# Schedule 14 – Standards for the Construction, Reconstruction, Maintenance or Decommissioning of Holes, Bores, Wells and Infiltration Galleries

| Section 1 Bore, Wells and Infiltration Gallery Maintenance Requirements | |
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| a) All bores, wells or infiltration galleries shall have sufficient surrounding open space to allow access for maintenance, monitoring, testing or decommissioning.<br>b) The headworks of the bore shall be maintained and the annular space between the casing and the hole shall be sealed from the surface to:<br>(i) Prevent the entry of contaminants; and<br>(ii) Control subsurface pressures; and<br>(iii) Prevent any movement of the casing until the bore is decommissioned.<br>c) All wells and water infiltration galleries shall be maintained to prevent the entry of contaminants to groundwater or an aquifer. | |
| **Section 2 Construction and Reconstruction Requirements** | |
| **2.1 General Requirements** | a) All equipment used for drilling and bore or well construction, and their maintenance, shall be kept clean to prevent the entry of contaminants to groundwater.<br>b) All chemicals, drilling fluid additives, grout materials used in the construction and operation of the bore or well shall be prepared and used in accordance with the manufacturers' instructions.<br>c) The driller shall have available manufacturers' guidelines and material safety data sheets for chemicals, drilling fluid additives, grout materials. This shall include instructions for handling, preparation, use, potential hazards, and disposal requirements for the materials and their containers. |
| **2.2 Drilling fluids and additives** | a) Drilling fluid must not be discharged directly to water.<br>b) Drilling fluid must be discharged to land, with measures taken to ensure that there is no runoff into surface waterways.<br>c) All grout materials used shall be suitable in terms of its composition, density, strength and corrosion resistance for the site and installation conditions.<br>d) Grout additives that could leave a residual toxicity in groundwater shall not be used.<br>e) Water used for drilling fluid or grouting shall be free of substances or contaminants that may adversely affect the strength of the grout or grout setting time.<br>f) Bentonite shall contain no added substances that may adversely affect the strength of the grout or grout setting time, or result in a discharge that affects groundwater quality. |
| **2.3 Casing** | a) All casing materials used (including temporary casing) shall be suitable in terms of its composition, cleanliness, strength and corrosion resistance for site and installation conditions, and the use of the bore.<br>b) Bore casing shall be secure, leak-proof, and suitable to withstand the stress of installation, bore testing and bore use. |
| **2.4 Screens** | a) All screen material (including temporary screen material) shall be suitable, in terms of its composition, cleanliness, strength and corrosion resistance for the site and installation conditions and the use of the bore.<br>b) The screen slot size shall be appropriate for the aquifer and the gravel pack grain size and grading.<br>c) The screen shall be securely sealed to the casing to prevent entry of rock or soil or gravel pack material into the bore. |

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| **2.5 Gravel Pack** | a) The gravel pack shall consist of non-toxic, washed, rounded gravel of selected grain size and gradation, free of material that may decay or disintegrate during installation, development and bore use.<br>b) No more than two percent by weight of the gravel pack shall consist of thin, flat or elongated material, where the maximum length exceeds three times the minimum width or thickness whichever is the lesser.<br>c) No more than five% by volume of the gravel pack shall be acid soluble gravel.<br>d) The gravel pack material shall fill the annulus from below the screen to above the top of the screen at all times during bore development, testing and use. |
| **2.6 Headworks** | a) All materials used in the bore headworks shall be of appropriate composition, corrosion resistance, and strength for the site, installation conditions, and the use of the bore.<br>b) All joints, valves, sockets, bungs, taps and gauges used in the headworks shall be able to withstand the pressure and temperature of the bore under all conditions.<br>c) Bore headworks shall be constructed and maintained to prevent: the leakage of groundwater, any movement of the casing, and any material or surface water entering the bore or annulus. |

**Section 3 Bore-Specific Requirements**

a) All bores shall have a concrete pad or grout seal placed around the bore head to prevent the entry of surface water or contaminants between the bore casing and surrounding ground and to control subsurface pressures.

b) The bore shall be protected from interference by stock or tampering.

c) When a bore is not in use, it shall be capped to prevent the entry of contaminants down the bore or artesian water flowing from the bore.

d) Bores that present with perennial flowing artesian conditions shall:

(i) Be fitted with headworks that control artesian pressures to avoid the uncontrolled discharge of water and;

(ii) Have provision to allow pressure readings to be taken.

**Section 4 Hole, Bore, Well and Infiltration Gallery Decommissioning**

a) The hole, bore or well shall be backfilled and sealed at the surface to confine the gallery system and prevent contaminants from surface sources leaking or leaching to groundwater.

b) The water infiltration gallery and excavation shall be backfilled with inert material and sealed at the surface sufficiently to prevent contamination of groundwater or an aquifer.

c) Backfill materials used shall be inert and consist of clean sand, coarse stone, clay or drill cuttings. The materials used shall not contain contaminants that may degrade groundwater or aquifer water quality.

d) Backfill materials shall be placed form the bottom upward, by methods that will avoid segregation or dilution of material and the contamination of groundwater or an aquifer.