Inspection & Test Plan

Project no.: _____ **Project name:** _____

Client: _____ **Water Authority** _____

Inspection Legend: H = Hold point; S = Surveillance; W = Witness

Responsibility Legend: PM = Project Manager; SS = Site Supervisor; C = Client Rep; I = Inspector

No.	Inspection Activity	Specification / Drawing Reference	Inspection Procedure and Acceptance Criteria	Verification Document	Aquatec			Skerman Civil			Urban Utilities			Records / Comments
					Insp.	Resp.	Sign and date	Insp.	Resp.	Sign and date	Insp.	Resp.	Sign and date	
1.0	**SITE PRELIMINARIES**													
1.1	Management Plans		□ Management Plans Submitted and approved		H	PM		H	C		H	I		
1.2	Permit to Work		□ All required permits received		H	PM		H	C		H	I		
1.3	Drawings	Aquatec Civil/Mech Drawings	□ IFC Drawings confirmed latest revision and approved	IFC Drawings	H	PM		H	C		H	I		
1.4	Backfill Design Approval	Aquatec Civil/Mech Drawings	□ Foundation and Backfill design has been reviewed and modified where necessary with letter of endorsement from RPEQ Geotech (Must be site-specific)	RPEQ Letter of Endorsement	H	PM		H	C					
1.5	Backfill Materials Approval	Aquatec Civil/Mech Drawings	□ All backfill material certificates submitted and approved for use by Geotechnical Engineer	Material Certificates	H	PM		W	C					
2	**PRECAST CONCRETE INSTALLATION**													
2.1	Excavation set-out	Aquatec Civil/Mech Drawings	□ Setout points established and offset for recovery		W	SS		W	C					
2.2	Excavation to Base R.L	Aquatec Civil/Mech Drawings	□ Shoring and benching completed as required □ Where over-excavation occurs, excavation shall be filled with suitable material to satisfaction of geotechnical engineer		W	SS		H	C		W	I		
2.3	Testing of Base	Aquatec Civil/Mech Drawings	□ 2 x DCP tests completed on excavation floor and bearing capacity of >100kPa confirmed □ If excavation base material deemed unsuitable, unsuitable foundation to be replaced with suitable material with approval.	DCP Report	H	SS		H	C		W	I		
2.4	Sub-Base Preparation	Aquatec Civil/Mech Drawings	□ Approved Sub-Base material placed and compacted □ Sump and pump set up to keep excavation dry (if required) □ Pump Station Base R.L, centre and orientation set out and confirmed		W	SS		W	C		W	I		
2.5	Testing of Sub-Base	Aquatec Civil/Mech Drawings	□ Sub-base confirmed at 98% compaction	Compaction Test Report	H	SS		H	C		W	I		
2.6	Precast Items Check	Aquatec Coring Drawings	□ Precast items checked for damage □ Precast items checked against drawings for correct dimensions, cast-ins, coatings and penetrations		S	SS		W	CS		W	I		
2.7	Base and Increment Placement	Craning and Excavation Plan Aquatec Civil/Mech Drawings	□ Precast items lifted into chamber as per craning and excavation plan □ Precast items jointed as per drawings □ Orientation of inlet stub and penetrations as per drawings		S	SS		W	CS		W	I		
2.8	Cover Slab Installation	Craning and Excavation Plan Aquatec Civil/Mech Drawings	□ Cover Slab lifted onto pump station as per craning and excavation plan □ Cover Slab orientation and alignment correct as per drawings □ Cover Slab sealed to pump station as per drawings		S	SS		W	CS					
2.9	Placement of Ballast Concrete	Aquatec Civil/Mech Drawings	□ 25MPa Concrete Used □ Correct Volume Used □ Sufficient Vibration	Concrete Dockets	S	SS		W	CS					
2.10	Placement and Compaction of Backfill	Aquatec Civil/Mech Drawings	□ Backfill placed and compacted in 200mm layers to 95% as per drawings □ Compaction test taken every 5th layer (1m)	Compaction Test Reports	S	SS		W	CS					
2.11	As Built Pickup	Aquatec Civil/Mech Drawings	□ Survey pickup completed □ All as-constructed data recorded.	Survey Pickups Redlined Drawings	S	SS		W	C					
3.0	**PUMP STATION MECH FITOUT**													
3.1	Materials check	Aquatec Civil/Mech Drawings	□ Pumps, Pipework, valves, fittings, fasteners, brackets, etc. as per drawings and specifications □ Materials checked for damage	Delivery Dockets Material Certificates	H	SS		W	C					
3.2	Pump and Pipeline set out	Aquatec Pipework Layout Drawings	□ Layouts and IL's are consistent with drawings		S	SS		W	C					

3.3	Pump Pedestal Installation	Aquatec Civil/Mech Drawings	□ Anchors installed to correct depth and as per manufacturers recommendation □ Pumps level □ Pedestal anchors torqued □ Guide rails installed and plumb		S	SS		W	C		W	I		
3.4	Pipe and Pipe Support Installation	Aquatec Civil/Mech Drawings	□ Pipe and fittings installed as per project drawings □ Pipe supports erected as per drawings with neoprene gaskets between metal and PE liner □ Fasteners torqued correctly and marked □ Dissimilar metals isolated □ Pipework flushed, drained and dried as required □ HDPE Vactor pipe vacuum tested to confirm no leaks □ PE Welding spark testing		S	SS		W	C					
3.5	Valve Installation	Aquatec Civil/Mech Drawings	□ Valves installed as per drawings □ Handles fitted and secure □ Valve operation checked □ Valve orientation correct □ Fasteners torqued correctly and marked		S	SS		W	C					
3.6	Ladders and misc. installation	Aquatec Civil/Mech Drawings	□ Anchors installed to correct depth and as per manufacturers recommendation □ Ladders and misc. steelwork plumb and level □ Bracket anchors torqued with neoprene gaskets between metal and PE liner		S	SS		W	C					
3.7	Grouting	Aquatec Civil/Mech Drawings	□ Confirm grout product has not passed expiry date □ Concrete surfaces scrabbled as required □ All penetrations and pipe supports grouted as per manufactures specification		S	SS		W	C					
3.8	Thrust Blocks	Aquatec Civil/Mech Drawings	□ Reinforcing placed as per drawings □ 2 x layers hydrotite used □ Walls scabbled □ Adequate Vibration used	Concrete Dockets	H	SS		H	C		H	I		
3.9	Trench Fill and Compaction	Aquatec Civil/Mech Drawings	□ Marker tape installed as required □ Trench backfilled with imported suitable trench fill		S	SS		W	C					
3.10	As Built Pickup	Aquatec Civil/Mech Drawings	□ Final inspection of mechanical works completed □ Survey pickup completed □ All as-constructed data recorded.	Survey Pickups Redlined Drawings	H	SS		H	C		H	I		
4.0	**DRAINS, CONDUITS & VENTS**														
4.1	Materials check	Aquatec Civil/Mech Drawings	□ Pipework, fittings and adhesives as per drawings		H	SS		W	C					
4.2	Pipeline set out	Aquatec Civil/Mech Drawings	□ Layouts and IL's are consistent with drawings		W	SS		W	C					
4.3	Pipework Connections	Aquatec Civil/Mech Drawings	□ Pipework installed as per project drawings □ Invert, grade and alignment checked □ Connections completed with no excessive loading exerted onto cast-ins.		S	SS		W	C					
4.4	Trench Fill and Compaction	Aquatec Civil/Mech Drawings	□ Marker tape installed as required □ Trench backfilled with imported suitable trench fill		W	SS		W	C					
4.5	As Built Pickup	Aquatec Civil/Mech Drawings	□ Survey pickup completed □ All as-constructed data recorded.	Survey Pickups Redlined Drawings	S	SS		W	C					
5.0	**PUMP STATION CONCRETE SLABS**														
5.1	Slab set-out	Aquatec Civil/Mech Drawings	□ Setout points established and offset for recovery					W	C					
5.2	Excavation for slab	Aquatec Civil/Mech Drawings	□ Bearing Capacity confirmed as per drawings □ If excavation base material deemed unsuitable, unsuitable foundation to be replaced with suitable material with approval. □ Where over-excavation occurs, excavation shall be filled with material to satisfaction of geotechnical engineer					W	C					
5.3	Formwork	Aquatec Civil/Mech Drawings	□ Formwork installed as per drawings □ Form release applied as required					W	C					
5.4	Reinforcement	Consultant Drawings MW Specifications	□ Correct reinforcing sizes and spacing □ Minimum cover as per drawing □ Appropriate lap / cog lengths □ Cover to conduits as per drawings					W	C					

5.6	Pre-Pour	Consultant Drawings MW Specifications	□ Relevant persons notified of pour □ Inspection and certification completed (as applicable) □ all debris removed from formwork □ Correct bar chairs and qty in place □ Conduits positioned correctly		W	SS		H	C		H	I		
5.7	Concrete Pours	Consultant Drawings MW Specifications	□ Concrete docket checked to confirm mix is as per drawings □ Free dropping not permitted □ Adequate vibration used □ Finish as per specification and drawings	Pour record /Docket				S	C					
5.8	Post-Pour	MW Specifications AS 3600	□ Compressive strength adequate prior to stripping □ Curing agent applied immediately after stripping					W	C					
5.9	As Built Pickup	MW Specifications	□ Survey pickup completed as required □ All as-constructed data recorded.	Survey Pickups Redlined Drawings	W	SS		W	C					
6.0	**ELECTRICAL INSTALLATION**														
6.1	Switchboard check	Electrical Drawings	□ Switchboard and instruments as per drawings and specifications □ Materials checked for damage	Delivery Dockets Material Certificates	H	PM		H	C		H	I		
6.2	Switchboard check	Electrical Drawings	□ FAT test results received	FAT Results	H	PM		H	C		H	I		
6.3	Switchboard Installation	Aquatec Civil/Mech Drawings AS 3000	□ Conduits are installed as per drawings □ Communications GeoSCADA □ Mastic sealant used on underside of switchboard □ Switchboard fixed down using correct dyna bolts		S	SS		S	C					
6.4	Switchboard Installation	Aquatec Civil/Mech Drawings AS 3000	□ Pre SAT		S	SS		S	C		H	I		
6.5	Switchboard Installation	Aquatec Civil/Mech Drawings AS 3000	□ SAT		S	SS		S	C		H	I		
6.6	Earthing	Electrical Drawings AS 3000	□ Main earth stake correctly installed and labelled □ Earthing cables terminated safely and correctly		S	SS		S	C					
6.7	Consumer Mains	Electrical Drawings AS 3000	□ Conduits meet AS 3000 requirements and are free of obstructions □ Conduit penetration into POS is sealed and at correct depth □ Consumer mains installed to conduits and labelled as requried □ Cable testing and terminations completed □ Sealing of conduits completed		S	SS		S	C					
6.8	Instrumentation and Control	Electrical Drawings AS 3000	□ Flowmeter installed, labelled and terminated as per drawings □ Level control instrumentation installed, terminated and labelled as per drawings □ Pump controllers terminated and labelled as per drawings □ Sealing of conduits completed		S	SS		S	C					
6.9	Lighting and power	Aquatec Drawings Electrical Drawings AS 3000	□ Lighting setout as per drawings □ Light & Power components are as per drawings		S	SS		S	C					
7.0	As Built Pickup		□ All as-constructed data recorded.	Redlined Drawings	S	SS		W	C					
8.0	**CLOSEOUT**														
8.1	Non Conformances		□ Non-conformances closed out		H	PM		H	C		H	I		
8.2	Hydrostatic Testing	AS3735	□ AQT Test Record Documentation		H	PM		H	C		H	I		
8.3	Final Site Inspection	Project Specifications and Drawings	□ Site Clean and Clear of all Construction Waste and Debris disposed of legally and in accordance with legislation □ 100% Visual Inspection of install by PM, Client and MW □ Installation checked against drawings to confirm all works are as per design □ Site Reinstated to a standard equal to or better than existing in accordance with Project specification		H	PM		H	C		H	I		

Project Completed Date…….....

Signed By Aquatec Representative

…… Date…..

Signed By Civil Contractor Representative

…… Date…..

Signed By Water Authority Representative

…… Date…..