United Utilities - Wastewater Developer Services - Sewer Adoptions Adoption Engineer feedback form - Sections 6 & 7 – Pumping Station Review



Proposed S104 at *****(Insert site name)

UU Reference – 42000*****

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Date of UU response	Click here to enter a date.									

Form contents

Section 6 – Information required for pumping station review

Section 7 – Drawings checklist and Technical Appraisal comments

Section 6 – Information required for pumping station review

Section 6 Information required	Yes	No	твс	N/A	Designer Date of submission where information has been provided
Site location plan - for information only (see S104 review sheet for technical review guidance)					
Drainage layout plan - for information only (see S104 review sheet for technical review guidance)					
Land transfer plan					
Pumping station dimensioned compound layout					
Pumping station wet well sectioned drawing					
Rising main general arrangement and long section					
• Tanker vehicle turning circles drawing (if applicable – based on the use of an 8 wheeler tanker as a minimum)					
DSEAR zoning diagram					
Mechanical and electrical design package - typically received from pump supplier					
1:20 manhole detail for pumping station isolation manhole					
Pumping station flotation calculations					

Section 7 – Drawing Checklist and comments

Section 7a Land transfer plan	Submitted Involved Submitted	Yes	No	твс	N/A	(Designer) Addressed with resubmission
A PDF copy of a pl	an at a scale of 1:500 at A3 or A4 size (or a suitable scale for UU legal and land registry).					
North Arrow, Land	dmarks and a minimum of two road names clearly visible.					
Boundary of the c	ompound area to be transferred edged in red.					
Access rights to th	e compound to be coloured brown.					

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Section 7b Pumping station compound layout □ Submitted □ Not yet submitted □	Yes	No	твс	N/A	(Designer) Addressed with resubmission
Compound finished level displayed (set above the 1 in 200 year critical storm water level where required)					
 Positions of chambers, kiosk, cable ducts/cables, cable draw pits and bollards clearly shown. Should include DNO and BT cable ducts 					
 Hardstanding details and fencing specifications clearly shown. 					
 Access means indicated on plan Access gate shown to open outwards and the width of the gates dimensioned to show that they are in excess of the minimum acceptable gate width of 3.8m 					
Check compound layout against guidance set out within 'Sewers for Adoption' and UU addendum.					
 Has adequate access has been provided for tanker/vactor units to enable safe off road parking and turning manoeuvres Based on an 8 wheeler as a minimum 					
 Minimum distance of wet wells from habitable buildings provided in accordance with 'Sewers for Adoption' 7th Edition Table D.1 (pg. 62) 					
 Has sufficient clearance been provided between the pumping station compound and any adjacent structures i.e. retaining walls etc. 					
Can the kiosk doors be opened safely with adequate working space provided for maintenance?					
• Tanker Hardstanding construction should be 200mm thick reinforced concrete on 500mm type 1 granular sub-base, surrounded by a 125mm kerb upstand					
The tanker hardstanding area drained into the foul system					
 For Pumping Stations in a fenced compound, the whole area should be covered with hardstanding. Specification confirmed on the drawing (Blacktop finish to footpath construction specification is considered acceptable) 					
Palisade or Paladin fencing 1.8m in height specified					
Inlet manhole c/w isolation penstock shown upstream of the wet well within compound.					

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Section 7c Pumping station wet well sectioned drawing Submitted Not yet submitted	Yes	No	твс	N/A	(Designer) Addressed with resubmission
 Plan and section through wet well and valve chambers indicating cover and invert levels to ordnance datum. 					
 Alarm levels and top water levels shown on sections. 					
Pumps, pipework, pipe fittings and valve arrangements shown on plans and sections.					
Access opening details for wet well and valve chamber.					
 Cross check key pumping station information against information within Technical Design Submission document provided by pump supplier i.e. cover level, invert levels, pump start and alarm levels, pumping station diameter etc. 					
 Cross check pumping station design against UU Signature Designs and Standard Details for pumping stations and valve chambers. 					
 Is there sufficient space between the assets to undertake maintenance operations? 					
 Check the pumping station and valve chamber construction materials for compliance i.e. concrete shaft rings, in-situ reinforced concrete, preformed units etc. Does the product satisfy the UU Asset Standards? 					
 Please provide the contact details for the M&E pump supplier including, name, an email address and telephone number 					
 Wet well The wet well should be surrounded with no less than 150mm thickness of GEN3 concrete 					
 Any counter floatation measures detailed on the drawing 					
 Access - No permanent ladder or steps rungs should be located in the wet well Permanent ladder provided only for wet wells in excess of 6m in depth. 					
 Valve chamber Manhole cover is required to extend over the entire chamber (full access) 					
Encapsulated step irons required, positioned appropriately (how covers and frames open)					
 Sump drain required (connected to wet well). The inlet end of the drain pipe in the valve chamber, shall be fitted with a non-return valve. 					
Inlet manhole					
Foul penstock positioned in manhole upstream to the wet well					
 Plan and section view required for future maintenance inspections 					

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Section 7d Route of proposed rising main *(typically shown on \$104 Drainage Layout)*	Yes	No	твс	N/A	(Designer) Addressed with resubmission
Pumping station and new discharge manhole shown on plan					
 Route of proposed rising main and S104 sewers shown coloured as per SFA with any associated easements coloured yellow. (rising main bends to be marked with a marker post 'if practicable') 					
Pipe diameter and specification (material, SDR rating and jointing method) shown.					
Thrust block locations indicated on plan.					
Site boundary shown coloured green.					
 Cross check the proposed pipe material and specification shown on the plan against the specification within the pump suppliers Technical Design Submission (TDS). 					
Check the proposed pipe material and specification for compliance with the UU Asset Standards.					
Ensure root protection on rising main is considered 'if applicable'					

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Section 2e Rising main long section Submitted Not yet submitted	Yes	No	твс	N/A	(Designer) Addressed with resubmission
 Drawing must show the full section from valve chamber to inlet manhole 					
 Pumping station and new discharge manhole shown. 					
 Pipe diameter, gradient and pipe specification (material and SDR rating) shown. 					
 Locations of air valves, washouts and thrust blocks shown. 					
 Cover levels, invert levels and chainages shown at regular intervals and at any high/low spots (air valve & washout locations). 					
 Cross check the proposed pipe material and specification shown on the plan against the specification within the pump suppliers Technical Design Submission (TDS). 					
Check that thrust blocks are shown at any changes in direction.					

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Section 2f 1:20 manhole detail for pumping station isolation manhole Submitted Not yet submitted	Yes	No	твс	N/A	(Designer) Addressed with resubmission
 Manhole designed in accordance with United Utilities Standard Details. 					
Penstock shown on outlet pipe (non-rising spindle).					

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Section 2g PS Design Package (Inc. Flotation and Storage calculations) Submitted Not yet submitted	Yes	No	твс	N/A	(Designer) Addressed with resubmission
 Where foul pumping stations are used, check that the design flow rate of the pump satisfies SFA 7th Edition Section D4.6.1 "The design flow rate of the pump units are at least the maximum of: Half the peak design flowrate(B5.1.1), and the flowrate required to achieve the minimum flow velocity in the rising main (D5.3.1)". 					
 Check that the pumping station data and dimensions shown within pumping station storage and flotation calculations match with the design drawings. 					
 Check that the pumping station inflow shown within calculations is correct using the guidance set out within 'Sewers for Adoption' (4000 litres/unit dwelling per 24 hours x number of houses). 					
 Some pumping station storage calculations utilise upstream sewer pipes for additional storage. In this scenario check that water level does not surpass the invert of the upstream end of the lowest public lateral drain (storage should not be provided in private drainage). See SFA 7th Edition Section D4.5 for further guidance. 					
 Review flotation calculations in line with United Utilities guidance note ENG 801 – Anti-flotation Measures 					

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