MINIMUM REQUIREMENTS FOR ADOPTABLE WASTEWATER PUMP STATIONS

Date: ……

Site Name: ……

Address: ……

Note that this document is not a technical specification and is not a complete checklist for all the specified requirements.

PUMP STATION	
1. The pump station is to be designed to comply with the "Sewerage Pumping Station Code of Australia" WSA 04-2005 – 2.1.	
2. The Corporation requires the pump station to be an Aquatec Packaged Pumping Station or equivalent.	

SITE	
3. Pump station to be located on a nature strip, reserve or title vested in SGW.	
4. Pump station reserve/title is to be fenced with a 1.8m high black PVC coated cyclone chain mesh fencing with 3 wire barb on top. This fence will include a 3.6m. wide. opening for 2 x 1.8m high double gates with SGW padlock / security if required.	
5. Overhead lighting is to be installed over wet well and switchboard	
6. Area surrounding the wet well, valve pit and switchboard/control box to be concreted.	
7. Area is to be level, no subsidence, pipes back filled, topsoil and grassed.	
8. An all weather access / driveway is to be provided which is suitable for truck/heavy vehicle access.	
9. Locks on all doors, covers and/or gates to be SGW standard locks.	
10. Unrestricted access provided for removal of pumps by truck mounted crane.	
11. Reticulated water supply to be available.	
12. Backflow prevention device to be installed and include a water meter and external tap.	
13. Backflow device to be caged or secure from damage.	

WET WELL	
14. Wet well to be constructed of concrete materials with a minimum diameter of 2.0m.	
15. Wet well, pumps, pipework and other equipment shall be sized to cater for the whole of the development ie all stages.	
16. Wet well to have a minimum of 60 minutes storage volume, at peak wet weather flows, above pump start level.	
17. Wet well covers to be lightweight with secondary fall arrest safety grills. Wet well covers to be fitted with SGW standard locks.	
18. MultiTrode wet well washers are installed and function correctly (if required).	
19. There are to be no tripping hazards around wet well.	
20. All materials used are to be non corrosive.	
21. Two rail mounted submersible pumps operating as duty/standby.	

22. Pumps are to be rated in accordance with WSA requirements.	
23. Pumps are to operate at a minimum noise and vibration level (dba to be checked)	
24. Benching of wet well to be 300mm high and 300mm from pump and sloped upward from pump at slope of 1:2.	
25. 2 stainless steel pump lifting chains fitted as required.	
26. 2 pump guide rails as required.	
27. Wet well washer lifting chains as required.	
28. Pumps correctly labelled at top of well. The labels are to be permanent, legible and securely installed.	
29. Instruments and floats correctly labelled on cables near top of well.	

VALVE PIT	
30. All valves to be operational at ground level.	
31. All valves to be in a separate pit no deeper than 1.5 m. unless otherwise approved.	
32. Valve pit self draining to wet well.	
33. A rising main scour valve discharging to the wet well.	
34. Non-return/flap valve on rising main.	
35. Isolating valve on each delivery line.	
36. All valves are to be correctly labelled (as required).	

EMERGENCY STORAGE	
37. Emergency storage is generally to be provided within the wet well, unless site conditions require storage to be provided externally.	
38. Size and material of external retention tank to be shown on Technical Data Information Sheet (if applicable).	
39. A minimum allowance of 3 hours detention time at PWWF is to be provided in either the wet well or in the combined wet well and external storage, above the high level alarm.	

PIPEWORK AND CONNECTIONS	
40. All valves and materials used to be to SGW standards.	

SWITCHBOARD	
41. The switchboard is constructed to South Gippsland Water drawings and specifications.	
42. The switchboard is installed close to the wet well with the doors opening so that the wet well can be seen when operating the pump station at the switchboard. The switchboard does not obstruct access to the wet well.	
43. The switchboard is to be fitted with SGW standard locks.	
44. The external surfaces of the switchboard are to be painted Bronze Olive Olive or similar green; the internal surfaces of the switchboard are painted gloss White (or other colour acceptable to the Corporation).	
45. There are to be no scratches, marks or damage to the painted surfaces.	
46. The doors on the switchboard have stays fitted to hold them in the open position.	

47. The switchboard is to be provided with vents and forced ventilation fans to prevent build up of heat. Vents are to be sealed with termite mesh.	
48. The switchboard is to be weatherproof and vermin proof (door seals are installed; doors close fully against door seals; and, insect screens and dust proofing are installed on the switchboard vents), constructed of stainless steel or aluminium.	
49. The switchboard is to be fully sealed against the entry of corrosive gases from the wet well (including the conduits between the wet well and the switchboard).	
50. A galvanised plinth is to be securely installed and the switchboard is to be secured to the plinth.	
51. Separate socket outlets are to be provided for the alarm dialler and the RTU.	
52. The underground electricity supply is to be connected to the switchboard.	
53. Labels are to be attached identifying the switchboard, components and functions. The labels are permanent, legible, understandable, and securely installed.	

ELECTRICAL	
54. The pump controller is to be a Brodersen RTU or MultiTrode - MultiSmart (with built in motor protection module and Sun Smart Display).	
55. The radio telemetry units are to be (RTU) (Elpro 105U-G-ET1, 5 watt Wireless Gateway telemetry unit). The RTU antenna pole is securely mounted to the switchboard.	
56. The alarm dialler is to be an EDAC 400 GSM voice dialler and the alarm dialler antenna is securely mounted to the switchboard. Note – SGW to provide Sim Card.	
57. The following parameters are to be connected to the Alarm Dialler, and each functions correctly: • Power fail • Both Pumps 1 & 2 fail • Wet well high level alarm	
58. The following parameters are connected to the Remote Telemetry Units, and each functions correctly: • Wet well high level alarm (digital) • Power status (digital)	
59. The analogue level sensor installed in the wet well is to be a (MultiTrode conductive level probe, or pressure sensor) and provides an accurate reading of the wet well level on the control panel.	
60. The High Level Alarm is from a separate float switch in the wet well and is connected directly to the alarm dialler and RTU, independent of other monitoring and control equipment, from the backup battery. A MultiTrode or Brodersen High Level Alarm (Digital Output) is to be connected in parallel with the float switch.	
61. The power status (alarm/fail) signal to the alarm dialler and telemetry is supplied from a 3-phase Phase Fail Relay (PFR). An adjustable timer for a delay of up to 4 hours is to be wired in close proximity to the Alarm Dialler for this input and clearly labelled.	
62. The Alarm Dialler Pump Fault (both pumps 1 & 2 fail) will trigger in the event that both pumps fail or become unavailable, not for individual pump faults.	
63. The mounting location of the monitoring and control equipment on the switchboard is between 1.1 and 1.6 m high and is in accordance with the design layout in the switchboard drawings.	
64. There is at least 20% free space on the back plane within the switchboard for the installation of equipment in the future.	

ELECTRICAL	
65. There is a generator socket and a changeover switch installed (if required).	
66. Variable speed drives are installed and function correctly (if required).	
67. Pumps are to be fitted with screened cables where VSD installed.	

DRAWINGS & MANUALS	
68. As constructed are to be provided of the wet well drawings showing all levels, pipes, connections on site.	
69. As constructed electrical drawings are to be provided and a copy of the electrical drawings to be placed in the holder behind one of the switchboard doors.	
70. 3 hardcopies of pump station information are to be provided to the Foster Office. Such information shall include pump manuals and any other relevant information in relation to the operation and maintenance of the pump station	

TECHNICAL DATA INFORMATION SHEET
(To be submitted in conjunction with design drawings)

Date: ……

Site Name: ……

Address: ……

Design Basis

Number of Lots (Current)	
Number of Lots (Future)	

Sewage Pumps	**No 1**	**No 2**
Manufacturer		
Number of Pumps		
Serial Number/s		
Flow Rate (l/s)		
Static Head (m)		
Total Dynamic Head (m)		
Motor Size (kw)		
Speed (RPM)		
Type of Starter		
Full Load Amps		
Impeller Type		
Impeller Diameter (mm)		
Pump Weight (per pump)		

Wet Well

Manufacturer	
Wet Well Diameter (m)	
Wet Well Depth (m)	
Wet Well Detention Time (Hours)	

Date: .....

Signed: .....