

## Water Design

**SEW audits against the relevant codes and standards, these checklists are simply a tool to help in auditing and auditors are not limited to the items in the checklists.**

### 1. Management

1.1. Is Office of Surveyor General (OSG) datum noted on the design drawings

1.2. Is the project Pipeline Go to Section 2

1.3. Is the project Civil Go to Section 3

### 2. Pipeline Project

#### 2.1. Pipeline Alignment

2.1.1. Are duplicate mains used where necessary

2.1.2. Verify water mains cater for all allotments

2.1.3. Verify all mains are within road reserves or appropriate easements

2.1.4. Verify continuity of supply lines identified inside and outside the subdivision

2.1.5. Is common trenching nominated

2.1.6. Verify common trenching does not include electric cables

2.1.7. Verify that water main crossing under sewer complies with standard drawings

2.1.8. Verify horizontal alignment and deflections are in accordance with the water design manual

2.1.9. Verify vertical alignment and deflections are in accordance with the water design manual

2.1.10. Verify minimum vertical clearances between services has been maintained

2.1.11. Verify clearance from other services meet requirements

2.1.12. Are mild steel pipes required

2.1.13. Verify that jointing detail for pipe works is shown

2.1.14. Verify cover is in accordance with SEWL specifications

2.1.15. Verify cover does not exceed 1.5m

2.1.16. Verify depth allows for future works in accordance with SEWL specifications

2.1.17. Is a level schedule required

2.1.18. Verify levels relate to AHD

2.1.19. Verify levels take existing and proposed services into account

2.1.20. Verify levels make allowances for cover over fittings

2.1.21. Verify levels allow for future road and driveway construction

2.1.22. Verify chainages follow in sequence with plan

#### 2.2. Pipeline Materials

2.2.1. Verify design head is correctly calculated from the figure given by SEWL

2.2.2. Verify pipe class meets design pressures

2.2.3. Verify pipe size is in accordance with SEWL specifications

2.2.4. Verify materials specified on the plans are on SEWL approved products list

2.2.5. Verify material selected is appropriate for the pressure rating and location of the main

2.2.6. Is design head >120m

2.2.6.1. Verify appropriate fittings used

2.2.7. Are insulated flanges required

2.2.7.1. Verify they are shown on the plan

2.2.8. Are MS pipes being designed

2.2.8.1. Are they >10m

2.2.8.1.1. Verify electrolysis points are shown on the plans

#### 2.3. Pipeline Assemblies

2.3.1. Are concrete Thrust restraints required

2.3.1.1. Verify dimensions and volume are satisfactory

2.3.1.2. Verify that location is correctly indicated on the design

2.3.2. Verify valves are in the appropriate location in accordance with MRWA Edition of WSAA Water Supply Codes

2.3.3. Verify that valves are anti-clockwise closing

2.3.4. Is the mains >300mm

2.3.4.1. Ensure valve is the next size down from mains diameter

2.3.5. Is a zone boundary valve part of the project

2.3.5.1. Ensure appropriate warning not to use valve has been included on plans

2.3.6. Are hydrants required

2.3.6.1. Verify these are not on mains less than 100mm dia

2.3.6.2. Verify high/low point requirements met in accordance with MRWA Edition of WSAA Water Supply Codes

2.3.6.3. Verify that they are used as a terminal fitting at the end of a main

2.3.6.4. Verify spacing between hydrants in accordance with MRWA Edition of WSAA Water Supply Codes

2.3.6.5. Verify hydrants are located clear of driveways

2.3.6.6. Verify hydrants placed adjacent to valves where possible
2.3.6.7. Verify valve controlled hydrants are used for mains >300mm
2.3.6.8. Is the Area a fire prone area
2.3.6.8.1. Ensure that hydrant cover and posts are not recycle plastic
2.3.7. Are Washout assemblies required
2.3.7.1. Verify temporary and permanent end of mains >= 100mm
2.3.8. Are Flushing assemblies required
2.3.8.1. Verify permanent end of mains < 100mm
2.3.9. Are Chlorination/pitot assemblies required
2.3.9.1. Verify these are only specified on mains >=225mm
2.3.10. Verify swabs and swabbing directions are shown on the plans
2.3.11. Are connections to existing mains required
2.3.11.1. Verify method of connection to large main in accordance with SEWL requirements
2.4. Water Quality
2.4.1. Verify shut off blocks meet South East Water Limited requirements
2.4.2. Verify that layout minimises dead ends
2.4.3 Verify that pipe sizing appropriate