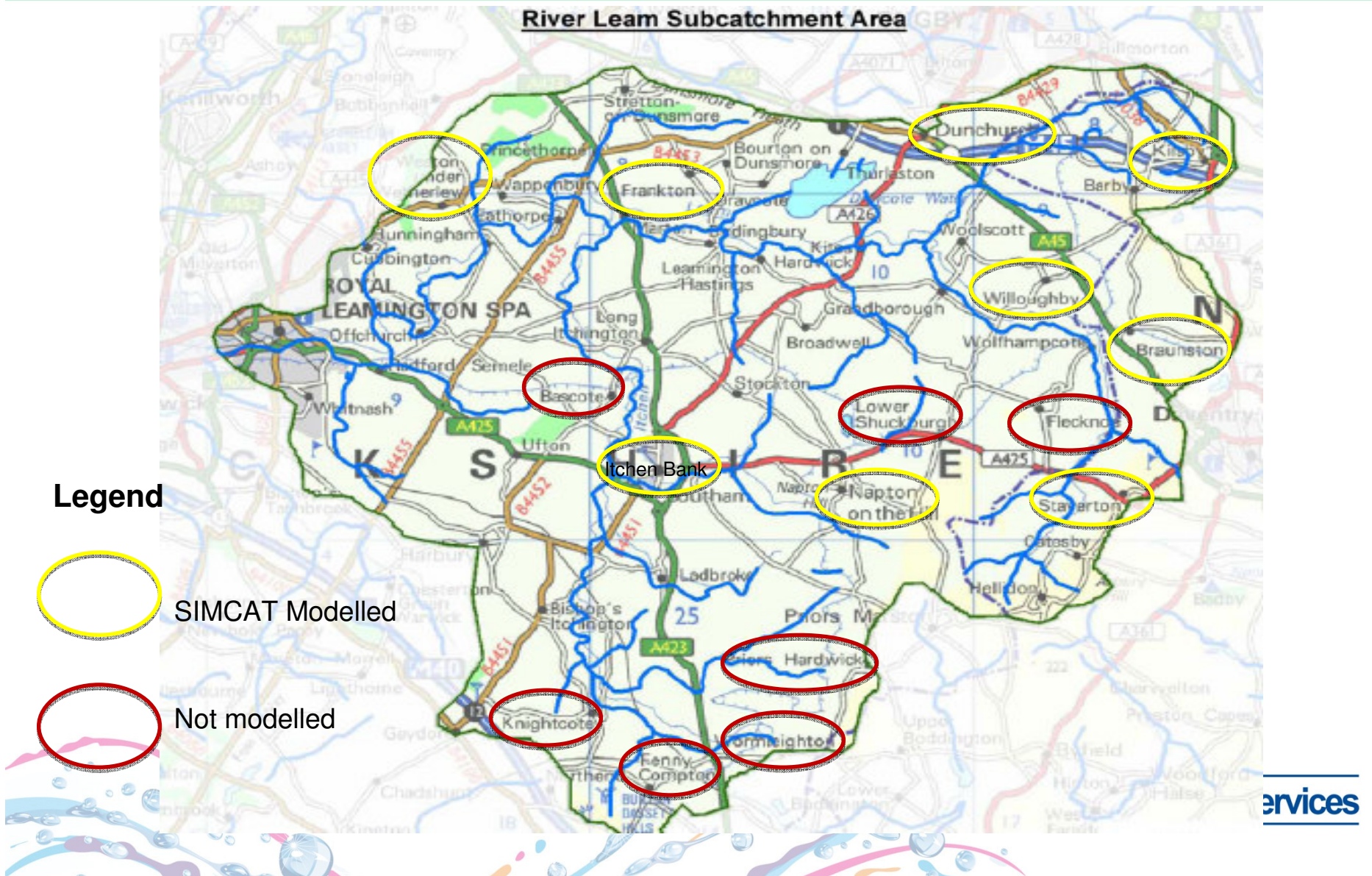


River Leam and Itchen Catchment



Waste Water Services

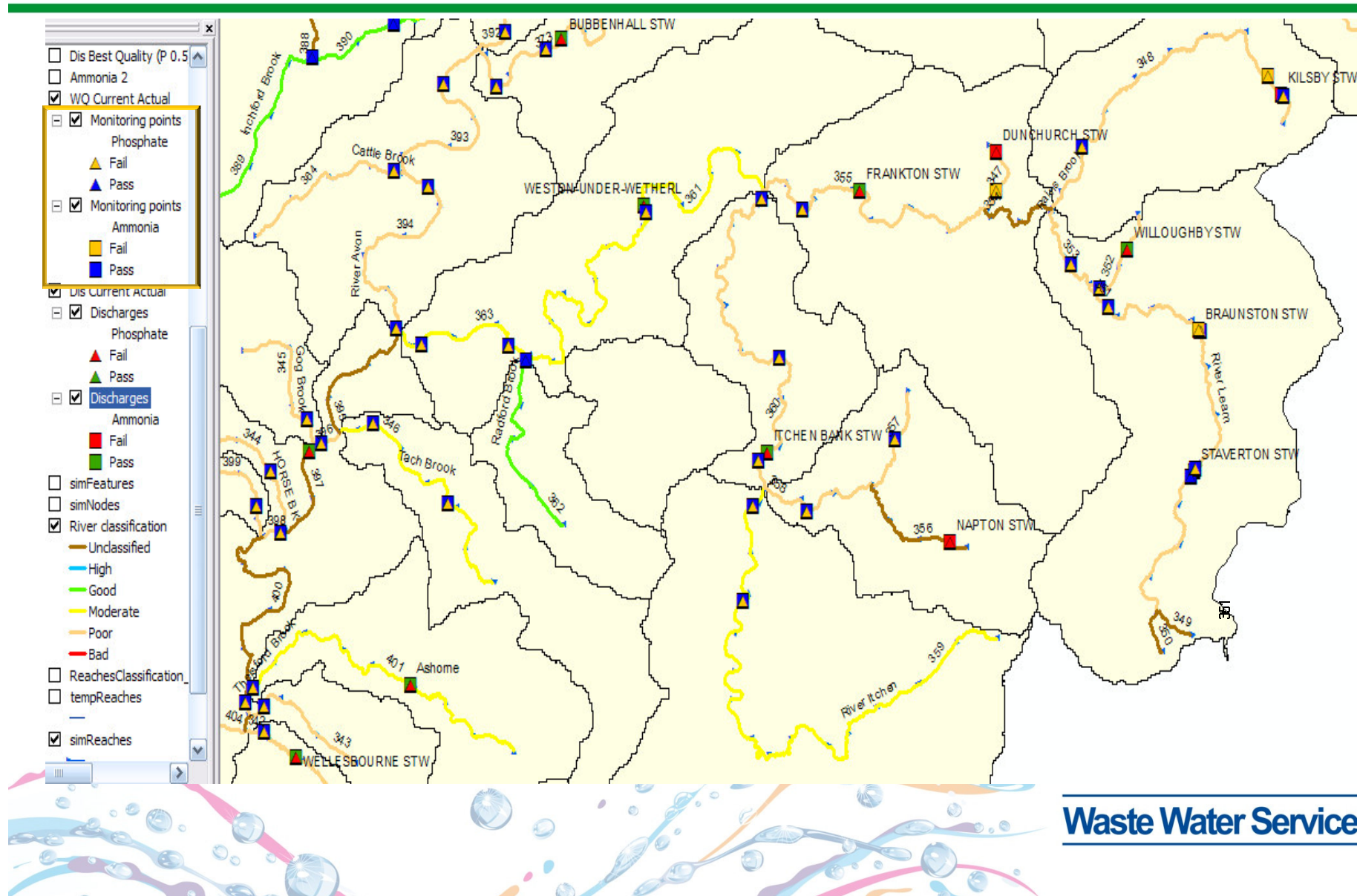
River Leam Subcatchment Area



Sewage works in the river Leam catchment

Sewage Works	River	Consented DWF m3/d	PE Served	BOD (mg/l)	Ammonia (mg/l)	SS (mg/l)	Total P (mg/l)	Process	In Simcat model?
Staverton	Trib Leam	321	720	10	5	20	-	RBC	Y
Flecknoe	Trib Leam	39	183	Descriptive				SAF	N
Braunston	Leam	930	1947	25	5	45	-	RBC	Y
Willoughby	Trib Leam	130	381	30	-	45	-	RBC	Y
Kilsby	Rains Brook	658	2358	15	5	25	-	OD	Y
Dunchurch	Thurlaston bk	976	2640	10	5	20	-	OD	Y
Frankton	Trib Leam	1002	2301	20	10	40	-	Bio Filter	Y
Lower Shuckborough	Trib Leam	17	71	Descriptive				Bio Filter	N
Priors Hardwick	Trib Itchen	30	178	25	-	45	-	Bio Filter	N
Wormleighton	Trib Itchen	35	69	20	-	30	-	RBC	N
Fenny Compton	Itchen	251	735	10	5/10	15	-	RBC	N
Knightcote	Trib Itchen	36	188	Descriptive				RBC	N
Napton	Stowe	197	937	15	10	25	-	RBC	Y
Itchen Bank	Itchen	2281	16139	10	3	20	2 (2014)	OD	Y
Bascote	Trib Itchen	23	131	Descriptive				RBC	N
Weston under	Leam	278	919	20	-	30	-	Bio Filter	Y
Total		7,204	29,897						

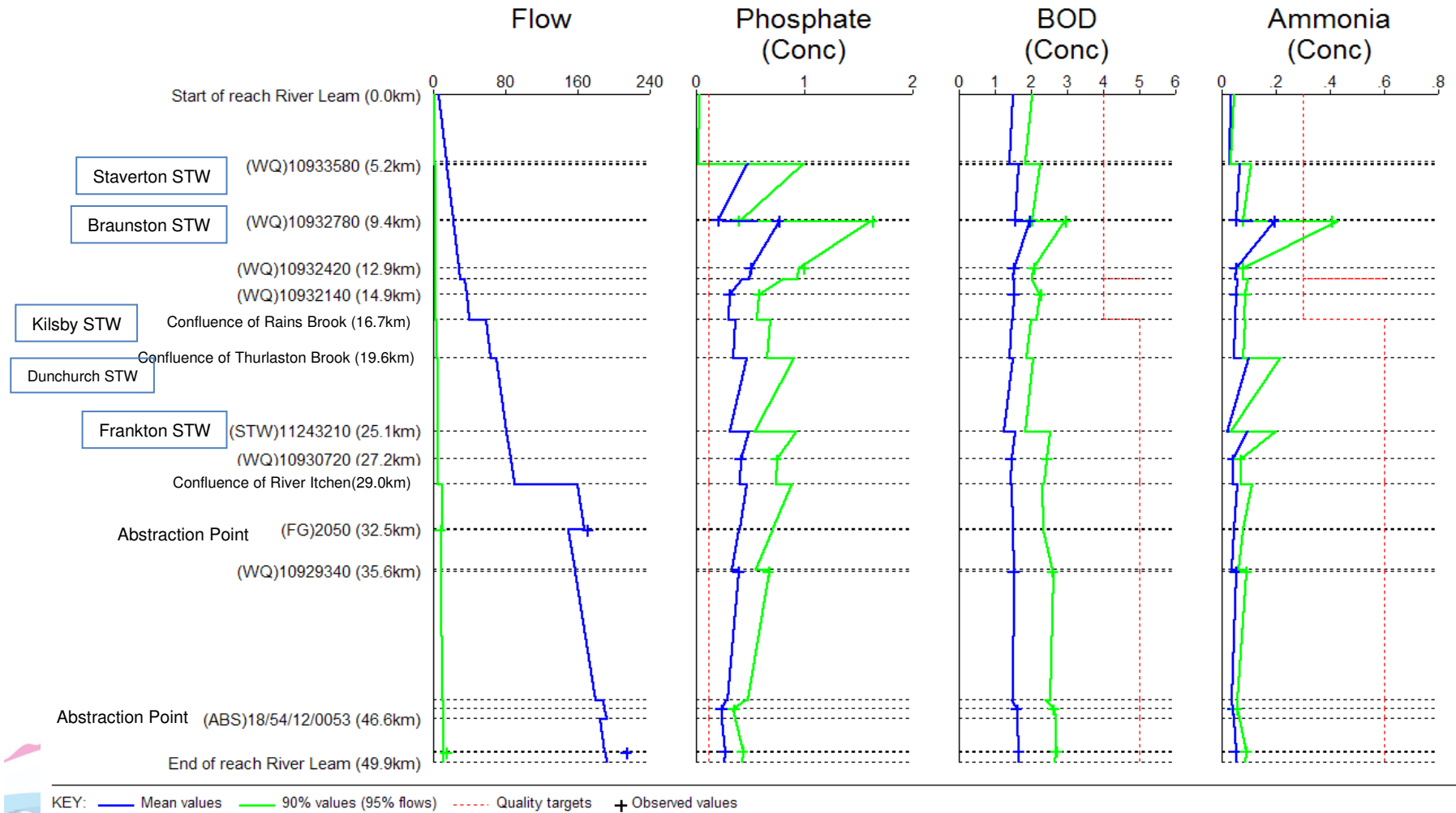
River Leam Catchment in SIMCAT



Current Flow and Quality Position

SIMCAT RESULTS
Date: 13/10/2011

SEVERN_ArcGIS Simcat Geodatabase V2



Initial SIMCAT modelling outputs

An initial SIMCAT simulation has been run to assess the likely river quality improvement delivered by addition of Phosphorus removal equipment to selected sewage treatment works:-

- Staverton STW
- Braunston STW
- Kilsby STW
- Dunchurch STW
- Frankton STW

The model run is on the basis of imposition of 1 mg/l total phosphorus consents

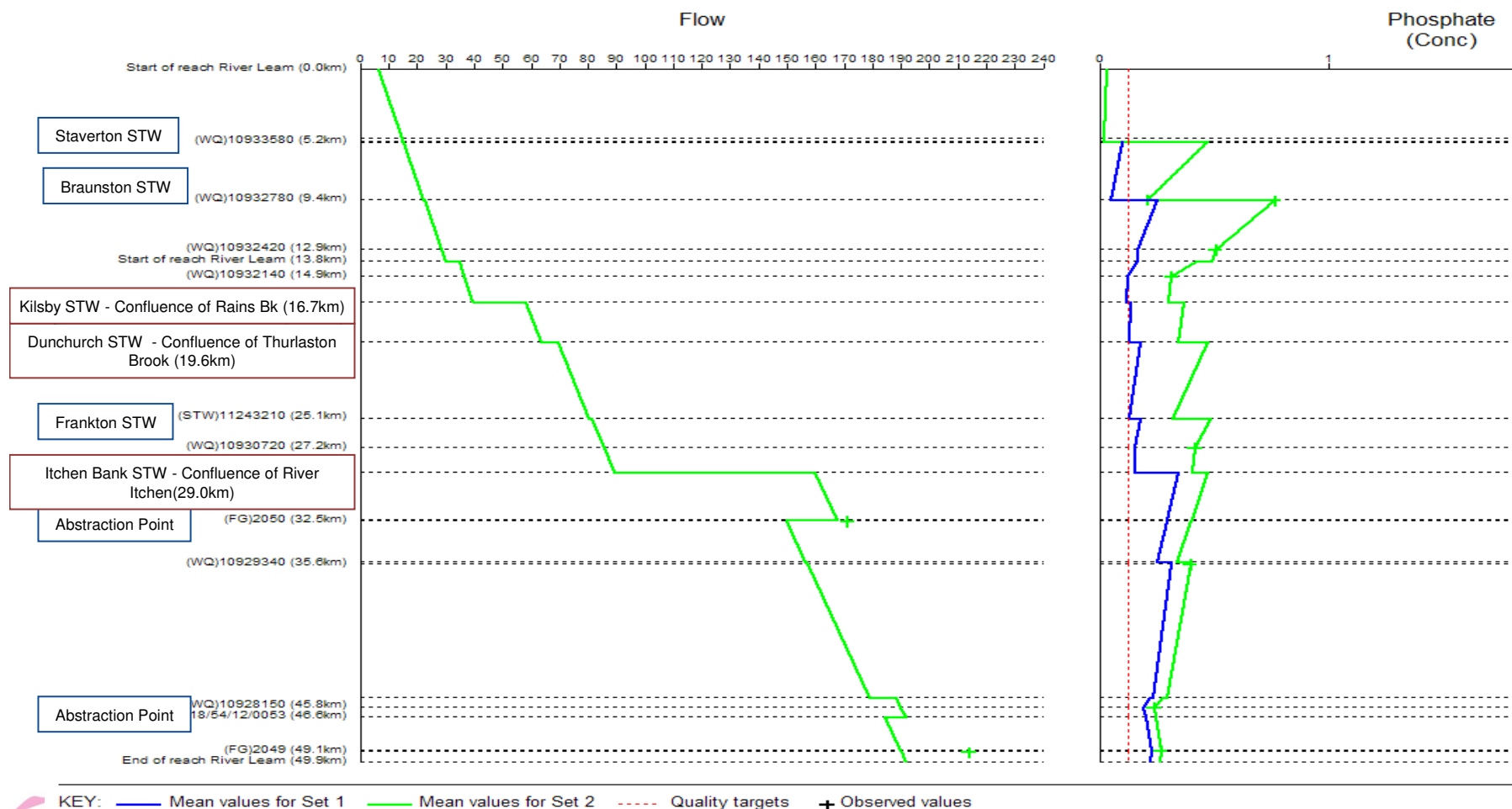
In practice, a works with a 1 mg/l total phosphorus consent will be operated to deliver an effluent that is some way within the consent limit.

The following plot does not reflect the likely improvements that will be delivered by the ongoing phosphorus removal project at Itchen Bank STW.

SIMCAT Output – Simulating impact of 1mg Phosphorus consents.

SIMCAT RESULTS
Date: 08/12/2011

SEVERN_ArcGIS Simcat Geodatabase V2



Waste Water Services

Key Points

- There are 16 Severn Trent Sewage Treatment Works in the River Leam catchment. However, only 9 are represented in the SIMCAT model.
- Of the 7 sewage works not included in SIMCAT, 4 are in the upper reaches of the river Itchen. One of these (Fenny Compton) is likely to be significant.
- There is one major quality improvement project taking place in AMP5 – the addition of Phosphorus removal equipment at Itchen Bank STW
- Phosphorus apportionment to sewage works in SIMCAT in the upper Leam reach is questionable and requires investigation.
- Severn Trent intend to work with the EA with a view to including a number of Phosphorus removal projects in our AMP6 business plan.
- Phosphorus removal at sewage treatment works alone will not deliver good status required by WFD.