SHIRE OF DOWERIN
TIN DOG TERRITORY

ABN 35 939 977 194
13 Cottrell Street (PO Box 111), Dowerin WA 6461
T: 9631 1202 F: 9631 1193
E: dowshire@dowerin.wa.gov.au
W: www.dowerin.wa.gov.au

Approval to Establish a Borrow Pit to Obtain Road Building Material or Similar

Property Details	
Property Owner:	
Property Address:	
Contact Number:	

Consent

Permission is hereby given to the Shire of Dowerin to enter onto and remove necessary road building material from Lot/Location No: _____ situated at:

_____

In this instance it is agreed that _____ m^3 of material may be removed.

A royalty will be paid at $3.30 inc gst per cubic metre or other such arrangements as mutually agreed to by both parties in lieu of a royalty payment listed in the additional information/condition's column below. Please refer to Bulking factor sheet which reflects the 28% bulking factor that is subtracted from total m3 loaded.
At the completion of the 'Useable Life' of the Borrow Pit area unless otherwise agreed, the Shire of Dowerin will rehabilitate the pit area.

Additional Information & Conditions

Declaration by Shire of Dowerin		
Chief Executive Officer	Name:	Signature:
Asset & Works Coordinator	Name:	Signature:
Date:		
Property Owner Declaration		
Property Owner	Name:	Signature:
Date:		

OFFICE USE ONLY

□ Form reviewed & signed by all parties
□ Owner/Property Set up as Creditor (If not, creditor form supplied)

Officer's Name: _____ Date: _____

□ Purchase Order Raised & Emailed to Owner

Bulking Factor

The bulking factor accounts for the increase in volume that occurs when material is excavated and loosened. For gravel, a typical bulking factor might be around 28%. Here's how you can calculate the bulking factor for gravel:

Calculation Steps

1. **Determine the in-situ volume**: This is the volume of the gravel in its natural, compacted state.
2. **Calculate the bulked volume**: This is the volume of the gravel once it has been excavated and loosened.
3. **Apply the bulking factor**: The bulking factor represents the percentage increase in volume due to excavation.

Summary

- **In-situ volume**: 10,000 m^3
- **Bulking factor**: 28%
- **Bulked volume**: 12,800 m^3

When 10,000 m^3 of gravel is excavated and loosened, its volume increases by 28% to 12,800 m^3.

If you're using the current rate and subtracting the bulking factor:

- **Payment calculation with bulking factor**:
  - **10,000m3 x (1-0.28) = 7,200m3**
  - **7,200m3 x $3.30 = $23,760**

POLICY NUMBER	-	4.2
POLICY SUBJECT	-	4.2 Gravel, Sand and Pit Rehabilitation Policy
DATE ADOPTED	-	18 December 2018 (Item 10.1.1)
RESPONSIBLE OFFICER	-	Chief Executive Officer
REVIEWED	-	6 July 2023 (CMRef 0798)

Objective

To ensure that at all times the Shire has sufficient materials and arrangements in place to meet the needs of road maintenance and construction programs. This will be achieved by:

1. Ensuring access to an adequate supply of high-quality road building materials.
2. Ensuring that an effective rehabilitation program is in place; and
3. Ensuring that all facets of these transactions are transparent and compliant with relevant legislation.

Policy

Access to Material

Council recognises that in order to access gravel, sand or clay it needs to pay a fair price and abide by its own policies and local laws. To this end, Council will undertake the following:

1. Approach the landowner at least four weeks prior to the time that the works are due to commence, to advise the landowner of the Shire's intention, advise of compensation and to enable the landowner to make any domestic arrangements in relation to stock, etc.
2. All pits opened on private property will be reclaimed before the plant shifts to the next programmed job, unless firm arrangements are made with the landowner for not reclaiming.
3. If the area is required for dam catchments, all topsoil shall be stock piled, or removed if suitable for road building.
4. If required by the land holder, the areas shall be fenced, and suitable gates fitted to the fenced area, at the Shires expense.
5. Construction shall occur when necessary to create or repair affected haul roads.
6. All care will be taken to reduce, as much as possible, the impact or inconvenience to the landowner.
7. All pits will be rehabilitated in accordance with the signed gravel agreement and this Policy.
8. Material from pits will be tested to ensure specifications are suitable for construction.
9. Rate of payment for materials, including GST are:
   - Gravel $3.30 per cubic metre for compacted gravel removed from private property.
   - Sand $1.75 per cubic metre.
   - .
10. All transactions are to be in accordance with relevant legislation and include a written agreement, detailing all aspects of the proposed transaction, including rehabilitation of the quarry/pit. No works are to occur prior to the signing of the agreement by both parties.
11. Landowners have an option to:
    a. Claim full payment for the materials extracted.
    b. Claim part payment and part private works up to the value of the material extracted; or
    c. Receive no payment and have private works carried out to the value of the materials extracted.

The value of private works will be determined by the Asset and Works Coordinator.

12. The private works in Part 9 above may only be carried out on the property from which material has been extracted and is subject to plant availability. Any works scheduled are to be performed during the budgeted financial year and are not to be carried over.
13. When landowner consent from the extraction of road building or other materials required for public works is not granted and the Chief Executive Officer and Asset and Works Coordinator considers the acquisition of these materials is in the best interest of the public, the Chief Executive Officer will provide such notices and takes such actions as prescribed by the *Local Government Act 1995*, Section 3.27 (1) to secure the materials.
14. If materials are extracted without the landowner's consent then the rates of royalty that would have been applicable and remedial actions to the land that would have been taken, will apply as if the landowner had given their permission.
15. Upon meeting all requirements of the Agreement in Part 7 (Access to Material) the Asset & Works Coordinator shall ensure the landowner is adequately satisfied by way of a signed acceptance letter.

Pit Rehabilitation

The Shire recognises and accepts that pit rehabilitation is necessary to avoid soil compaction, decrease surface drainage, avoid erosion and minimise visual pollution.

1. In general, prior to opening a pit, a management plan of the site will be prepared which will include rehabilitation and monitoring.
2. Private operators are required to submit and abide to a pit management plan, which includes rehabilitation and monitoring, before establishing a pit.
3. Wherever possible, new pits will be established on cleared land, not existing bushland and not be located on a road verge.
4. Where necessary, the visual impacts of an operating pit will be minimised through the establishment of buffers between the pit and visual vantage point/s.
5. Where necessary, the dust and noise impacts of an operating pit will be minimised through the establishment of buffers between the pit and neighbours.
6. Throughout the life of the pit, topsoil, overburden and vegetation will be stockpiled separately ready for respreading in the rehabilitation process.
7. If weeds have developed on the topsoil mounds these will be removed prior to respreading the topsoil.
8. If necessary, drainage structures will be established within the pit, to reduce any ponding and/or surface erosion.
9. Rehabilitation will be done progressively throughout the life of the pit.
10. The site will be monitored In accordance with the signed rehabilitation plan and this policy; and
11. Private pits shall be rehabilitated in accordance with the signed gravel rehabilitation agreement

Bush Sites

Where a proposed pit is located within bushland, the following will apply:

1. Reference to the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* and obtain the necessary clearing permits.
2. Prior to opening a pit, seed from local endemic species will be collected from the site and stored for use in the revegetation phase of rehabilitation.
3. The general process of rehabilitation will be:
    a. Rip the floor of the pit at one metre intervals across the contour.
    b. Shape the ripped pit so that the surfaces are as smooth as possible.
    c. Batter the edges down to blend in with the landscape with the batter slopes no steeper than 4H:1V.
    d. Return the overburden and the topsoil to the pit.
    e. Then cross-rip the site at one metre intervals on the contour to encourage plant growth and
    f. Return all vegetation and debris to the pit.
4. Seeds collected prior to pit establishment should be scattered on the site at the time of year suited for germination (varies with location) if establishment from respreading vegetation has been inadequate. If a store of seeds is not available, seed from local endemic species should be collected from surrounding areas; and
5. If required by the landowner and the pit is located on farmland, it will be fenced to exclude stock to help ensure adequate regeneration at the Shire's expense.

Pastured Sites

1. Prior to establishment of the site, the landowner will be asked how they want the site rehabilitated.
2. For sites to be rehabilitated back to pasture the general process of rehabilitation will be:
   a. Rip the floor of the pit to a depth of at least 50cm along the contour.
   b. Shape the pit so that the surfaces are as smooth as possible and edges are battered down to blend in with the landscape.
   c. Return the overburden and then topsoil to the pit and
   d. Pasture seed will be spread.

Abandoned Pits

1. As part of its annual budget deliberations, Council will determine an amount specifically for the rehabilitation of abandoned pits. This will take into account, a works program to ensure that over time, all abandoned pits are rehabilitated to a satisfactory level.
2. The method for rehabilitation will not change from that mentioned in the section on current pits.
3. If fill is no longer available, spoil from roadworks etc. will be used. Topsoil, if no longer on site, will be carted to the area to ensure regeneration will be satisfactory and
4. The site will be monitored after rehabilitation works are completed to ensure compliance with signed rehabilitation plan. If rehabilitation is inadequate, appropriate measures will be taken to ensure success.

Roles and Responsibilities

Chief Executive Officer

The Chief Executive Officer has responsibility to ensure this policy is implemented.

Related Documentation

Nil

Related Legislation/Local Law/Policy/Procedure

Sections 3.21, 3.22, 3.27, 3.31, 3.32, 3.33 and Schedule 3.2 of the *Local Government Act 1995*.

Related Delegation

Nil

Document Control	
Policy Number	4.2
Policy Version	3
Policy Owners	Chief Executive Officer
Creation Date	18 December 2018 (Item 10.1.1)
Last Review Date	19 January 2021 (CMRef 0357) 6 July 2023 (CMRef 0798)
Next Review Due	This policy will be reviewed bi-annually or more often where circumstances require.

Shire of Dowerin RFQ 2024-02 Leak Detection Evaluation

Scope of Works

Distinctive Pools:

- Leak Detection Using Dye:
  - SCUBA dive dye leak detection of entire swimming pools including construction joints, pool structure, and centre channel.
  - Inspection of gutter channel and pipework for degradation and leakage.
  - Detailed plan highlighting leak points within the pool.
- Camera Inspection:
  - Camera-based inspection of pipework to centre channel.
  - Inspection from access panels in the dive bowl section, enabling inspection in both directions, up to the toddler pool and back to the plant room.
  - Recording all footage and providing it to the Shire.
- Reporting and Analysis:
  - Detailed report and analysis including plans, photos, and videos highlighting any leaks from both dye and camera inspections.
  - Report on the overall condition of the swimming pool and recommendations for remediation.

WetDek Pools:

- Challenges:
  - The Dowerin pool's higher elevation relative to the plant room complicates internal pipework inspection.
  - The camera needed for the inspection is typically hired, which is expensive and time-consuming to fetch and return.
- Proposed Approach:
  - Professional level inspection requiring 3 people: a diver, someone in the pool room, and a coordinator.
  - Allowance for 2 days of work and an overnight stay.
  - Comprehensive written report provided after data gathering.

Relevant Experience

Distinctive Pools:

- Extensive experience in leak detection and remediation services throughout regional WA, including Derby Shire, Town of Port Hedland, Shire of Kulin, Shire of Westonia, Shire of Wyalkatchem, and the Dowerin Memorial Pool itself.

WetDek Pools:

- 35 years in the construction industry, with a focus on pools for the past 12 years.
- Experience in constructing and refurbishing commercial swimming pools.
- References highly recommend WetDek Pools based on phone calls checking references.

Proposed Approach

Distinctive Pools:

- Capacity to undertake the work before the deadline of August 8.
- 2-day inspection period with 2 personnel on-site starting in the last week of July.
- Underwater leak detection performed by qualified PADI-accredited staff using dive hookah equipment.
- Travel and accommodation costs included in the submission price.

WetDek Pools:

- Emphasizes the challenges posed by the higher elevation of the pool.
- Plans to hire the necessary camera equipment.
- Requires 3 people on-site for a 2-day period, factoring in an overnight stay.
- Underwater leak detection performed by qualified PADI-accredited staff using
- Comprehensive written report provided after data gathering.
- Design and consultancy team to manage projects from conception to production.
- Professional and friendly service, with personal referees available on request.
- Exceptional quality and workmanship, with strict adherence to construction standards.

Pricing

Distinctive Pools:

- Total Price: $9,815.00 (GST Exclusive, valid for 30 days)

WetDek Pools:

- Total Price: $22,000

Summary

Distinctive Pools:

- Provides a detailed and structured approach covering all aspects of the required scope of works.
- Offers a competitive price significantly lower than WetDek Pools.
- Highlights extensive relevant experience.
- Includes specific details on methodology and logistics.

WetDek Pools:

- Identifies challenges specific to the site and includes a thorough plan to address them.
- Requires a larger team and mentions the higher cost of equipment hire.
- Offers a comprehensive report but at a much higher cost.
- Brings 35 years of construction industry experience, with 12 years focused on pools.
- Known for professional and friendly service, with positive references.
- Utilises revolutionary technology and maintains exceptional quality and workmanship.
- Supported by a professional design and consultancy team.

Conclusion

Distinctive Pools

- offers a comprehensive service with a well-outlined approach, extensive relevant experience, and a significantly lower price.

WetDek Pools

- addresses specific site challenges and proposes a thorough approach but at a much higher cost. However, they bring extensive industry experience, advanced technology, and exceptional quality, with strong recommendations from references.

Given the details, Distinctive Pools appears to be the more cost-effective option, while WetDek Pools provides added value through their advanced technology and extensive experience, though at a higher price.

QUOTE

Shire of Dowerin
Shire Of Dowerin 13 Cottrell St
DOWERIN WA 6461
AUSTRALIA

Date
4 Jul 2024

Expiry
3 Aug 2024

Quote Number
QU-0009

ABN
47 135 723 134

Wetdeck Pty Ltd
15 Cort Way
ROCKINGHAM WA 6168
AUSTRALIA

Description	Quantity	Unit Price	GST	Amount AUD
Our quote to undertake a leak detection exploration of your pool, analyse the results and provide the Shire with a written report summarising said results.	1.00	20,000.00	10%	20,000.00

Subtotal	20,000.00
TOTAL GST 10%	2,000.00
TOTAL AUD	**22,000.00**

Terms

50% of the GST-inclusive price payable within 14 days of acceptance of this quotation with the balance payable 14 days following completion of the works.

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RFQ 2024-02 Leak Detection Quotation

Date: Thursday 4th July 2024
Client: Shire of Dowerin
Site Address: Memorial Swimming Pool

Dear Ben,

Thank you for the opportunity to provide you with a quotation for the leak detection works for the Dowerin Memorial Pool
Below you will find our comprehensive quotation, including detailed scope of works for your review.

With over 10 years' experience in the concrete pool construction industry, we are a hard-working, professional team, dedicated to ensuring that we design and construct residential and commercial pools, spas and water features to the highest of standards, with as little disruption to our clients' daily lives and business as possible. We work closely with each of our clients from conception to completion, to ensure we deliver a pool to meet their individual needs.

If you have any queries at all or wish to discuss your project further please don't hesitate to give me a call. I look forward to hearing from you

Kind Regards,

Otis Arrow

Director
0401 839 417

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Balcatta WA 6914
Mob. 0401 839 417
Email. info@distinctivepools.com.au
Web. www.distinctivepools.com.au
ABN: 51 619 280 278

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Scope of Works:

Leak Detection	SCUBA dive dye leak detection of entire swimming pools inclusive of construction joints, pool structure and centre channel Inspection of gutter channel and pipework for any degradation and leakage Detailed plan highlighting and leak points within pool
Camera Inspection	Camera based inspection of pipework to centre channel Inspection shall be conducted from the access panels in the dive bowl section of the swimming pool. This will enable us to inspect both directions, up to the toddlers pool and back to the plant room. Recording of all footage to be provided to shire
Report and Analysis	Completion of a detailed report and analysis inclusive of plans, photos and videos highlighting any leaks from both dye and camera inspection Provide detailed report of the overall condition of the swimming pool and provide recommendations for the appropriate remediation
Relevant Experience	Distinctive Pools have conducted leak detection and remediation services throughout regional WA inclusive of but not limited to; Derby Shire, Town of Port Hedland, Shire of Kulin, Shire of Westonia, Shire of Wyalkatchem and in the Dowerin Memorial Pool itself
Proposed Approach	Distinctive Pools have the current capacity to undertake these works before the required deadline of 8th August. The Inspection will be conducted over a 2 day period with 2 x personnel on site – starting on site within the last week of July Underwater leak detection will be undertaken by our qualified PADI accredited staff with the use of our dive hookah equipment Travel and accommodation has been allowed for within the below submission price

Total Price - $9,815.00
GST Exclusive – Valid 30 days

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WETDECKPOOLS

Brian Macdonald

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ABN: 11 081 758 876 **ACN:** 081 758 876

Pool Inspection Report

Location of Works: Dowerin memorial Swimming Pool,
8 Couper Street, Dowerin, WA, 6461

Date of Works: 9/6/2017

For the attention of: Andrea Selvey, (Chief Executive Officer)

On the 9 June 2017 Andrew Green and Aaron Blanch of Wetdeck Pools completed a facility inspection on your community swimming pool. The main reason for their attendance was to establish the cause of the water loss you are experiencing. During their visit they carried a Dive / Dye test within the swimming pools and the balance tank. Below you will find a report on each section checked and their findings.

Dive / dye test overview:

The dive / dye test is the test we use to identify leaks within a full swimming pool. The test allows us to identify rouge currents of water exiting the pool shell structure. It is carried out by using a small amount of dye in a syringe and releasing it into to water, close to where visible cracking or pool failure is witnessed. In the event of a leak the dye within the water would be sucked through the pool shell and disappear from the water body. To make this test successful it is important to have all the filtration equipment off, making the water as still as possible. All the surrounding ground water around the pool should also be removed via the sub-level drainage well (located at the deepest end of the swimming pool). This allows water to escape the concrete pool shell without restriction from surrounding ground water. Viewing the sub-level drainage pipework that enters this well is further confirmation that the pool is leaking. Excessive Running water = leaking pool. This pipework is located under the pool shell structure and is mainly used to remove ground water and keep it emptied while works are carried out on an emptied pool. This prevents floating of the pool shell structure itself due to dissimilar pressures.

Control Joint Construction:

Control joint construction is generally made up of two seals. One rubber water stop built into the concrete structure, and a replaceable sealant top seal. The seal built into the concrete structure is there to prevent water escaping if the top sealant joint has cracked. If the pool experiences excessive movement this rubber water stop can tear resulting in water escaping. We have also found in the past that these rubber water stops have been incorrectly installed from day one. The result of this means the pool is entirely relying on the top sealant joint to prevent leaking. I have attached some photos showing an incorrectly installed water stop for your information.

Pool Leak Checks:

Sub-level Drainage Well:

On arrival the well had already been emptied although the pump installed in the well did not reach the bottom and was not capable of emptying the well completely. We added another pump to this well to aid in completely emptying it. This was successful and this pit was continually kept empty over the course of the day and for the testing procedure. While this pit was emptied we could noticeably see a large amount of water entering the well from the sub-level drainage pipework. This was also witnessed by the shire member (Steve Geerdink, Works Manager) who was in attendance at the time, and initially emptied the well for us before arrival. This provided a clear indication there was quite a major leak within the pool.

Children's Pools Concrete Shell Structure:

The children's pool was checked for leaks. Visually there was some cracking to the concrete structures, although this may only be surface cracking. When performing the dive / dye test no dye appeared to exit this pool. All pipework penetrations also seemed to be ok, with no leaks detected. There did appear to be a low flow rate off water coming into the children's pool when the system was restarted. The reason for this is explained below.

Olympic Pool Concrete Shell Structure:

Whilst diving there was some cracking noticed along the concrete pool surface, these are most probably surface cracks within the plaster as no leaks were detected at the majority of these areas. There was quite a large crack in the concrete on the eastern side dive-well invert wall, this was leaking.

The pool control joints throughout the concrete structure appeared to be cracked in many places. There also appeared to be previously repaired areas. These were all fully checked including all wall and floor joints along the length and width of the pool.

All control joints going vertically up the walls appeared to be in good condition and no leaks were found.

The control joints down either side of the centre channel inlet appeared to be fine. There were two locations, one on the southern dive-well invert wall that appeared to have already been repaired. This previously repaired area was leaking. This area of concrete also appears to have raised in comparison with the panel next to it. This can be seen in the photos provided and may have been caused from emptying the pool in the past without empting the sub-level drainage well, (Causing dis similar pressure internally and externally of the swimming pool). The other was on the floor of the dive-well, a small leak was detected where the sealant had torn.

The diagonal joint on the south eastern side of the dive-well invert wall was also found to be leaking quite a large amount of water. This was a mentioned as a suspected area before we started testing. We can confirm this is leaking. All other diagonal joints on dive-well invert walls appeared to be ok and no leaks were found.

The control joint across the shallow end of the pool was in good condition and no leaks were found on this joint.

The two joints across the pool (middle and before the dive-well) had leaks in several locations. These are marked on a diagram I have attached and can also be seen in the photos and videos. One of these areas was an existing repair. At the start of **(video 1)**, you can see that the dye / water is being drawn into the crack where the repair has broken against the existing concrete not through the joint itself.

The main centre channel inlet pipe cover was removed (Located at the bottom of the dive well). Dye was placed in this pipe and it quite quickly disappeared down the pipe. This indicates that the pipework had failed somewhere down the line between the pool and the plantroom. This is

most probably caused by corrosion of the old cast iron pipe over the years, resulting in water escaping into the ground.

The reason for the control joint leaks could be that the rubber water-stop located within the concrete structure has completely ripped apart, or it was incorrectly installed on day one. Without extensive investigation it is impossible to tell. I have attached videos showing the dive / dye test being performed and the dye clearly being drawn through the cracks for you information.

Please Note: *Although water is seen to be escaping at certain points within the pool shell, it is entirely possible for the water to track along the installed water-stop below the sealant and exit into the ground in a different place completely.*

Other Notes:

Whilst diving we also noticed that the pool paint had failed across the entire pool structure, and was quite easily rubbing off with your hands. This will cause a problem with water clarity until the paint has completely come off.

There was also 3 missing inlets up the centre channel. Although this is not the cause of a leak we are mentioning it as having these missing will greatly reduce the flow of water to the children's pool. You can quite easily see these in some of the photos and videos attached.

There was also a large amount of algae present not only on the pool floor but also within step niches. We would recommend super chlorination of the pool before opening it to the public in order to remove this algae.

Our recommendations for fixing the above issues with your Olympic pool would be to rebuild the control joints. There are several different stages of repair we can do to fix this problem. From a basic sealant replacement to a complete control joint rebuild. Micro tunnelling a new pool supply line from the plantroom to the centre channel may also be a good idea to replace the existing leaking supply line. Please give me a call and I can discuss the different options with you to best suit your budget.

If you require any more information in regards to this report or your overall swimming pool facility please don't hesitate to get in contact with me. Our company has an extensive knowledge of the pool industry and has successfully fixed many leaking country pools in the past. We employ a small team with a large skill and knowledge set that cover all types of work, from fixing to building or fully reconditioning aquatic centres. Wetdeck pools would be more than happy to provide you with any quotations needed for any of the above works mentioned, if you decide to go ahead with them.


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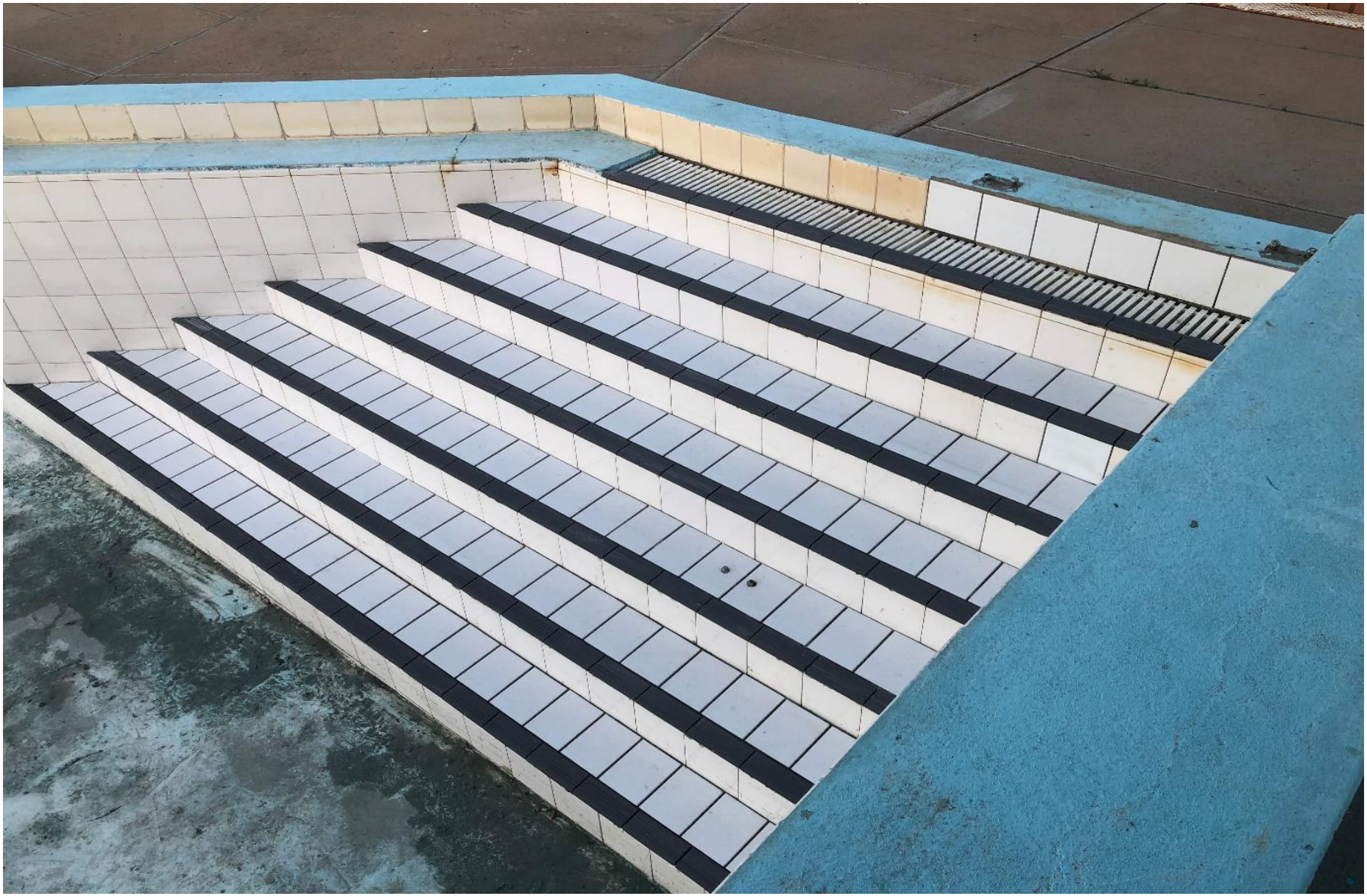


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Dowerin Swimming Pool

SHIRE OF DOWERIN

LEAK DETECTION REPORT

4th May 2021

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SHIRE OF DOWERIN

LEAK DETECTION REPORT

On Tuesday the 23rd March 2021, Distinctive Pools attended site to carry out leak detection services to the 50m and Toddlers swimming pools.
The intention of this inspection was to ascertain the location of the suspected leak in the swimming pools
This report provides a brief description of the findings from our inspections and recommendations for rectification works.

Testing Methodology

Leak testing the swimming pools was achieved using the Dye Test method utilising SCUBA gear.
A bucket test proved not possible at the time as the facility was open to patrons during our inspections
Dye testing is achieved using an industry specific dye which holds together in water so a leak can be visually located in the pool.
Grid lines were set up to systematically check the entire pool surface for signs of leaking.
Items inspected were:

- All tiles to swimming pool walls
- All floor/wall joints
- Construction joints
- Silicon Joints
- Filtered water return centre channel

Inspection Findings

Throughout our inspections we have identified no major leaks in the swimming pool structure.
We did however find a leak point in the soiled water gravity line from pool to balance tank
Results as follows:

Toddlers Pool – NO LEAKS DETECTED
50m Pool
Wall Tiles – NO LEAKS DETECTED
Floor/wall Joints – NO LEAKS DETECTED
3 x Construction joints to width of the pool - NO LEAKS DETECTED
Construction Joint to length of pool – NO LEAKS DETECTED
Silicon Joints – NO LEAKS DETECTED
Filtered water return Centre Channel - NO LEAKS DETECTED
Control Joints in Gutters – LEAKS NOT DETECTED, HOWEVER COULD BE LIKELY
Gravity Pipework – LEAKS DETECTED

No leaks have been detected in the swimming pool structure.
It has been noted that the control joint silicon in the gutters is in poor condition or is missing entirely.
There have been leaks detected in the gravity pipework that runs from the pool and back to the balance tank.
The gravity pipework is too small for the plant room flow rate, which is causing the pipes to fill and leak through cracks and pool sealing in the concourse.
Bricks were also noted to be in place where repair jobs may have been attempted in the past.
Bricks are not watertight.
Drummy areas in the concourse behind the pool indicated undermining of the soil below as a result of the leaks found

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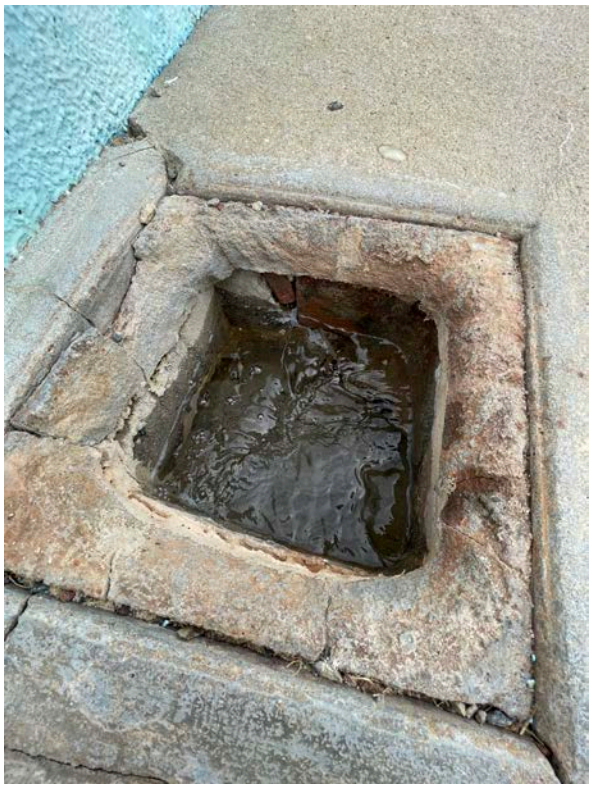

Brickwork below waterline of gravity pipework

Cracks in inspection pits behind pool end wall

Recommendations

We recommend the gravity pipework be upgraded to allow the plant room flow.
We also recommend the silicon joints in the gutters be cleaned and reinstated as a precautionary measure.
Gravity pipework scope of works would include:

- Removal of some parts of the concrete concourse to deep end of pool.
- Removal of existing gravity pipework from pool to balance tank
- Core larger holes to balance tank and leaf/lint strainer box
- Construct new concrete inspection pits to either side of pool
- Reinstate 2 x new 150mm gravity pipework from pool to leaf/lint strainer box
- Install 1 x new 250mm gravity pipe from leaf/lint strainer box to balance tank
- Reinstate concrete concourse

Budget Costings: $43,500.00 Excluding GST

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