



**Department of
Primary Industries**
Office of Water

Googong Township Pty Limited
PO Box 1000
CIVIC SQUARE ACT 2608

5 August 2013

Our Ref: 40BL192616
Your Ref : Monitoring Bore License

Dear Sir /Madam,

Attn : Matthew Lau

Re : Monitoring Network – Googong Township

Please find enclosed your monitoring bore license for the Googong Township .

Your attention is drawn to the nature and description of the works, terms, limitations and conditions under which the license is issued.

Your clients are entitled to make a written submission to the Department with respect to the license conditions . The Department is required to have regard to any submission that is duly made.

Please advise of construction specifications (Form A) and site plan co-ordinate details (GDA1994) of the six bores to Leeton Office when completed .

If you have any queries please contact this office.

Yours faithfully

For: 

**Manager Water Regulation Group
Murray Basin South**

NSW Office of Water

Murrumbidgee Region
Po Box 156
27-33 Chelmsford Place
Leeton NSW 2705
Phone: (02)69530700

BORE LICENSE CERTIFICATE
UNDER SECTION 115 OF THE WATER ACT, 1912

40BL192616



Googong Township Pty Limited
P O Box 1000
Civic Square ACT 2608

LICENSE NUMBER
40BL192616
DATE LICENSE VALID FROM
05-Aug-2013
DATE LICENSE VALID TO
PERPETUITY
FEE
\$0.00
ABN 47661556763 GST NIL

LOCATION OF WORKS		
Portion(s) or Lot/Section/DP	PARISH	COUNTY
1//1179941	Googong	Murray
2//1179941	Googong	Murray
3//1179941	Googong	Murray
4//1179941	Googong	Murray
5//1179941	Googong	Murray

TYPE OF WORKS	PURPOSE(S) FOR WHICH WATER MAY BE USED
Bore	Monitoring Bore

CONDITIONS APPLYING TO THIS LICENSE ARE

As shown on the attached Condition Statement

ORIGINAL

NSW Office of Water

CONDITIONS STATEMENT REFERRED TO ON 40BL192616 ISSUED UNDER PART V OF THE WATER ACT, 1912 ON 05-Aug-2013

(1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN THREE YEARS OF THE DATE OF THE ISSUE OF THE LICENCE.

(2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO NSW OFFICE OF WATER:-

(A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).

(B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.

(C) A ONE LITRE WATER SAMPLE FOR ALL LICENCES OTHER THAN THOSE FOR STOCK, DOMESTIC, TEST BORES AND FARMING PURPOSES.

(D) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.

(3) THE LICENSEE SHALL ALLOW NSW OFFICE OF WATER OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.

(4) IF DURING THE CONSTRUCTION OF THE WORK, SALINE OR POLLUTED WATER IS ENCOUNTERED ABOVE THE PRODUCING AQUIFER, SUCH WATER SHALL BE SEALED OFF BY:-

(A) INSERTING THE APPROPRIATE LENGTH(S) OF CASING TO A DEPTH SUFFICIENT TO EXCLUDE THE SALINE OR POLLUTED WATER FROM THE WORK.

(B) CEMENTING BETWEEN THE CASING(S) AND THE WALLS OF THE BORE HOLE FROM THE BOTTOM OF THE CASING TO GROUND LEVEL.

ANY DEPARTURE FROM THESE PROCEDURES MUST BE APPROVED BY THE DEPARTMENT BEFORE UNDERTAKING THE WORK.

(5) (A) THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY NSW OFFICE OF WATER.

(B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.

(6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-

(A) BACKFILLING THE WORK TO GROUND LEVEL WITH CLAY OR CEMENT AFTER WITHDRAWING THE CASING (LINING); OR

(B) SUCH METHODS AS AGREED TO OR DIRECTED BY NSW OFFICE OF WATER.

- (7) THE LICENSEE SHALL NOT ALLOW ANY TAILWATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-
- ANY ADJOINING PUBLIC OR CROWN ROAD;
 - ANY OTHER PERSONS LAND;
 - ANY CROWN LAND;
 - ANY RIVER, CREEK OR WATERCOURSE;
 - ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
 - ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.
- (8) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.
- (9) IF THE BORE AUTHORISED BY THIS LICENSE IS LINED WITH STEEL OR PLASTIC CASING THE INSIDE DIAMETER OF THAT CASING SHALL NOT EXCEED 220 MM.
- (10) WATER SHALL NOT BE PUMPED FROM THE BORE AUTHORISED BY THIS LICENSE FOR ANY PURPOSE OTHER THAN GROUNDWATER INVESTIGATION.
- (11) SUBJECT TO CONDITION (12) THE LICENSEE SHALL WITHIN TWO MONTHS OF THE DATE OF COMPLETION OF THE BORE AUTHORISED BY THE LICENSE,
- (1) BACKFILL IT WITH CLAY OR CEMENT TO GROUND LEVEL, AFTER WITHDRAWING ANY CASING(LINING), OR:-
 - (2) RENDER IT INEFFECTIVE BY ANY OTHER MEANS ACCEPTABLE TO THE DEPARTMENT.
- (12) CONDITION (11) SHALL HAVE NO FORCE OR EFFECT IF:-
- (1) AT THE RELEVANT TIME THERE IS WITH NSW OFFICE OF WATER, AN APPLICATION IN RESPECT OF WHICH THE DEPARTMENT HAS NOT MADE A DECISION TO CONVERT THE GROUNDWATER INVESTIGATION BORE INTO A PRODUCTION BORE; OR
 - (2) THE LICENSEE HAS COMPLETED THE BORE FOR THE PURPOSE OF MEASURING WATER LEVELS OR WATER QUALITY BY THE ADDITION OF CASING WITH A DIAMETER NOT EXCEEDING 220MM.
- (13) THE LICENSEE SHALL, UPON REQUEST FROM THE DEPARTMENT, PROVIDE RECORDS OF GROUNDWATER LEVELS AND GROUNDWATER QUALITY OBTAINED FROM THE MONITORING BORES.
- (14) THE MONITORING BORES ARE TO BE CONSTRUCTED AS PER THE WATER MANAGEMENT PLAN FOR THE GOOGONG TOWNSHIP WATER CYCLE PROJECT .

End Of Conditions

SCHEDULE C

**DETAILS OF LANDS TO BE SUPPLIED WITH WATER
REFERRED TO ON
40BL192616**

Property Name	County	Parish	Portion No or Lot/Section/DP	Area Irrigated
GOOGONG TOWNSHIP	Murray	Googong	1//1179941	
			2//1179941	
			3//1179941	
			4//1179941	
			5//1179941	
Total:				<u>0.00</u>

Procedures – Form A

1. The landholder must obtain a bore licence from the department before a bore can be constructed.
2. The Department will forward the following to the landholder.
 - Approval letter (with the regional contact officer and regional address for return of the completed Form A)
 - The bore licence (with condition statement)
 - Form A (with bore licence number recorded)
 - A4 size CLID Map (or copy of a topographic map) for recording the location of the constructed bore (with bore licence number recorded)
3. The landholder makes arrangements with the driller to sink and construct the bore. (*A work plan and contractual agreement by both parties, prior to commencement of construction work is highly recommended. The agreement should include arrangements for obtaining the completed Form A*)
4. The driller must sign the bore licence before constructing the bore. (The bore licence number must be recorded on the Form A, and any subsequent enquiry or correspondence in relation to this bore with the Department should quote the bore licence number).
5. The driller is required to complete the Form A (during/after bore construction). The completed form needs to be co-signed by both the driller and landholder.
6. The landholder forwards the completed co-signed Form A to the Department's Leeton office as nominated in the approval letter (See 2 above).

Notes:

(i) The landholder is advised to make a copy of the completed/signed Form A before despatch to the Department.

(ii) The landholder must forward the completed Form A to the department, or else future actions relating to the licensed work such as renewal or the conversion from a Water Act licence to Water Management Act approvals may not proceed.

(iii) Driller will not be forced to keep copies of Form A's for inclusion with applications for driller licence renewals. For future driller licence renewals, drillers will be asked to specify the bores they have constructed (by providing the bore licence number), and the department will review the recorded details against the bore from the corporate database.

(iv) If drillers require a copy of the completed Form A for their personal records, then they should make the appropriate arrangements to obtain a copy.

7. Department staff will transfer the data contained in the Form A into the Department's Groundwater Data System.
8. The original Form A should be placed in the bore licence file and retained by the Leeton office.



Driller's Licence No:	<input type="text" value="1"/>
Class of Licence:	<input type="text"/>
Driller's Name:	<input type="text"/>
Assistant Driller:	<input type="text"/>
Contractor:	<input type="text"/>
New bore	<input type="checkbox"/>
Deepened	<input type="checkbox"/>
Reconditioned	<input type="checkbox"/>
Final Depth	<input type="text" value="m"/>

Work Licence No:	<input type="text" value="40BL192616"/>
Name of Licensee:	<input type="text"/>
Intended Use:	<input type="text"/>
Completion Date:	<input type="text"/>

DRILLING DETAILS			
From (m)	To (m)	Hole Diameter (mm)	Drilling Method <small>See Code 3</small>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

WATER BEARING ZONES											
From (m)	To (m)	Thickness (m)	S W L (m)	Estimated Yield (L/s)		Test method <small>See Code 4</small>	D D L at end of test (m)	Duration		Salinity (Conductivity or TDS)	
				Individual Aquifer	Cumulative			Hrs	min	Cond (µS/cm)	TDS (mg/L)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

CASING / LINER DETAILS												
Material	OD	Wall Thickness	From	To	Method Fixing	Casing support method <small>See Code 5</small>						
<small>Code 5</small>	(mm)	(mm)	(m)	(m)	<small>Code 5</small>	Type of casing bottom <small>See Code 5</small>						
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Centralisers installed (Yes/No)		(Indicate on sketch)				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Sump installed (Yes/No)		From	<input type="text"/>	m To	<input type="text"/>	m
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Pressure cemented (Yes/No)		From	<input type="text"/>	m To	<input type="text"/>	m
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Casing Protector cemented in place						

WATER ENTRY DESIGN										
General							Screen	Slot Details		
Material	OD	Wall Thickness	From	To	Opening type	Fixing	Aperture	Length	Width	Alignment
<small>Code 5</small>	(mm)	(mm)	(m)	(m)	<small>See Code 6</small>	<small>See Code 5</small>	(mm)	(mm)	(mm)	<small>See Code 6</small>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

GRAVEL PACK								
Type	Grade	Grain size (mm)		Depth (m)		Quantity		Method of placement of Gravel Pack <small>See Code 7</small>
		From	To	From	To	Litres	m ³	
Rounded	Graded	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Crushed	Ungraded	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Bentonite/Grout seal (Yes/No)		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

For Departmental use only: **GW**



Work Licence No: 408L-192616

BORE DEVELOPMENT 8

Chemical used for breaking down drilling mud (Yes/No) Name: _____

Method Bailing/Surging Jetting Airlifting Backwashing Pumping Other: _____

Duration _____ hrs _____ hrs _____ hrs _____ hrs _____ hrs _____ hrs

DISINFECTION ON COMPLETION 9

Chemical(s) used	Quantity applied (Litres)	Method of application

PUMPING TESTS ON COMPLETION 10

Test type	Date	Pump intake depth (m)	Initial Water Level (SWL) (m)	Pumping rate (L/s)	Water Level at end of pumping (DDL) (m)	Duration of Test (hrs)	Recovery	
							Water level (m)	Time taken (hrs) (mins)
Multi stage (stepped drawdown)	Stage 1							
	Stage 2							
	Stage 3							
	Stage 4							
Single stage (constant rate)								

Height of measuring point above ground level _____ m Test Method _____ See Code 4

WORK PARTLY BACKFILLED OR ABANDONED 11

Original depth of work: _____ m Is work partly backfilled: (Yes/No)

Is work abandoned: (Yes/No) Method of abandonment: Backfilled Plugged Capped

Has any casing been left in the work (Yes/No) From _____ m To _____ m

Sealing / fill type	From depth (m)	To depth (m)	Sealing / fill type	From depth (m)	To depth (m)
See Code 11			See Code 11		

Site chosen by: Hydrogeologist Geologist Driller Diviner Client Other _____ 12

Work Location 13

Lot No _____ DP No _____

Work Location Co ordinates Easting _____ Northing _____ Zone _____

GPS: (Yes/No) >> AMG/AGD or MGA/GDA (See explanation)

Please mark the work site with "X" on the CLID provided map.
Indicate also the distances in metres from two (2) adjacent boundaries, and attach the map to this Form A package

Signatures:

Driller: _____ Licensee: _____

Date: _____ Date: _____



Work Licence No: 40BL 192616

DRILLER'S ROCK/STRATA DESCRIPTION (LITHOLOGY)			WORK CONSTRUCTION SKETCH
Depth		Description <div style="border: 1px solid black; padding: 2px;">See Code 15</div>	
From (m)	To (m)		
0			

15

WORK NOT CONSTRUCTED BY DRILLING RIG

16

Method of excavation: Hand dug Back hoe Dragline Dozer Other

Depth (m)	Length (m)	Width (m)	Diameter (m)	Lining material	Dimensions of liner (m)	From Depth (m)	To Depth (m)

Please attach copies of the following if available

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Geologist log	(Yes/No) <input type="checkbox"/>	Laboratory analysis of water Sample	(Yes/No) <input type="checkbox"/>	Pumping test(s)	(Yes/No) <input type="checkbox"/>
Geophysical log	(Yes/No) <input type="checkbox"/>	Sieve analysis of aquifer material	(Yes/No) <input type="checkbox"/>	Installed Pump details	(Yes/No) <input type="checkbox"/>

CODE TABLES

DRILLING METHOD

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1	Auger - Hollow Flight	9	Rotary - Percussion - (Down Hole Hammer)
2	Auger - Solid Flight	10	Rotary - Percussion - Foam injection
3	Cable Tool - Drill and Drive Casing	11	Rotary - Reverse circulation - Air
4	Cable Tool - Mud stabilised	12	Rotary - Reverse circulation - Mud
5	Rotary Air	13	Rotary - Coring
6	Rotary - Air/foam	14	Jetted - Air
7	Rotary - Mud	15	Jetted - Water
8	Rotary - Water	16	Other - See page 2, NO 11

WATER BEARING ZONE

4

TEST METHOD		FLOW MEASURING DEVICE					
1	Airlift	6	Pump - Helical Rot	A	Container of known volum	F	Weir - Rectangular
2	Bailer	7	Pump - Jet	B	Flow meter	G	Weir - V Notch - 60°
3	Pump - Centrifugal	8	Pump - Turbine	C	Flume	H	Weir - V Notch - 90°
4	Pump - Cylinder	9	Freeflow	D	Orifice, plate & manomete	I	Other
5	Pump - Electric submersil			E	Ultra sonic meter		

CASING / LINER DETAILS

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MATERIAL				METHOD OF FIXING					
1	A.B.S.	6	PVC - Class 12	11	Steel - Stainless	1	Glued	6	Welded - Butt
2	Aluminium	7	PVC - Class 15	12	Steel - Stainless 304	2	Kwik-lock	7	Welded - Colla
3	Concrete cylinder	8	PVC - Class 18	13	Steel - Stainless 316	3	Packer	8	Other
4	Fibre glass (FRP)	9	Steel - ERW	14	Other	4	Riveted		
5	PVC - Class 9	10	Steel - Galvanised			5	Screwed		

CASING SUPPORT METHOD

TYPE OF CASING BOTTOM

1	Driven into small hole	5	Held in clamp	1	Open end	5	Casing shoe
2	Seated on bottom	6	Other	2	End cap	6	Wash down shoe
3	Seated on backfill			3	Plug - concrete	7	Cementing shoe
4	Cemented			4	Plug - wood	8	Other

WATER ENTRY DESIGN

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OPENING TYPE			SLOT ALIGNMENT		
1	Casing - Bridge slot	7	Casing - Plasma-cut slot	D	Diagonal
2	Casing - Drilled holes	8	Casing - Perforated in hole	H	Horizontal
3	Casing - Hand sawn slot	9	Screen - gauze / mesh	V	Vertical
4	Casing - Louvre slot	10	Screen - round wire	<i>For MATERIAL and FIXING Codes Please refer to CASING DETAILS code table</i>	
5	Casing - Machine slotted	11	Screen - wedge wire		
6	Casing - Oxy cut slot				

GRAVEL PACK - METHOD OF PLACEMENT

7

1	Poured or shovelled into annul	2	Placed through tremie pipe	3	Reverse circulated
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WORK PARTLY BACKFILLED OR ABANDONED - SEALING MATERIAL

11

1	Cement grout	3	Bentonite	5	Clay	7	Gravel
2	Concrete	4	Drilled cuttings	6	Sand	8	Coarse stone

DRILLER'S ROCK STRATA DESCRIPTION

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Reporting sequence	1	2	3	4	To save confusion, write the full name of colour and abbreviate following: light = lt, dark = dk, fine grained = fg, medium grained = mg, coarse grained = cg. Texture can relate weathered, fractured, broken, hard, soft etc.
	Rock type	Colour	Grain size	Texture	
Example	Sandstone	Dk Grey	mg	Fractured	