

Enclosure B

Full-Scale Verification Testing Protocol

Monitoring and Reporting of Operating Processes

The operating processes marked with a check (✓) in Table B below selected by the TCEQ as the minimum operating processes to be recorded during the Full-Scale Verification Testing of the proposed temporary DPR WTP. This will allow the TCEQ to have a more complete understanding of operating parameters that can interfere with the DPR WTP's ability to continuously produce a safe quality of water.

Table B

PROCEDURES	Each Event
MF/RO 2008 Radial Flow Clarifier	
All Blowdown Events	
Blowdown date	✓
Blowdown start time	✓
Blowdown duration (mins.)	✓
Quantity of sludge wasted (gals.)	✓
MF Membranes Unit	
Selected Unit No. for testing	✓
Daily maximum flux rate (gpm/sf)	✓
Daily maximum specific flux rate (gpm/sf-psi)	✓
1) All Backwash (BW) Events	
BW trigger (time, gals. treated, specific flux, transmembrane pressure (TMP))	✓
BW frequency (mins.)	✓
BW duration (mins.)	✓
BW flow rate (gpm)	✓
BW supply pH	✓
Chemical added to BW supply	✓
Chemical concentrations	✓
BW supply temperature (° C)	✓
Quantity filtrate used (gals.)	✓
2) All Chemical Maintenance Clean (MC) Events	
MC trigger (time, gals. treated, specific flux, TMP)	✓
MC frequency (mins.)	✓
MC date	✓
MC start time	✓
MC solution flow rates (gpm)	✓
MC soak duration (mins.)	✓
MC air flow rate (cfs)	✓
MC air flow duration (mins.)	✓
MC chemicals used	✓
MC chemical concentrations (mg/L)	✓
MC solution temperature (° C)	✓
MC solution pH	✓
MC flush flow rate (gpm)	✓

PROCEDURES	Each Event
MC flush duration (mins.)	✓
Total MC duration (mins.)	✓
Quantity of filtrate used (gals.)	✓
Filtrate pH immediately after MC flush	✓
3) All Clean-In-Place (CIP) Events	
CIP trigger (time, gals. treated, specific flux, TMP)	✓
CIP date	✓
CIP start time	✓
CIP frequency (mins.)	✓
CIP solution flow rate (gpm)	✓
CIP soak duration (mins.)	✓
CIP air flow duration (mins.)	✓
CIP chemicals used	✓
CIP chemical concentrations (mg/L)	✓
CIP solution temperature (° C)	✓
CIP solution pH	✓
CIP flush flow rate (gpm)	✓
CIP flush duration (mins.)	✓
Total CIP duration (mins.)	✓
Quantity filtrate used (gals.)	✓
Filtrate pH immediately after CIP flush	✓
4) All Direct Integrity Test (DIT) Results	
DIT date	✓
DIT start time	✓
Starting test pressure (psi)	✓
Duration (mins.)	✓
Ending test pressure (psi)	✓
Deterioration rate (psi/min)	✓
Calculated log removal value (LRV _{DIT})	✓
5) All Repairs & Replacements	
Date of repair or module replacement	✓
Module No.	✓
Type of repair or module replacement	✓

Enclosure B
Full-Scale Verification Testing Protocol
Monitoring and Reporting of Operating Processes

PROCEDURES	Each Event
RO Membrane Unit	
Selected Unit No. for testing	✓
Daily maximum flux rate (gpm/sf)	✓
Daily maximum specific flux rate (gpm/sf-psi)	✓
1) All Clean-In-Place (CIP) Events	
CIP trigger (time, gals. treated, specific flux, TMP)	✓
CIP frequency (hrs.)	✓
CIP date	✓
CIP start time	✓
CIP solution flow rate (gpm)	✓
CIP soak duration (mins.)	✓
CIP air flow rate (cfs)	✓
Quantity of permeate used (gals.)	✓
2) All RO Membrane Molecular DIT (if applicable)	
DIT date	✓
DIR start time	✓
Molecular indicator selected	✓
Target log removal value (LRV)	✓
Required feed solution volume (gals.)	✓
Required dosage rate (mg/L)	✓
Duration for equilibrium to occur (mins.)	✓
Sample size (liters)	✓
No. of samples collected	✓
Sample frequencies (mins.)	✓
Feed sample concentrations (mg/L)	✓
Permeate sample concentrations (mg/L)	✓
All calculated LRV _{DIT} Values	✓
Quantity of permeate wasted (gals.)	✓
3) All Repairs & Replacements	
Date(s) of repair or element replacement	✓
Stage No.	✓
Pressure Vessel No.	✓
Module No.	✓
Type of repair or replacement	✓
Person/company performing repair	✓

PROCEDURES	Each Event
Conventional 2010 SWTP Accelerator Solids-Contact Clarifier	
All Blowdown Events	
Blowdown date	✓
Blowdown start time	✓
Blowdown duration (mins.)	✓
Quantity of sludge wasted (gals/event)	✓
Conventional 2010 SWTP Media Filter	
Selected Filter No. for testing	✓
Maximum daily hydraulic loading rate (gpm/sf)	✓
All Backwash (BW) Events	
BW date	✓
BW trigger (time, loss-of-head, turbidity, other)	✓
Filter run time (hrs.)	✓
BW start time	✓
BW duration (mins.)	✓
BW flow rate (gpm/sf)	✓
Quantity of filtered water used for BW (gals.)	✓
Filter-to-waste duration (mins.)	✓
Filter ripening duration (mins.)	✓
Unit filter run volumes (gals./day)	✓