Michael Azar
ECOVE Group
Cnr Australia Avenue and Herb Elliott Avenue
Sydney Olympic Park
NSW 2127

Dear Sir,


DLA Environmental Services (DLA) was commissioned by Michael Azar of ECOVE Group to prepare an Unexpected Finds Protocol (UFP) for the property identified as:

Site 9 – Corner Sarah Durack Ave and Olympic Boulevard, Sydney Olympic Park (the Site)

This UFP has been developed as part of the construction planning for implementation during Site works primarily associated with excavation and civil activities. It has been prepared to ensure appropriate management of natural soils / fill which may contain undefined levels of landfill waste, leachate, landfill gas and asbestos contamination should they be encountered during Site works.

Due to the history of the Site (both past and present) and discoveries of landfill waste, leachate and landfill gas and asbestos during previous environmental investigations, there is potential for landfill waste, leachate, landfill gas and asbestos materials to be present in soils. These materials may require additional assessment or management. It is imperative that the potential for such material to impact Site workers and the remainder of the Site is minimised during remedial and construction works.

The area of investigation is known to have received waste and fill material for landfill. The Site is located on the boundary of the landfill and encompasses both fill material and natural soils. It is thought prudent to implement a UFP to cover all possible potential contamination scenarios. Potential contamination on the Site which may exist outside the scope of the past environmental investigations will be managed through the following UFP.
1.0 **TYPICAL FEATURES OF ‘UNEXPECTED FINDS’**

The main features to look for are:

- Material containing anthropogenic artefacts such as rubble, plastics, metal etc.;
- Material that is noticeably stained in colour;
- Asbestos or suspected asbestos containing material;
- Material with fibres visible;
- Leachate; and
- Landfill Gas odours;

2.0 **IMPLEMENTATION OF THE PROTOCOL**

2.1 **General**

Prior to the commencement of any excavation or construction works onsite, an occupational health and safety induction should be attended by all Site staff. The aim and importance of the UFP and how it is to be implemented should be discussed at this time. Responsibility for its implementation will be assigned to the Principal Contractor.

Monitoring of environmental issues will be undertaken on a daily basis. If an unexpected find is revealed during Site works, the following protocol is to be followed.

2.2 **Implementation Process**

1. Cease disturbance of the affected portion of the site and evacuate the immediate area.

2. Contact the Principal Contractor and the Contractors Environmental Representative (CER).

3. Principal Contractor and CER to conduct an assessment of the location and extent of the unexpected find.
4. High risk areas should be isolated and secured against unintended access.

5. Temporary encapsulation (sealing) of the high risk area to ensure no airborne spread of contamination occurs may be appropriate. This may involve clean soil, plastic sheeting, etc.

6. Dust should be prevented by wetting the soil and drainage controls should be arranged where there is a potential for runoff to occur (runoff should be minimised).

7. Warning signs should be placed in the vicinity.

8. If the Principal Contractor and CER considers that the material warrants further investigation, the area is to be barricaded to provide an exclusion zone.

9. If necessary, environmental controls should be established to minimise the potential for migration of contaminants from the impacted area.

10. Principal Contractor to complete UFP form (refer to **Section 4.0**) and issue to all relevant stakeholders.

11. Further visual assessment and sample collection and analysis undertaken by a qualified environmental consultant. If necessary, samples will be sent to a NATA registered laboratory.

12. Evaluation of analytical data with respect to specific health screening levels to be undertaken. Contaminated soil incident report amended with final classification of soils, including whether the soils are suitable for the proposed land use, need to be remediated or disposed of offsite to a suitably licensed facility. If soils are suitable to remain on-site and/or the area is found to be clean, a work instruction will be provided by the CER to this effect. A waste classification letter must be provided prior to any offsite disposal.

13. If the material is subsequently found to contain asbestos, an appropriately licensed contractor will be employed to remove it.

14. Affected areas will be reopened for earthworks following a clearance of the location and issuance of a report by CER.
2.3 Notes

1. Any suspected asbestos containing should be left in place and not disturbed. The CER will organise appropriate environmental professionals for further investigation purposes.

2. It is essential that material of differing compositions not be mixed.

3. All sampling for validation, waste classification or characterisation purposes will be carried out in accordance with the following documents:
   
   - *Contaminated Sites: Sampling Design Guidelines* (NSW EPA, 1995);
   - *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No.1)* (NEPC, 2013);

4. Any unexpected finds encountered should be listed on a UFP register, which should include the action taken and the status of the unexpected find. A suitable register is included in Section 5.0.

5. Once an unexpected find has been identified and a UFP form filled in the Principal Contractor and CER should liaise with the client as to the appropriate means of managing the situation. This should include discussions around the handling, treatment and disposal of material, OH&S considerations and how the affected area will be validated and reopened for works.

6. Prior to closing out an unexpected find it will be important to ensure the appropriate documentation is obtained, such as: photographs, the UFP form, waste classification letter(s) and a validation report or letter.

7. A UFP form should be completed on each day of the remedial works as part of the daily site records. This will ensure that the process is being undertaken even if no unexpected finds are encountered. The form should include the name, company and the position of the person undertaking the field observations.
3.0 UNEXPECTED FINDS PROTOCOL FORM

To be completed by the Site Controller/Environmental Representative

SITE: ____________________________________________________________

PERSONNEL ON-SITE: ____________________________________________

DATE: __________________________________________________________

DAILY SUMMARY:

1. Suspect material encountered during daily activities: YES [ ] NO [ ]
   (if YES, complete 2 to 5)

2. CER contacted: YES [ ] NO [ ]

3. UFP Reference Number
   (label occurrences sequentially 1, 2, 3, etc.). ______________________

DESCRIPTION OF MATERIAL ENCOUNTERED:

4. Asbestos or suspected ACM present: YES [ ] NO [ ]

5. Brief written description of material:
   ______________________________________________________________

6. Material isolated: YES [ ] NO [ ]

7. Location of contaminated material (incl. field sketch/map if required):

8. Photographs taken: YES [ ] NO [ ]

NAME: ___________________________ SIGNATURE: _____________________
## 4.0 UNEXPECTED FINDS REGISTER

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<th>Date Found</th>
<th>Suspect Material</th>
<th>Description</th>
<th>Recorded on UFP Form</th>
<th>Action Taken</th>
<th>Status</th>
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</table>
APPENDIX B – GROUNDWATER WORKS DATABASE SEARCH
GW111343

**Licence: 10BL604349**

**Licence Status:** ACTIVE

**Authorised:** MONITORING BORE

**Purpose(s):** MONITORING BORE

**Work Type:** Bore

**Work Status:** Equipped

**Construct.Method:** Auger - Solid Flight

**Owner Type:** Other Govt

**Commenced Date:** 06/11/2010

**Completion Date:** 06/11/2010

**Contractor Name:**

- **Driller:** Daniel Giles Fox
- **Assistant Driller:** David Mangnall

**Property:** SYDNEY WATER 4 HERB

ELLIOTT AVENUE HOMEBUSH

BAY 2127 NSW

**Standing Water Level:**

- **GWMA:**
- **GW Zone:**

**Site Details**

**Site Chosen By:**

- **County:** CUMBE
- **Parish:** CUMBE.13
- **Cadastre:** 52/747909

**Region:** 10 - Sydney South Coast

**CMA Map:**

**River Basin:** - Unknown

**Area/District:**

**Elevation:** 0.00 m (A.H.D.)

**Elevation Source:** Unknown

**Northing:** 6253040.0

**Easting:** 321540.0

**Latitude:** 33°50'52.3"S

**Longitude:** 151°04'15.9"E

**GS Map:** -

**MGA Zone:** 0

**Coordinate Source:** Unknown

**Construction**

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

<table>
<thead>
<tr>
<th>Hole</th>
<th>Pipe</th>
<th>Component</th>
<th>Type</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Outside Diameter (mm)</th>
<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
</tr>
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<tr>
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<td></td>
<td>Seated on Bottom, Screwed</td>
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<tr>
<td>1</td>
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<td>Slots - Horizontal</td>
<td>5.00</td>
<td>8.00</td>
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<td></td>
<td></td>
<td></td>
<td>Casing - Machine Slotted, PVC Class 12, Screwed, A: 1.00mm</td>
</tr>
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</table>

**Water Bearing Zones**

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|----------|--------|---------------|----------|------------|------------|-------------|----------------|----------------|----------------|-----------------|

Source: Unknown
# Geologists Log

## Drillers Log

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<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>Drillers Description</th>
<th>Geological Material</th>
<th>Comments</th>
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<td>0.40</td>
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<td>Shale</td>
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## Remarks

*** End of GW111343 ***

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NSW Office of Water
Work Summary

GW102553

 Licence: 10BL157703  Licence Status: ACTIVE

Authorised: MONITORING BORE
Purpose(s): MONITORING BORE

 Work Type: Bore
 Work Status:
 Construct.Method:
 Owner Type:

 Commenced Date: Final Depth: 4.00 m
 Completion Date: 01/01/1996 Drilled Depth:

 Contractor Name:
 Driller:
 Assistant Driller:

 Property: N/A
 GWMA: -
 GW Zone: -

 Standing Water Level: 1.830
 Salinity:
 Yield:

 Site Details

 Site Chosen By:

 Form A: County Parish Cadastre
 Licensed: CUMBERLAND . CONCORD Whole Lot //

 Region: 10 - Sydney South Coast
 River Basin: - Unknown
 Area/District: 

 Northing: 6253267.0
 Elev: 0.00 m (A.H.D.)
 Latitude: 33°50'45.3"S
 Source: Unknown

 Easting: 322210.0
 Longitude: 151°04'42.2"E

 GS Map: -
 MGA Zone: 0
 Coordinate Source: Unknown

 Construction

 Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

<table>
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<th>To (m)</th>
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<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
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Water Bearing Zones

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<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
<th>D.D.L. (m)</th>
<th>Yield (L/s)</th>
<th>Hole Depth (m)</th>
<th>Duration (hr)</th>
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</table>

Geologists Log

Drillers Log
**Remarks**

01/01/1996: Form A Remarks:
DATA FROM AG APPLICATION ONLY

*** End of GW102553 ***

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NSW Office of Water
Work Summary

GW102555

Licence: 10BL157703
Licence Status: ACTIVE

Authorised: MONITORING BORE
Purpose(s): MONITORING BORE

Work Type: Bore
Work Status:
Construct.Method:
Owner Type:

Commenced Date: 01/01/1996
Completion Date: 01/01/1996

Final Depth: 4.00 m
Drilled Depth: 4.00 m

Contractor Name: Macquarie Drilling
Driller:
Assistant Driller:

Property: N/A
GWMA: -
GW Zone: -

Standing Water Level: 1.830
Salinity: 
Yield: 

Site Details

Site Chosen By:

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<tr>
<th>County</th>
<th>Parish</th>
<th>Cadastre</th>
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<tbody>
<tr>
<td>CUMBERLAND</td>
<td>CONCORD</td>
<td>Whole Lot //</td>
</tr>
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Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District: 

Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source: 

GS Map: -
MGA Zone: 0
Coordinate Unknown
Source: 

Construction
Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

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<th>Details</th>
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<th>Pipe</th>
<th>Component</th>
<th>Type</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
<th>D.D.L. (m)</th>
<th>Yield (L/s)</th>
<th>Hole Depth (m)</th>
<th>Duration (hr)</th>
<th>Salinity (mg/L)</th>
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Water Bearing Zones

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<tr>
<th>From (m)</th>
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<th>Duration (hr)</th>
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Geologists Log

Drillers Log
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<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>Drillers Description</th>
<th>Geological Material</th>
<th>Comments</th>
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**Remarks**

01/01/1996: Form A Remarks:
DATA FROM AG APPLICATION ONLY

*** End of GW102555 ***

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NSW Office of Water
Work Summary

GW102556

<table>
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<th>Licence Status: ACTIVE</th>
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Authorised: MONITORING BORE
Purpose(s): MONITORING BORE

Work Type: Bore
Work Status:
Construct.Method:
Owner Type:

Commenced Date: Final Depth: 4.00 m
Completion Date: Drilled Depth:

Contractor Name: Macquarie Drilling
Driller:
Assistant Driller:

Property: N/A
GWMA: -
GW Zone: -
Standing Water Level: 1.830
Salinity: Yield:

Site Details

Site Chosen By:

Form A:
County: CUMBERLAND
Parish: CONCORD
Cadastre: Whole Lot //

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:

Elevation: 0.00 m (A.H.D.)
Elevation: Unknown
Source:

Northing: 6252900.0
Easting: 322371.0
Latitude: 33°50'57.3"S
Longitude: 151°04'48.2"E

GS Map: -
MGA Zone: 0
Coordinate Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

<table>
<thead>
<tr>
<th>Hole</th>
<th>Pipe</th>
<th>Component</th>
<th>Type</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Outside Diameter (mm)</th>
<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
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<tbody>
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<th>To (m)</th>
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<th>WBZ Type</th>
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<th>D.D.L. (m)</th>
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<th>Hole Depth (m)</th>
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<th>Salinity (mg/L)</th>
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Water Bearing Zones

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<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
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Geologists Log

Drillers Log
### Remarks

01/01/1996: Form A Remarks:
DATA FROM AG APPLICATION ONLY

*** End of GW102556 ***

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<table>
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<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>Drillers Description</th>
<th>Geological Material</th>
<th>Comments</th>
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</table>

file:///C:/Users/Ashleigh/AppData/Local/Temp/Temp1_gw102556.wsr.htm.zip/gw102556.wsr.htm
NSW Office of Water
Work Summary

GW102557

Licence: 10BL157703

Licence Status: ACTIVE

Authorised: MONITORING BORE
Purpose(s): MONITORING BORE

Work Type: Bore

Work Status:

Construct.Method:

Owner Type:

Commenced Date: 29/03/1995
Completion Date: 01/01/1996

Final Depth: 4.00 m
Drilled Depth:

Contractor Name: Macquarie Drilling

Driller:

Assistant Driller:

Property: N/A
GWMA: -
GW Zone: -

Standing Water Level:

Salinity: -
Yield: -

Site Details

Site Chosen By:

Country:
County: CUMBERLAND
Licensed: -
Licensed:
Parish: CONCORD
Cadastre: Whole Lot //
Region: 10 - Sydney South Coast
CMA Map:
River Basin: - Unknown
Area/District:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source:

Northing: 6252778.0
Easting: 322425.0
Latitude: 33°51'01.3"S
Longitude: 151°04'50.2"E
GS Map: -
MGA Zone: 0
Coordinate Unknown
Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

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<th>Component</th>
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Water Bearing Zones

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</table>

Geologists Log

Drillers Log
**Remarks**

01/01/1996: Form A Remarks:
DATA FROM AG APPLICATION ONLY

*** End of GW102557 ***

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NSW Office of Water
Work Summary

GW102558

License: 10BL157703
License Status: ACTIVE

Authorised MONITORING BORE
Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status:
Construct.Method:
Owner Type:

Commenced Date: 
Completion Date: 01/01/1996

Final Depth: 4.00 m
Drilled Depth:

Contractor Name: Macquarie Drilling
Driller:
Assistant Driller:

Property: N/A
GWMA: -
GW Zone: -

Standing Water Level: 1.830
Salinity: 
Yield:

Site Details

Site Chosen By:

Form A: 
Licensed: CUMBERLAND
County
Licensed: CUMBERLAND
Parish
Licensed: CONCORD
Cadastre
Whole Lot //

Region: 10 - Sydney South Coast
CMA Map:
River Basin: - Unknown
Area/District:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevaton Unknown
Source:
Northing: 6252682.0
Easting: 322272.0
Latitude: 33°51'04.3"S
Longitude: 151°04'44.2"E

GS Map: -
MGA Zone: 0
Coordinate Source:

Construction
Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

<table>
<thead>
<tr>
<th>Hole</th>
<th>Pipe</th>
<th>Component</th>
<th>Type</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Outside Diameter (mm)</th>
<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Hole</td>
<td>Hole</td>
<td>0.00</td>
<td>4.00</td>
<td>0</td>
<td>50</td>
<td>Unknown</td>
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</tr>
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</table>

Water Bearing Zones

<table>
<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
<th>D.D.L. (m)</th>
<th>Yield (L/s)</th>
<th>Hole Depth (m)</th>
<th>Duration (hr)</th>
<th>Salinity (mg/L)</th>
</tr>
</thead>
</table>

Geologists Log

Drillers Log


### Remarks

01/01/1996: Form A Remarks:
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---

*** End of GW102558 ***

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NSW Office of Water
Work Summary

GW102550

Licence: 10BL157703
Licence Status: ACTIVE

Authorised: MONITORING BORE
Purpose(s): MONITORING BORE

Work Type: Bore
Work Status:
Construct.Method:
Owner Type:

Commenced Date: 01/01/1996
Completion Date: 01/01/1996

Contractor Name: Macquarie Drilling
Driller:
Assistant Driller:

Property: N/A
GWMA: -
GW Zone: -

Standing Water Level: 1.800
Salinity: Yield:

Site Details

Site Chosen By:

Form A:
County: CUMBERLAND
Licensed: CONCORD
Cadastre: Whole Lot //
Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District: CMA Map:
Grid Zone: Scale:

Elevation: 0.00 m (A.H.D.)
Northing: 6253109.0
Easting: 322033.0
Latitude: 33°50'50.3"S
Longitude: 151°04'35.2"E
GS Map: -
MGA Zone: 0
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

<table>
<thead>
<tr>
<th>Hole</th>
<th>Pipe</th>
<th>Component</th>
<th>Type</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Outside Diameter (mm)</th>
<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Hole</td>
<td>Hole</td>
<td>0.00</td>
<td>4.00</td>
<td>0</td>
<td></td>
<td>Unknown</td>
<td></td>
</tr>
</tbody>
</table>

Water Bearing Zones

<table>
<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
<th>D.D.L. (m)</th>
<th>Yield (L/s)</th>
<th>Hole Depth (m)</th>
<th>Duration (hr)</th>
<th>Salinity (mg/L)</th>
</tr>
</thead>
</table>

Geologists Log

Drillers Log
### Remarks

01/01/1996: Form A Remarks:
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---

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---

### From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments
---|---|---|---|---|---

---

*** End of GW102550 ***
NSW Office of Water
Work Summary

GW102561

<table>
<thead>
<tr>
<th>Licence: 10BL157703</th>
<th>Licence Status: ACTIVE</th>
</tr>
</thead>
</table>

Authorised: MONITORING BORE
Purpose(s): MONITORING BORE

Work Type: Bore
Work Status:
Construct.Method:
Owner Type:

Commenced Date: 01/01/1996
Completion Date: 01/01/1996

Contractor Name: Macquarie Drilling
Driller:
Assistant Driller:

Property: N/A
GWMA: -
GW Zone: -

Standing Water Level: 1.830
Salinity: 
Yield: 

Site Details

Site Chosen By:

<table>
<thead>
<tr>
<th>County</th>
<th>Parish</th>
<th>Cadastre</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUMBERLAND</td>
<td>CONCORD</td>
<td>Whole Lot //</td>
</tr>
</tbody>
</table>

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District: 

Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source: 

GS Map: -
MGA Zone: 0
Coordinate Unknown
Source: 

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

<table>
<thead>
<tr>
<th>Hole</th>
<th>Pipe</th>
<th>Component</th>
<th>Type</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Outside Diameter (mm)</th>
<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hole</td>
<td>Hole</td>
<td>Hole</td>
<td>0.00</td>
<td>4.00</td>
<td>0</td>
<td></td>
<td>Unknown</td>
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</tr>
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</table>

Water Bearing Zones

<table>
<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
<th>D.D.L. (m)</th>
<th>Yield (L/s)</th>
<th>Hole Depth (m)</th>
<th>Duration (hr)</th>
<th>Salinity (mg/L)</th>
</tr>
</thead>
</table>

Geologists Log

Drillers Log
<table>
<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>Drillers Description</th>
<th>Geological Material</th>
<th>Comments</th>
</tr>
</thead>
</table>

## Remarks

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*** End of GW102561 ***

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**NSW Office of Water**

**Work Summary**

GW102562

<table>
<thead>
<tr>
<th>Licence:</th>
<th>10BL157703</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licence Status:</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>Authorised:</td>
<td>MONITORING BORE</td>
</tr>
<tr>
<td>Purpose(s):</td>
<td>MONITORING BORE</td>
</tr>
</tbody>
</table>

**Work Type:** Bore

**Work Status:**

**Construct.Method:**

**Owner Type:**

<table>
<thead>
<tr>
<th>Commenced Date:</th>
<th>01/01/1996</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Depth:</td>
<td>4.00 m</td>
</tr>
<tr>
<td>Drilled Depth:</td>
<td></td>
</tr>
</tbody>
</table>

**Contractor Name:** Macquarie Drilling

**Driller:**

**Assistant Driller:**

| Property: | N/A |
| GWMA: | - |
| GW Zone: | - |

| Standing Water Level: | 1.830 |
| Salinity: | |
| Yield: | |

**Site Details**

**Site Chosen By:**

<table>
<thead>
<tr>
<th>Form A:</th>
<th>County: CUMBERLAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensed:</td>
<td>Parish: CONCORD</td>
</tr>
<tr>
<td>Cadastre:</td>
<td>Whole Lot //</td>
</tr>
</tbody>
</table>

**Region:** 10 - Sydney South Coast

**River Basin:** - Unknown

**Area/District:**

| Elevation: | 0.00 m (A.H.D.) |
| Source: | Unknown |

| Northing: | 6252830.0 |
| Latitude: | 33°50'59.3"S |
| Longitude: | 151°04'31.2"E |

| GS Map: | - |
| MGA Zone: | 0 |

| Coordinate | Unknown |
| Source: | |

**Construction**

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

<table>
<thead>
<tr>
<th>Hole</th>
<th>Component</th>
<th>Type</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Outside Diameter (mm)</th>
<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hole</td>
<td>Hole</td>
<td>0.00</td>
<td>4.00</td>
<td>0</td>
<td></td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Casing</td>
<td>P.V.C.</td>
<td>0.00</td>
<td>0.00</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Water Bearing Zones**

<table>
<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>S.W.L. (m)</td>
</tr>
</tbody>
</table>

**Geologists Log**

**Drillers Log**
<table>
<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>Drillers Description</th>
<th>Geological Material</th>
<th>Comments</th>
</tr>
</thead>
</table>

**Remarks**

01/01/1996: Form A Remarks:
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*** End of GW102562 ***

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NSW Office of Water
Work Summary

GW102562

<table>
<thead>
<tr>
<th>Licence: 10BL157703</th>
<th>Licence Status: ACTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorised: MONITORING BORE</td>
<td></td>
</tr>
<tr>
<td>Purpose(s):</td>
<td></td>
</tr>
<tr>
<td>Intended Purpose(s): MONITORING BORE</td>
<td></td>
</tr>
</tbody>
</table>

Work Type: Bore
Work Status:
Construct.Method:
Owner Type:

Commenced Date: Final Depth: 4.00 m
Completion Date: 01/01/1996 Drilled Depth:

Contractor Name: Macquarie Drilling
Driller:
Assistant Driller:

Property: N/A
GWMA: -
GW Zone: -
Standing Water Level: 1.830
Salinity: Yield:

Site Details

Site Chosen By:

<table>
<thead>
<tr>
<th>County</th>
<th>Parish</th>
<th>Cadastre</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUMBERLAND</td>
<td>CONCORD</td>
<td>Whole Lot //</td>
</tr>
</tbody>
</table>

Form A:
Licensed: CUMBERLAND

Region: 10 - Sydney South Coast
CMA Map:
Grid Zone: Unknown
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source:
Northing: 6252830.0
Easting: 321935.0
Latitude: 33°50'59.3"S
Longitude: 151°04'31.2"E
GS Map: -
MGA Zone: 0
Coordinate Unknown
Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

<table>
<thead>
<tr>
<th>Hole</th>
<th>Pipe</th>
<th>Component</th>
<th>Type</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Outside Diameter (mm)</th>
<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Hole</td>
<td>Hole</td>
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<td>0</td>
<td>Unknown</td>
<td></td>
</tr>
</tbody>
</table>

Water Bearing Zones

<table>
<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
<th>D.D.L. (m)</th>
<th>Yield (L/s)</th>
<th>Hole Depth (m)</th>
<th>Duration (hr)</th>
<th>Salinity (mg/L)</th>
</tr>
</thead>
</table>

Geologists Log

Drillers Log
### Remarks

01/01/1996: Form A Remarks:
DATA FROM AG APPLICATION ONLY

---

*** End of GW102562 ***

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**NSW Office of Water**

**Work Summary**

**GW102645**

<table>
<thead>
<tr>
<th>Licence:</th>
<th>Licence Status:</th>
<th>Authorised:</th>
<th>Purpose(s):</th>
<th>Intended Purpose(s):</th>
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<tbody>
<tr>
<td>10BL150044</td>
<td>ACTIVE</td>
<td>MONITORING BORE</td>
<td>MONITORING BORE</td>
<td></td>
</tr>
</tbody>
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**Work Type**: Bore

**Work Status**: 

**Construct.Method**: 

**Owner Type**: 

**Commenced Date**: 21/05/1992

**Final Depth**: 10.00 m

**Completion Date**: 21/05/1992

**Drilled Depth**: 10.00 m

**Contractor Name**: DJ DOUGLAS

**Driller**: 

**Assistant Driller**: 

**Property**: N/A NSW

**GWMA**: -

**GW Zone**: -

**Standing Water Level**: 

**Salinity**: 

**Site Details**

**Site Chosen By**: 

<table>
<thead>
<tr>
<th>County</th>
<th>Parish</th>
<th>Cadastre</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUMBERLAND</td>
<td>LIBERTY PLAINS</td>
<td>Whole Lot 121/11427</td>
</tr>
</tbody>
</table>

**Region**: 10 - Sydney South Coast

**CMA Map**: 

**Grid Zone**: 

**Scale**: 

**Elevation**: 0.00 m (A.H.D.)

**Northing**: 6251735.0

**Easting**: 321082.0

**Latitude**: 33°51'34.3"S

**Longitude**: 151°03'57.2"E

**Source**: GIS - Geographic Information System

**Construction**

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

<table>
<thead>
<tr>
<th>Hole</th>
<th>Pipe Component</th>
<th>Type</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Outside Diameter (mm)</th>
<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Annulus</td>
<td>Waterworn/Rounded</td>
<td>6.50</td>
<td>10.00</td>
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<td></td>
<td></td>
<td>Graded</td>
</tr>
<tr>
<td>1</td>
<td>Casing</td>
<td>PVC Class 18</td>
<td>0.00</td>
<td>9.50</td>
<td>65</td>
<td></td>
<td></td>
<td>Seated on Bottom, Screwed</td>
</tr>
<tr>
<td>1</td>
<td>Opening</td>
<td>Slots - Vertical</td>
<td>6.50</td>
<td>9.50</td>
<td>65</td>
<td>1</td>
<td>Sawn, PVC Class 18, SL: 3.0mm, A: 1.00mm</td>
<td></td>
</tr>
</tbody>
</table>

**Water Bearing Zones**

<table>
<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
<th>D.D.L. (m)</th>
<th>Yield (L/s)</th>
<th>Hole Depth (m)</th>
<th>Duration (hr)</th>
<th>Salinity (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>0.00 Unknown</td>
<td></td>
<td>7.30</td>
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<td></td>
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</tr>
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</table>
### Geologists Log

#### Drillers Log

<table>
<thead>
<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>Drillers Description</th>
<th>Geological Material</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>5.00</td>
<td>5.00</td>
<td>SHALE WEATHERED</td>
<td>Shale</td>
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<tr>
<td>5.00</td>
<td>10.00</td>
<td>5.00</td>
<td>SHALE</td>
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<td></td>
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</tbody>
</table>

### Remarks

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*** End of GW102645 ***

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NSW Office of Water
Work Summary

GW111341

Licence: 10BL604349
Licence Status: ACTIVE

Authorised: MONITORING BORE
Purpose(s): MONITORING BORE

Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid Flight
Owner Type: Other Govt

Commenced Date: 
Completion Date: 06/11/2010
Final Depth: 8.00 m
Drilled Depth: 8.00 m

Contractor Name:
Driller: Daniel Giles Fox
Assistant Driller:

Property: SYDNEY WATER 4 HERB
Standing Water Level:
ELLIOTT AVENUE HOMEBUS
BAY 2127 NSW

GWMA:
Salinity:
GW Zone:
Yield:

Site Details

Site Chosen By:

Region: 10 - Sydney South Coast
CMA Map:
River Basin: - Unknown
Grid Zone:
Area/District:
Elevation: 0.00 m (A.H.D.)
Elevation Source:
Northing: 6253031.0
Easting: 321544.0
Latitude: 33°50'52.6"S
Longitude: 151°04'16.1"E

GS Map: -
MGA Zone: 0
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

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<th>Inside Diameter (mm)</th>
<th>Interval</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hole</td>
<td>Hole</td>
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<td>0.00</td>
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Water Bearing Zones

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<tr>
<th>From (m)</th>
<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
<th>D.D.L. (m)</th>
<th>Yield (L/s)</th>
<th>Hole Depth (m)</th>
<th>Duration (hr)</th>
<th>Salinity (mg/L)</th>
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### Geologists Log

#### Drillers Log

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### Remarks

*** End of GW111341 ***

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.
NSW Office of Water  
Work Summary

GW111342

 Licence: 10BL604349  
 Licence Status: ACTIVE

 Authorised: MONITORING BORE
 Purpose(s): MONITORING BORE

 Work Type: Bore
 Work Status: Equipped
 Construct.Method: Auger - Solid Flight
 Owner Type: Other Govt

 Commenced Date:  
 Completion Date: 06/11/2010
 Final Depth: 8.00 m  
 Drilled Depth: 8.00 m

 Contractor Name:
 Driller: Daniel Giles Fox
 Assistant Driller: David Mangnall

 Property: SYDNEY WATER 4 HERB
 ELLIOTT AVENUE HOMEBUSH
 BAY 2127 NSW

 Standing Water Level:
 GWMA:  
 Salinity:
 GW Zone:
 Yield:

 Site Details

 Site Chosen By:

 County
 Form A: CUMBE
 Parish: CUMBE.13
 Cadastre: 52/747909

 Region: 10 - Sydney South Coast
 CMA Map:
 River Basin: - Unknown
 Grid Zone:
 Area/District:
 Elevation: 0.00 m (A.H.D.)
 Source: Unknown
 Northing: 6253037.0
 Easting: 321547.0
 Latitude: 33°50'52.4"S
 Longitude: 151°04'16.2"E

 GS Map: -  
 MGA Zone: 0
 Coordinate Source: Unknown

 Construction
 Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

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<th>To (m)</th>
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 Water Bearing Zones

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<tr>
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<th>To (m)</th>
<th>Thickness (m)</th>
<th>WBZ Type</th>
<th>S.W.L. (m)</th>
<th>D.D.L. (m)</th>
<th>Yield (L/s)</th>
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Geologists Log
Drillers Log

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Remarks

*** End of GW111342 ***

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.
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* Depth relates to Depth Below Surface Level
  -- Not Tested
  nd = Not Detected Above Laboratory LOR
  RED = Exceeds HIL Criteria
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**Sample ID**
- BH: Bidwell Harbor
- BH0.05A: 0.05m Above FH
- BH0.2A: 0.2m Above FH
- BH0.3A: 0.3m Above FH
- BH0.5A: 0.5m Above FH
- BH0.1A: 1.0m Above FH
- BH0.5A: 1.5m Above FH
- BH0.1A: 2.0m Above FH

**Date**
- 25/01/2016

**Chemical Report**
- SE148426

**PAHs**
- Total

**Fertilizers**
- Endosulfan
- Endrin
- HCB

**Heavy Metals**
- As
- Cd
- Cr VI
- Cu
- Pb
- Hg
- Ni
- Zn

**95% UCL**
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7

**INTRA-LABORATORY DUPLICATES**
- BH5-5.5A
- BH8
- BH7
- BH6
- BH5
- BH3
- BH2
- BH1

**Total**
- 12.1
- 12.1
- 12.1
- 12.1
- 12.1
- 12.1
- 12.1
- 12.1

**Statistical Analysis**
- Avg
- Min
- Max

**N**
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7

**N%**
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7

**Statistical Analysis**
- Avg
- Min
- Max

**N**
- 7.7
- 7.7
- 7.7

**N%**
- 7.7
- 7.7
- 7.7

**95% UCL**
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7
- 7.7

*Depth relates to Depth Below Surface Level -- Not Tested*
<table>
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<th>Sample Type</th>
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**Physical Properties**

- BTEX - Sandy soils
- TRH  - Sandy soils
- Pesticides
- Heavy Metals

**Sample ID**

- BH1
- BH8
- BH1- A
- BH8- A
- BH1
- BH8
- BH1
- BH8
- BH1
- BH8
- BH1
- BH8

**Date**

- 1/02/2016
- 1/02/2016
- 1/02/2016
- 1/02/2016
- 1/02/2016
- 1/02/2016
- 1/02/2016
- 1/02/2016
- 1/02/2016
- 1/02/2016
- 1/02/2016
- 1/02/2016

**Chemical Report**

- DDT+DDD+DDE
- Aldrin+Dieldrin
- Chlordane
- Endosulfan
- Endrin
- Heptachlor
- HCB
- Methoxychlor

**Depth (m)**

- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0

**Total Concentration**

- 400
- 600
- 950
- 10
- 20
- 90
- 30
- 100
- 900
- 200
- 900
- 200

**1%ILE**

- 200
- 600
- 950
- 10
- 20
- 90
- 30
- 100
- 900
- 200
- 900
- 200

**95% UCL**

- 900
- 1200
- 1500
- 20
- 40
- 100
- 30
- 200
- 900
- 200
- 900
- 200

**Notes**

- *Depth relates to Depth Below Surface Level*
- **RED** = Exceeds HIL Criteria
- **NL** = Not Limiting
- *Not Tested*
- nd = Not Detected Above Laboratory LOR
<table>
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<th>PAH</th>
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**PREVIOUS SOIL ANALYTICAL RESULTS SUMMARY TABLE**

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* NSW EPA Service Station Guidelines 1994 - Superceded by NEPM 2013 Amendment - TPH Fractions only reported

**Depth relates to Depth Below Surface Level**

1 = Exceeds HIL Criteria
20 = 50
60,000

**Located outside of Site boundary**