Est 1976 ABN: 32 180 735 738

A.LEVIS & SONS

SPECIALIST PERTH HILLS AND COASTAL SAND PLAIN WATER WELL DRILLERS

LICENSED CLASS 1 DRILLERS – NATIONAL/ADIA LICENSE NUMBER 43
SENIOR DRILLER – VIC LEVIS
131GLEN ISLA ROAD
CARMEL 6076
WESTERN AUSTRALIA
Ph: 08 9293 5392
Email: vlevis@iinet.net.au
Web: alevisandsons.com.au

PARTICULARS OF A COMPLETED BORE HOLE

SECTION 1

LAND OWNER'S DETAILS			
NAME:	Castleton Holdings Pty Ltd		
ADDRESS:	206 Reen Road - Postal: PO Box 255, Mundaring		
SUBURB:	Gidgegannup		
MOB:	0419 958 770	POSTCODE:	

SECTION 2

PHYSICAL LOCATION MAP
N ^   N.T.S NOT TO SCALE

SECTION 3

SATELLITE CO-ORDINATES						
CO-ORDINATES via GARMIN GPS MODEL 72 FIELD UNIT						
LAT:		DEGREES:		GREENWICH +8 HOURS		
LONG:		DEGREES:		SAT'S:		
H.A.S (m)		AC		DATE:		

SECTION 4

DRILLING METHODS USED (BLACK OUT WHERE APPLICABLE)			
CONTINUOUS FLIGHT AUGERS		SURFACE CASING	
CABLE TOOL (BAILER PUMP)		SAMPLING AND SETTING CASING	
RAB		OPTIONAL	
HIGH PRESSURE AIR + DHH		ALWAYS	
ROTARY MUD		OPTIONAL	

SECTION 5

ADDITIVES USED DURING CONSTRUCTION

- CHLORINATED WATER – USED WHILE DRILLING AND WASH DOWN
- SUPA FOAM- INJECTION VIA VARIABLE SPEED PUMP 1 – 55 LPM
- LIQUID POLYMER – WHERE REQUIRED
- AMC LUBRICATING OIL 150 GRADE
- PORTLAND GREY CEMENT (SG 1.63 CONSTANLTY)
- HARD SET CEMENT

SECTION 6

PARTICULARS OF THE BORE/ NUMBER	
BORE NAME: Reen (1)	
START DATE: 20/06/2019	FINISH DATE: 20/06/2019

SECTION 7

PURPOSE OF THE BORE (BLACK OUT WHERE APPLICABLE)							
COMMERCIAL		IRRIGATION		STOCK		ORCHARD	
IDUSTRIAL		SUPRESSION		DOMESTIC		SUBDIVISION	

SECTION 8

WATER SAMPLES TAKEN ON SITE			
METER USED: YSI Pro - 1030			
T.D.S:	454	LEVEL (S.W.L) (M):	30
Ph:	6-7	DATE:20/06//2019	
TEMPERATURE DEG (C): 17.8		SWL may change once natural level stabilizes	

SECTION 9

DEVELOPMENT DETAILS (BLACK OUT APPLICABLE)					
DEVELOPED:	YES:		NO:		OTHER DETAILS
AIR:		BAILER:			Free of sand and drill fines
ESTIMATED SAFE YIELD (GPH): 250					Slight clay colour on completeion. Normal
DATE: 20/06/2019					for Hills bores drilled clay formations

SECTION 10

BORE HOLE STRATA LOG		
FROM(M)	**TO(M)**	**DESCRIPTION OF FORMATIONS DRILLED**
0	1	Gravel clay mix at surface
1	3	@1 tan clay/firm/stable
3	4	@3 red clay/firm/stable
4	7	@4 tan clay/firm/stable
7	9	@7 light pink clay/VFT/soft/sticky/stable
9	14	@9 red clay/VFT/no sand in samples taken so far/VFT/stable
14	15	@14 tan clay/VFT/soft/sticky/stable
15	16	@15 dark tan clay/VFT/soft/sticky/stable
16	22	@16 light tan clay/VFT/soft/sticky/no – very little sand in samples taken/no H2O as yet
22	26	@22 weathered zone/basalt/chips 8mm
26	26.5	@26 fracture/well defined ~0.5m/void/continuing drilling seeking further fractures
26.5	28	@26.5 basalt/chips 8mm
28	28.5	@28 fracture/well defined ~ 0.5m/still no indication H2O/continuing drilling deeper
28.5	30	@28.5 basalt/chips =<8mm
30	33	@30 basalt/chips =< 8mm
33	34	@33 fracture/ small ~0.2 m/ no indication H2O/continuing drilling deeper
34	34.8	@34 fracture/large/well defined/ H2O bailing/good supply noted ~ 0.8m
34.8	36	@34.8 basalt/chips =< 16 mm
36	36.2	@36 fracture/well defined/ larger chips -20 mm noted/H2O bailing consistently
36.2	38	@36.2 basalt/chips =< 6mm + powder
38	42.6	@38 basalt/getting harder to drill/chips finer/more powdered
42.6		@42.6 basalt/chips =< 6mm + powder
		Suspended drilling at 42.6 meters/140 feet

SHADED AREAS INDICATE POTENTIAL WATER BEARING FORMATIONS:	GREEN = CLAY SAND MIX	RED = HARD ROCK FRACTURES

NOTES

Drilling progressed through all the formations encountered. The main formations drilled were clay and hard rock – basalt. There was no sand in the clays above the basalt rock. Water was found in three of the lower fractures. The upper fractures between 26 and 28.5 meters were void.
Drilling was suspended at 42.6 /140 feet became harder as depth increased. In my opinion there was no advantage in drilling deeper in the bore

SECTION 11

CONSTRUCTION DETAILS (BLACK OUT APLLICABLE)						
CONSTRUCTION ELEMENTS	FROM (m)	TO (m)	INTERNAL DIAMETER mm	CASING TYPE AS/NZ 1477	SLOT SIZE	FIXINGS
CASING	0	36	100 mm	PVC CL9	0.5 mm	CLEAR GLUE
SCREENED AREA	36	42.6	100 mm	PVC CL9	PACK SIZE	316 MARINE SCREWS
STABILISING PACK	30	42.6			1 /4 1/8	
CHIP SEAL	29	30				
ANNULAR FILL	X	X				
HARD ROCK BASE	22	42.6				
END CAP	YES	NO				
PACKER	YES	NO				
SURFACE CASING	IN	OUT				

NOTES
Ran the casing directly to the bottom of the bor. There was no "stick up "noted. Added 360 kilograms of stabiliser pack to the annuls of the bore. The pack was dipped at 30 meters below ground. Added 20 kilograms of 3/8" Bentonite sealing chips above the stabiliser pack. The 175-mm surface casing as left in place as protection for the 100 mm bore casing. Styrene foam seals the annulus at the surface

SECTION 12

STATUS OF THE COMPLETED BORE HOLE (BLACK OUT APPLICABLE)			
CAP ON		SEALED	
CASING REMOVED		WAITNG FOR PUMP	
ABANDONED		GROUTED	

SECTION 13

DRILLING COMMENTS
The bore does have an average domestic supply estimated to be around 250 gallons per hour. There is a lot of very fine talc like clay in this bore. Care will be needed when pumping this bore not to draw in fine clay. Please see precautions below. The water was tested as being fresh 454 (parts per million total dissolved solids) ppm TDS. Fresh water is less than 1000 ppm TDS. By completion the water still had a slight clay colour. The colour is normal for Hills bores drilled through clay formations-the colour will clear once a pump has been installed and working. There was no indication of sand or grit entering the bore. An indication that both the screen and stabiliser pack were working as they should **Pump required:** Install a ¾ hp high pressure Lowara or Grundfos 4" submersible pump no deeper than 130 feet down the bore pump included. Control the flow from the pump with a ball or gate valve set to pump around 250 gallons per hour. **Pump protection:** It would be wise to install a Pumptec switch at the head of the bore as a means of protecting the pump from power variations or the pump running dry

Pumping:
The bore cannot supply enough water to run an irrigation system directly. The water must be pumped into a holding tank and distributed from the holding tank with a separate pump

Precautions.

1. **There is a lot of very fine talc like clay in the bore formations above hard rock. Pump this bore very slowly to avoid drawing in clay. Begin with ~ 50 gph. Wait until the water is clear and clean; then open the control valve in steps to gradually build up to 250 gph. If the water becomes coloured or cloudy close the control valve slightly. It may take time to set this bore up.**

2. **Do not to open the control valve fully, raw hide or over pump this bore. Doing so will draw in fine clay from above which will block off the slits in the screen. Once damage has been done it is not often possible to recover the original supply as the clay will packed around the screen sealing it off.**

INFORMATION SUPPLIED BY
Vic Levis