



| TYPE | SIZE RANGE | STANDARDS | APPROVED PRODUCTS | COMMENTS/CONDITIONS | DATE APPROVED |
|---------------------------|-------------------|---------------------------------------|--|--|----------------------|
| SANITARY | | | | | |
| PIPES | | | | | |
| Concrete | < 900mm | ASTM C14M | | Non-reinforced. | |
| | > 900mm | ASTM C76M | | Reinforced. | |
| PVC Gravity | 100mm-375mm | ASTM D2412, CSA B182.2, ASTM D3034 | Royal Pipe Systems, Ipex, J-M, Rahau, Northern Pipe | PVC SDR35. | |
| | 450mm-1200mm | ASTM D2412, CSA B182.2, ASTM F679 | | | |
| PVC Forcemain | 100mm-300mm | AWWA C900, CSA B137.3 | Ipex | | |
| | 350mm-1200mm | AWWA C905, CSA B137.3 | | | |
| HDPE Forcemain | | AWWA C906, CSA B137.1 | | | |
| Polyethylene Forcemain | 100mm + | AWWA C906, CSA 137.1 ASTM PE2036 | Driscopipe, Sclairpipe | | |
| Ductile Iron Forcemain | | AWWA C151 | | Cement mortar lined to AWWA C104/A21.4. | |
| SERVICE PIPE | | | | | |
| PVC | 100mm-150mm | ASTM D3034, CSA B182.2 | Royal Pipe Systems, Ipex, J-M, Rahau, Northern Pipe | PVC SDR28. | |
| PIPE JOINTS | | | | | |
| Rubber Gasket | | ASTM C443M | | For concrete pipe. | |
| Rubber Gasket | | ASTM F477 | | For PVC pipe. | |
| Bell and Spigot Ends | | ASTM D3212, ASTM D3139 | | For PVC pipe. | |



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| <u>SANITARY (CONT...)</u> | | | | | |
| MANHOLES | | | | | |
| Manhole Barrels | 1050mm + | ASTM C478M | | Precast reinforced 20 Mpa concrete. | |
| Concrete Lid | | H20 Loading | | | |
| Concrete Spacer Rings | | H20 Loading | | | |
| Adjusting Rings | | ASTM C478 | | | |
| Frame and Cover | | H20 Loading, ASTM A48 | | | |
| Ladder Rungs | | ASTM C497, ASTM C478M | | | |
| WYES, BENDS, REDUCERS | | | | | |
| PVC | | CSA B182.2, ASTM D3034 | | | |
| Inserta Tee | 100mm-300mm | | Royal Pipe Systems | Post-main construction only - Inserta tees will not be permitted for new construction. | |
| INSPECTION CHAMBERS | | | | | |
| Add a Flap | 100mm-150mm | | Royal Pipe Systems | | |
| PUMPS | | | | | |
| Submersible Pumps | | | Flygt 3000 & 8000 Series | Non-clogging, submersible | |



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| <u>SANITARY (CONT...)</u> | | | | | |
| LIFT STATION, TANK & APPURTENANCES | | | | | |
| Lift Station | Min. 2440mm inside diameter | | Flygt | Pre-fabricated engineered FRP Lift Station | |
| Access Cover | Min. 900mm x 900mm | | Flygt | Safe-hatch Access Cover | |
| Portable Lifting Davit | | | Flygt | | |
| Ballcentic Valve | | | Keytone F580, F583 | | |
| Ball Check Valve | | | HDL Type 2020/PN16 | | |
| Wastewater Air Release Valve | 25-100mm | AWWA C512 | Val-Matic | | |

PUMP STATIONS

The Regional District will directly retain consultants for the design and construction supervision of new or modifications to existing pump stations and electrical and SCADA controls for the Regional District's sewer utilities.

TREATMENT PLANT SYSTEMS

| | | | | | |
|-----------------|-------------|-----------------|-----------|---|--|
| MBR | As Required | B.C Reg. 129/99 | Corix MBR | Packaged Plant | |
| USBF + Advanced | As Required | B.C Reg. 129/99 | ECOfluid | Packaged Plant Advanced treatment shall be membrane | |

Where a product is not listed, acceptance will be reviewed on a case by case basis by the Regional District's Manager, Environment and Engineering Services.



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| <u>ELECTRICAL, CONTROLS & SCADA</u> | | | | | |
| SCADA EQUIPMENT | | | | | |
| PLC | | As required for B.C. | Siemens | S7-1200 is the preferred choice of PLC | |
| | | As required for B.C. | Allen Bradley | Ethernet Port, Siemens WinCC Compatible | |
| HMI | | As required for B.C. | Siemens KTP600 Series | Ethernet Port, Color | |
| | | As required for B.C. | Allen Bradley PanelView | Ethernet Port, Color | |
| Ethernet Switch | | As required for B.C. | WEIDMULLER | Min. 5 Port, Unmanaged | |
| | | As required for B.C. | Approved Equal | Min. 5 Port, Unmanaged | |
| UPS | | As required for B.C. | Liebert GXT Series | Min. 100 VA, Online | |
| | | As required for B.C. | Approved Equal | Min. 100 VA, Online | |
| Ethernet Radio | | As required for B.C. | FreeWave FGRPLUSRE | | |
| Antenna | | | Open | Include 902-928 MHz Range, Min. 6dB | |
| Surge Suppressor | | | PolyPhaser IS-B5OLN-C2 | | |
| ANALYZERS | | | | | |
| Turbidity | | As required for B.C. | ABB 4670 Series | 7997 Series Sensor | |
| Free Chlorine & pH | | AS required for B.C. | Severn Trent MicroChem2 | KC4000 Series Measuring Cell | |
| INSTRUMENTS | | | | | |
| Flow | | As required for B.C | Open | Magmeter, 4-20mA Out, Relay Out | |
| Level | Reservoirs | As required for B.C. | Open | 0-10 PSI, 4-20mA Loop Powered, Air Bellows | |
| | Wells | As required for B.C. | Open | 4-20mA Loop Powered, | |



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| <u>ELECTRICAL, CONTROLS & SCADA (CONT...)</u> | | | | | |
| INSTRUMENTS (CONT...) | | | | | |
| | | | | Air Bellows | |
| Pressure | | As required for B.C. | Open | 4-20mA Loop Powered | |
| Temperature | | As required for B.C. | Open | 0-50 °C, 4-20mA Loop Powered | |