Contaminated Sites Act 2003
Basic Summary of Records Search Response

Search Results

This response relates to a search request received for:

Lot 9105 On Plan 404839
Dalyellup, WA, 6230

This parcel belongs to a site that contains 5 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

| Address | Lot 9105 On Plan 404839
Dalyellup, WA, 6230 |
<table>
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<tbody>
<tr>
<td>Lot on Plan Address</td>
<td>Lot 9105 On Plan 404839</td>
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<tr>
<td>Parcel Status</td>
<td>Classification: 27/03/2018 - Report not substantiated</td>
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</tbody>
</table>
| | Nature and Extent of Contamination: 
No contamination has been identified at this site. |
| | Restrictions on Use: 
Please refer to Reasons for Classification for further information relevant to the use of the site. |
| | Reason for Classification: 
This site was reported to the Department of Water and Environmental Regulation (DWER) under section 11 of the 'Contaminated Sites Act 2003' (the Act), which commenced on 1 December 2006. 
The site has been classified under section 13 of the Act based on information submitted to DWER by March 2018. 
The site comprises of areas of cleared and remnant endemic vegetation. A low-lying swamp area and surface water bodies are located within the north eastern portion of the site. A telecommunications tower is in the central portion of the site and a wastewater pumping station is located near a drainage reserve along the south eastern boundary of the site. 
DWER understands that the site is proposed for development including residential land and public open space. 
The site was initially reported due to the identification of elevated concentrations of metals (such as hexavalent chromium) in groundwater beneath the site. 
Subsequent reports of known or suspected contamination identified an area located in the north east portion of the site as low lying swamp land which was suspected to have been used for the dumping of uncontrolled fill or waste material or other potentially contaminating activities, such as the disposal... |
Based on available information including historical assessments and aerial photographs, with the exception of the areas referred to as the 'Eastern Turning Circle' (ETC) and 'Area 8' comprising an area of 1.14 hectares, DWER understands that the majority of the site has not been used for any known contaminating land uses, as specified in the guideline 'Assessment and management of contaminated sites' (Department of Environment Regulation [DER], 2014).

Following the reporting of the site, DWER undertook a desktop assessment of all available information, including environmental assessments undertaken in 2016 as part of the proposed residential development as well as investigations undertaken at the former WRDF.

DWER officers undertook a site inspection on 16 March 2018 to verify the conclusions of the previous environmental assessments and to identify the presence of any visible waste or TSR.

The 'preliminary site investigation' (PSI) undertaken as part of the residential development identified two areas of potential contamination requiring further assessment. This included the low lying swampland and 'Area 8' where evidence of historical disturbance of natural soils was identified.

Low Lying Swampland

The soil investigations completed as part of the PSI targeted areas of historical disturbance. These investigations did not identify any chemicals of potential concern above Ecological Investigation Levels or Health Investigations Levels for residential land use as published in the 'National Environment Protection (Assessment of Site Contamination) Measure 1999' (the NEPM).

DWER undertook a site inspection in March 2018 of the low lying swamp land. The surface water body appeared to have been significantly modified to allow for the drainage of stormwater and surface water runoff. The PSI did not consider the surface water body to be of ecological significance and no further investigation was considered necessary.

DWER observed evidence of soil disturbance, however soils were observed to be natural with no evidence of significant importation of other soils. No evidence was identified to suggest that TSR had been disposed of at the site, or used for hardening of the sand tracks in this area. During site inspections undertaken on 16 March 2018, DWER officers did not observe any evidence of significant contamination which would have the potential to pose a risk of harm to human health, the environment or any environmental value in this area.

Based on available information combined with observations made by DWER officers on 16 March 2018, DWER concur with the findings of the baseline assessment and consider that the disturbed soils in the low lying swamp land appear to be consistent with natural swamp deposits and Safety Bay and Tamala limestone derived sands typical of this area.

DWER notes that while surface water sampling has not been undertaken, as the surface water body is groundwater dependant, and in the absence of any identified contamination, DWER considers that groundwater investigations undertaken in the vicinity of the swamp have been adequate to characterise water quality of this area.

'Lease Area' Known as Area 8 and Eastern Turning Circle

Remediation and validation works were completed for the lease area as part of the rehabilitation of...
the former WRDF in 2002 and 2013.

The Stage 1 rehabilitation plan, which included ‘Area 8’, was reviewed and approved in 2001 by the Environmental Protection Authority (EPA). ‘Area 8’ was recontoured and filled with 2m of calcareous sand dune material and revegetated during rehabilitation works completed for the WRDF in 2002.

The removal of TSR-impacted road base and up to one metre of natural soils located beneath the ETC was completed in 2013. Remediation and validation works for the ETC were subject to review by an accredited auditor who prepared a Mandatory Auditors Report (MAR) dated 14 February 2014. DWER and Department of Health reviewed the MAR and concurred with the findings and advised that the ETC appears suitable for use as ‘bushland’ and ‘residential’ land.

Further soil investigations were completed for Area 8 as part of the PSI undertaken as part of the residential development in 2016. This investigation targeted areas of historical soil disturbance and extended to depths of up to two metres below ground level (mbgl). The soil investigation did not identify any chemicals of concern above Ecological Investigation Levels or Health Investigations Levels for residential land use as published in the ‘National Environment Protection (Assessment of Site Contamination) Measure 1999’ (the NEPM).

Further investigations were completed in January 2018 for Area 8, comprising the visual characterisation of soils up to 3.5mbgl, in order to confirm the absence of TSR in this area. The investigation concluded that based on visual assessment of the deeper soil profile, there was no evidence of TSR disposal in this area.

Based on a DWER desktop assessment of available information, it is noted this is consistent with historic construction details of the waste disposal ponds of the WRDF, that the disposal of TSR did not occur in this area.

Groundwater Investigations

Groundwater flow from the former WRDF is generally in a west north west direction. Groundwater beneath and migrating from the WRDF is typically brackish and groundwater entering the WRDF is characterised as fresh. Based on this information, there is no evidence to suggest that groundwater flows in an easterly direction from the WRDF toward the proposed residential development.

Groundwater investigations were undertaken as part of the baseline assessments completed in 2016. Investigations included the sampling of monitoring wells located up hydraulic gradient of the site, near the swampland and included monitoring bore located along the western boundary of the site, which currently forms part of the groundwater monitoring network for the former WRDF.

Nutrients (such as ammonia) and iron were present in groundwater in concentrations exceeding the non-potable groundwater use guidelines as published in the guideline 'Assessment and management of contaminated sites' DER (2014). However, these assessment criteria, for the substances identified, are aesthetic values only and they are not considered to pose a risk to human health or ecological values.

Arsenic and total iron are present in groundwater at concentrations exceeding the freshwater guidelines as published in the guideline ‘Assessment and management of contaminated sites’ DER (2014). DWER notes that elevated concentrations of arsenic and iron were reported in groundwater monitoring bores located down hydraulic gradient of the swampland. Arsenic and iron occur naturally in low lying swamp deposits, and may be indicative of historical acid sulfate soil oxidation.

Disclaimer
This Summary of Records has been prepared by Department of Water and Environmental Regulation (DWER) as a requirement of the Contaminated Sites Act 2003. DWER makes every effort to ensure the accuracy, currency and reliability of this information at the time it was prepared, however advises that due to the ability of contamination to potentially change in nature and extent over time, circumstances may have changed since the information was originally provided. Users must exercise their own skill and care when interpreting the information contained within this Summary of Records and, where applicable, obtain independent professional advice appropriate to their circumstances. In no event will DWER, its agents or employees be held responsible for any loss or damage arising from any use of or reliance on this information. Additionally, the Summary of Records must not be reproduced or supplied to third parties except in full and unabridged form.
As identified on the acid sulfate soils risk map for Western Australia, and in the geotechnical investigation, the swampland lies within an area classified as high risk for encountering acid sulfate soils within 3 metres of the natural soils. A risk assessment has found that arsenic and iron are likely to be naturally occurring and are not considered to pose a risk to human health or ecological receptors at the site.

Metals (such as total chromium,) were identified in groundwater at concentrations exceeding the long term irrigation guidelines as published in the guideline 'Assessment and management of contaminated sites' DER (2014). DWER considers the use of long term irrigation criteria as conservative in this case as the future use of the site for intensive agriculture purposes is unlikely. A risk assessment has found the risk to human health and ecological receptors from these metals to be low.

Metals (such as hexavalent chromium, copper and zinc) are present in groundwater at concentrations exceeding the marine and/or the fresh water guidelines as published in the 'National Environment Protection (Assessment of Site Contamination) Measure 1999' (the NEPM).

Groundwater monitoring has been completed as part of licence requirements of the adjacent WRDF since the 1990’s, including the monitoring bore located in the lease area. The historical groundwater monitoring events and risk assessment has been reviewed by DWER in order to undertake an appropriate assessment of risk for this site.

The risk assessment has found that as the long term average concentrations of dissolved metals (such as hexavalent chromium, copper and zinc) are significantly below the non-potable use guidelines (DER, 2014) the risk to human health is considered to be low.

An ecological risk assessment completed for the WRDF and reviewed by the accredited Auditor found that the potential for sustained discharge of metals at concentrations above the adopted water quality ecosystem criteria into the marine environment is considered very low.

DWER advises that groundwater monitoring will be undertaken along the western boundary of the site as part of the ongoing site management plan for the former WRDF. As such, any changes in groundwater quality or risks to human health or ecological values will be identified and reported to DWER.

Radiation

Radiation surveys have been undertaken for the adjacent WRDF including along the western boundary of the site since August 1992. The post capping gamma survey of Stage 1 (including 'Area 8') and Stage 2 rehabilitation areas was completed in May 2014.

The report concluded that gamma radiation levels have returned to within the natural background of the area and that radon levels are commensurate or lower than world averages as specified in "Sources and Measurements of Radon and Radon Progeny Applied to Climate and Air Studies" (International Atomic Energy Agency, 2012).

Radiation surveys completed for the ETC remediation and validation works in 2013 concluded that gamma radiation levels at the ETC have returned to the natural background gamma levels consistent with this area.

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DWER advises that radiation monitoring will continue along the western boundary of the site as part of the ongoing site management plan for the former WRDF.

Based on the investigations undertaken and information provided to DWER, including DWER enquiries and site inspections, the site appears suitable for unrestricted use, including sensitive uses such as residential, primary schools and childcare centres.

The report of a known or suspected contaminated site, in conjunction with DWER enquiries and an inspection of the site on 16 March 2018, has provided insufficient grounds to indicate that possible contamination of the site is present from the current or historical land use. Therefore, the site is classified as 'report not substantiated'.

If further information regarding possible contamination of the site is submitted to DWER, it will be reviewed and the site may be reclassified.

DWER, in consultation with the Department of Health, has classified this site based on the information available to DWER at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to DWER, and as such, the usefulness of this information may be limited.

In accordance with Department of Health advice, if groundwater is being, or is proposed to be abstracted, DWER recommends that analytical testing should be carried out to determine whether the groundwater is suitable for its intended use.

**Action Required**

No further management of the site in relation to contamination is currently required.

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**Certificate of Title Memorial**

- **Type of Regulatory Notice:** Nil
- **Date Issued:** Nil

**Current Regulatory Notice Issued**

**General**

An appeal was lodged with the Office of the Contaminated Sites Committee on 24/05/2018 and is currently awaiting determination. To find out more about the appeal process, see the Office of the Contaminated Sites Committee website at www.consitescommittee.wa.gov.au or contact the Executive Officer of the Committee on (08) 6467 5201.

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