

Crude sewage coagulant
mixing point
Example scenarios

Scenario 2:

Site description:

- A medium/large sized percolating biological filtration treatment works
- Gravity and pumped incoming flows
- Inlet works:
 - 6mm 2D mechanical screen
 - Grit detritor
 - Single sided 3DWF storm weir
 - Manually adjusted penstock
 - Flow control flume
 - Feed chamber to PSTs

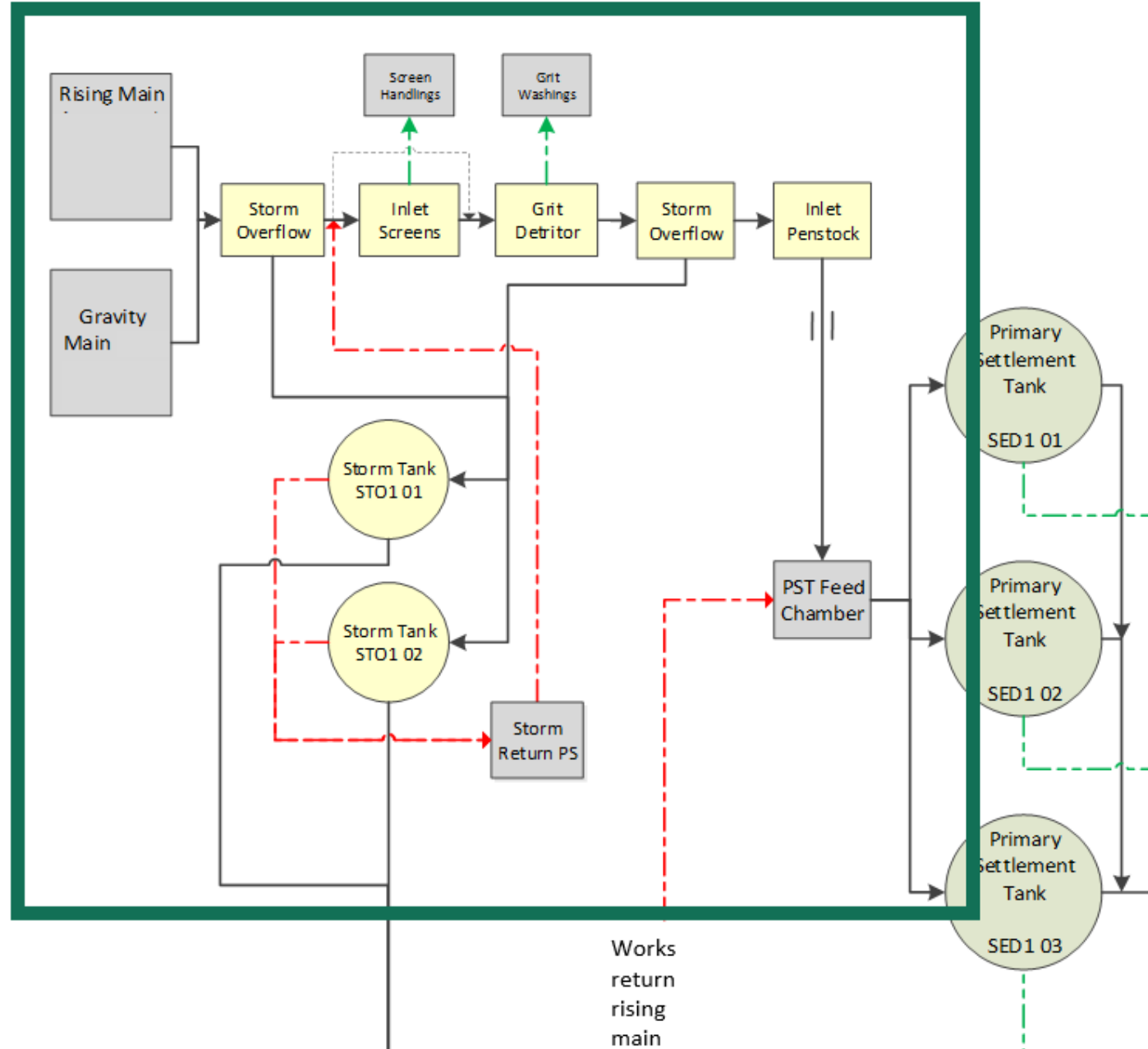
Scenario 2:

Site Name	Example 2 WRC
Population equivalent	8314
FFT (l/s)	70
FFT (m ³ /d)	6048
DWF (m ³ /d)	1800
Iron permit (95%ile) (mg/l)	4
Iron permit (Absolute) (mg/l)	8
Annual average phosphorus permit (mg/l)	1



Scenario 2:

Preliminary treatment stage



Scenario 2:

Hydraulic Assessment of dosing drop at the end of the current inlet.

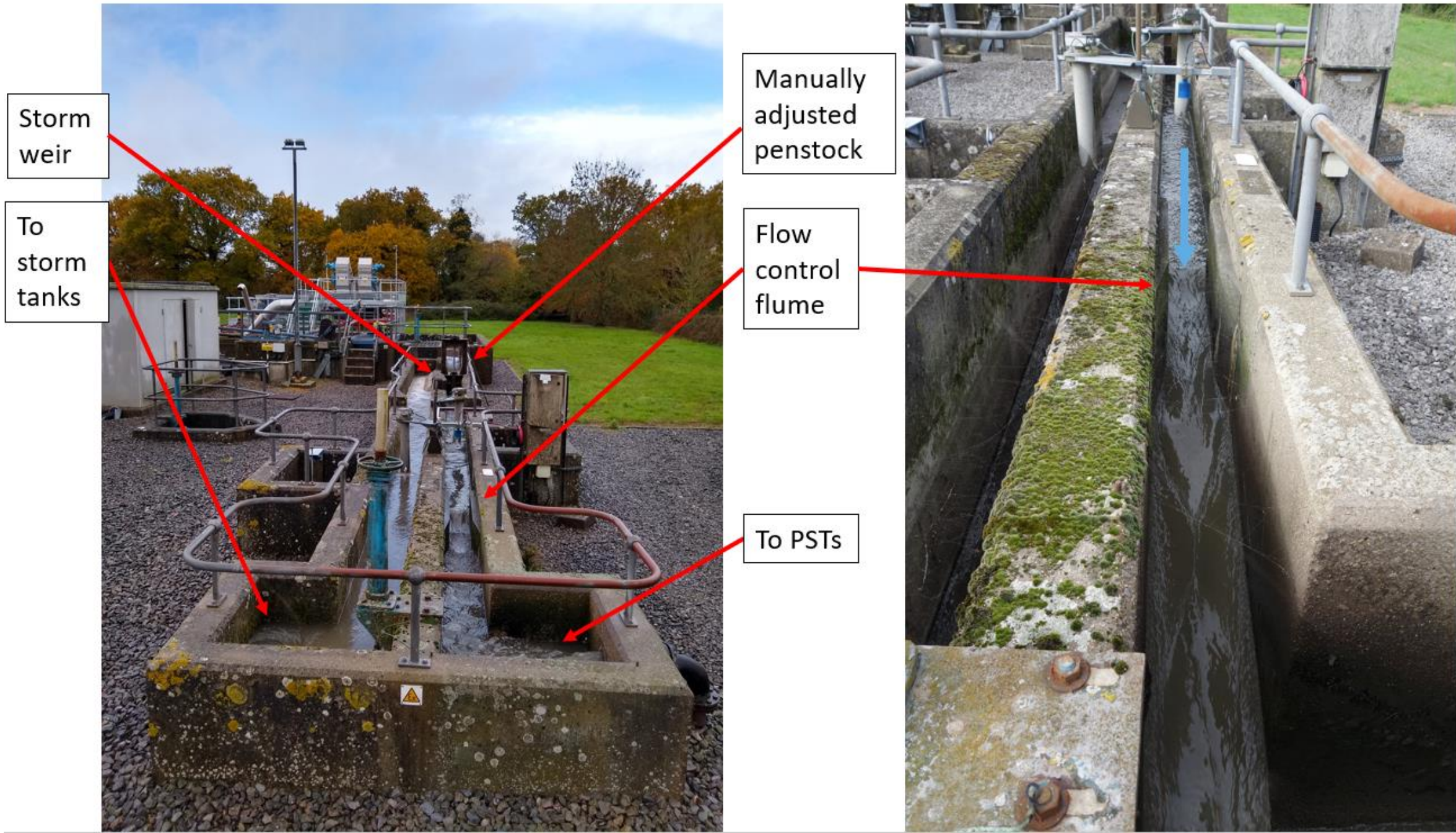
There is no 150mm drop present at the highest flows and when the works return pumping station (WRPS) operating (works return flow rate is 7 l/s). When the WRPS is set to 0 l/s there is still no drop present across the end of the inlet. As such an alternative mixer is required at highest flows.

A 150mm 'dosing drop' is achieved when incoming flows are reduced to 61 l/s (and no WRPS is operational). This is between the sloping section downstream of the flume and the lowest section of the chamber at the end of the inlet. It is assumed that the operation of the WRPS would create a turbulent mixing area at the end of the inlet, but this pump does not run all the time and therefore it is not guaranteed.

Challenges:

- No 150mm gravity drop in all flow conditions
- 150mm drop is only present when flows are below 61l/s and the WRPS is not in operation
- The inlet feed chamber is relatively small (nominally 1m x 1m)

Scenario 2:





PST feed chamber



Scenario 2: