameters was based on the site history which did not include industrial activities.

Figure 9: Soil Sample points and Site points of interest

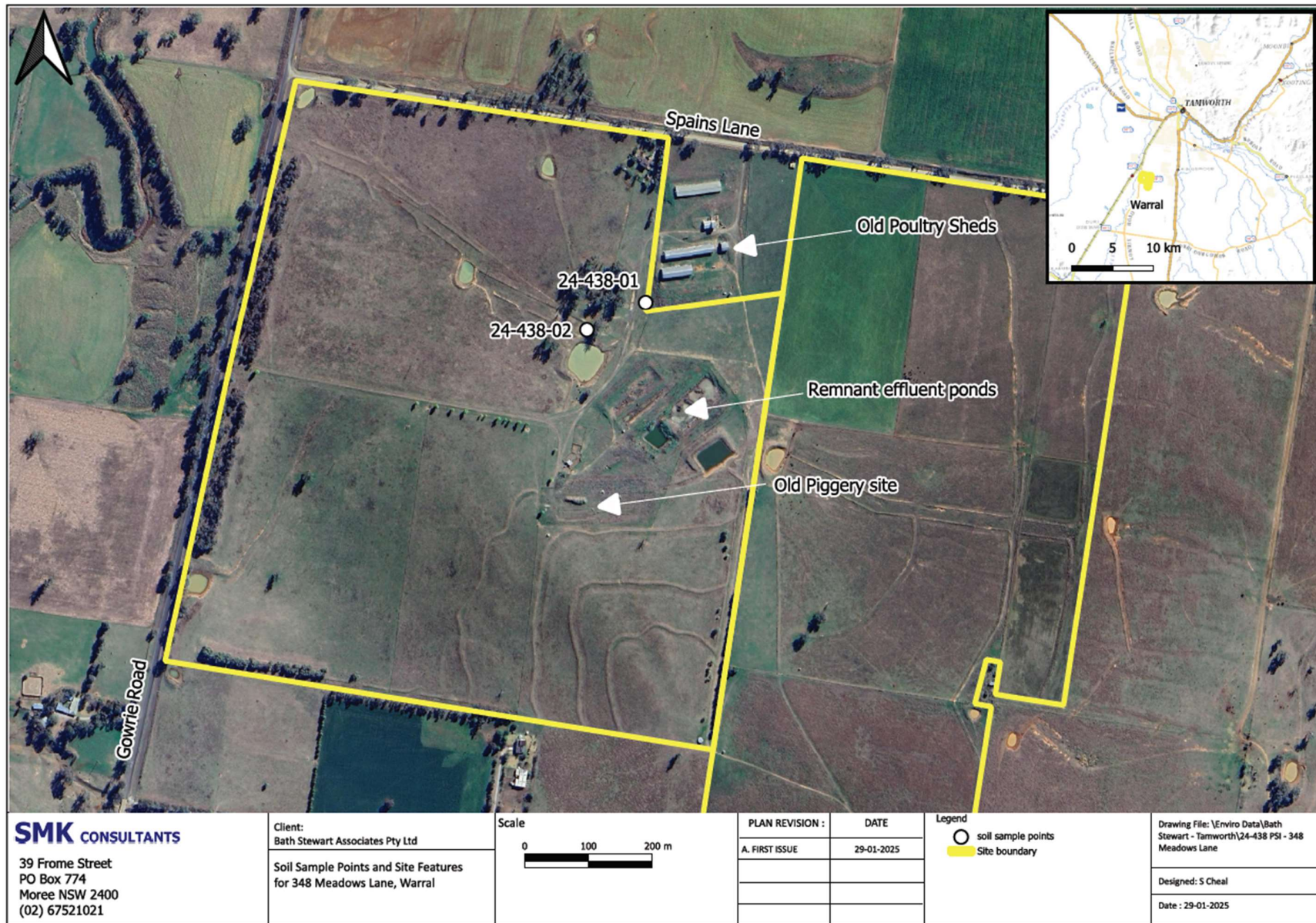


Table 2: Sample identification and description

SMK Sample Number	Sample Description	Description
24-438-01	Runoff line from adjacent poultry sheds: 0-300mm	Generally representative of potential runoff from adjacent land
24-438-02	overflow line from dam capturing runoff from poultry sheds and old piggery: 0-300mm	Generally representative of runoff from historic intensive farming areas

Figure 10: Location of soil sample point 24-438-01 – facing north

Figure 11: Location of soil sample point 24-438-02 – facing south east

4.2 Quality Assurance and Quality Control

The sampling was undertaken by SMK Consultants' standard protocol as presented in Appendix B. This ensures thorough decontamination of all field equipment before and during sampling.

Quality control of sample analysis is achieved by utilising a NATA-accredited laboratory. These laboratories follow ASTM standard methods, which are supported by internal duplicates and blanks, surrogate spikes, and matrix spikes. ALS Laboratories provides the details of surrogates and spikes, percent recoveries of surrogates and spikes used, and instrument detection limits within the certificate of analysis.

Field observations are also compared with laboratory results. If inconsistencies are detected, re-sampling and re-analysis of a sample is undertaken.

5 Site and Analytical results

5.1 Site Inspection

An initial site inspection was undertaken in December 2024. The field assessment included general consideration of any identifiable risk, environmental issues, and activities within the subject area and immediate vicinity. This involved a general visual inspection across the property to locate any materials or areas of concern. The pasture cover on the site was relatively complete over the property.

The existing two residences and associated sheds and infrastructure were observed to be in good order and well maintained, with no stockpiles of materials or potential sources of chemical

contamination evident. A detailed inspection inside sheds and residences was not considered necessary, as both of these residences are proposed to be on subdivided lots for which no future residential development will be proposed.

The property supports native trees and pasture. Storage of hazardous materials or hydrocarbon was not observed on potential subdivision blocks. The site is surrounded by agricultural land on all sides. No offsite pollution was observed from adjoining properties. No visible contamination of concern was noted during this inspection.

One of the piggery effluent ponds has been used as a stockpile site for domestic hard waste. The pond was dry and no potential sources of chemical contamination were observed in this pile (Figure 6). No stockpiles of soil or waste material from other locations were identified on the site.

5.2 Laboratory Results and Analysis – soil samples

Table 3 summarises the laboratory analysis for the two representative soil samples tested and compares these against the HIL contaminant threshold levels for the criteria adopted for this site.

The criteria adopted are Level A – Residential A.

The Certificates of Analysis for these results are presented in Appendix C, which include a full list of all the Organochlorine and Organophosphorus pesticides tested for in soils samples.

Table 3: Summary of soil analysis with NEPM 2013 HSL A - Residential A Threshold Criteria

Analyte	Unit	LOR ¹	HIL A-Residential A	24-438-01 TP 1	24-438-02 TP2
Depth	mm	-	-	0-300	00-300
EA010: Conductivity (EC) ALPHA 2510 B					
Conductivity	µS/cm	1.0	-	42	185
pH	pH unit	0.01	-	6.8	5.8
Arsenic ²	mg/kg	5	100	<5	<5
Cadmium	mg/kg	1	20	<1	<1
Chromium	mg/kg	2	100	15	14
Copper	mg/kg	5	6,000	26	24
Lead	mg/kg	5	300	5	6
Nickel	mg/kg	2	400	8	9
Zinc	mg/kg	5	7,400	44	57
Mercury	mg/kg	0.1	40	<0.1	<0.1

(1) LOR = Limit of Reporting

(2) HSL for arsenic assumes 70% oral bioavailability. Site-specific bioavailability may be important and should be considered where appropriate.

For both samples there are no exceedances and levels are consistent with background levels for these parameters. No contamination of concern is present in these samples.

6 Discussion

The soils testing results for metals show normal background levels for Arsenic, Cadmium, Chromium, Copper, Lead, Zinc, Nickel and Mercury. Some of the parameters were recorded at the

limit of recording, and therefore, it is suspected that no such contaminant was contained within the samples.

The OC and OP pesticide analysis did not identify any elevated levels of contamination. All levels were below the standard limit of recording. No hydrocarbon contamination was observed on the site and this is supported by the observation of good pasture cover across the property.

Soil pH and electrical conductivity were both within normal healthy ranges for the soil type present on site.

The results of soil sampling indicate no contamination is present as a result of historic intensive agriculture. Site inspections did not identify any signs or issues indicating contamination with either the historic or current use of this land.

While no contamination is evident around the remnants of the old piggery effluent ponds, the current landform and associated drainage may not be a desirable feature for the proposed future subdivided lot. Earthworks to return the overall surface contour to enable better land use options and an improved and stable drainage system may be desirable. The uppermost pond catches runoff from the old piggery site and effectively works as a normal farm dam. This could be retained as a useful feature upon a subdivided lot.

7 Conclusions and Recommendations

The preliminary site investigation of 348 Meadows Lane, Warral identified no areas or materials of concern on the site. All analytical results for the soil sampled were below Health Investigation Levels for Residential A land use.

This threshold classification level was adopted for this site based on the intended use of the land. This is the most stringent standard for health investigation levels for soil.

The site condition and past and current site activities described in this report indicate a low potential for contamination.

Based on the desktop searches, laboratory results, site inspection of the general environmental condition of the site and the lack of any contamination constraints on the site, it is considered suitable for the proposed subdivision.

Signatures:



Steve Cheal B Nat.Res. (Hons), BE Resources (Hons)
Environmental Engineer / Resource Consultant

8 Limitations

This report is based on observation at the time of the investigation and the history of the site available to the authors. The conclusions and recommendations are based on the scope of works adopted, the methodology presented in this report and the results of laboratory analysis undertaken for this investigation.

9 Bibliography

- Australian Standard (AS 4482.1) – Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 2: Non-volatile and Semi-volatile Compounds (2005).
- Australian Standard (AS 4964) Method for the Qualitative Identification of Asbestos in Bulk Samples (2004).
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- Contaminated Sites – Guidelines for the NSW Site Auditor Scheme – NSW EPA 1998
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- *Environment Protection Authority Sampling design part 2 – Interpretation Contaminated Land Guidelines 2022*
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- National Environmental Protection Council (NEPC) – National Environment Protection (Assessment of Site Contamination) Amendment Measure (NEPM), (2013).
- NEPM Appendix 1 – The Derivation of S for Metals and Inorganics, 2013.
- NEPM Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater, 2013.
- NEPM Schedule B2 – Guideline on Site Characterisation, 2013.
- NEPM Schedule B7 – Guideline on Derivation of Health-Based Investigation Levels, 2013.
- NSW EPA, Contaminated Land Management, Guidelines for the NSW Site Auditor Scheme, 2017 (4th Edition).
- NSW EPA, Guidelines for Consultants Reporting on Contaminated Sites, 2020.
- NSW EPA, Guidelines on the Duty to Report Contamination under Contaminated Land Management Act, 1997.
- NSW EPA, Sampling Design Guidelines, 1995.
- NSW EPA, Waste Classification Guidelines Part 1: Classifying Waste, 2014.
- Protection of the Environment Operations (Waste) Regulation (NSW EPA 2014)
- Protection of the Environment Operations (Waste) Regulations, 2005.

Appendix A – Historic images of site

Aerial Photography 5/1976



Aerial Photography 7/1984



Aerial Photography 7/1989



Aerial Photography 8/1998



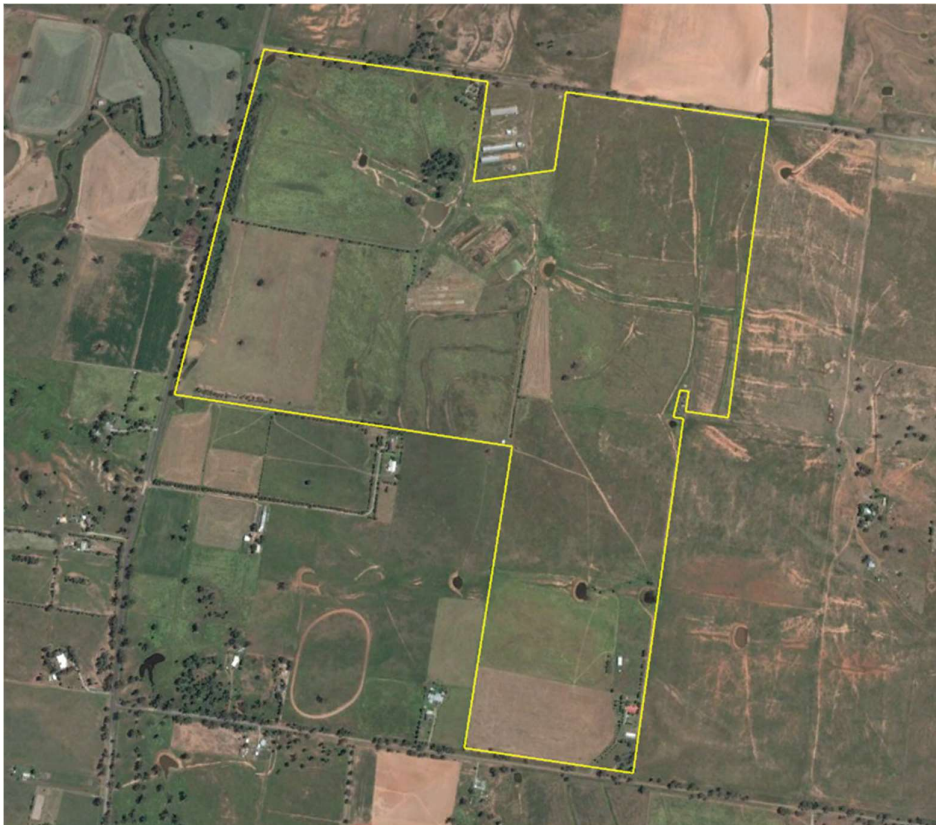
Satellite Imagery 10/2006 (Google Maps)



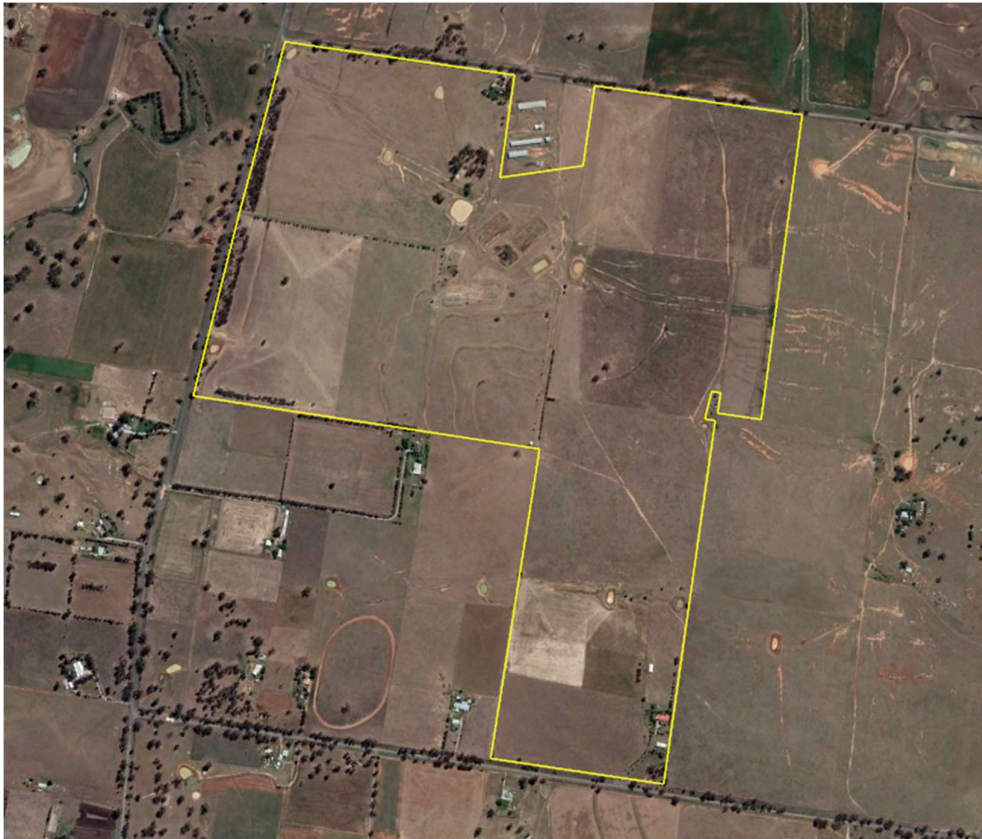
Satellite Imagery 11/2012 (Google Maps)



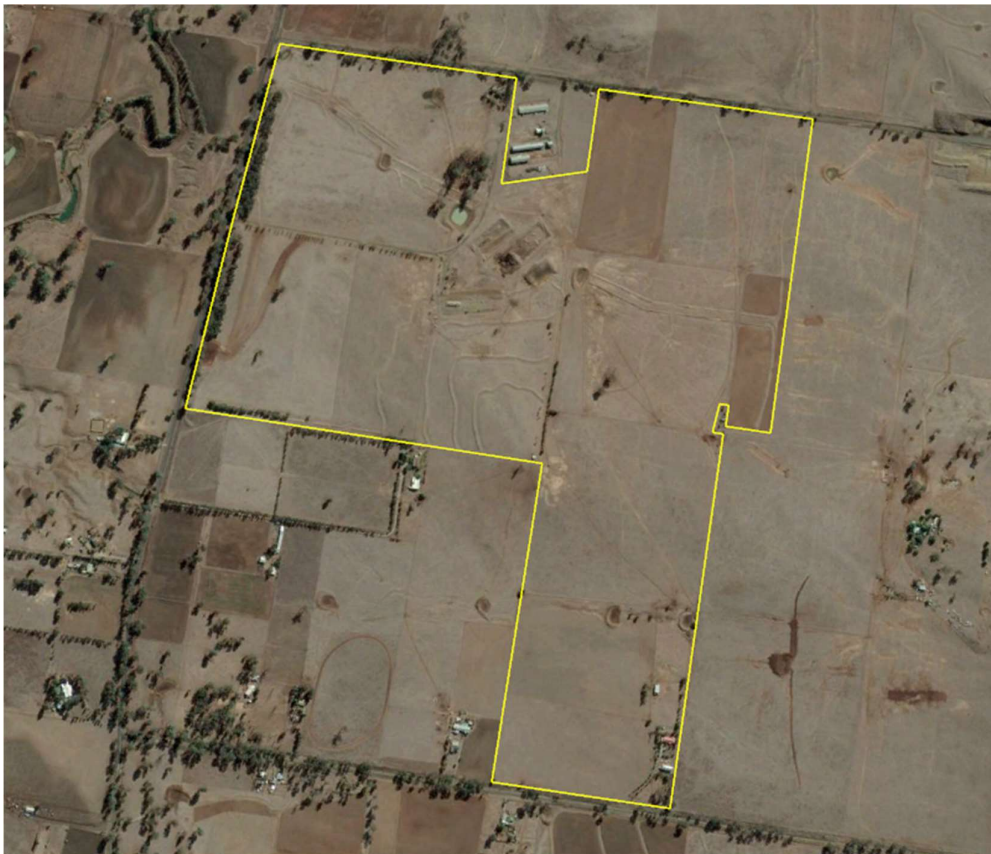
Satellite Imagery 2/2015 (Google Maps)



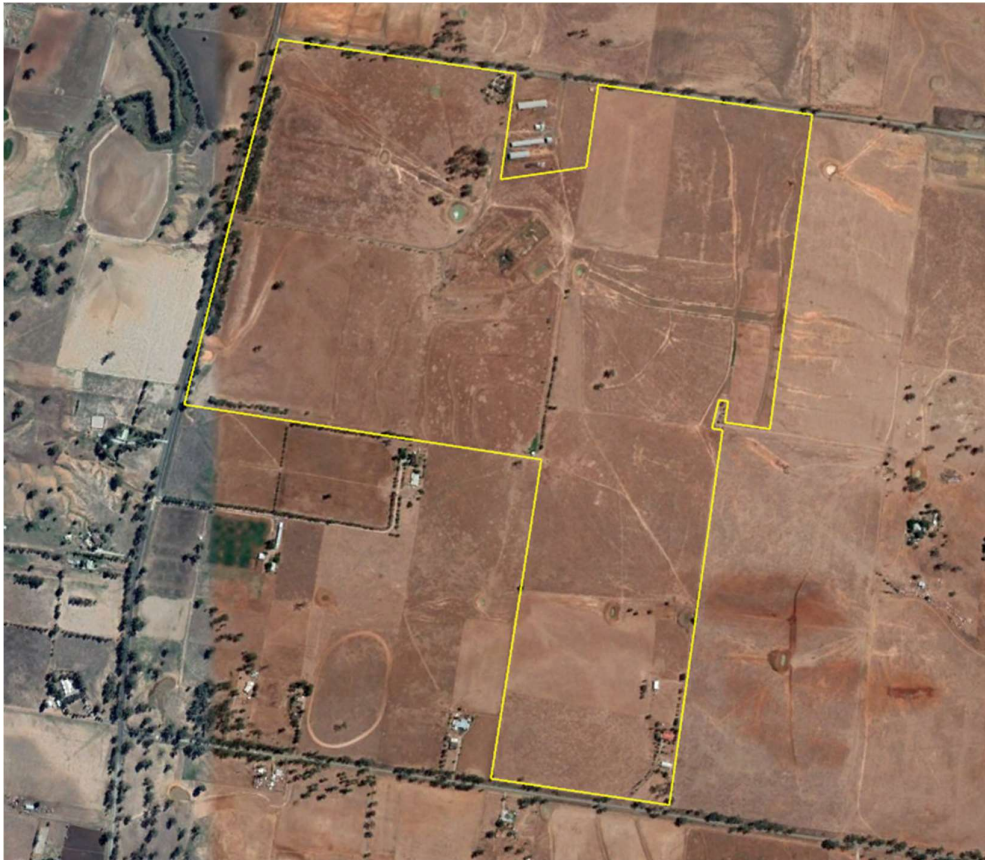
Satellite Imagery 10/2017 (Google Maps)



Satellite Imagery 6/2018 (Google Maps)



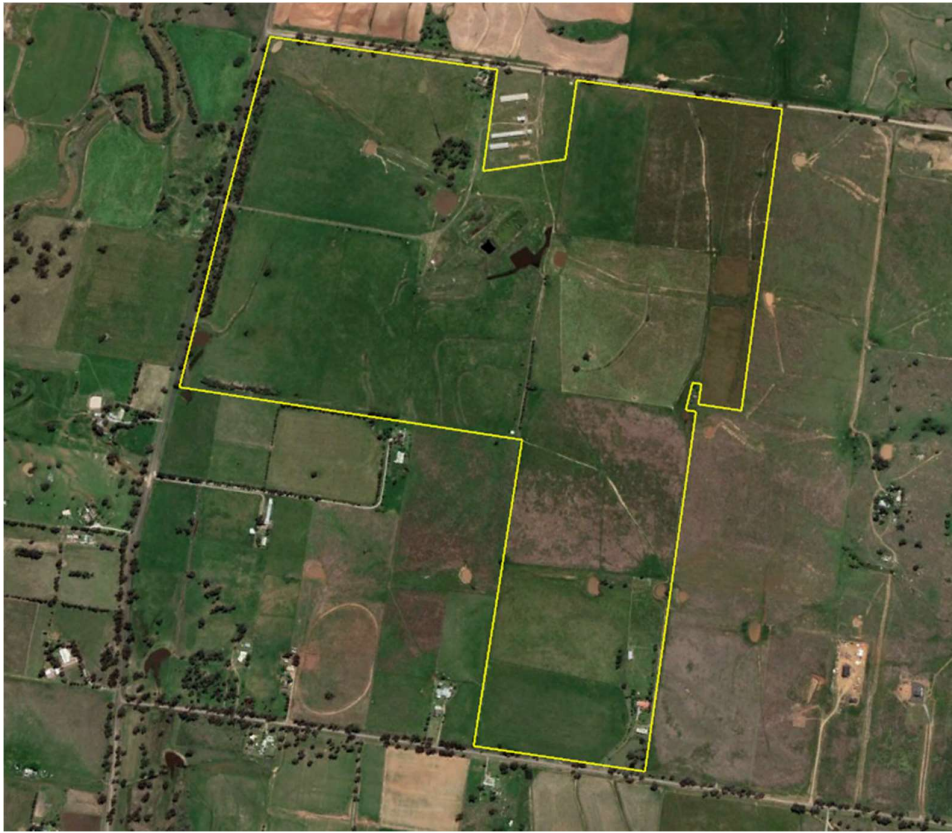
Satellite Imagery 4/2019 (Google Maps)



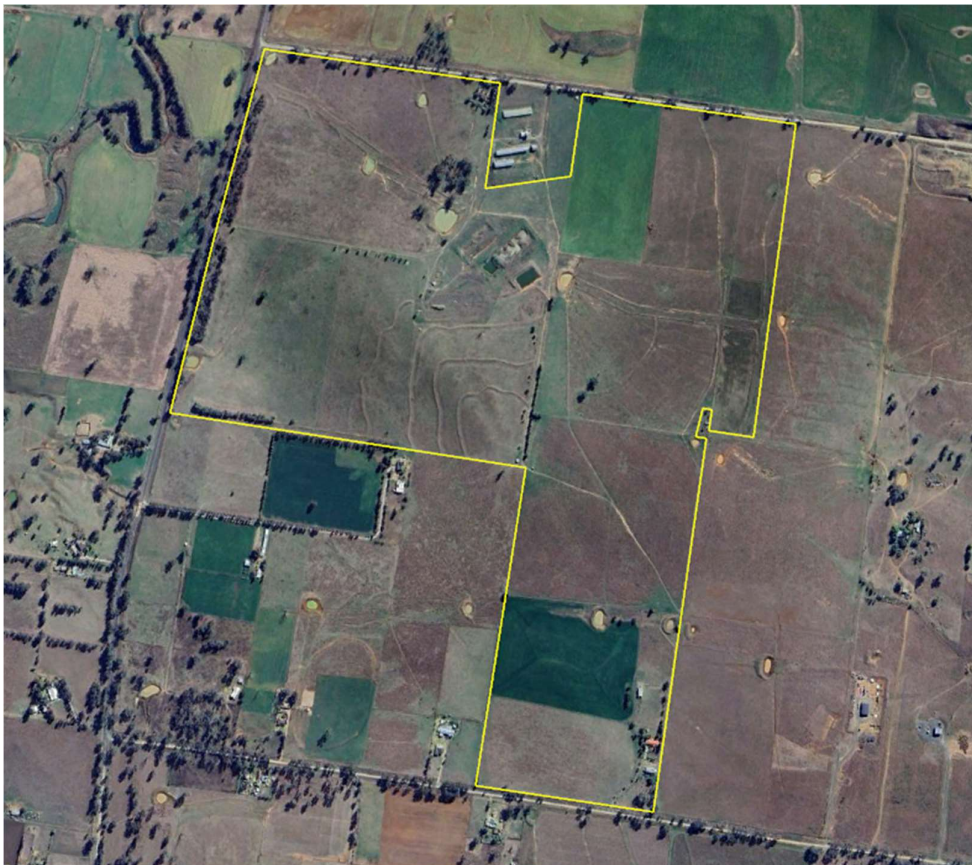
Satellite Imagery 3/2020 (Google Maps)



Satellite Imagery 10/2022 (Google Maps)



Satellite Imagery 7/2023 (Google Maps)



Appendix B— Standard Sampling Procedure

SMK Consultants - Soil Sampling, Storage, Transport and Laboratory Procedures

1. Field sampling

- **Preparation of Equipment** - All equipment to be utilised for the excavation, collection and storage of field samples is to be cleaned before entering the investigation site.
- **Onsite Sampling** – All equipment used for sample collection and excavation is to be cleaned between sampling actions. Cleaning is to be done using clean water and cleaning equipment to be dried before the next sampling action to ensure that all soil and water are removed from the sampling implement.
- **Field Observations** – The sampler is to record the date of sampling, location of sampling, conditions of sampling (weather), observation of the condition of soil, odours, potential contamination, level, and type of contamination.
- **Sampling Order** – Where it is envisaged that parts of the investigation area are more contaminated than other parts, the less contaminated areas are to be sampled before contaminated areas.

2. Sample Storage

- All samples are to be placed in cold storage (esky, fridge) and chilled to 3-4 C° as soon as practicable.
- All samples are to be documented and forwarded to the selected laboratory as soon as practicable.

3. Transport of Samples

- Chain of Custody forms are to be prepared for inclusion with samples for Transport. Forms are to include project reference, Client, date of sampling, listing of laboratory testing to be done on each sample, sample container description, date of transport, and condition of samples at the time of despatch.
- Laboratory to be advised by fax/email of pending arrival date for samples and type of testing to be done. (E.g. Forward a copy of the COC form)
- Samples are to be securely packed in an esky with sufficient ice to maintain the sample temperature at the required level until received by the Laboratory.
- Courier to be contacted for pick-up of samples at the latest time.

4. Laboratory Analysis

- The laboratory is to prepare a response COC to indicate that samples were delivered in suitable condition to maintain the integrity of samples, a list of testing required was received and the expected date for issue of results.
- The Laboratory is to undertake the required and documented QC/QA procedures as set out by the National Association of Testing Authorities (NATA)
- Where the Laboratory has its procedures, these procedures are to be documented and noted on the test results.
- Laboratory to maintain their appropriate system of internal check samples, duplicates, and external laboratory comparisons.

5. Correlation of Field Observations and Laboratory Results

- Field observations are to be correlated with laboratory results.
- Where a laboratory result does not correlate with a field observation, the investigation must consider re-sampling of the site to provide additional evidence to determine whether the contamination is present.

6. Laboratory Duplication Requirements

- Laboratory duplications are required during a detailed site investigation where the risk of contamination and the potential consequences of contamination are considered significant to human health or the environment, or where the laboratory operates this procedure as part of standard quality assurance management practices.
- Duplications are to be in two forms when it is determined that duplications are required.
- Field duplications are to be undertaken at a rate of one sample per 10 field samples. The field duplicate preparation involves obtaining sufficient sample material from the randomly selected point to prepare two samples. The duplicate is to be identified with a reference known to the sampler to ensure that the laboratory is unaware of the field duplicate identification or reference. The duplicate sample is to be tested for the same parameters as the original sample and then results are to be compared once laboratory results are provided. The scientist/sampler is then required to assess the results for the duplicated sample to determine variations in laboratory results. If a significant variation is noted, the laboratory should be advised to enable retesting of the sample to determine whether the results are correct or whether procedural errors have occurred in the laboratory.
- Laboratory duplicates and external duplicates to be determined by the Laboratories QC/QA system. Laboratory to be advised of duplicate requirements before submission of samples.

Appendix C– Certificates of Analysis for soil samples



CERTIFICATE OF ANALYSIS

Work Order	: ES2500923	Page	: 1 of 6
Client	: SMK CONSULTANTS PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR PETER TAYLOR	Contact	: Customer Services ES
Address	: P.O.Box 774 39 FROME STREET MOREE NSW, AUSTRALIA 2400	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 6752 1021	Telephone	: +61-2-8784 8555
Project	: 24-438 Preliminary Contaminated Site Investigations	Date Samples Received	: 15-Jan-2025 12:00
Order number	: ---	Date Analysis Commenced	: 15-Jan-2025
C-O-C number	: ---	Issue Date	: 21-Jan-2025 17:09
Sampler	: ---		
Site	: ---		
Quote number	: EN/333		
No. of samples received	: 2		
No. of samples analysed	: 2		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

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Work Order : ES2500923
Client : SMK CONSULTANTS PTY LTD
Project : 24-438 Preliminary Contaminated Site Investigations

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
g = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.

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 Work Order : ES2500923
 Client : SMK CONSULTANTS PTY LTD
 Project : 24-438 Preliminary Contaminated Site Investigations



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	24-438-1	24-438-2	----	----	----
Sampling date / time					09-Jan-2025 00:00	09-Jan-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2500923-001	ES2500923-002	-----	-----	-----
				Result	Result	Result	----	----	----
EA002: pH 1:5 (Soils)									
pH Value	----	0.1	pH Unit		6.8	5.8	----	----	----
EA010: Conductivity (1:5)									
Electrical Conductivity @ 25°C	----	1	µS/cm		42	185	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		10.6	14.6	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg		15	14	----	----	----
Copper	7440-50-8	5	mg/kg		26	24	----	----	----
Lead	7439-92-1	5	mg/kg		5	6	----	----	----
Nickel	7440-02-0	2	mg/kg		8	9	----	----	----
Zinc	7440-66-6	5	mg/kg		44	57	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	----	----	----
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	----	----	----
^A Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	----	----	----



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 Work Order : ES2500923
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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	24-438-1	24-438-2	----	----	----
Sampling date / time					09-Jan-2025 00:00	09-Jan-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2500923-001	ES2500923-002	-----	-----	-----
					Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	----	----
^A Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	----	----
^A Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	----
^A Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	----	----

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 Client : SMK CONSULTANTS PTY LTD
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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	24-438-1	24-438-2	----	----	----
Sampling date / time					09-Jan-2025 00:00	09-Jan-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2500923-001	ES2500923-002	-----	-----	-----
				Result	Result	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenamiphos	22224-92-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Carbophenothion	786-19-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Azinphos Methyl	88-50-0	0.05	mg/kg		<0.05	<0.05	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		77.7	87.1	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		77.0	88.8	----	----	----



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Client : SMK CONSULTANTS PTY LTD
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Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143