Appendix 3A

Details of Proposed Facilities for the WwTP component of the proposed Upgrade Project

	Ref. No.	Description	Purpose P - Performance Enhancement C - Capacity Increase A - Ancillary	Proposed External Treatment (where relevant)	Drawing Reference (Y15710-PL-xxx)	Comment	Included in ABP Consent PL 29N.YA0010
Wastewater Stream	**W1**	Installation of **additional pump** in existing Inlet Pump Structure	C		N.A.	Existing pump capacity is 11.1 m^3/s. Space allocated in existing structure to accommodate additional pump – to bring total capacity to 13.8 m3/s	✓
	W2	**Extend lamella packs in Primary Settlement Tanks** The lamella settlers currently treat flows up to 11.1 m^3/s and were designed for a peak flow of 13.8 m^3/s providing the lamella packs are extended.	P, C		N.A.	Internal mechanical equipment modifications within existing primary settlement tanks to improve sludge withdrawal efficiency. No external alterations.	✓
	W3	Additional secondary treatment comprising **New SBR tanks** (including biological nitrogen and phosphorus removal) capacity of 0.4 million PE - to be constructed on the 0.8 hectare open space on the site. **6 tanks on two levels (3 on each level)** Overall dimensions approx. 110 metres (L) x 38 m (W) x 21 m (Ht). Each tank 7m liquid depth **Additional Intermediate Expansion Lift Pumping Station (ELPS)** Approx Dimensions Sub structure 17 metres (L) x 14 m (W) x 6 m (depth) Superstructure 15 metres (L) x 9 m (W) x 4 m (Ht)	P, C	Cast insitu concrete, as existing SBRs	941 942 943 944 945 946 947 948 949	Includes External Equipment Plinth on AGS Reactor Block to accommodate feed, sludge and air pipework; pumps and air blowers. The Equipment Plinth and pumping station are not visible externally to site.	✓
	W4	**Retrofit of Existing 24 SBR tanks** to facilitate the use of the AGS process technology	P		931 932 934 935 936	Works predominantly involve removal of internal equipment and installation of new dividing walls to create buffer volumes; provision of influent distribution; treated effluent collection channels; sludge pipework; air pipework and diffusers. Also includes reconfiguration of the existing airblowers and pipework serving the existing SBR tanks	·
	W5	New **effluent fine screens** to further improve final effluent quality, if required	P	Cast insitu concrete	957 958	Primarily below ground structure	✓

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	W6	Installation of **additional UV lamps** in existing outlet channel to cater for increased flow rate.	C		959	Mechanical and electrical works	✓
	W7	**Modifications to the existing Intermediate Lift Pumping Station** (ILPS), to match new process requirements in modified existing SBR tanks	P, C		936 937 938 939 940	Provision of additional pumping capacity in existing structure to allow for direct pumping to SBR units	.
Sludge Stream	**S1**	**Additional sludge thickening facilities**, located over existing units on primary sedimentation tanks	C		N.A.	Sludge thickening units are externally mounted	✓
	S2	**New Sludge Pasteurisation Building** (approx. 25 m x 15 m x 8m height) to house sludge screens and pre-dewatering units; pasteurisation units for processing primary sludge. The building will also house boilers and heat exchangers and will be provided with odour extraction and treatment units.	P, C	PVC coated insulated cladding	955	Similar external finish to existing buildings 	.
	S3	**New anaerobic sludge digester**, approx. 18.5 metre diameter x 18-metre-high, on site of existing biogas storage facility. Existing biogas storage and gas flare to be relocated to south-west corner of the site	C	PVC coated insulated cladding	954 956	Similar construction and external finish to existing structures 	✓
	S4	**New phosphorus recovery facility building**, approx. 40 metre x 20 metre x 20-metre-high.	P, C	PVC coated insulated cladding	951 952 953	Building to house reactors, including pumps and piping, chemical storage and a struvite handling and storage unit. Similar external finish to existing sludge buildings	.

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	S5	**Post Digestion Centrifuges**	C		N.A.	Additional post digestion dewatering capacity is to be provided within the existing sludge building to cater for increase in (digested) sludge loads. Mainly mechanical and electrical work.	✓
Ancillary Modifications	**A1**	**Electrical Upgrade**					·
		Additional diesel generators. Approx dimensions 24 metre (L) x 14 mm (W) x 4.5 m (Ht)	A		950	Self-contained units (2 No.) in acoustic enclosure fabricated from insulated PVC coating cladding. Two 53m3 steel bunded diesel storage tanks.	·
		Connection of existing power cables to site by ESB.	A		916		·
	A2	**New site entrance** from Pigeon House Road at eastern end of northern boundary. Removal of existing internal landscaping berm along eastern site boundary. Note – details of internal site road in SE corner to be determined following slit trenching to locate ESB high voltage cables and agreement with ESB. Details relating to proposed Greenway to be agreed with Dublin City Council	A		966 967 968 969 970 971 972 973 974 975 976 977	It is proposed that the access be retained for permanent use to facilitate access/egress to the WwTP. Also for emergency access to the site.	This work is being carried out under revised planning consent ref. 29N.YA0010
	A3	Provision of **odour control** facilities at the inlet works	A		920	Plinth mounted proprietary system incorporating extraction fans and media storage.	✓
	A4	New bypass connection from final effluent culvert to existing connection to storm tanks	A		957	To facilitate maintenance of main treated effluent culvert	·
	A5	Modification to the sludge and fats oils grease (FOG) removal systems to the existing primary settlement tanks (PSTs).	A		N.A.	For improved sludge removal, additional suction piping from the end of the PSTs is proposed. FOG collection header to be provided for each block of 6 PSTs. FOG storage buffer to be provided in existing sludge buffers. The modifications comprise civil, mechanical and electrical works.	·

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		The various elements of the project, as listed above, will include • interconnecting pipework, pumps and valves and associated chambers • provision for upgrades of electrical, instrumentation and control systems (including SCADA) • general equipment upgrades • reconfiguration, where relevant of internal site roads and underground utilities	A		912 916		.