

Enquadramento da Bacia do PCJ



Estudo 3 – Rio Atibaia e tributários

Elaborado pelo Setor de Águas Interiores da
CETESB

Grupo de parâmetros:

- a) Matéria orgânica (Oxigênio Dissolvido e DBO)
- b) Nutrientes (Fósforo Total e Nitrogênio Amoniacal e Clorofila a)
- c) Sólidos (Ferro Dissolvido e Turbidez)
- d) Microbiológico (*Escherichia coli*)

Período de Estudo

- Início: 2000
- Término 2014

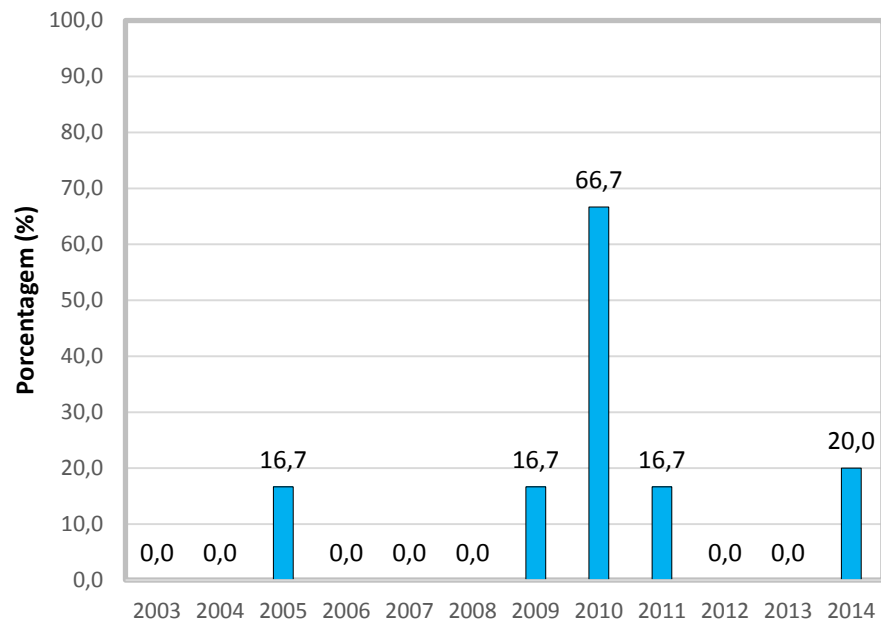
Pontos de amostragem

Corpo Hídrico	Ponto	Localização	Cidade	Latitude	Longitude
Ribeirão Anhumas	NUMA 04900	Próximo à foz no Rio Atibaia. Ponte antes da entrada da Rhodia, saindo de Paulínia.	PAULINIA	22 45 56	47 06 00
Ribeirão Pinheiros	PINO 02100	Ponte a montante da ETE de Vinhedo. O córrego esta correndo a esquerda, paralelamente a Rod. dos Andradas, no trecho urbano de Vinhedo.	VINHEDO	23 00 38	46 58 54
	PINO 03900	Ponte na Marginal paralela à Rod. Dom Pedro, alt. do Km 122,5 (sentido Campinas). Próximo à foz no Rio Atibaia.	VALINHOS	22 54 53	46 57 39
Rio Atibaia	ATIB 02010	Junto à captação do município de Atibaia.	ATIBAIA	23 06 12	46 32 42
	ATIB 02030	Na captação de Itatiba. Rua Fioravante Piovani.	ITATIBA	22 58 11	46 50 48
	ATIB 02035	Na captação de Valinhos.	VALINHOS	22 55 43	46 56 21
	ATIB 02065	Na captação de Campinas, na divisa entre os municípios de Campinas e Valinhos.	CAMPINAS	22 54 18	46 58 26
	ATIB 02300	No canal de captação da Rhodia, em Paulínia.	PAULINIA	22 45 07	47 06 20
	ATIB 02605	Ponte da Rodovia SP - 332 que liga Campinas a Cosmópolis.	PAULINIA	22 44 43	47 09 35
	ATIB 02800	Na captação de Sumaré, perto do Mini-Pantanal de Paulinia.	PAULINIA	22 45 41	47 10 24
	ATIB 02900	Ponte de Salto Grande, a jusante do Reservatório da CPFL.	AMERICANA	22 41 54	47 17 27
Rio Atibainha	BAIN 02950	Ponte sobre o Rio Atibainha na estrada que liga a Rod. D. Pedro a Piracaia.	BOM JESUS DOS PERDOES	23 06 48	46 28 45
Rio Cachoeira	CAXO 02800	Ponte sobre o Rio Cachoeira na estrada que liga a Rod. D. Pedro I a Piracaia.	BOM JESUS DOS PERDOES	23 05 43	46 26 31

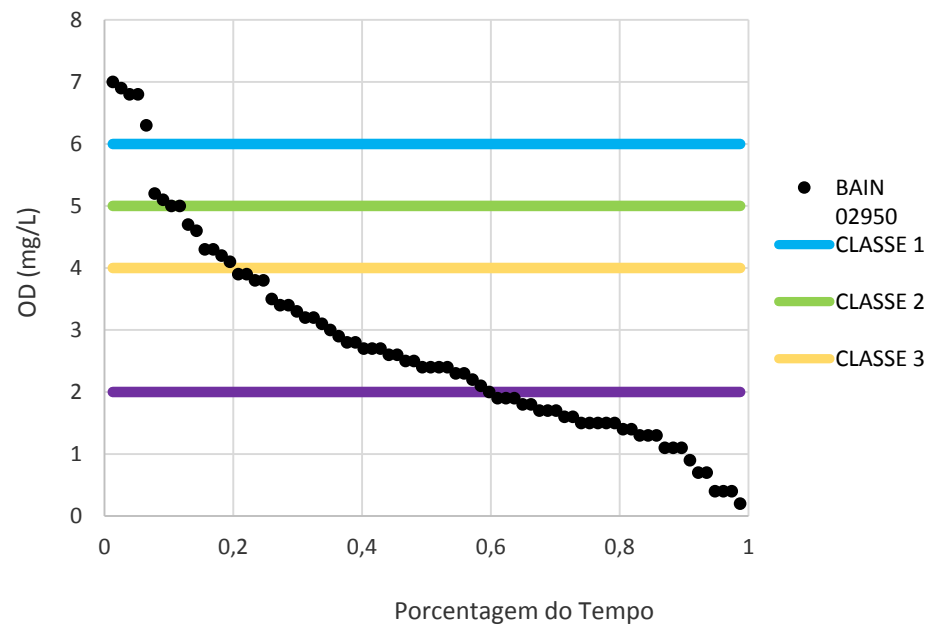
Rio Atibainha
BAIN 02950

BAIN 02950 – Oxigênio Dissolvido (mg/L)

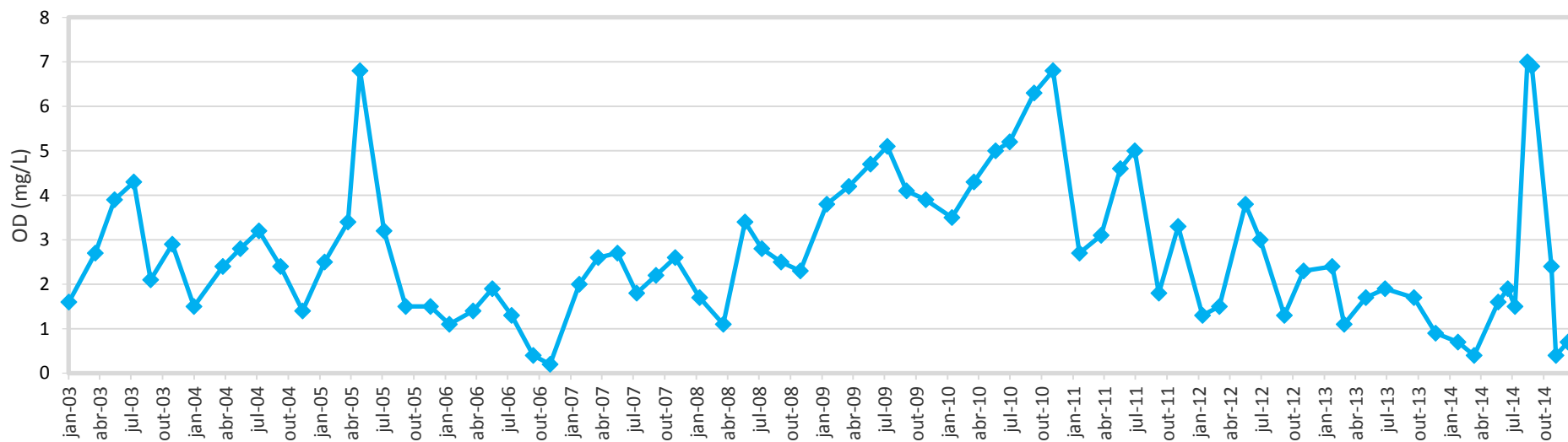
Porcentagem de Atendimento ao Padrão Classe 2 - OD



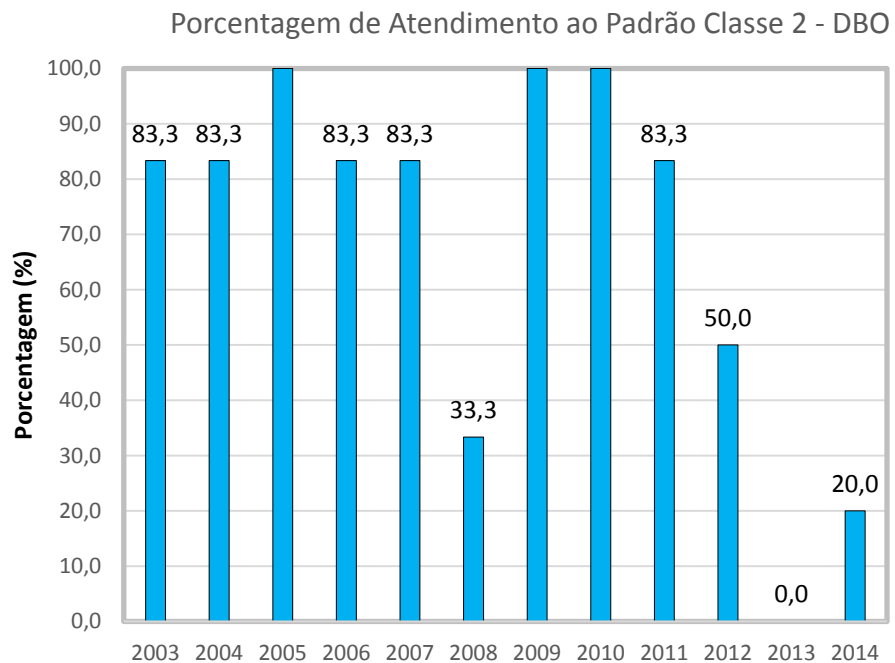
Curva de Permanência



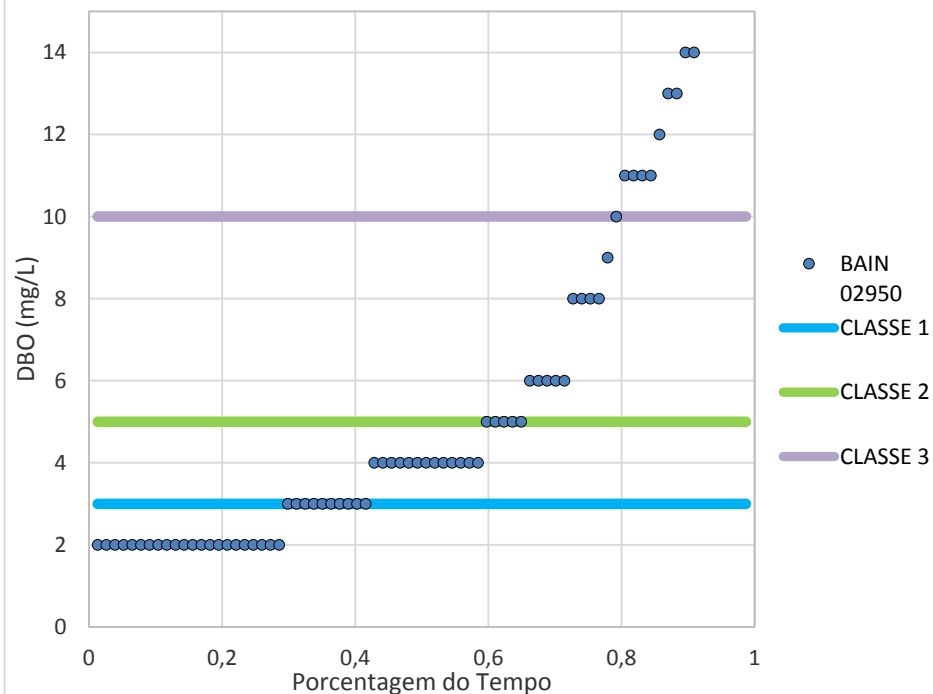
Evolução Temporal



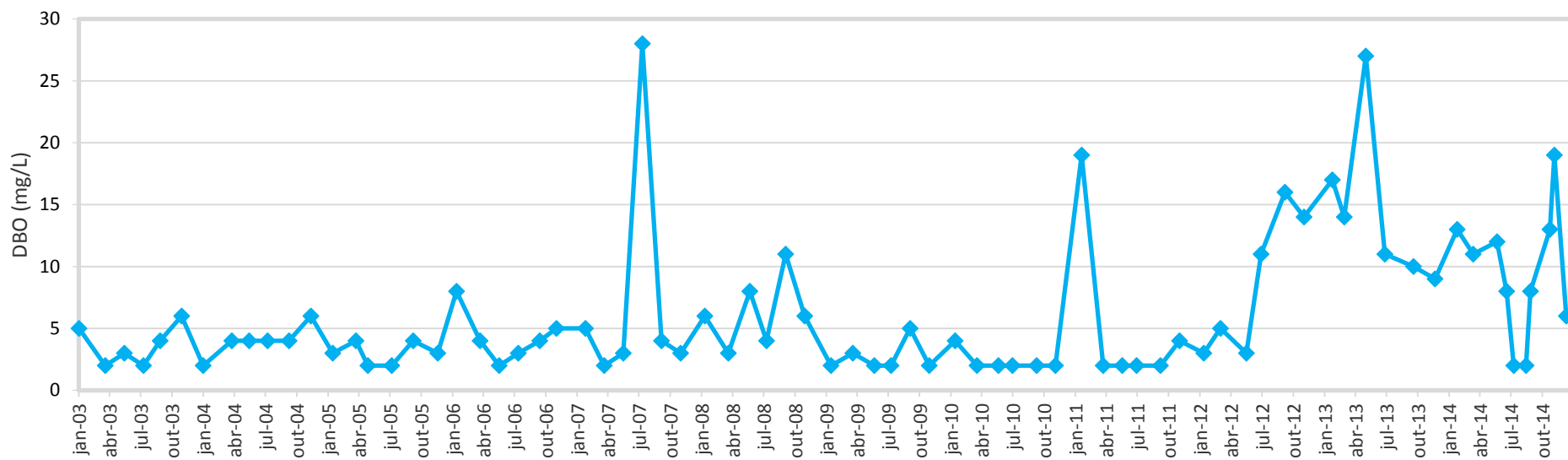
BAIN 02950 – DBO (mg/L)



Curva de Permanência

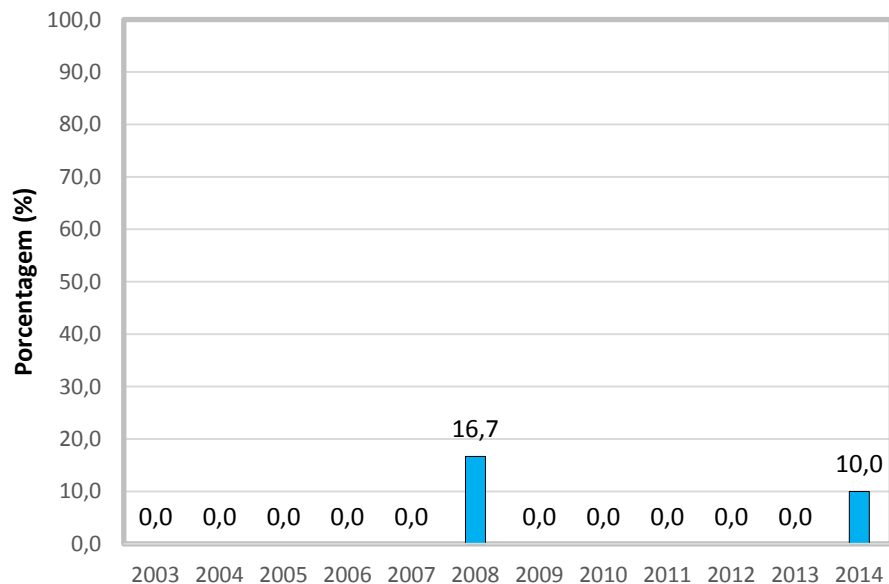


Evolução Temporal

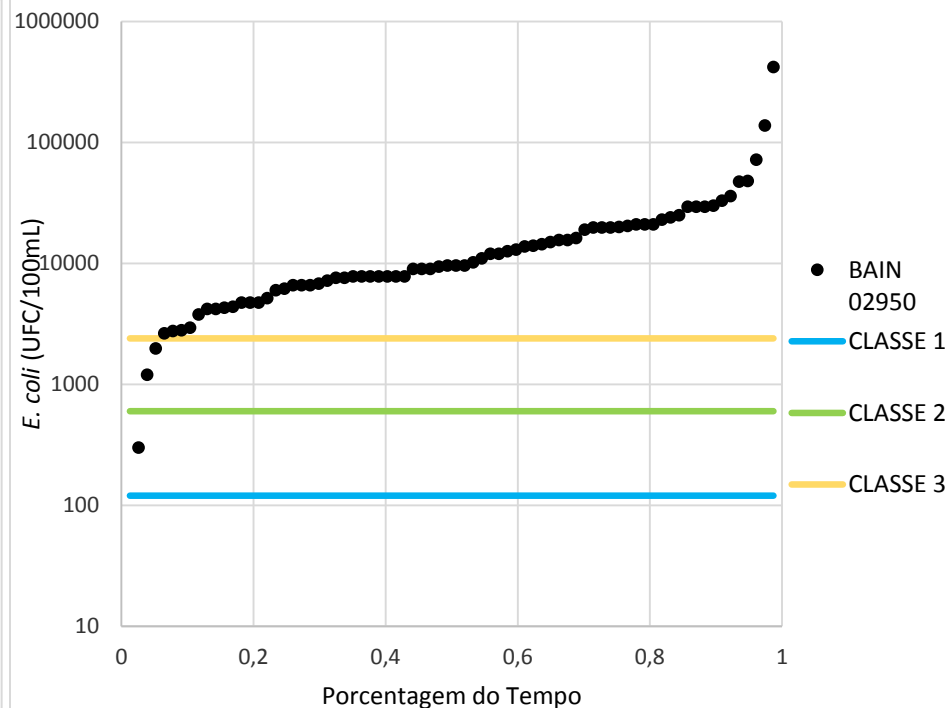


BAIN 02950 – *Escherichia coli* (UFC/100mL)

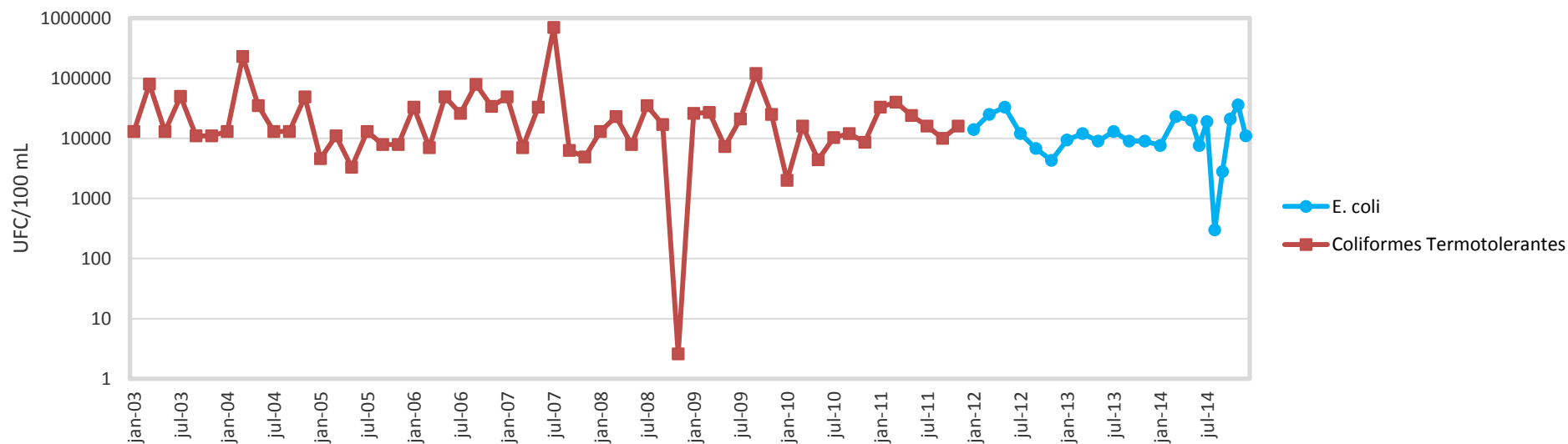
Porcentagem de Atendimento ao Padrão Classe 2 - Colif.
Term. e *E. coli*



Curva de Permanência

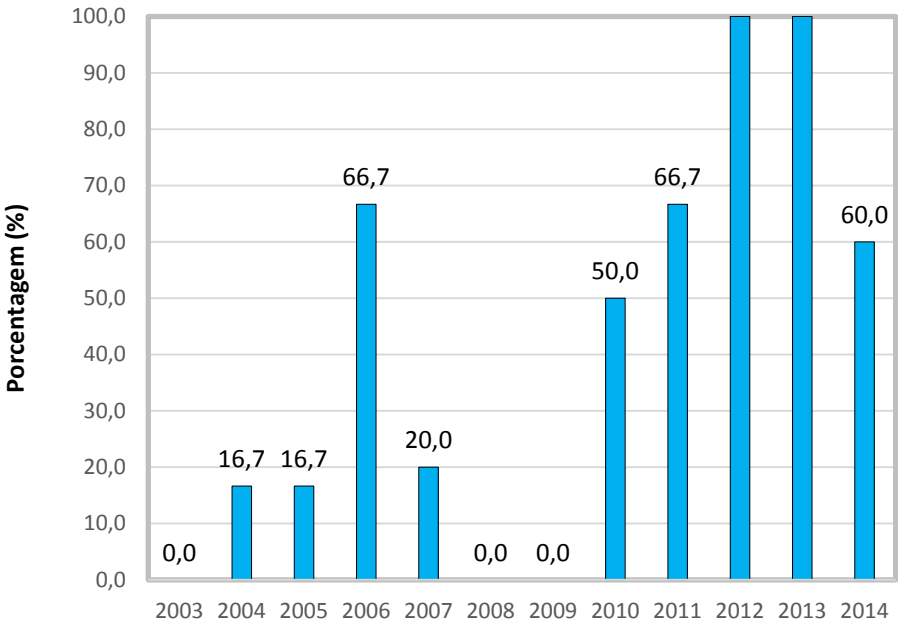


Evolução Temporal

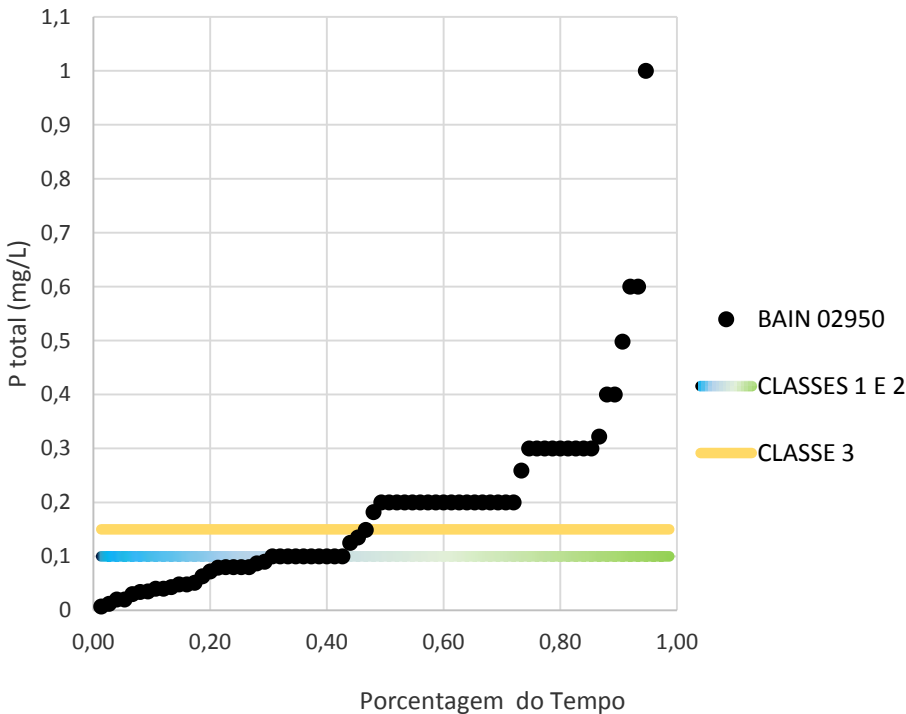


BAIN 02950 – Fósforo Total (mg/L)

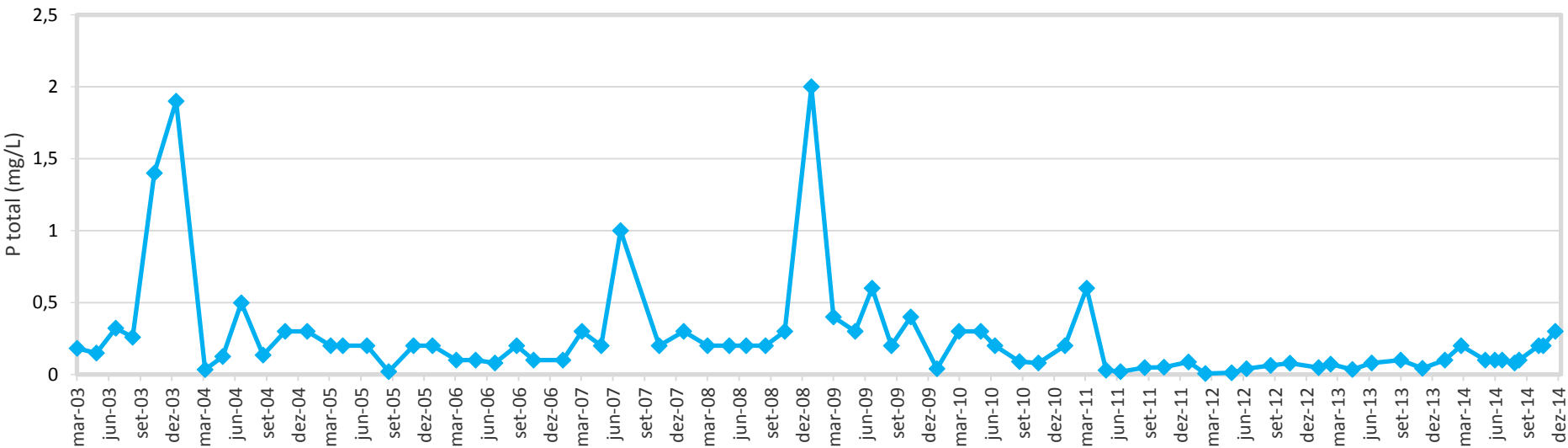
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

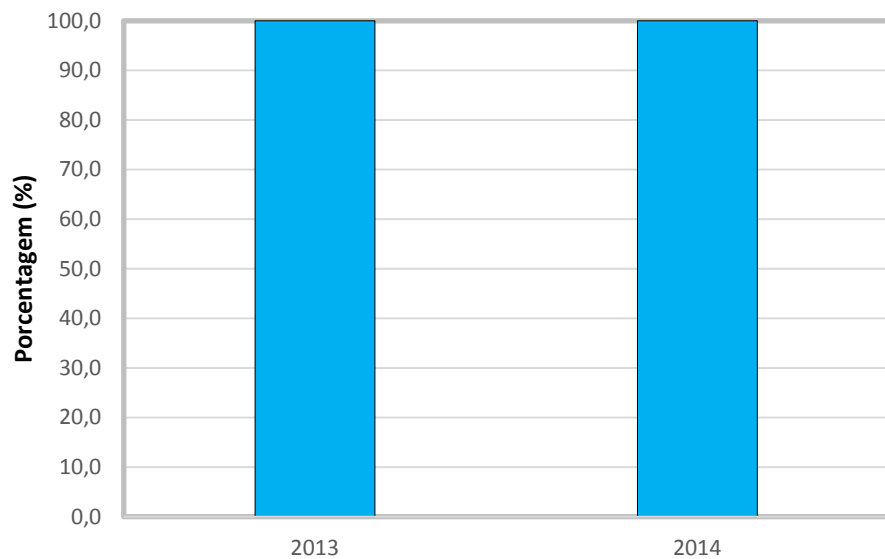


Evolução Temporal

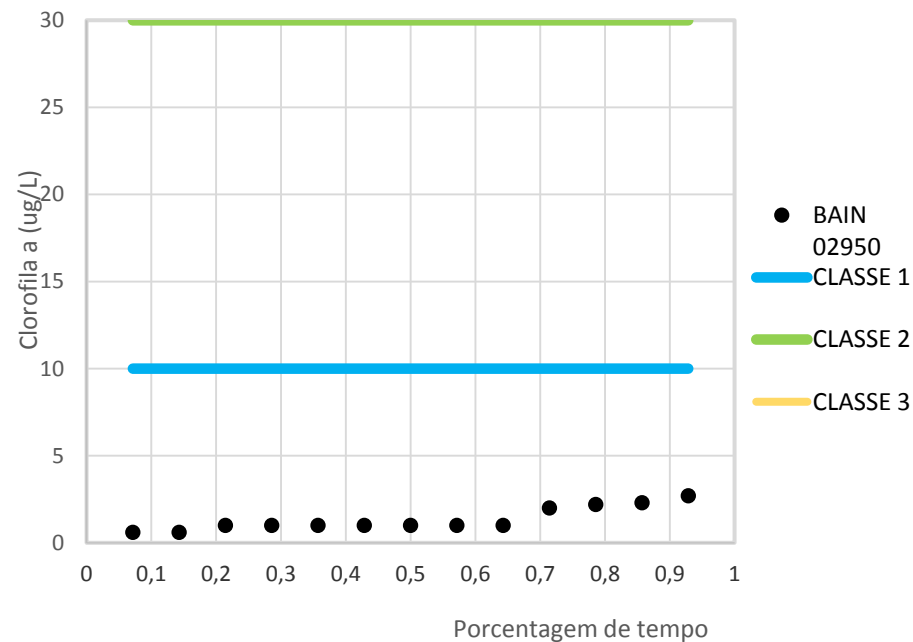


BAIN 02950 – Clorofila a ($\mu\text{g/L}$)

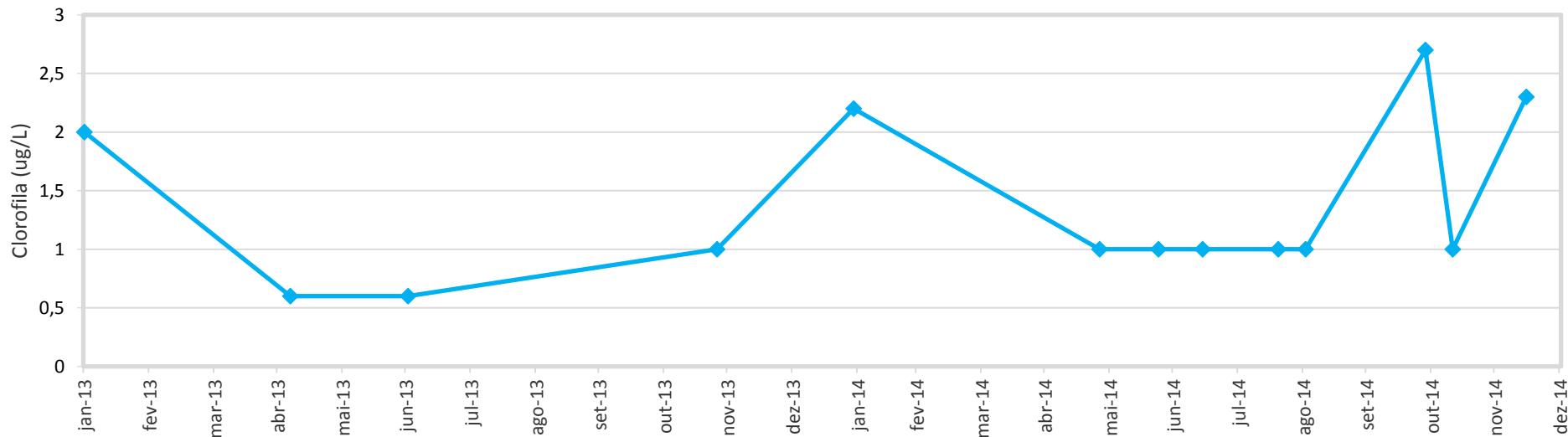
Porcentagem de Atendimento ao Padrão Classe 2 -
Clorofila-a



Curva de Permanência

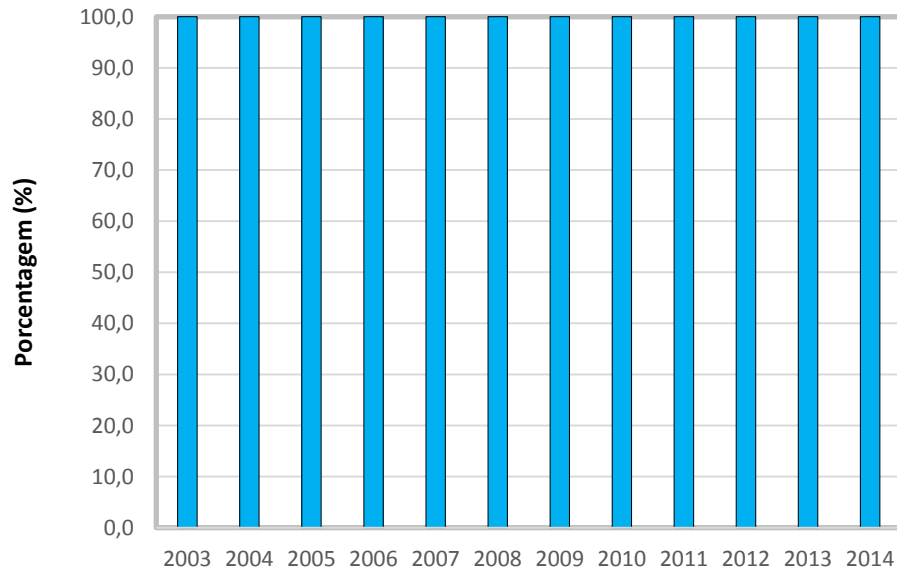


Evolução Temporal

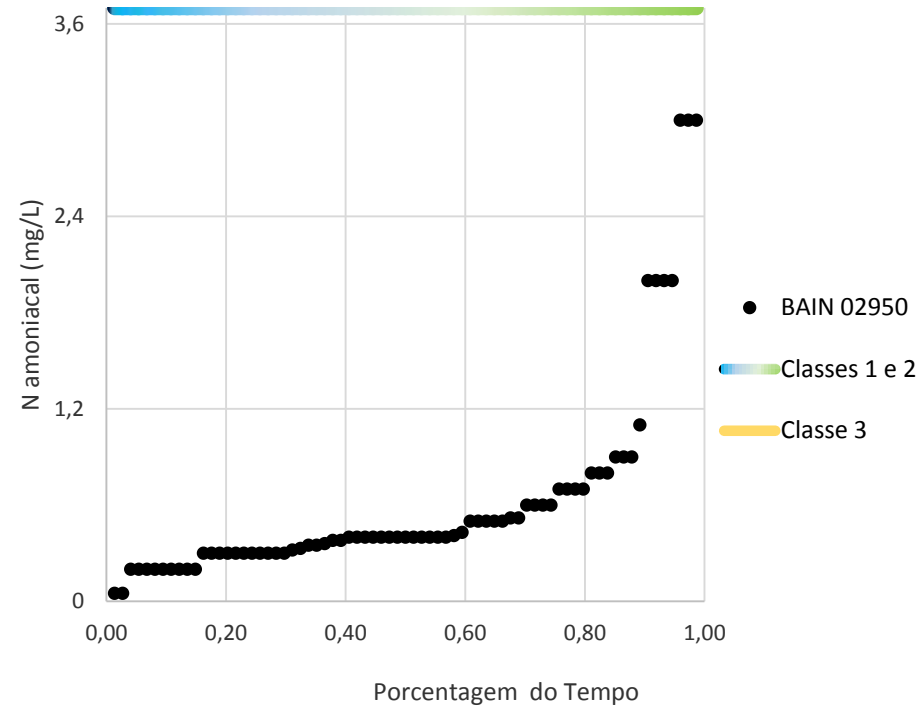


BAIN 02950 – Nitrogênio Amoniacal (mg/L)

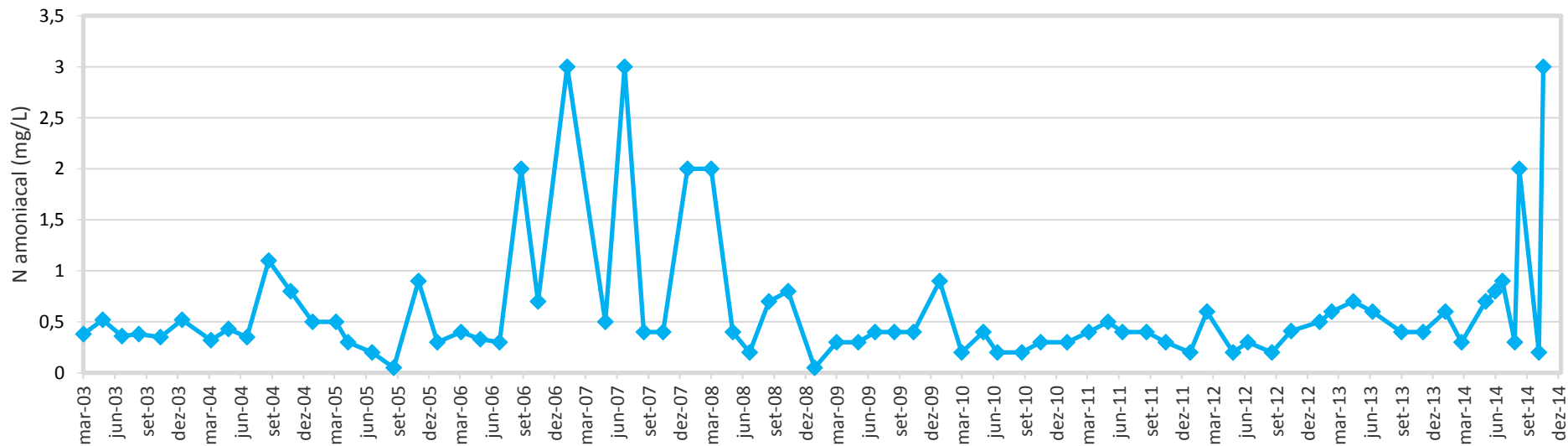
Porcentagem de Atendimento ao Padrão Classe 2 - N amoniacal



Curva de Permanência

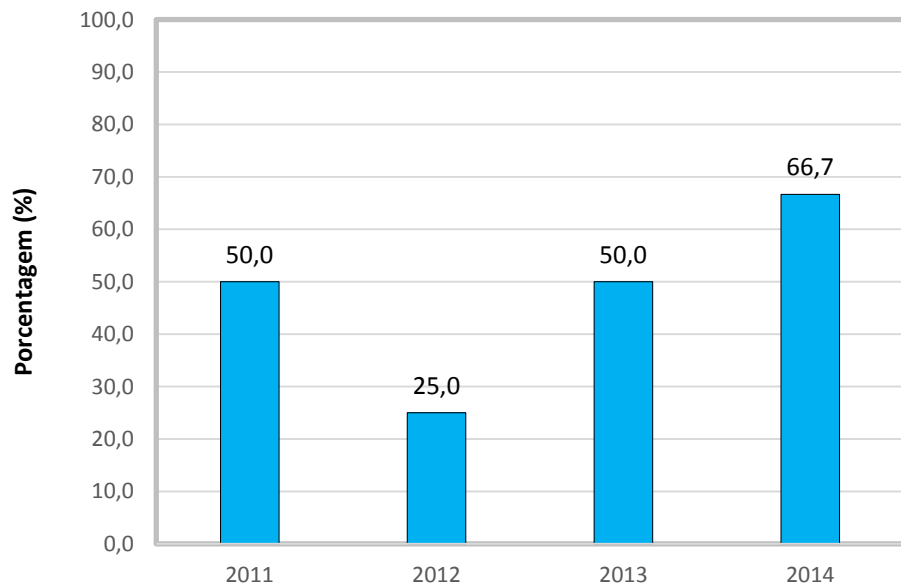


Evolução Temporal

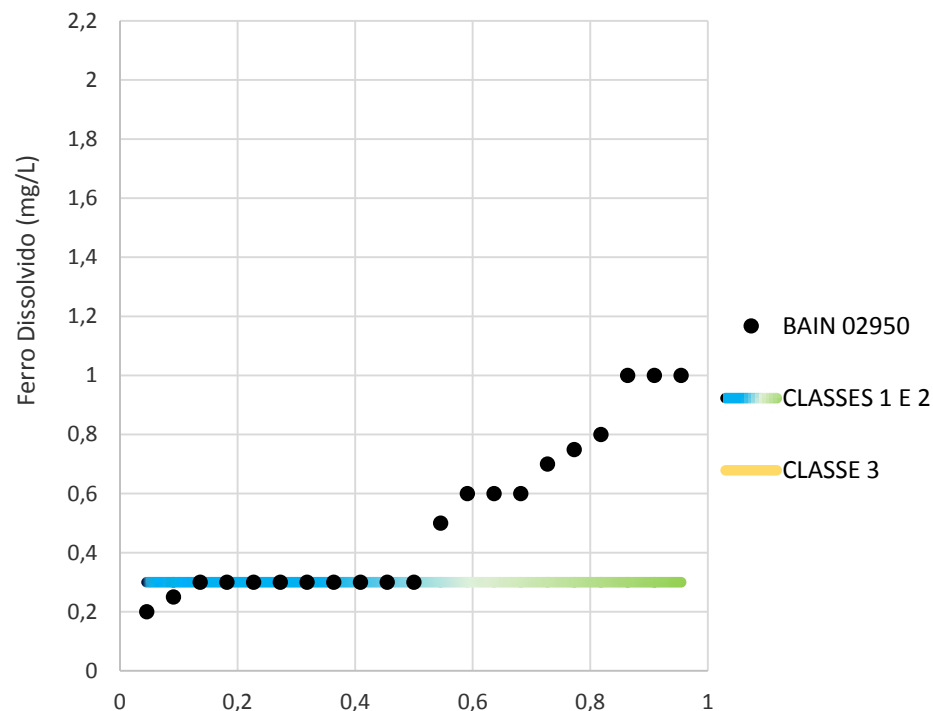


BAIN 02950 – Ferro Dissolvido (mg/L)

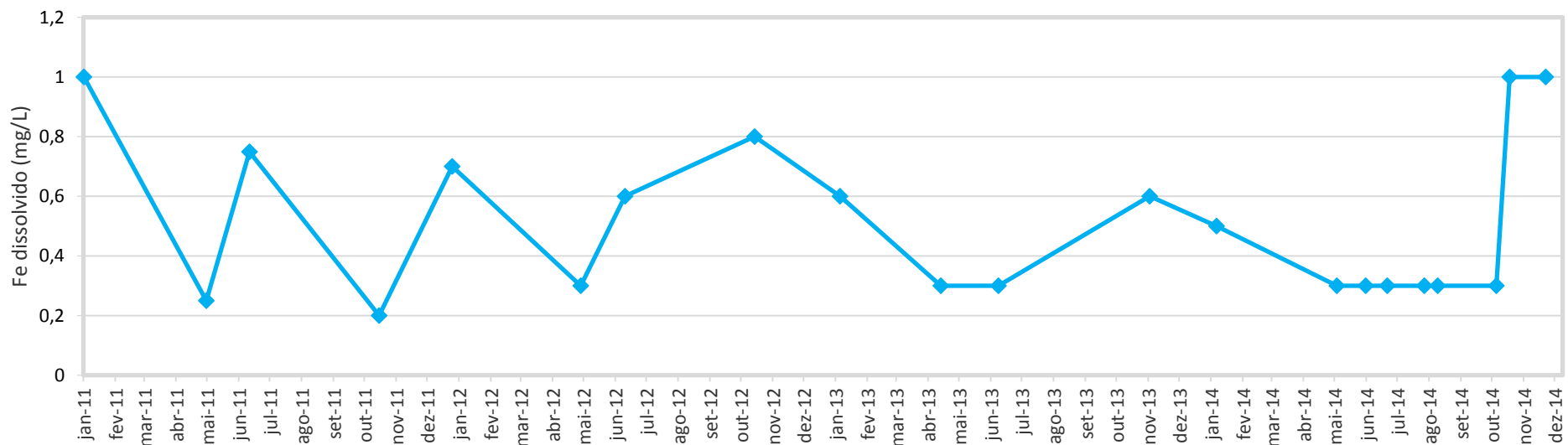
Porcentagem de Atendimento ao Padrão Classe 2 - Fe dissolvido



Curva de Permanência

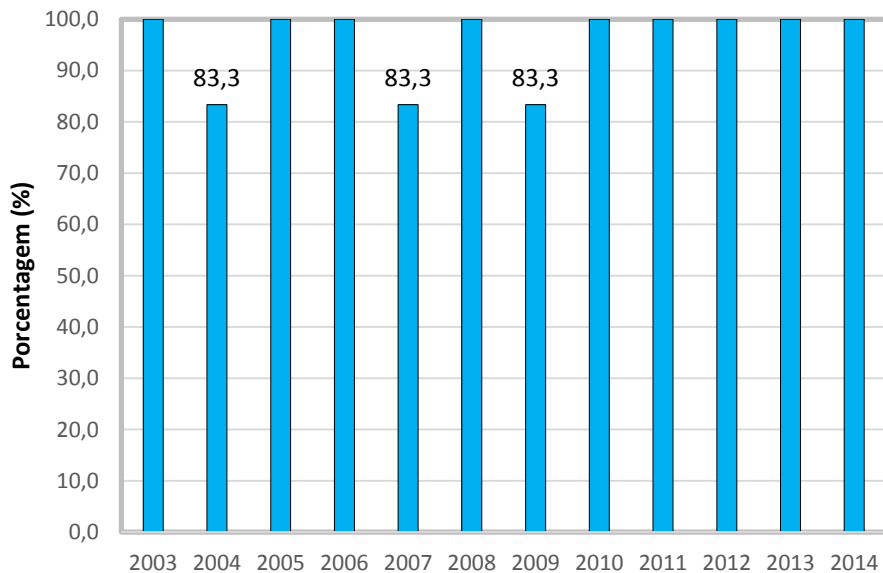


Evolução Temporal

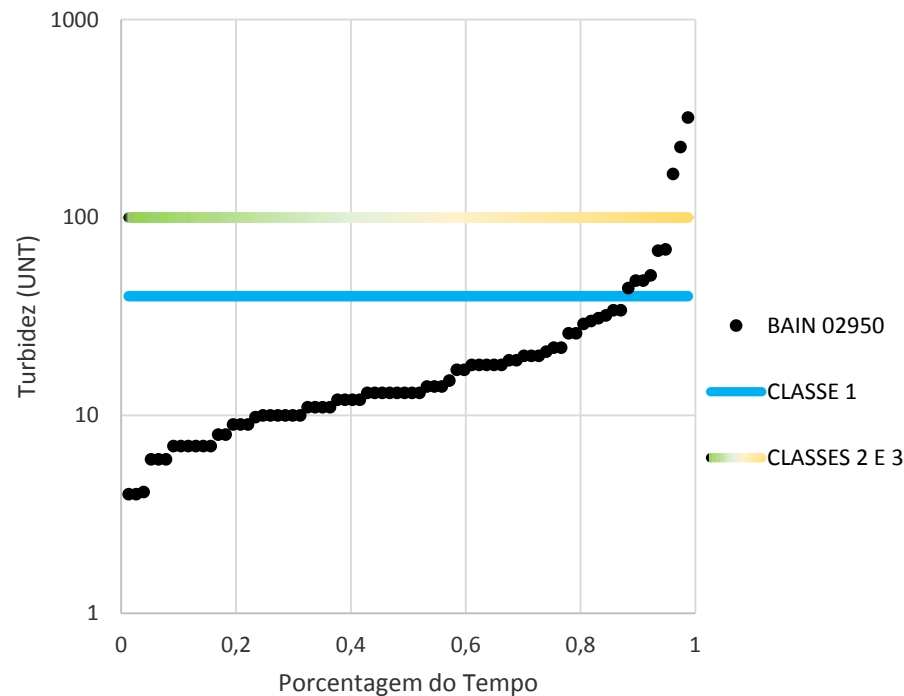


BAIN 02950 – Turbidez (UNT)

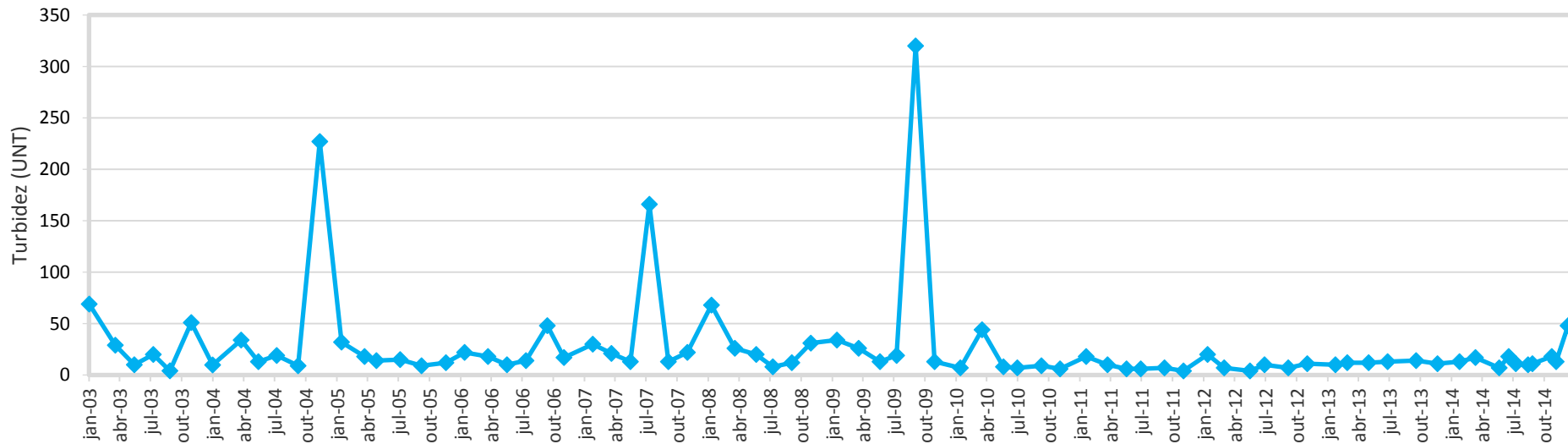
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

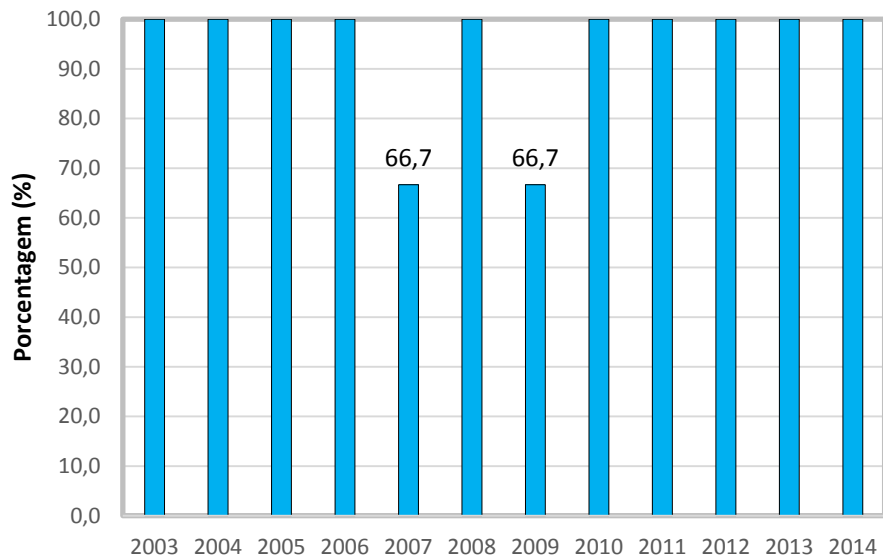


Evolução Temporal

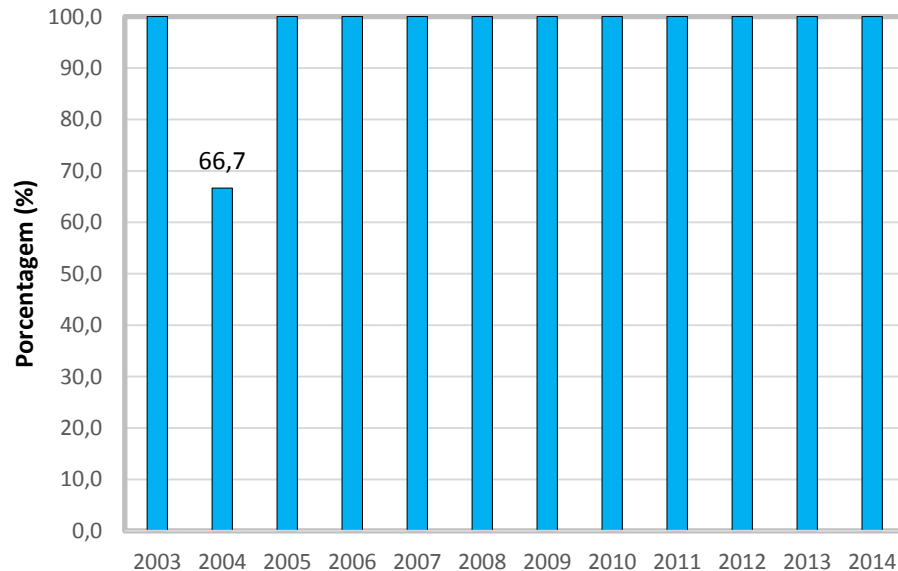


BAIN 02950 – Turbidez (Período Seco x Período Chuvoso)

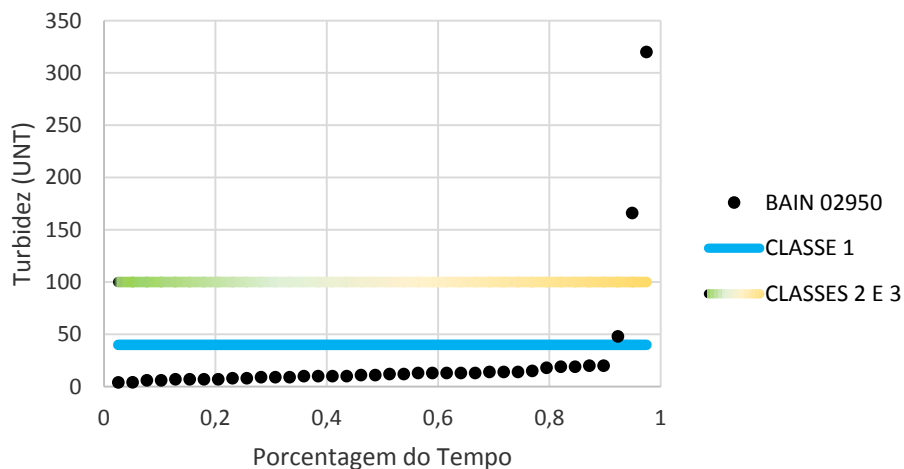
Porcentagem de Atendimento ao Padrão Classe 2 - Turbidez (seco)



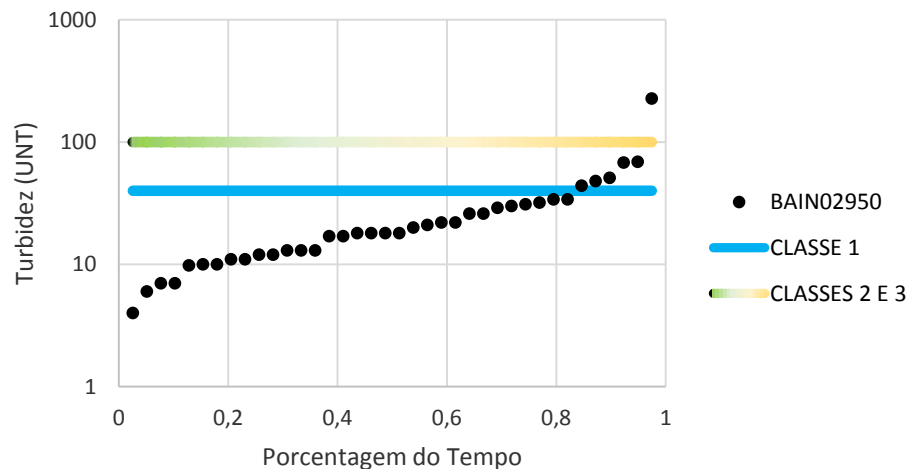
Porcentagem de Atendimento ao Padrão Classe 2 - Turbidez (chuvoso)



Curva de Permanência- Turbidez Período Seco

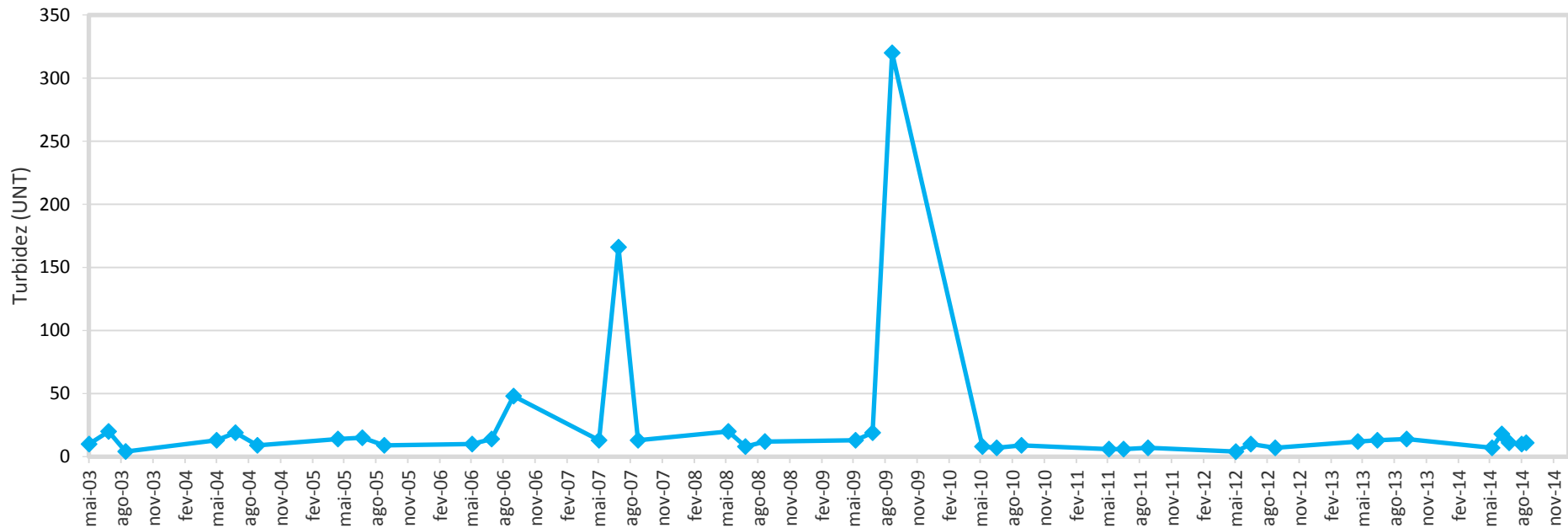


Curva de Permanência- Turbidez Período Chuvoso

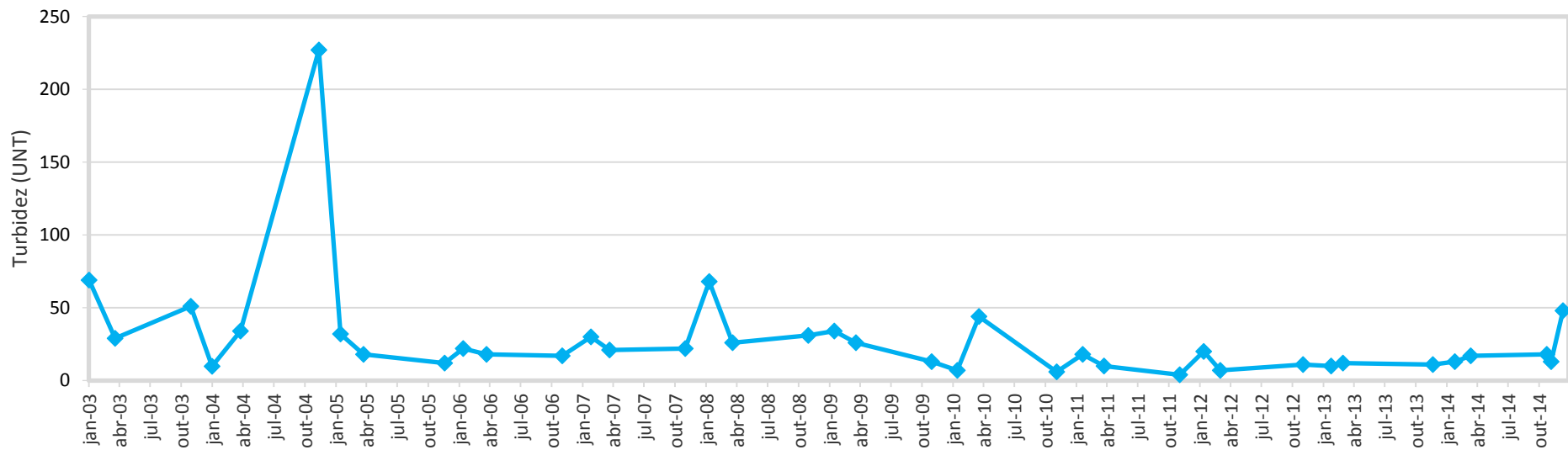


BAIN 02950 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



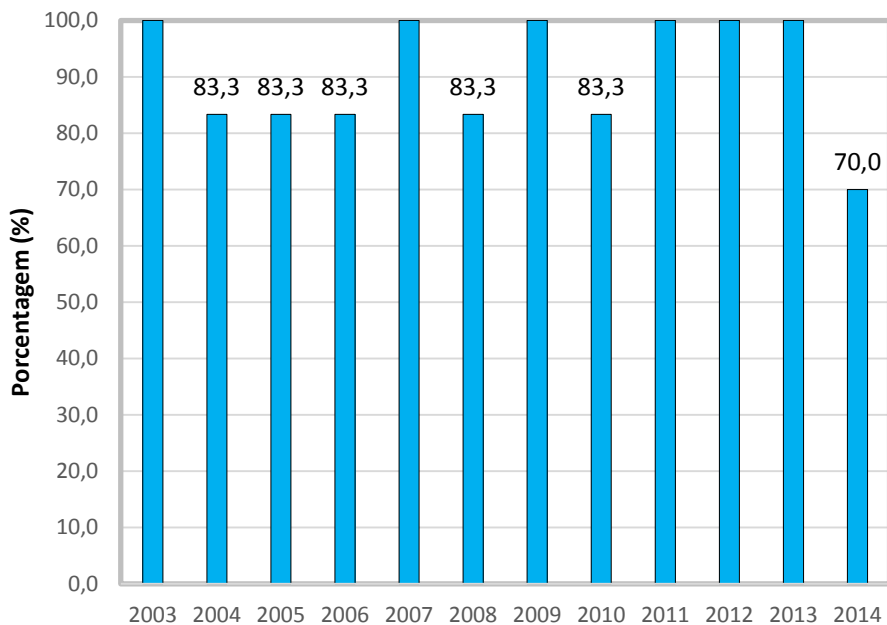
Evolução Temporal - Período Chuvoso



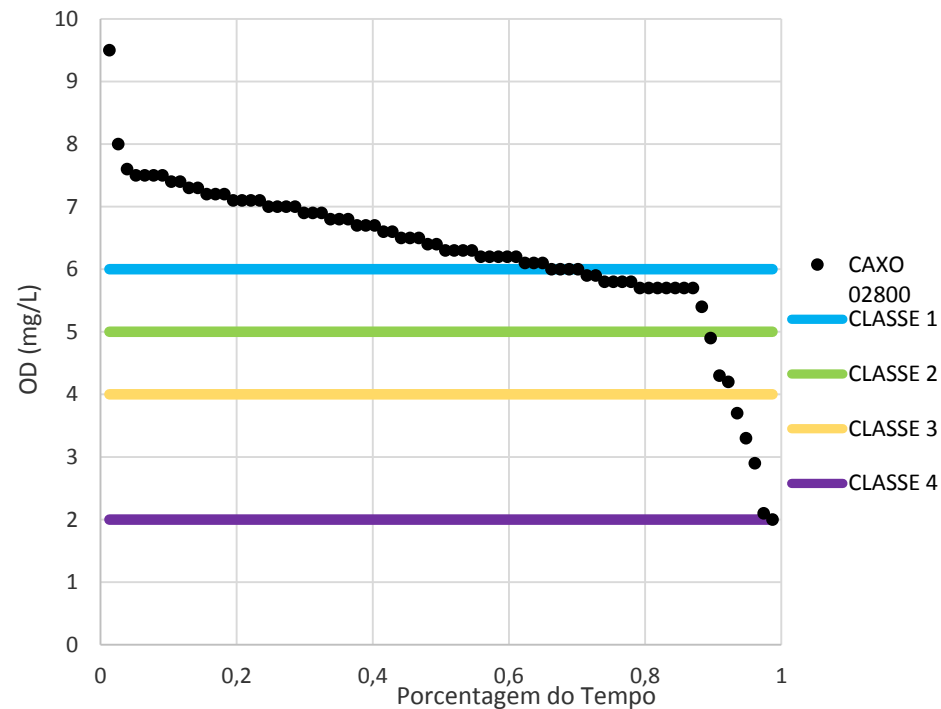
Rio Cachoeira
CAXO 02800

CAXO 02800 – Oxigênio Dissolvido (mg/L)

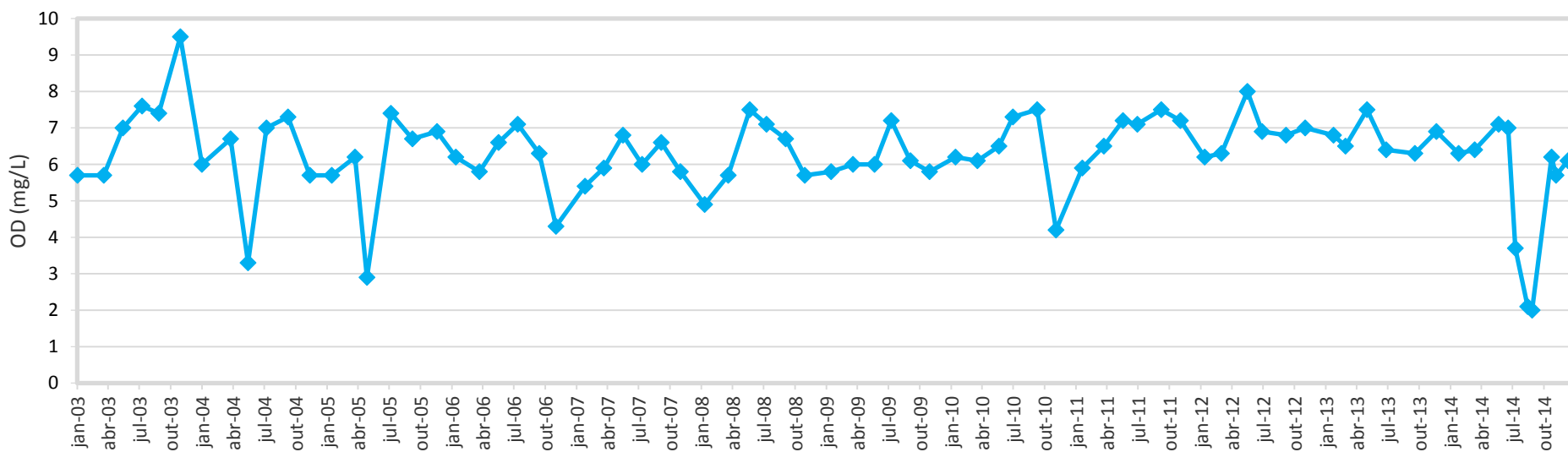
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

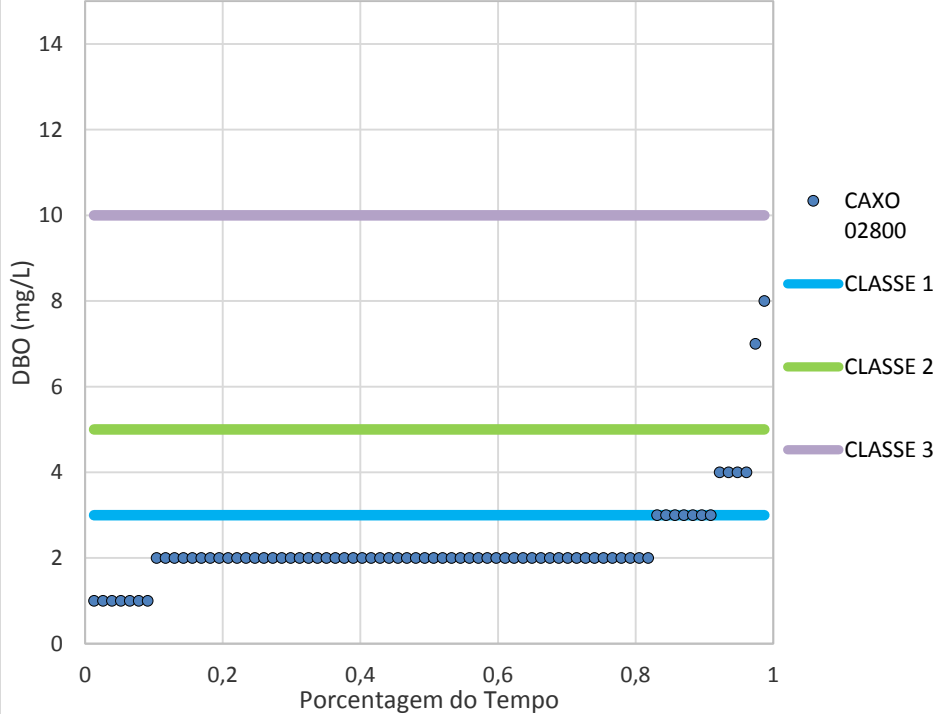


Evolução Temporal

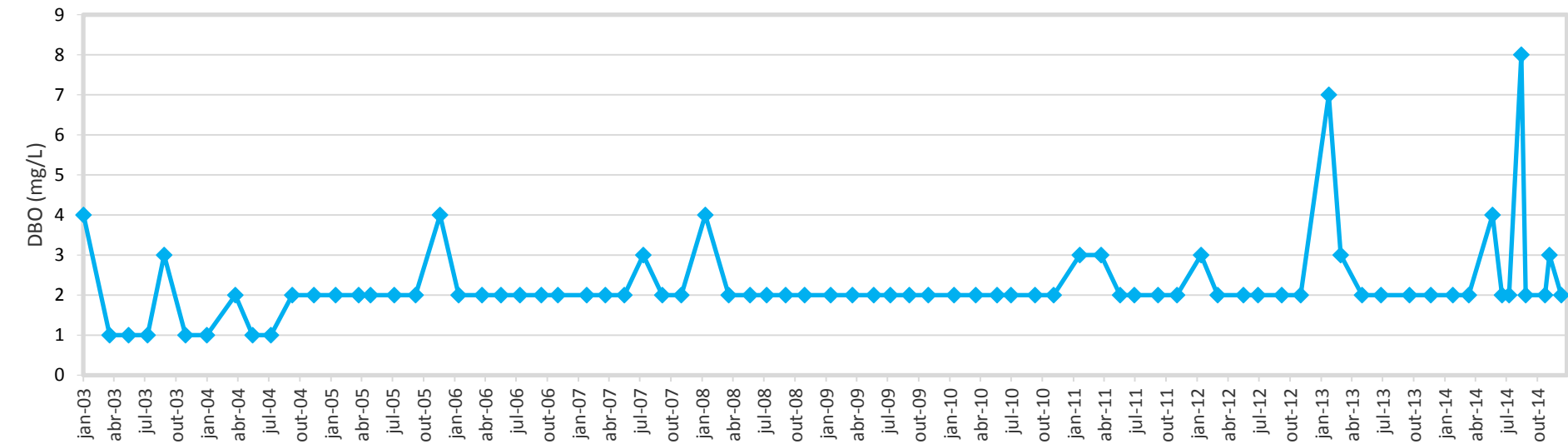


Porcentagem de Atendimento ao Padrão Classe 2 - DBO

Ano	Porcentagem (%)
2003	100,0
2004	100,0
2005	100,0
2006	100,0
2007	100,0
2008	100,0
2009	100,0
2010	100,0
2011	100,0
2012	100,0
2013	83,3
2014	90,0

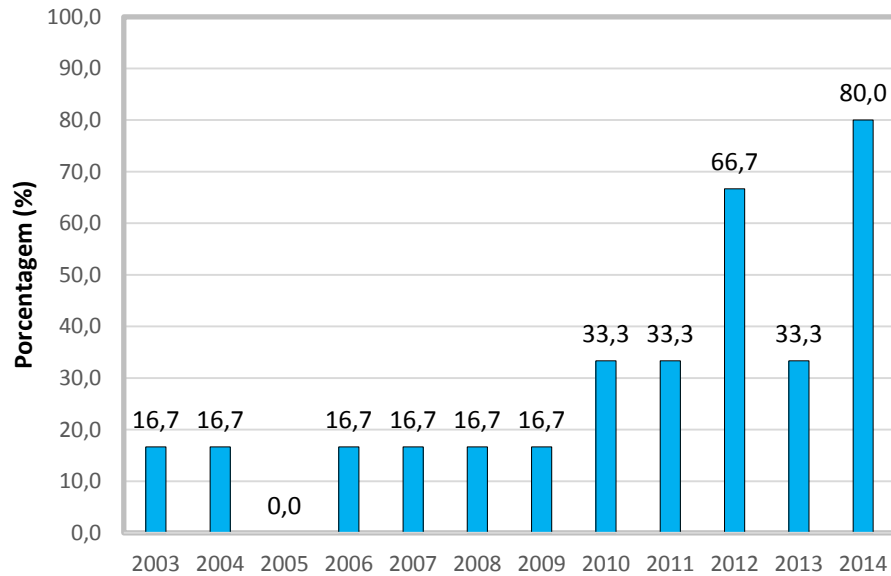


Date	DBO (mg/L)
jan-03	4.0
feb-03	1.0
mar-03	1.0
apr-03	1.0
may-03	3.0
jun-03	1.0
jul-03	1.0
aug-03	2.0
sep-03	1.0
oct-03	1.0
nov-03	2.0
dec-03	2.0
jan-04	2.0
feb-04	2.0
mar-04	2.0
apr-04	2.0
may-04	2.0
jun-04	2.0
jul-04	2.0
aug-04	2.0
sep-04	2.0
oct-04	2.0
nov-04	2.0
dec-04	2.0
jan-05	2.0
feb-05	2.0
mar-05	2.0
apr-05	2.0
may-05	2.0
jun-05	2.0
jul-05	2.0
aug-05	2.0
sep-05	2.0
oct-05	2.0
nov-05	2.0
dec-05	2.0
jan-06	2.0
feb-06	2.0
mar-06	2.0
apr-06	2.0
may-06	2.0
jun-06	2.0
jul-06	2.0
aug-06	2.0
sep-06	2.0
oct-06	2.0
nov-06	2.0
dec-06	2.0
jan-07	2.0
feb-07	2.0
mar-07	2.0
apr-07	2.0
may-07	2.0
jun-07	2.0
jul-07	2.0
aug-07	2.0
sep-07	2.0
oct-07	2.0
nov-07	2.0
dec-07	2.0
jan-08	2.0
feb-08	2.0
mar-08	2.0
apr-08	2.0
may-08	2.0
jun-08	2.0
jul-08	2.0
aug-08	2.0
sep-08	2.0
oct-08	2.0
nov-08	2.0
dec-08	2.0
jan-09	2.0
feb-09	2.0
mar-09	2.0
apr-09	2.0
may-09	2.0
jun-09	2.0
jul-09	2.0
aug-09	2.0
sep-09	2.0
oct-09	2.0
nov-09	2.0
dec-09	2.0
jan-10	2.0
feb-10	2.0
mar-10	2.0
apr-10	2.0
may-10	2.0
jun-10	2.0
jul-10	2.0
aug-10	2.0
sep-10	2.0
oct-10	2.0
nov-10	2.0
dec-10	2.0
jan-11	3.0
feb-11	3.0
mar-11	2.0
apr-11	2.0
may-11	2.0
jun-11	2.0
jul-11	2.0
aug-11	2.0
sep-11	2.0
oct-11	2.0
nov-11	2.0
dec-11	2.0
jan-12	3.0
feb-12	2.0
mar-12	2.0
apr-12	2.0
may-12	2.0
jun-12	2.0
jul-12	2.0
aug-12	2.0
sep-12	2.0
oct-12	2.0
nov-12	2.0
dec-12	2.0
jan-13	7.0
feb-13	3.0
mar-13	2.0
apr-13	2.0
may-13	2.0
jun-13	2.0
jul-13	2.0
aug-13	2.0
sep-13	2.0
oct-13	2.0
nov-13	2.0
dec-13	2.0
jan-14	2.0
feb-14	2.0
mar-14	2.0
apr-14	2.0
may-14	2.0
jun-14	4.0
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sep-14	2.0
oct-14	3.0
nov-14	2.0
dec-14	2.0

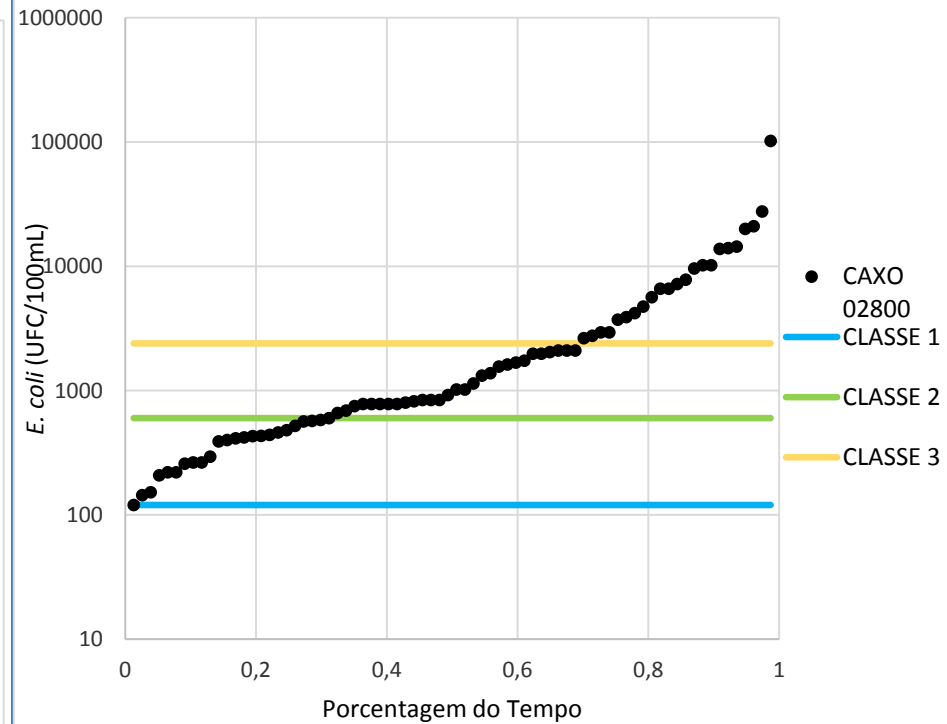


CAXO 02800 – *Escherichia coli* (UFC/100mL)

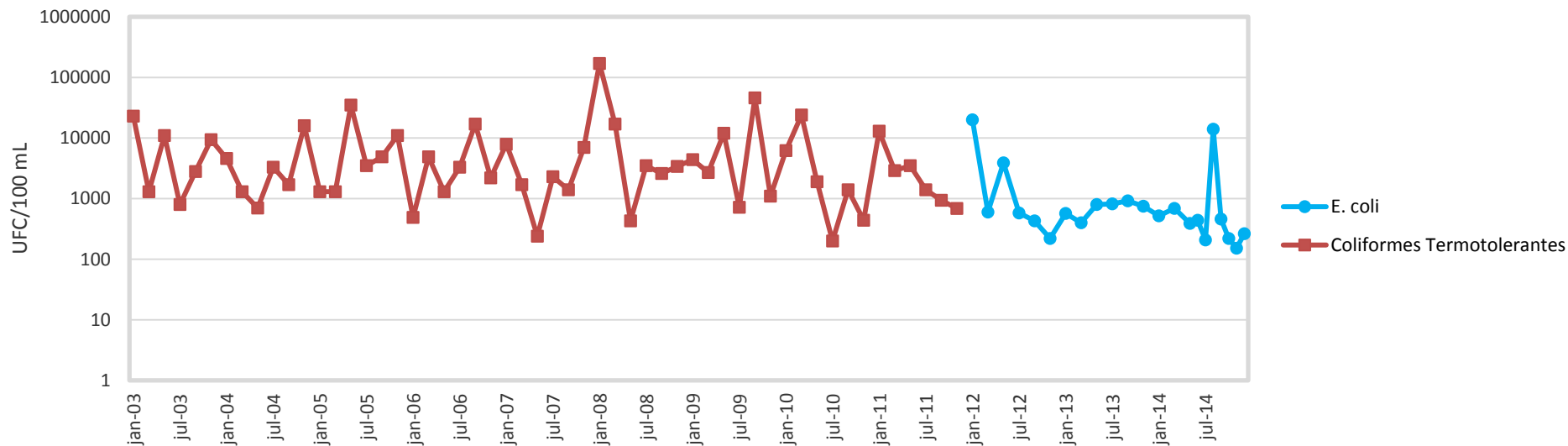
Porcentagem de Atendimento ao Padrão Classe 2 - Colif. Term. e *E. coli*



Curva de Permanência

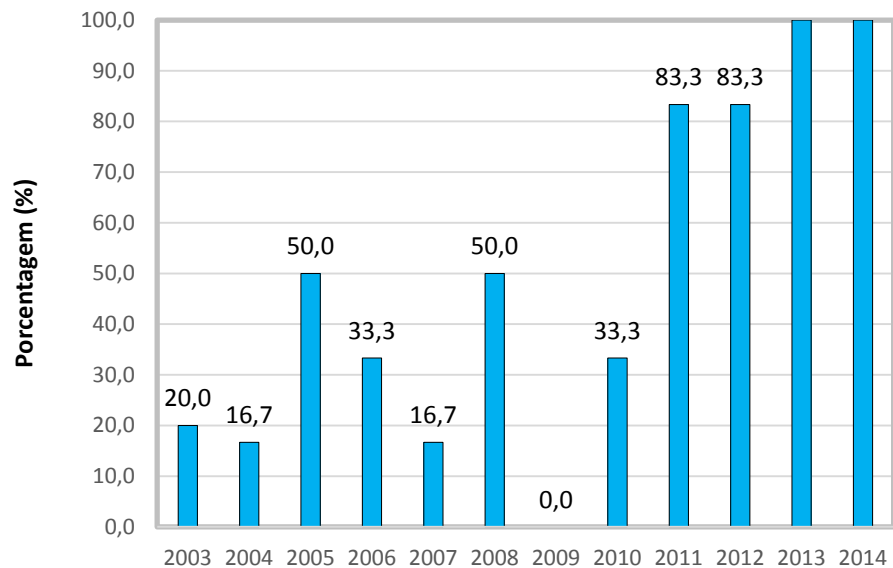


Evolução Temporal

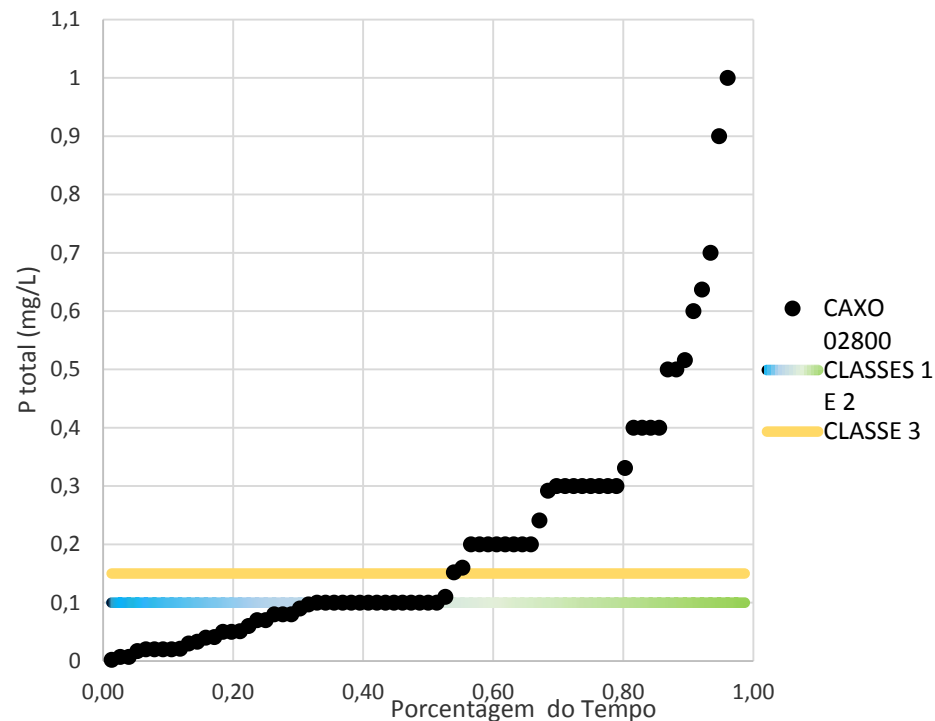


CAXO 02800 – Fósforo Total (mg/L)

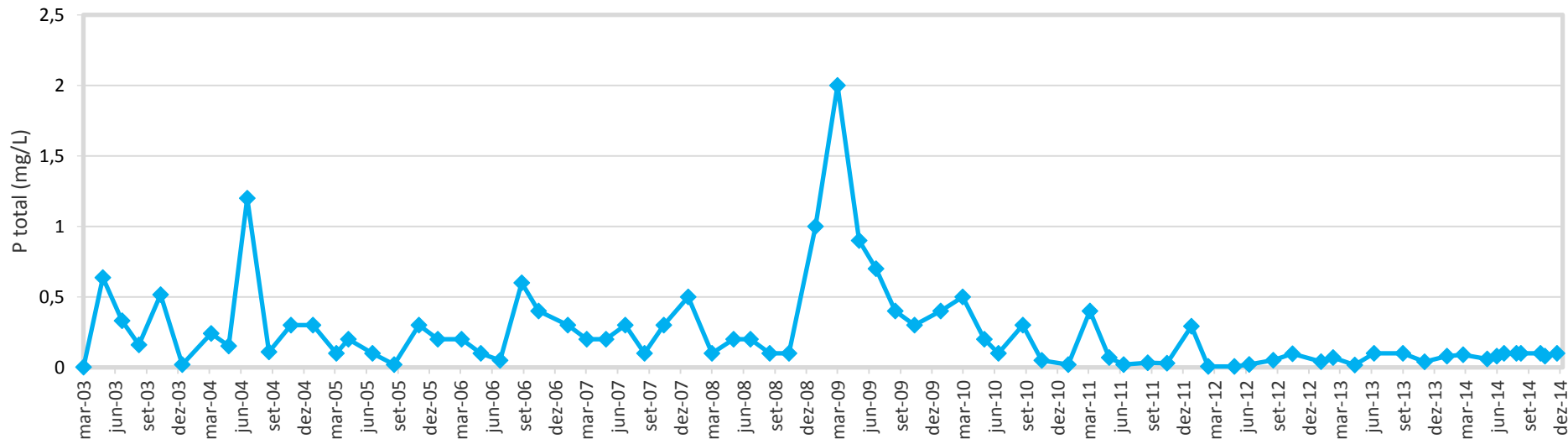
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

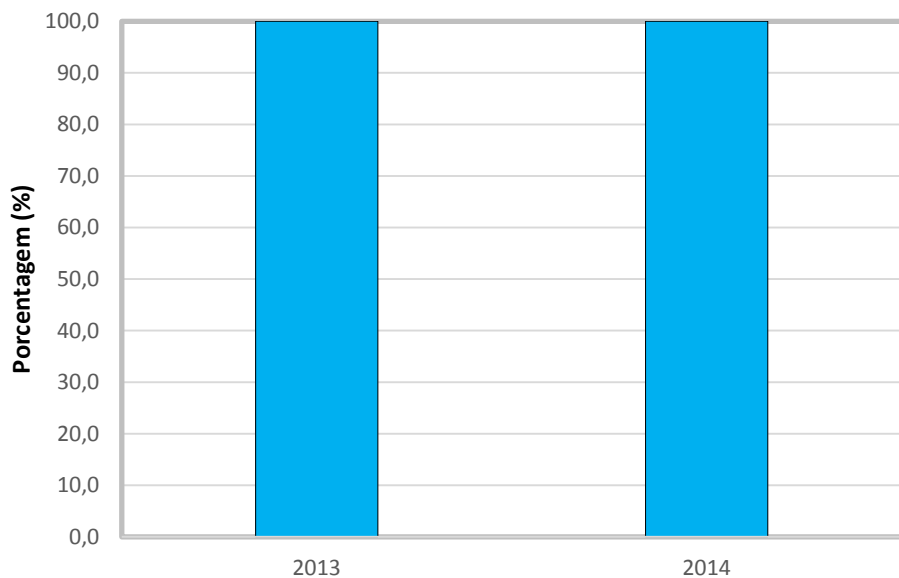


Evolução Temporal

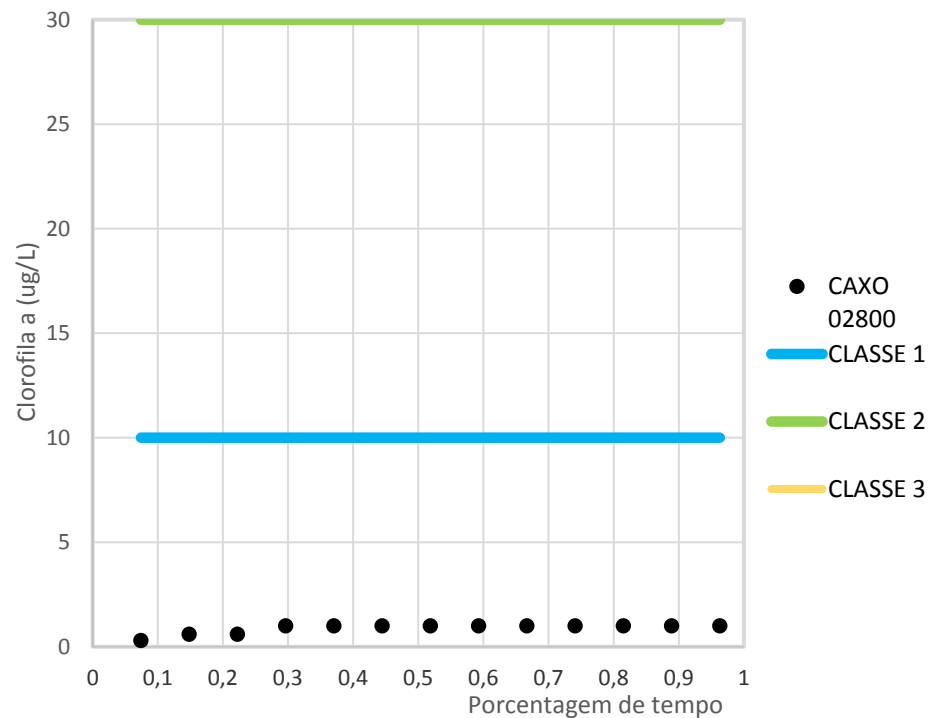


CAXO 02800 – Clorofila a (µg/L)

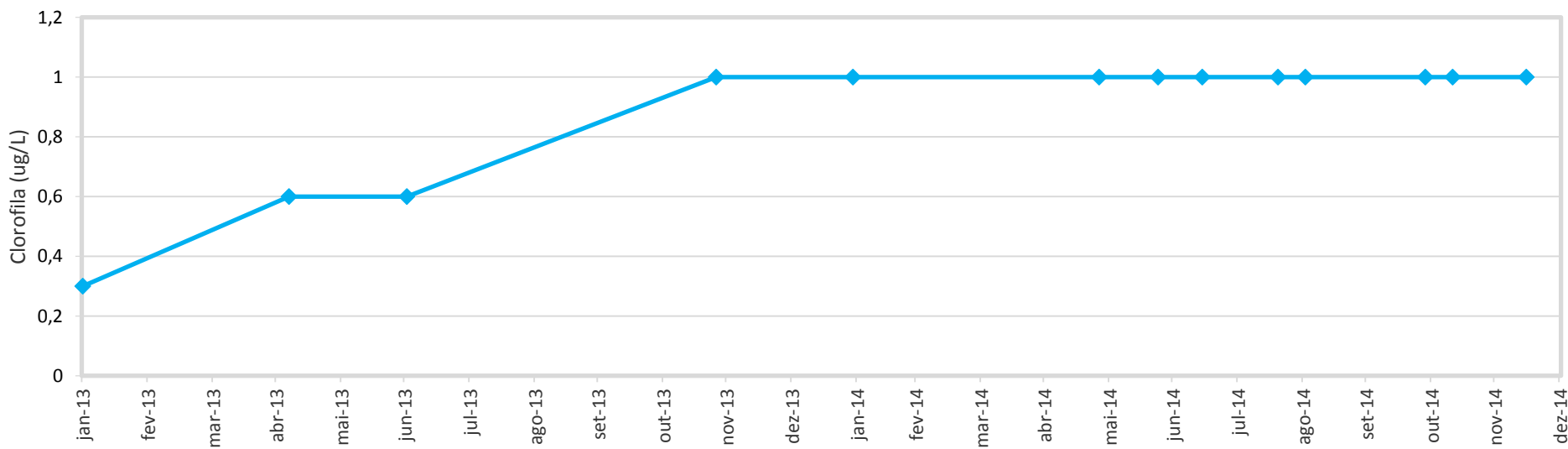
Porcentagem de Atendimento ao Padrão Classe 2 -
Clorofila



Curva de Permanência

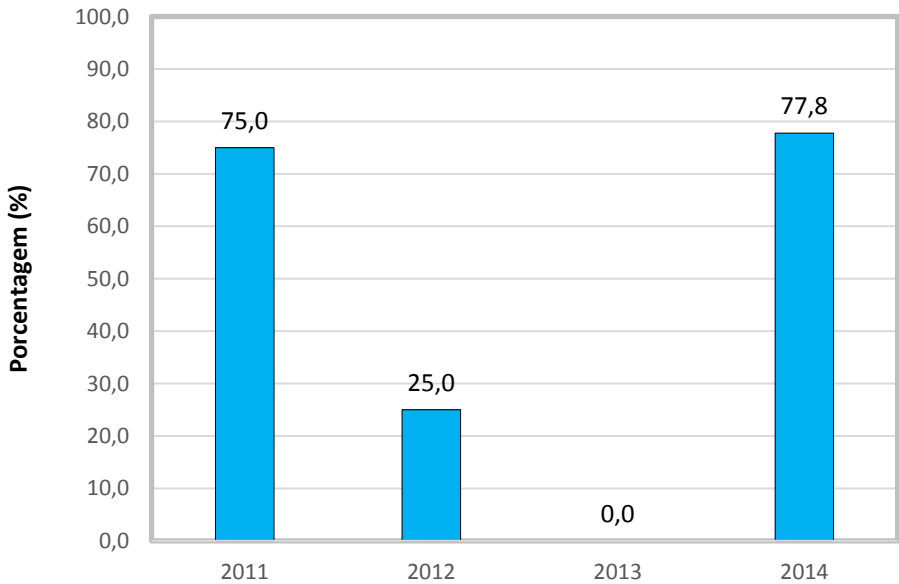


Evolução Temporal

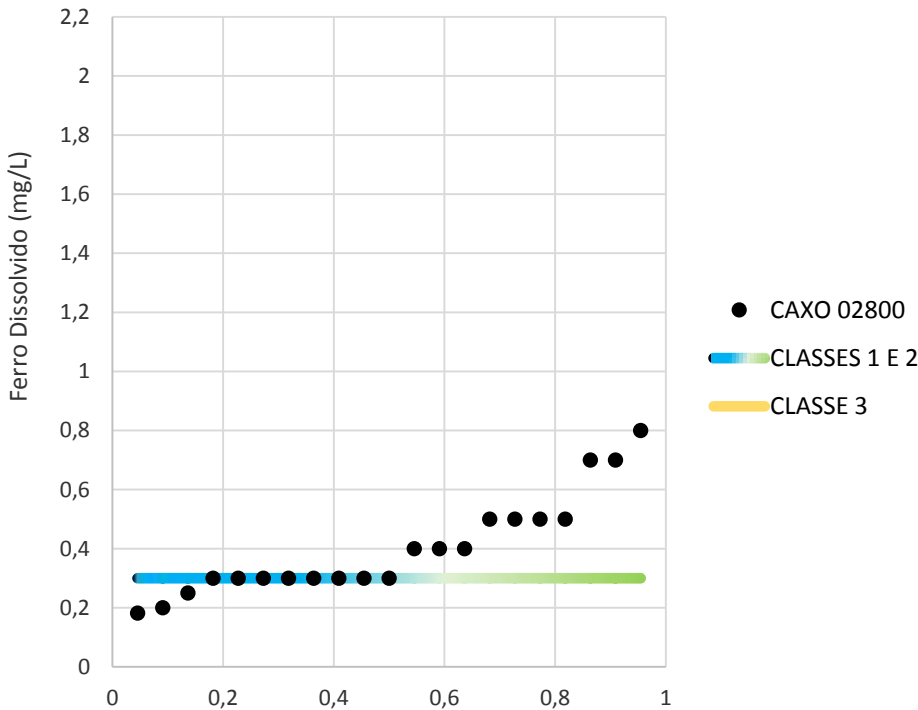


CAXO 02800 – Ferro Dissolvido (mg/L)

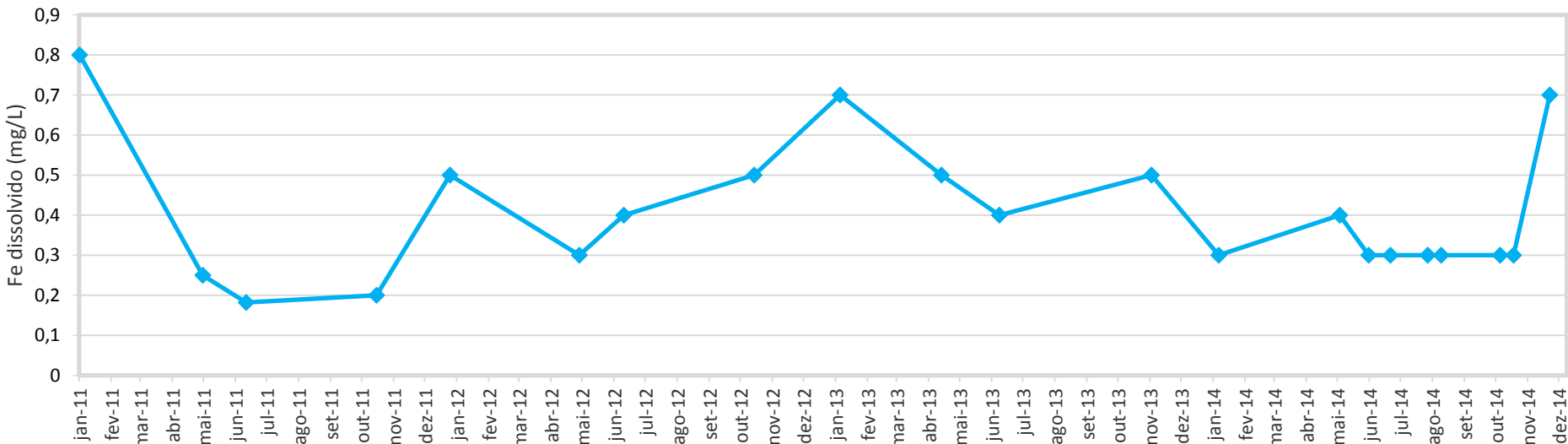
Porcentagem de Atendimento ao Padrão Classe 2 - Fe dissolvido



Curva de Permanência

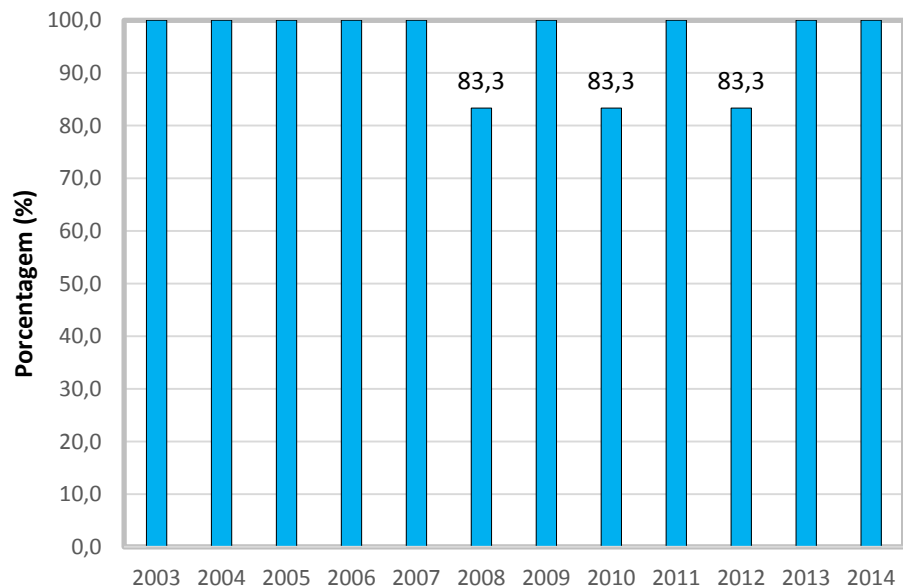


Evolução Temporal

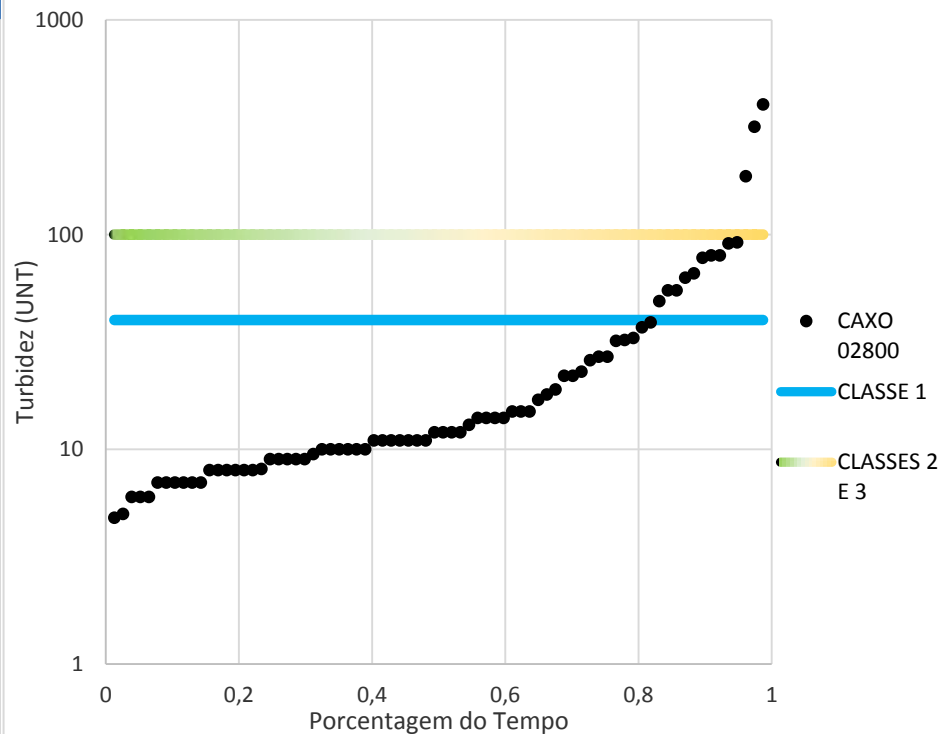


CAXO 02800 – Turbidez (UNT)

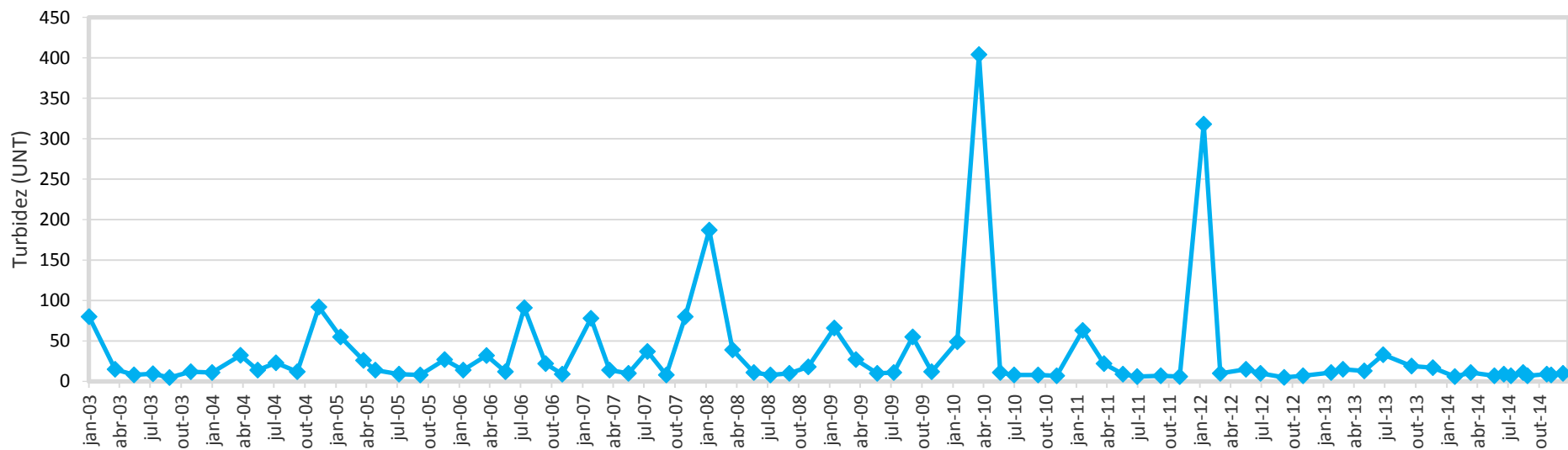
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

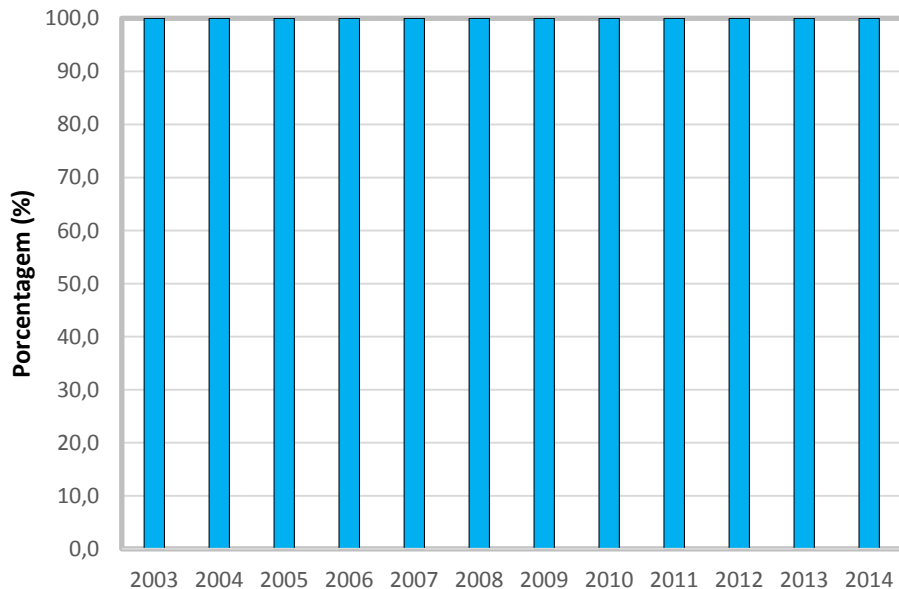


Evolução Temporal

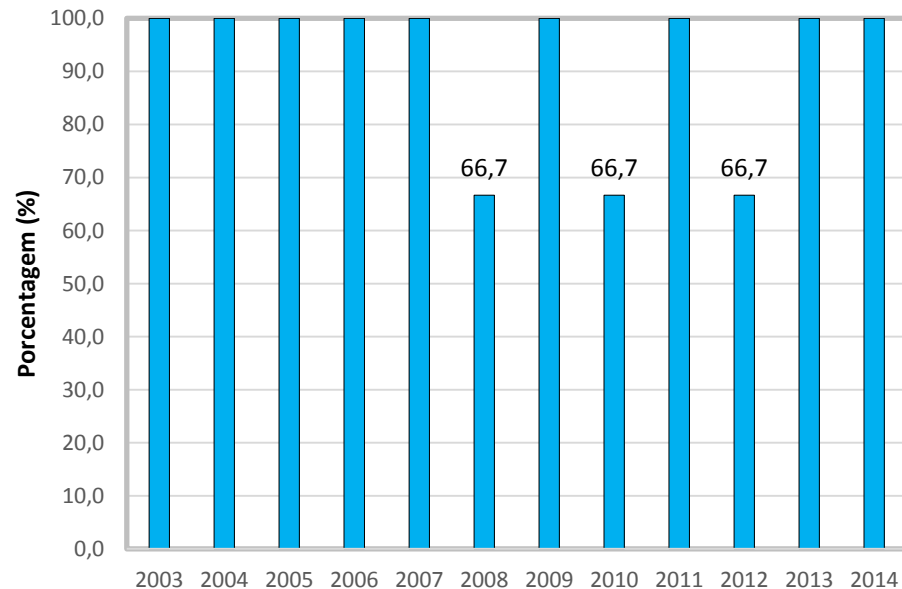


CAXO 02800 – Turbidez (Período Seco x Período Chuvoso)

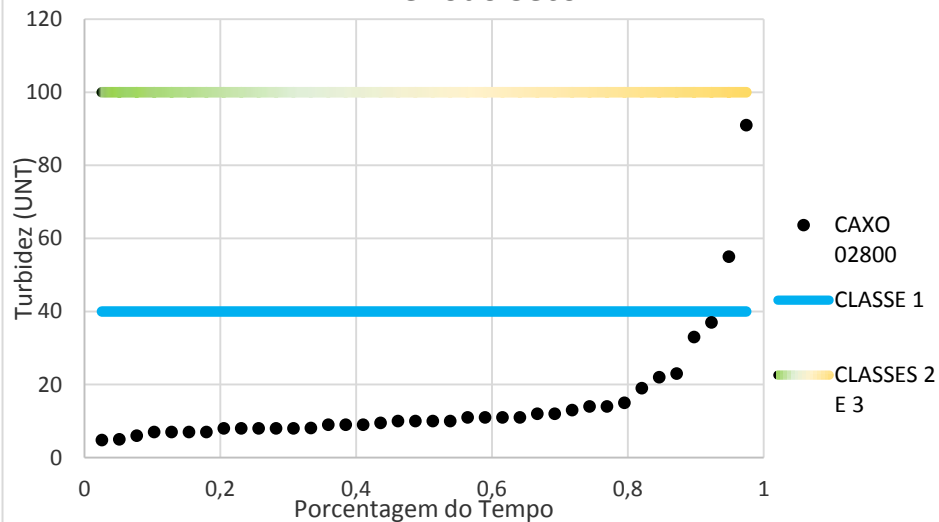
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



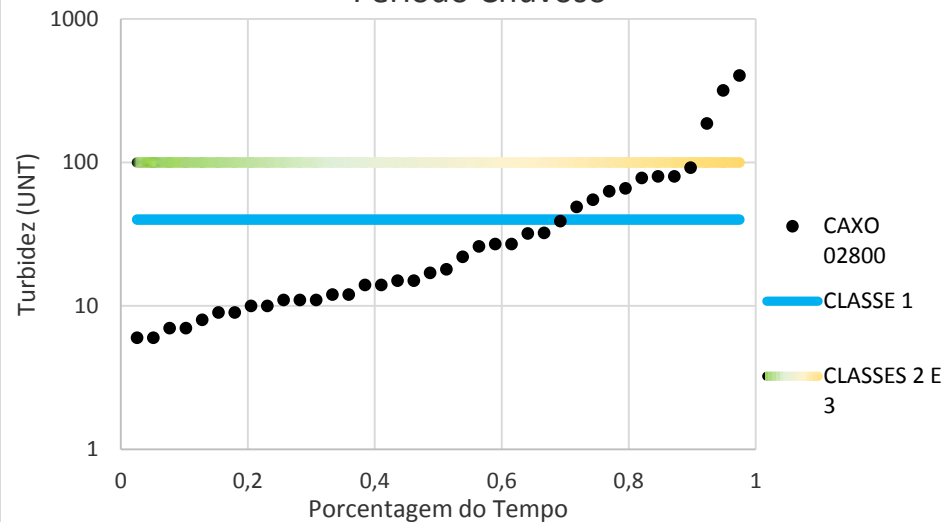
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

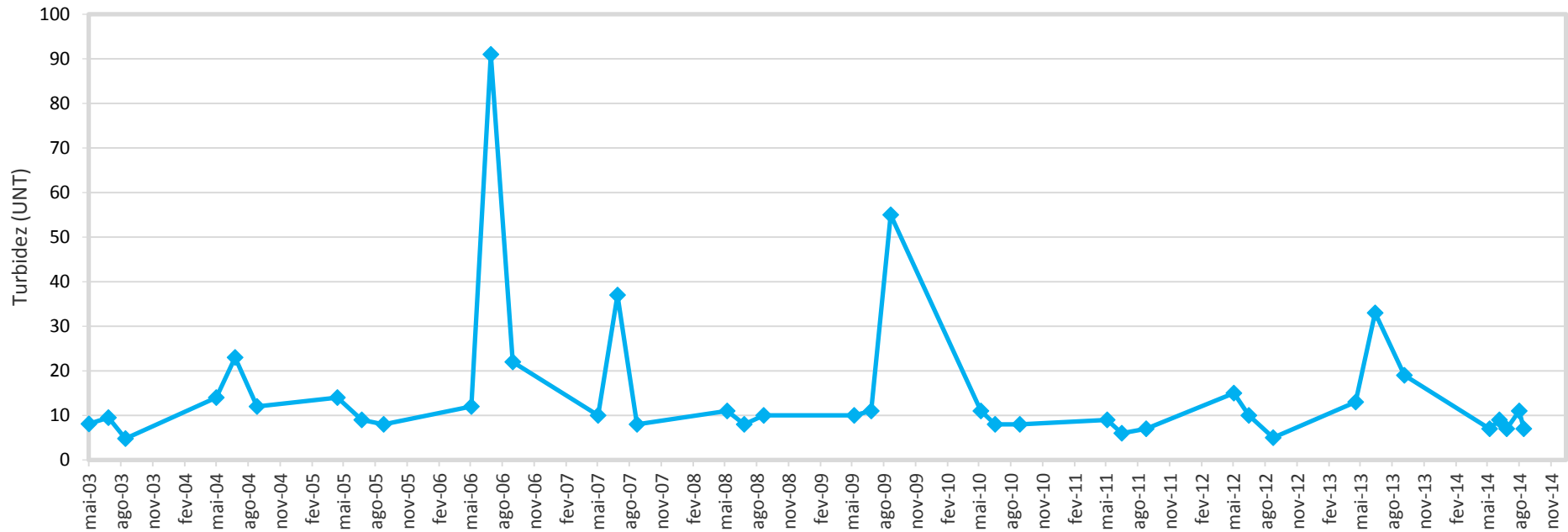


Curva de Permanência- Turbidez
Período Chuvoso

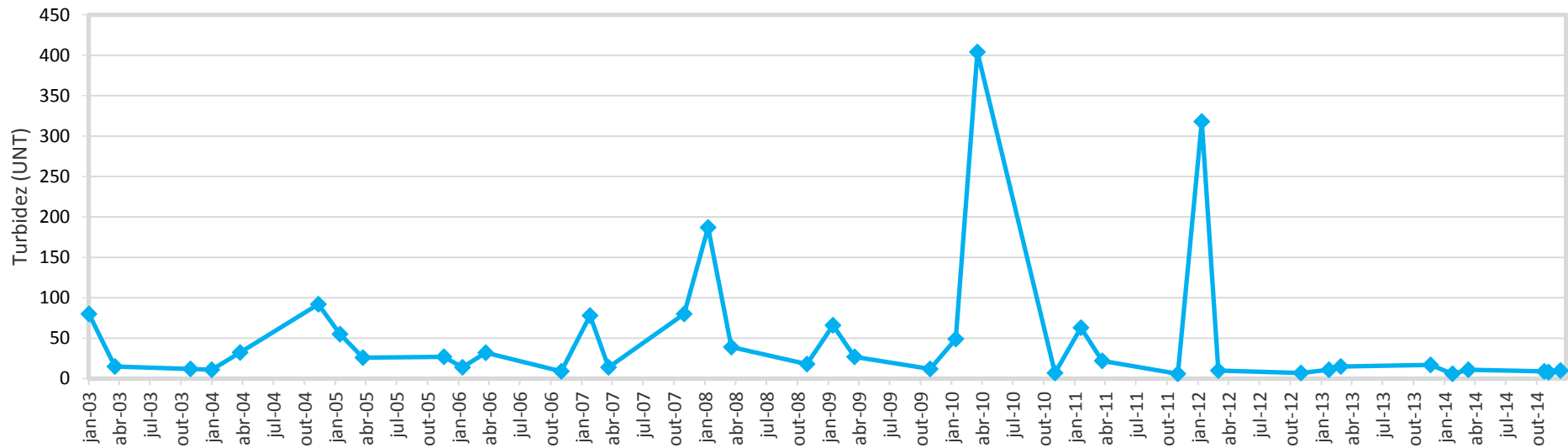


CAXO 02800 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



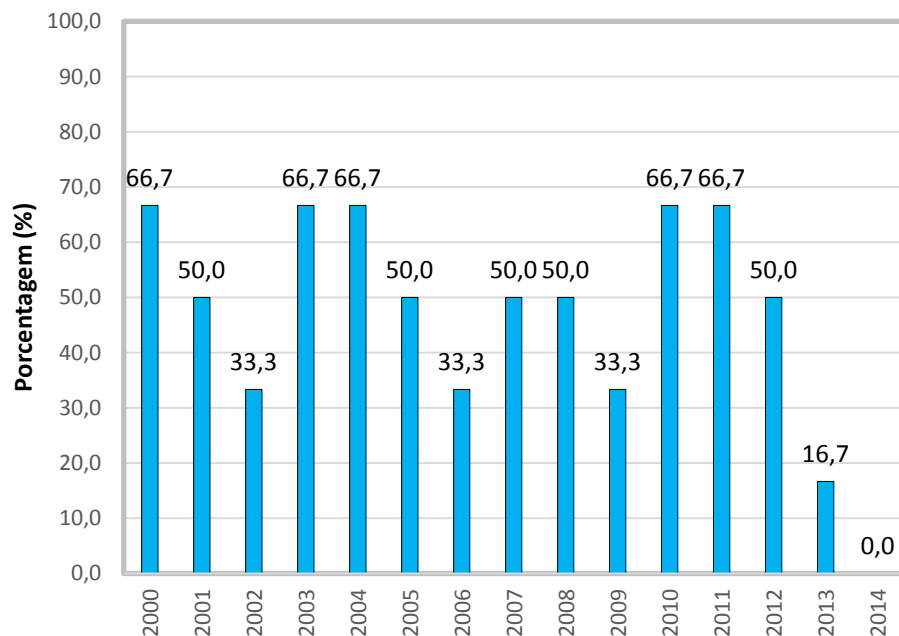
Evolução Temporal - Período Chuvoso



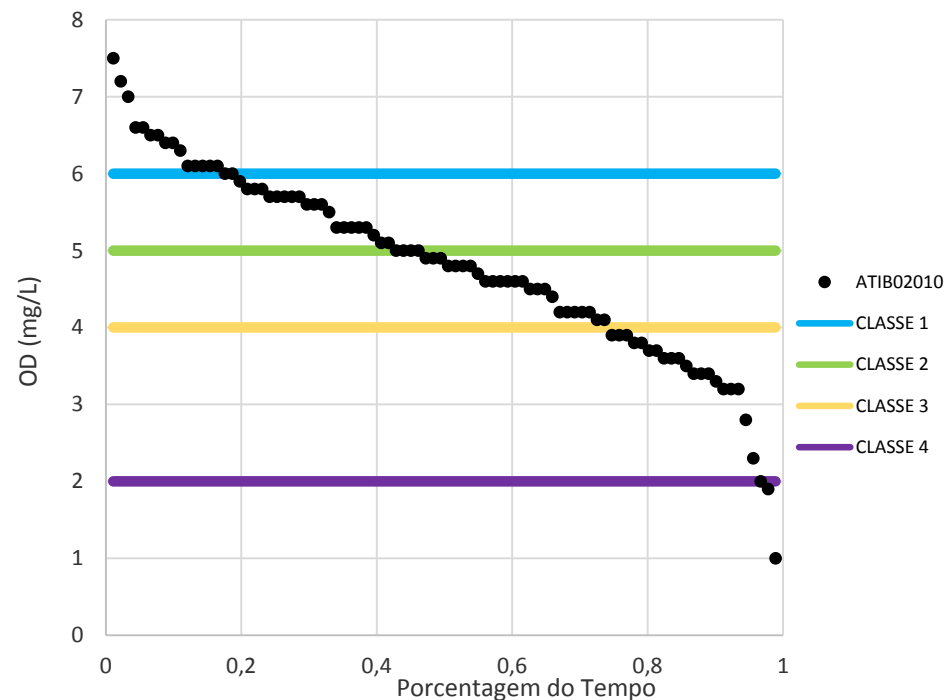
Rio Atibaia
ATIB 02010

ATIB 02010 – Oxigênio Dissolvido (mg/L)

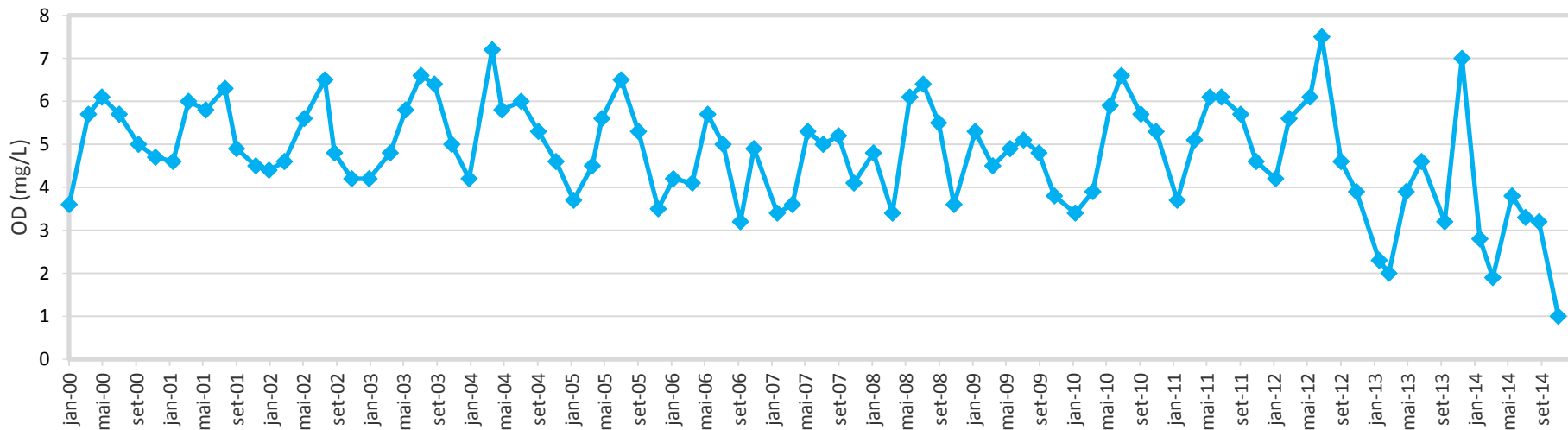
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

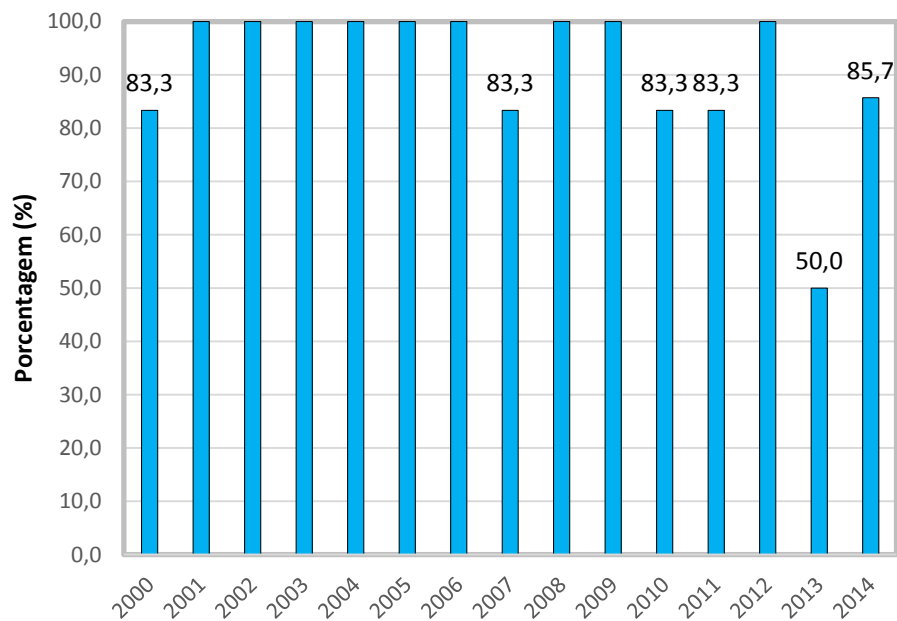


Evolução Temporal

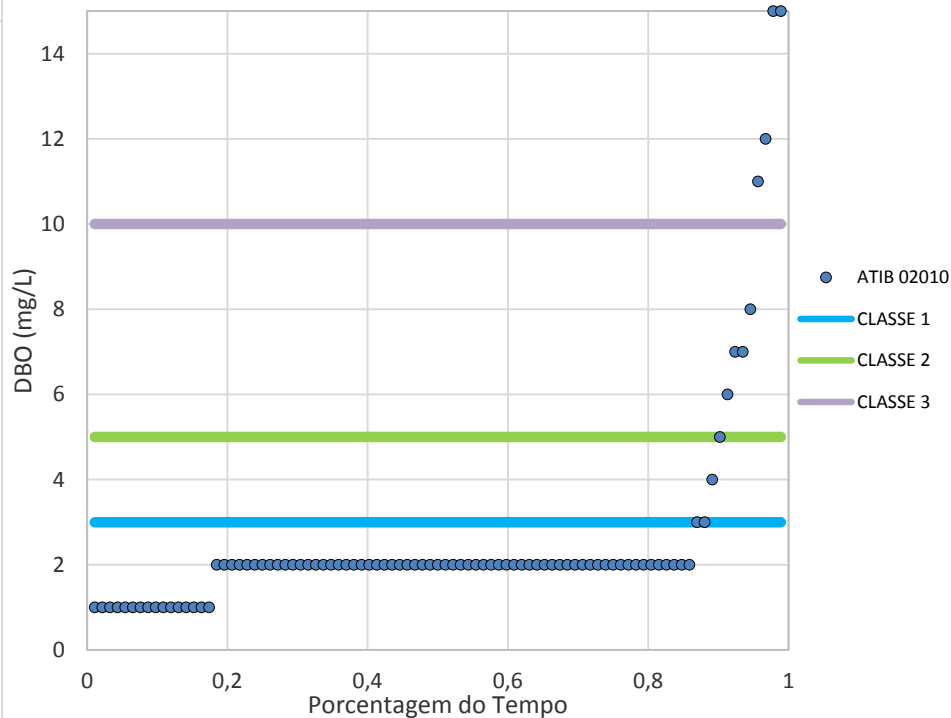


ATIB 02010 – DBO (mg/L)

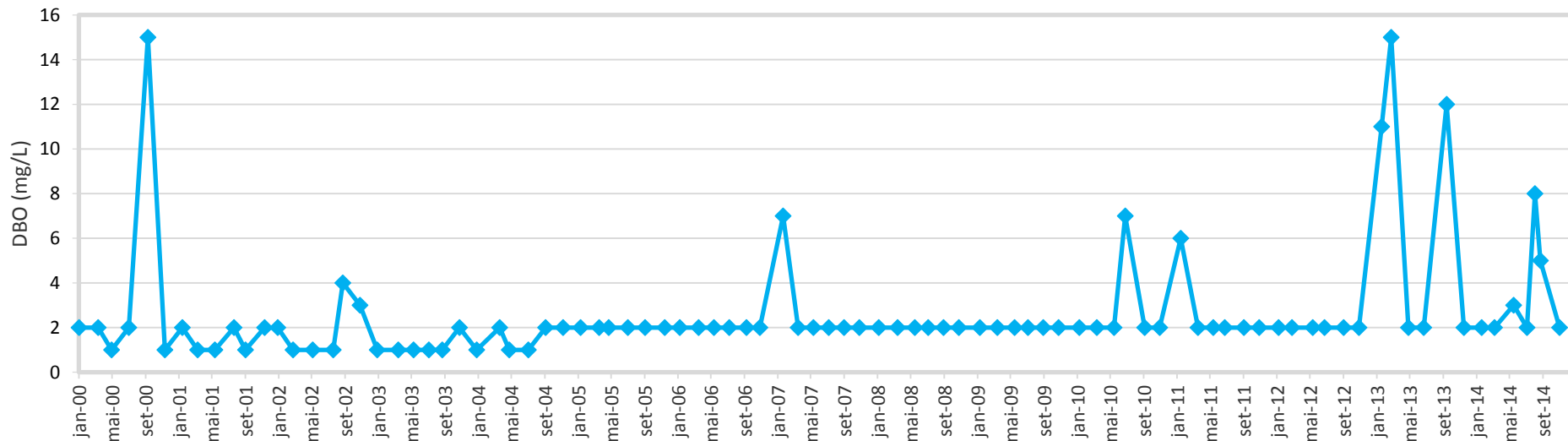
Porcentagem de Atendimento ao Padrão Classe 2 - DBO



Curva de Permanência

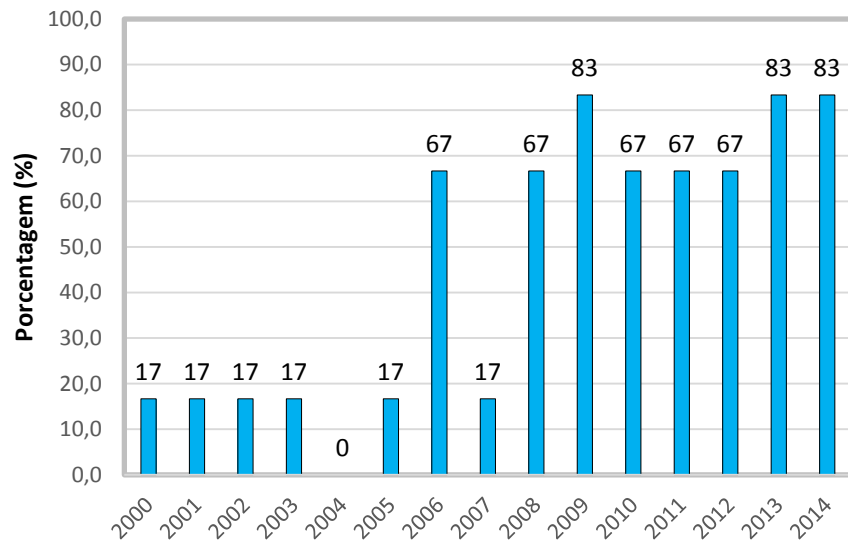


Evolução Temporal

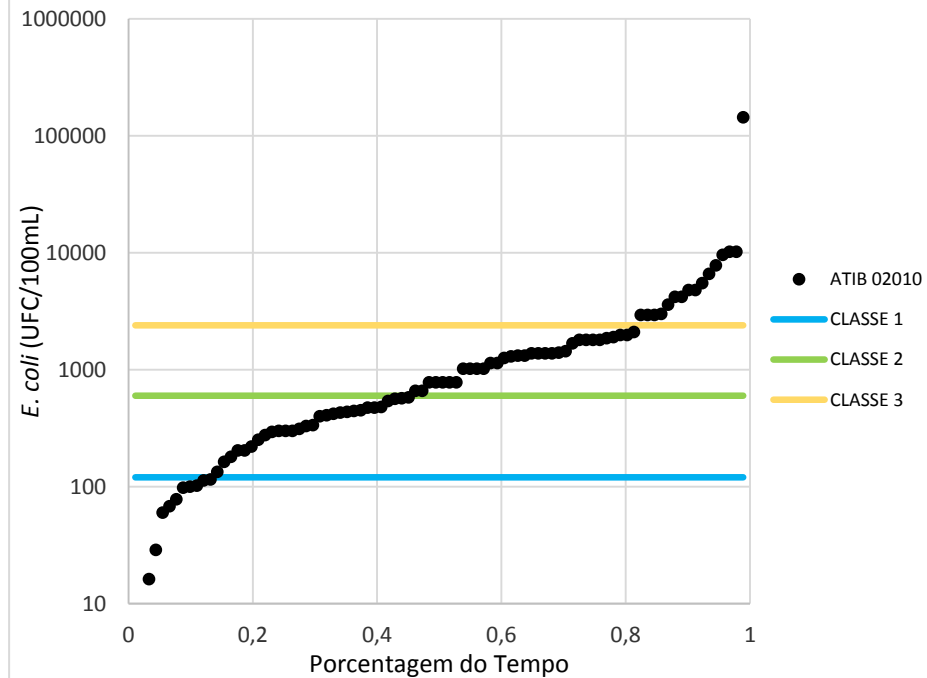


ATIB 02010 – *Escherichia coli* (UFC/100mL)

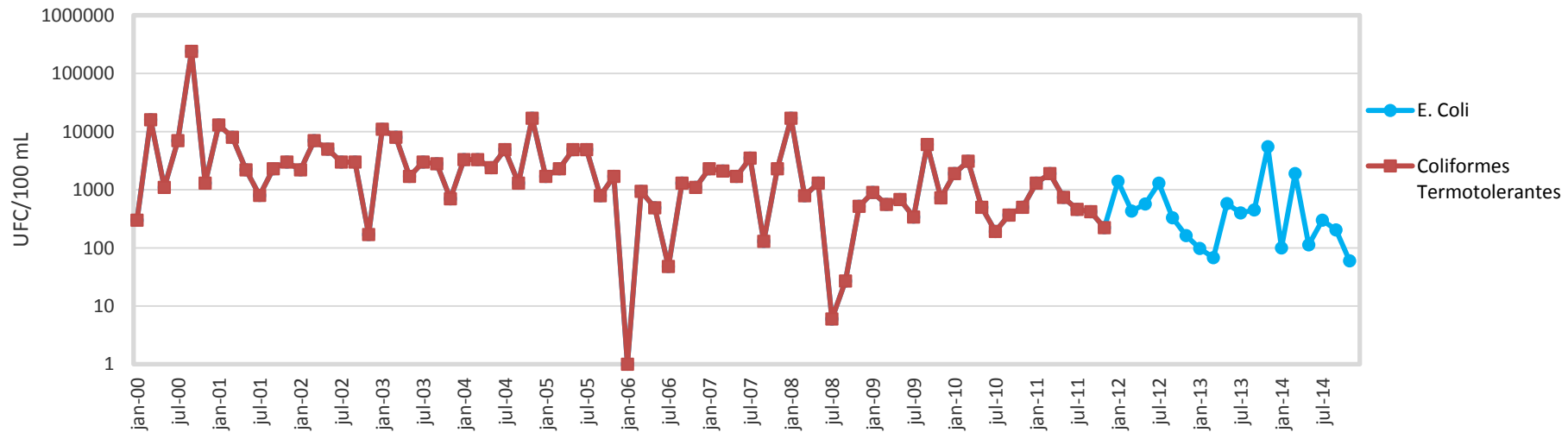
Porcentagem de Atendimento ao Padrão Classe 2 -
Colif. Term. e *E. coli*



Curva de Permanência

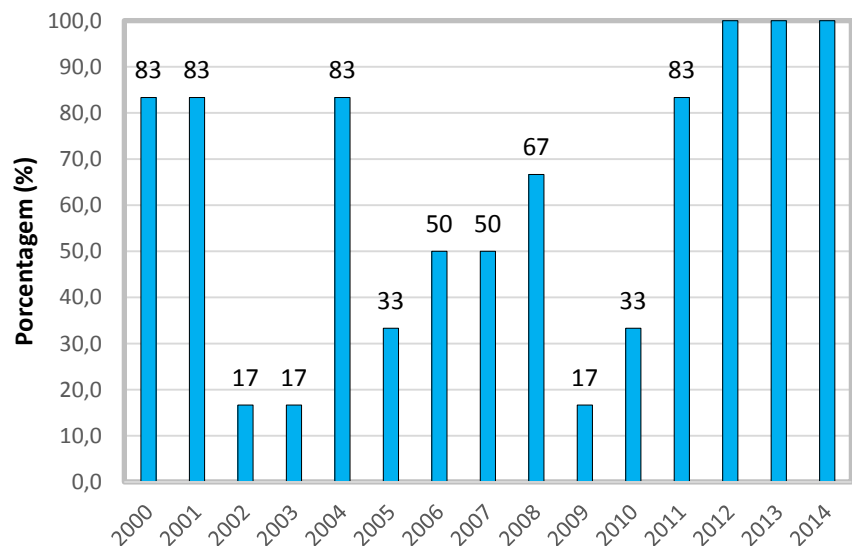


Evolução Temporal

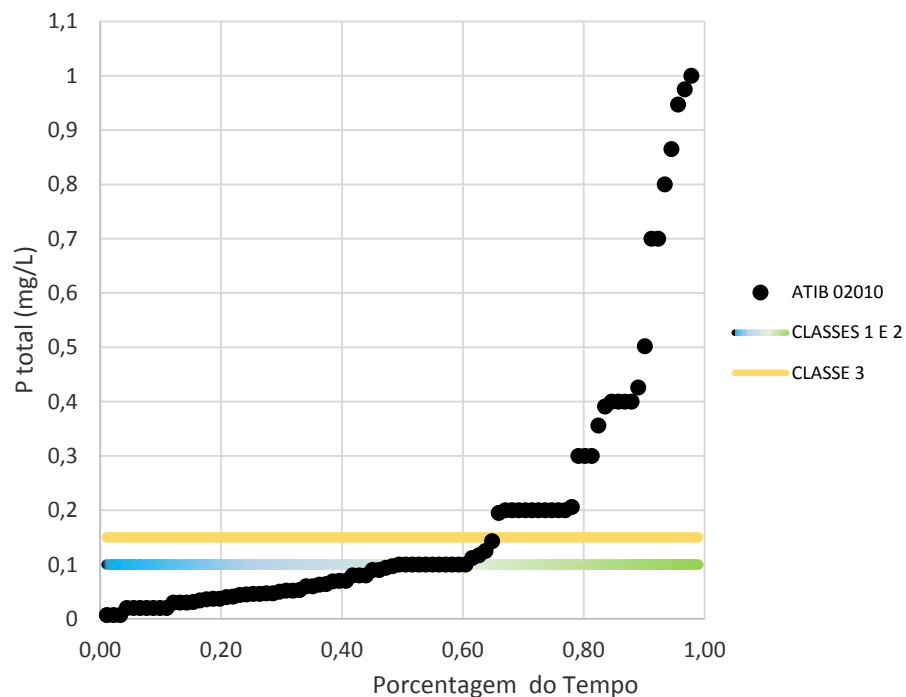


ATIB 02010 – Fósforo Total (mg/L)

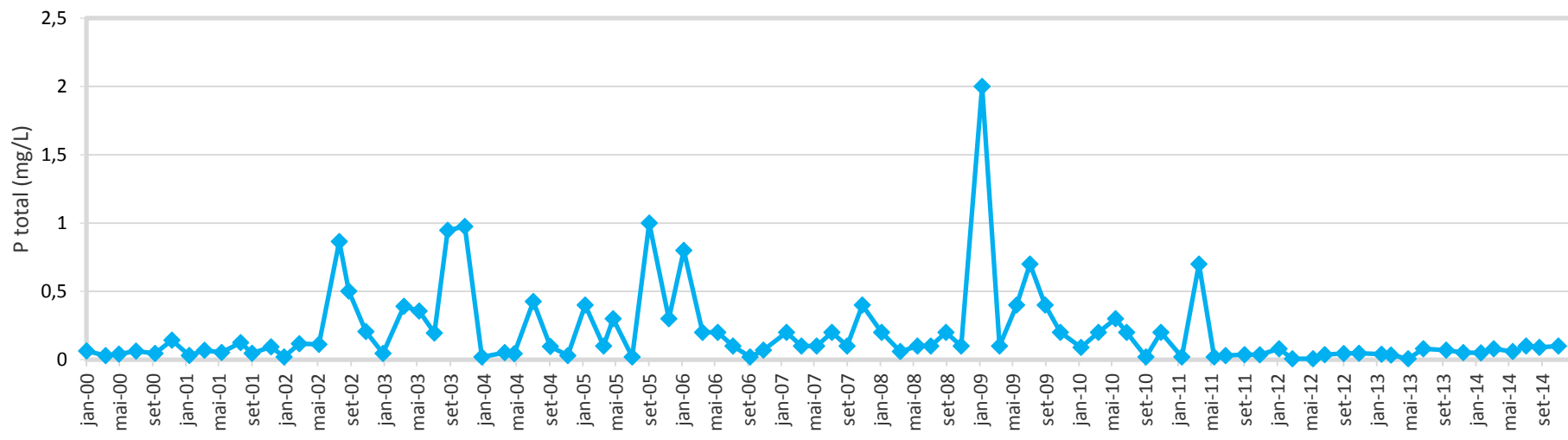
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

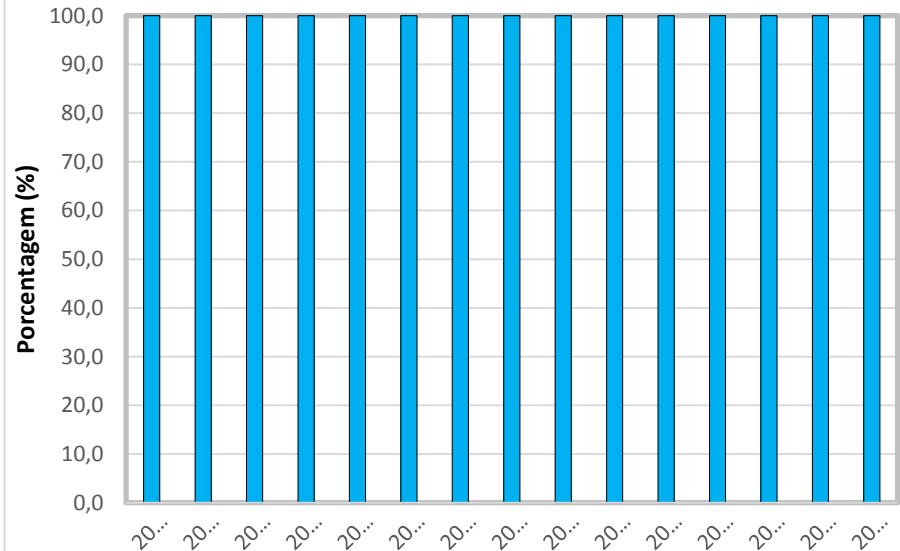


Evolução Temporal

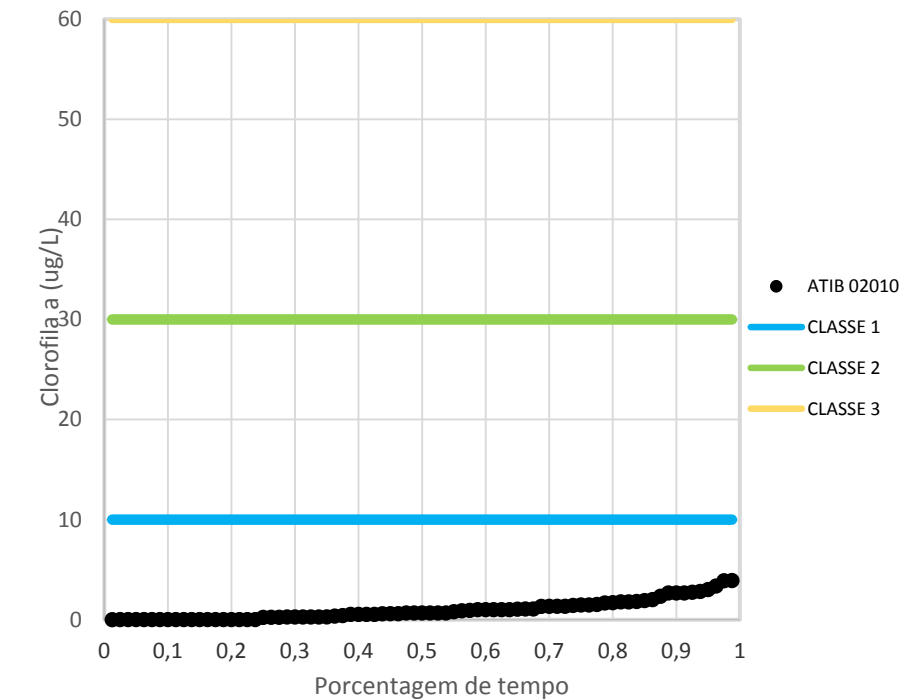


ATIB 02010 – Clorofila a (µg/L)

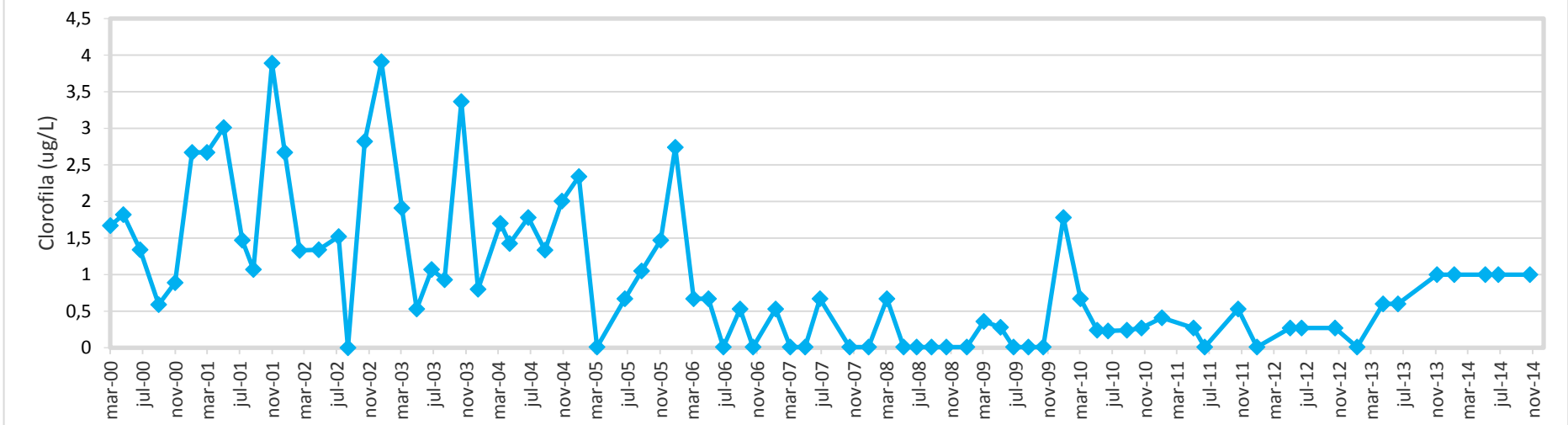
Porcentagem de Atendimento ao Padrão Classe 2 - Clorofila



Curva de Permanência

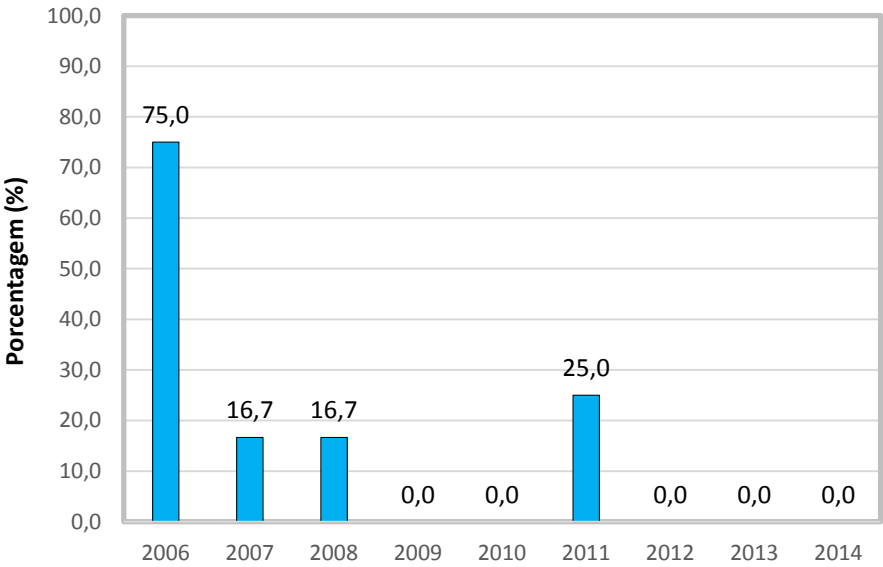


Evolução Temporal

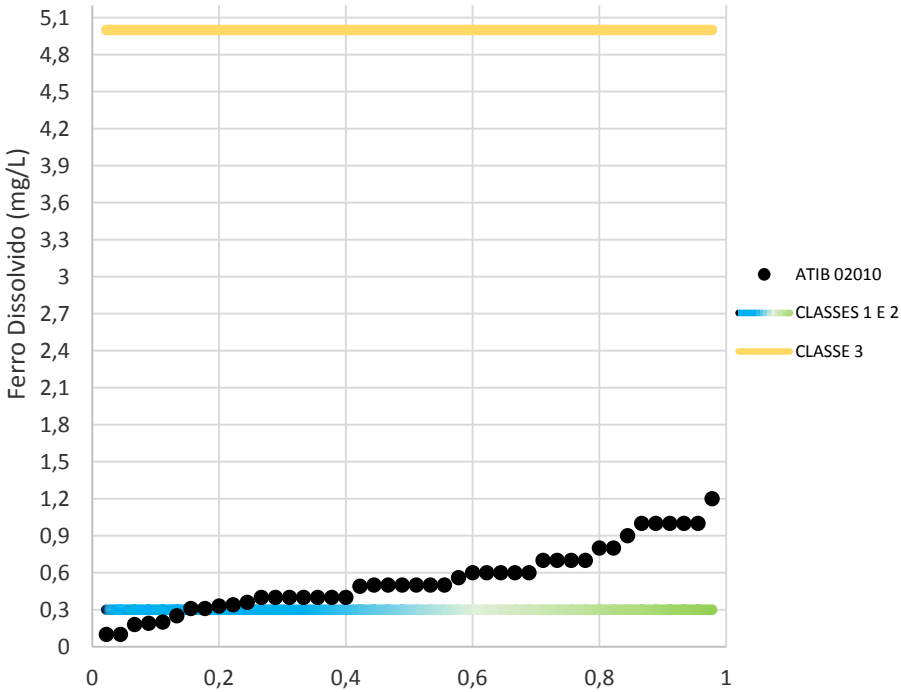


ATIB 02010 – Ferro Dissolvido (mg/L)

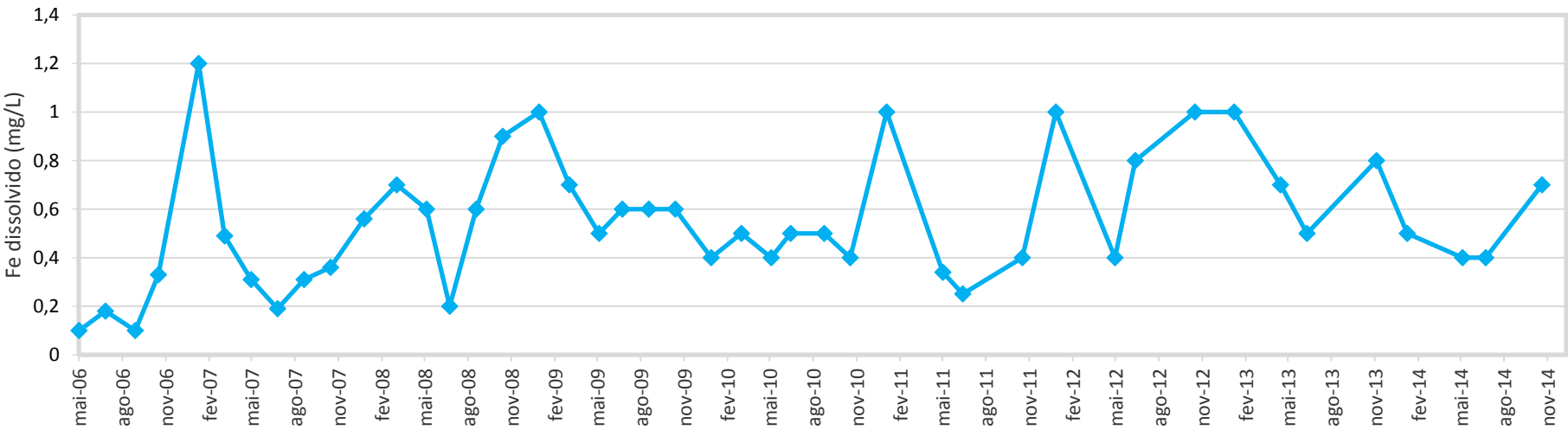
Porcentagem de Atendimento ao Padrão Classe 2 - Fe dissolvido



Curva de Permanência

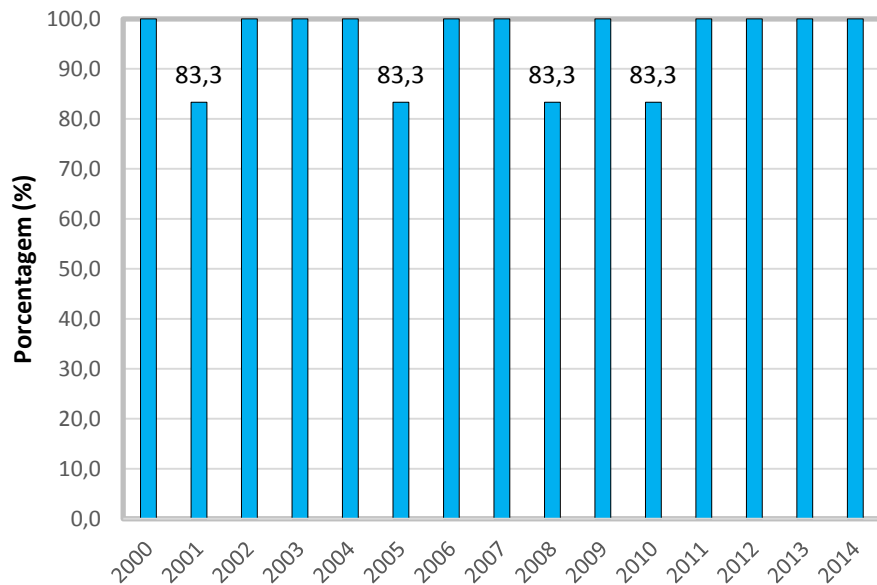


Evolução Temporal

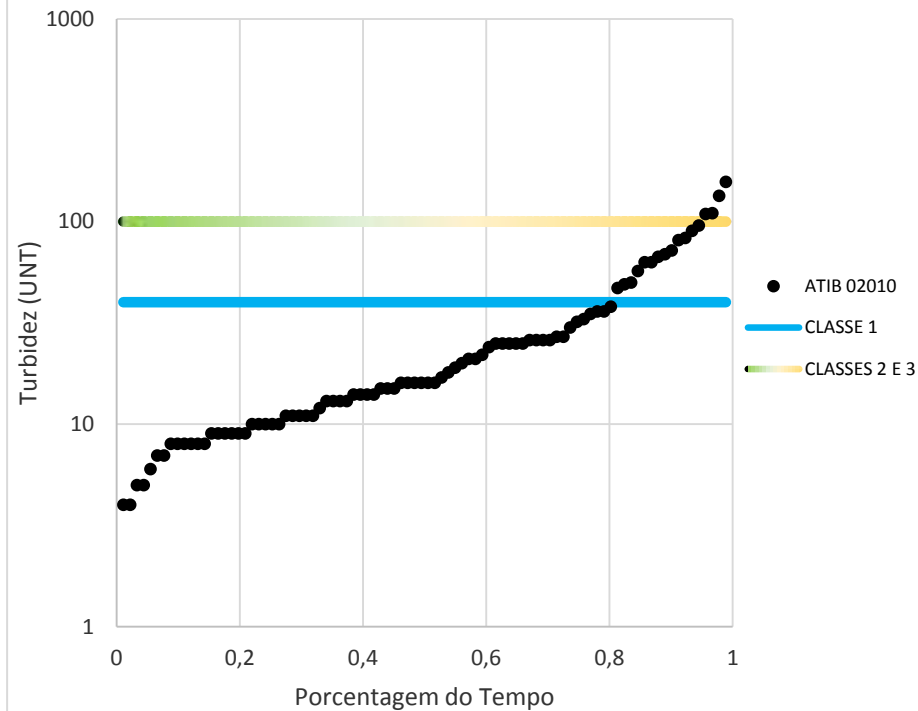


ATIB 02010 – Turbidez (UNT)

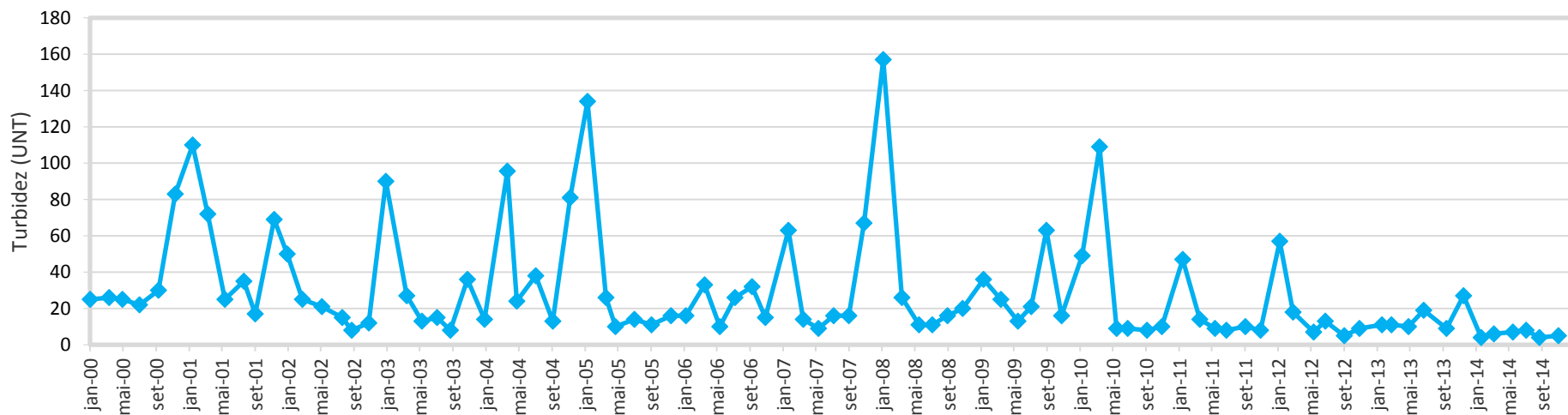
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

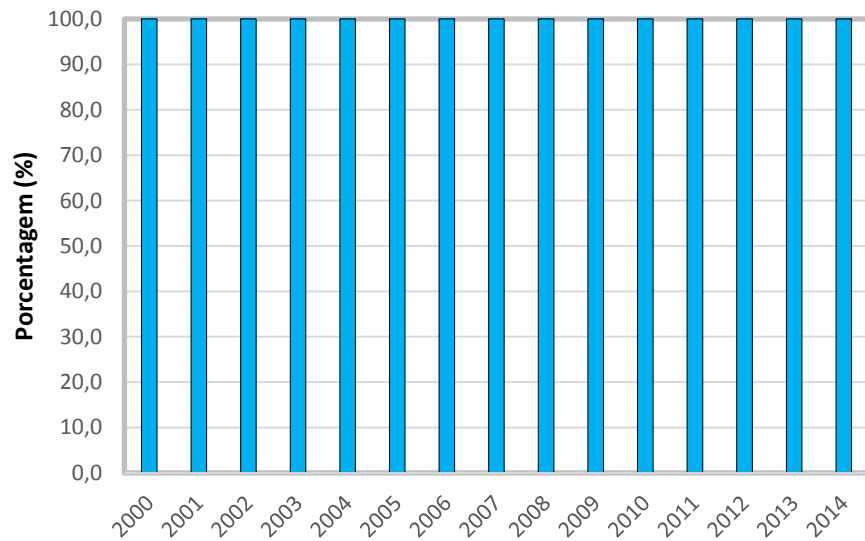


Evolução Temporal

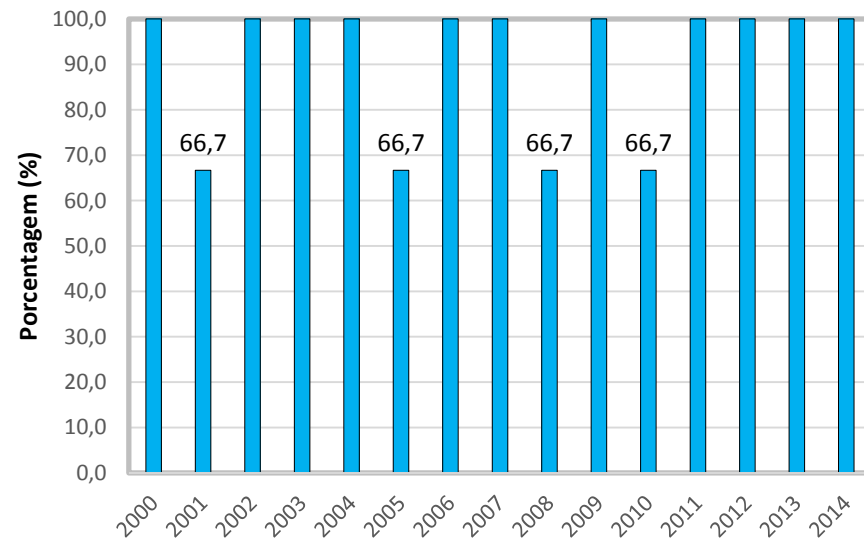


ATIB 02010 – Turbidez (Período Seco x Período Chuvoso)

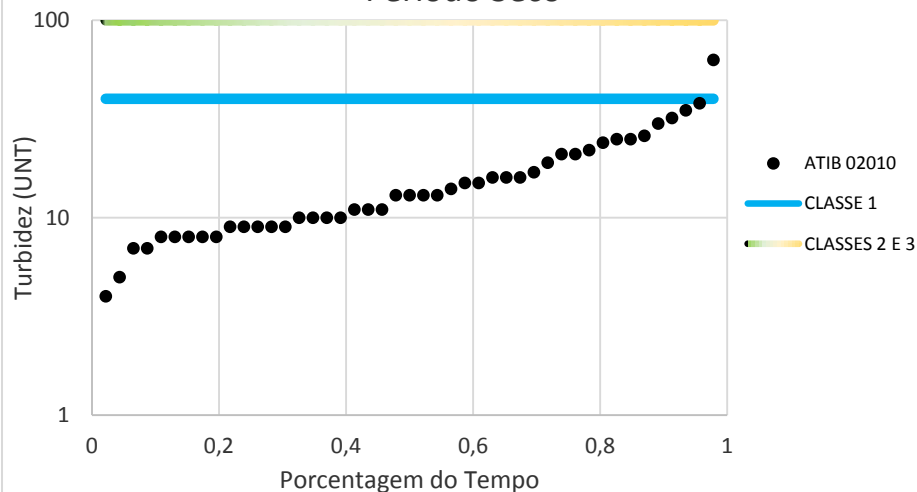
Porcentagem de Atendimento ao Padrão Classe 2 - Turbidez (Seco)



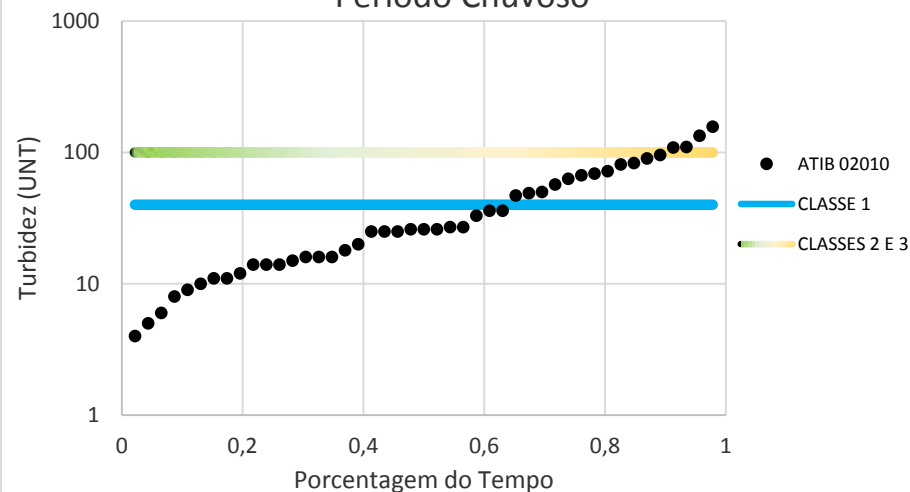
Porcentagem de Atendimento ao Padrão Classe 2 - Turbidez (Chuvoso)



Curva de Permanência- Turbidez Período Seco

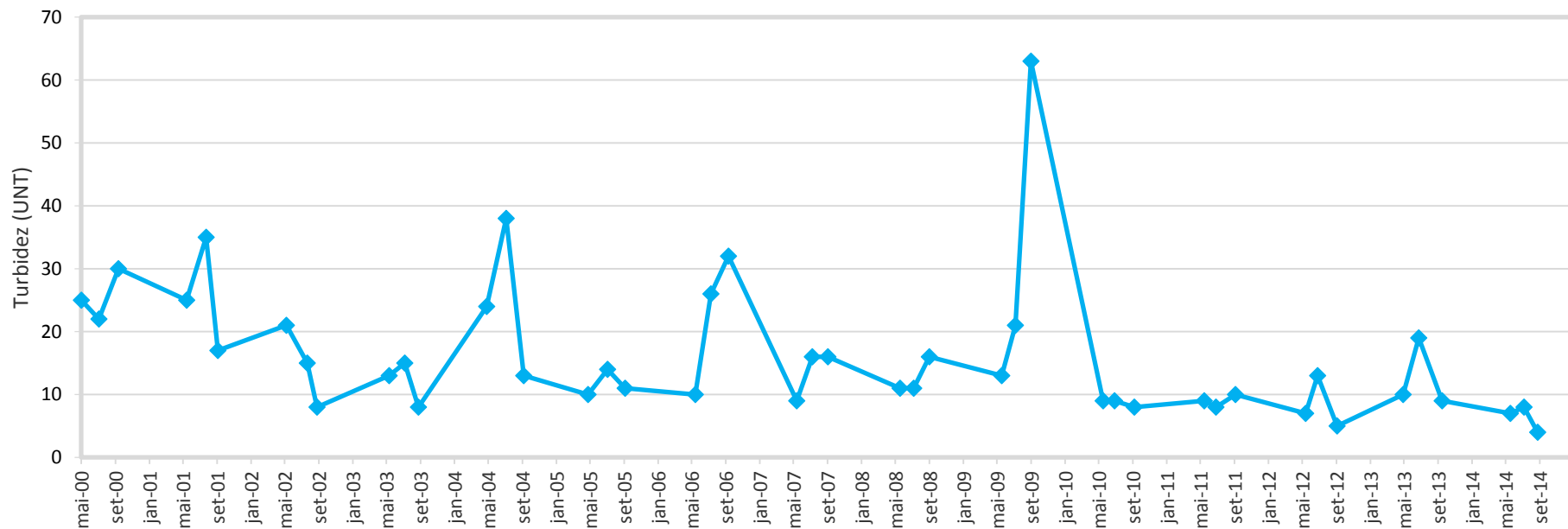


Curva de Permanência- Turbidez Período Chuvoso

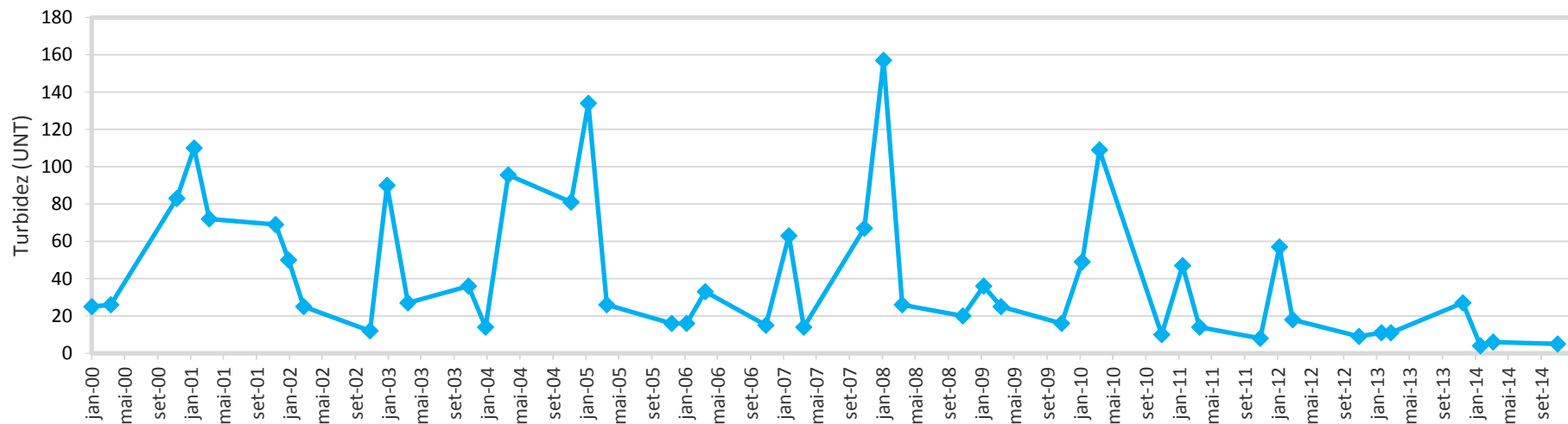


ATIB 02010 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



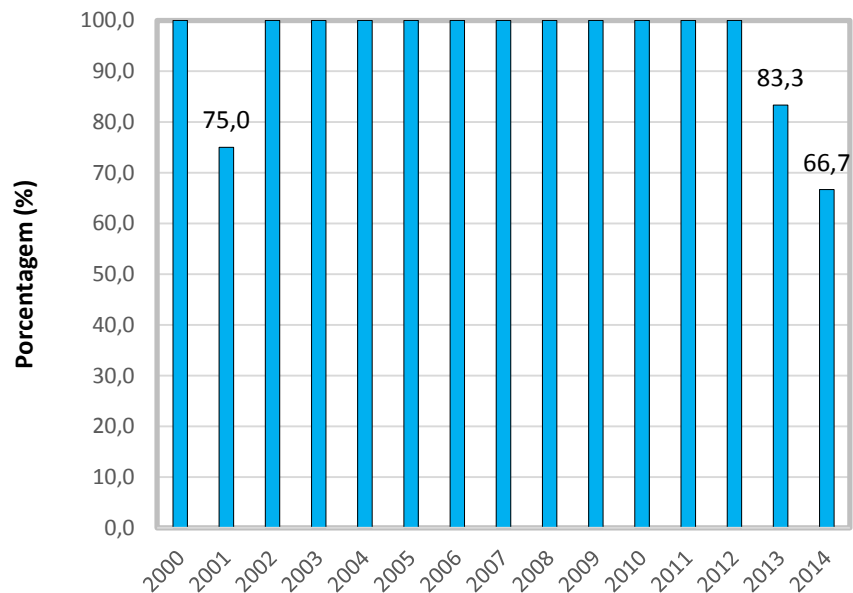
Evolução Temporal - Período Chuvoso



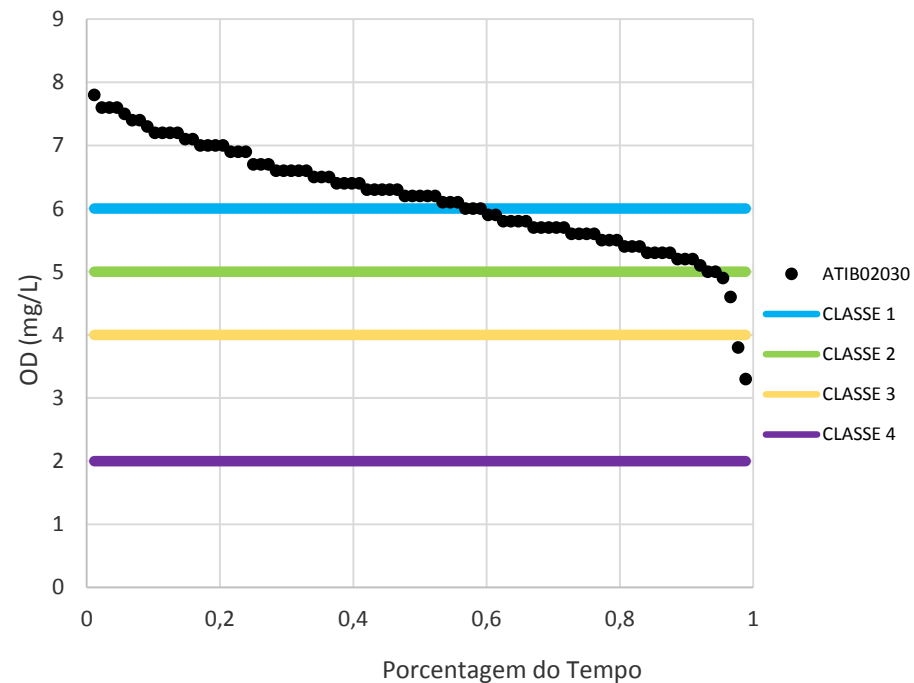
Rio Atibaia
ATIB 02030

ATIB 02030 – Oxigênio Dissolvido (mg/L)

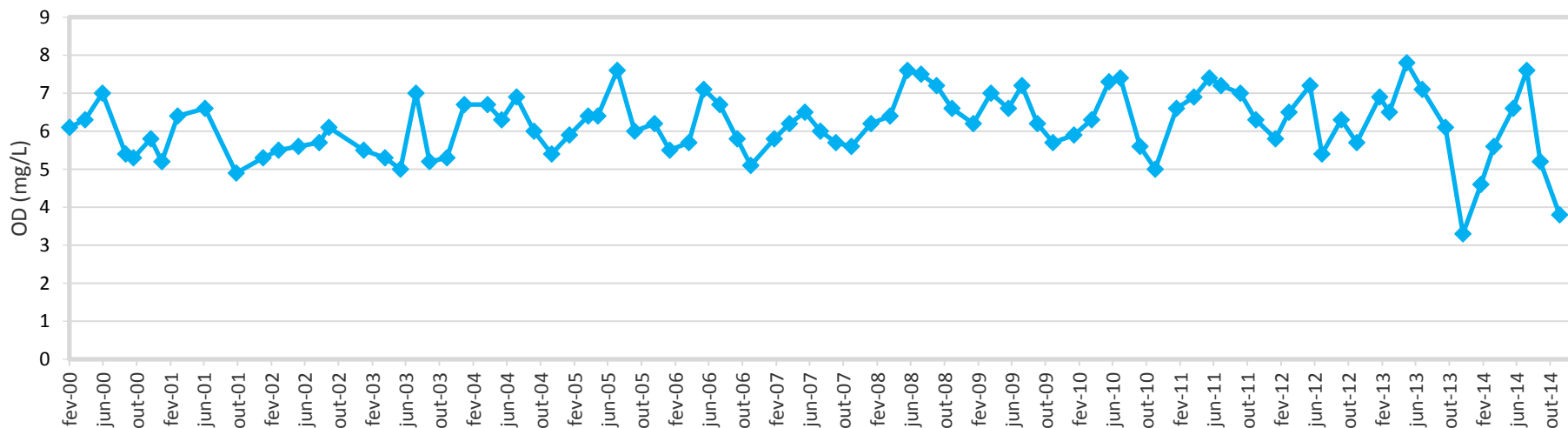
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

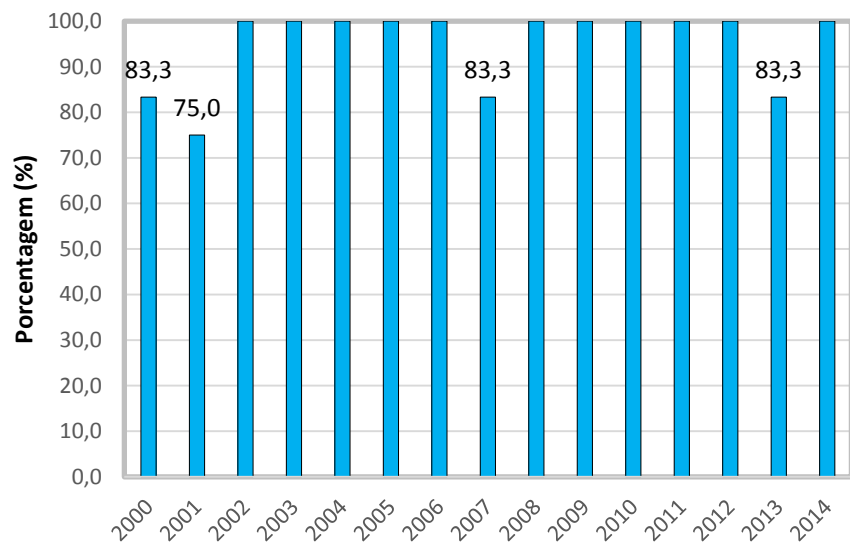


Evolução Temporal

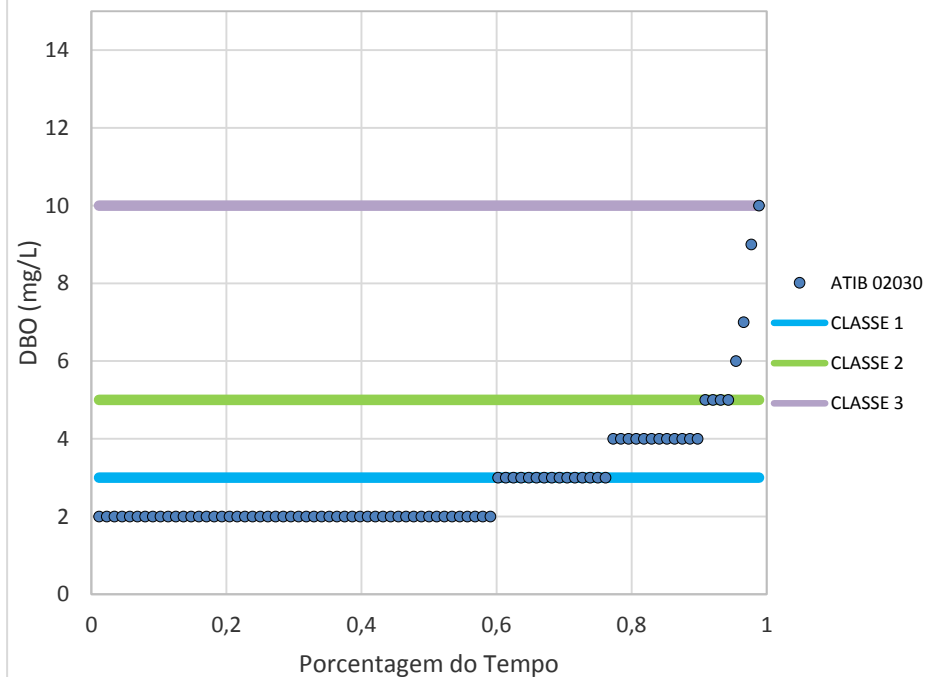


ATIB 02030 – DBO (mg/L)

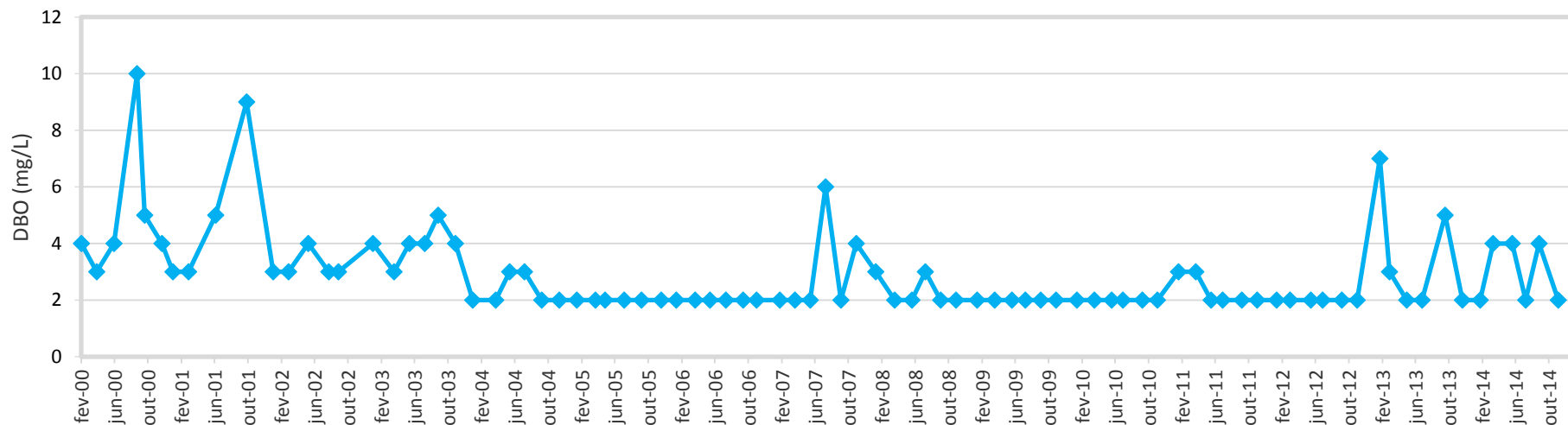
Porcentagem de Atendimento ao Padrão Classe 2 - DBO



Curva de Permanência

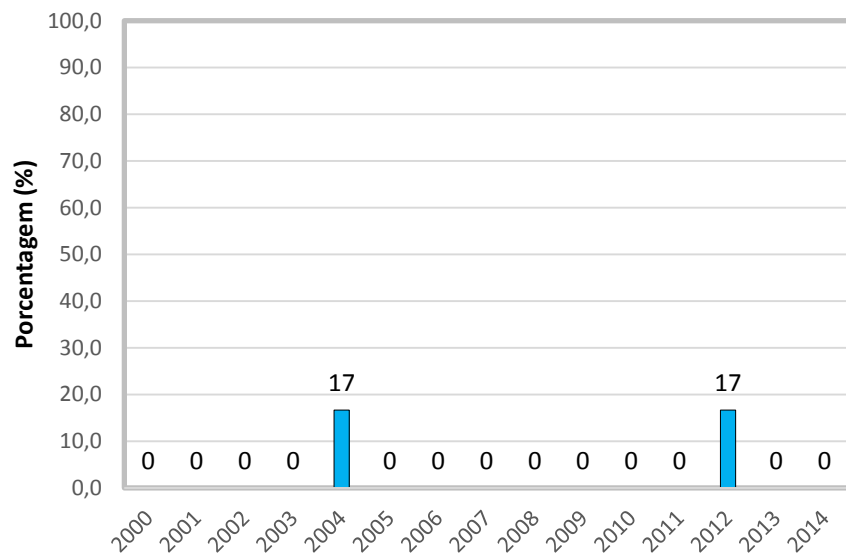


Evolução Temporal

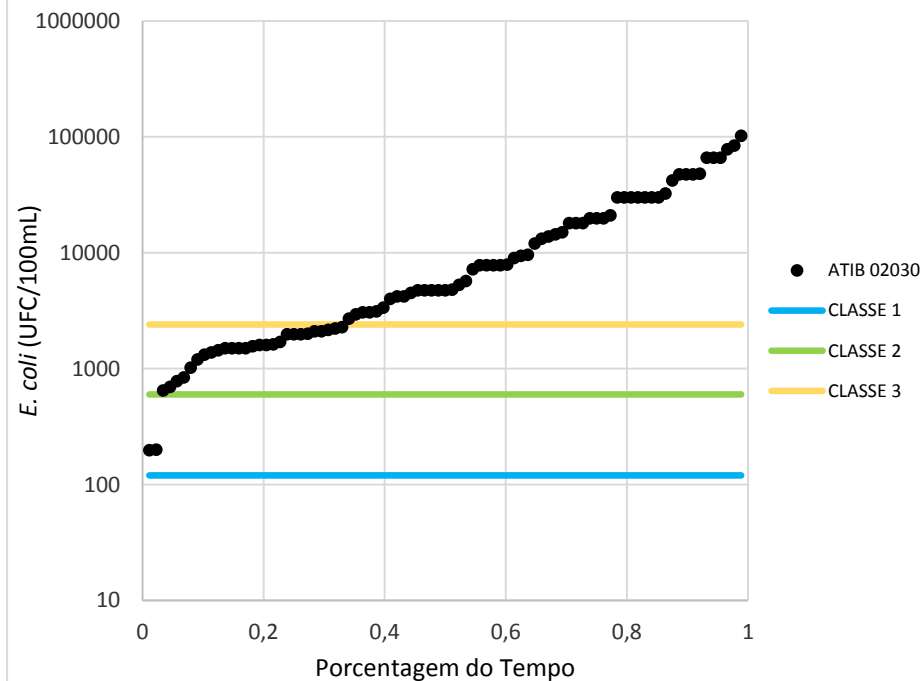


ATIB 02030 – *Escherichia coli* (UFC/100mL)

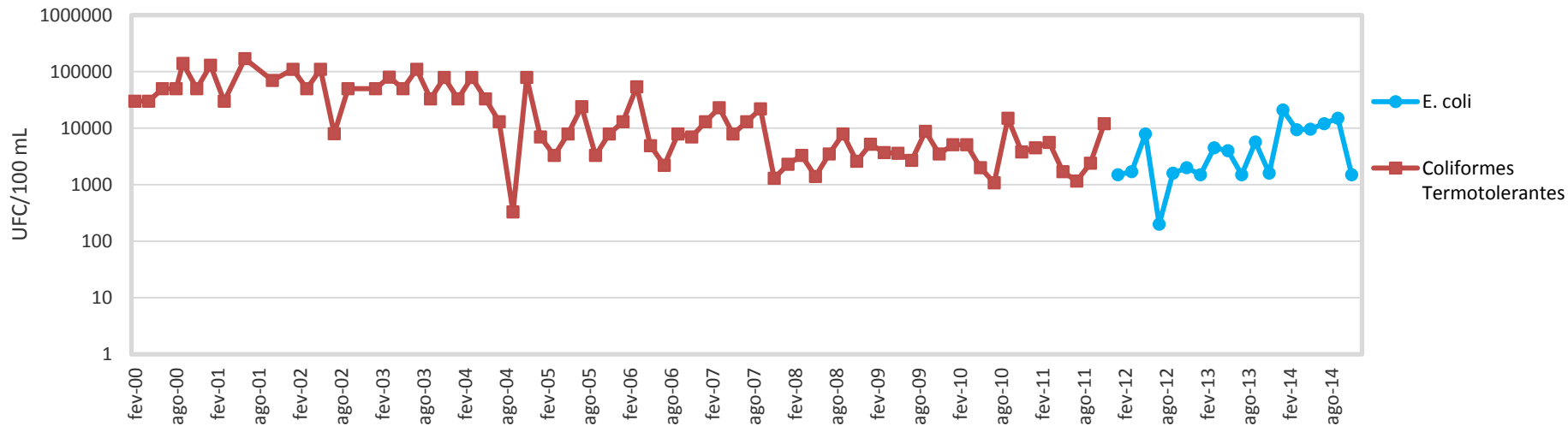
Porcentagem de Atendimento ao Padrão Classe 2 -
Colif. Term. e *E. coli*



Curva de Permanência

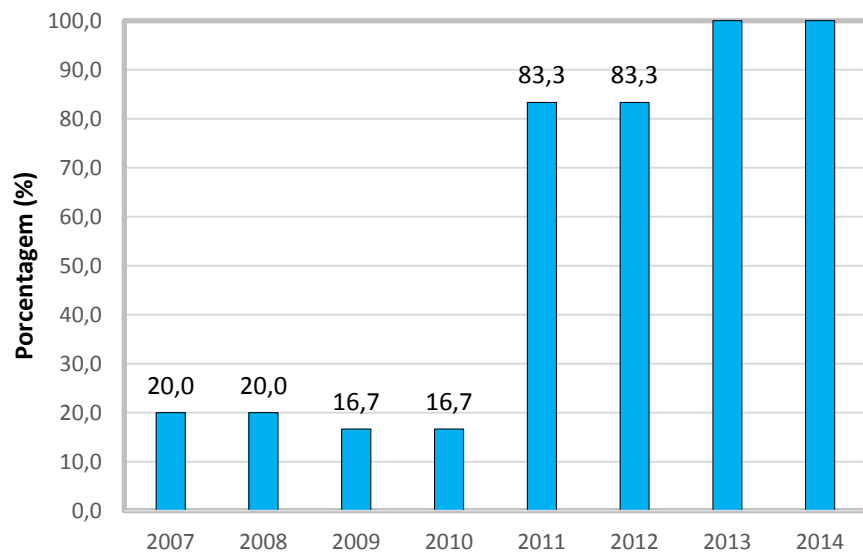


Evolução Temporal

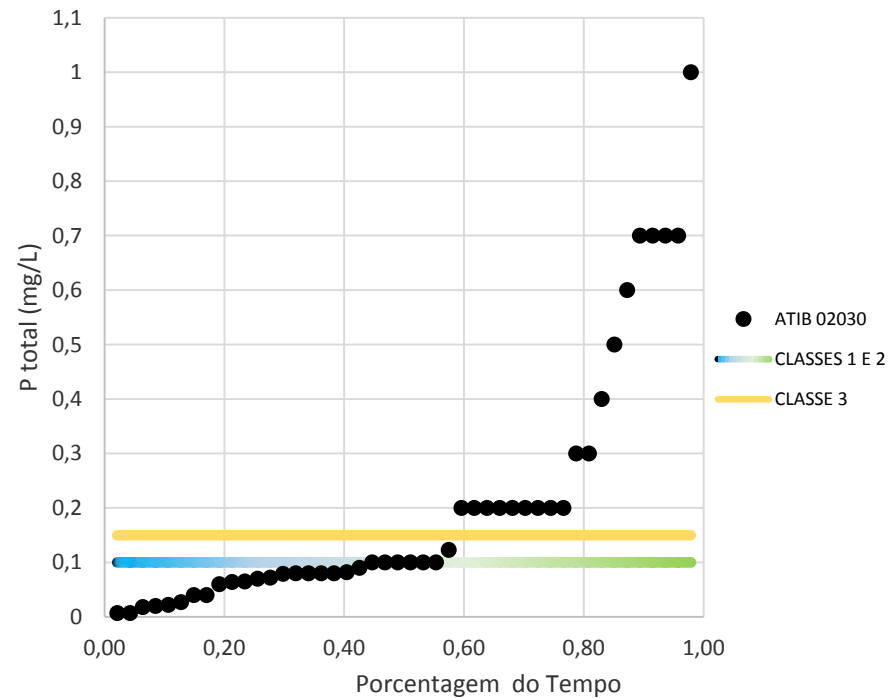


ATIB 02030 – Fósforo Total (mg/L)

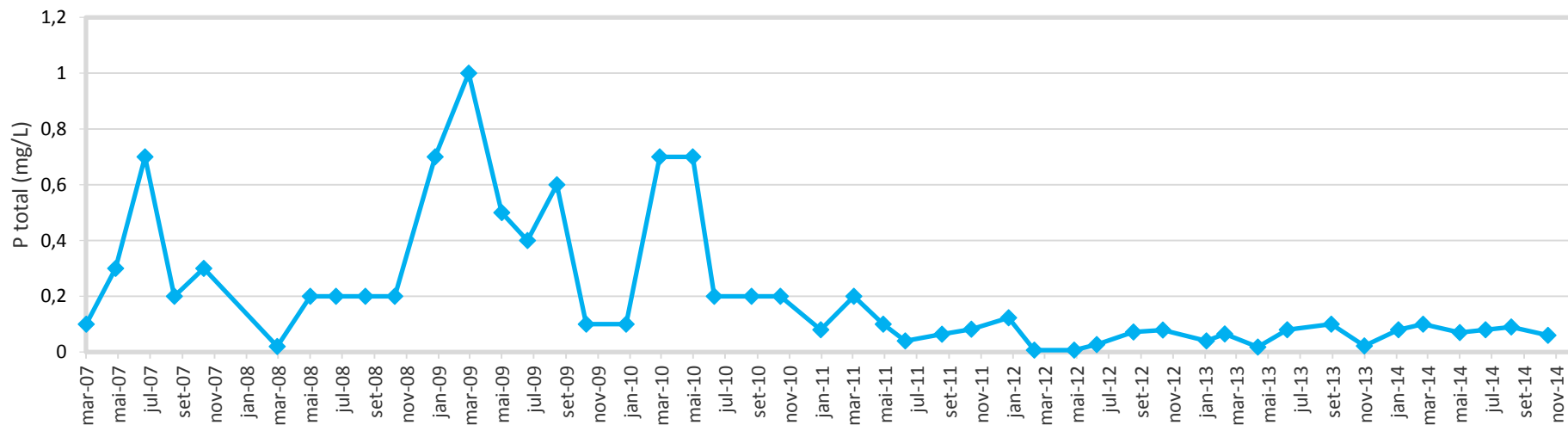
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

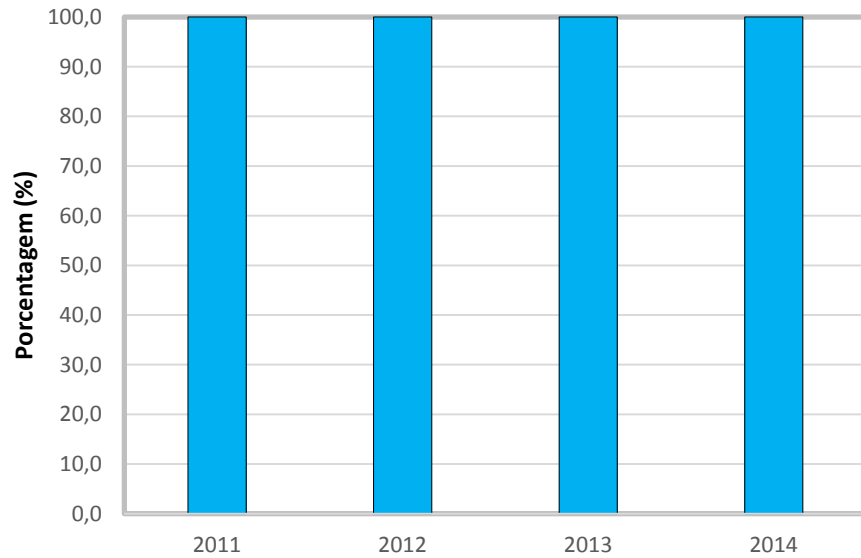


Evolução Temporal

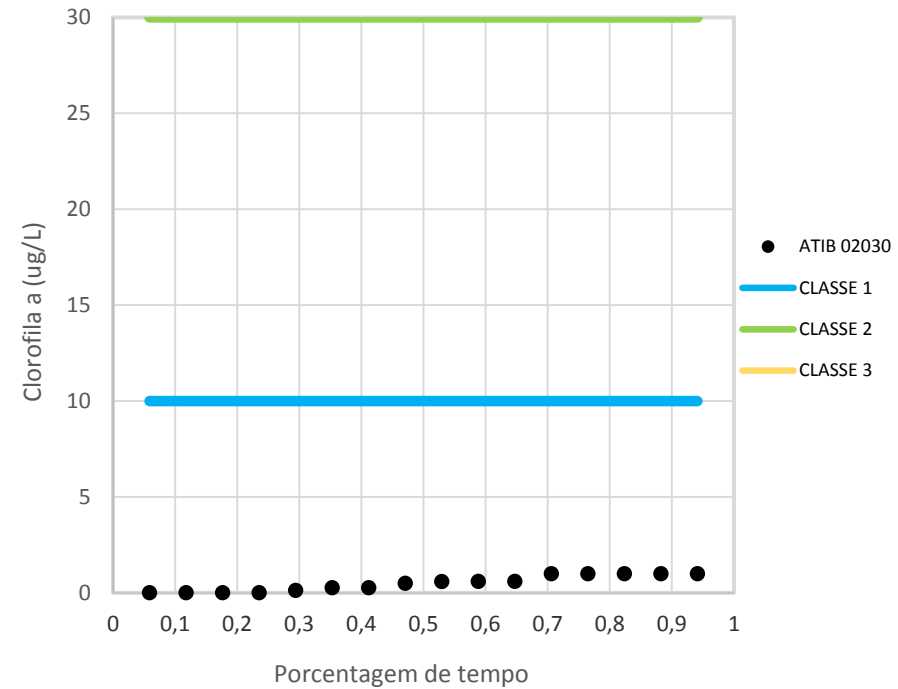


ATIB 02030 – Clorofila a ($\mu\text{g/L}$)

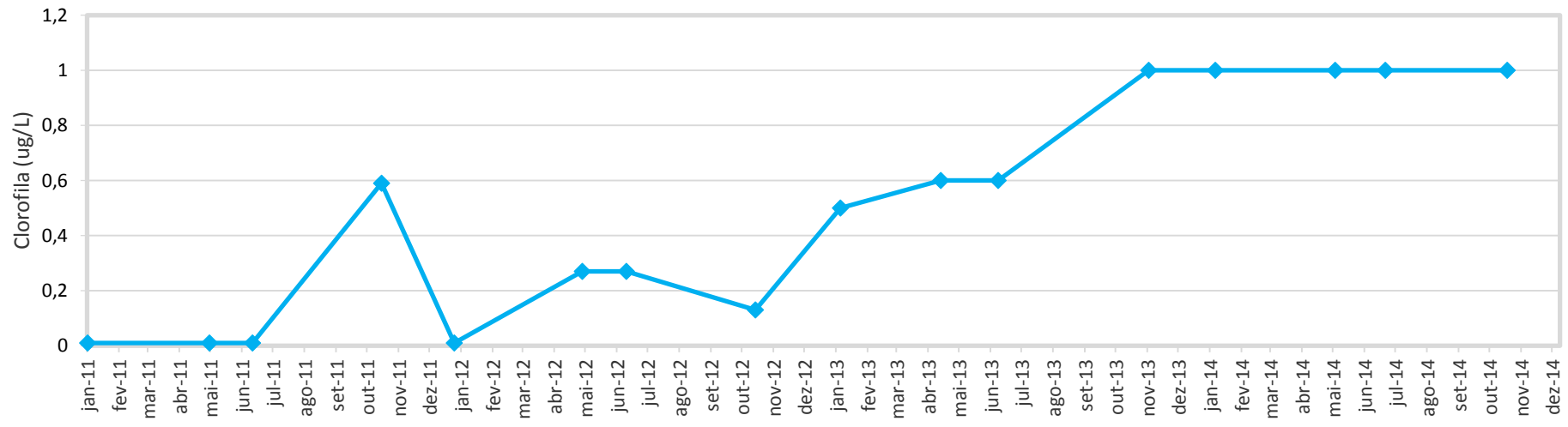
Porcentagem de Atendimento ao Padrão Classe 2 - Clorofila



Curva de Permanência

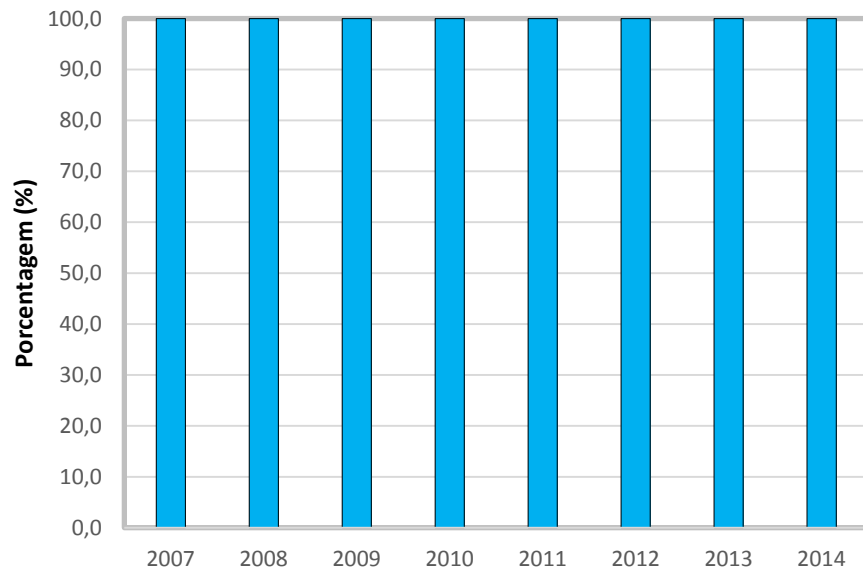


Evolução Temporal

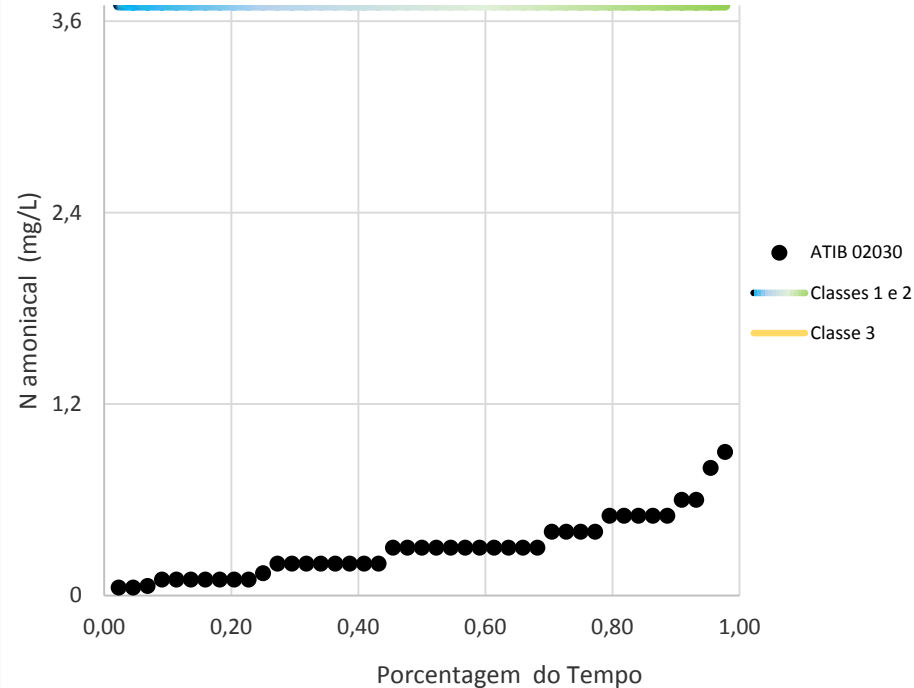


ATIB 02030 – Nitrogênio Amoniacal (mg/L)

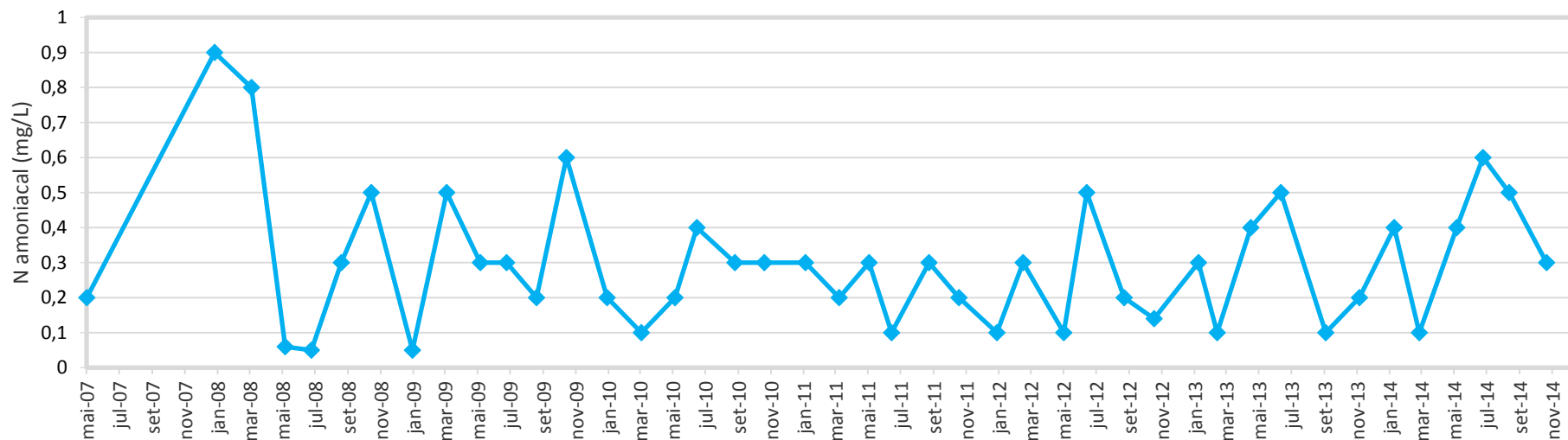
Porcentagem de Atendimento ao Padrão Classe 2 - N amoniacal



Curva de Permanência

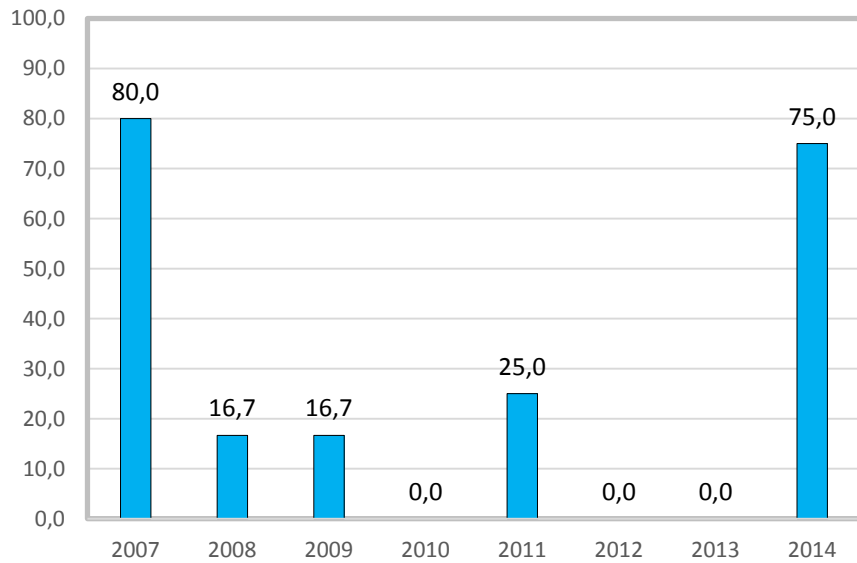


Evolução Temporal

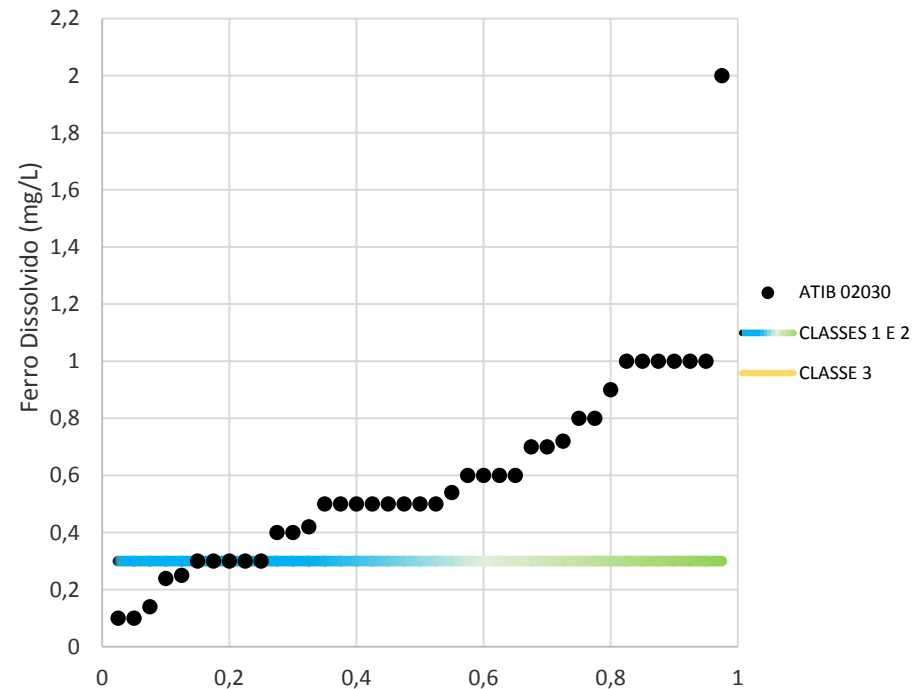


ATIB 02030 – Ferro Dissolvido (mg/L)

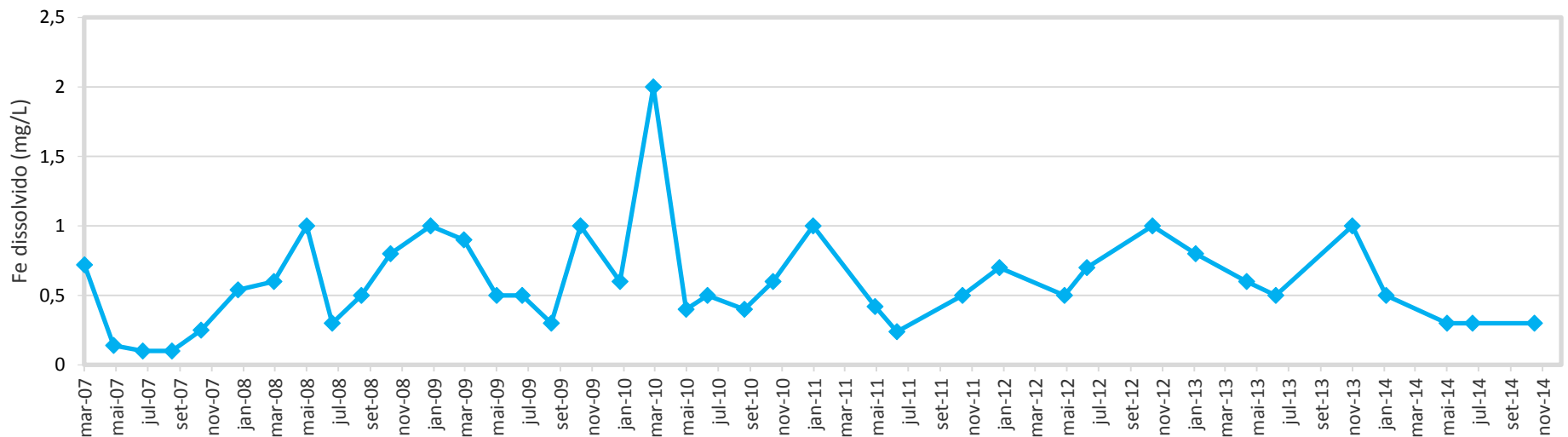
Porcentagem de Atendimento ao Padrão Classe 2 - Fe dissolvido



Curva de Permanência

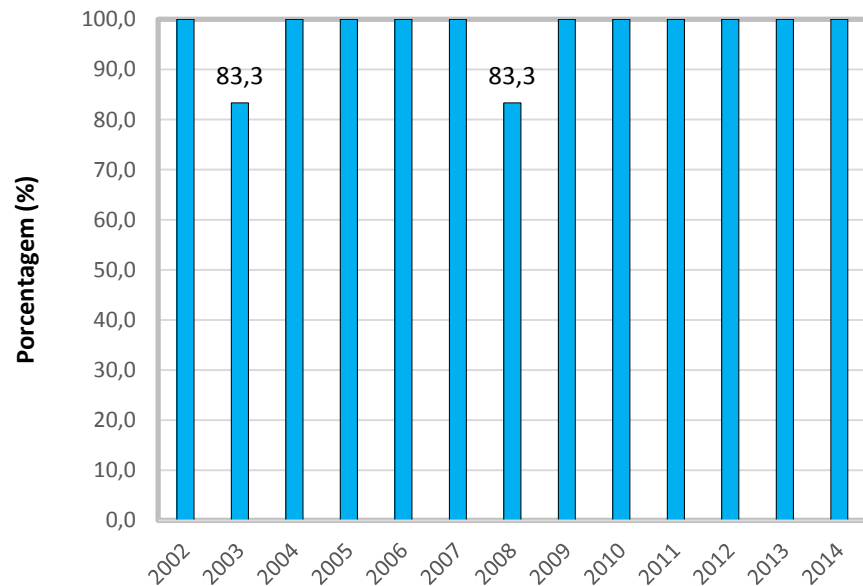


Evolução Temporal

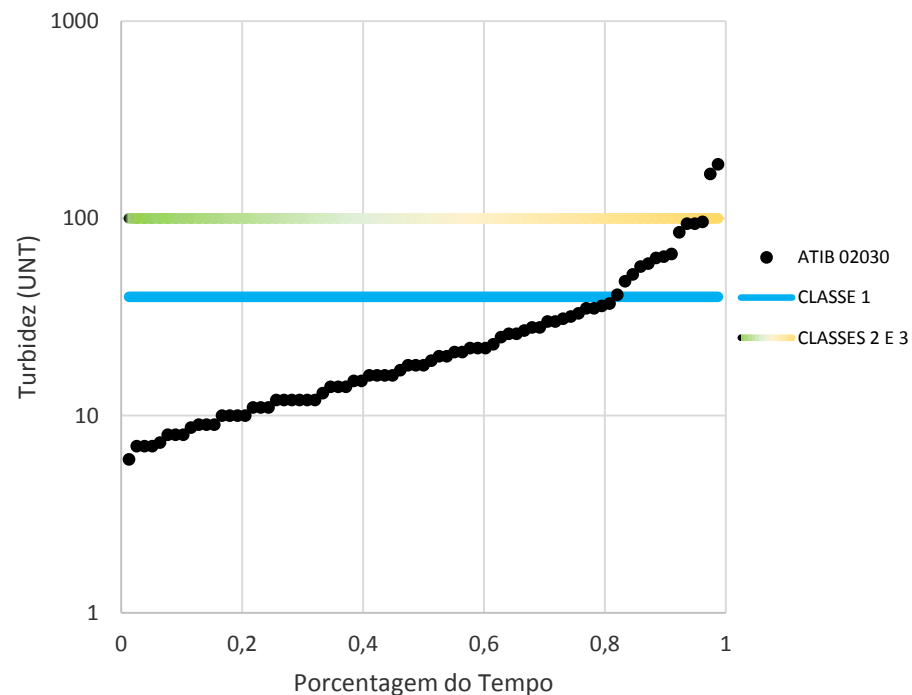


ATIB 02030 – Turbidez (UNT)

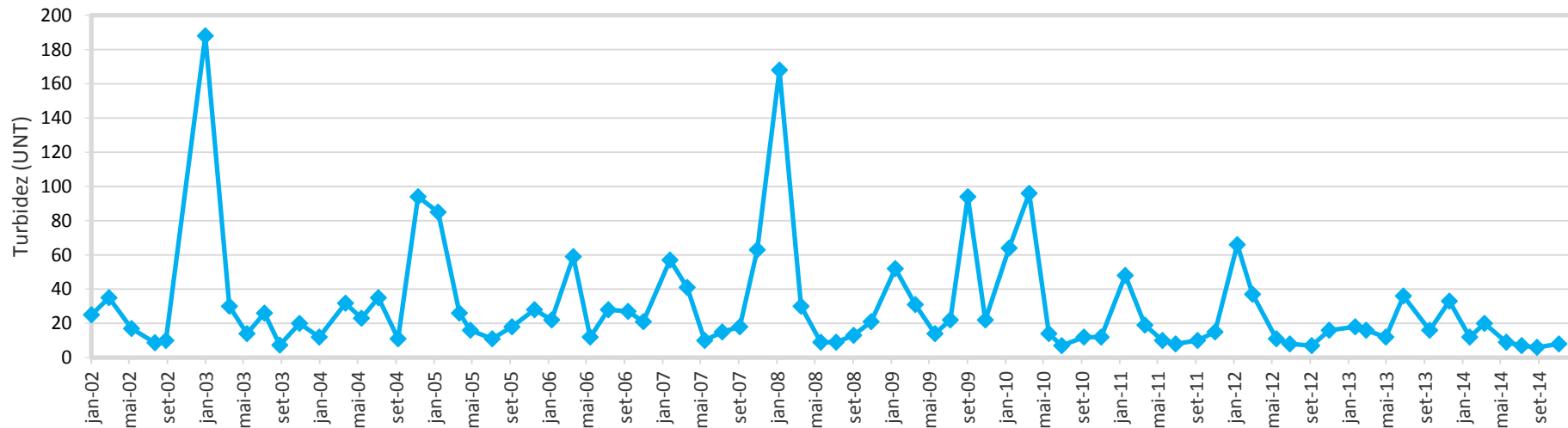
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

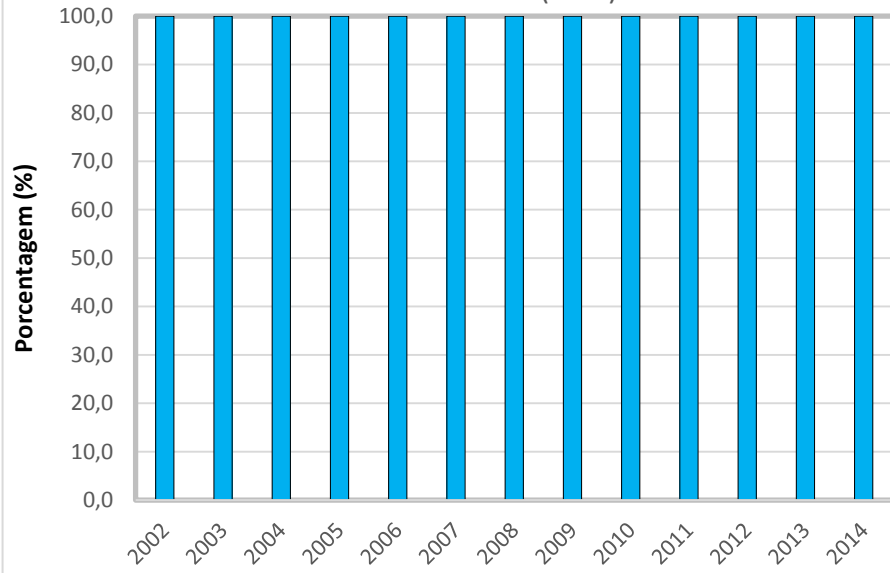


Evolução Temporal

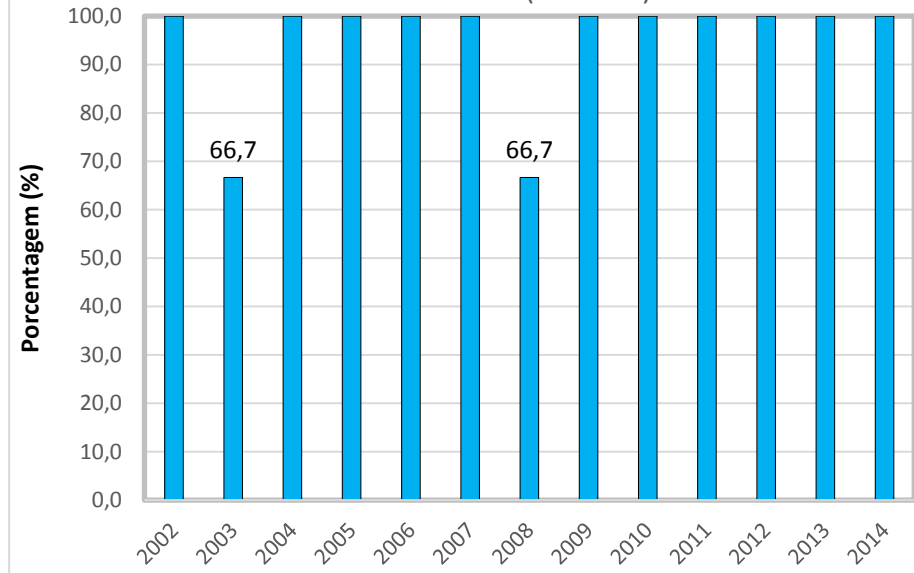


ATIB 02030 – Turbidez (Período Seco x Período Chuvoso)

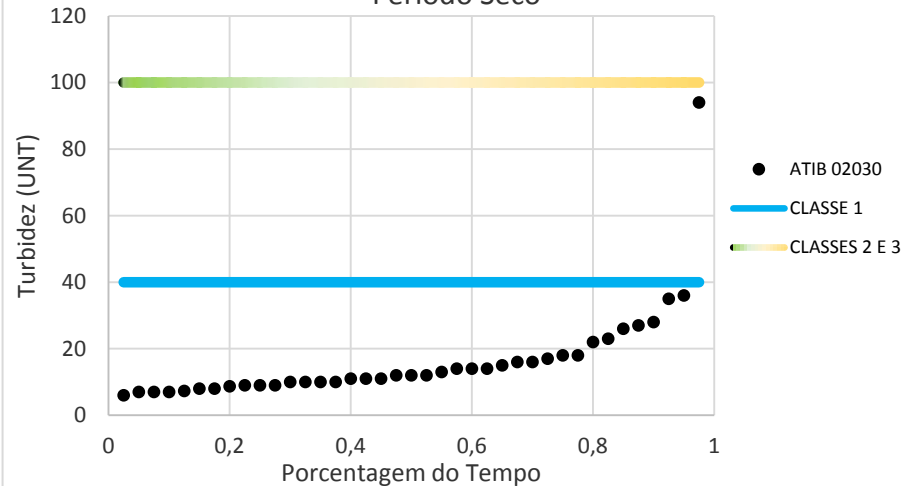
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



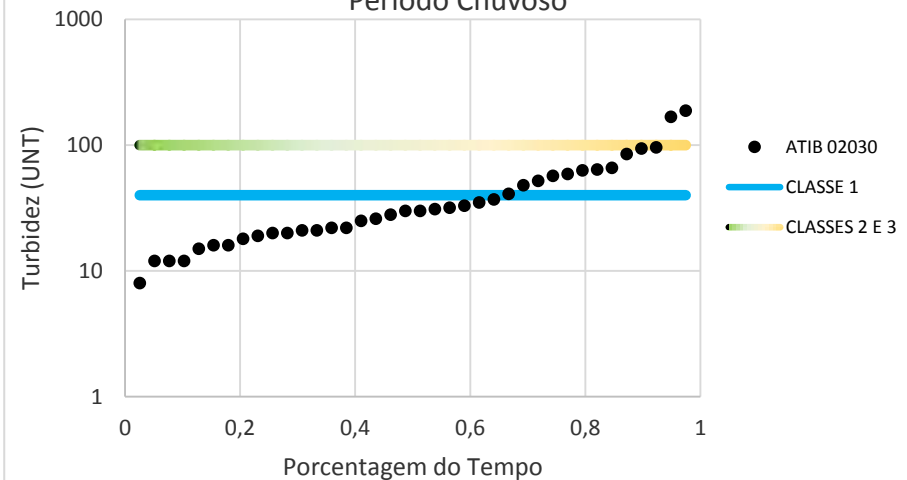
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

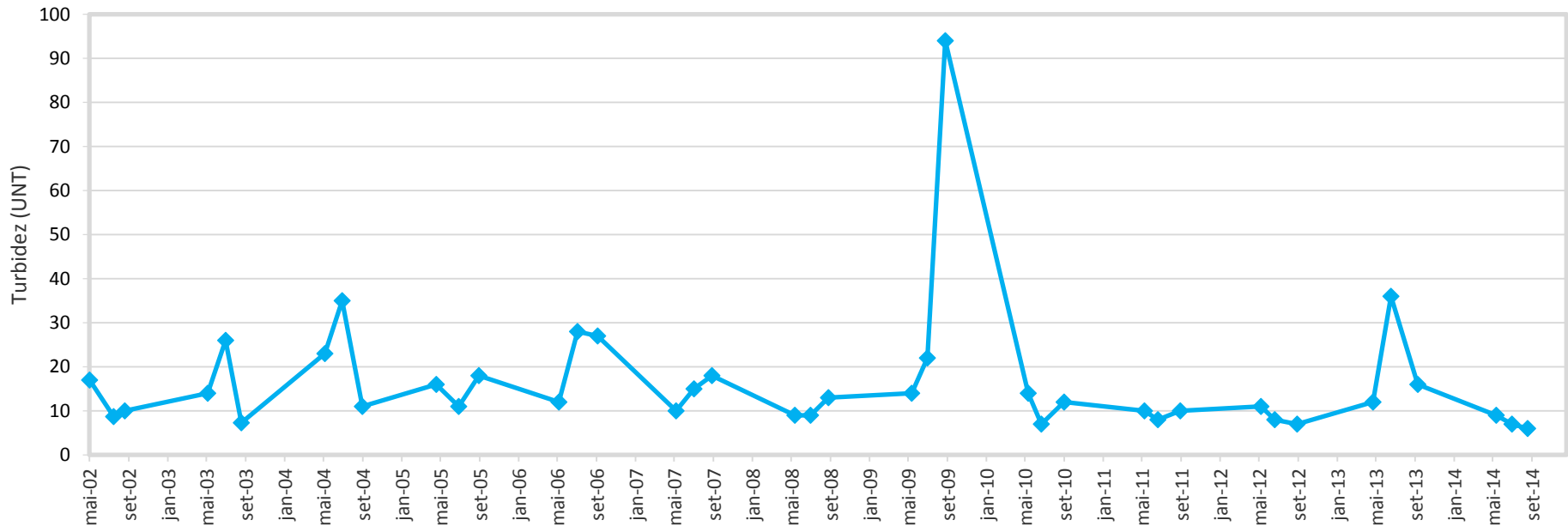


Curva de Permanência- Turbidez
Período Chuvoso

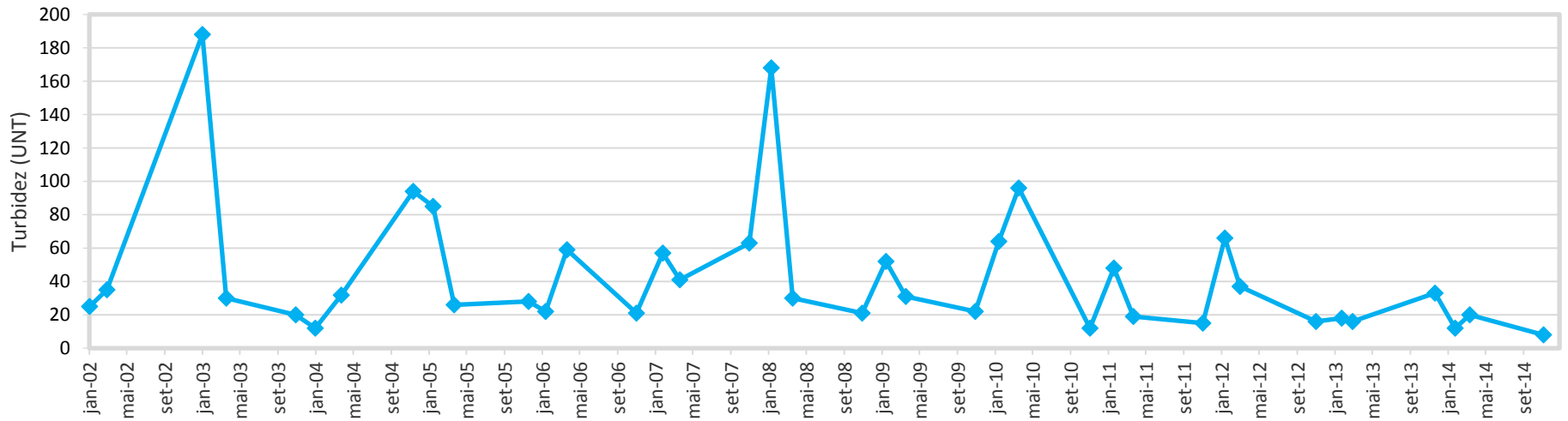


ATIB 02030 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



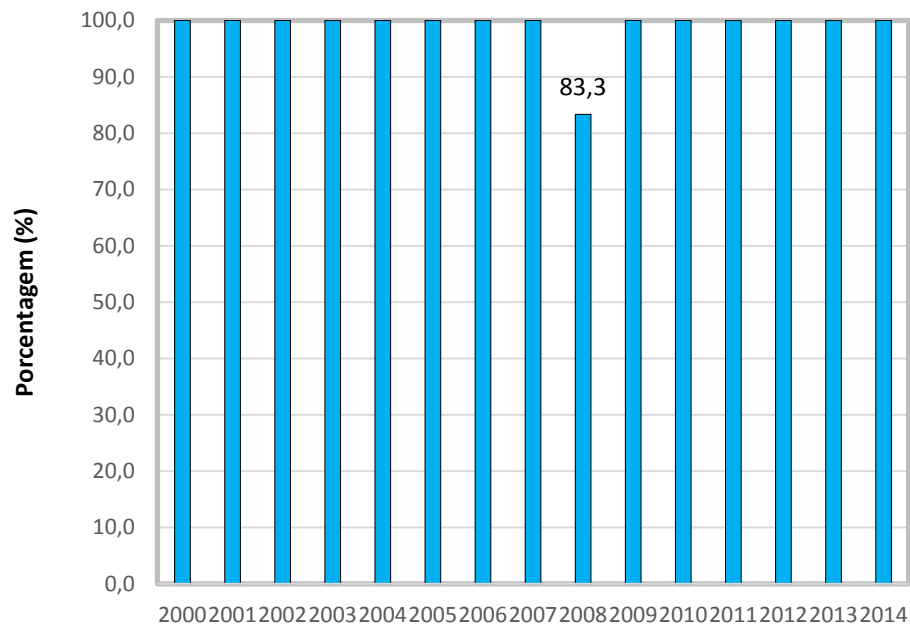
Evolução Temporal - Período Chuvoso



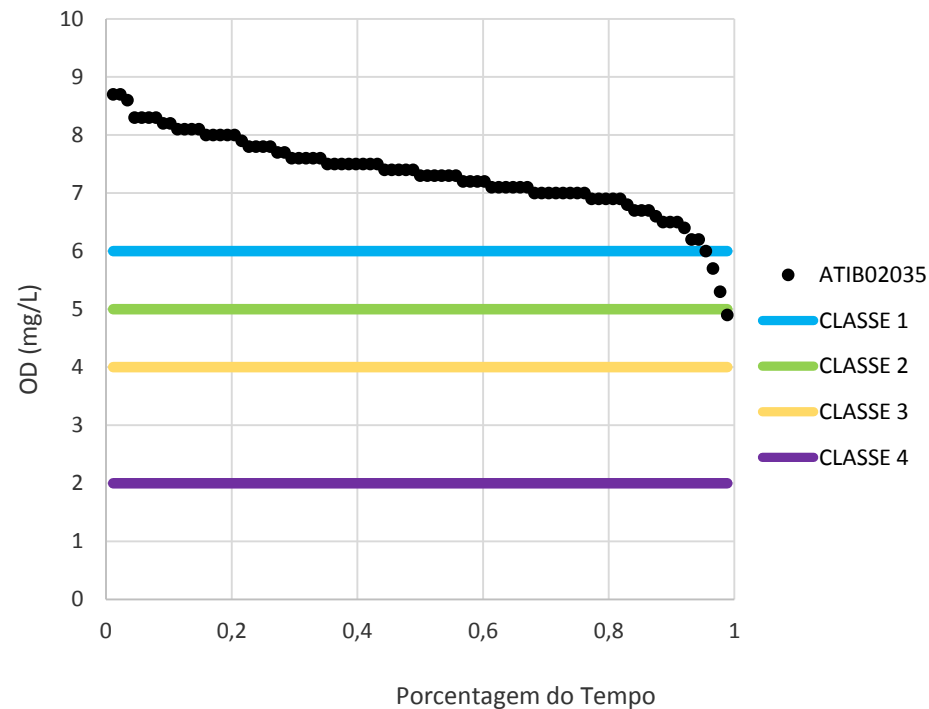
Rio Atibaia
ATIB 02035

ATIB 02035 – Oxigênio Dissolvido (mg/L)

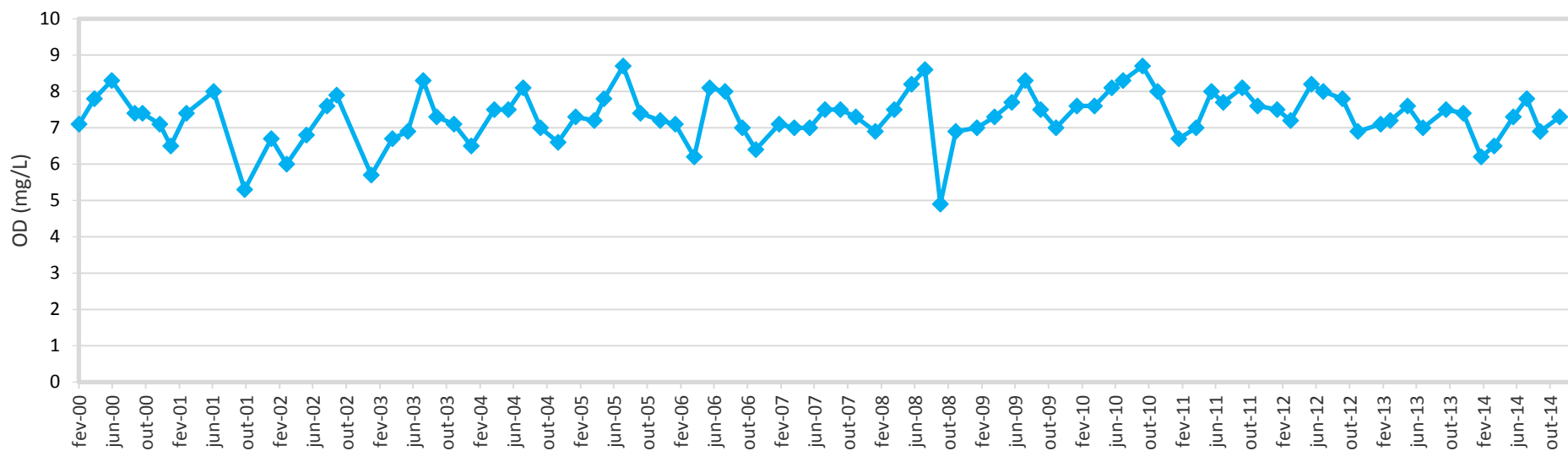
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

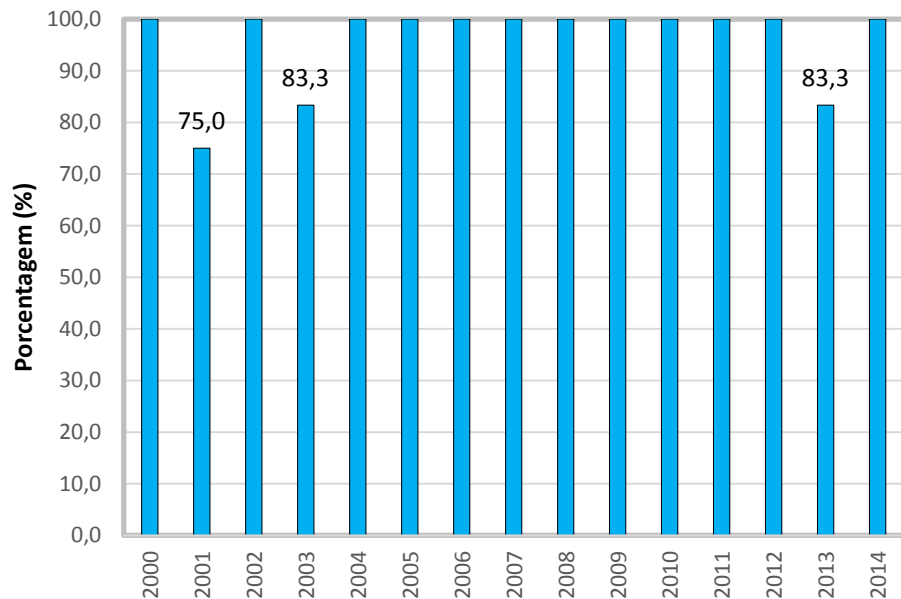


Evolução Temporal

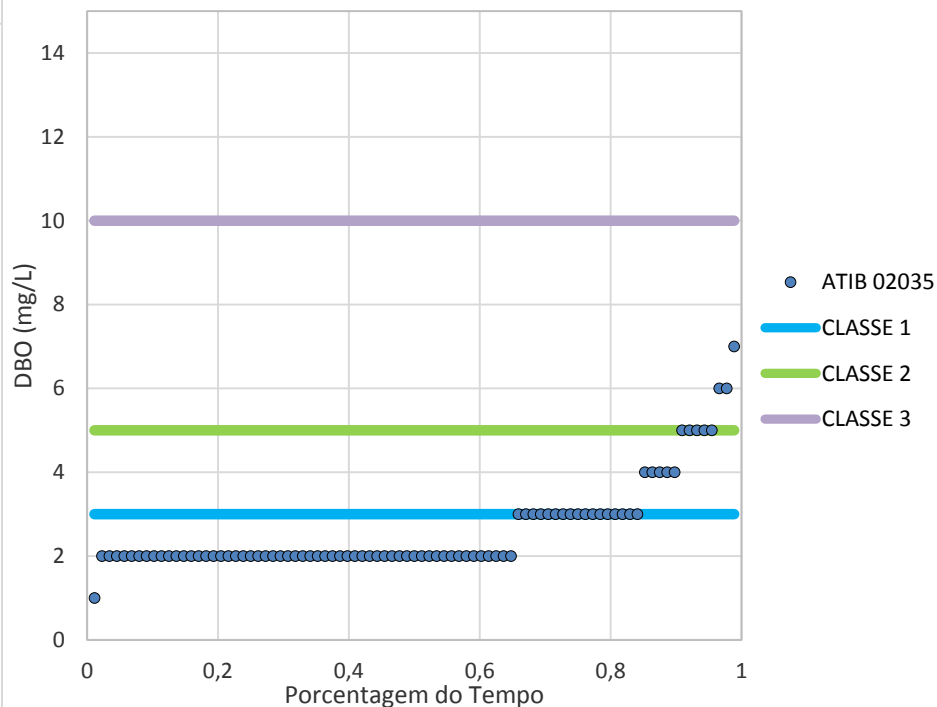


ATIB 02035 – DBO (mg/L)

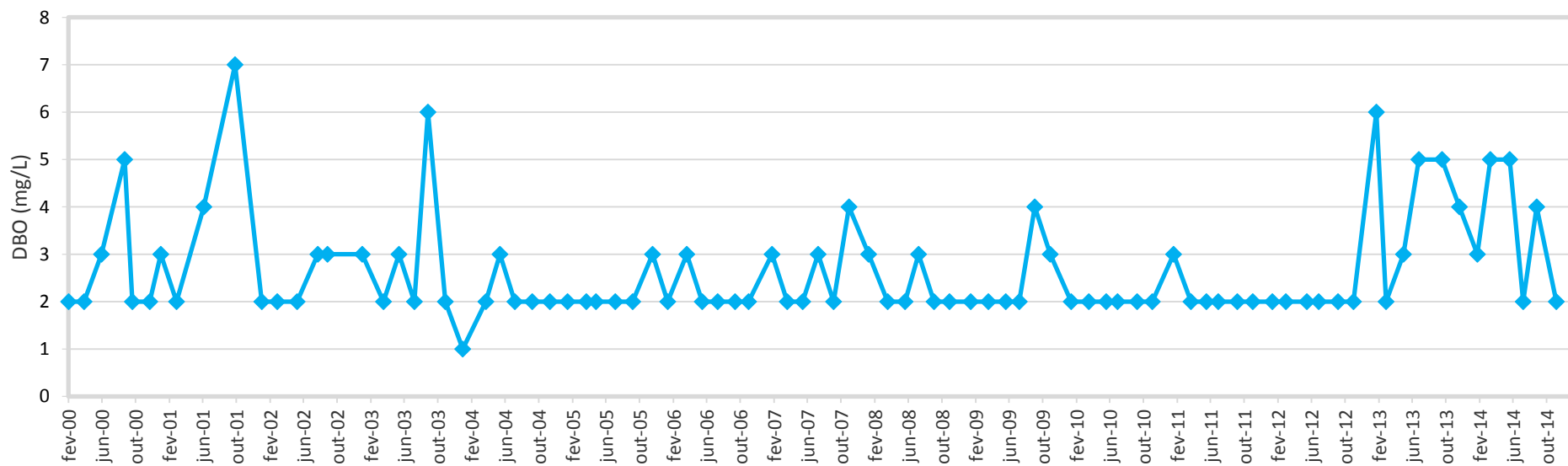
Porcentagem de Atendimento ao Padrão Classe 2 - DBO



Curva de Permanência

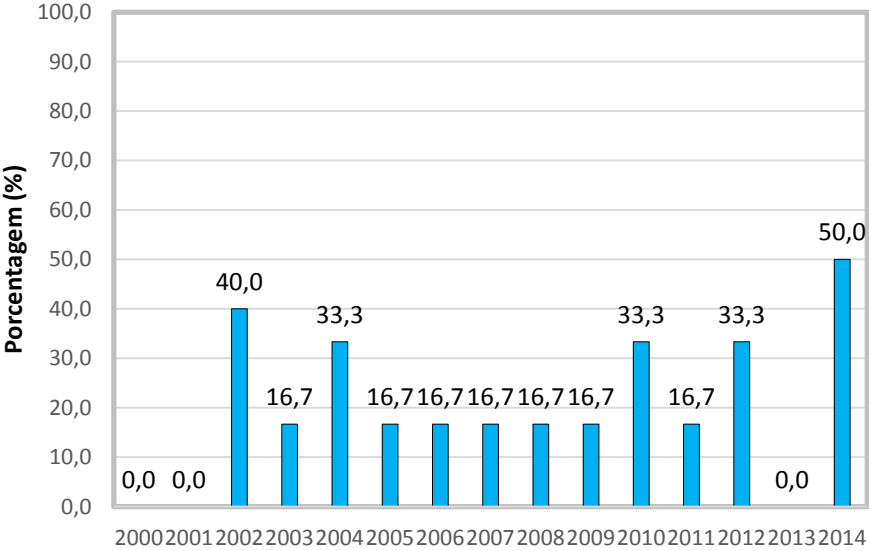


Evolução Temporal

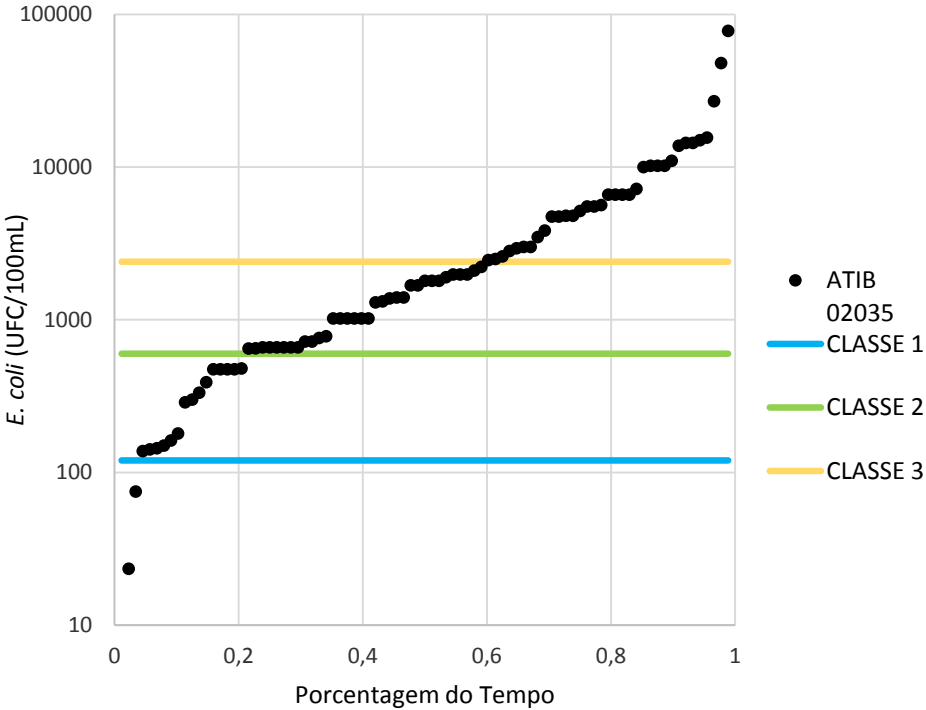


ATIB 02035 – *Escherichia coli* (UFC/100mL

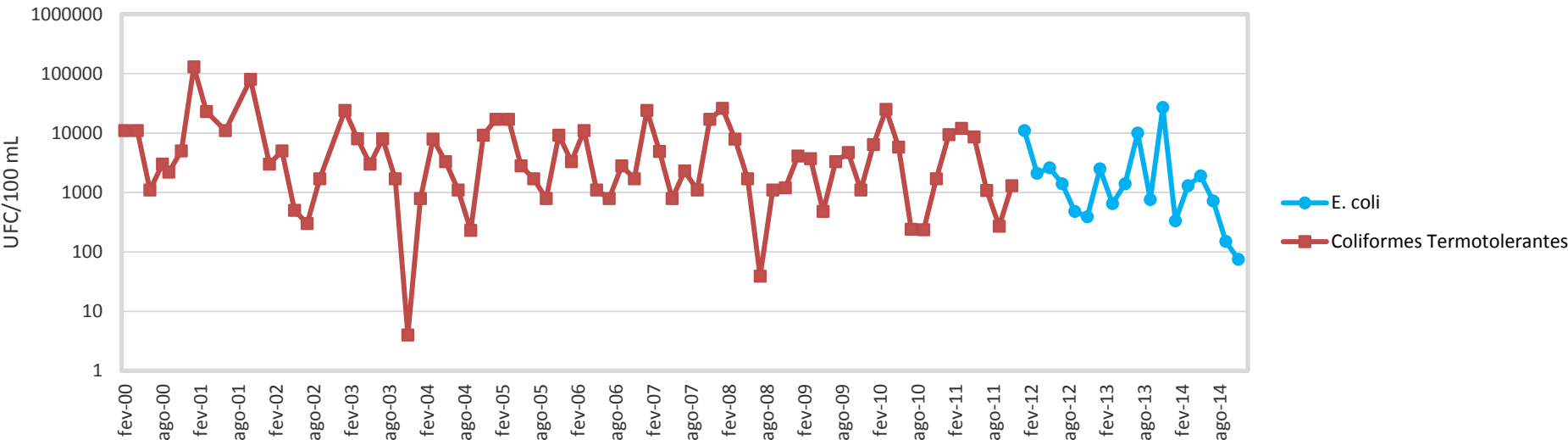
Porcentagem de Atendimento ao Padrão Classe 2 - Colif. Term. e E. coli



Curva de Permanência

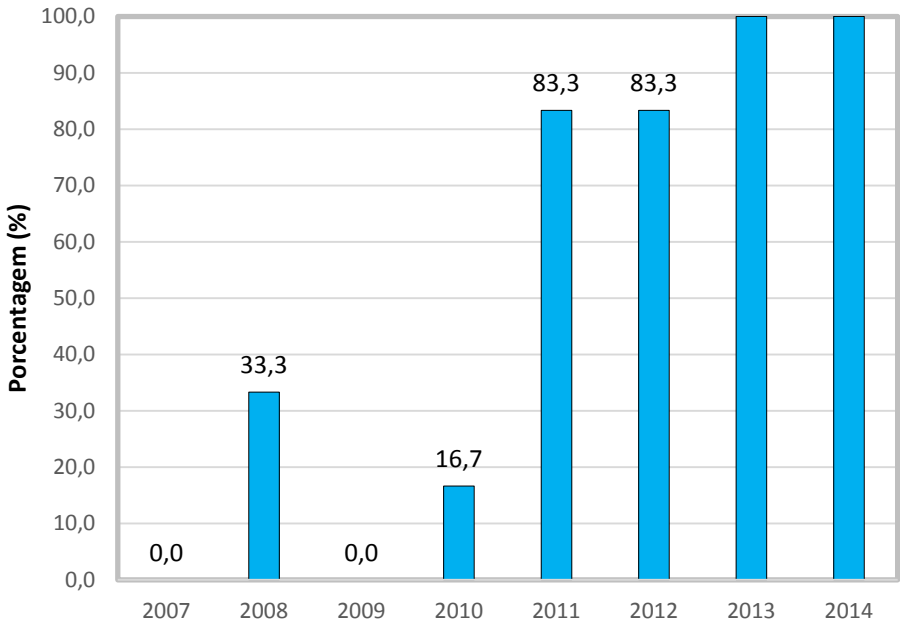


Evolução Temporal

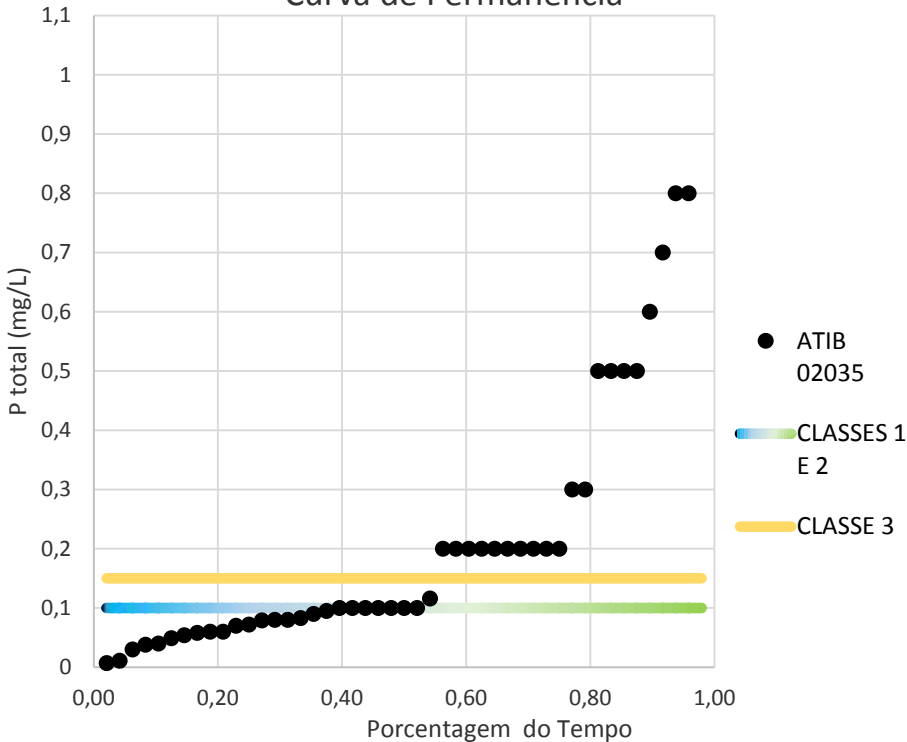


ATIB 02035 – Fósforo Total (mg/L)

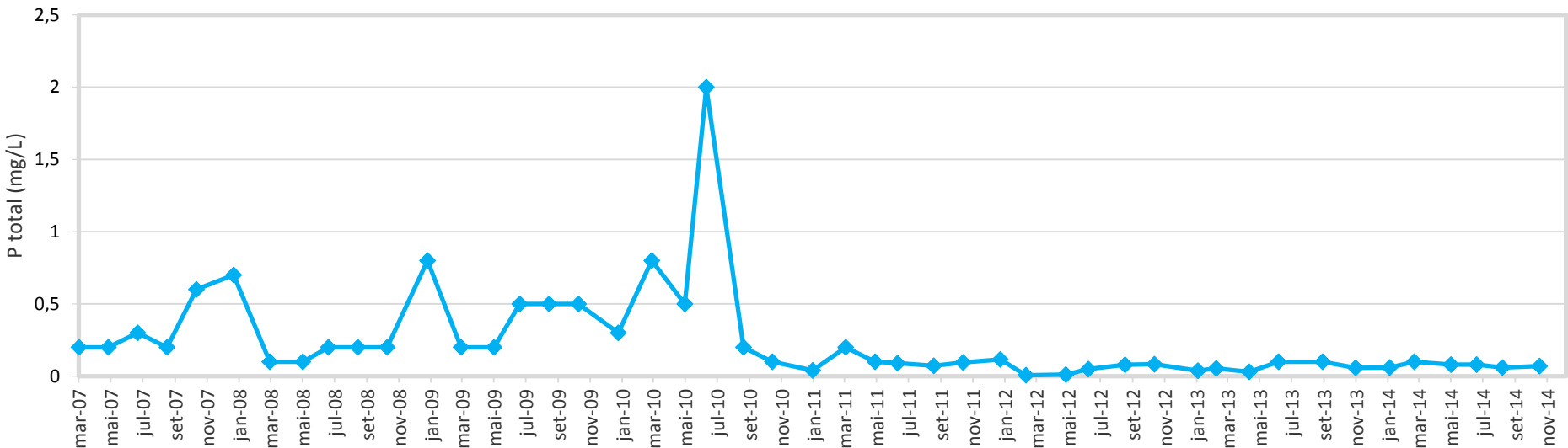
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

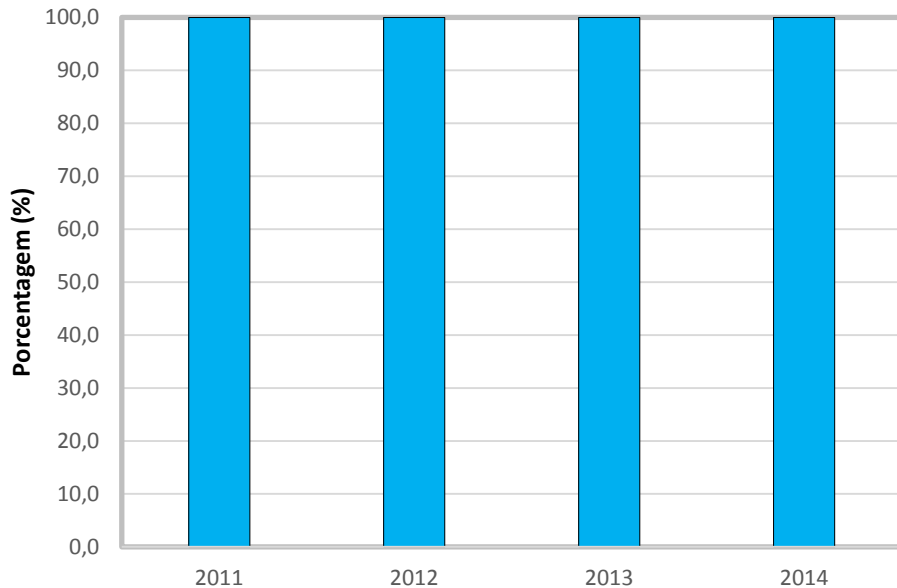


Evolução Temporal

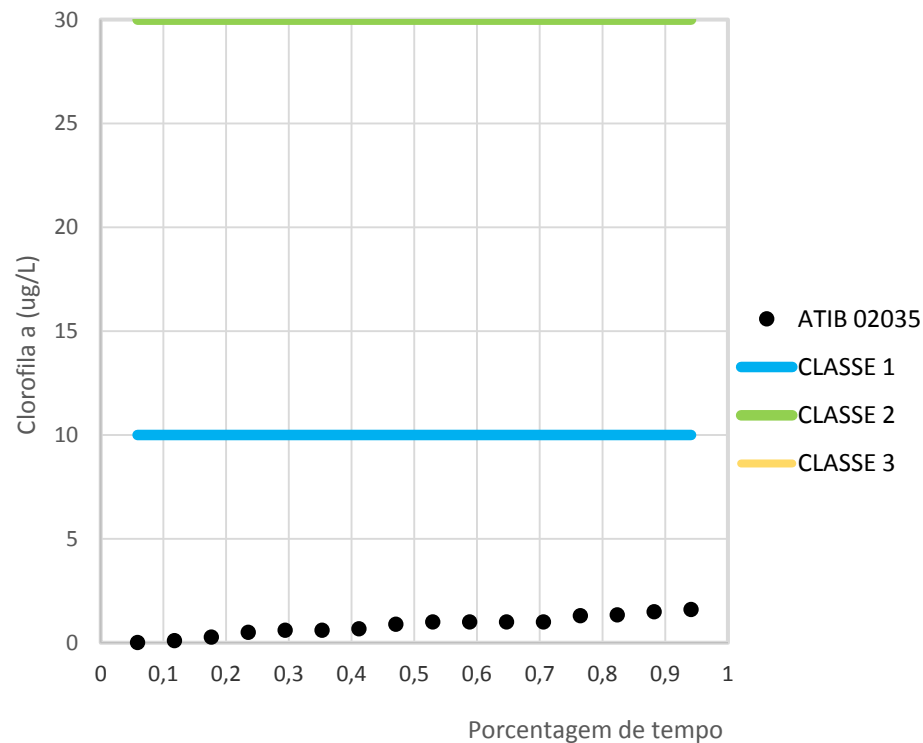


ATIB 02035 – Clorofila a ($\mu\text{g/L}$)

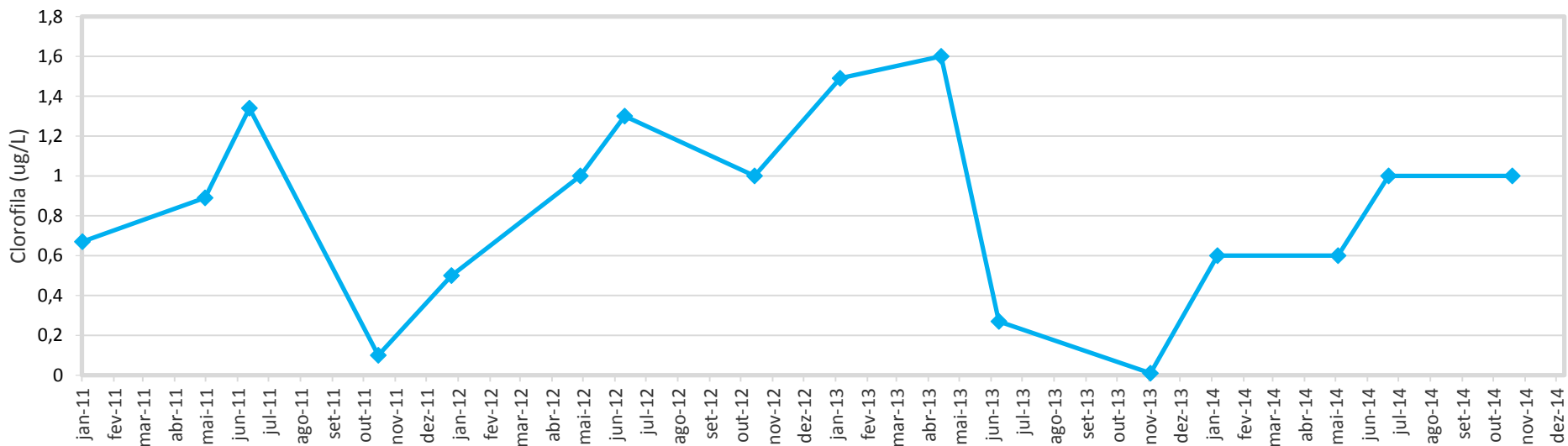
Porcentagem de Atendimento ao Padrão Classe 2 -
Clorofila



Curva de Permanência

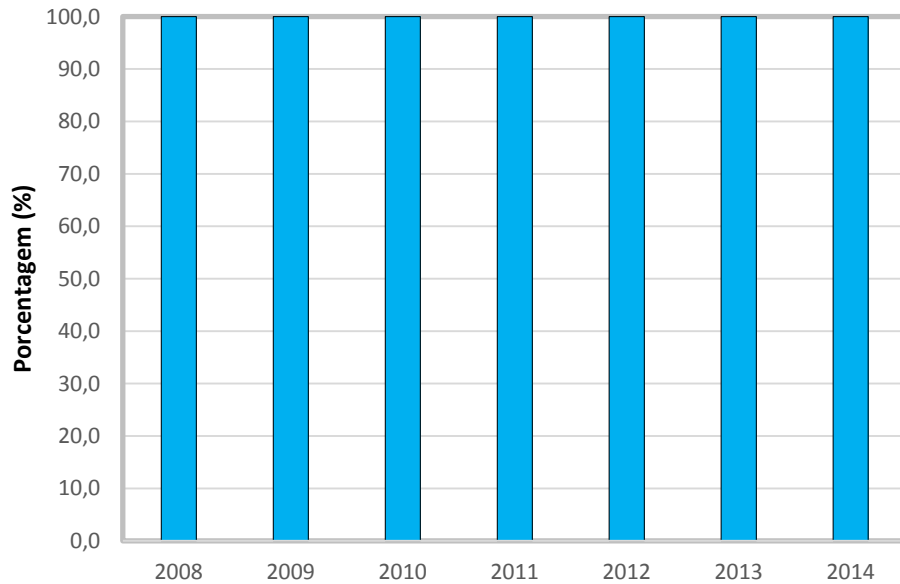


Evolução Temporal

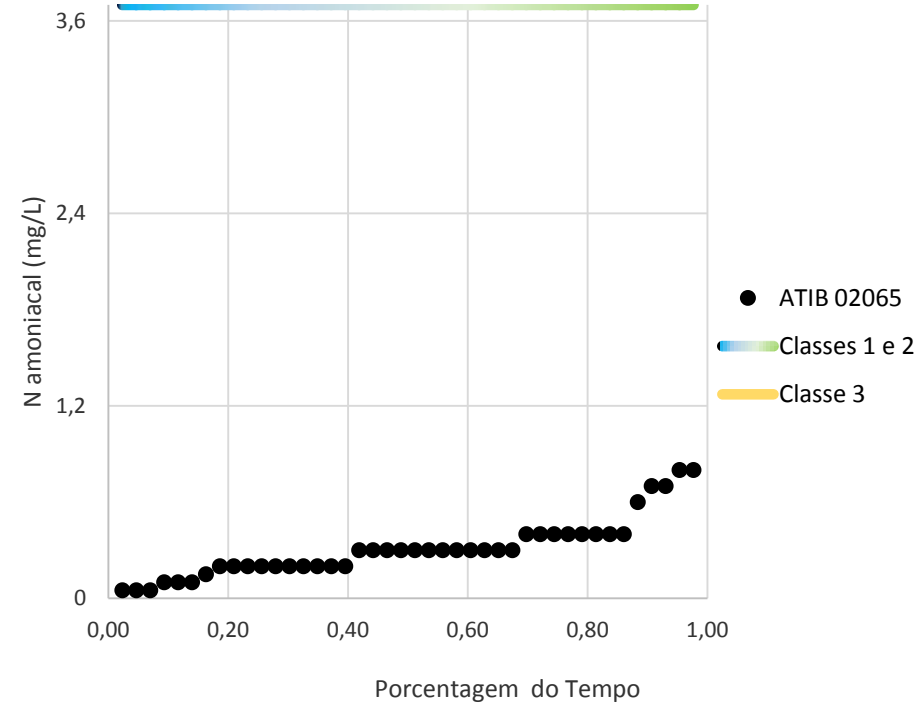


ATIB 02035 – Nitrogênio Amoniacal (mg/L)

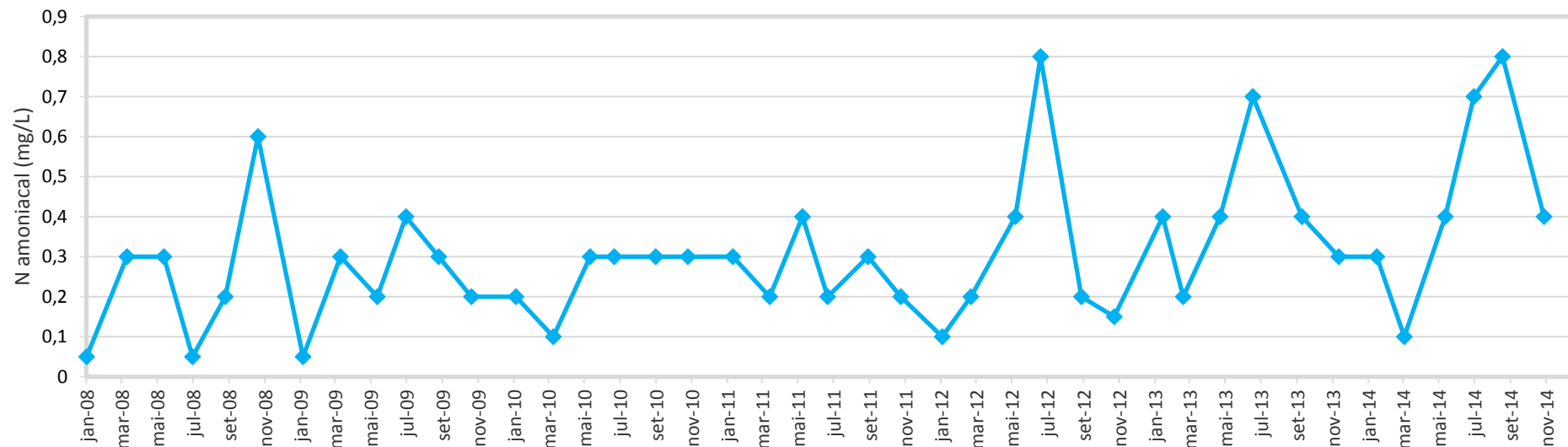
Porcentagem de Atendimento ao Padrão Classe 2 - N amoniacal



Curva de Permanência

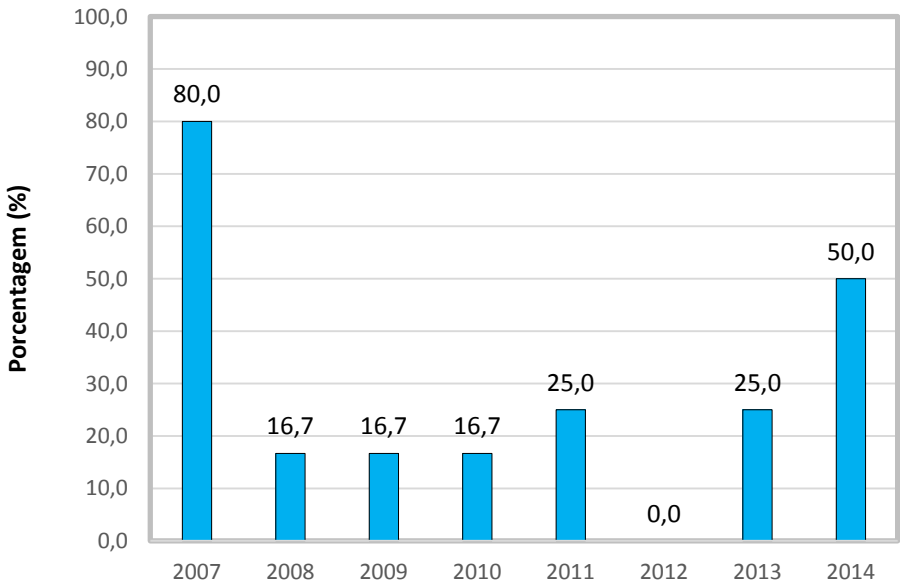


Evolução Temporal

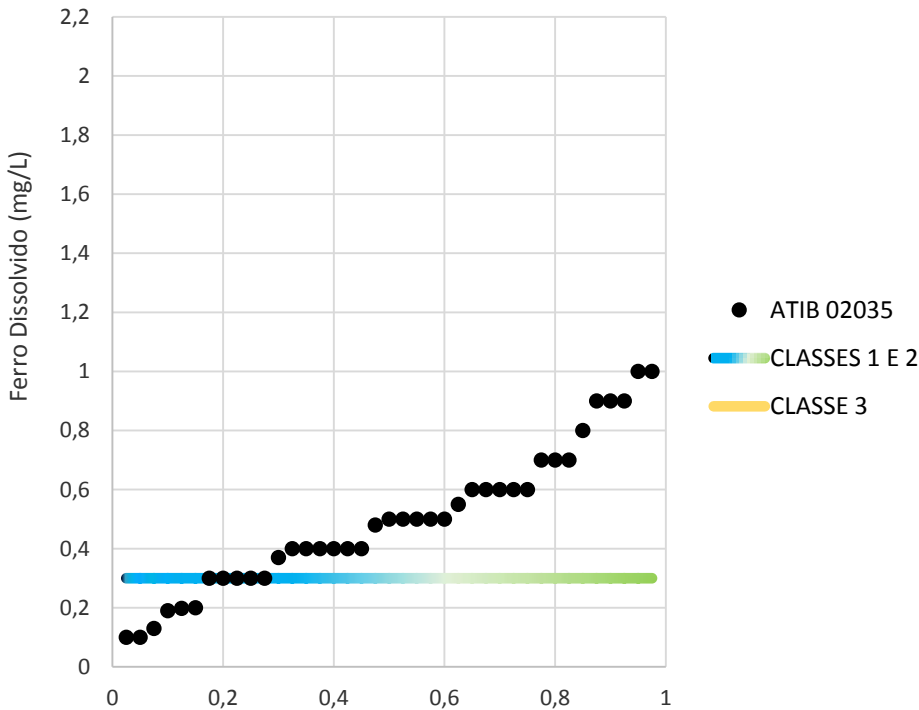


ATIB 02035 – Ferro Dissolvido (mg/L)

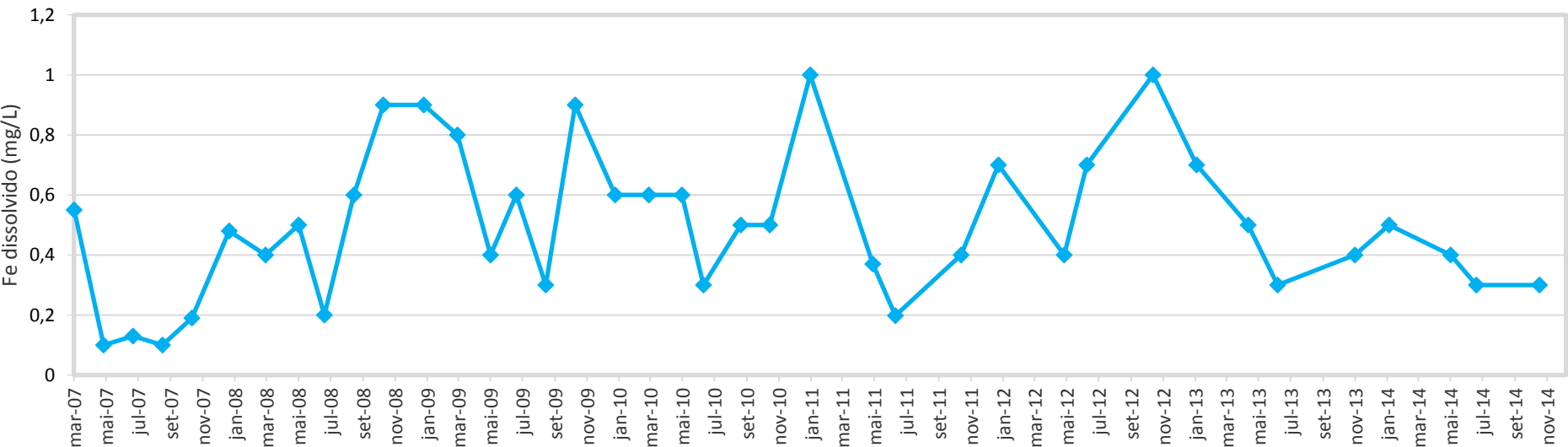
Porcentagem de Atendimento ao Padrão Classe 2 - Fe dissolvido



Curva de Permanência

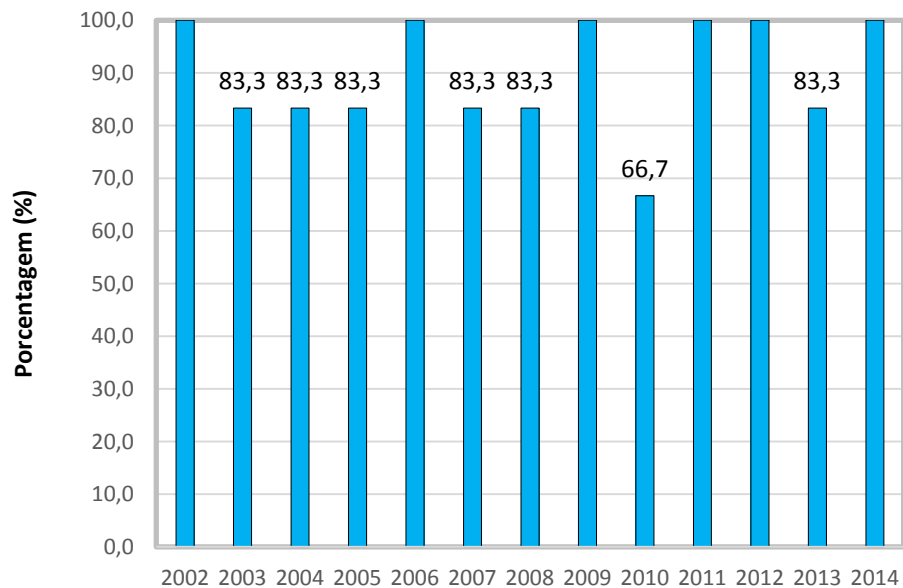


Evolução Temporal

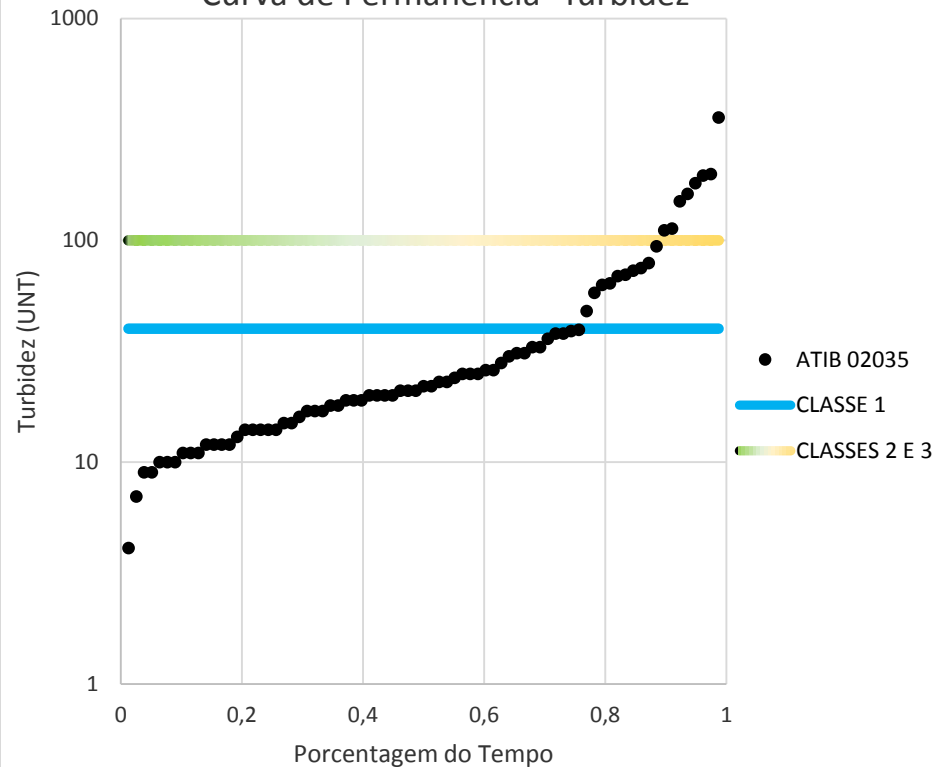


ATIB 02035 – Turbidez (UNT)

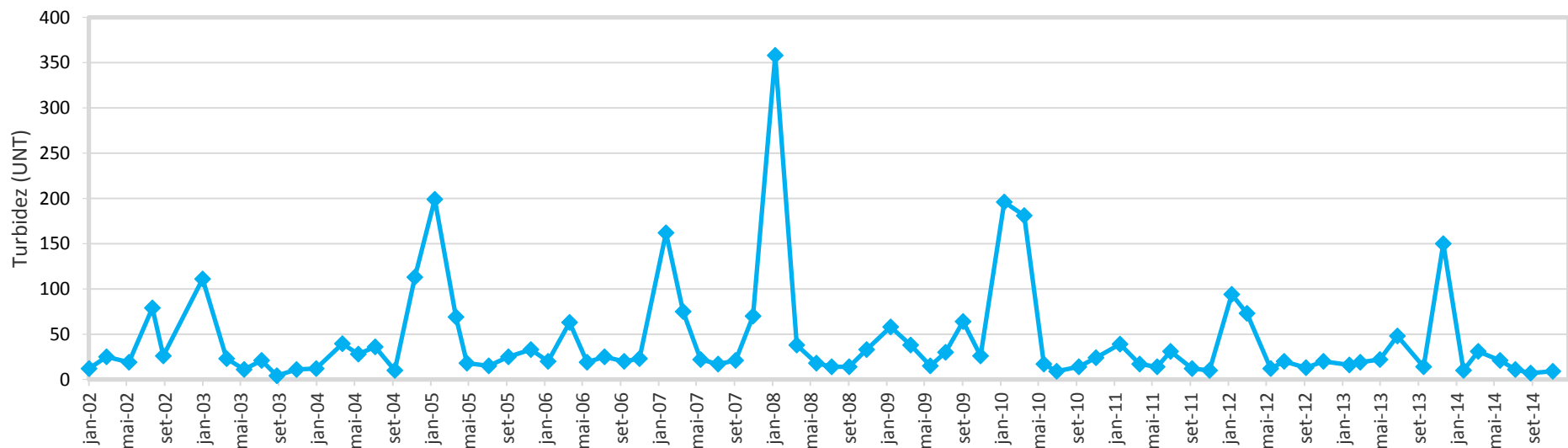
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

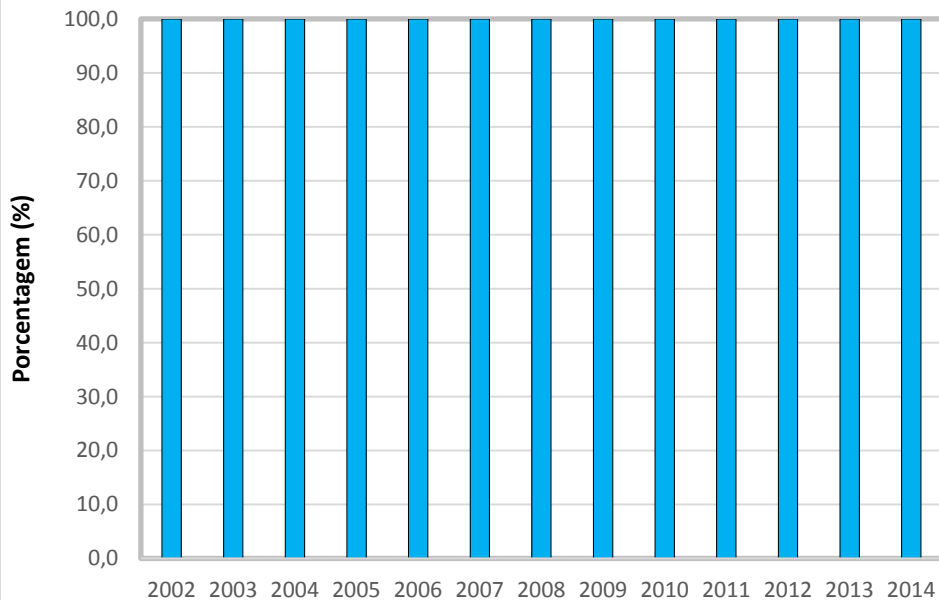


Evolução Temporal

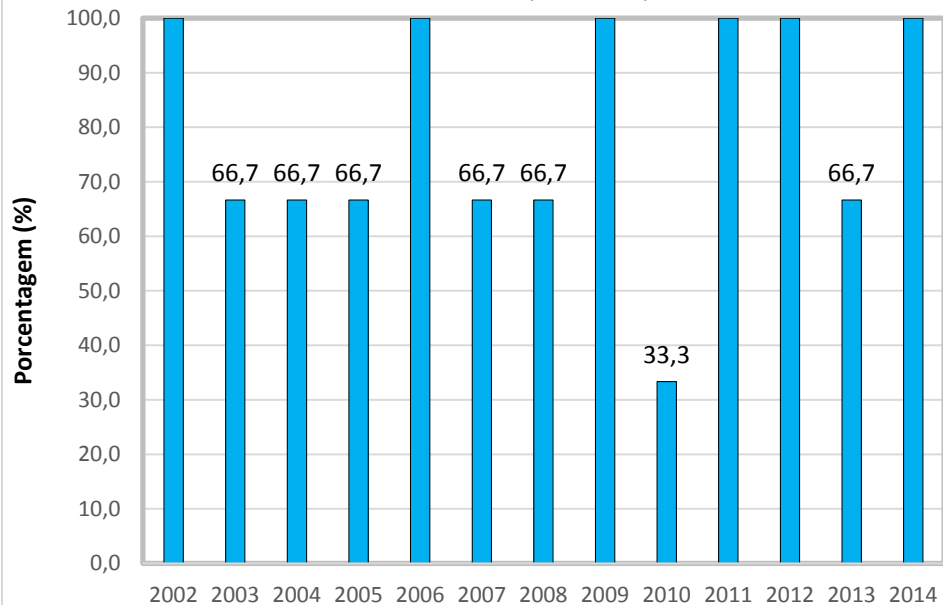


ATIB 02035 – Turbidez (Período Seco x Período Chuvoso)

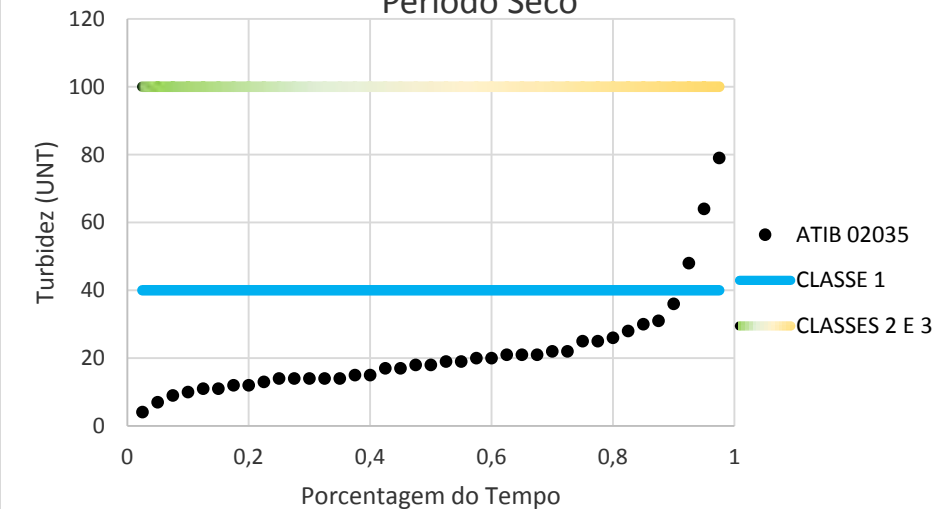
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



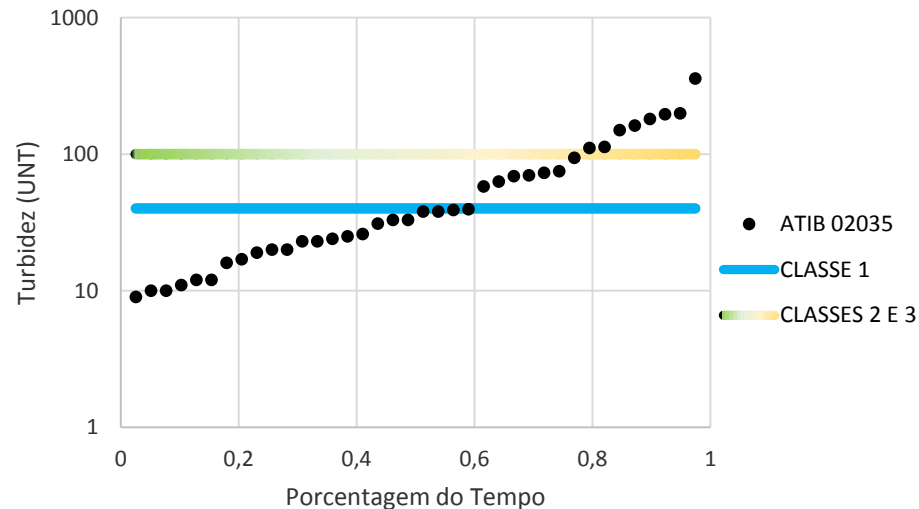
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

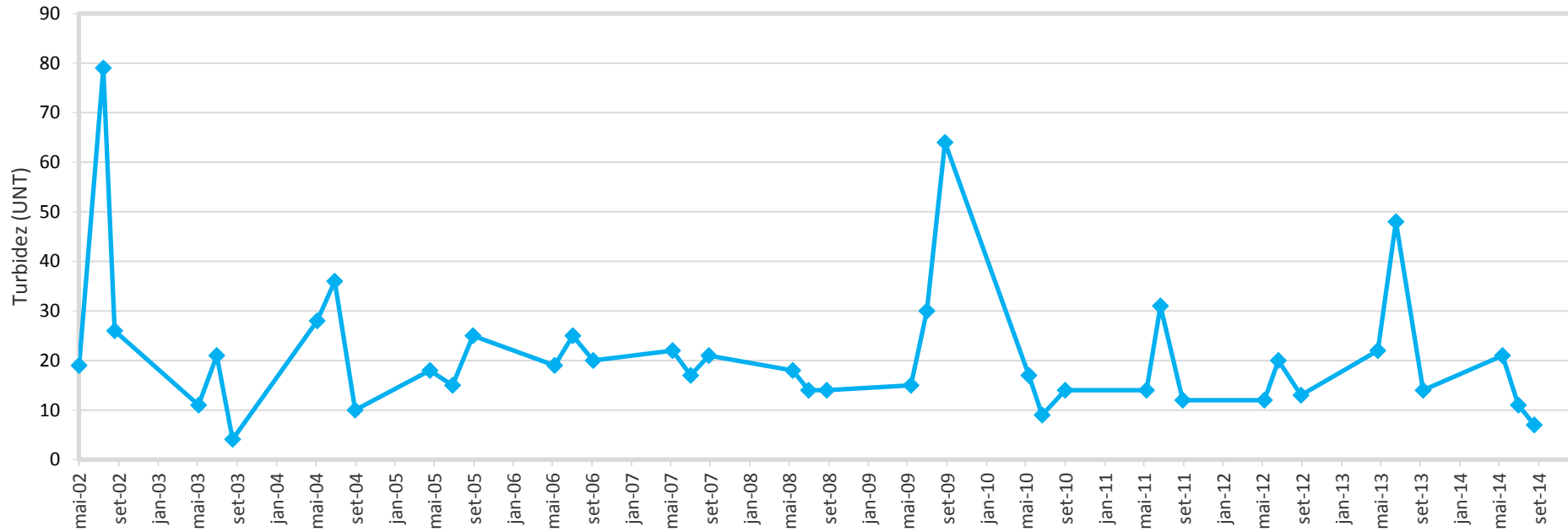


Curva de Permanência- Turbidez
Período Chuvoso

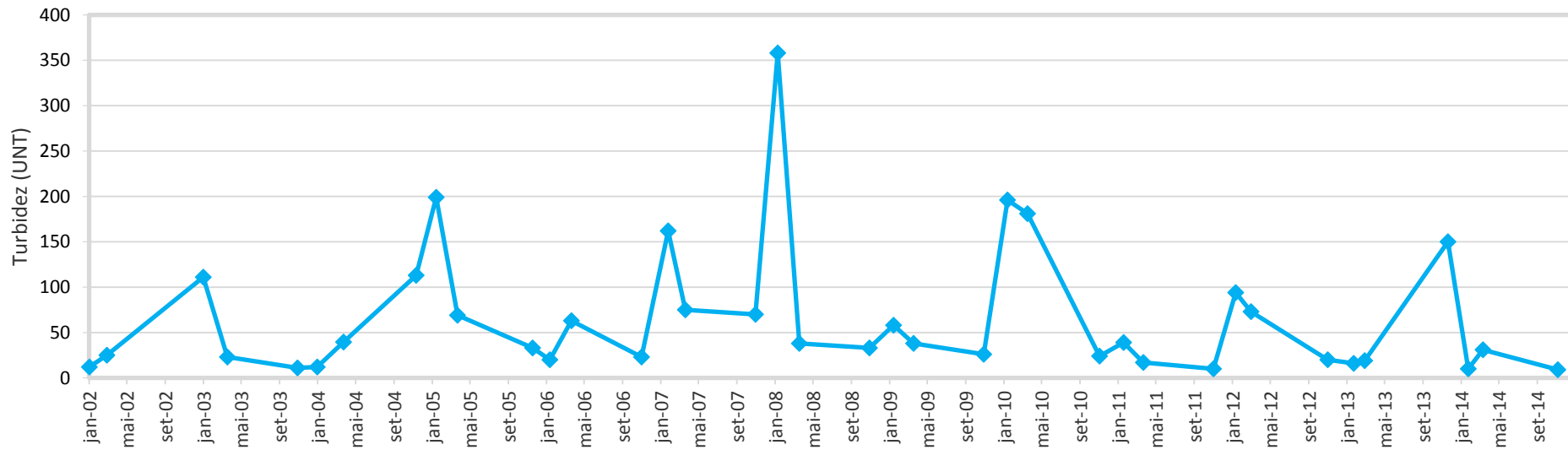


ATIB 02035 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



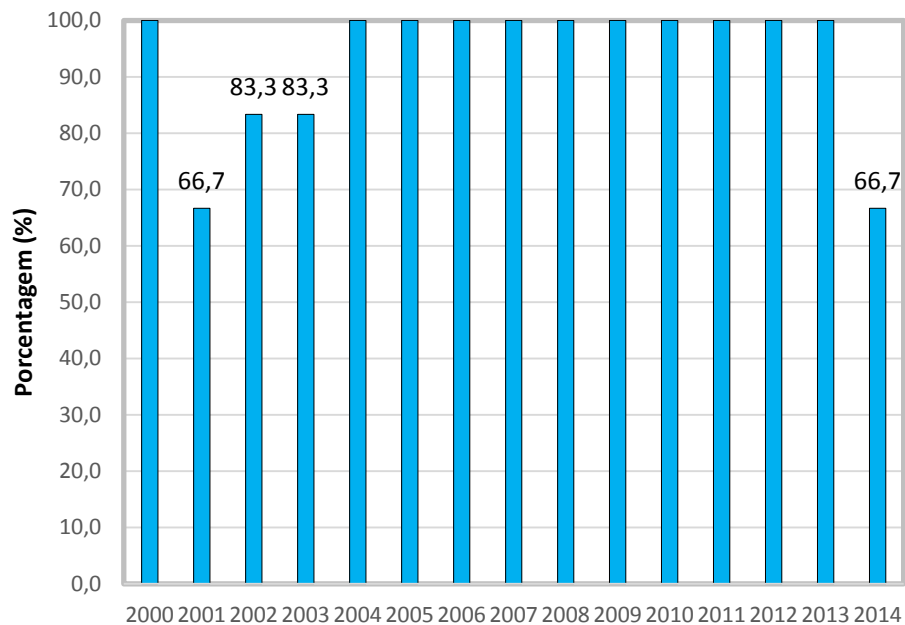
Evolução Temporal - Período Chuvoso



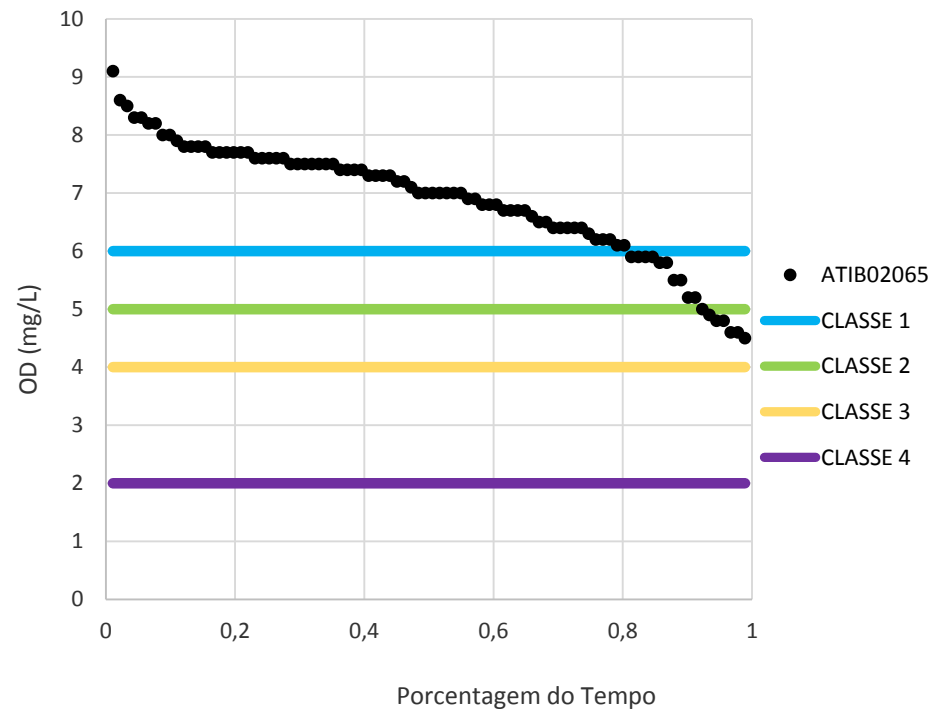
Rio Atibaia
ATIB 02065

ATIB 02065 – Oxigênio Dissolvido (mg/L)

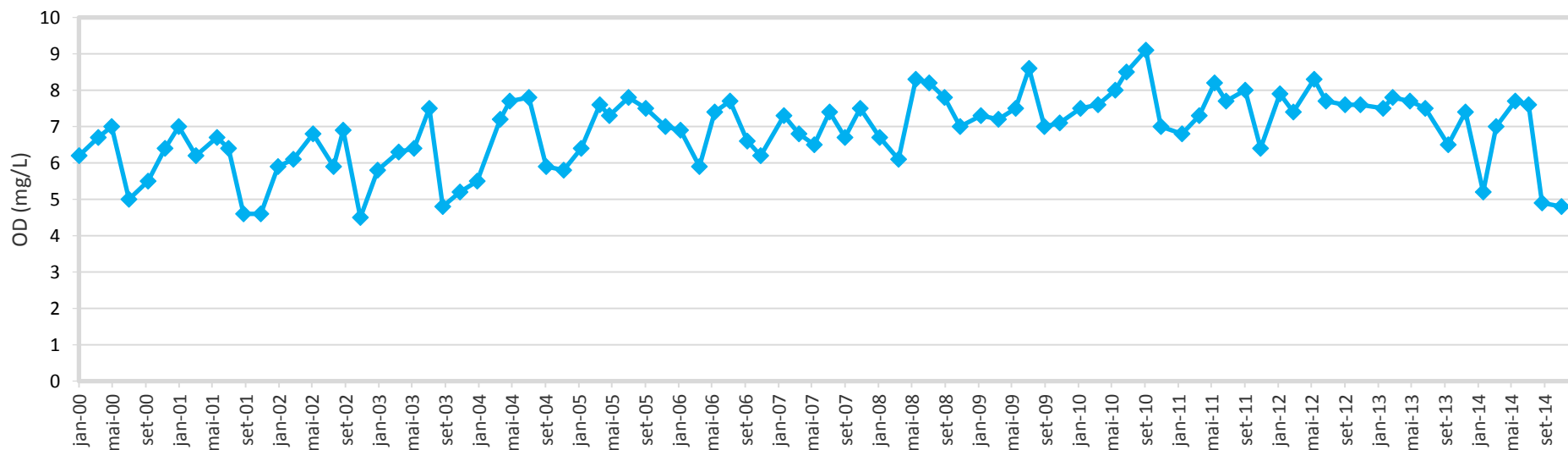
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

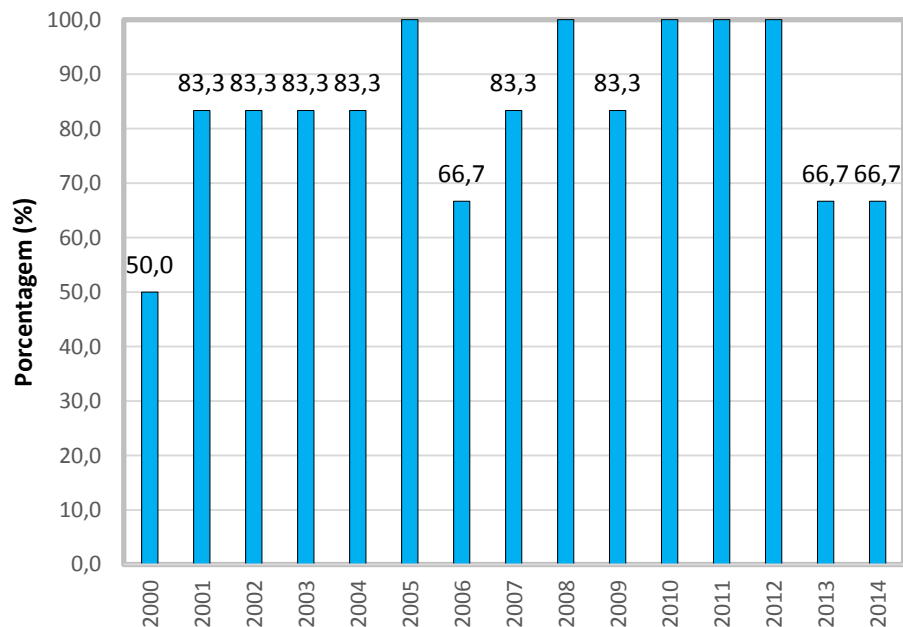


Evolução Temporal

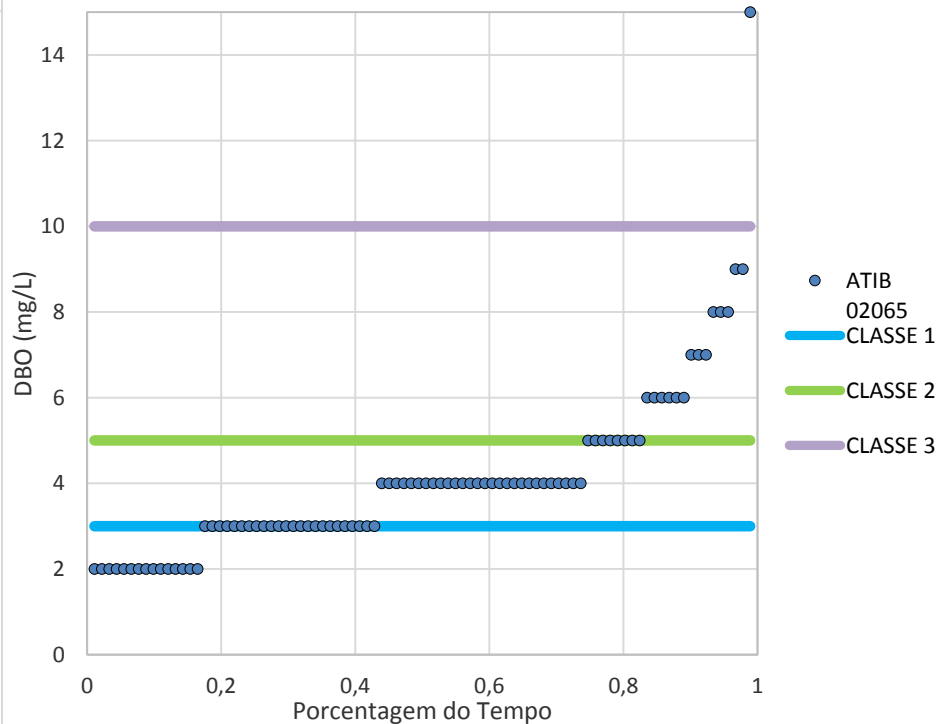


ATIB 02065 – DBO (mg/L)

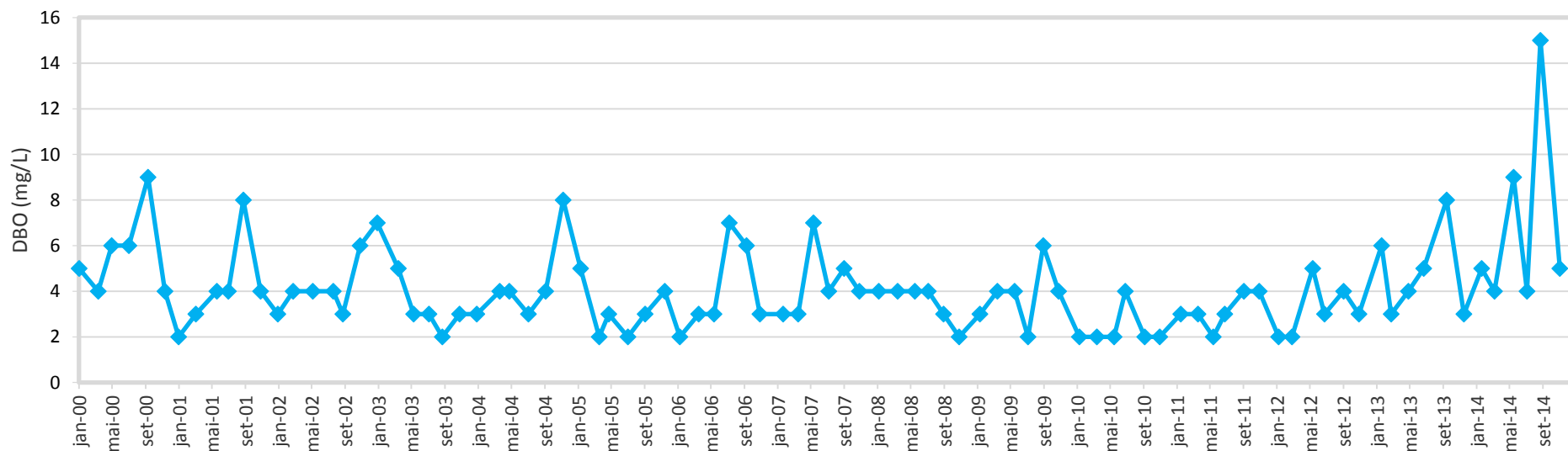
Porcentagem de Atendimento ao Padrão Classe 2 - DBO



Curva de Permanência

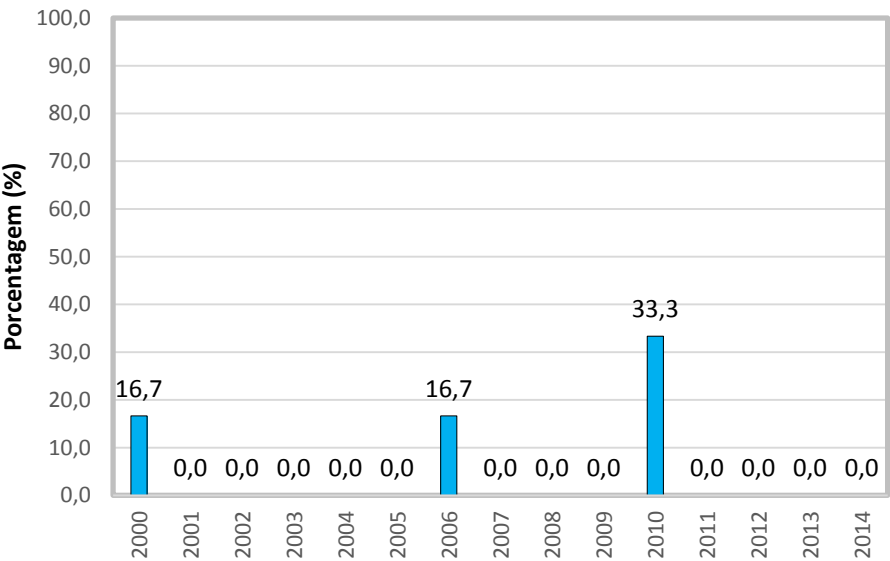


Evolução Temporal

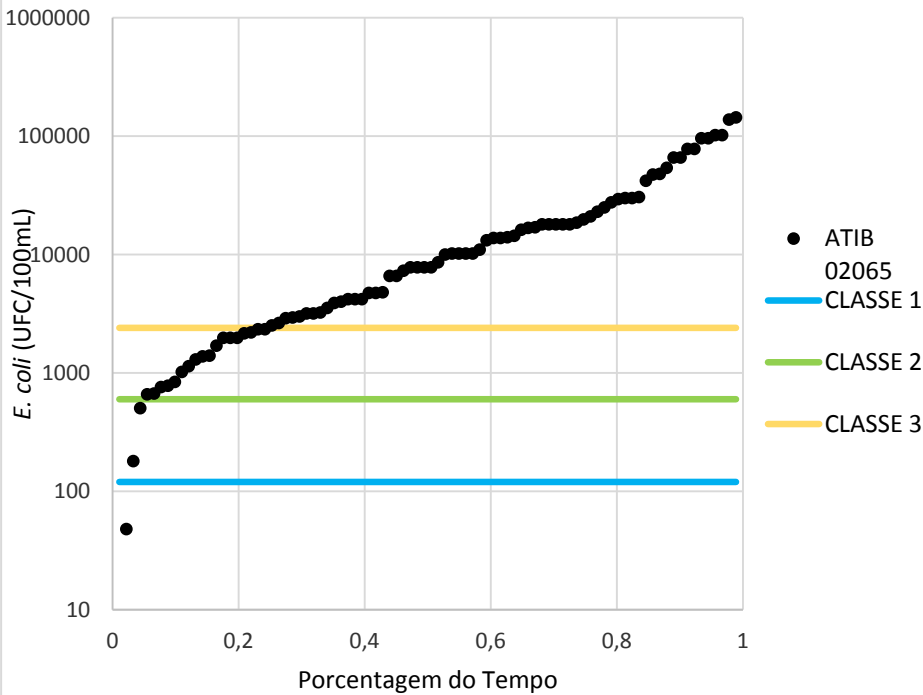


ATIB 02065 – *Escherichia coli* (UFC/100mL)

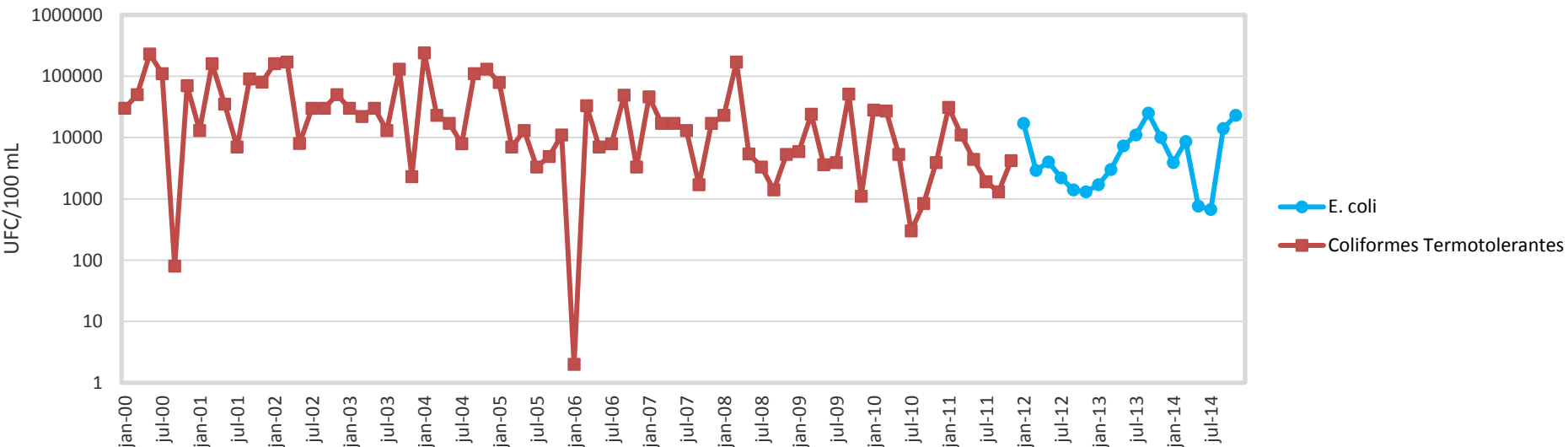
Porcentagem de Atendimento ao Padrão Classe 2 - Colif. Term. e E. coli



Curva de Permanência

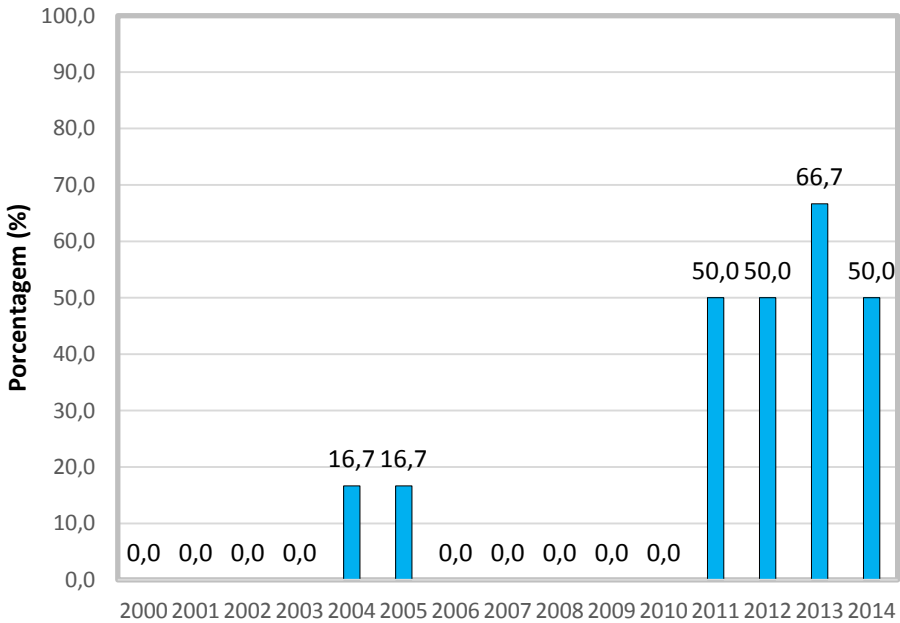


Evolução Temporal

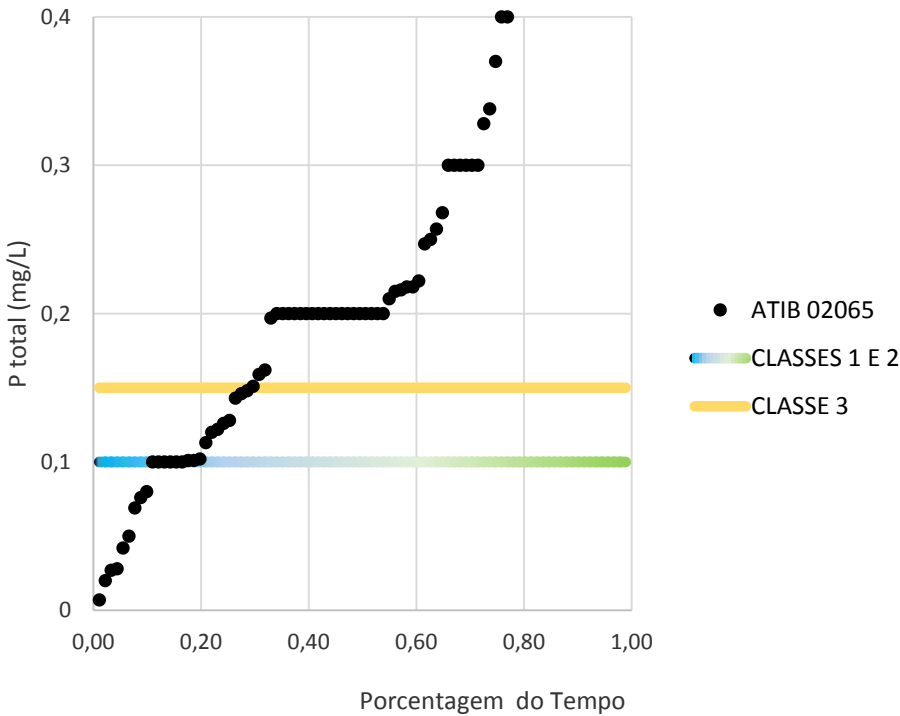


ATIB 02065 – Fósforo Total (mg/L)

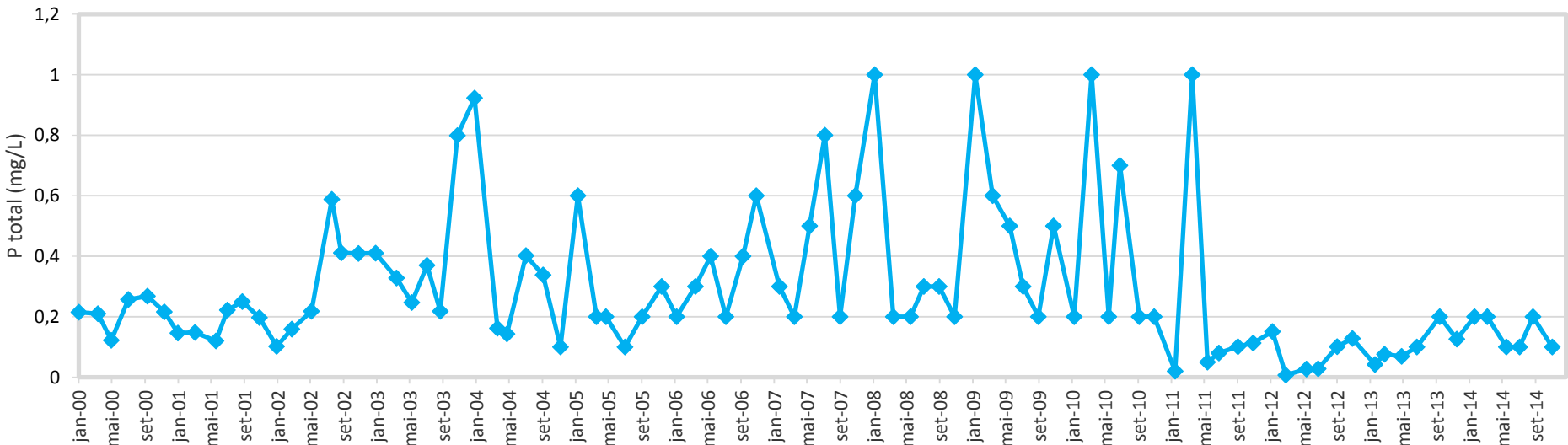
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

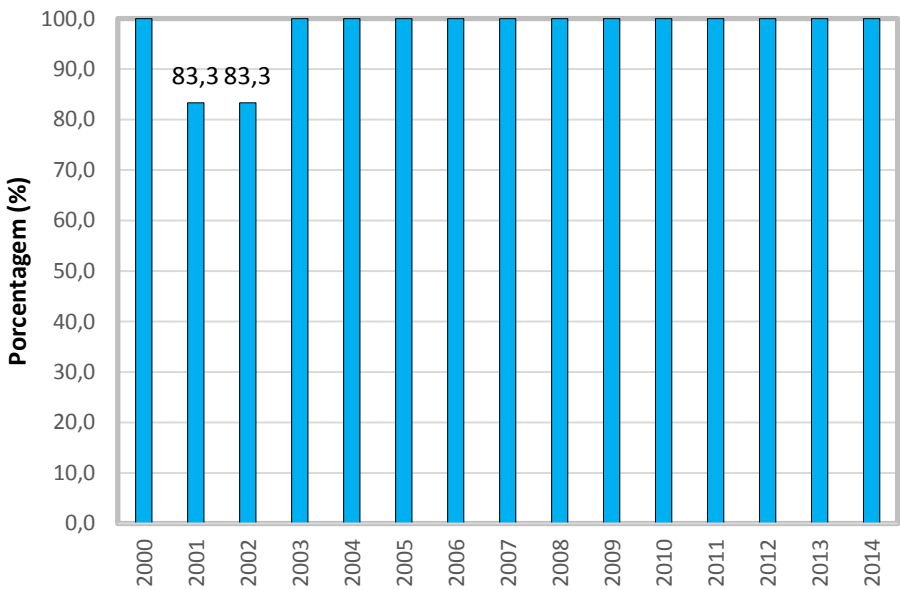


Evolução Temporal

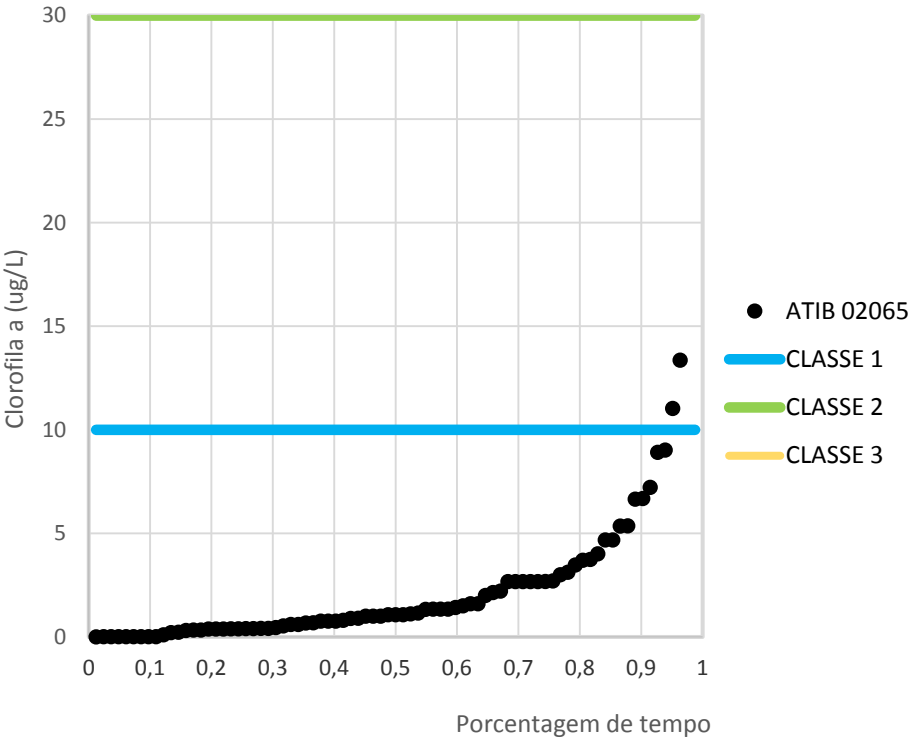


ATIB 02065 – Clorofila a (µg/L)

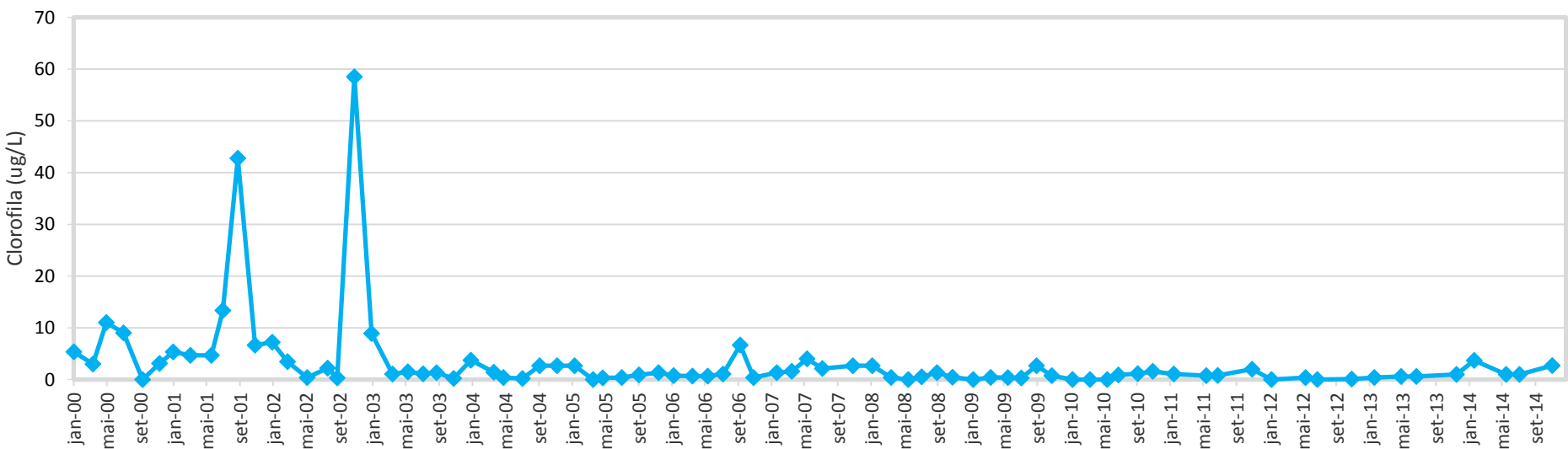
Porcentagem de Atendimento ao Padrão Classe 2 - Clorofila



Curva de Permanência

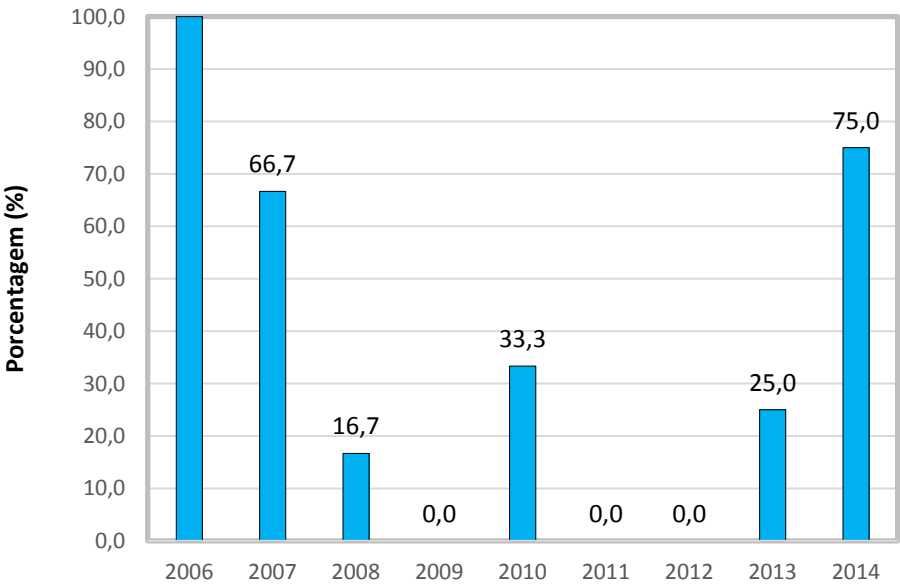


Evolução Temporal

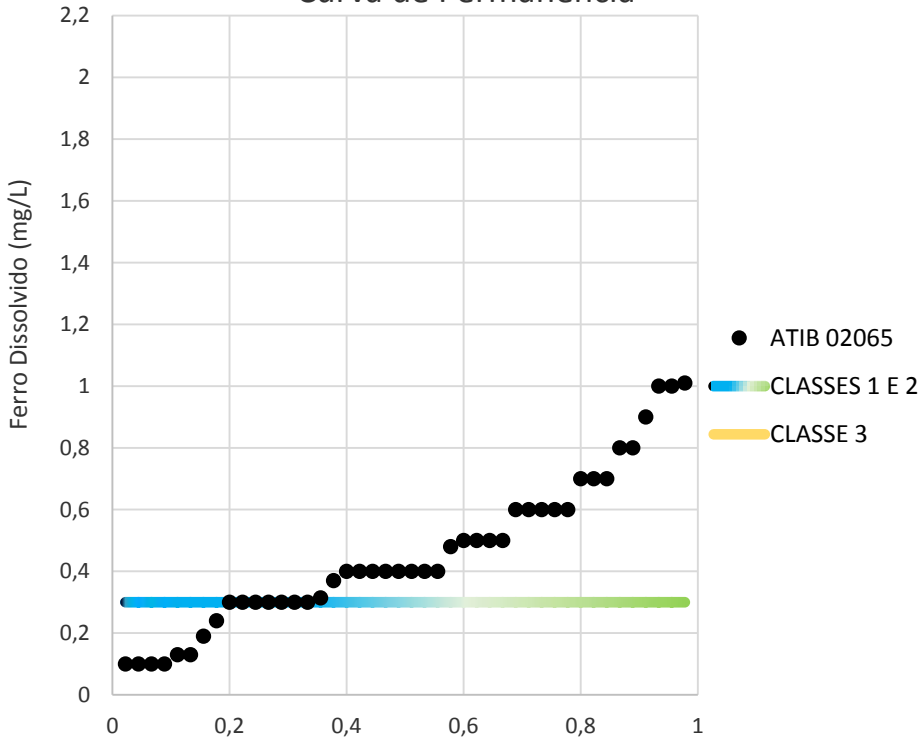


ATIB 02065 – Ferro Dissolvido (mg/L)

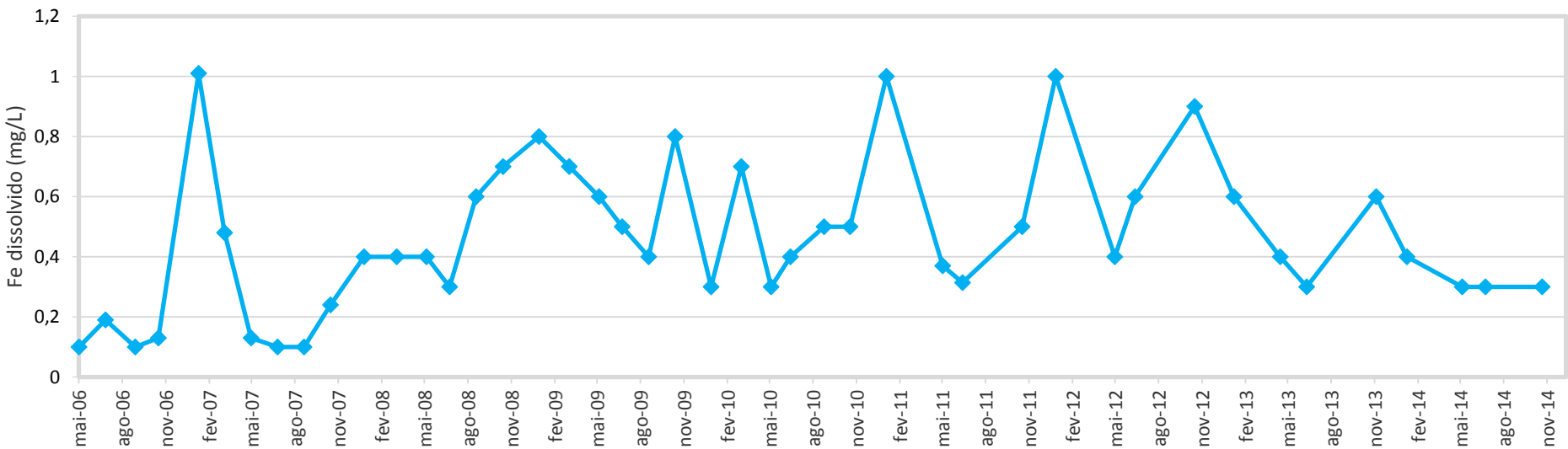
Porcentagem de Atendimento ao Padrão Classe 2 - Fe dissolvido



Curva de Permanência

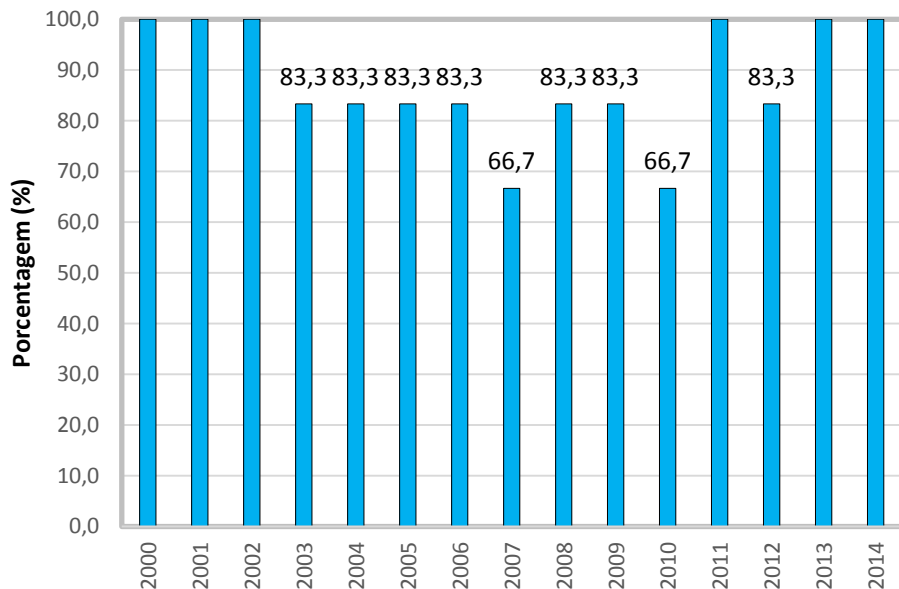


Evolução Temporal

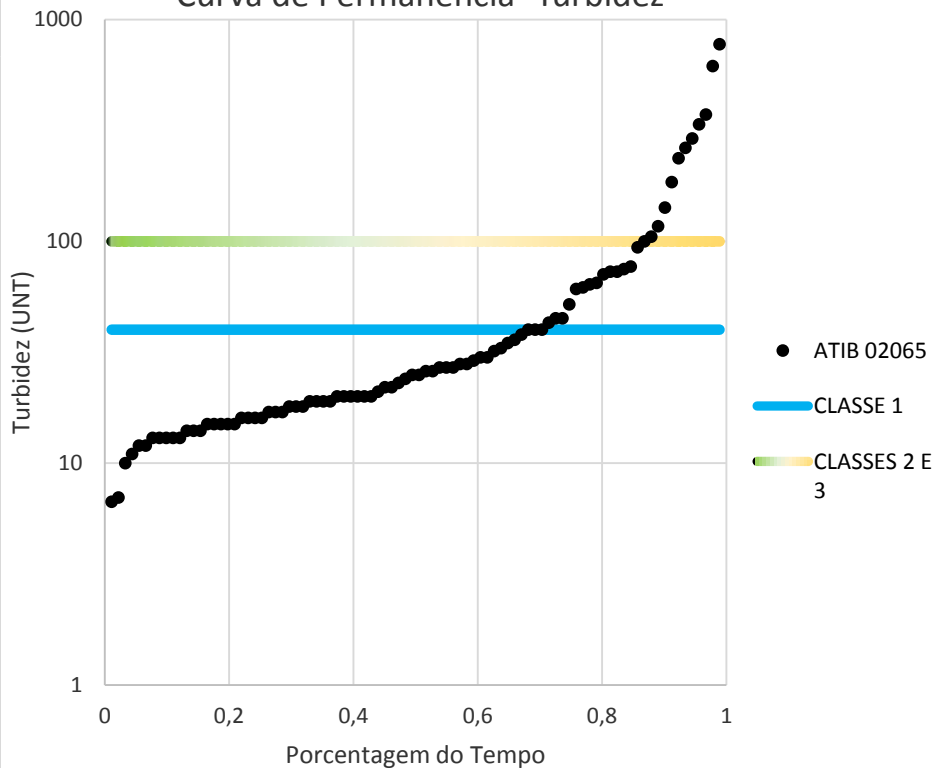


ATIB 02065 – Turbidez (UNT)

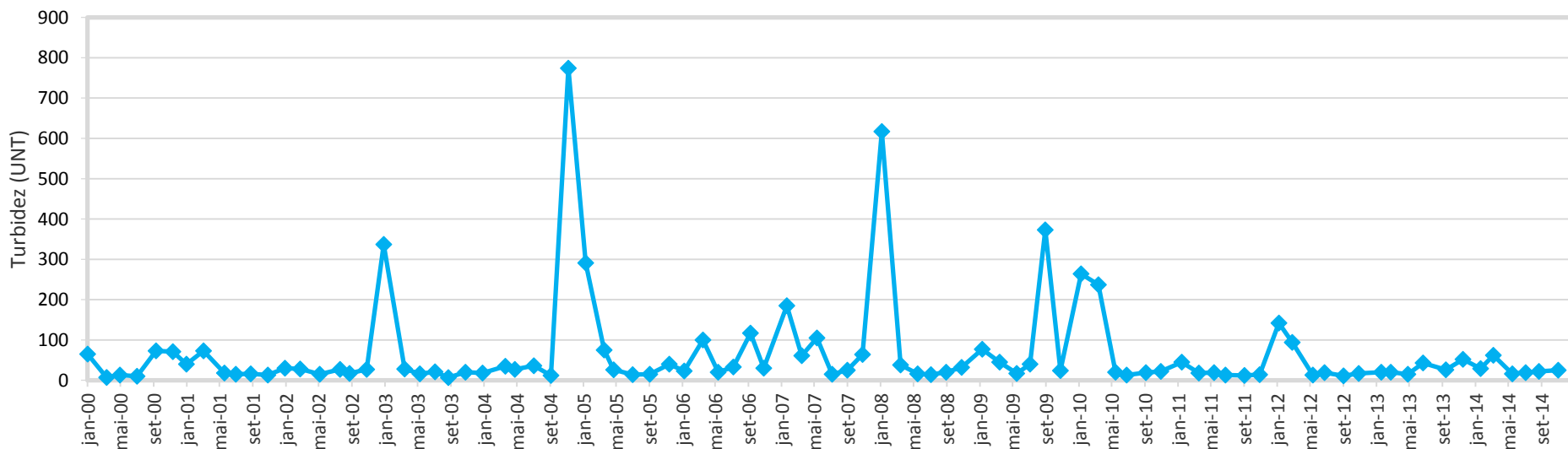
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

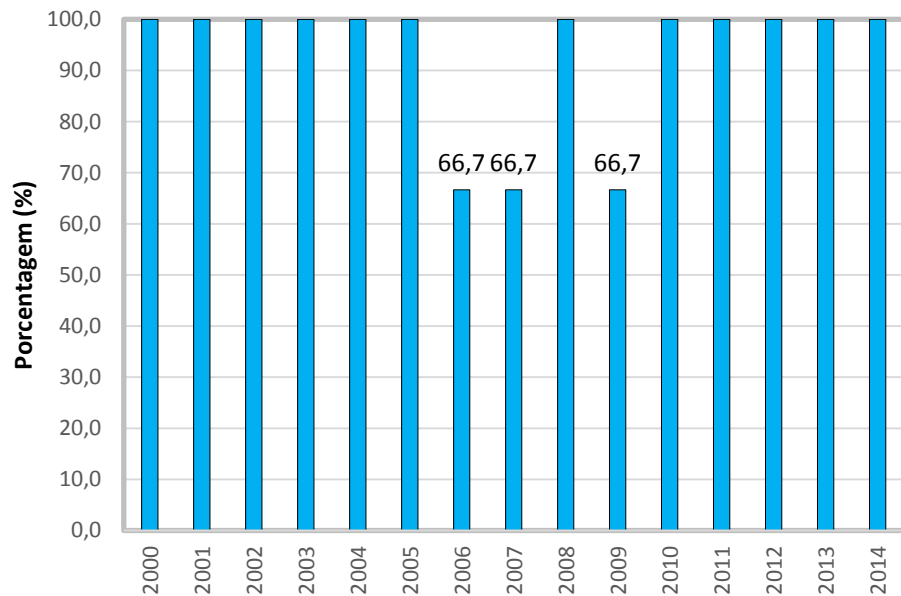


Evolução Temporal

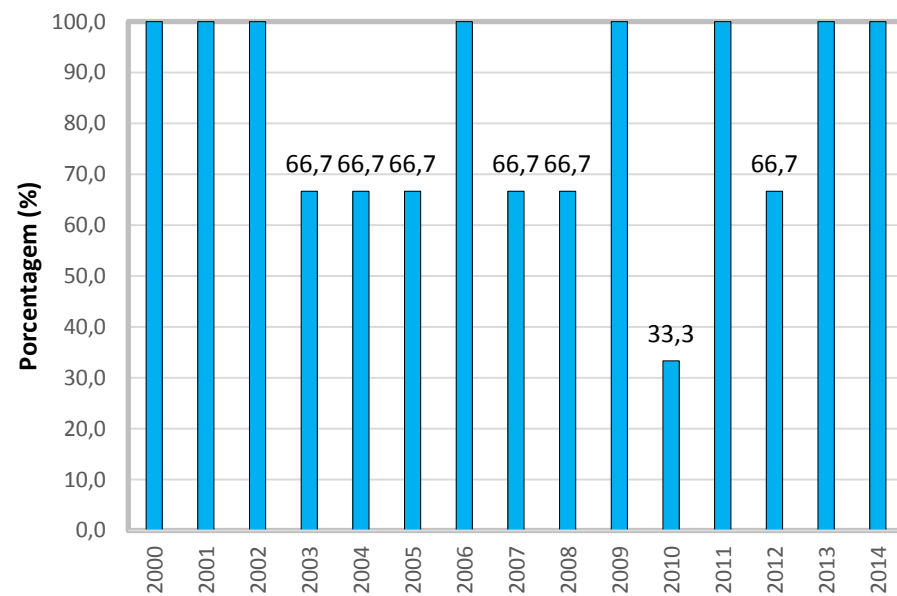


ATIB 02065 – Turbidez (Período Seco x Período Chuvoso)

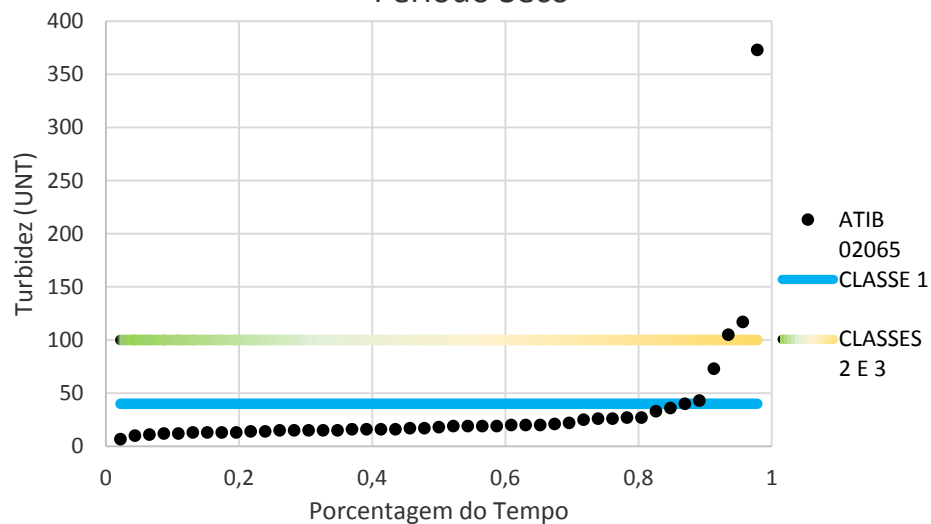
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



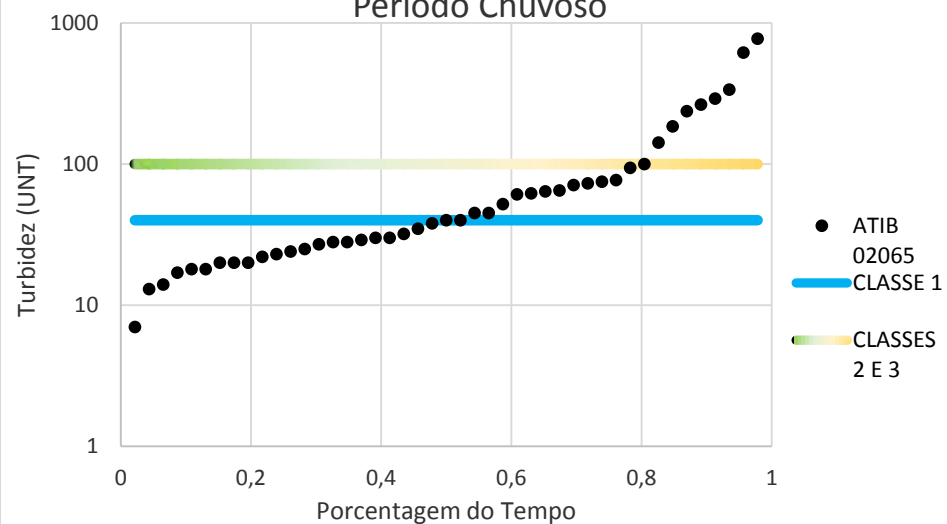
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

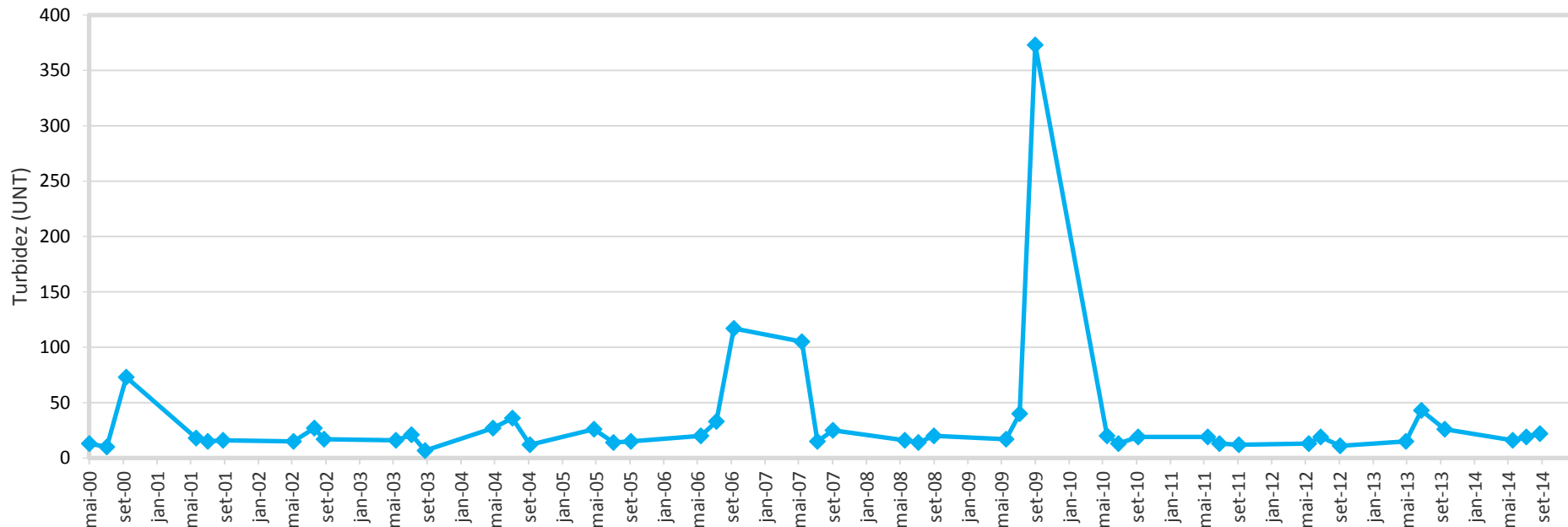


Curva de Permanência- Turbidez
Período Chuvoso

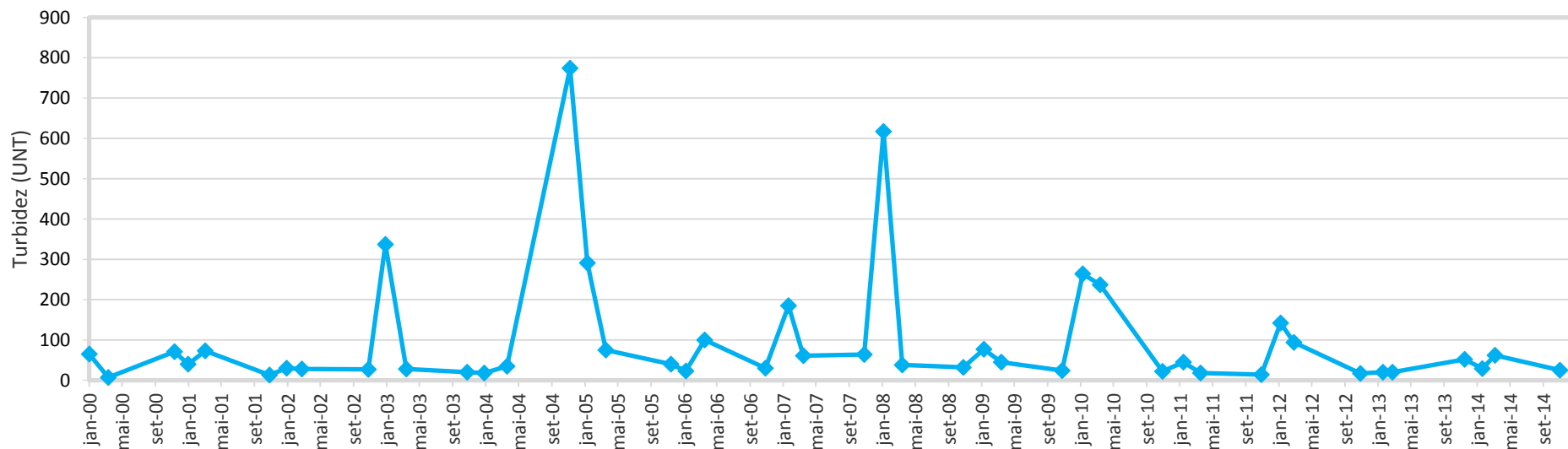


ATIB 02065 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco

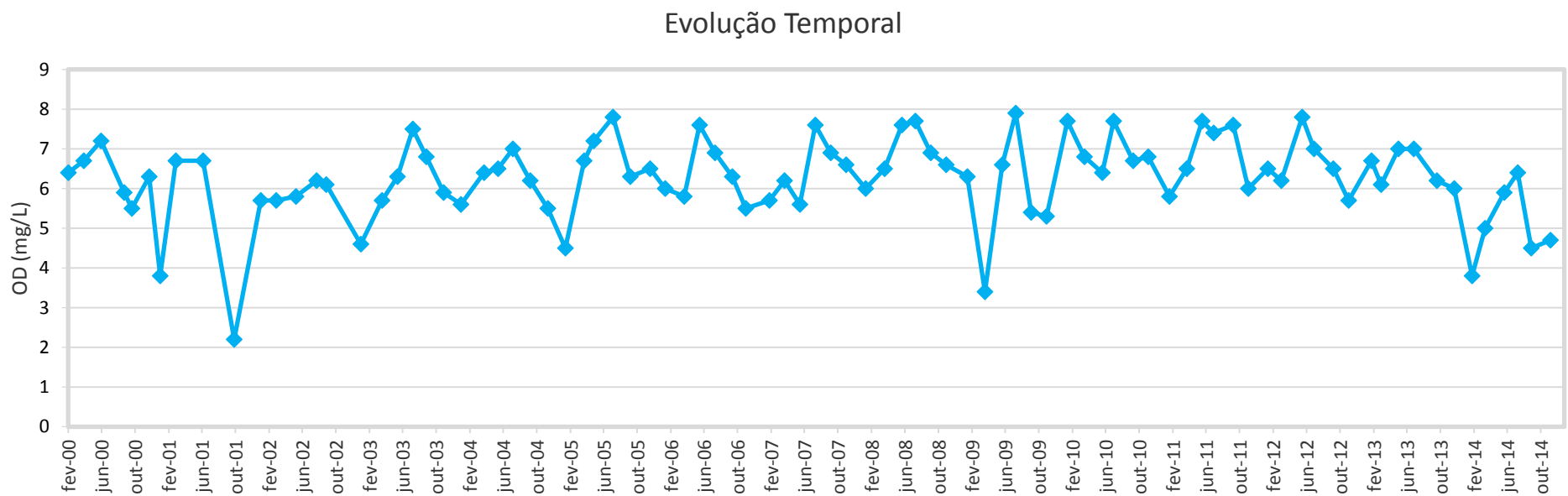
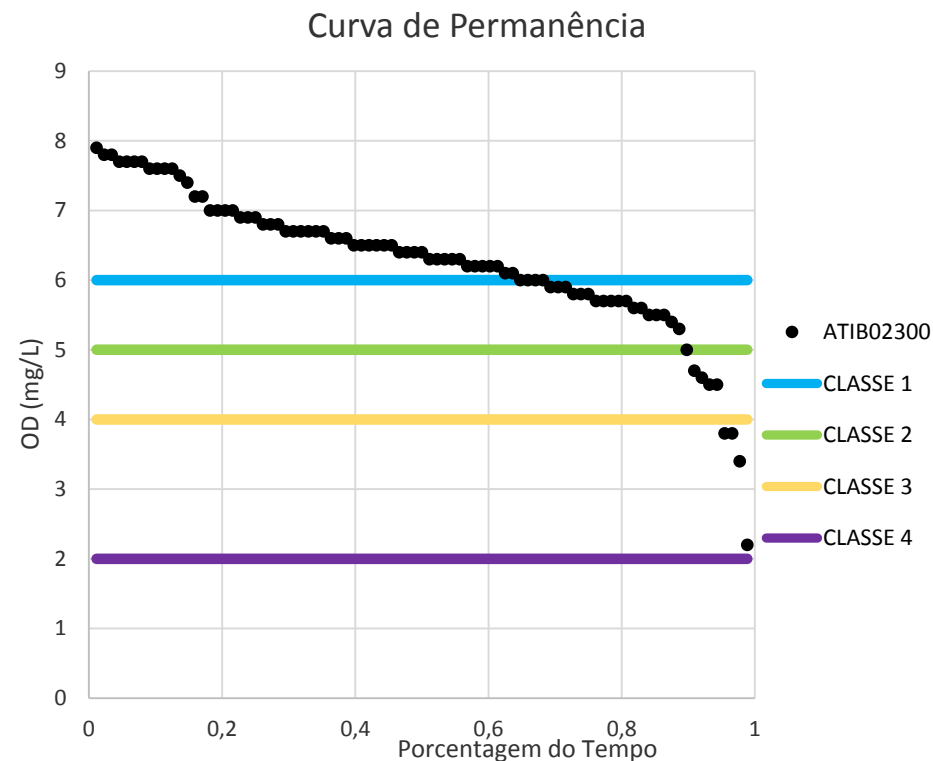
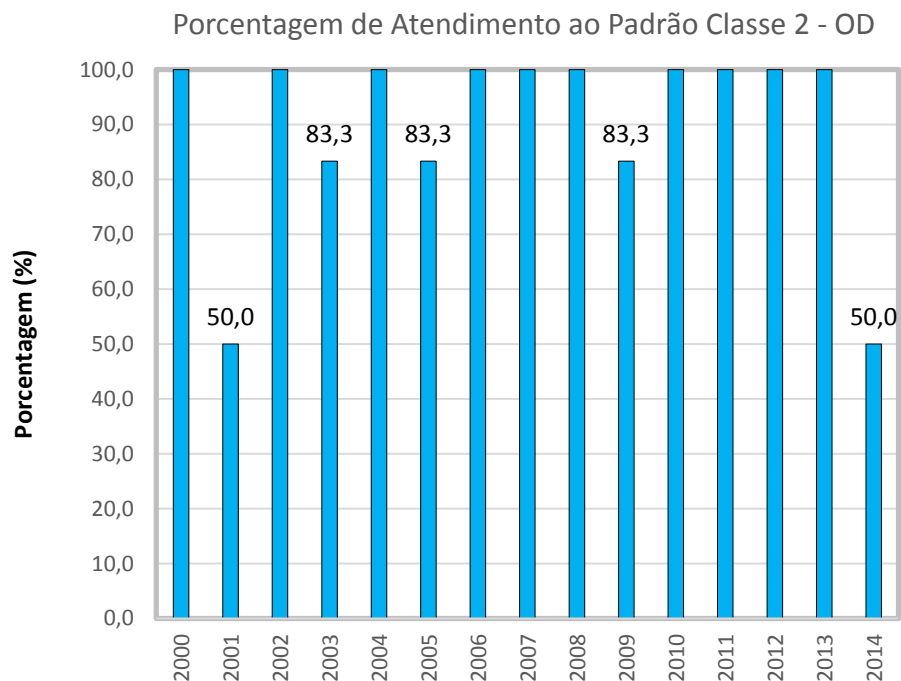


Evolução Temporal - Período Chuvoso

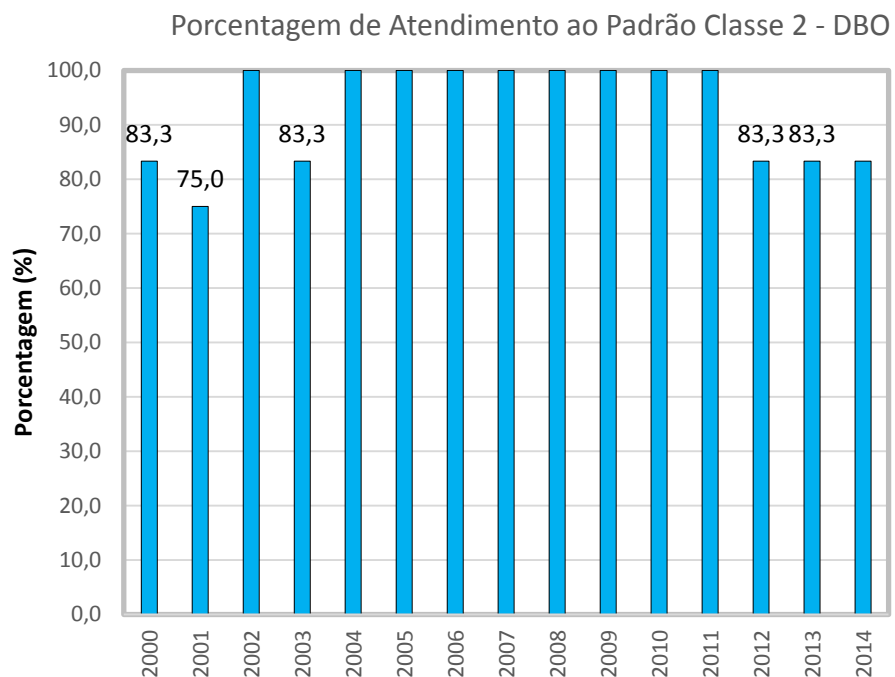


Rio Atibaia
ATIB 02300

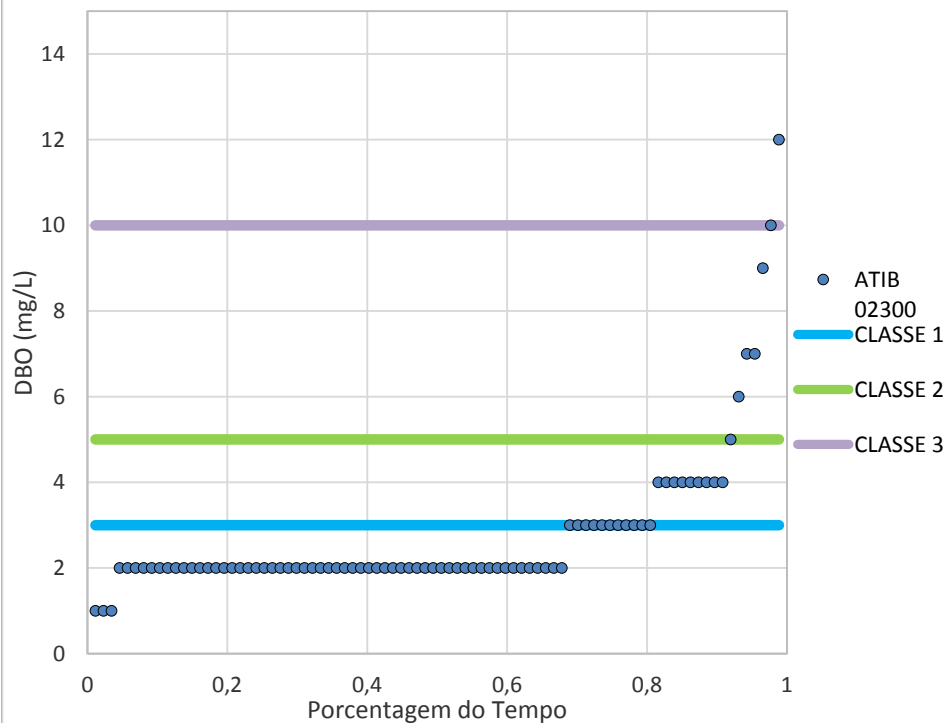
ATIB 02300 – Oxigênio Dissolvido (mg/L)



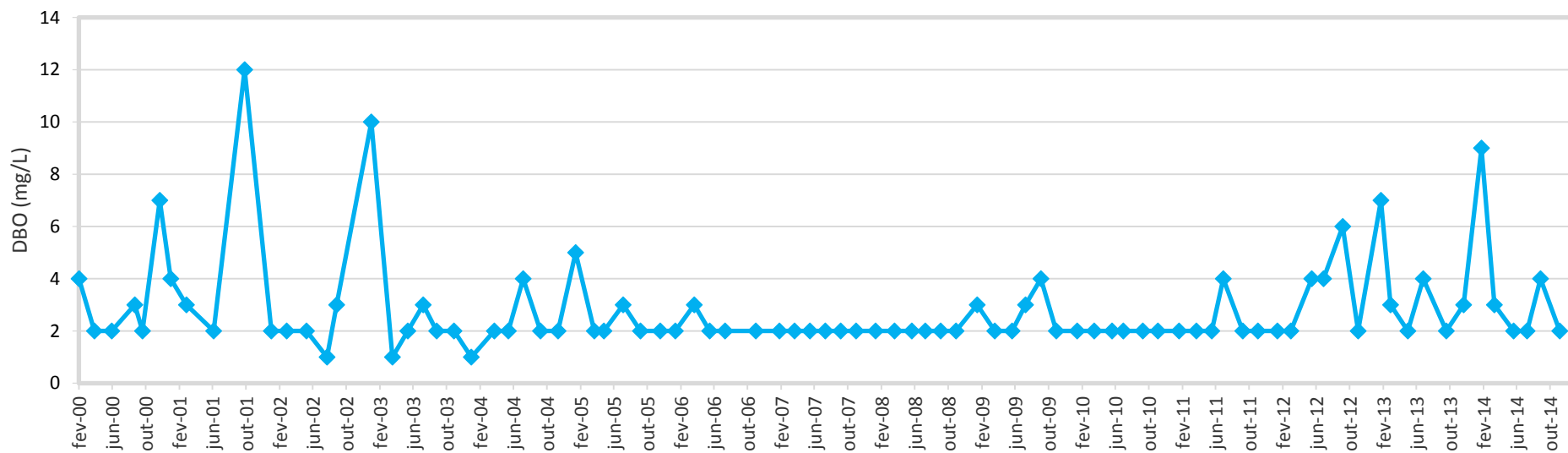
ATIB 02300 – DBO (mg/L)



Curva de Permanência

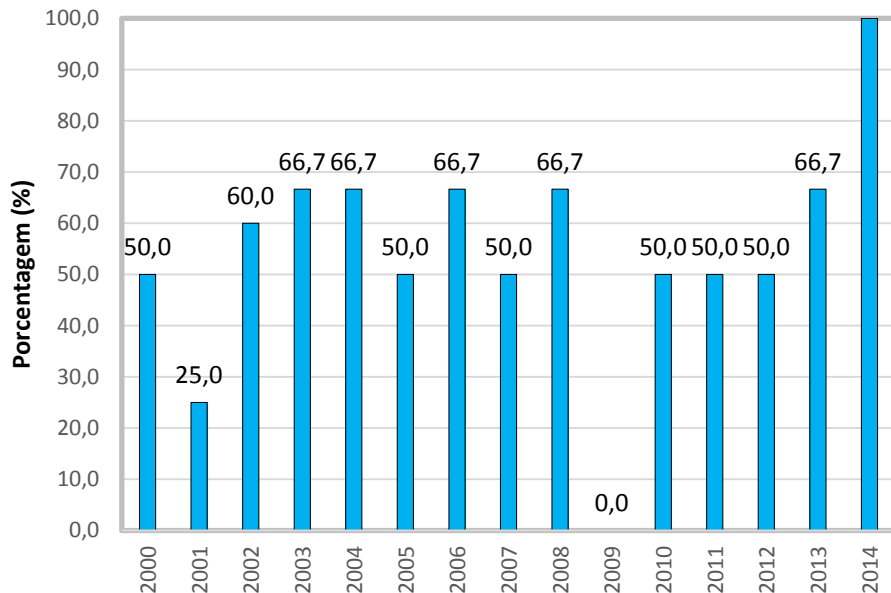


Evolução Temporal

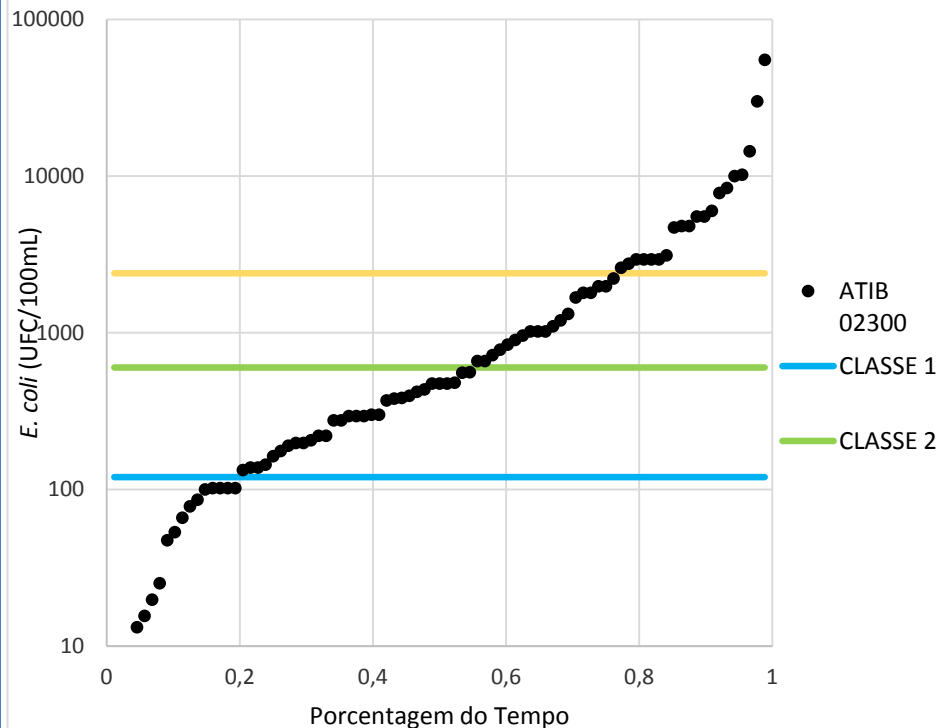


ATIB 02300 – *Escherichia coli* (UFC/100mL)

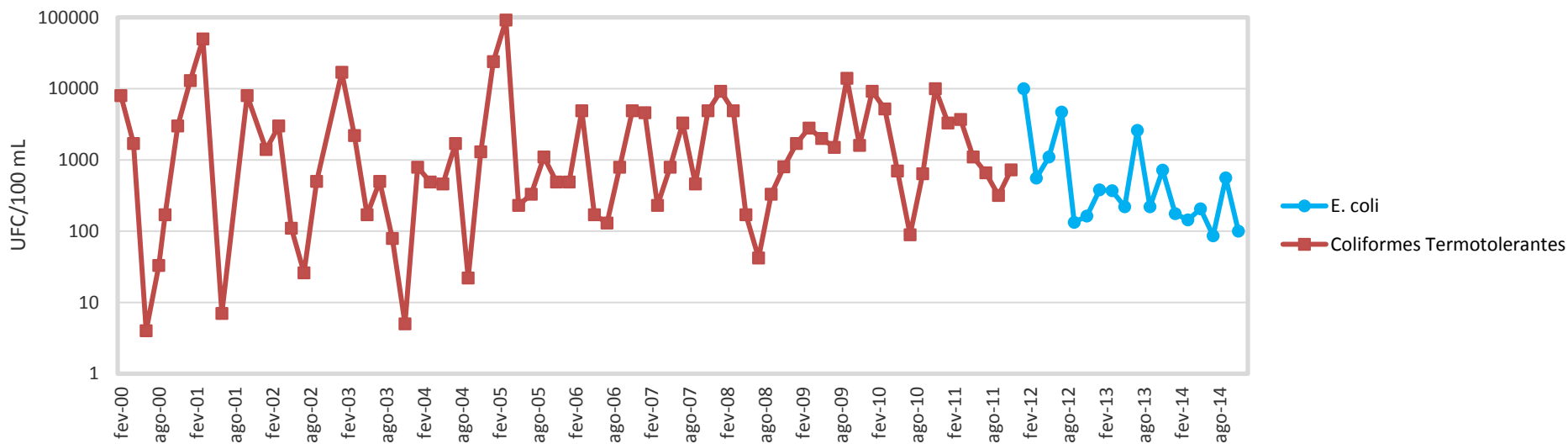
Porcentagem de Atendimento ao Padrão Classe 2 - Colif.
Term. e *E. coli*



Curva de Permanência

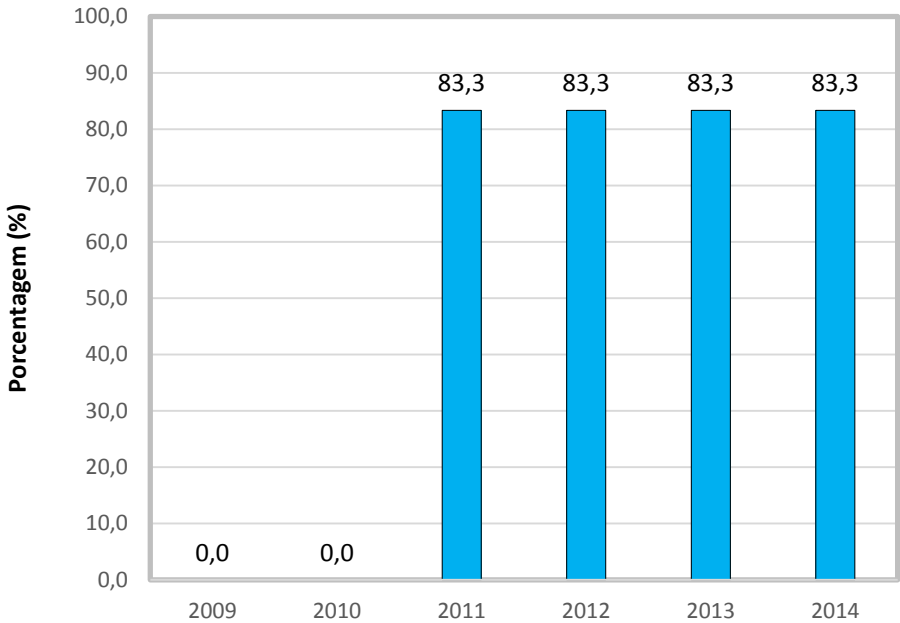


Evolução Temporal

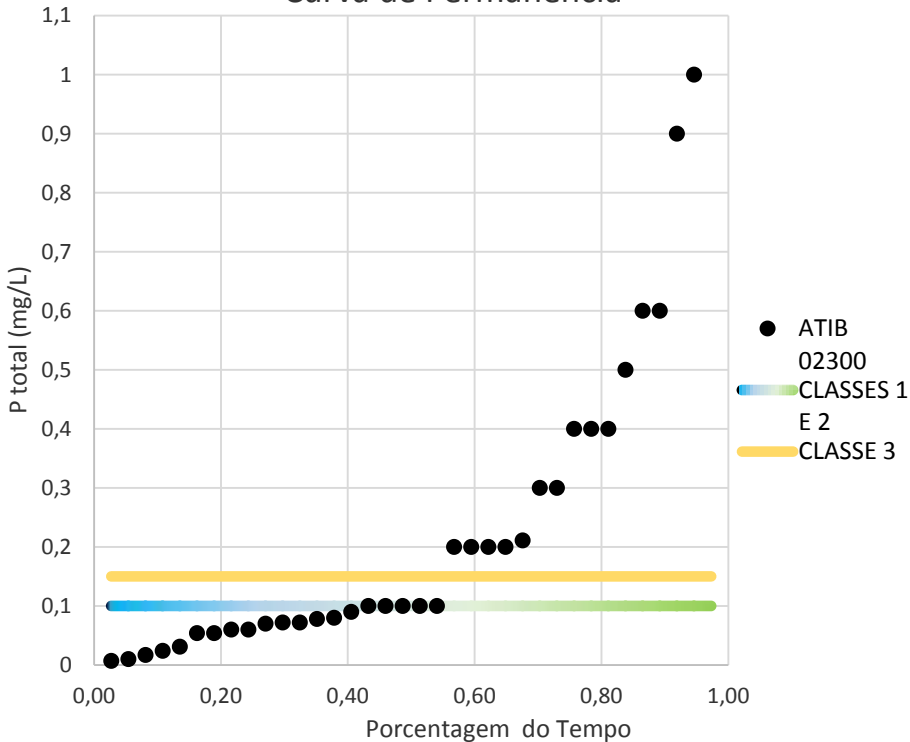


ATIB 02300 – Fósforo Total (mg/L)

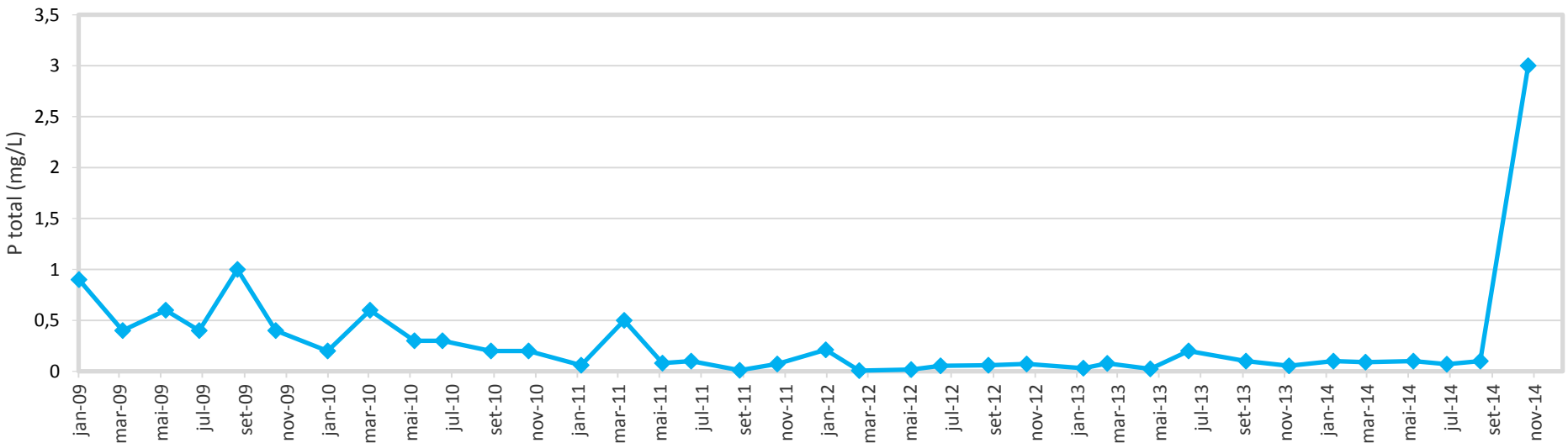
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

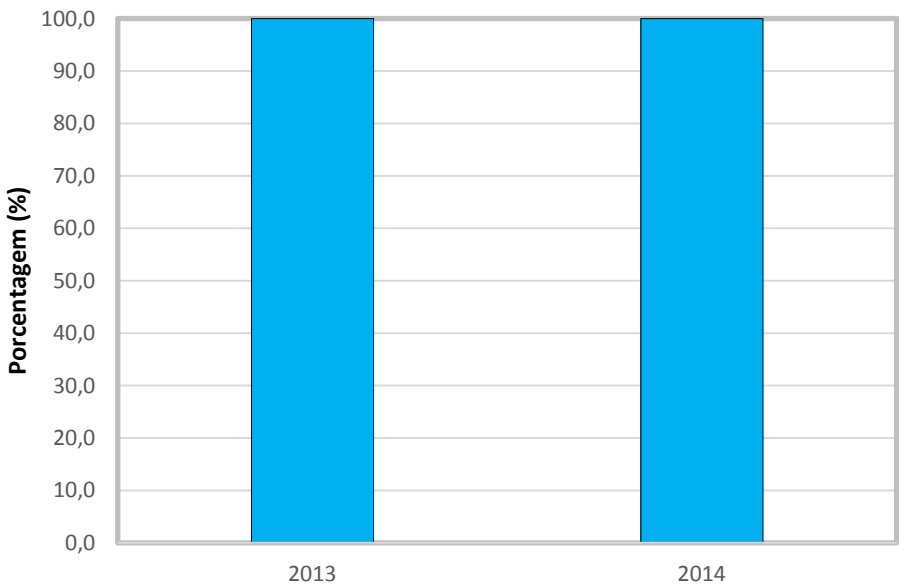


Evolução Temporal

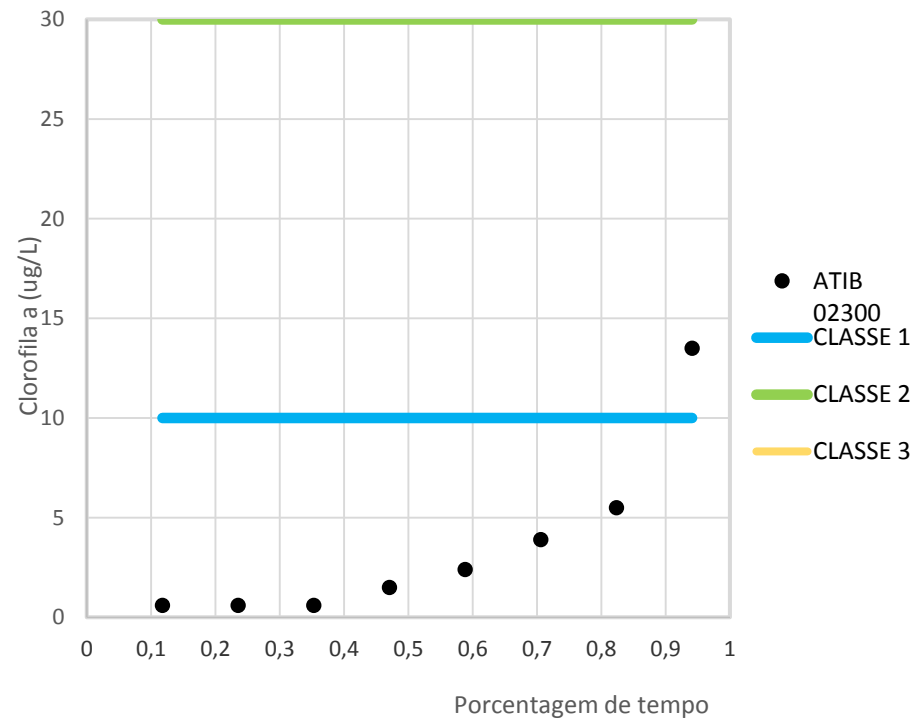


ATIB 02300 – Clorofila a (µg/L)

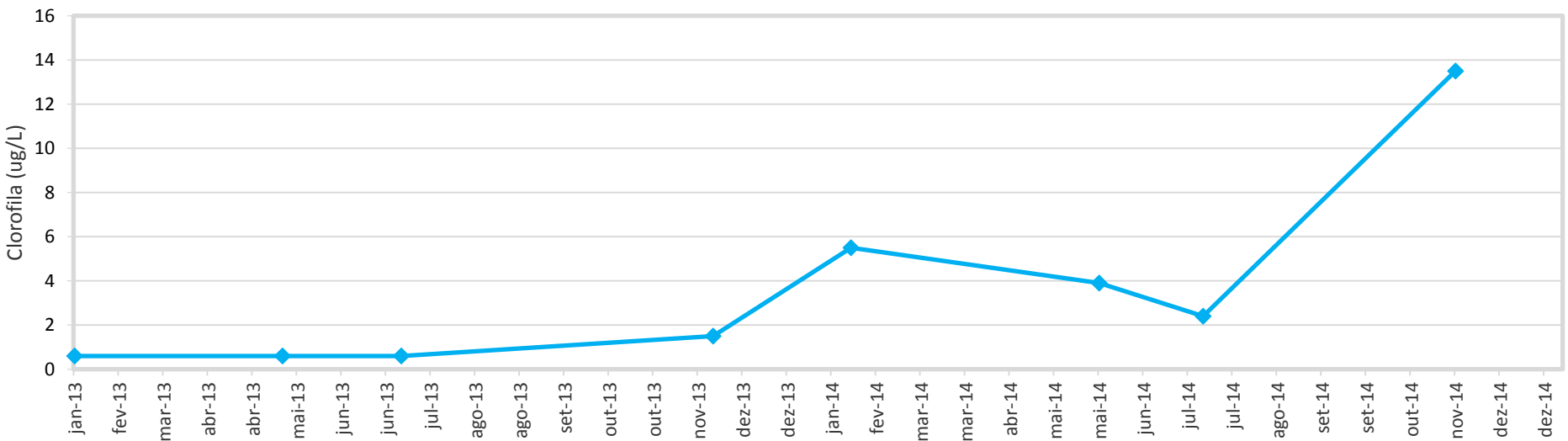
Porcentagem de Atendimento ao Padrão Classe 2 - Clorofila



Curva de Permanência

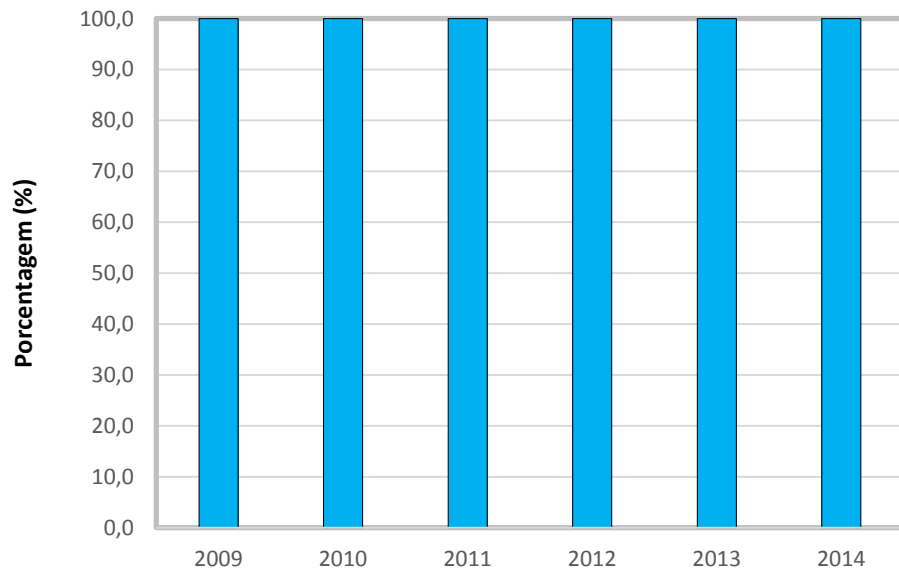


Evolução Temporal

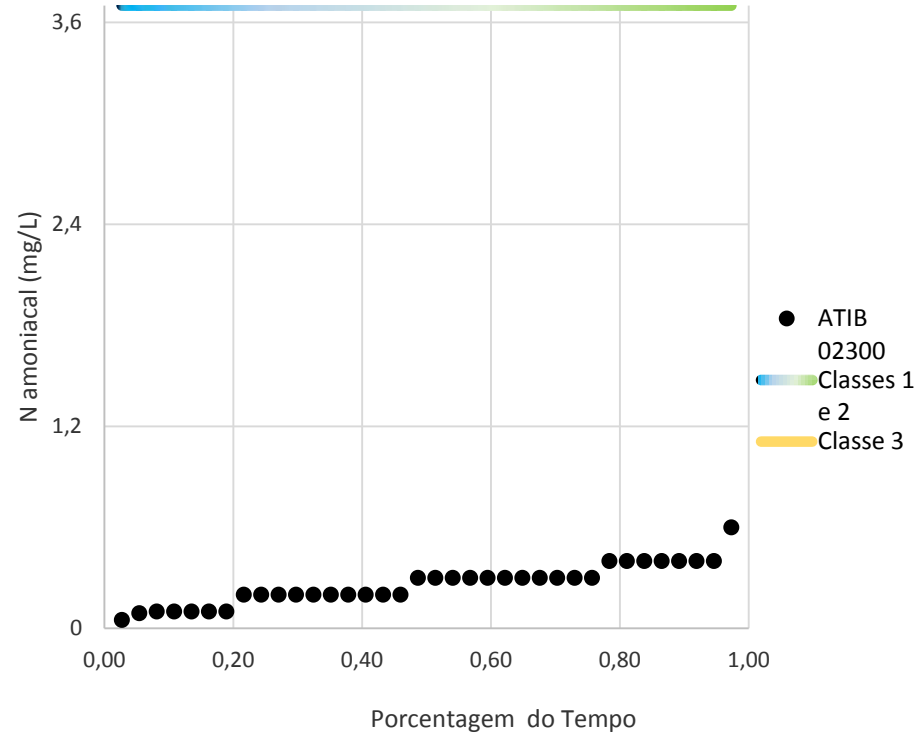


ATIB 02300 – Nitrogênio Amoniacal (mg/L)

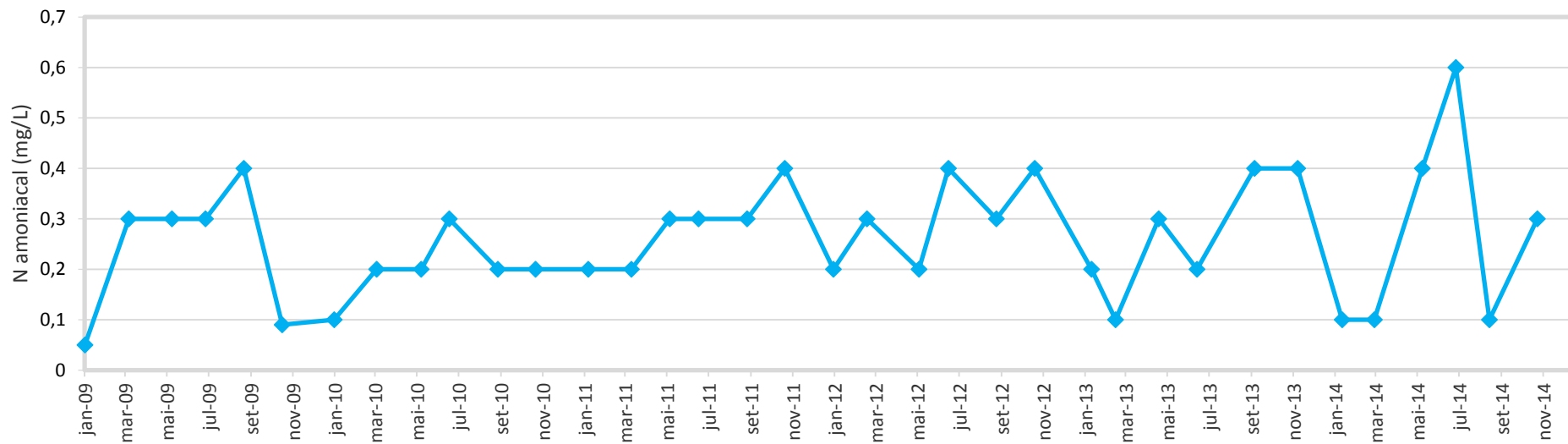
Porcentagem de Atendimento ao Padrão Classe 2 - N amoniacal



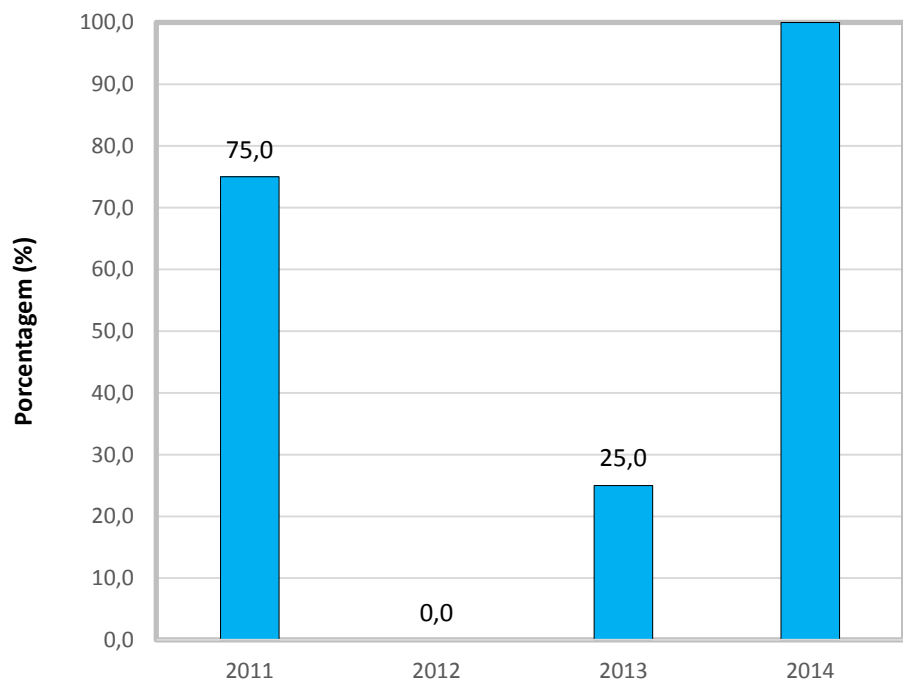
Curva de Permanência



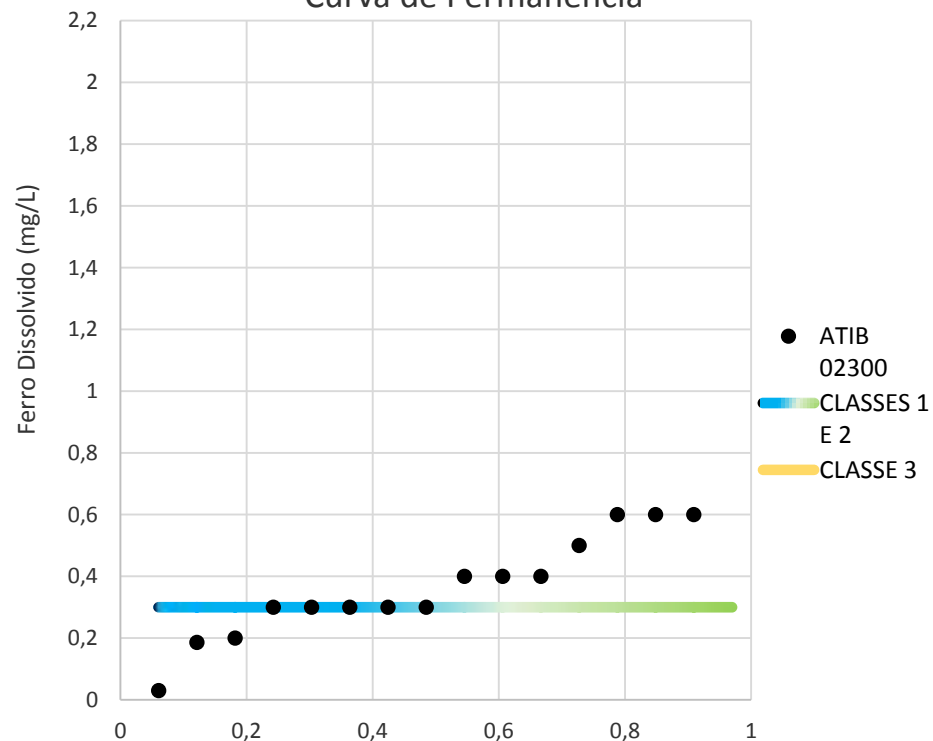
Evolução Temporal



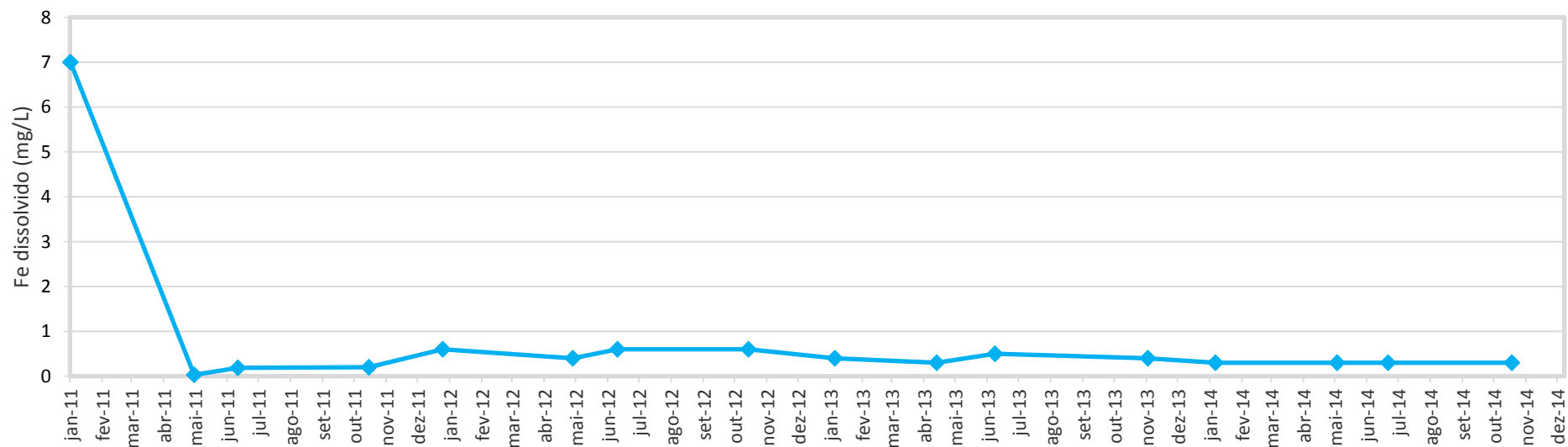
Porcentagem de Atendimento ao Padrão Classe 2 - Fe dissolvido



Curva de Permanência

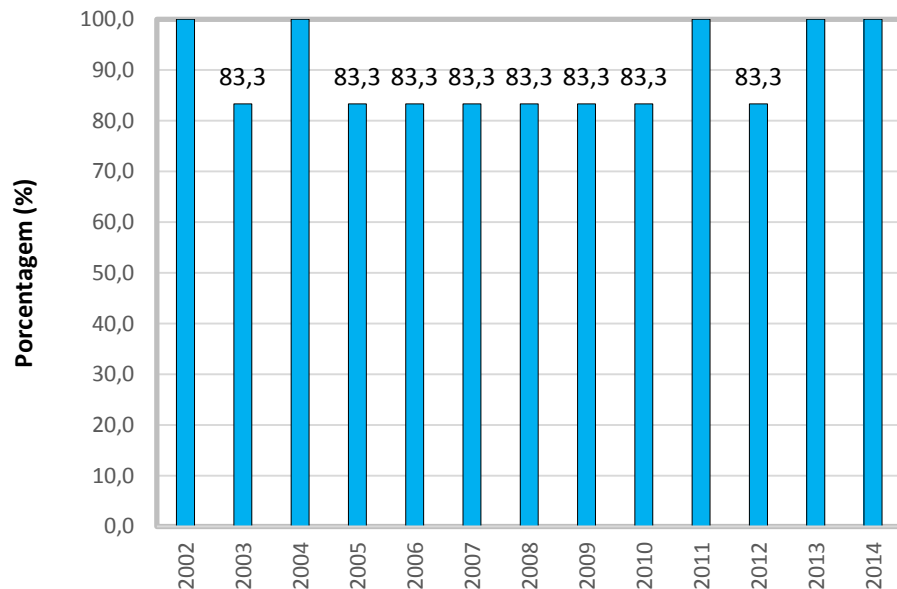


Evolução Temporal

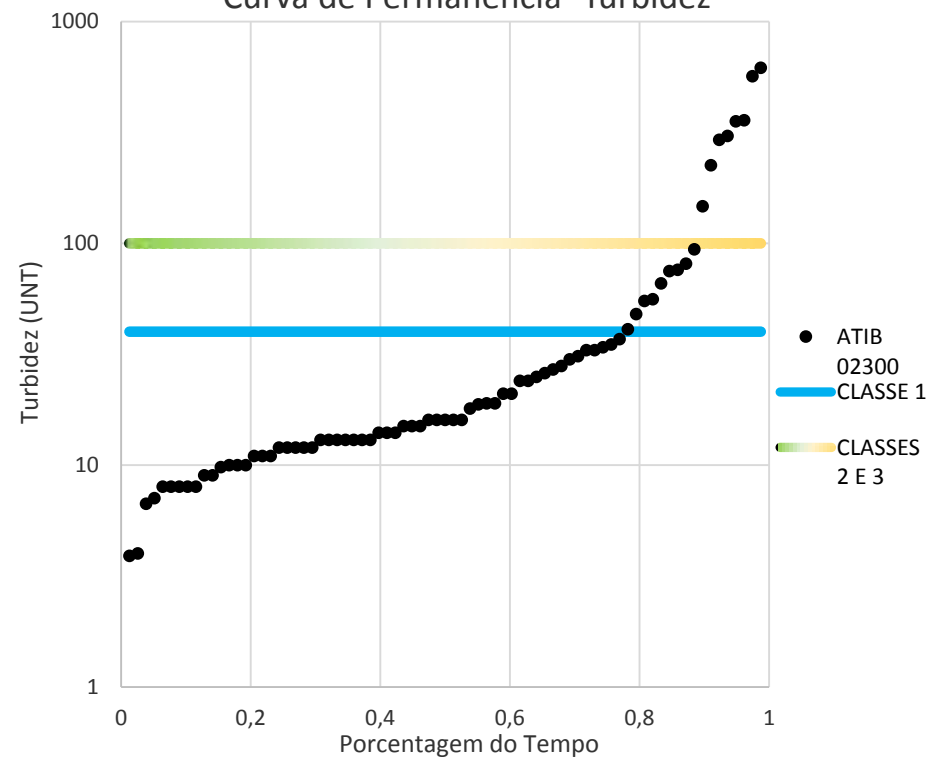


ATIB 02300 – Turbidez (UNT)

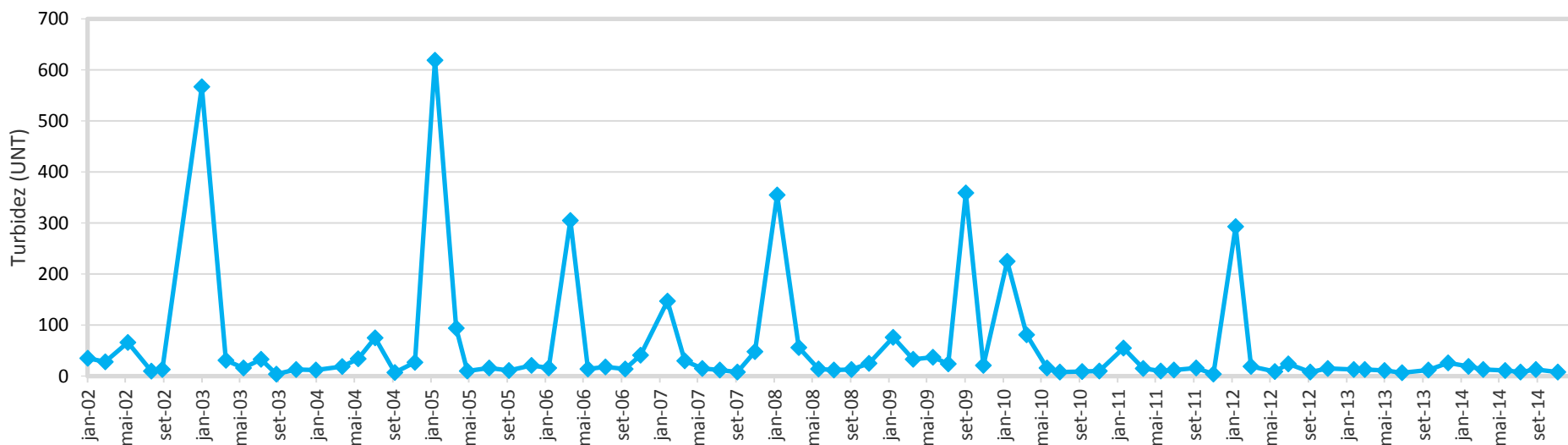
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

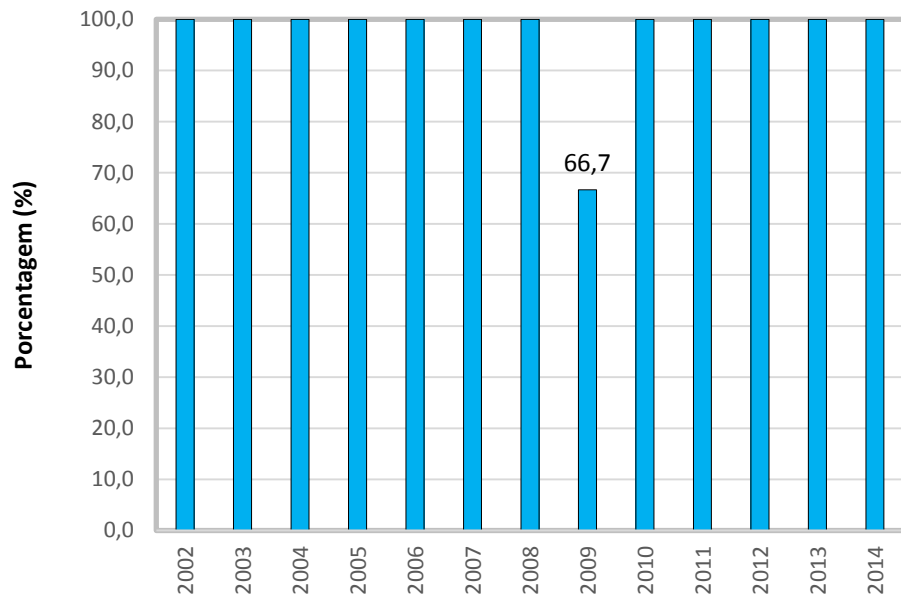


Evolução Temporal

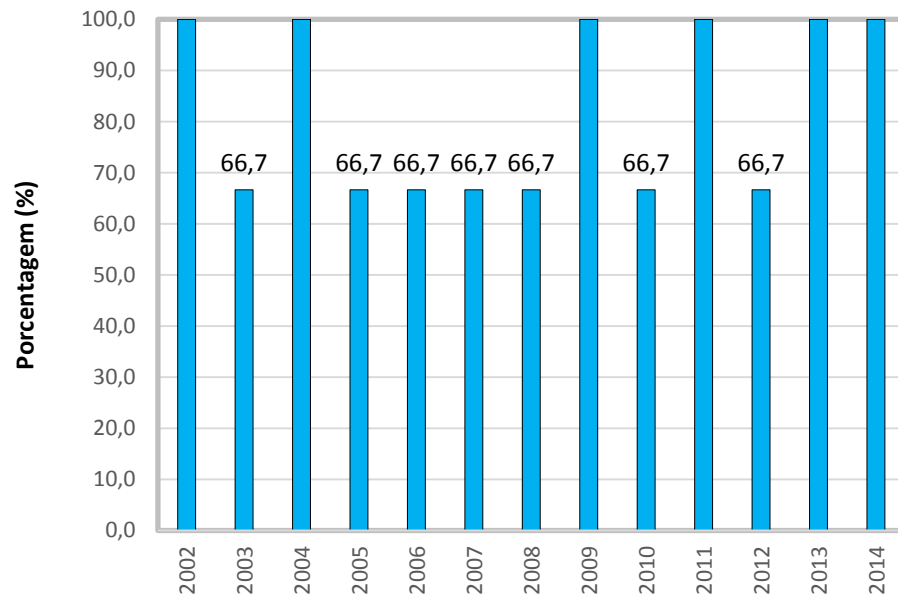


ATIB 02300 – Turbidez (Período Seco x Período Chuvoso)

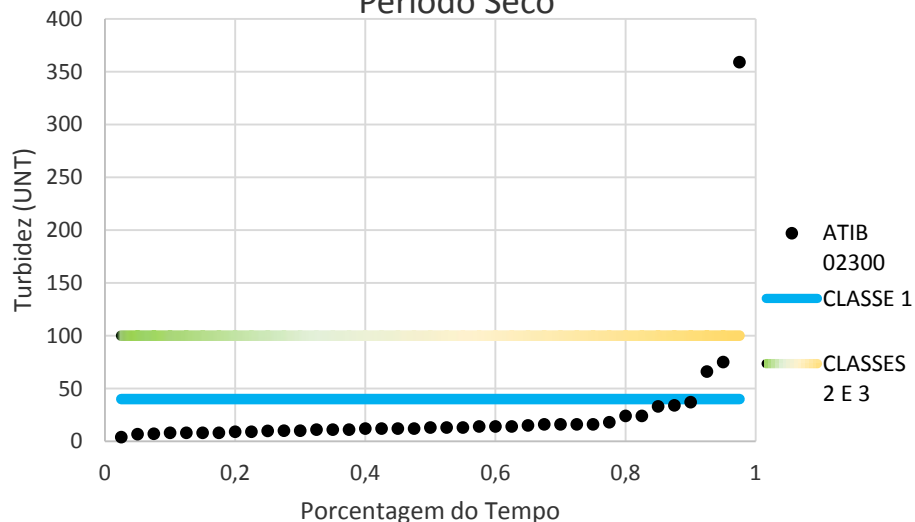
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



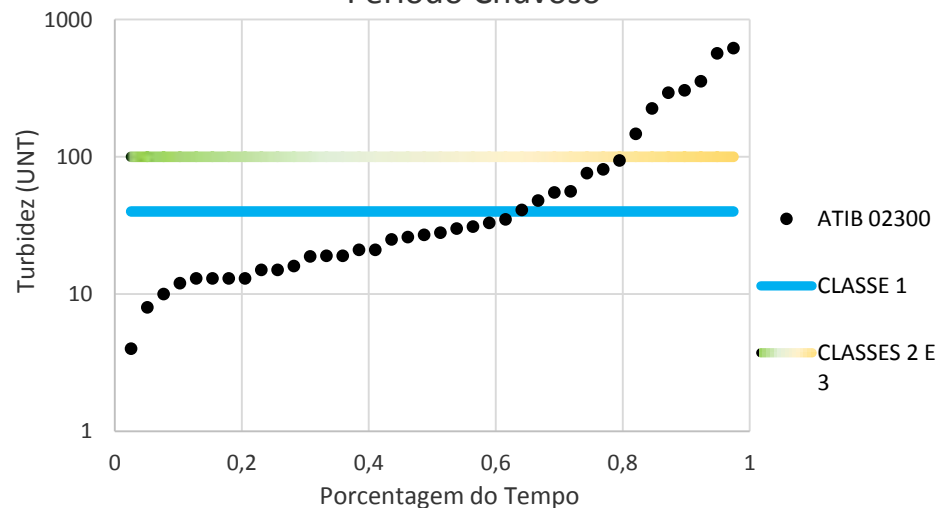
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

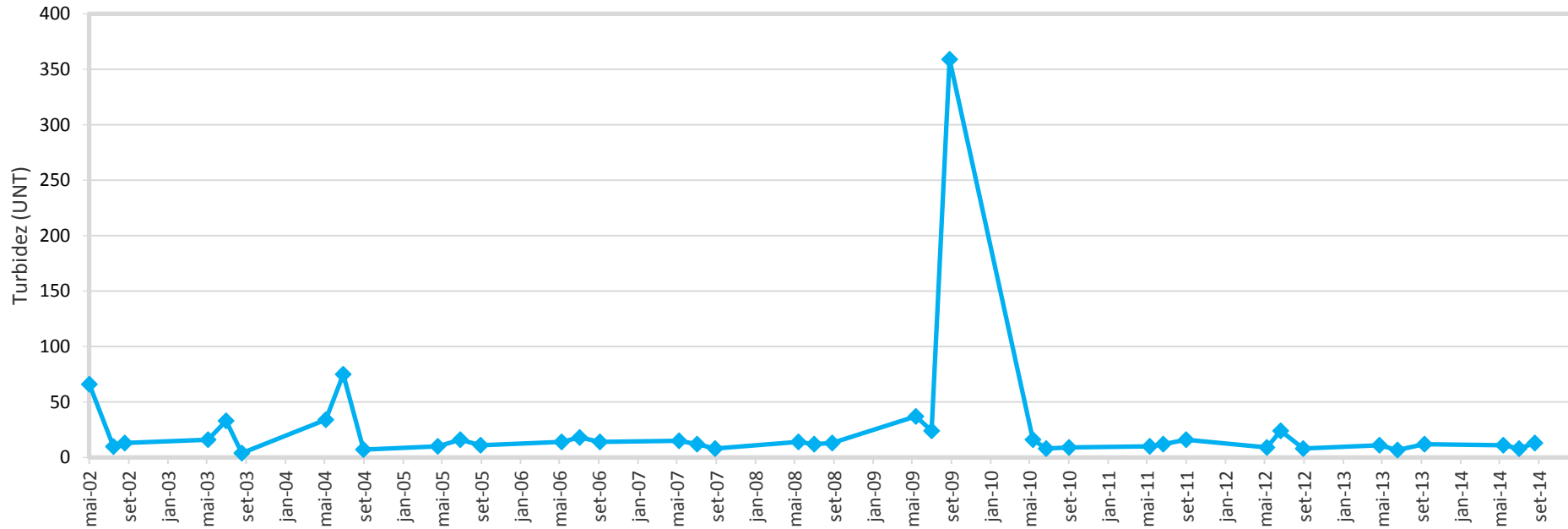


Curva de Permanência- Turbidez
Período Chuvoso

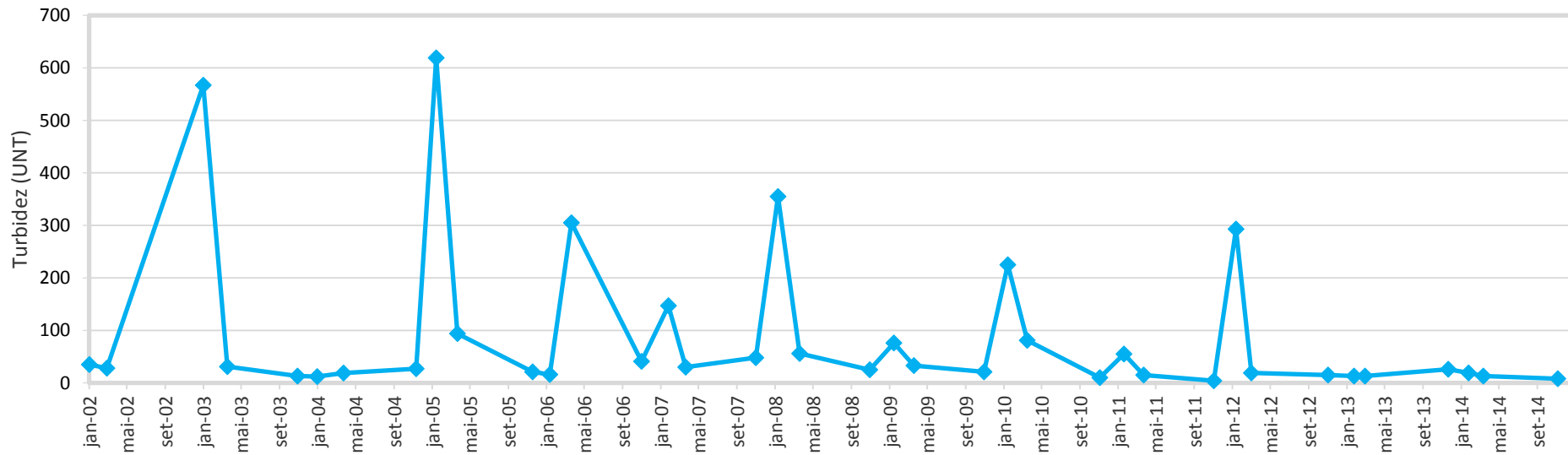


ATIB 02300 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



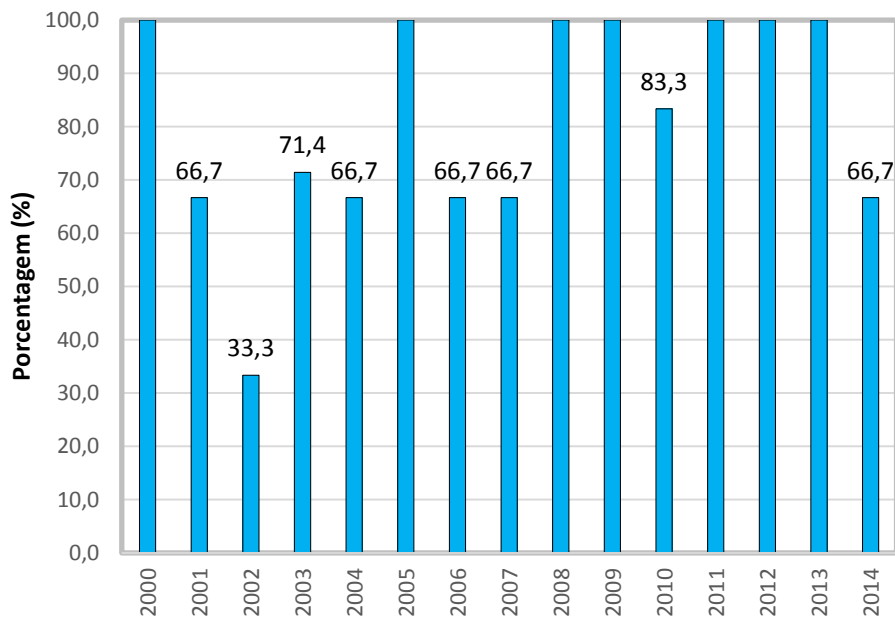
Evolução Temporal - Período Chuvoso



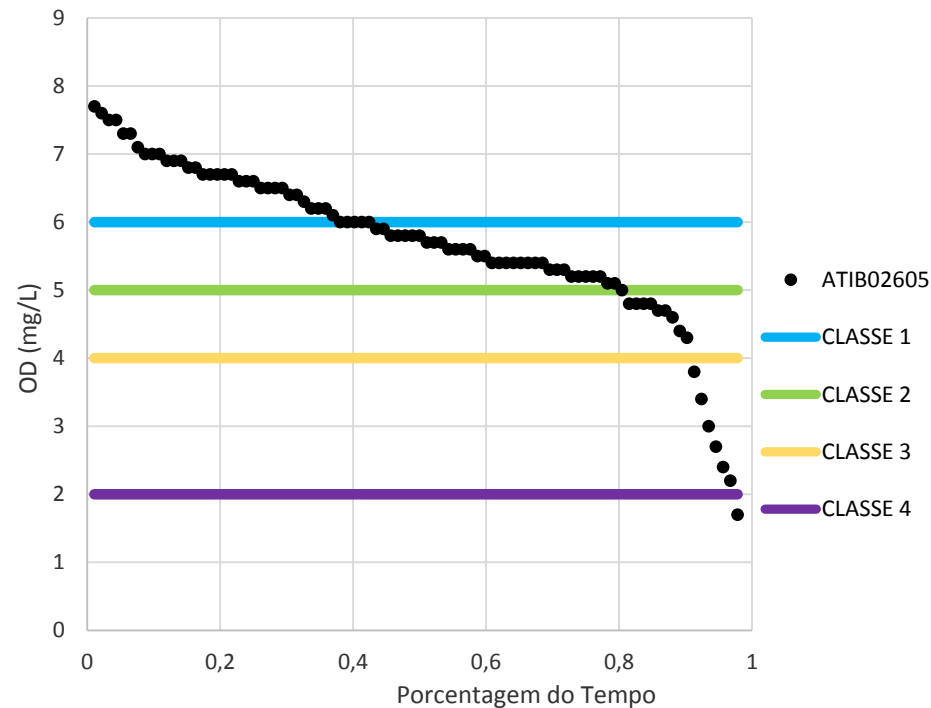
Rio Atibaia
ATIB 02605

ATIB 02605 – Oxigênio Dissolvido (mg/L)

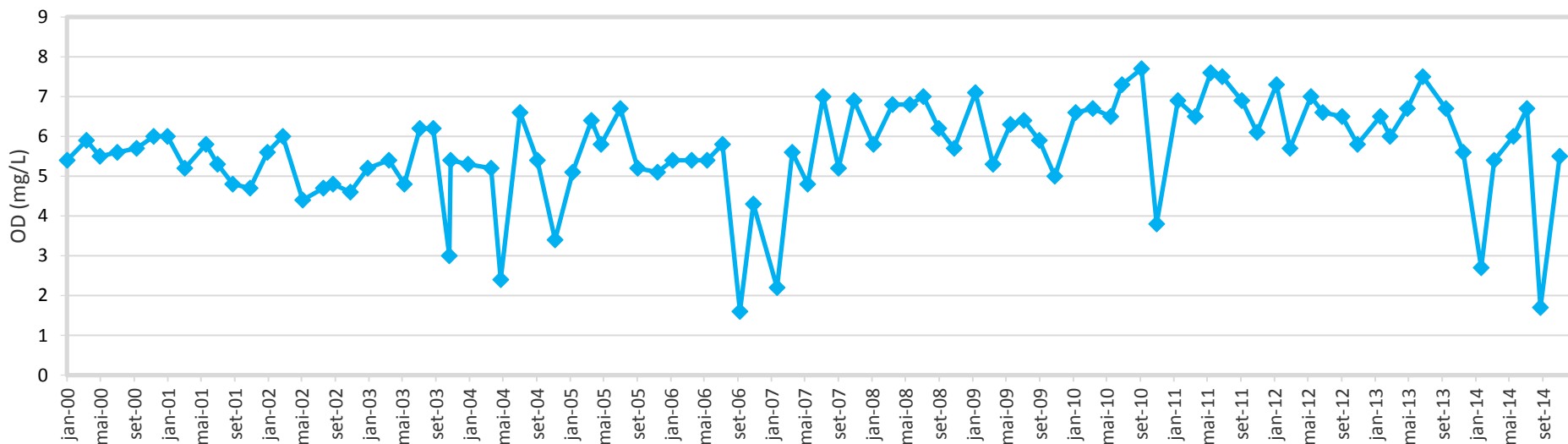
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

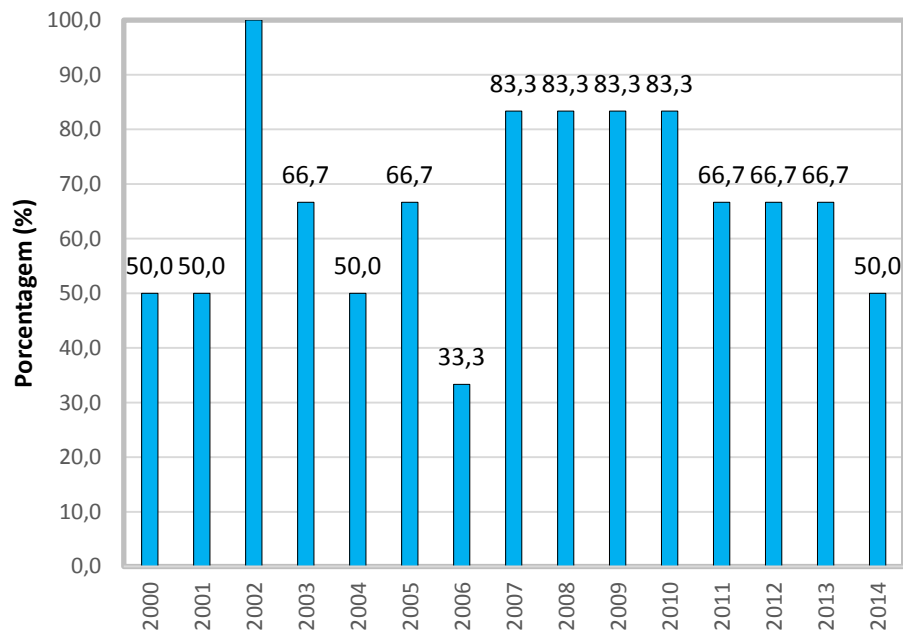


Evolução Temporal

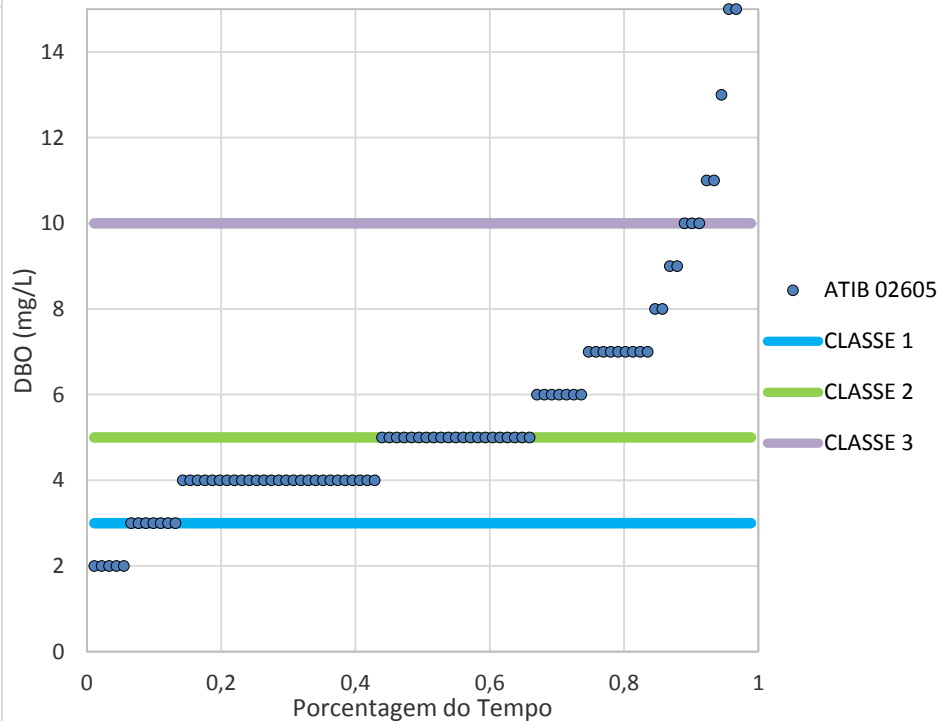


ATIB 02605 – DBO (mg/L)

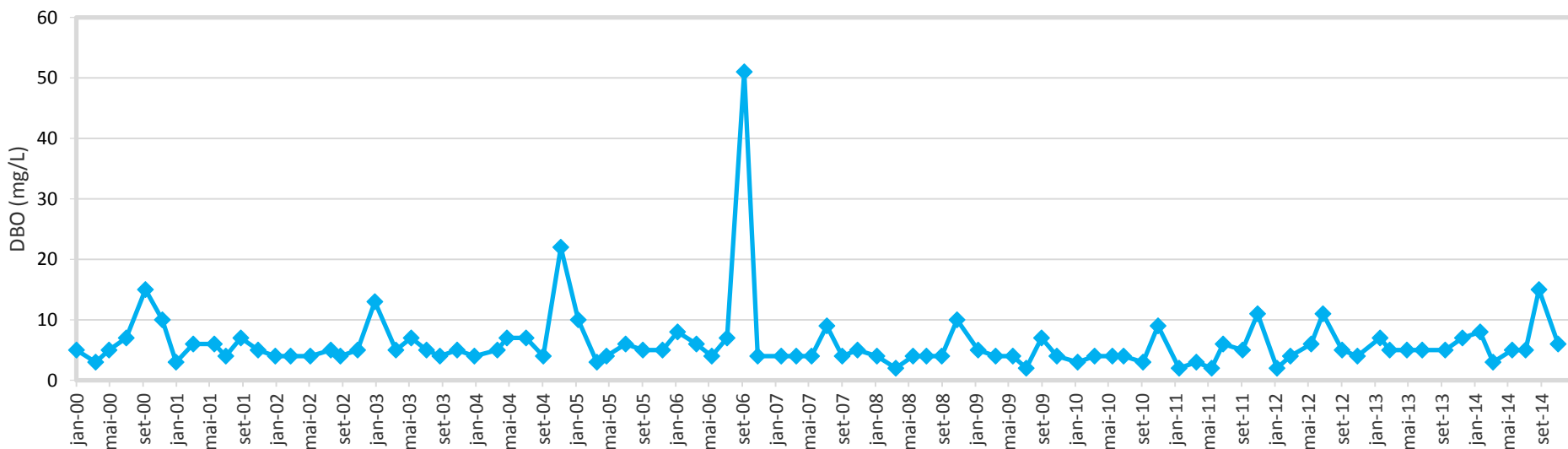
Porcentagem de Atendimento ao Padrão Classe 2 - DBO



Curva de Permanência

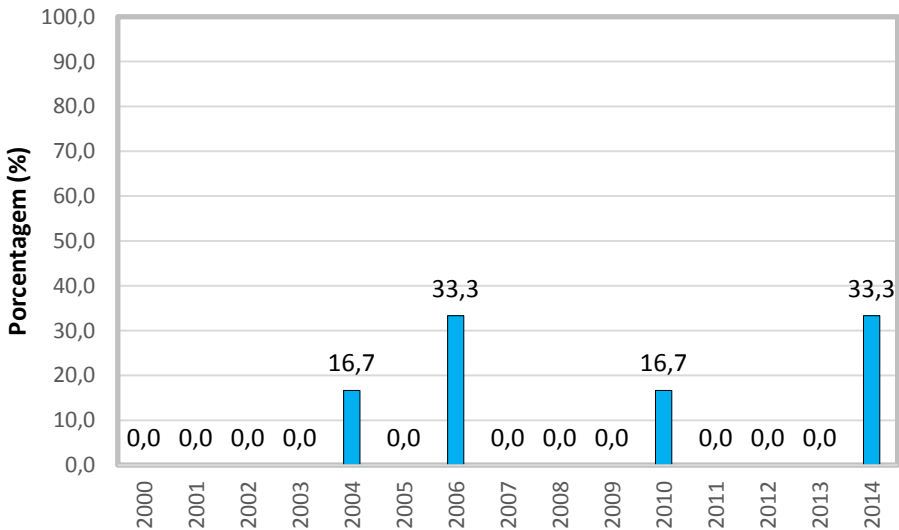


Evolução Temporal

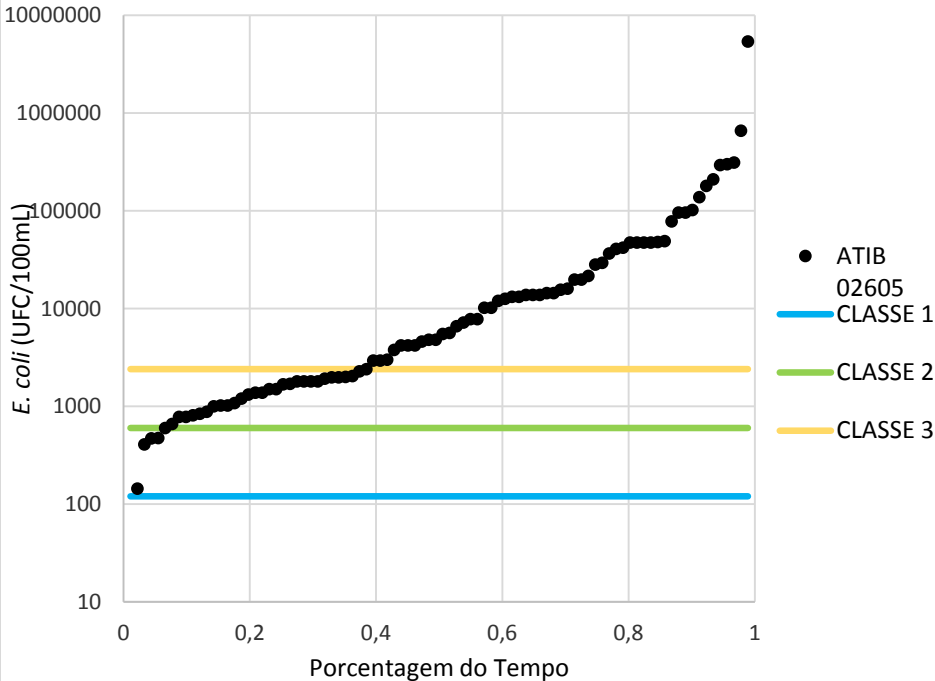


ATIB 02605 – *Escherichia coli* (UFC/100mL)

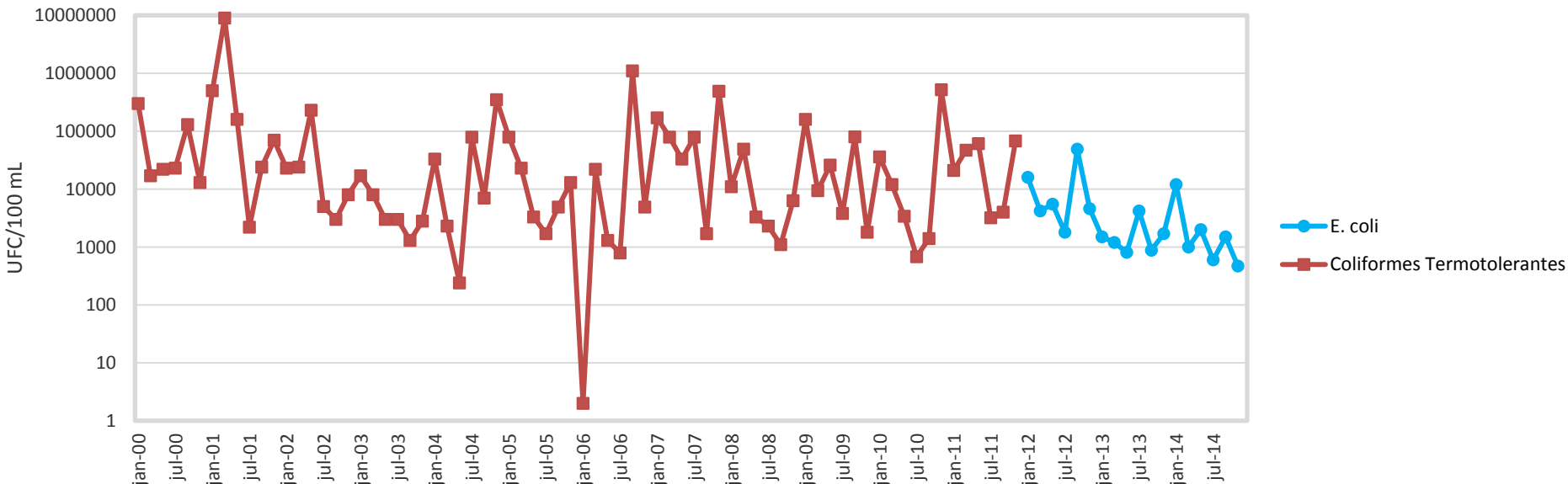
Porcentagem de Atendimento ao Padrão Classe 2 - Colif. Term. e *E. coli*



Curva de Permanência

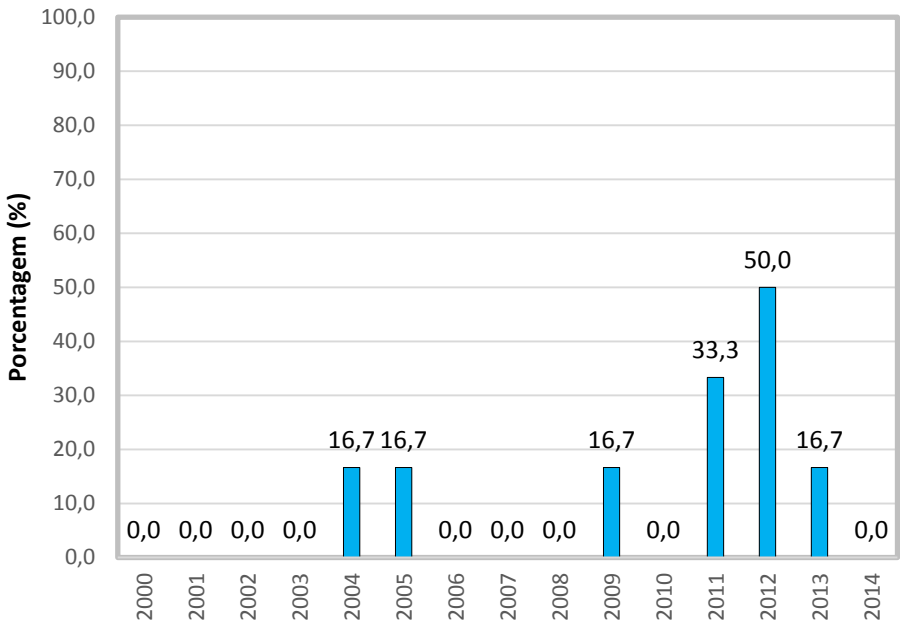


Evolução Temporal

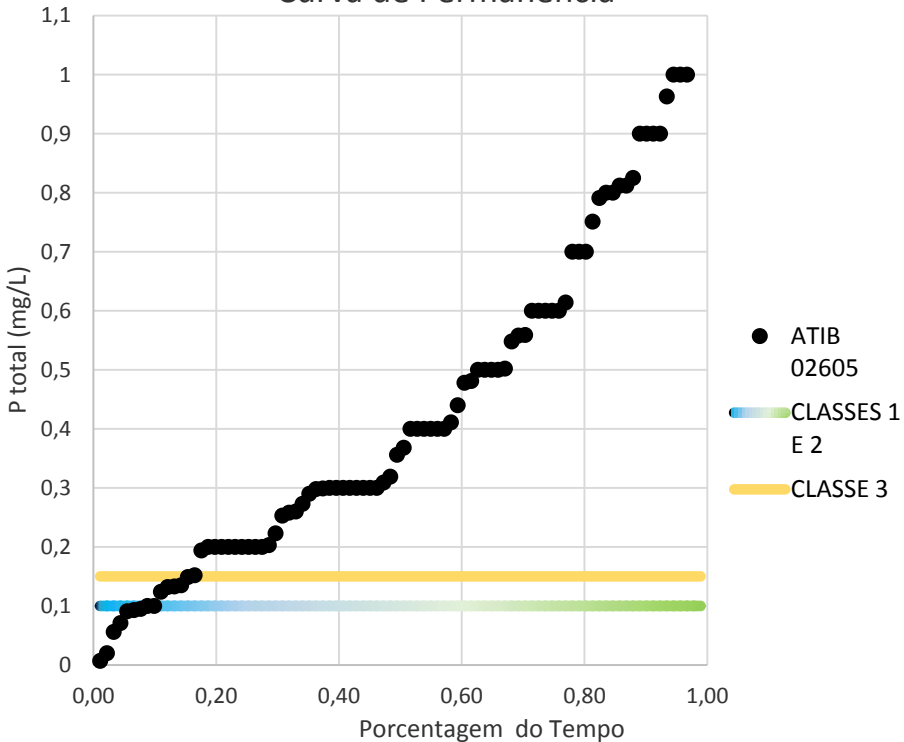


ATIB 02605 – Fósforo Total (mg/L)

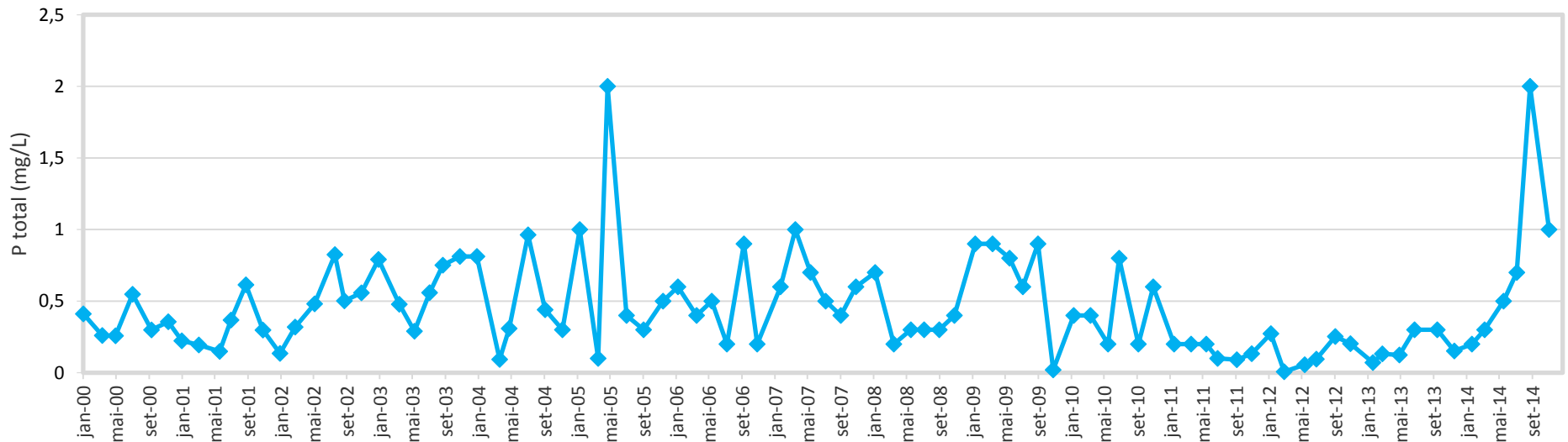
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

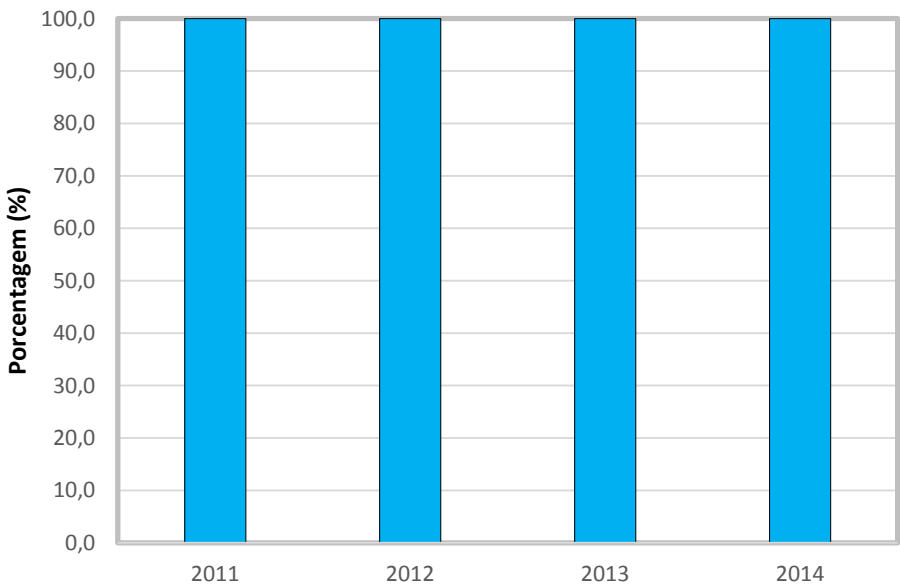


Evolução Temporal

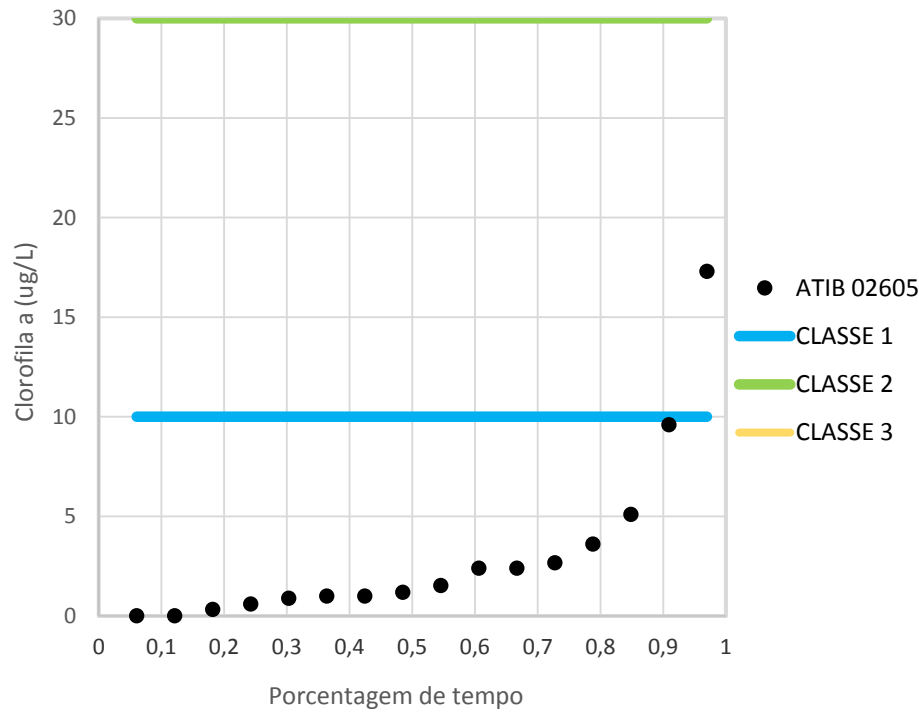


ATIB 02605 – Clorofila a (µg/L)

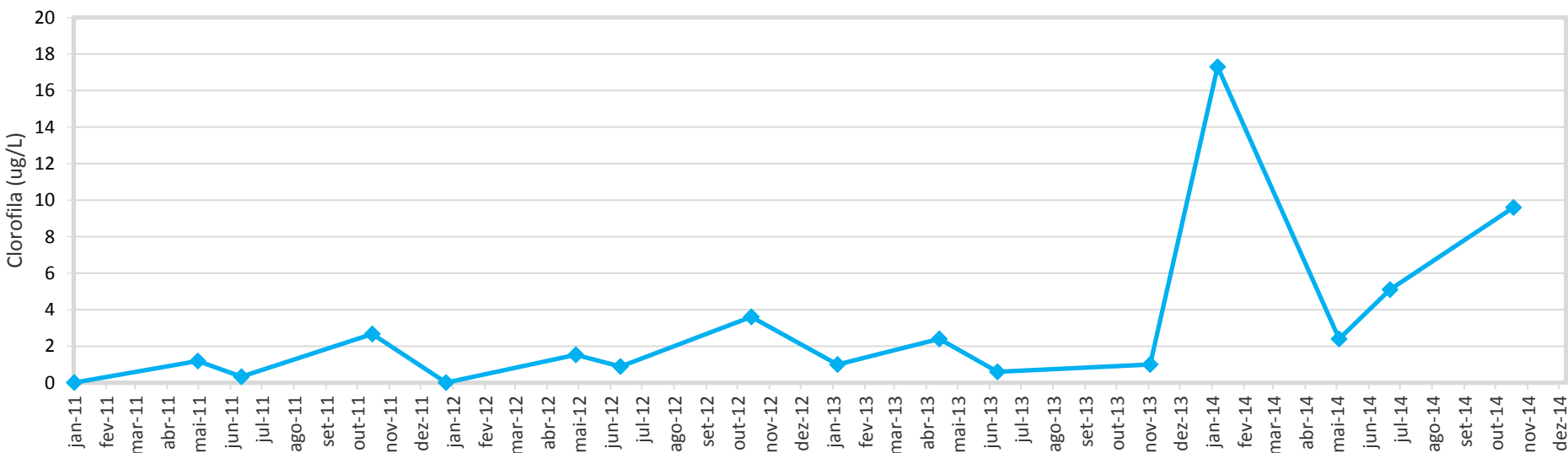
Porcentagem de Atendimento ao Padrão Classe 2 - Clorofila



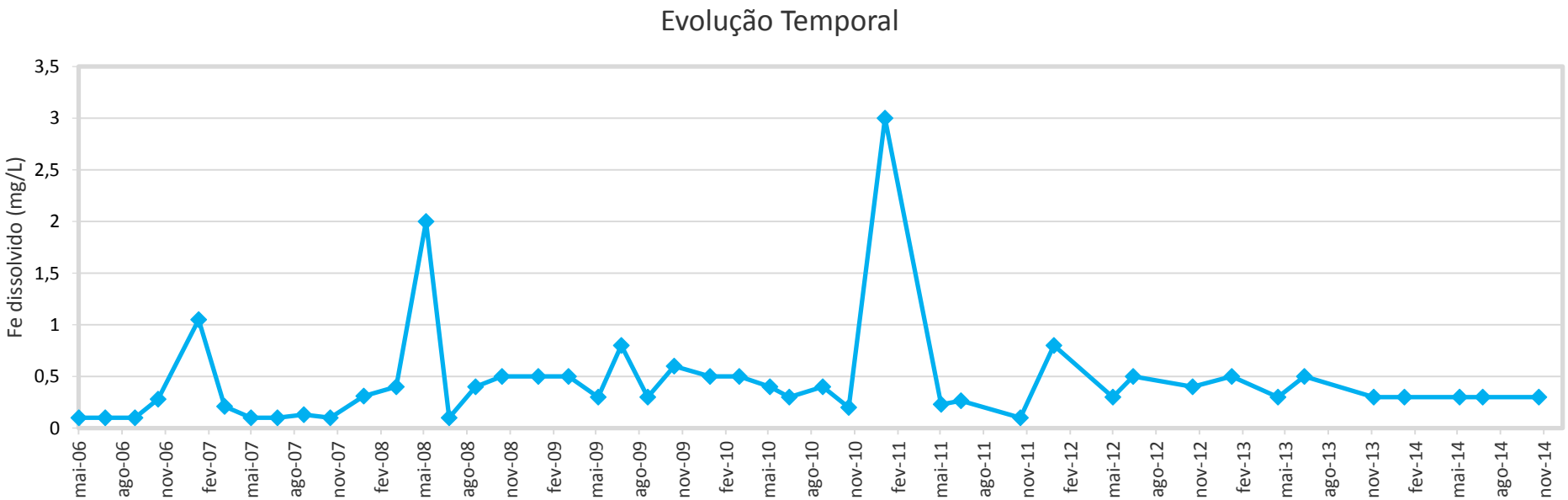
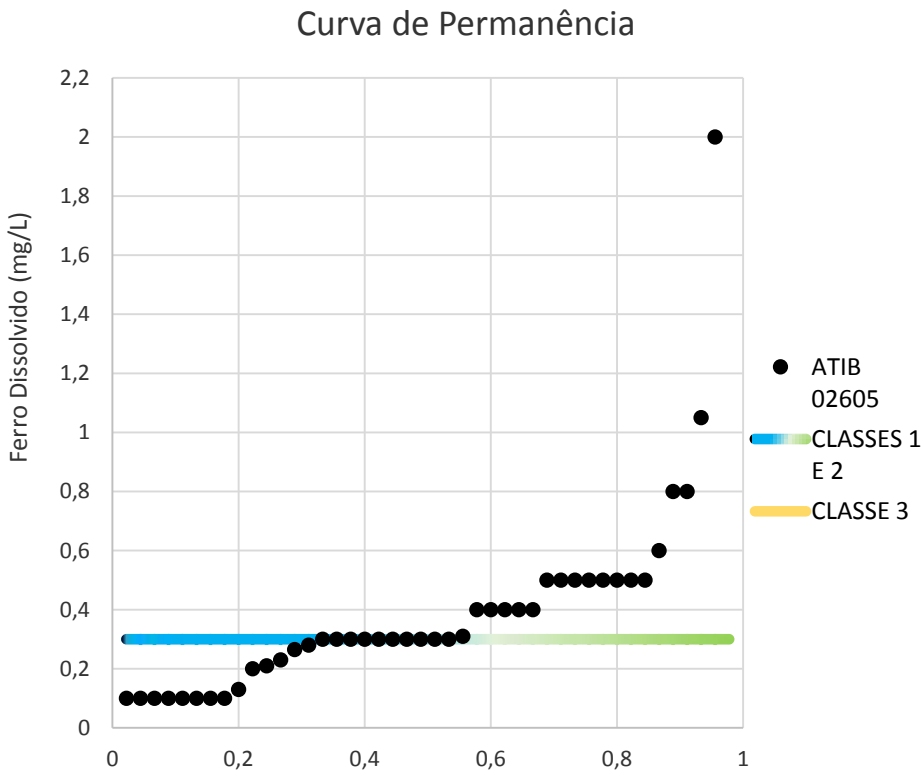
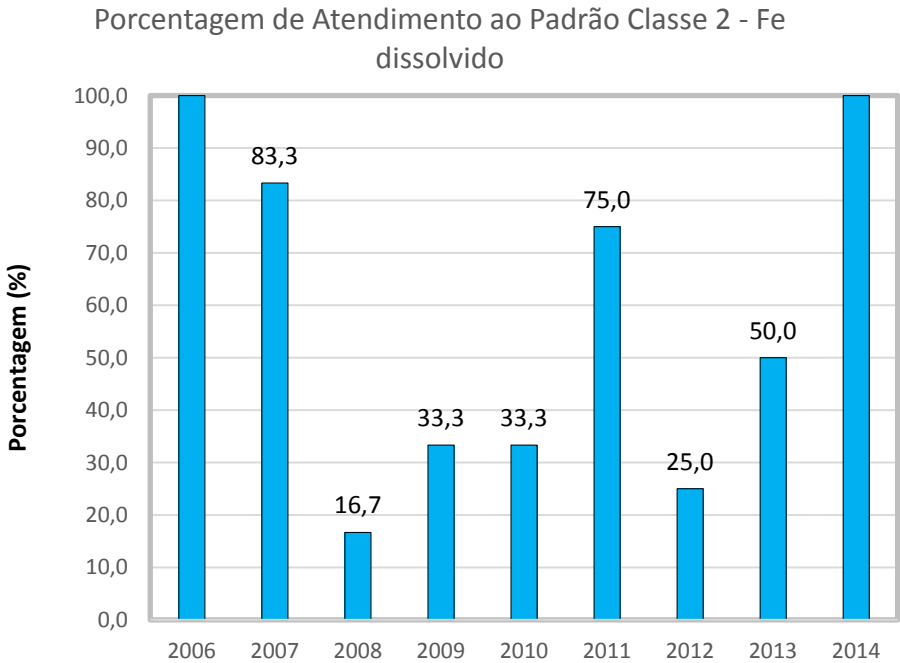
Curva de Permanência



Evolução Temporal

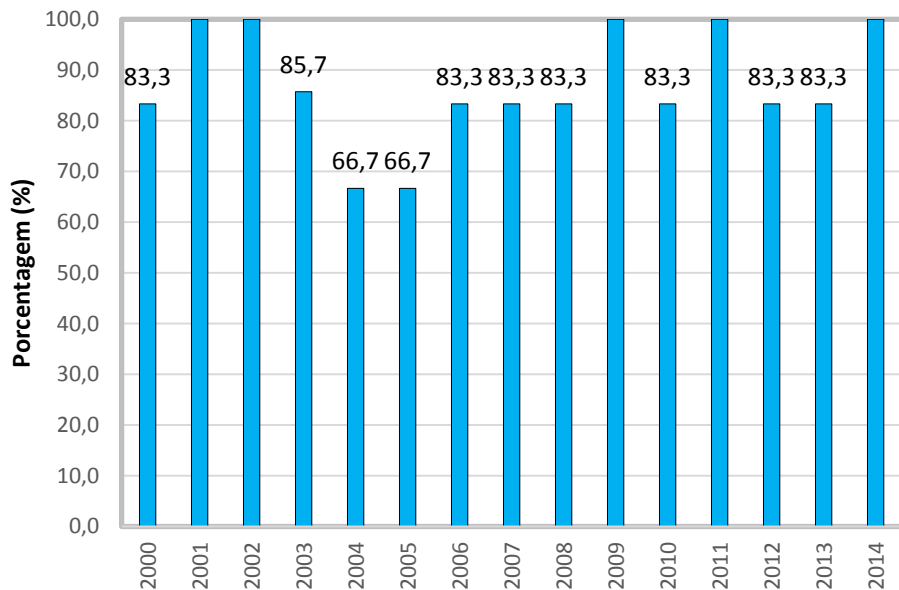


ATIB 02605 – Ferro Dissolvido (mg/L)

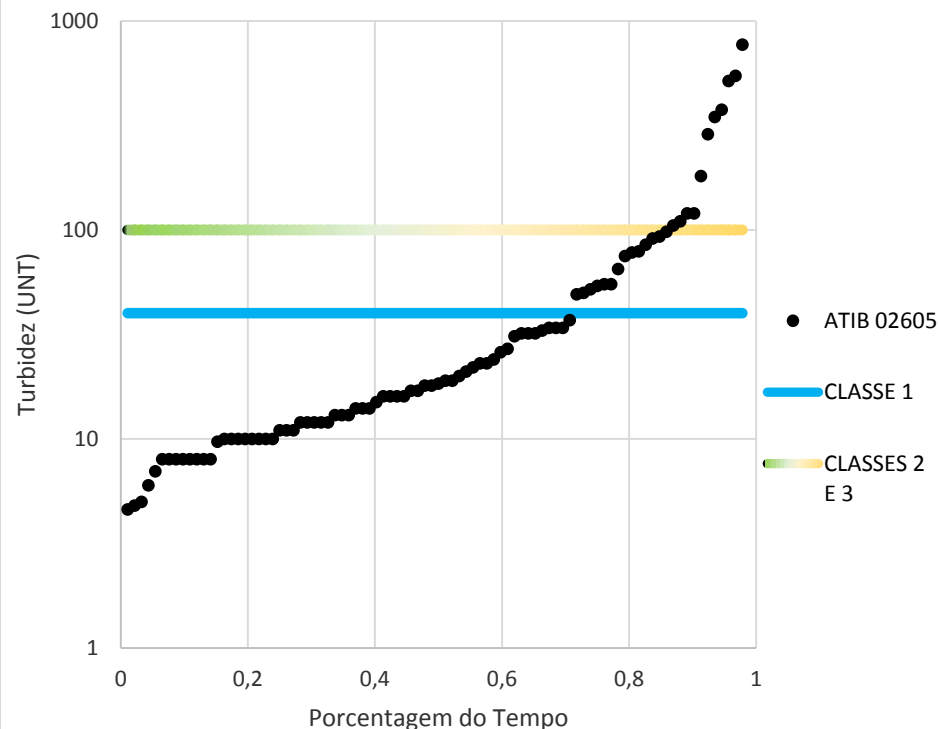


ATIB 02605 – Turbidez (UNT)

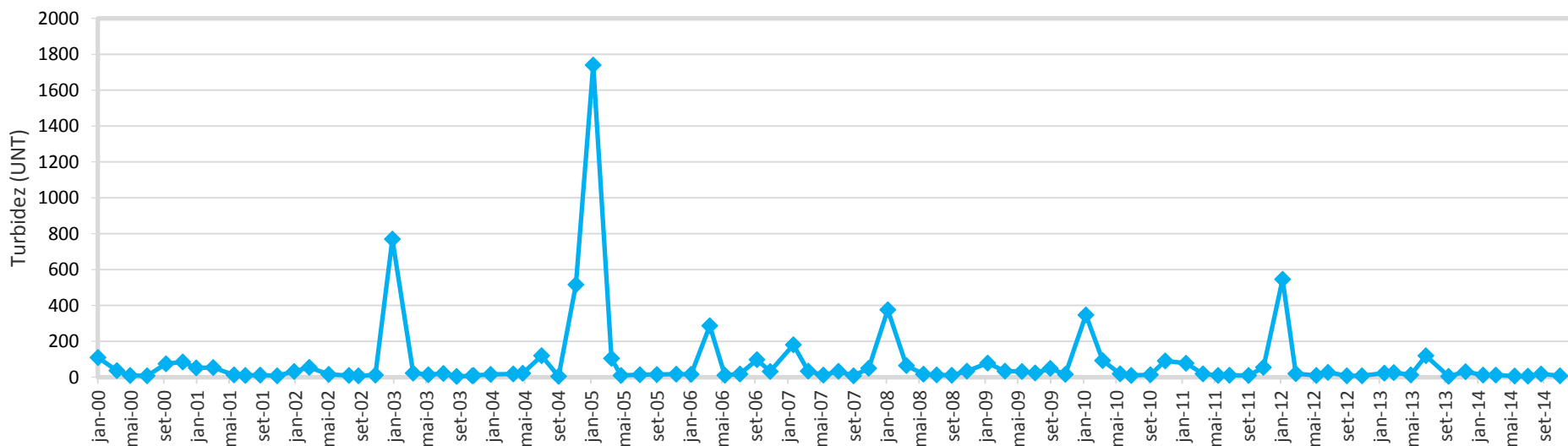
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

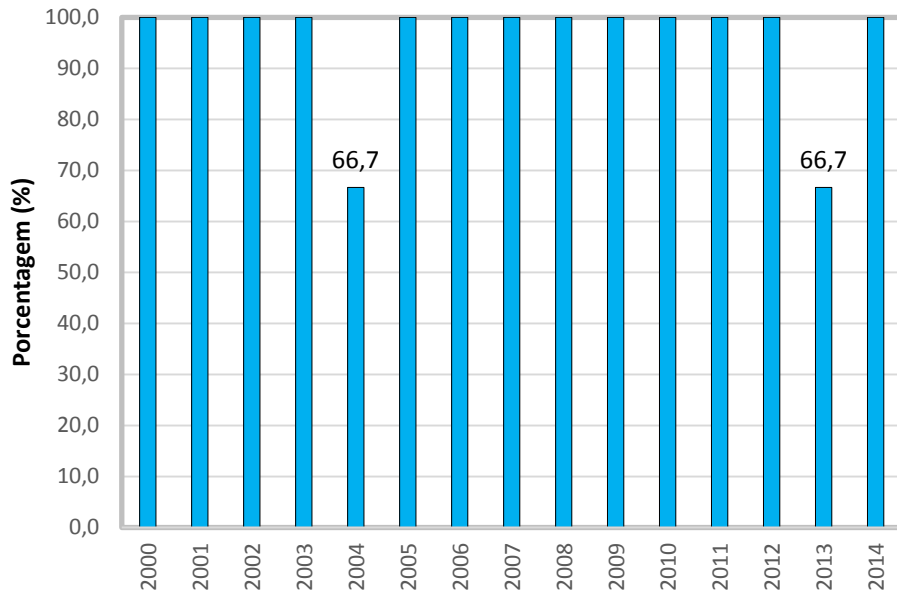


Evolução Temporal

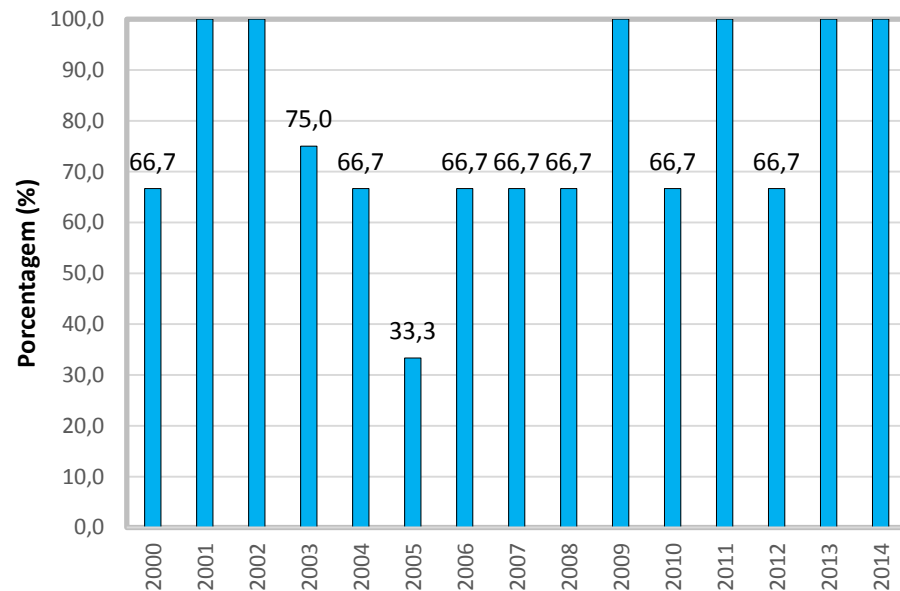


ATIB 02605 – Turbidez (Período Seco x Período Chuvoso)

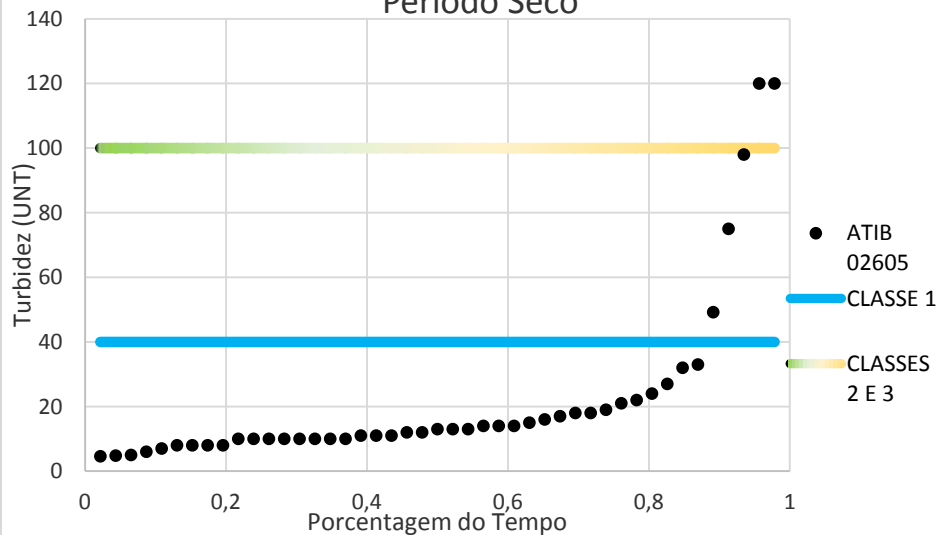
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



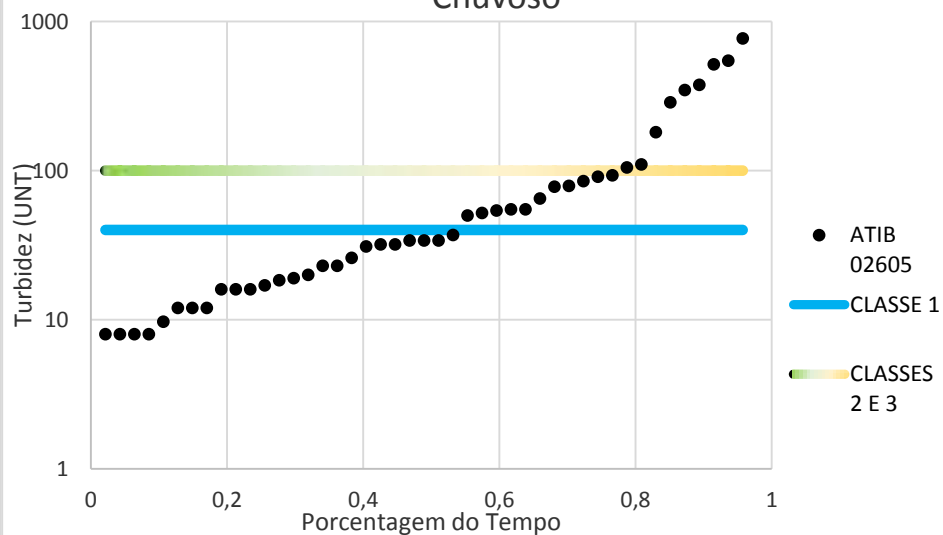
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

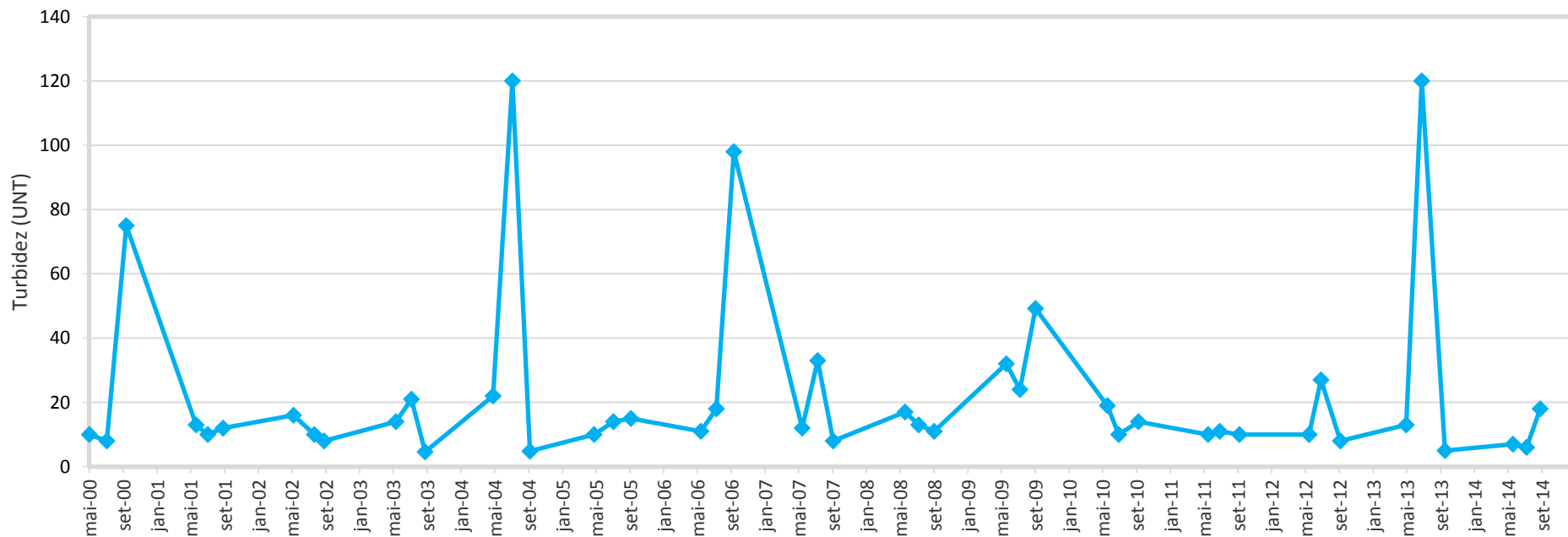


Curva de Permanência- Turbidez Período
Chuvoso

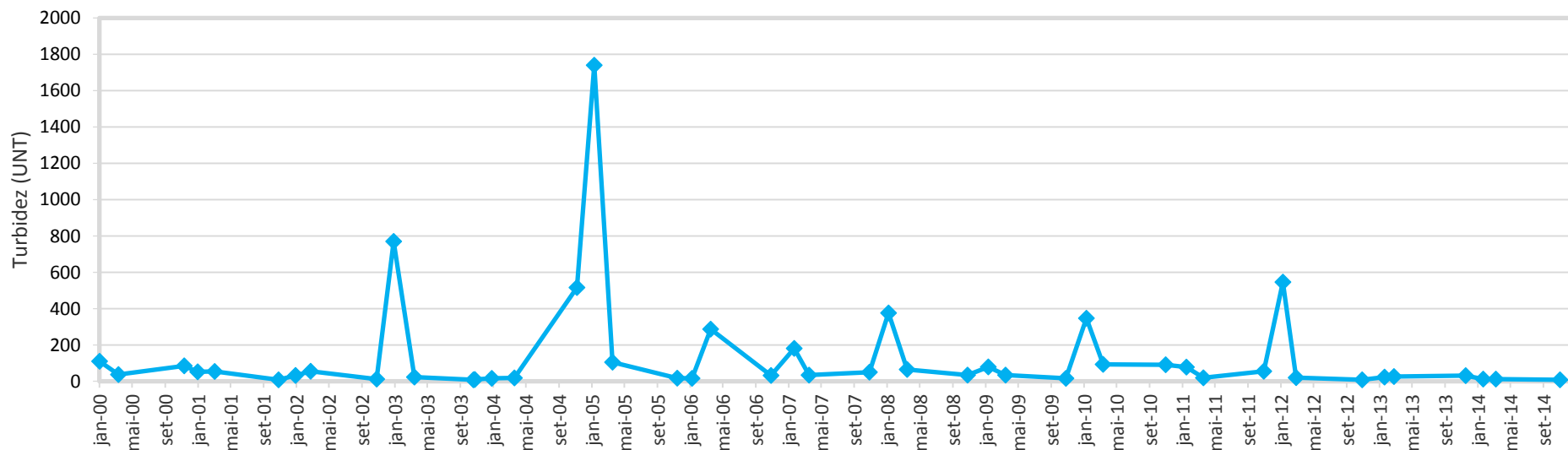


ATIB 02605 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



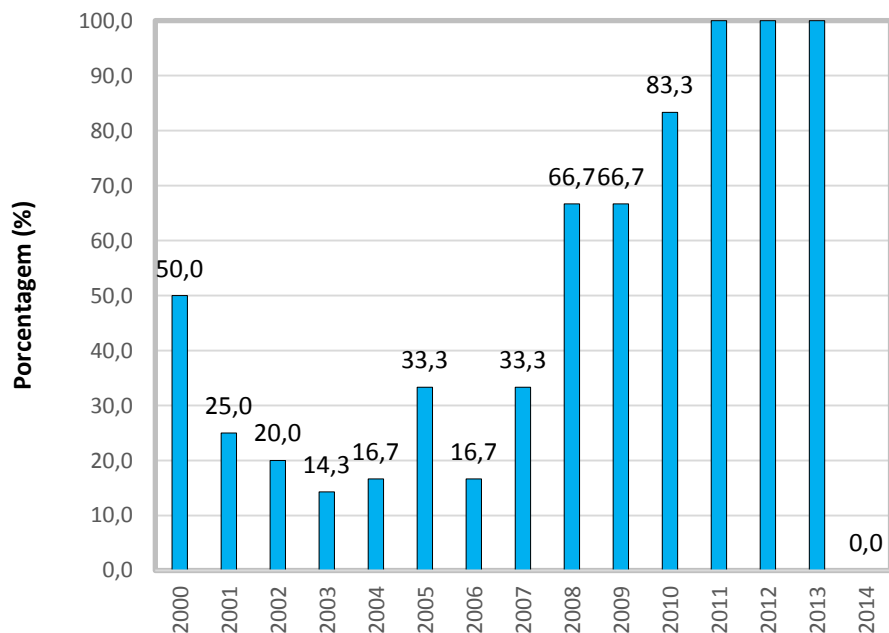
Evolução Temporal - Período Chuvoso



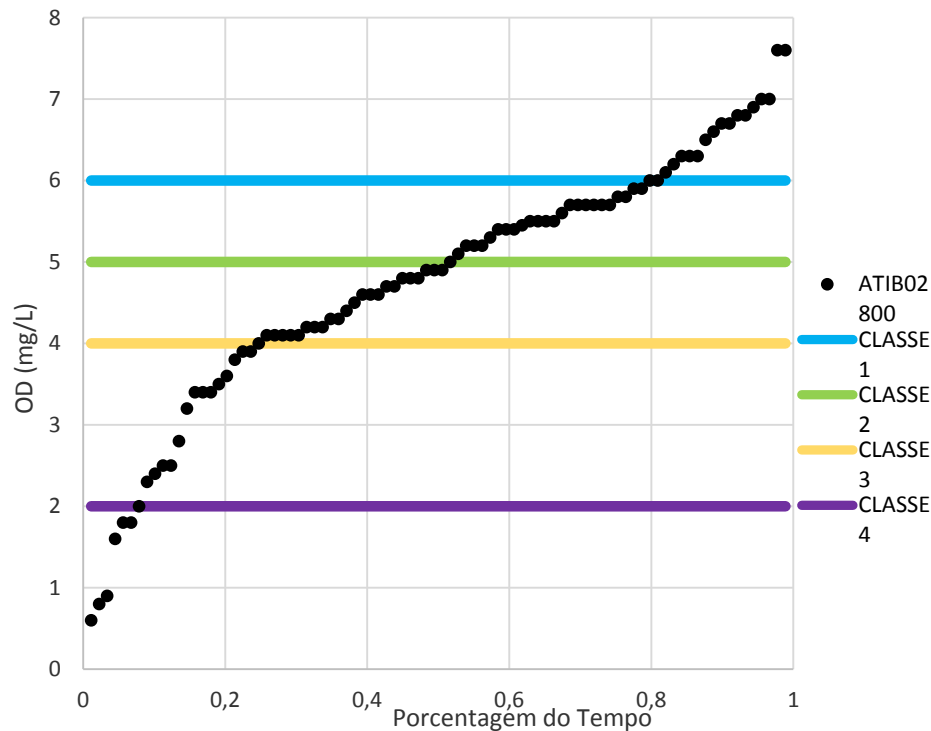
Rio Atibaia
ATIB 02800

ATIB 02800 – Oxigênio Dissolvido (mg/L)

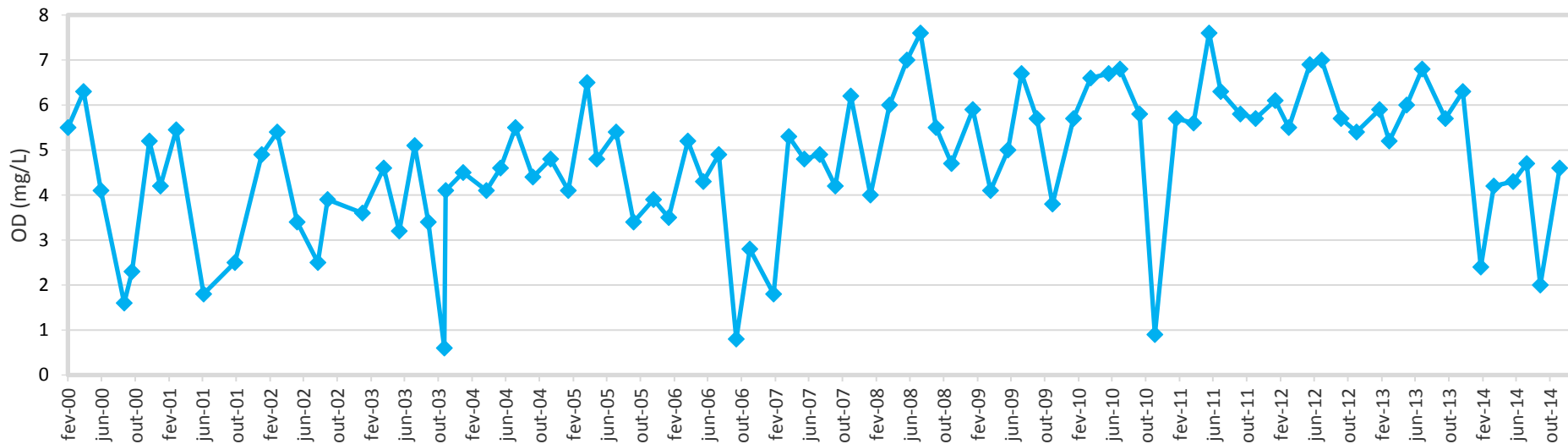
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

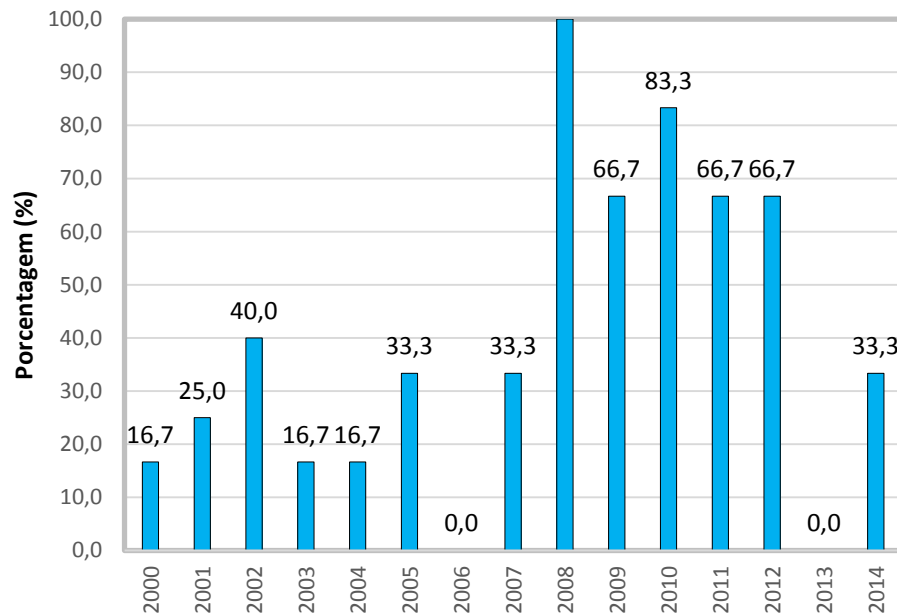


Evolução Temporal

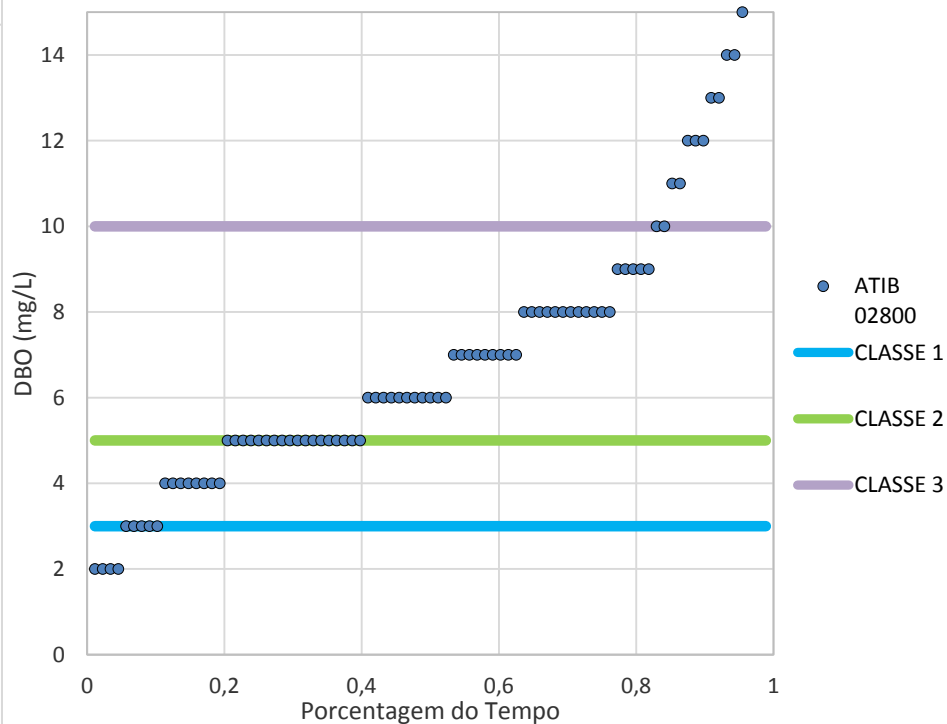


ATIB 02800 – DBO (mg/L)

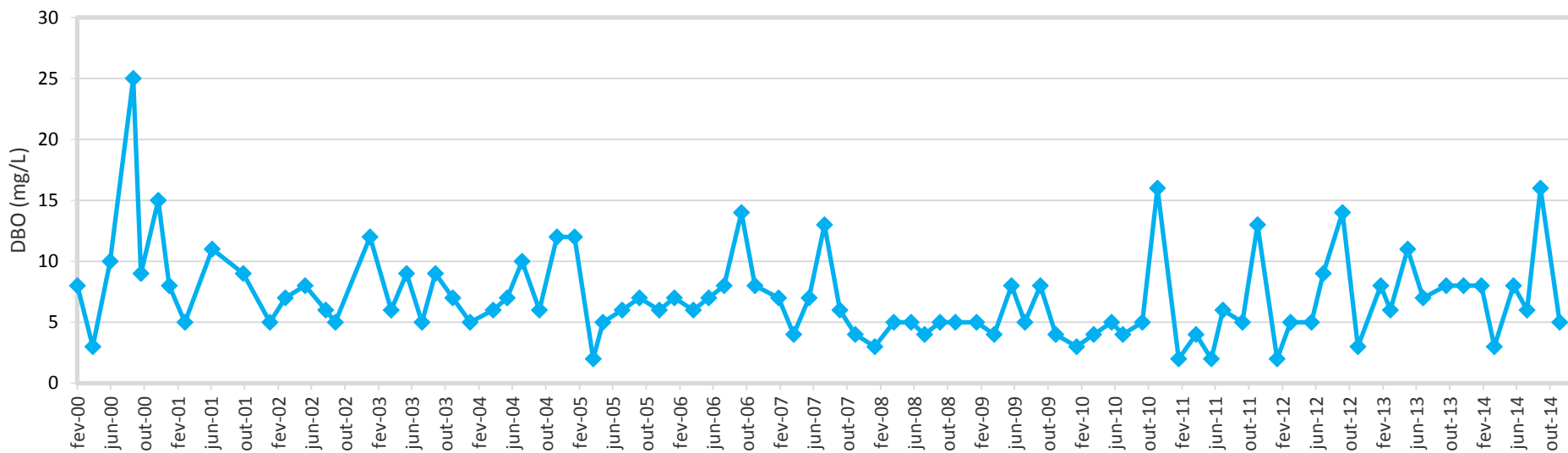
Porcentagem de Atendimento ao Padrão Classe 2 - DBO



Curva de Permanência

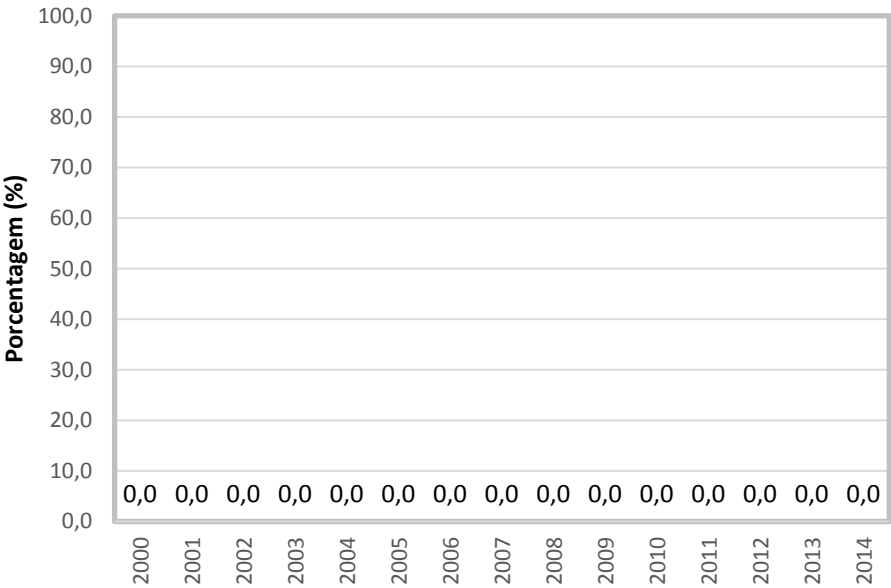


Evolução Temporal

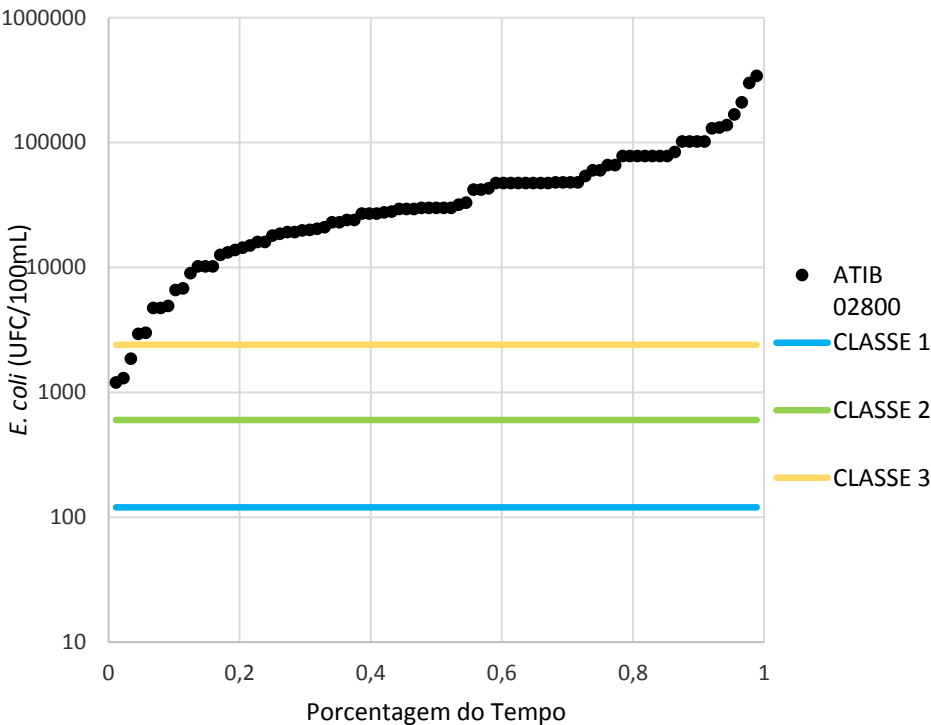


ATIB 02800 – *Escherichia coli* (UFC/100mL

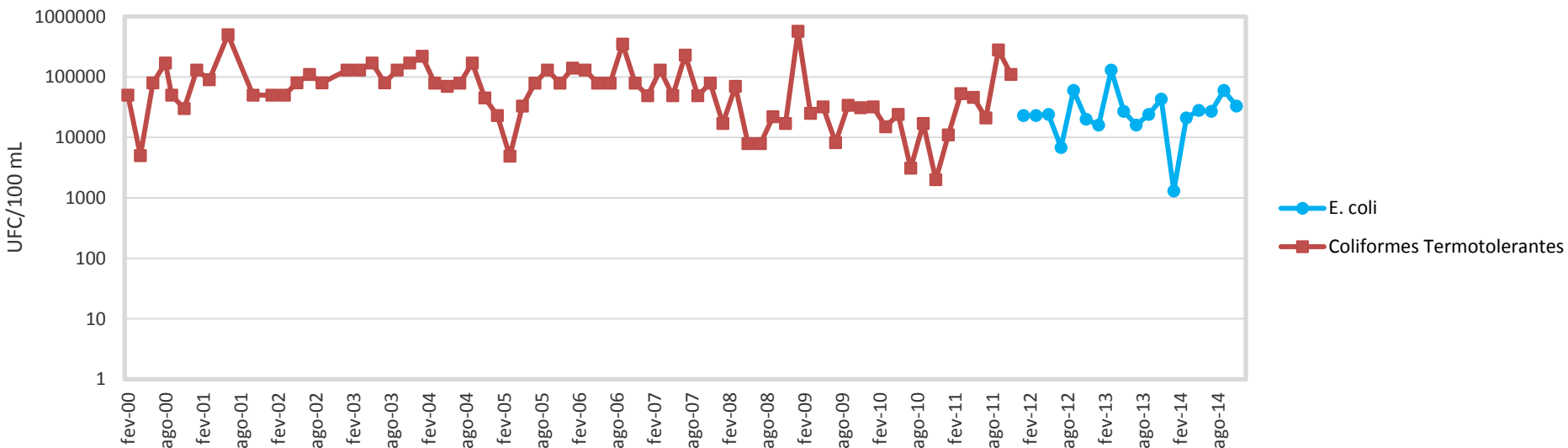
Porcentagem de Atendimento ao Padrão Classe 2 - Colif. Term. e *E. coli*



Curva de Permanência

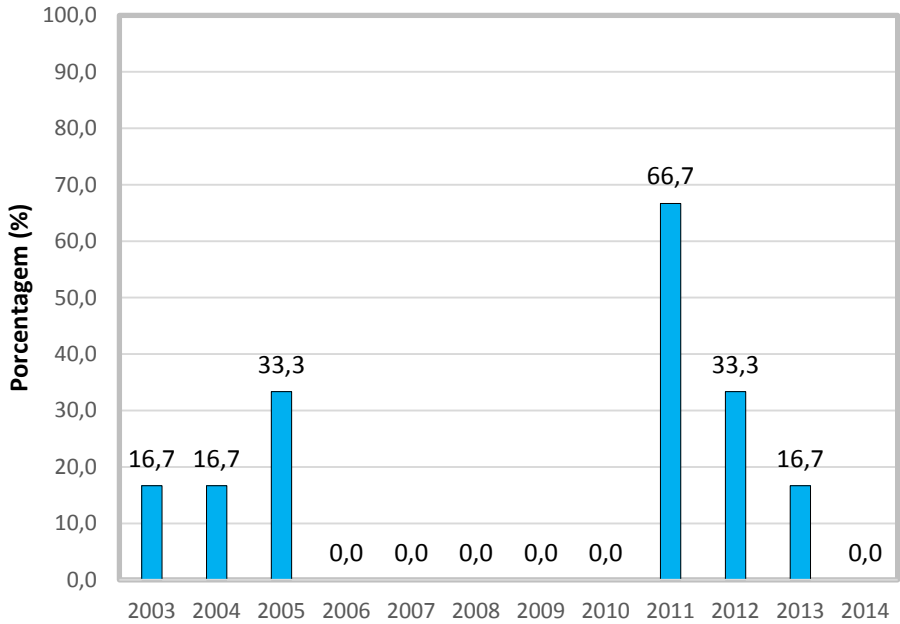


Evolução Temporal

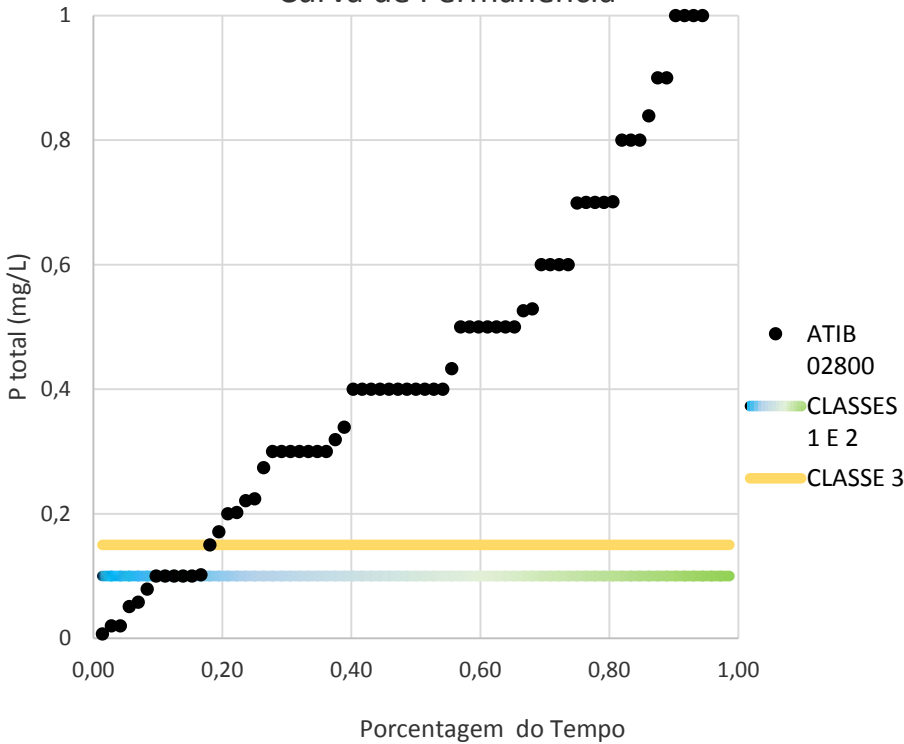


ATIB 02800 – Fósforo Total (mg/L)

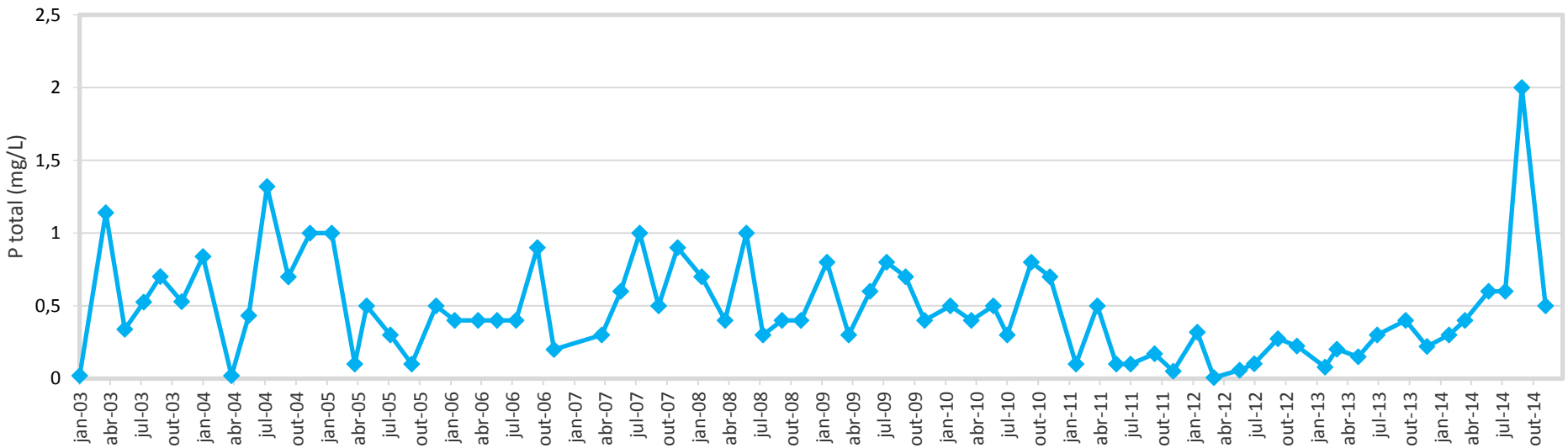
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

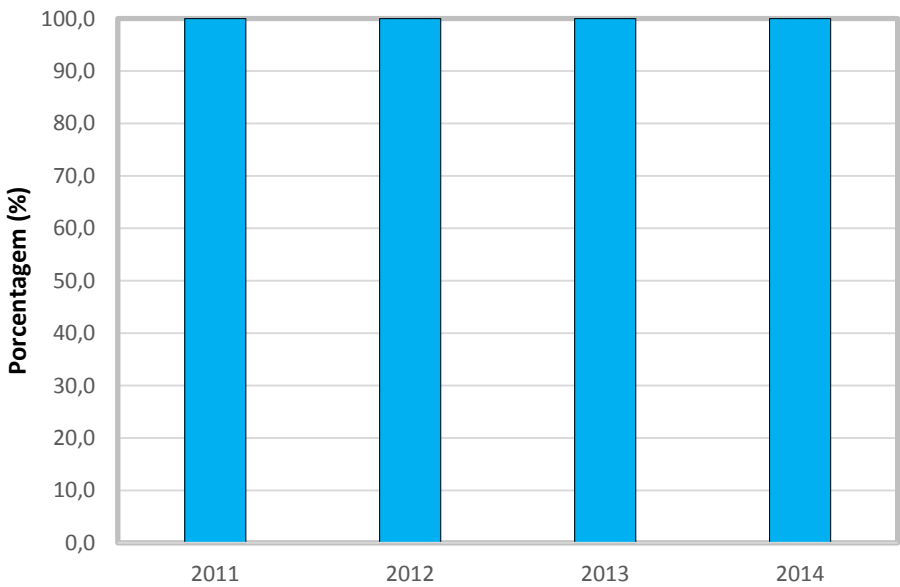


Evolução Temporal

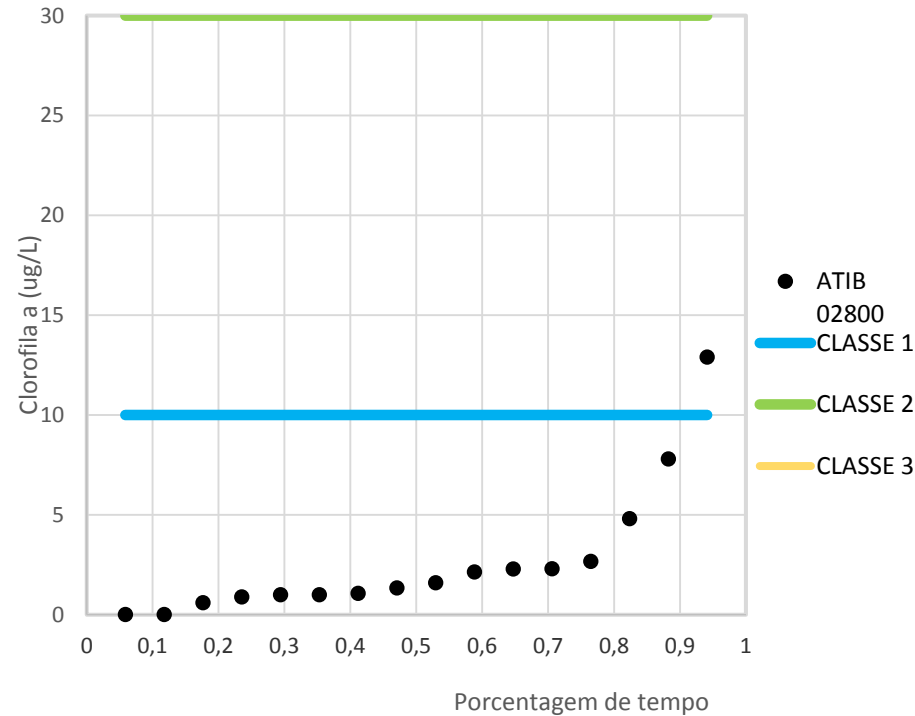


ATIB 02800 – Clorofila a (µg/L)

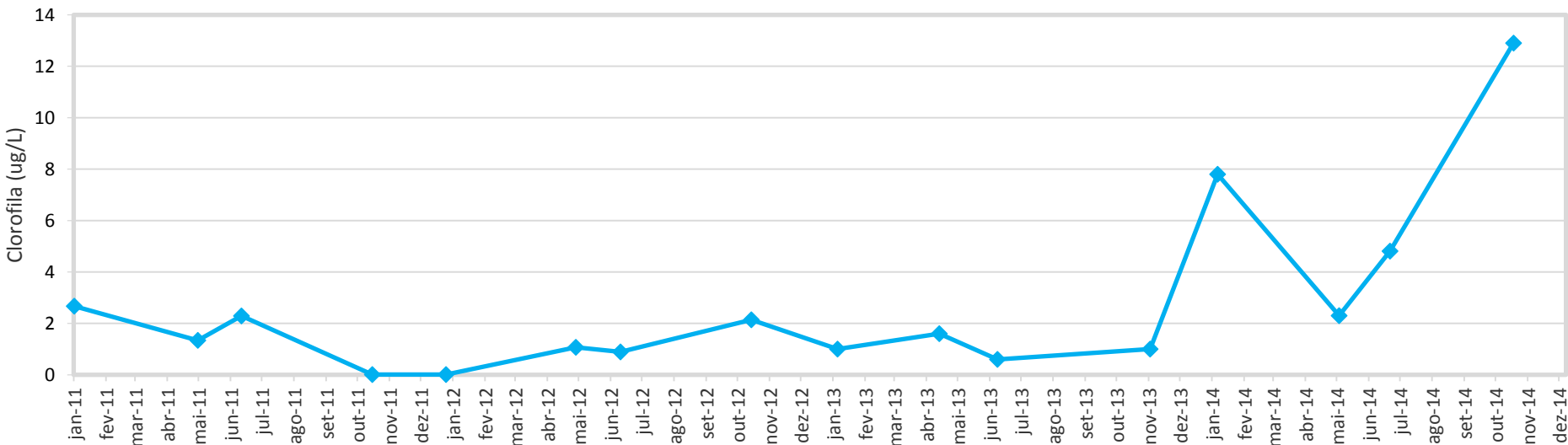
Porcentagem de Atendimento ao Padrão Classe 2 - Clorofila



Curva de Permanência

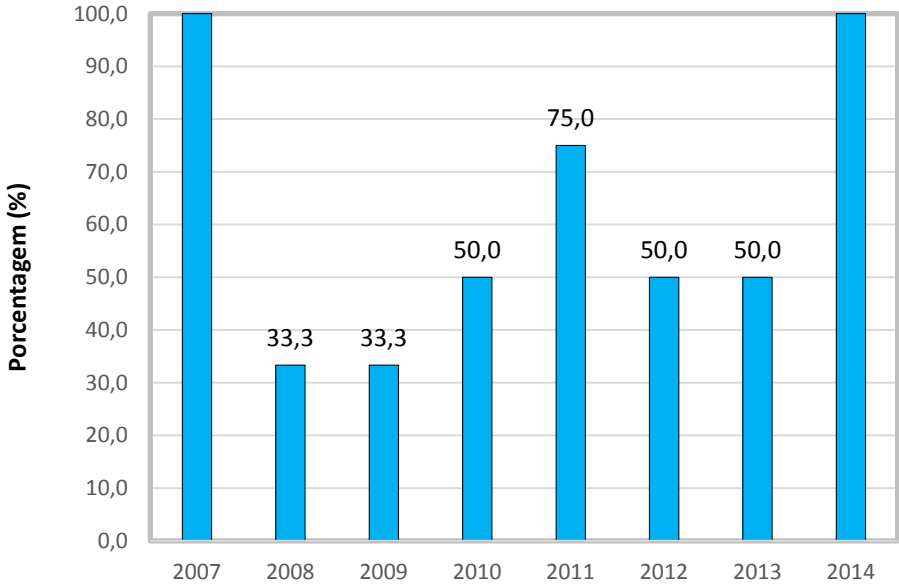


Evolução Temporal

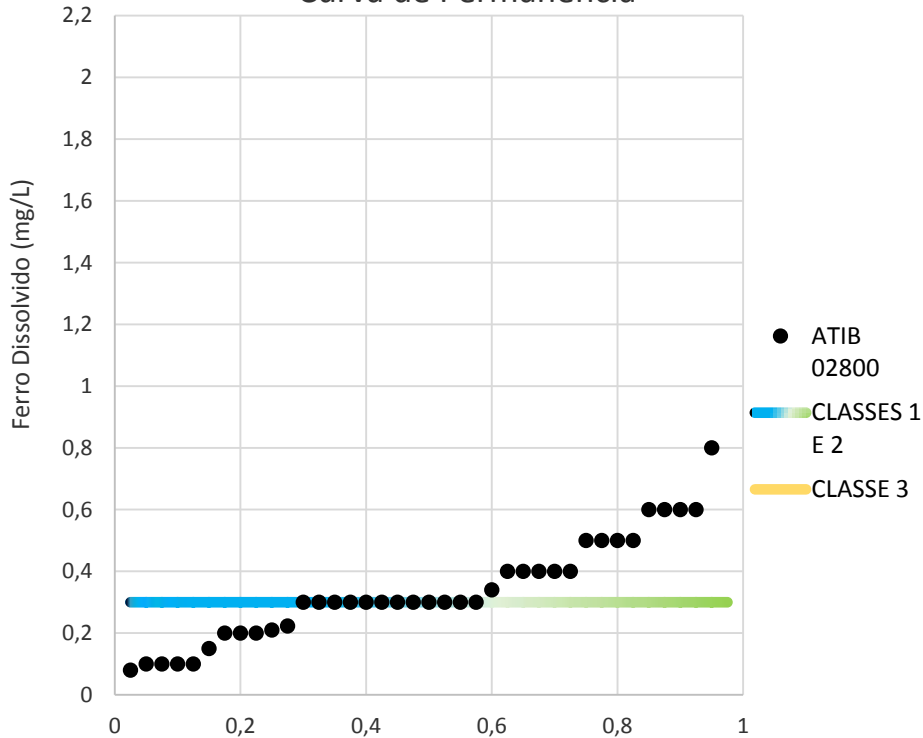


ATIB 02800 – Ferro Dissolvido (mg/L)

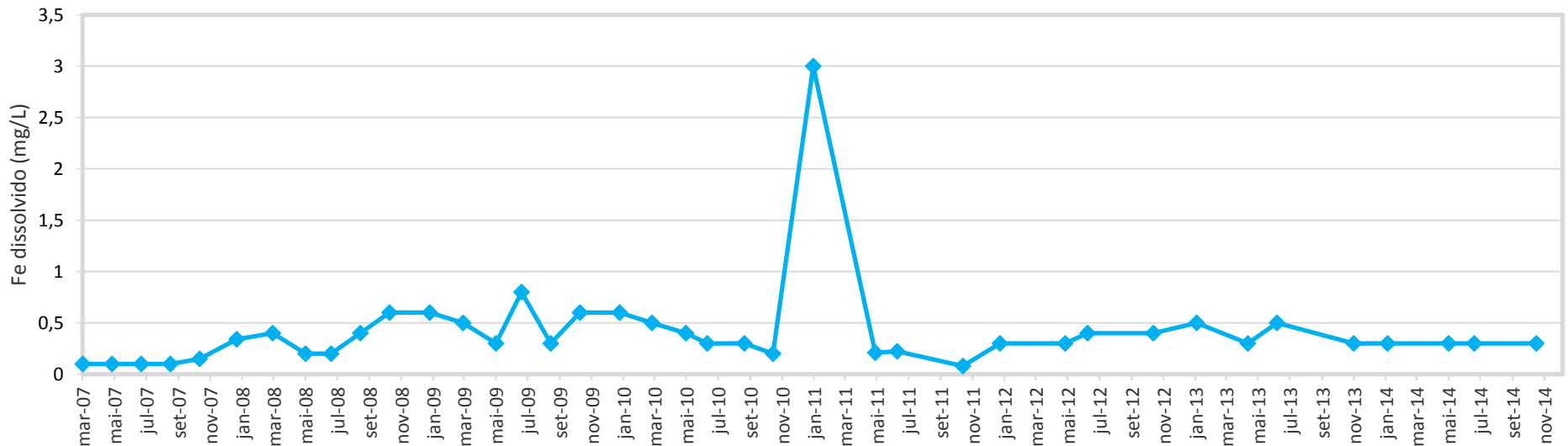
Porcentagem de Atendimento ao Padrão Classe 2 - Fe dissolvido



Curva de Permanência

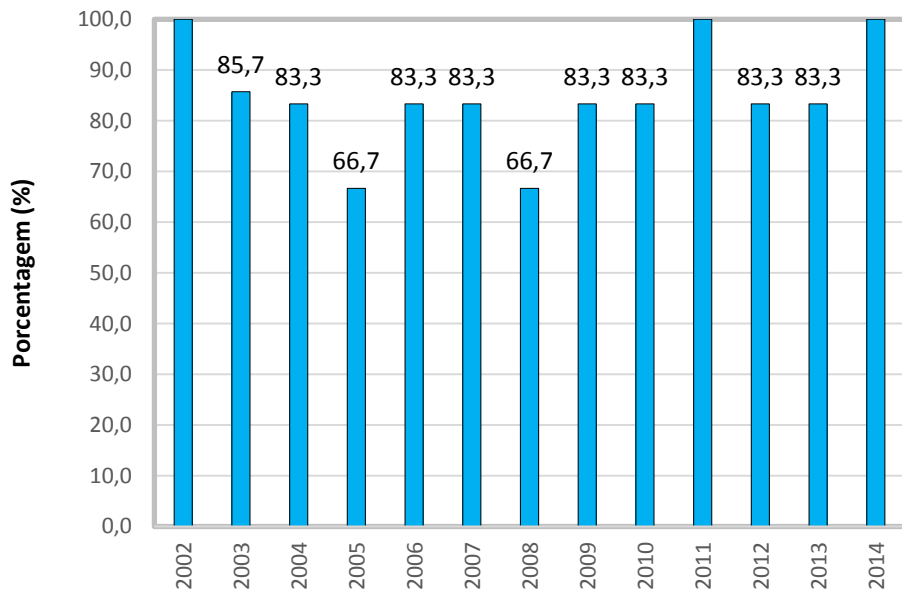


Evolução Temporal

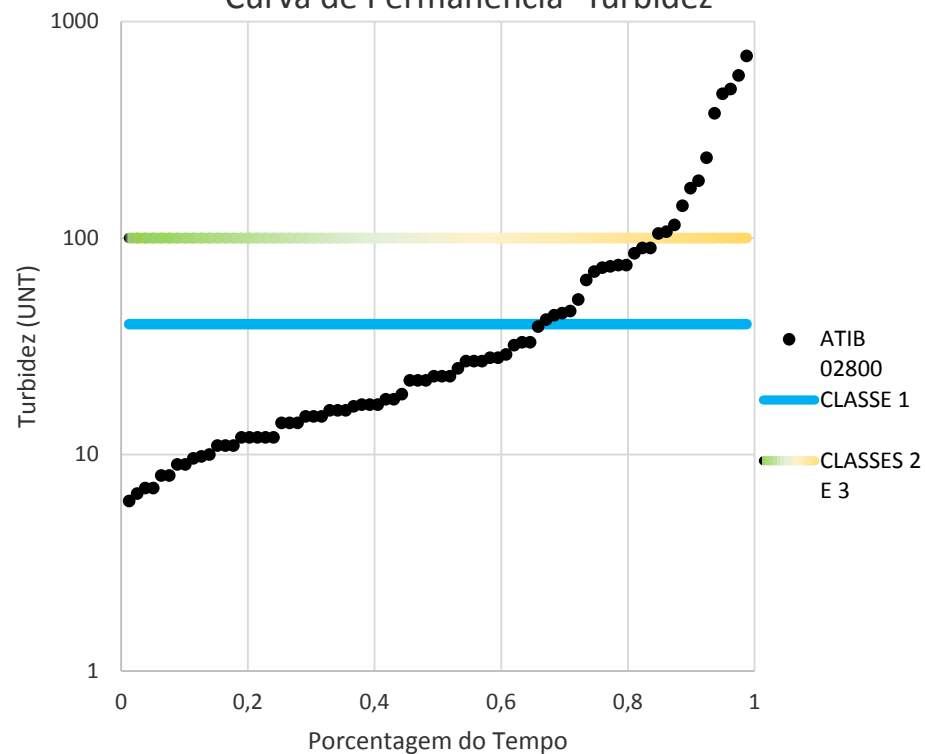


ATIB 02800 – Turbidez (UNT)

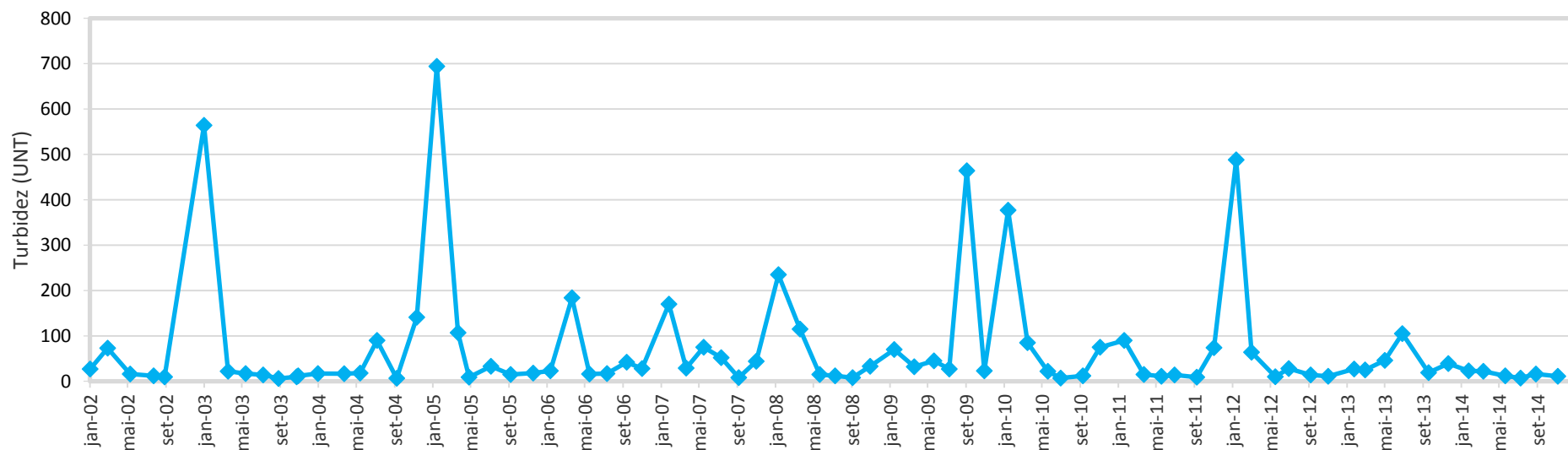
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

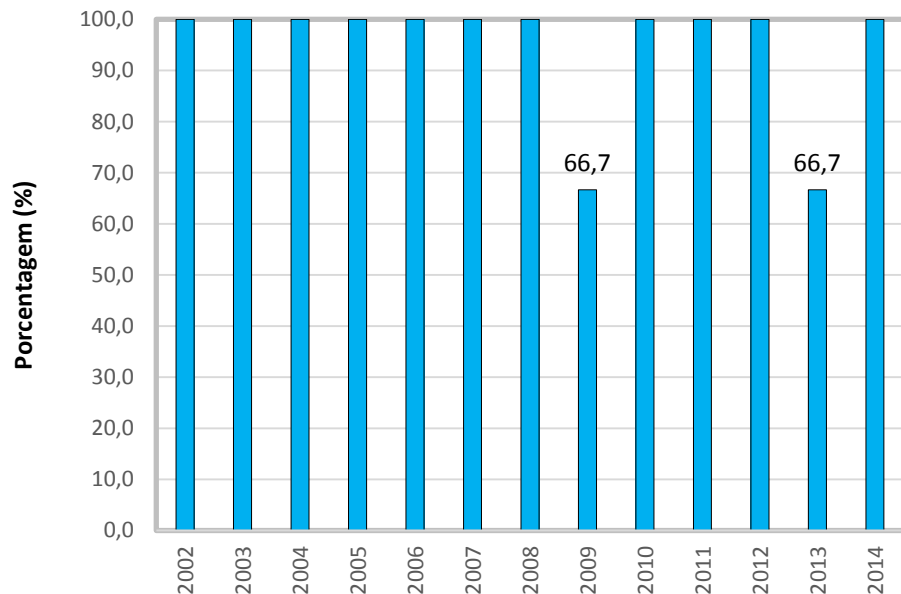


Evolução Temporal

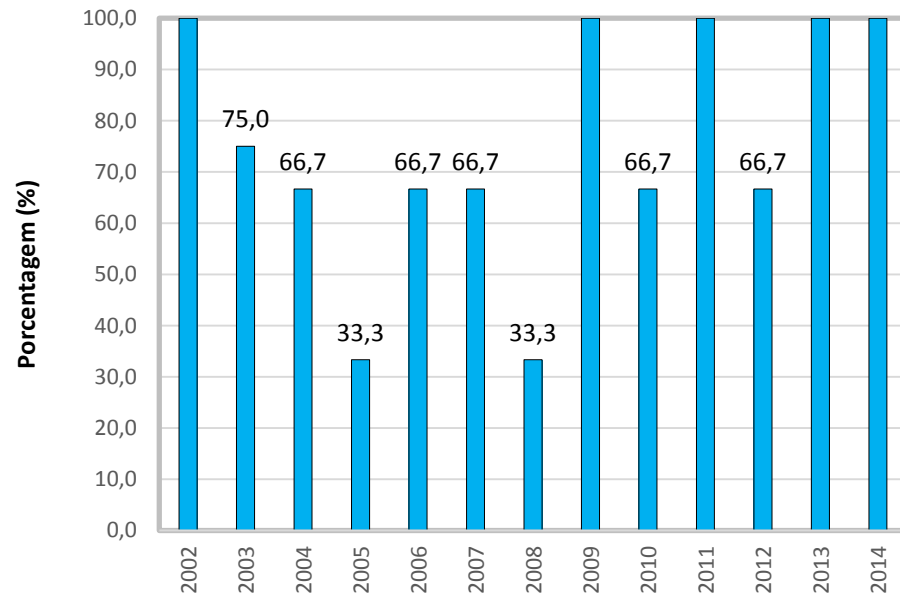


ATIB 02800 – Turbidez (Período Seco x Período Chuvoso)

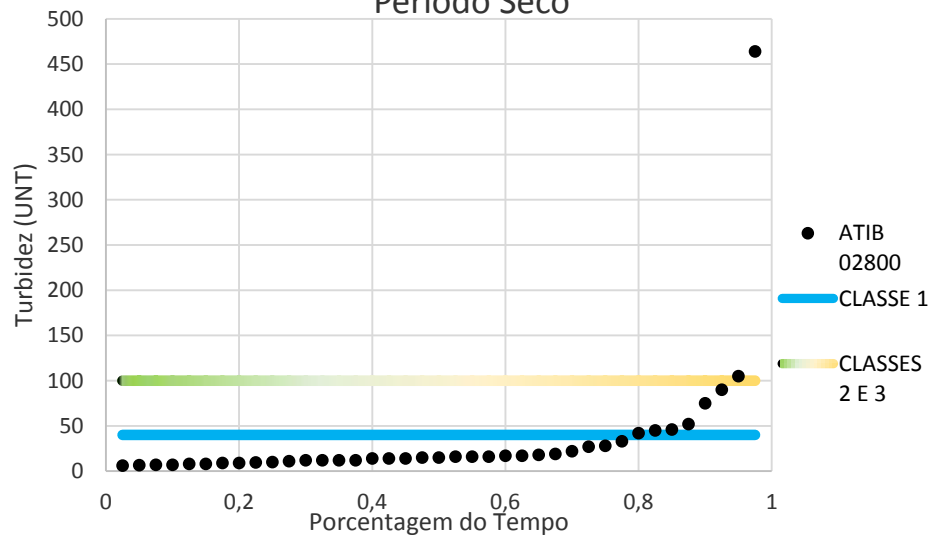
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



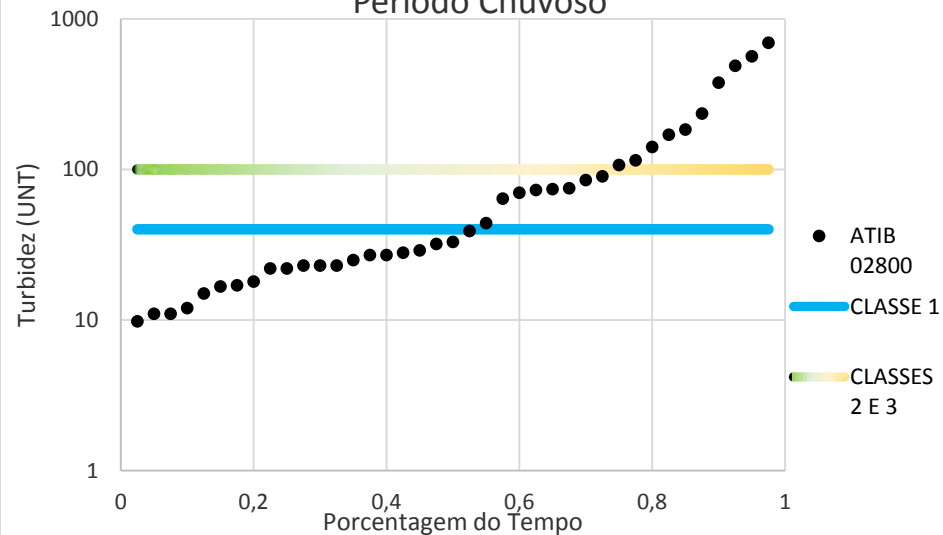
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

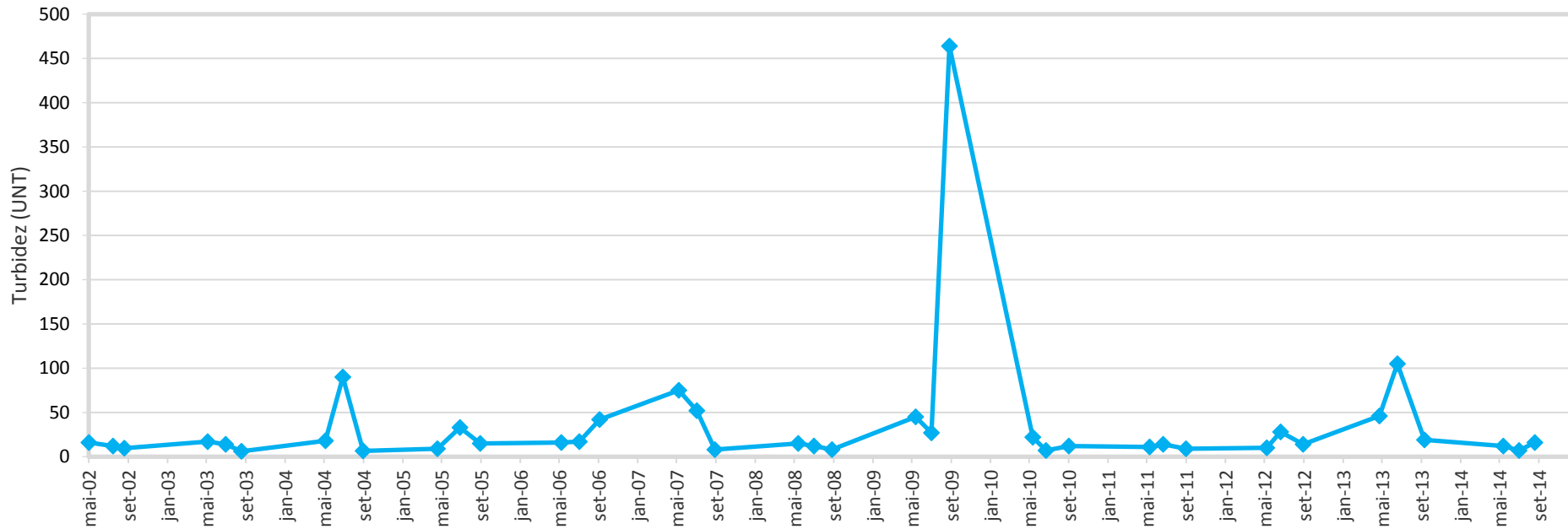


Curva de Permanência- Turbidez
Período Chuvoso

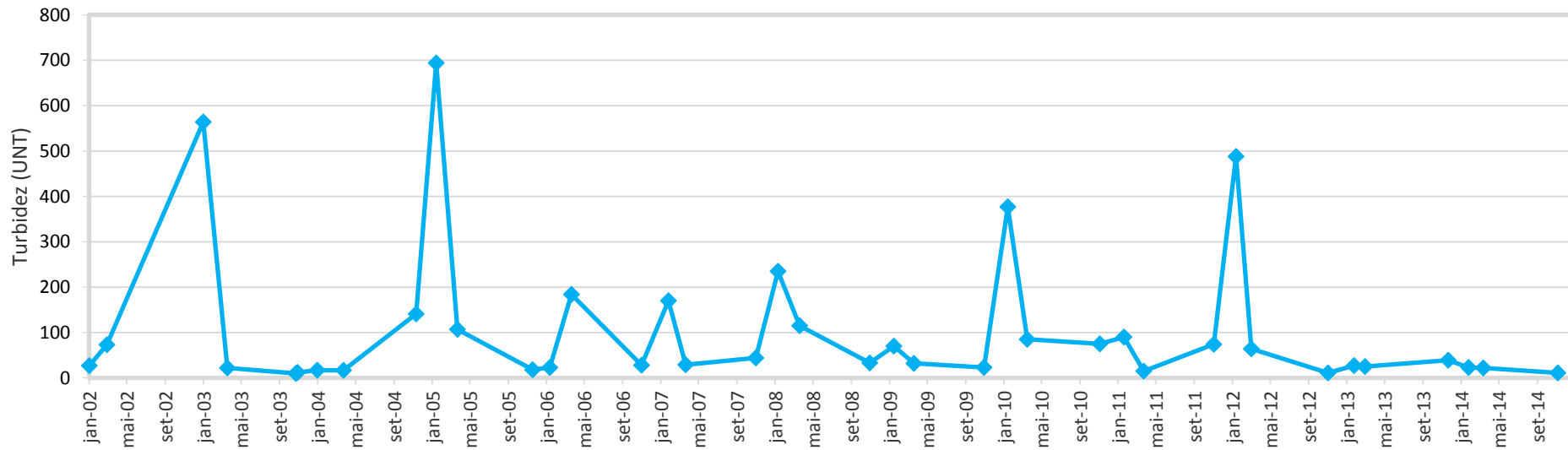


ATIB 02800 – Turbidez (Período Seco x Período Chuvoso)

Evolução Tempora - Período Seco



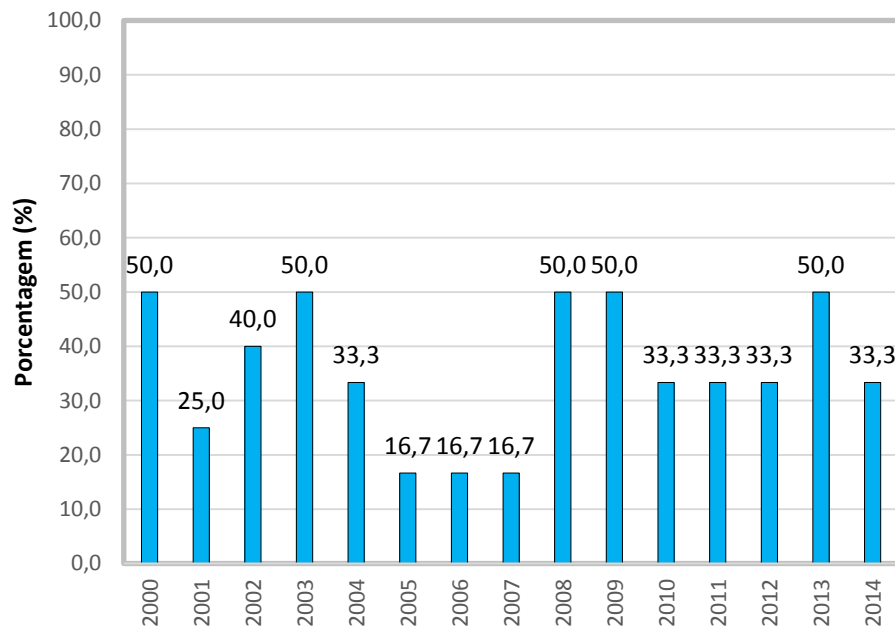
Evolução Tempora - Período Chuvoso



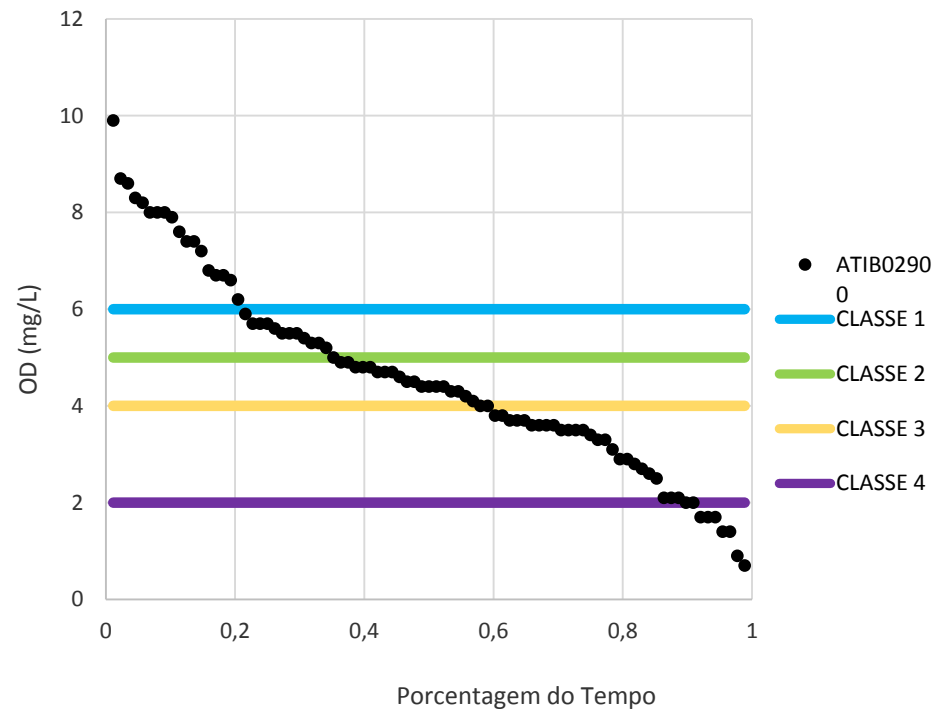
Rio Atibaia
ATIB 02900

ATIB 02900 – Oxigênio Dissolvido (mg/L)

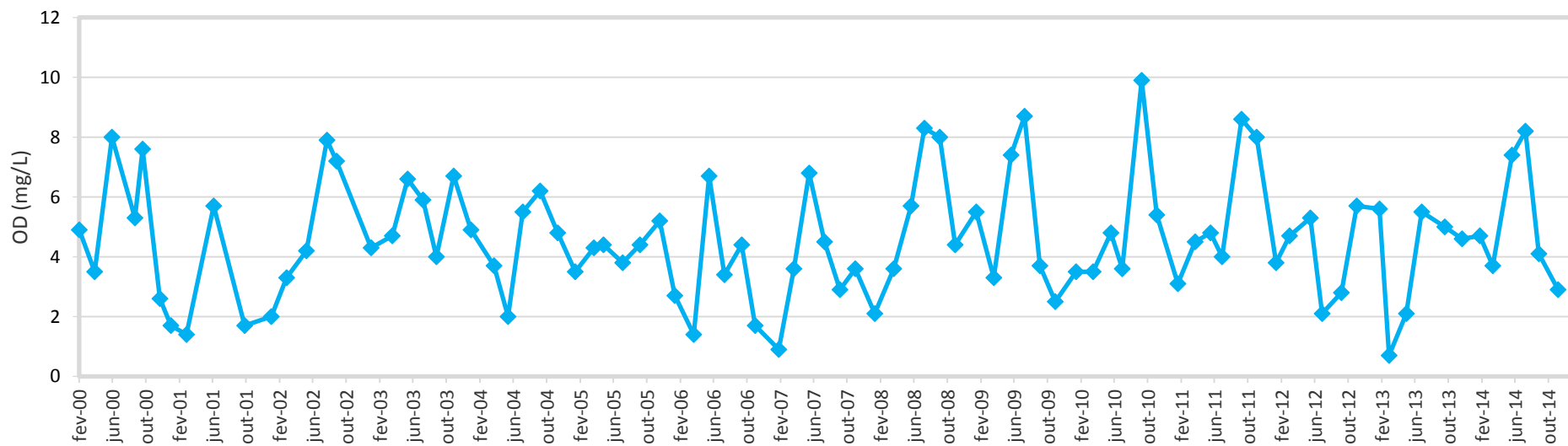
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

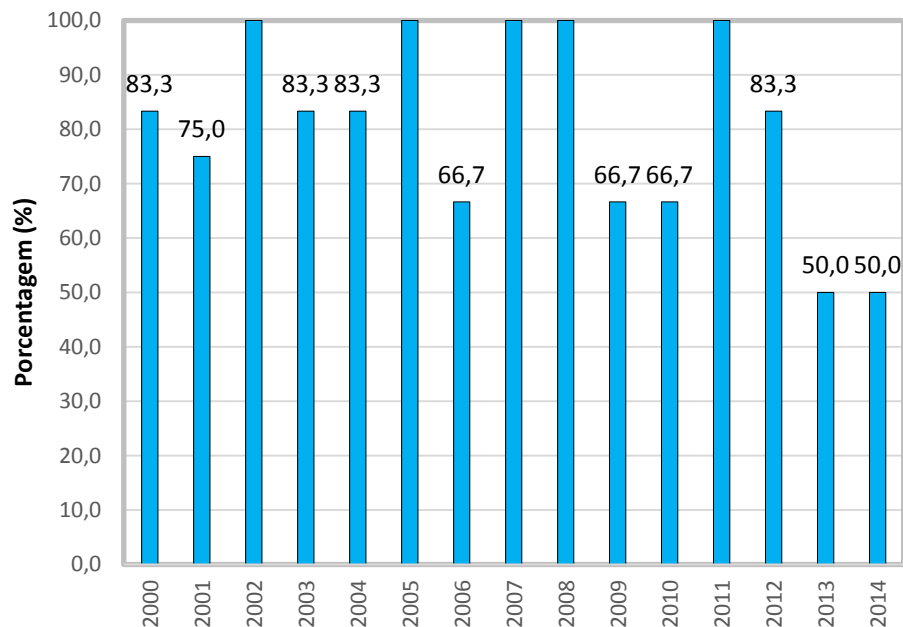


Evolução Temporal

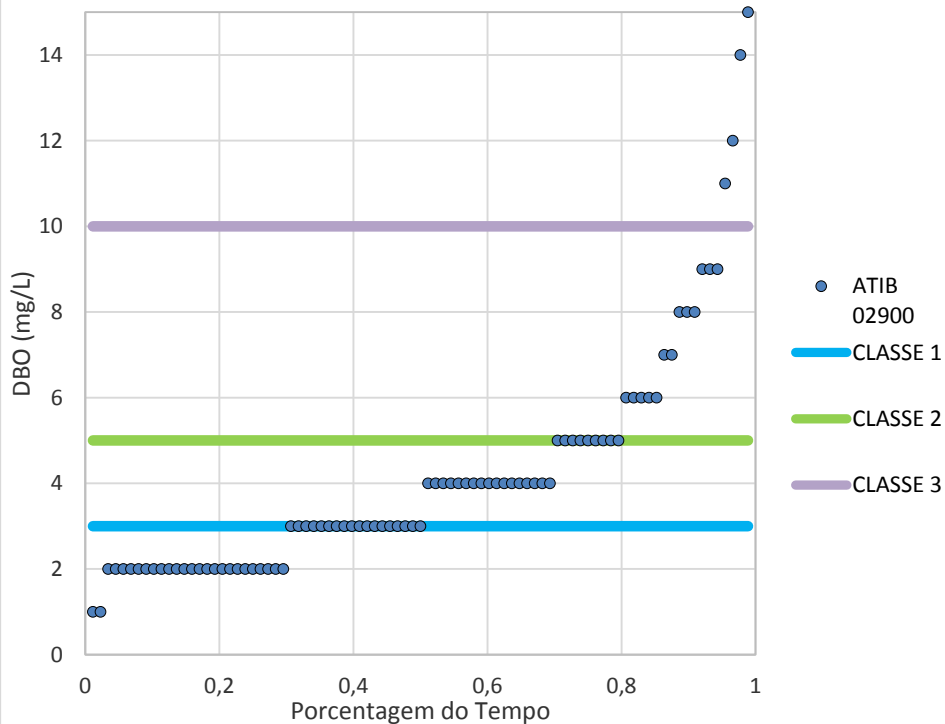


ATIB 02900 – DBO (mg/L)

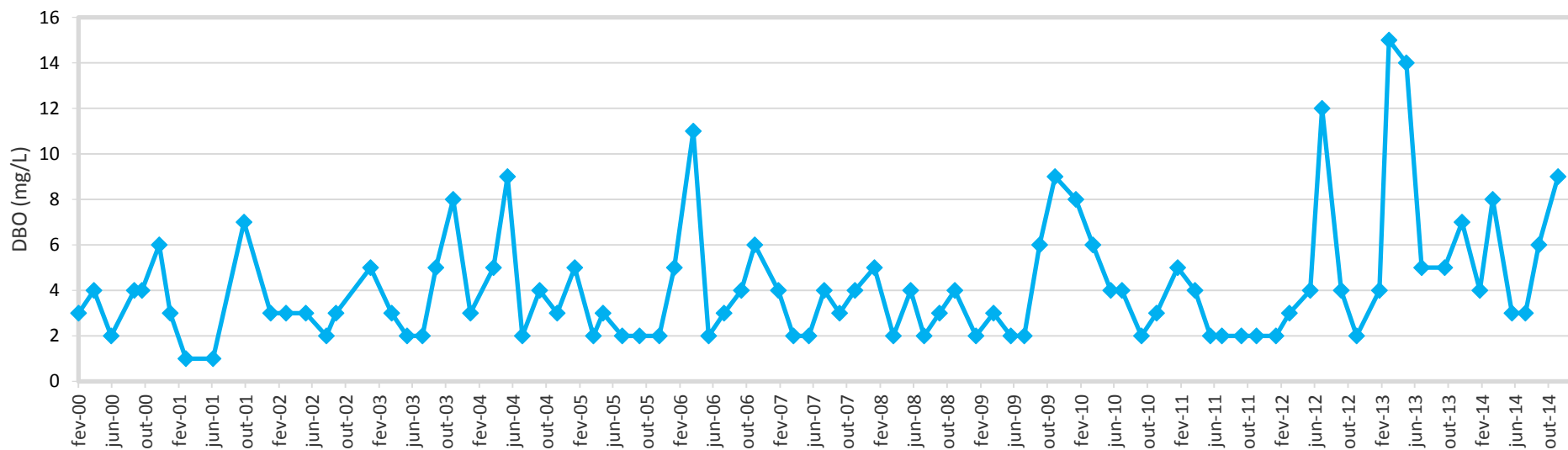
Porcentagem de Atendimento ao Padrão Classe 2 - DBO



Curva de Permanência

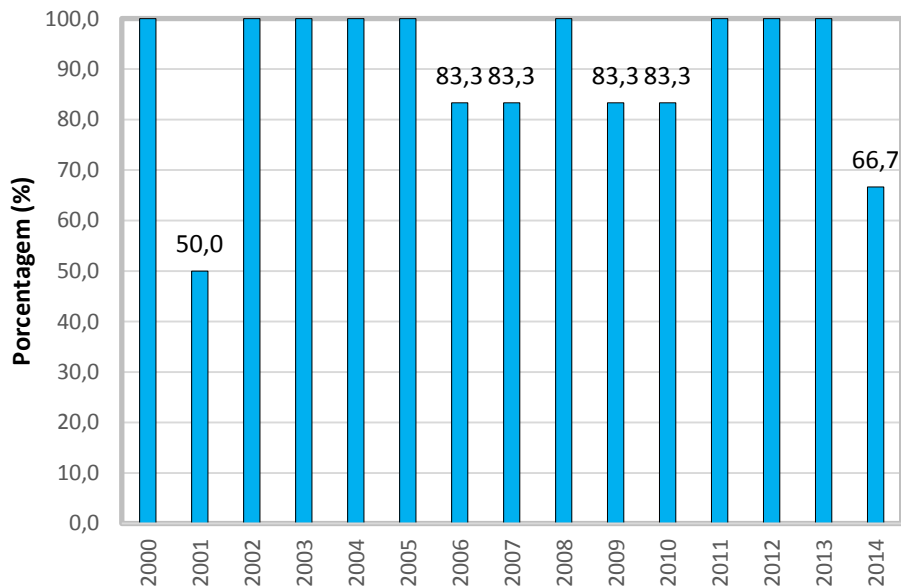


Evolução Temporal

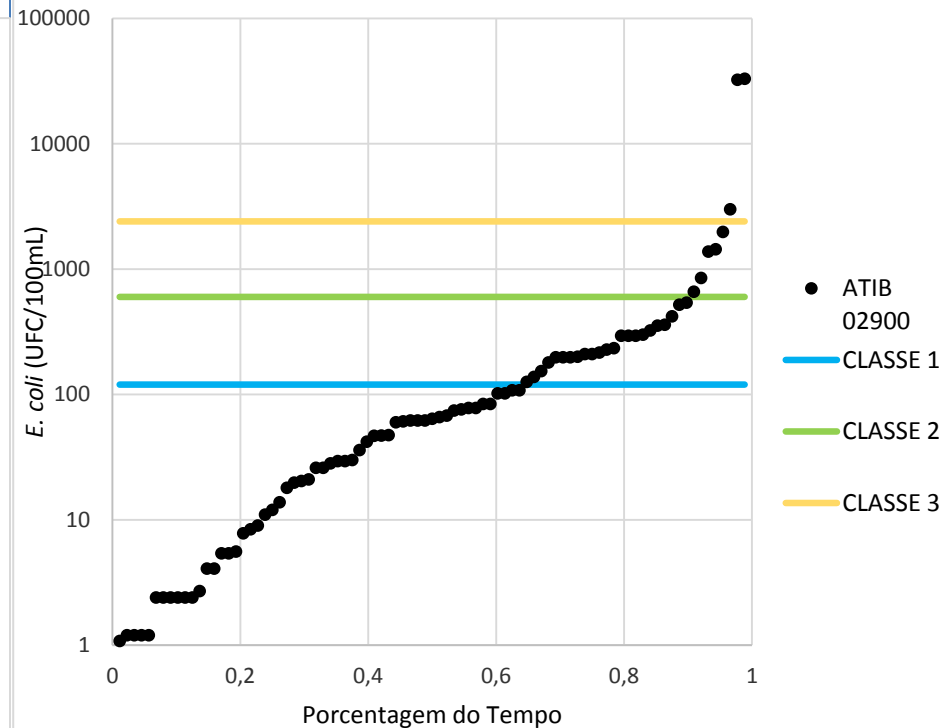


ATIB 02900 – *Escherichia coli* (UFC/100mL)

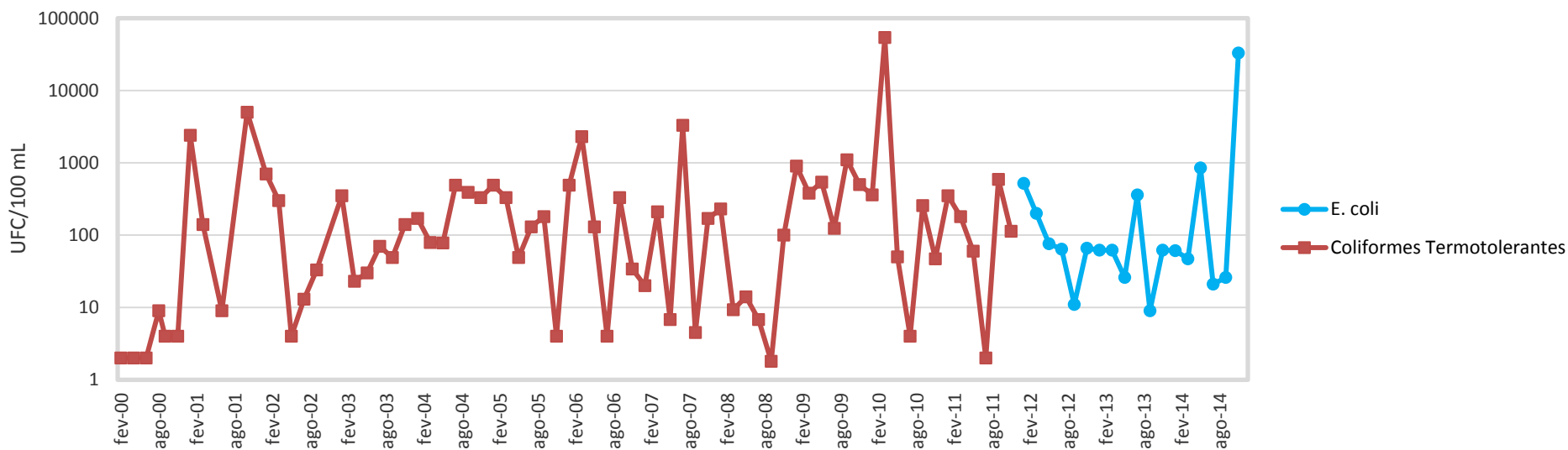
Porcentagem de Atendimento ao Padrão Classe 2 - Colif. Term. e *E. coli*



Curva de Permanência

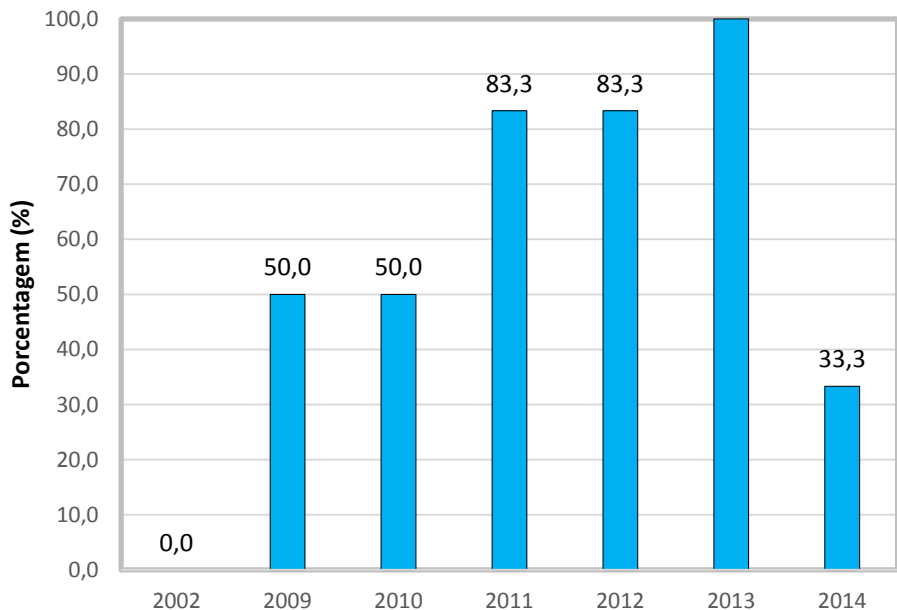


Evolução Temporal

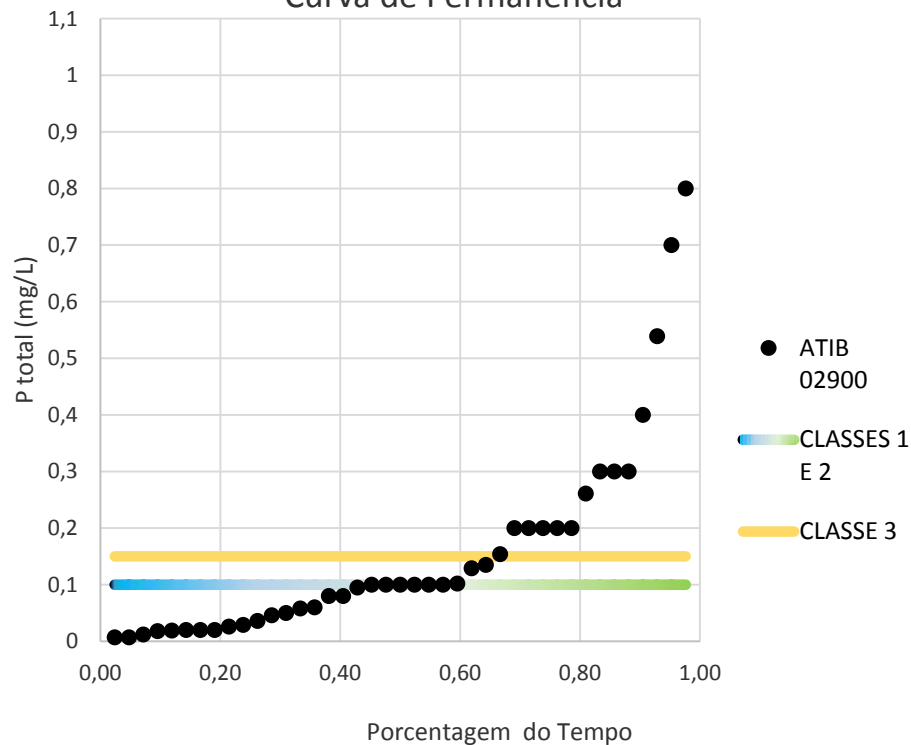


ATIB 02900 – Fósforo Total (mg/L)

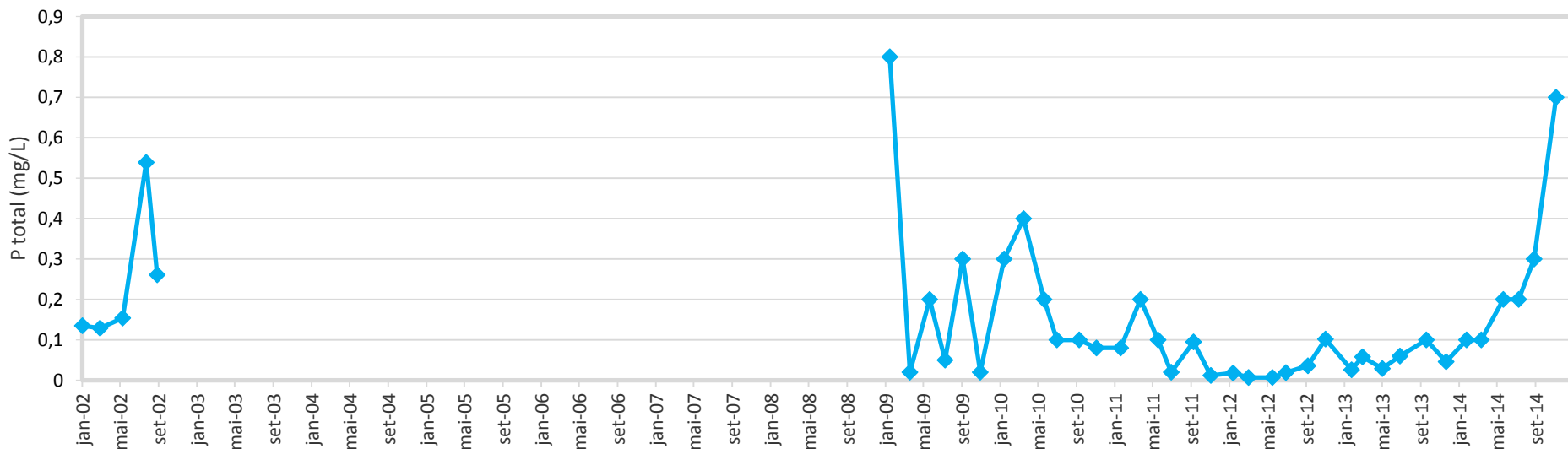
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

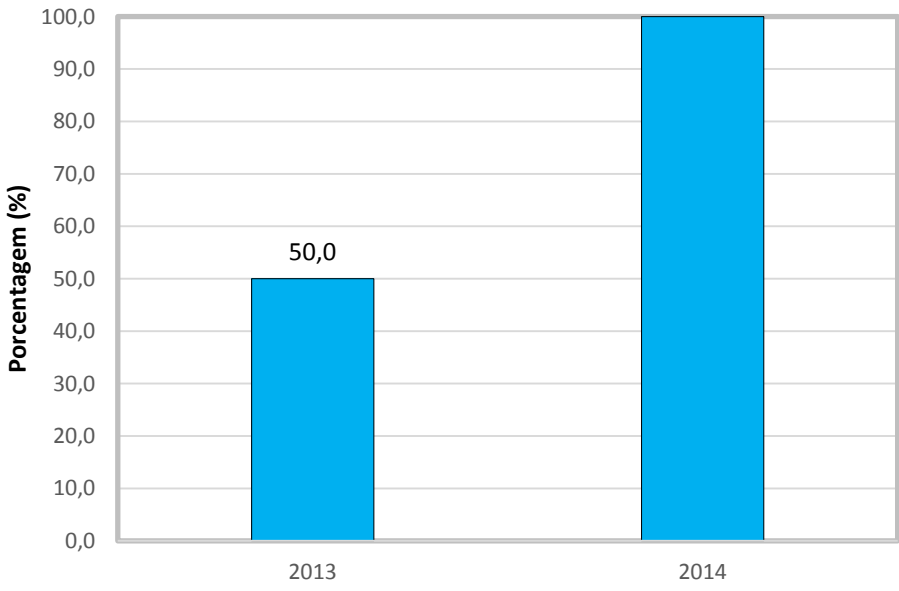


Evolução Temporal

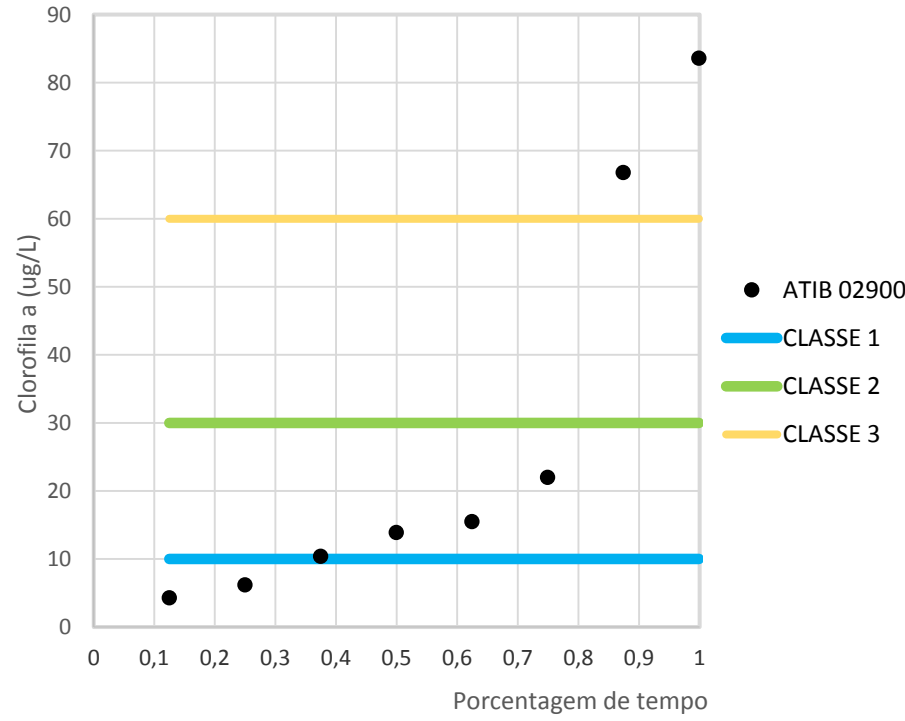


ATIB 02900 – Clorofila a (µg/L)

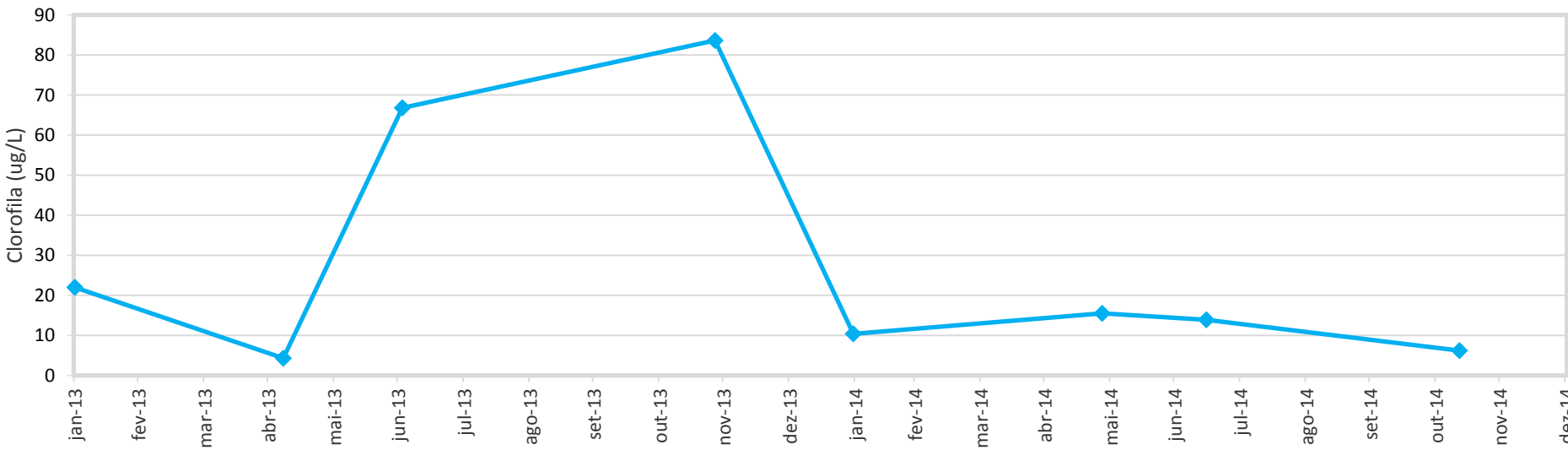
Porcentagem de Atendimento ao Padrão Classe 2 - Clorofila



Curva de Permanência

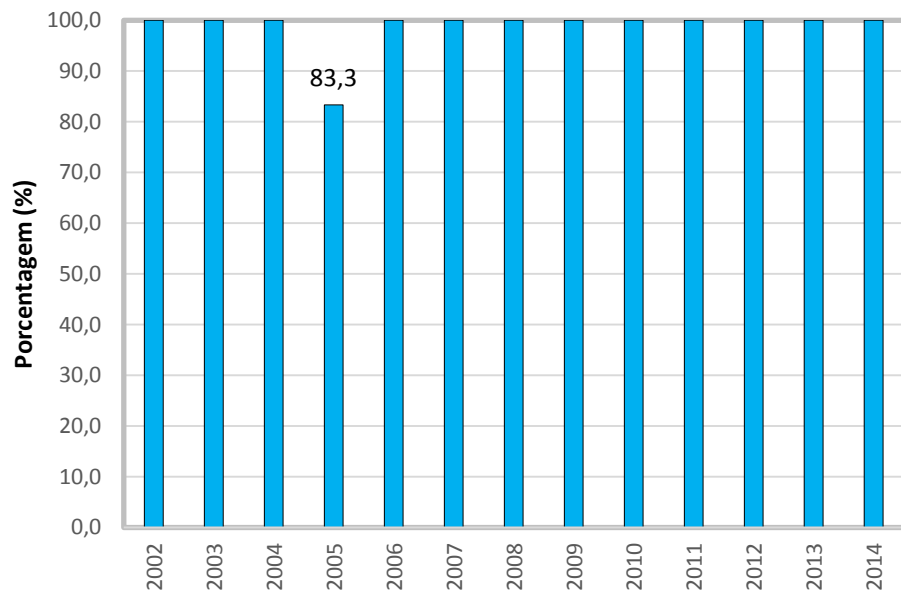


Evolução Temporal

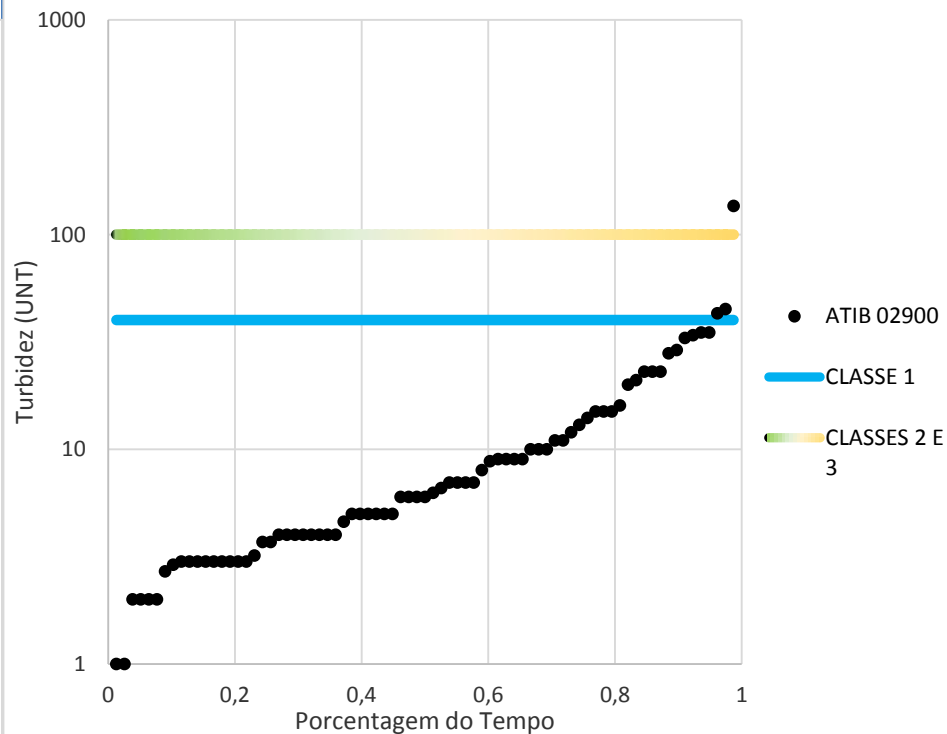


ATIB 02900 – Turbidez (UNT)

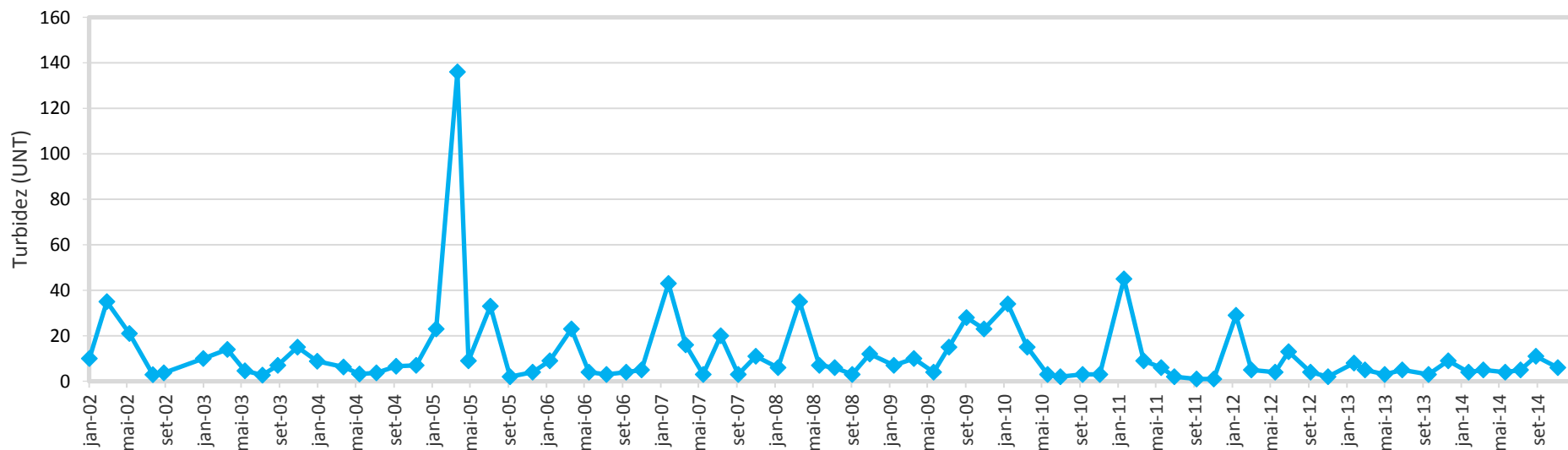
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

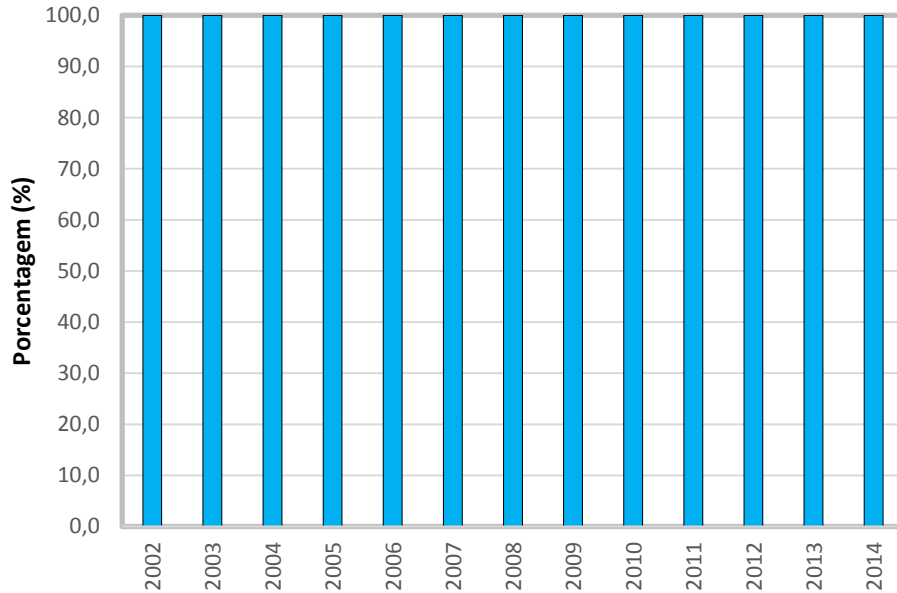


Evolução Temporal

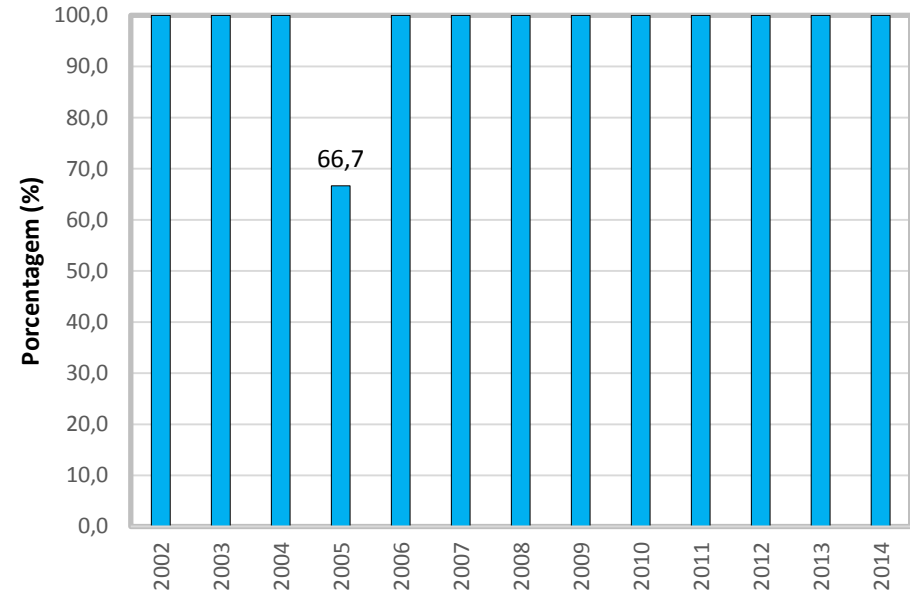


ATIB 02900 – Turbidez (Período Seco x Período Chuvoso)

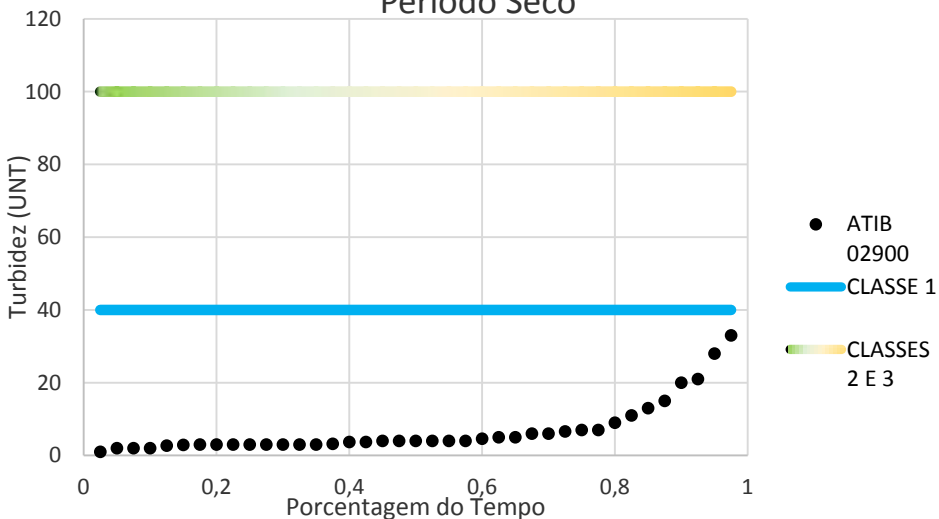
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



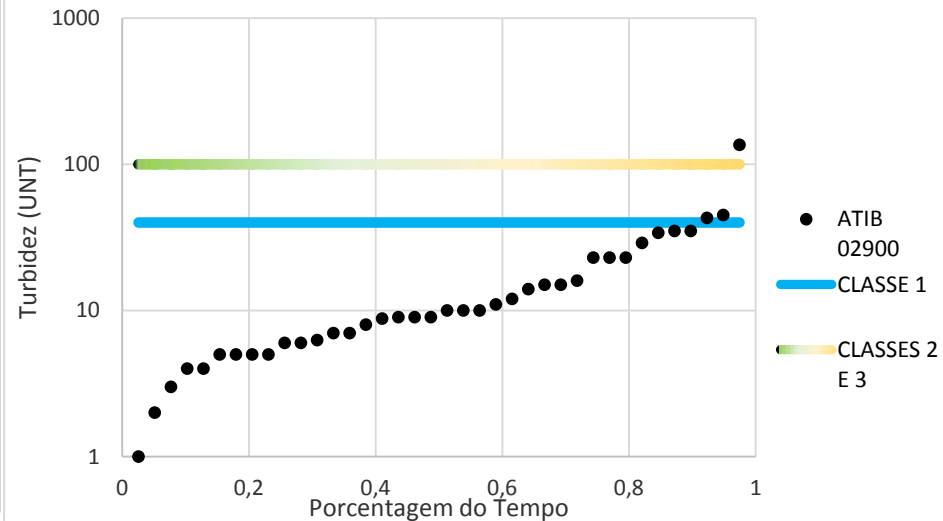
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

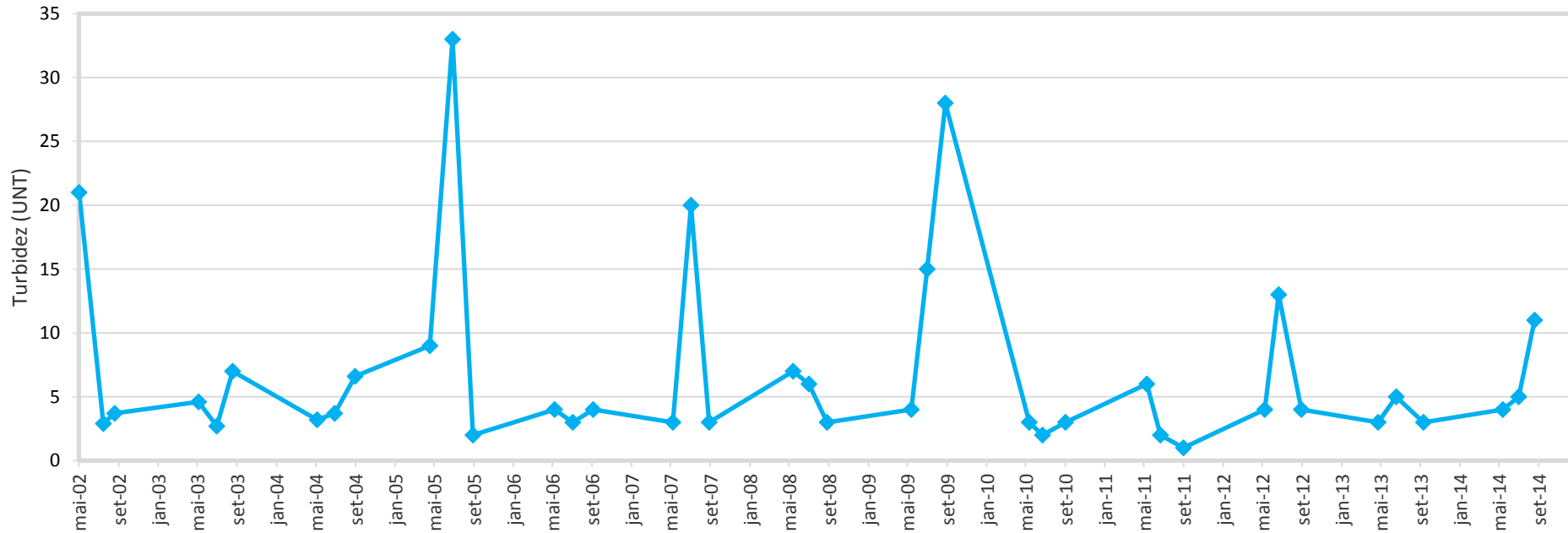


Curva de Permanência- Turbidez
Período Chuvoso

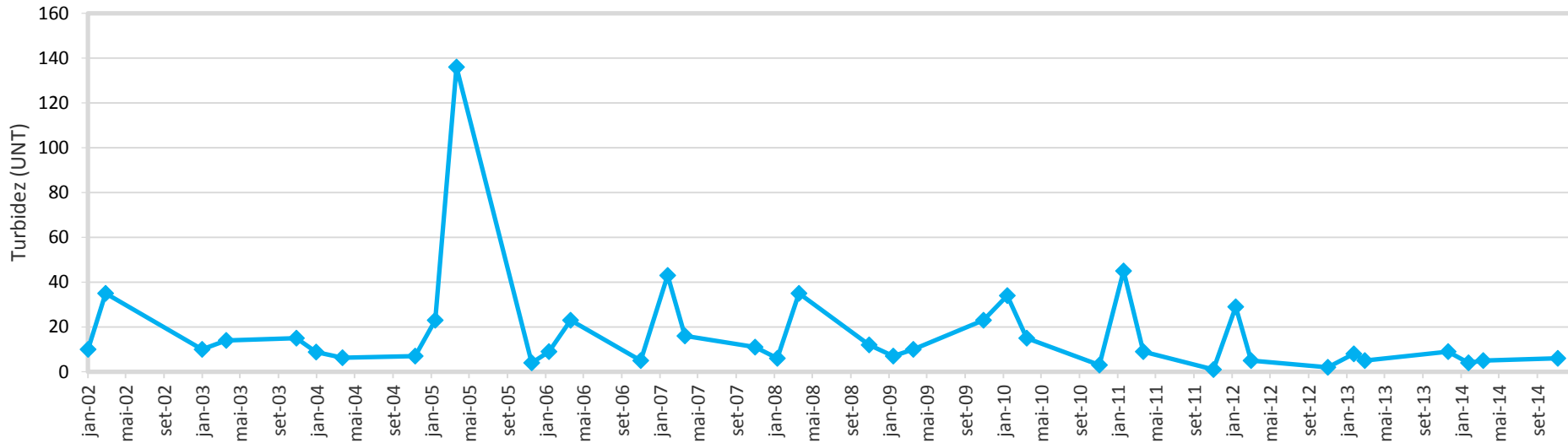


ATIB 02900 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



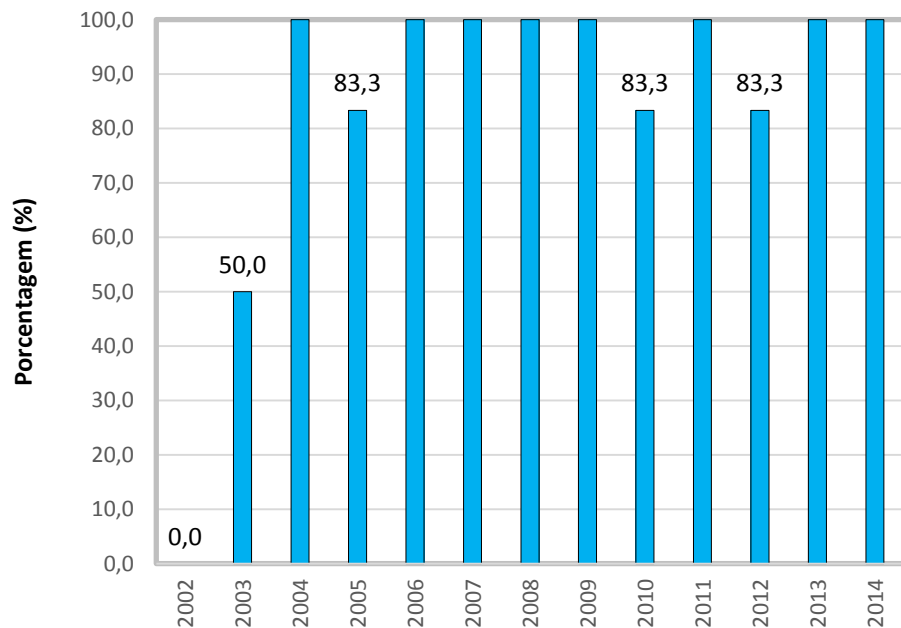
Evolução Temporal - Período Chuvoso



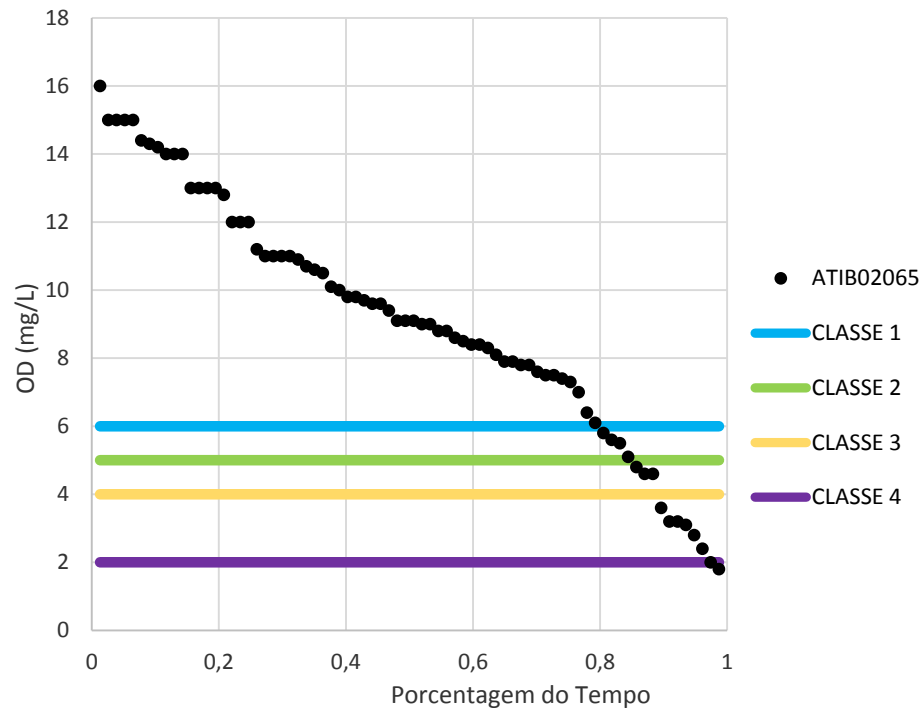
Ribeirão Pinheiros
PINO 02100

PINO 02100 – Oxigênio Dissolvido (mg/L)

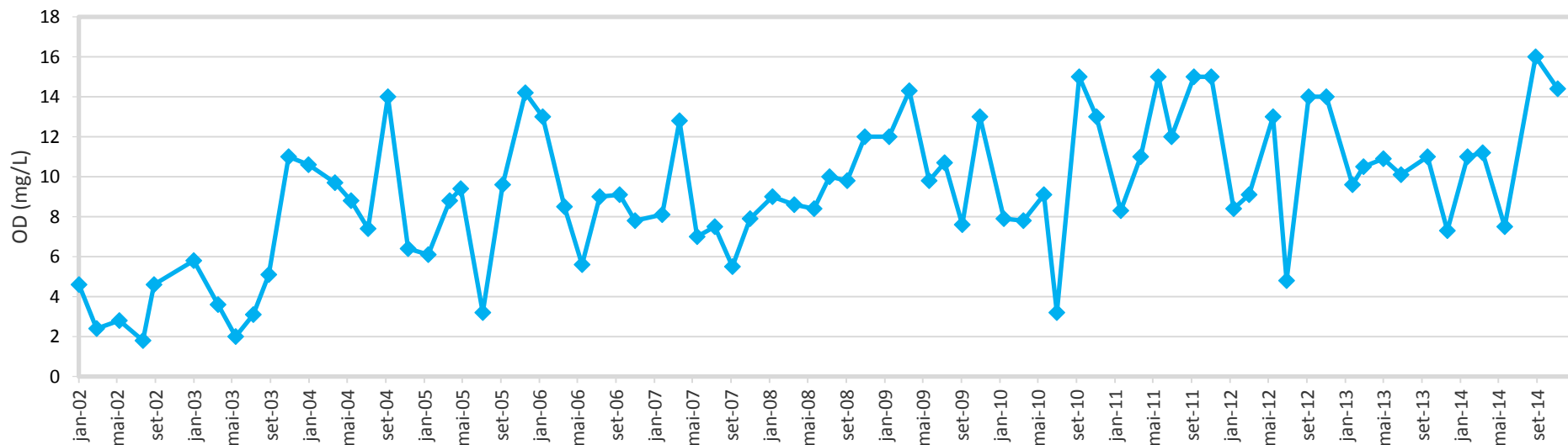
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

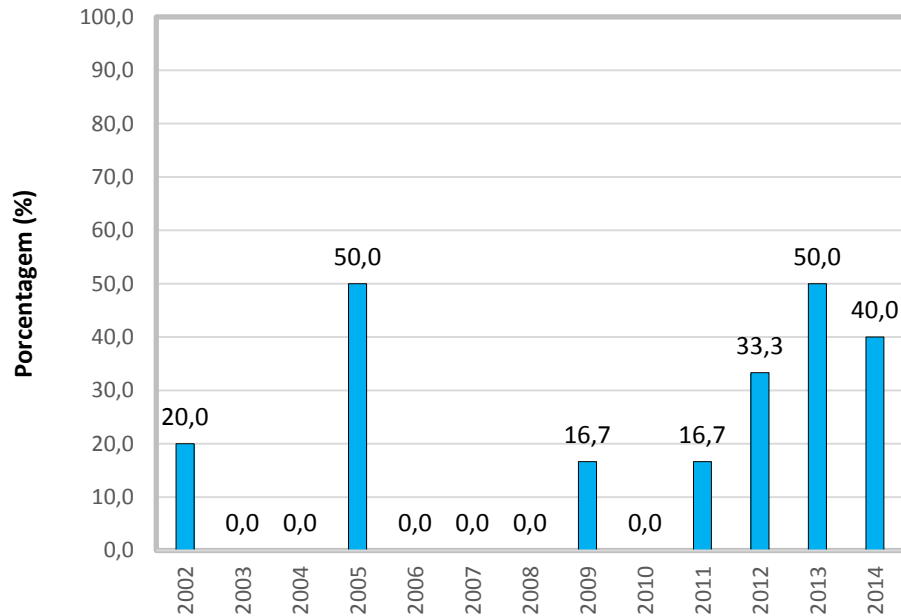


Evolução Temporal

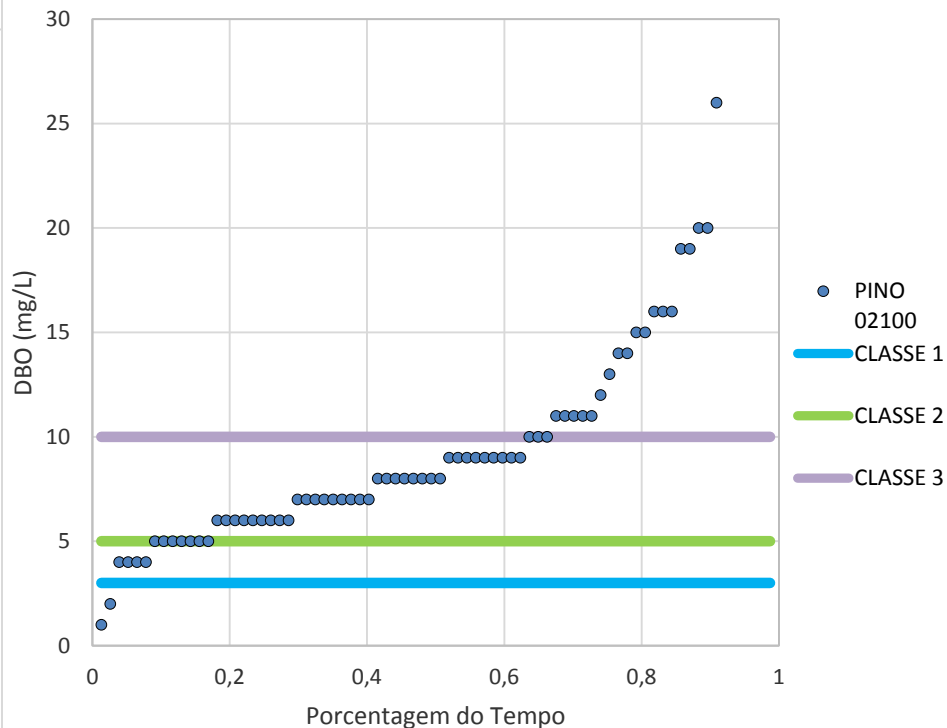


PINO 02100 – DBO (mg/L)

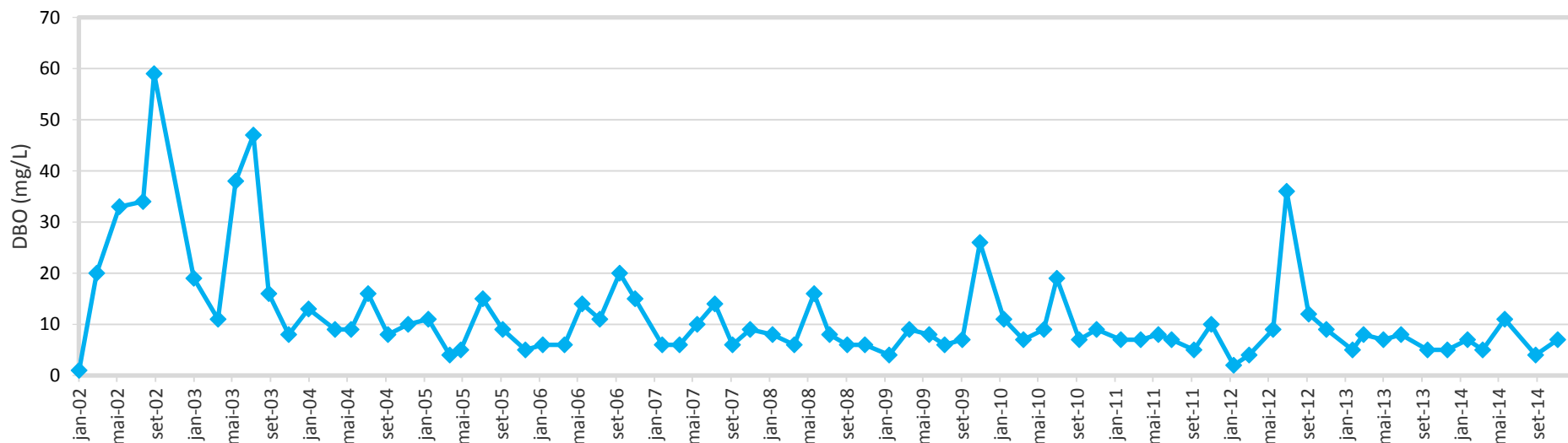
Porcentagem de Atendimento ao Padrão Classe 2 - DBO



Curva de Permanência

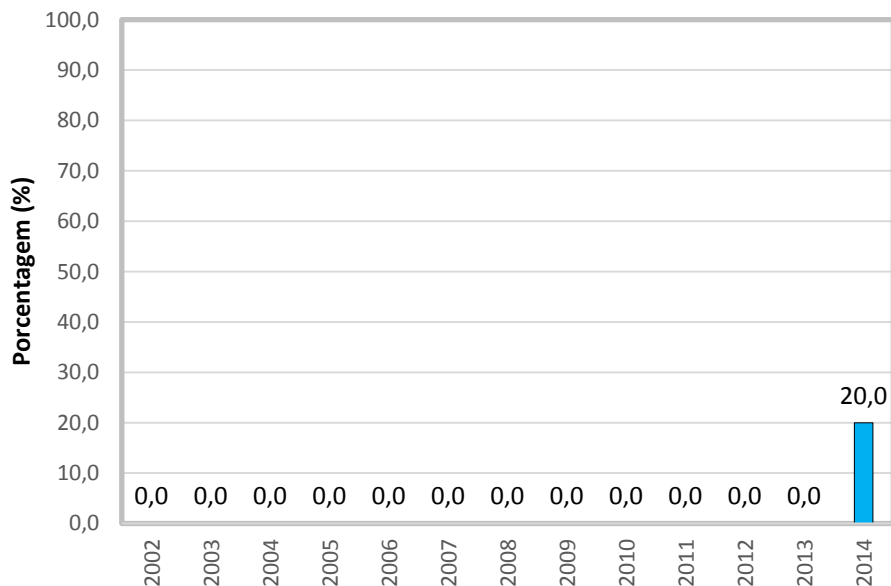


Evolução Temporal

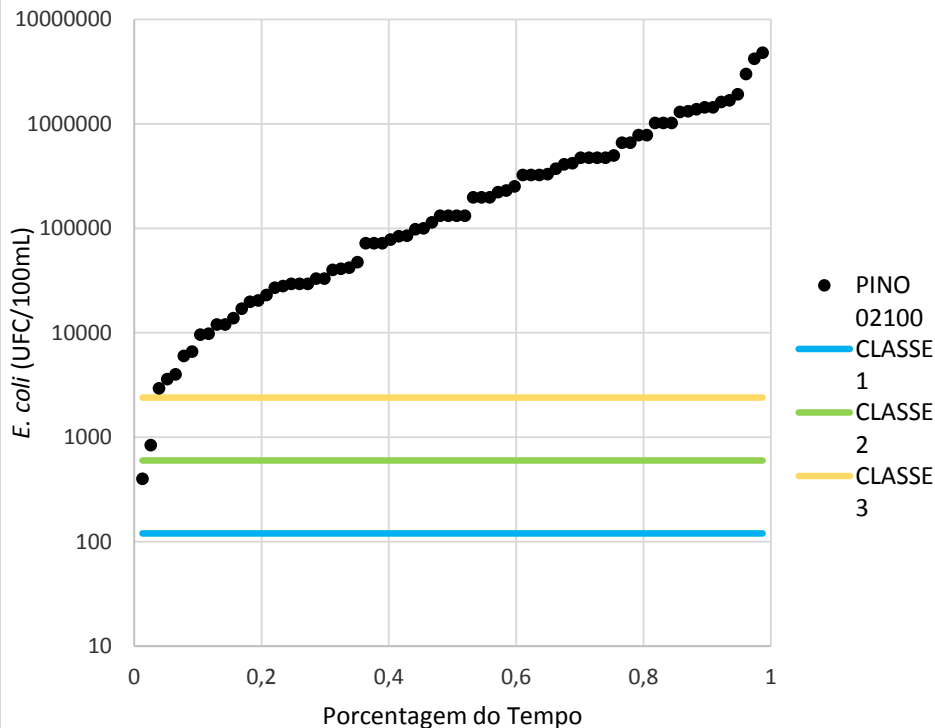


PINO 02100 – *Escherichia coli* (UFC/100mL)

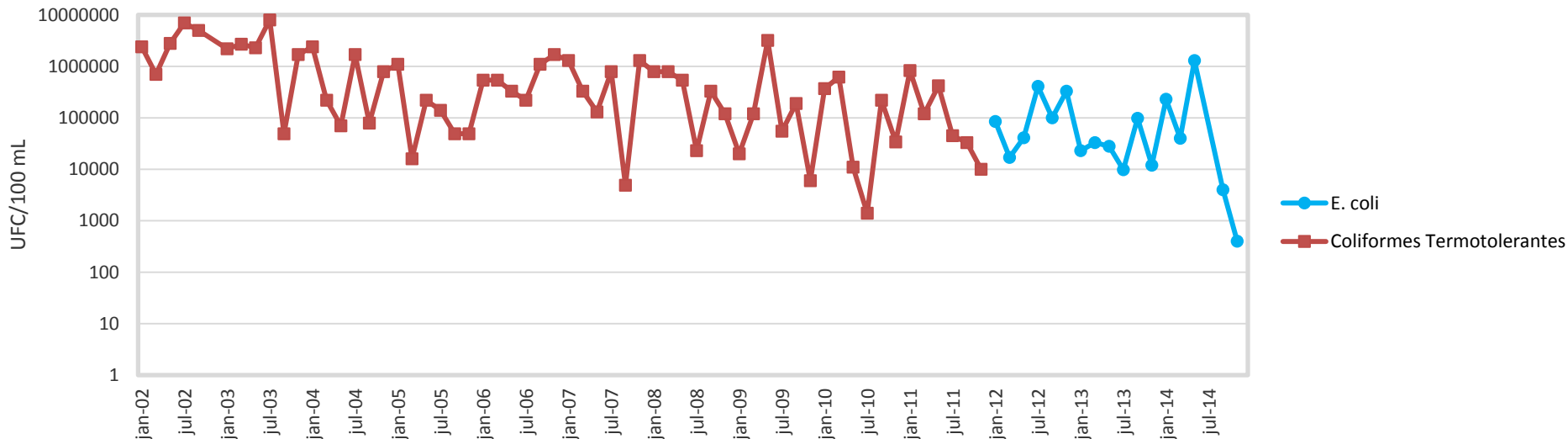
Porcentagem de Atendimento ao Padrão Classe 2 - Colif.
Term. e E. coli



Curva de Permanência

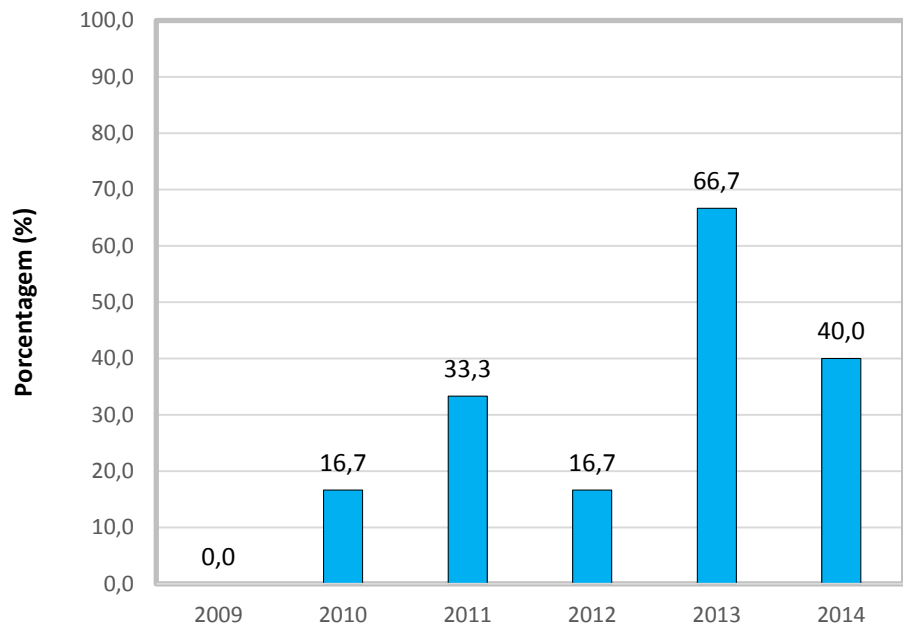


Evolução Temporal

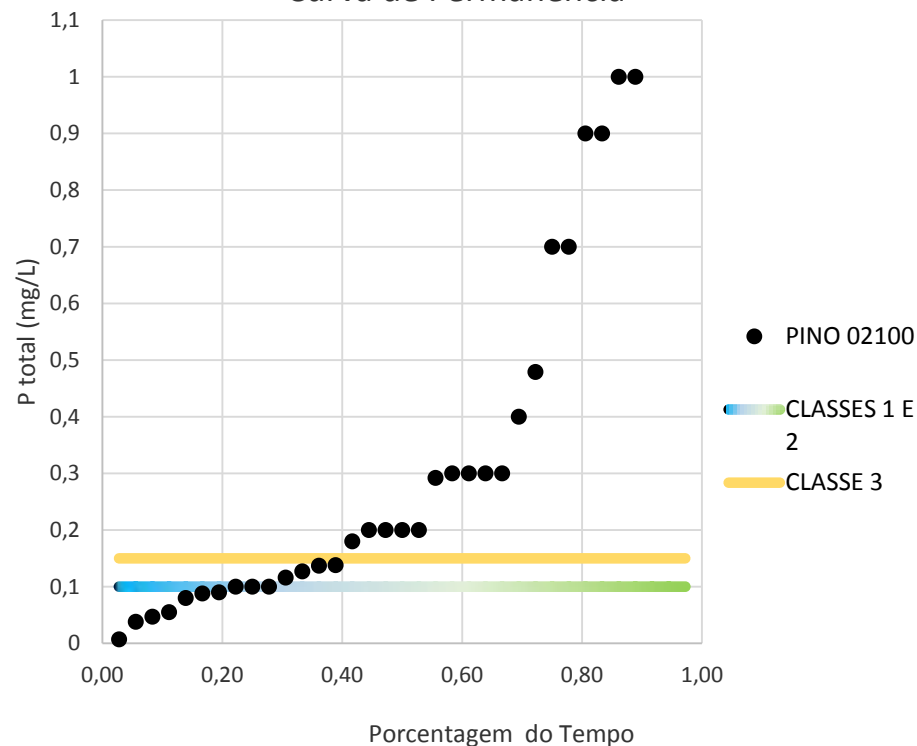


PINO 02100 – Fósforo Total (mg/L)

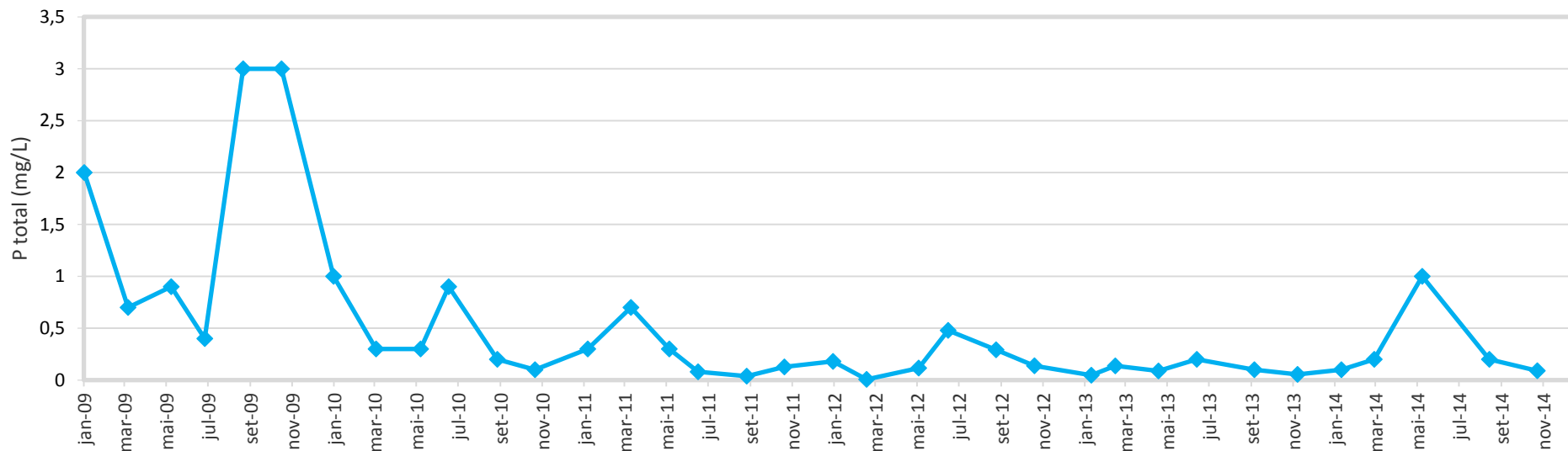
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

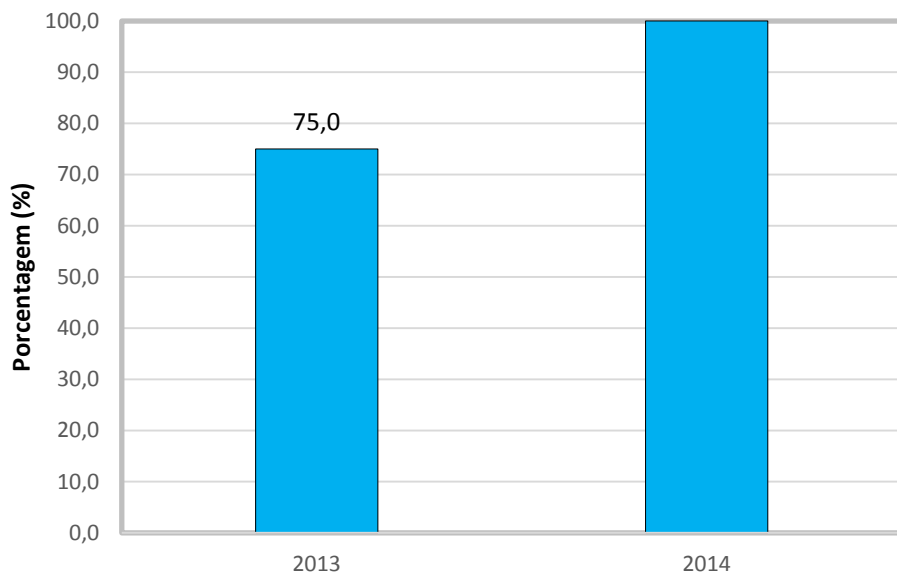


Evolução Temporal

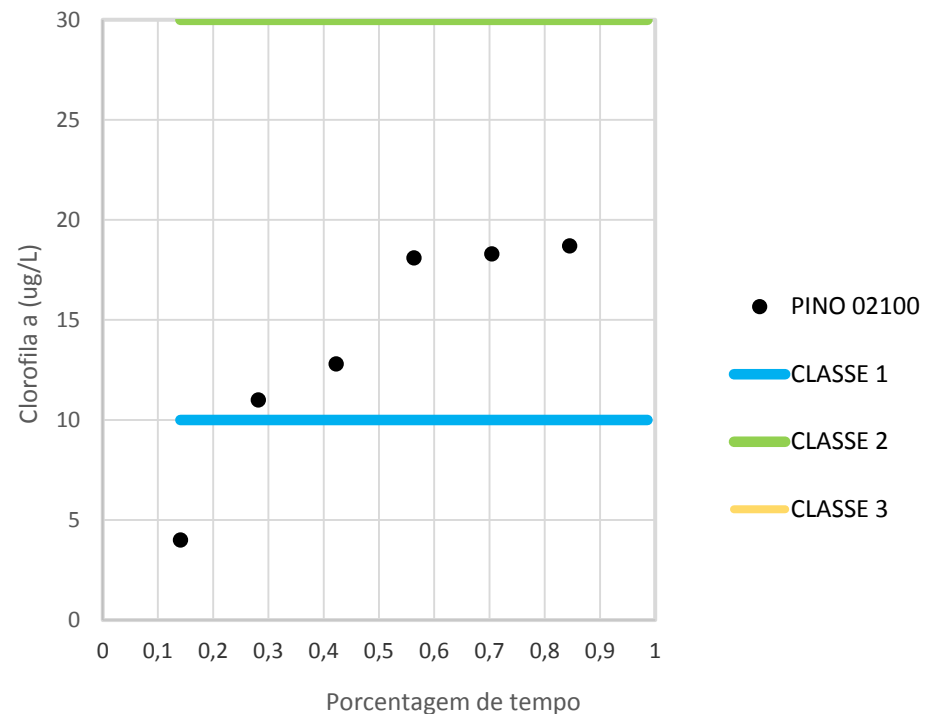


PINO 02100 – Clorofila a (µg/L)

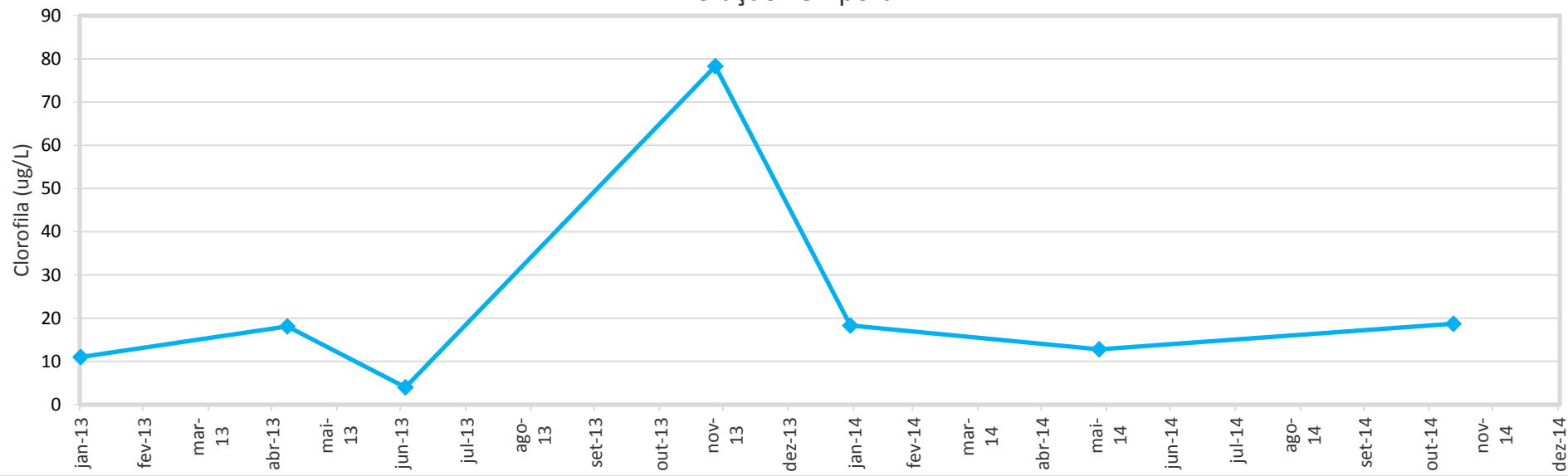
Porcentagem de Atendimento ao Padrão Classe 2 -
Clorofila



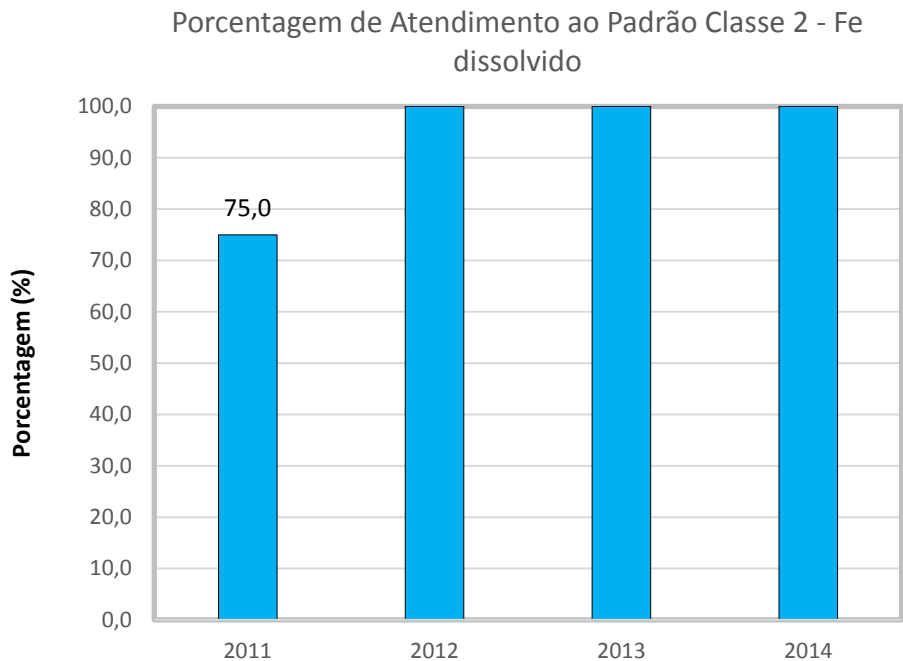
Curva de Permanência



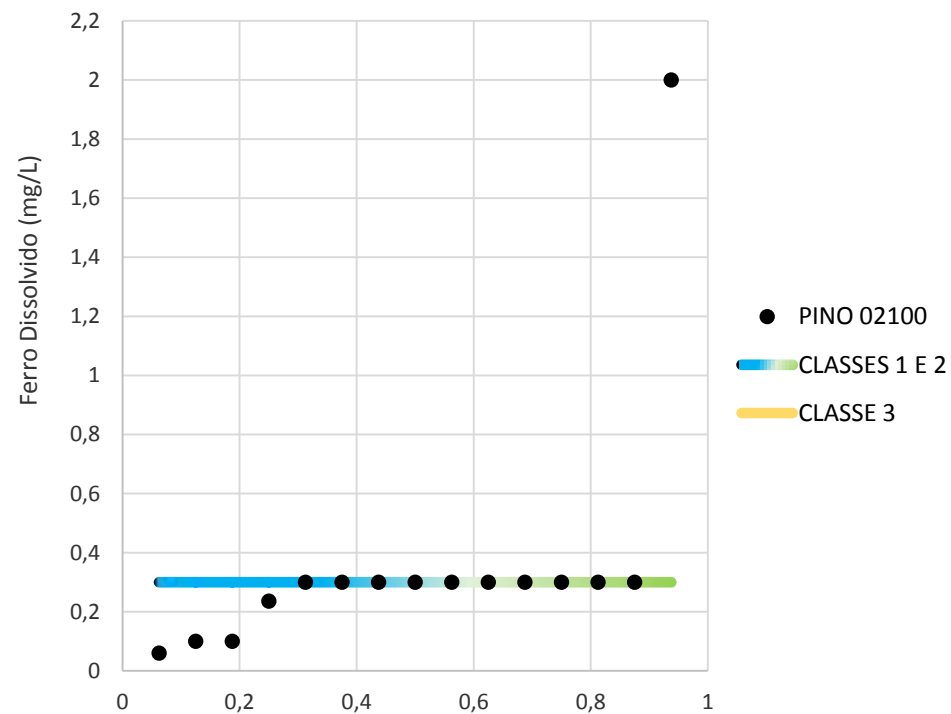
Evolução Temporal



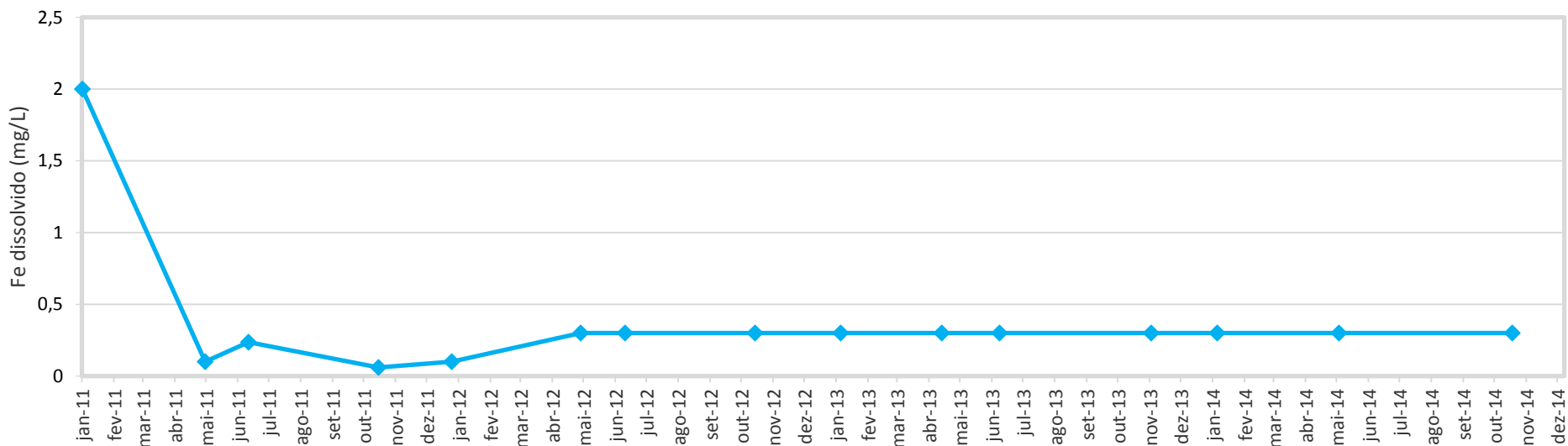
PINO 02100 – Ferro Dissolvido (mg/L)



Curva de Permanência

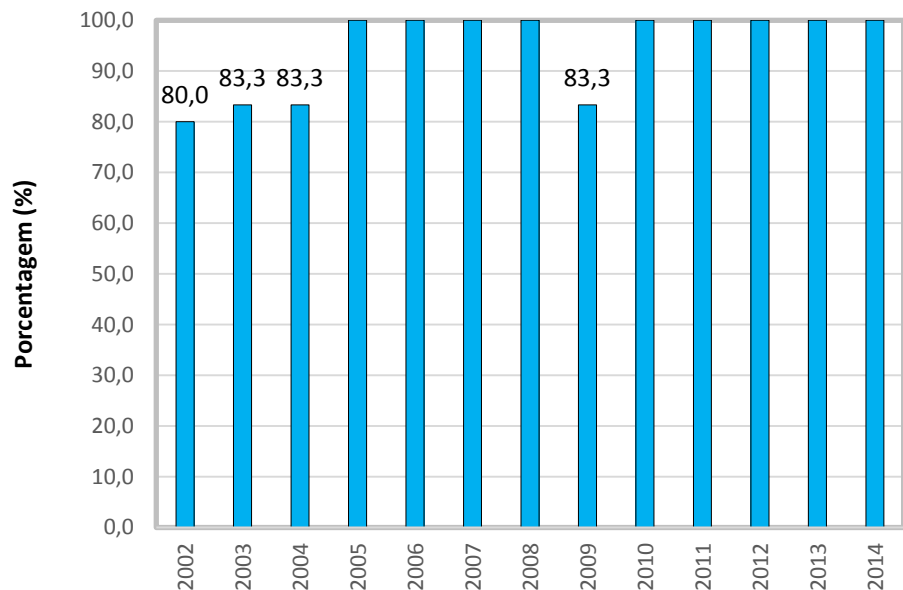


Evolução Temporal

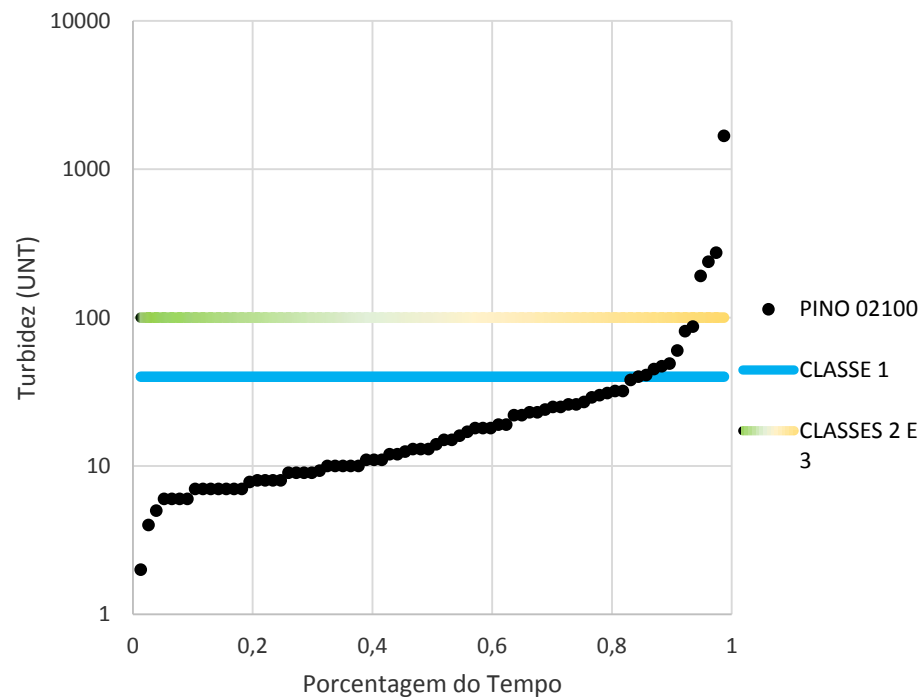


PINO 02100 – Turbidez (UNT)

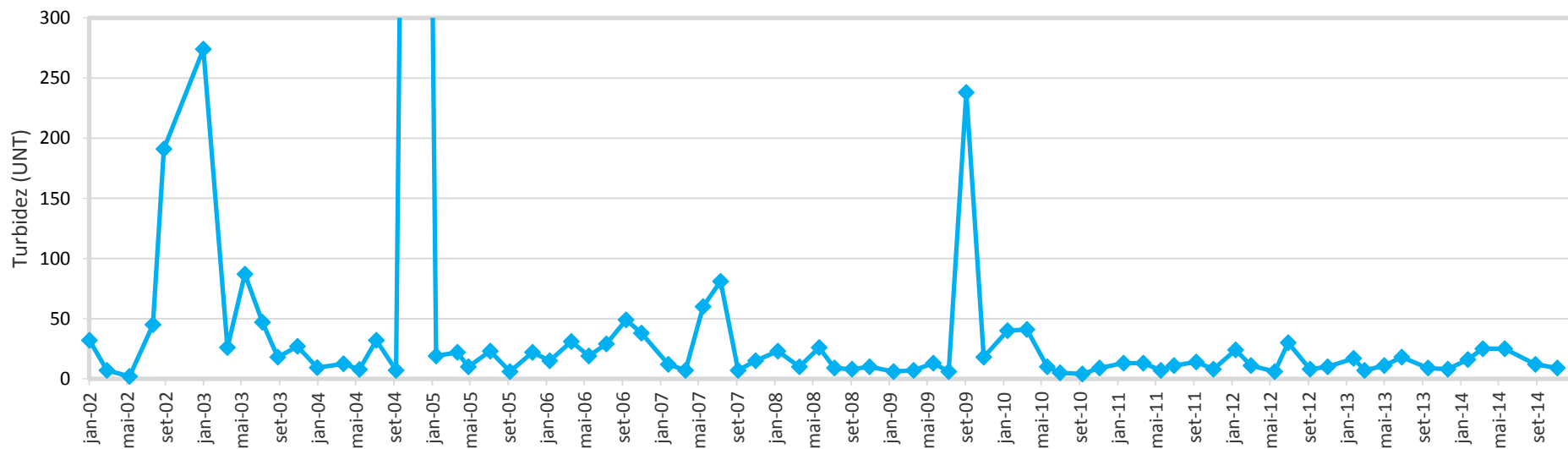
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

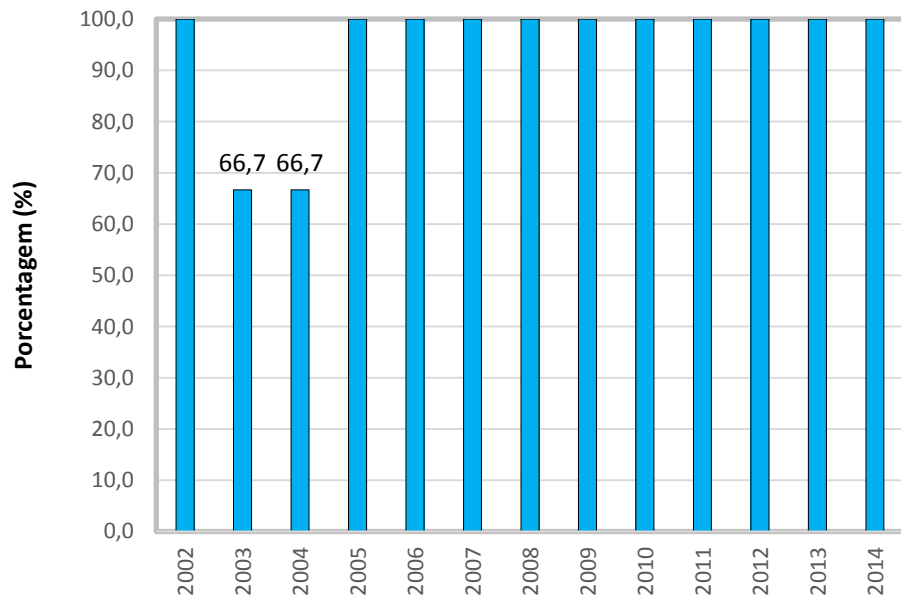


Evolução Temporal

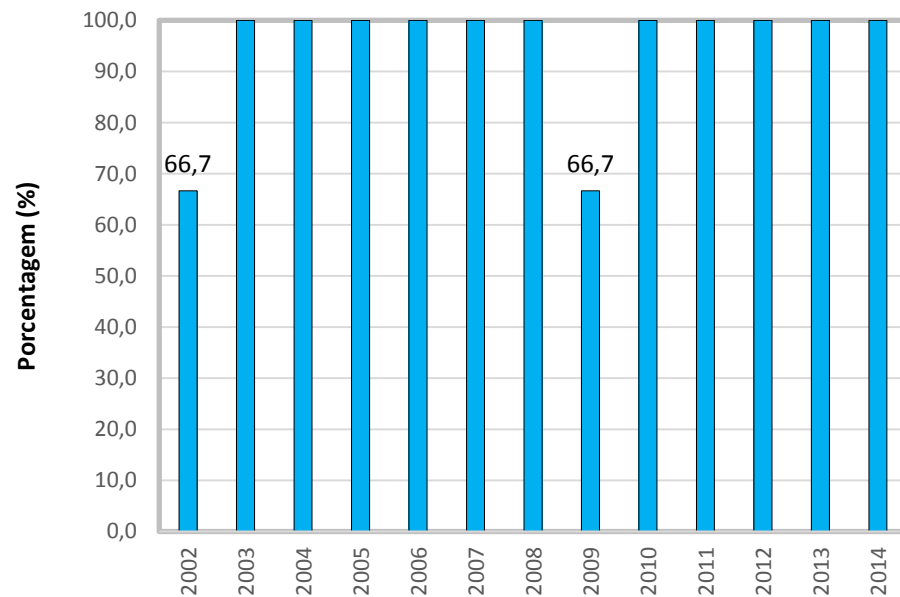


PINO 02100 – Turbidez (Período Seco x Período Chuvoso)

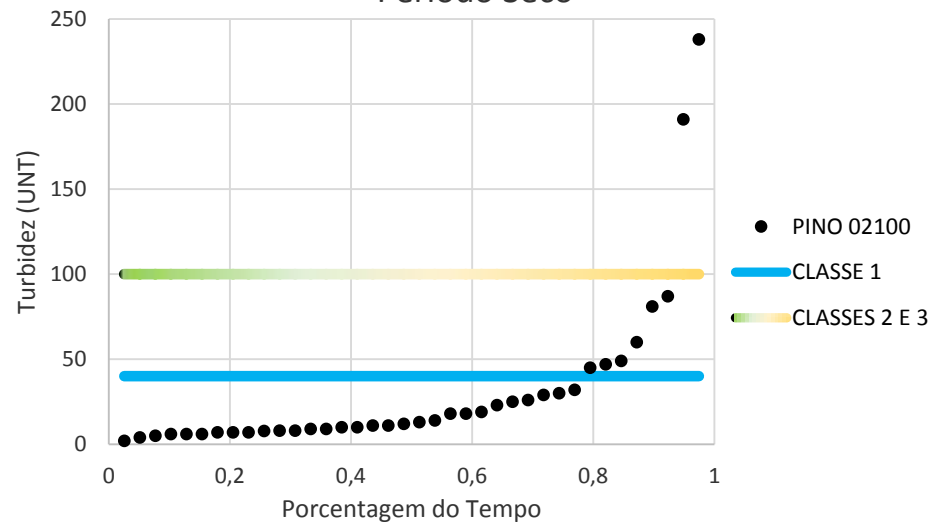
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



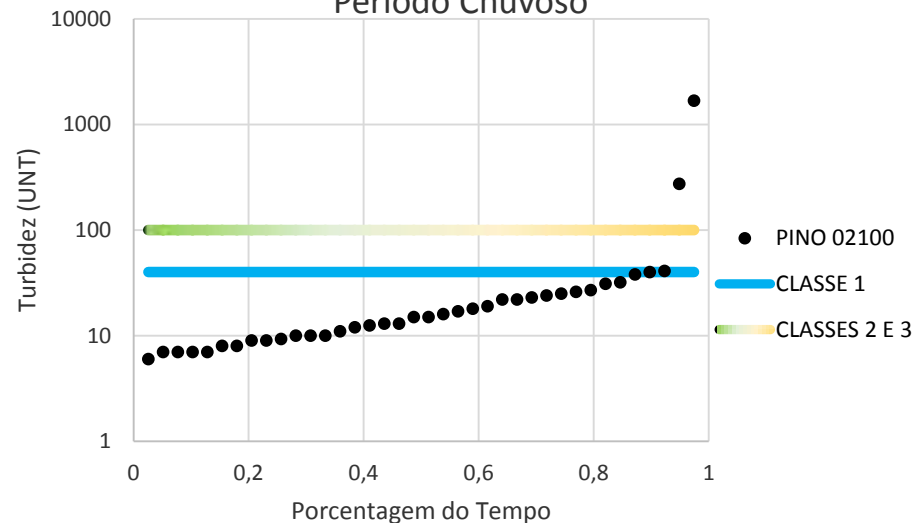
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

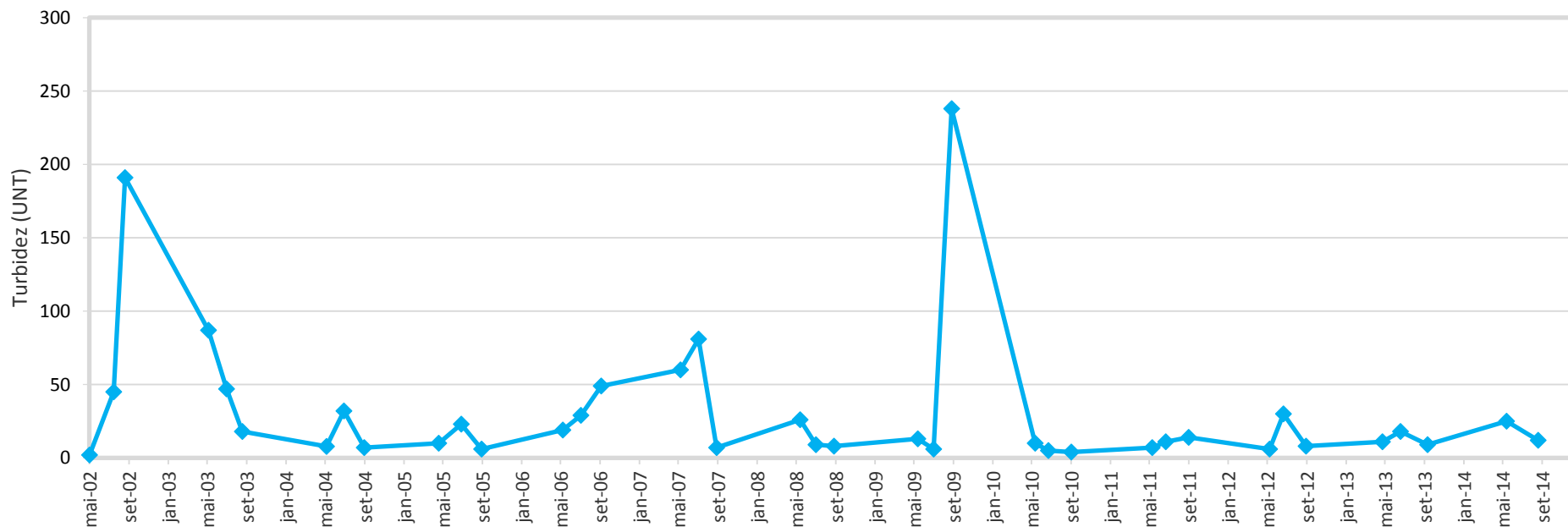


Curva de Permanência- Turbidez
Período Chuvoso

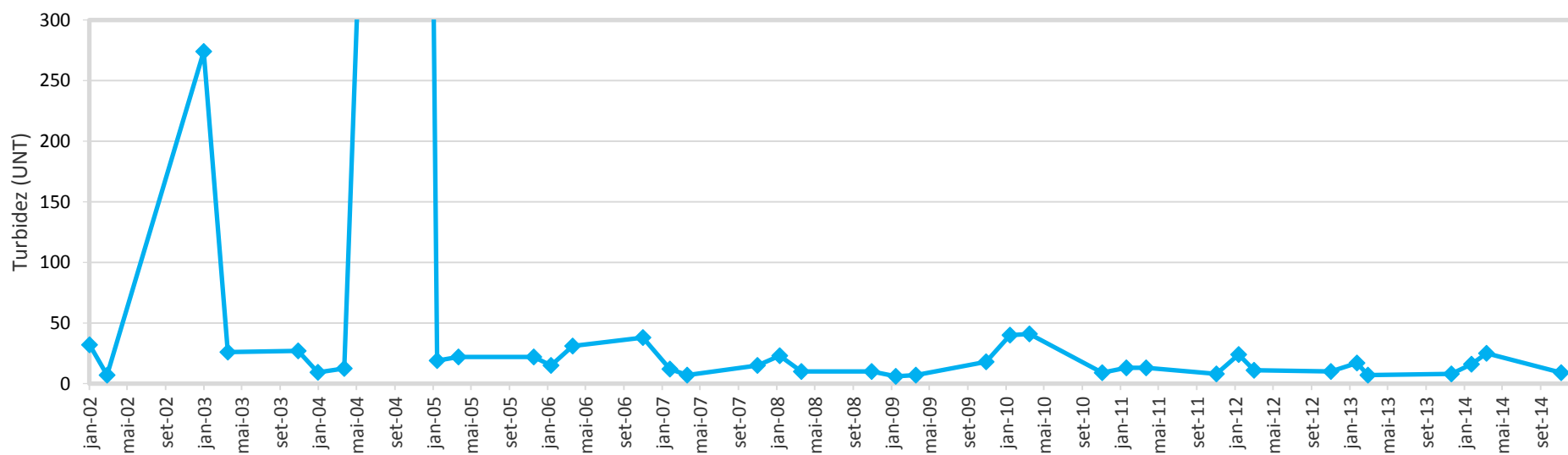


PINO 02100 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



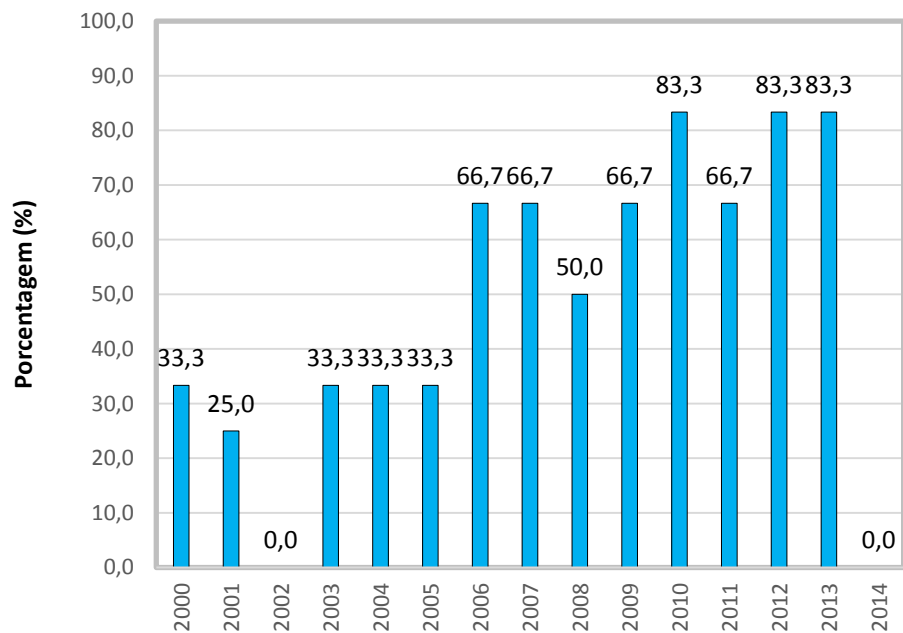
Evolução Temporal - Período Chuvoso



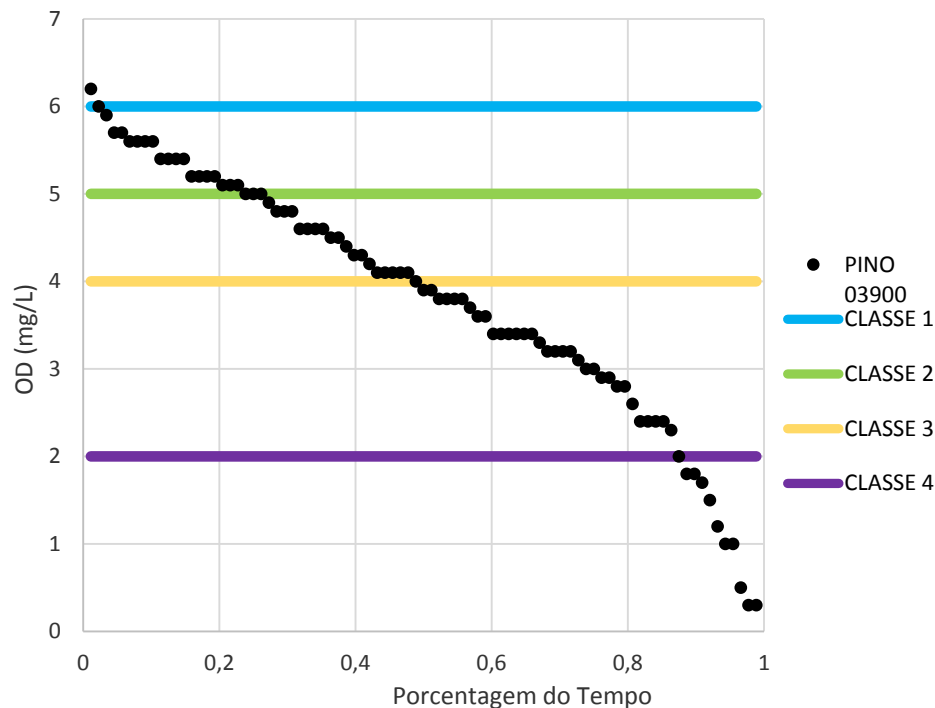
Ribeirão Pinheiros
PINO 03900

PINO 03900 – Oxigênio Dissolvido (mg/L)

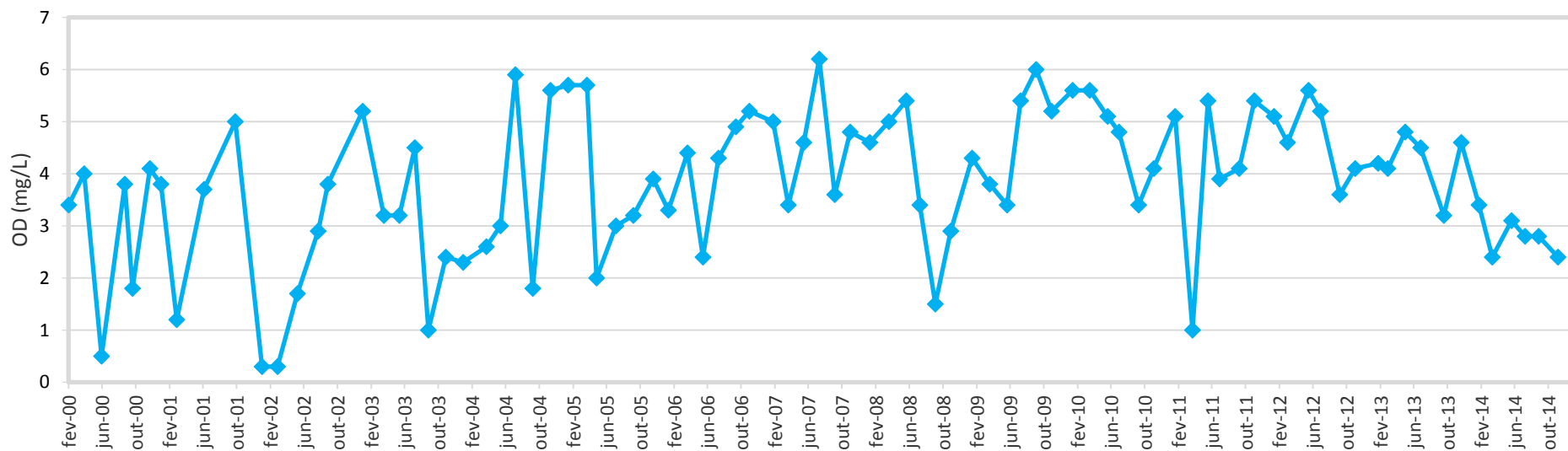
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência

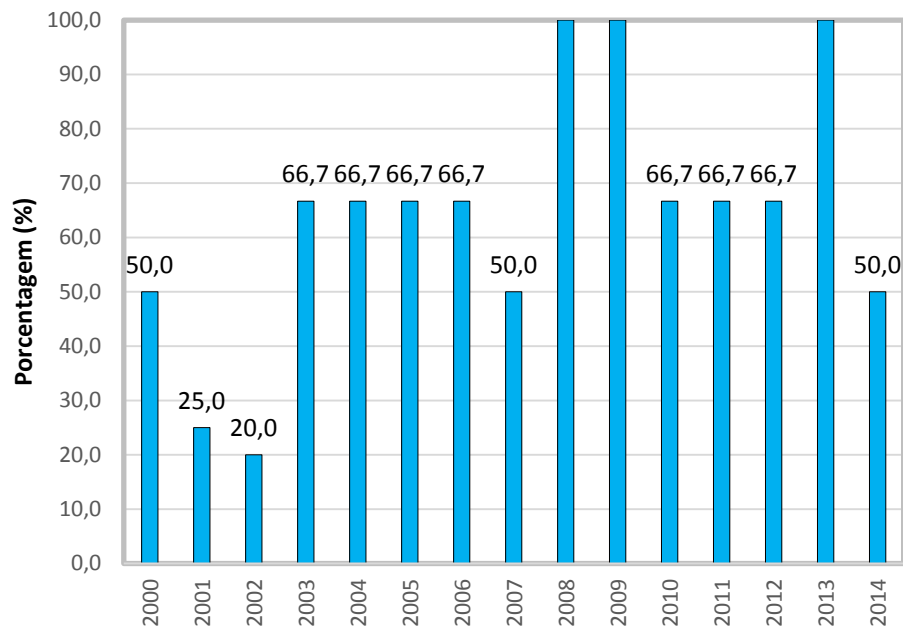


Evolução Temporal

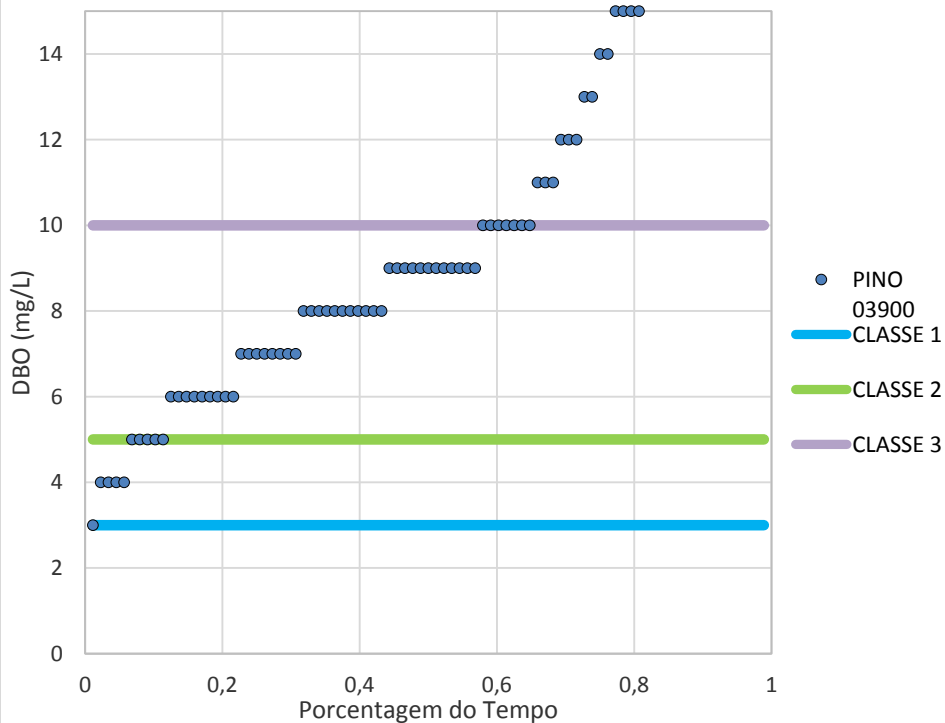


PINO 03900 – DBO (mg/L)

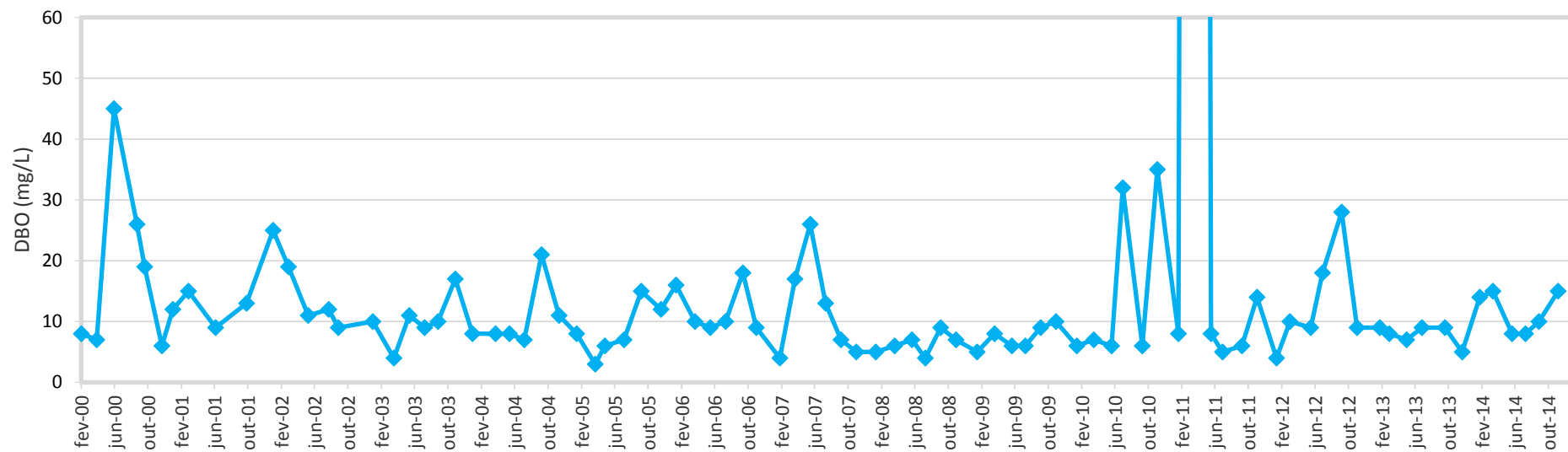
Porcentagem de Atendimento ao Padrão Classe 2 - DBO



Curva de Permanência

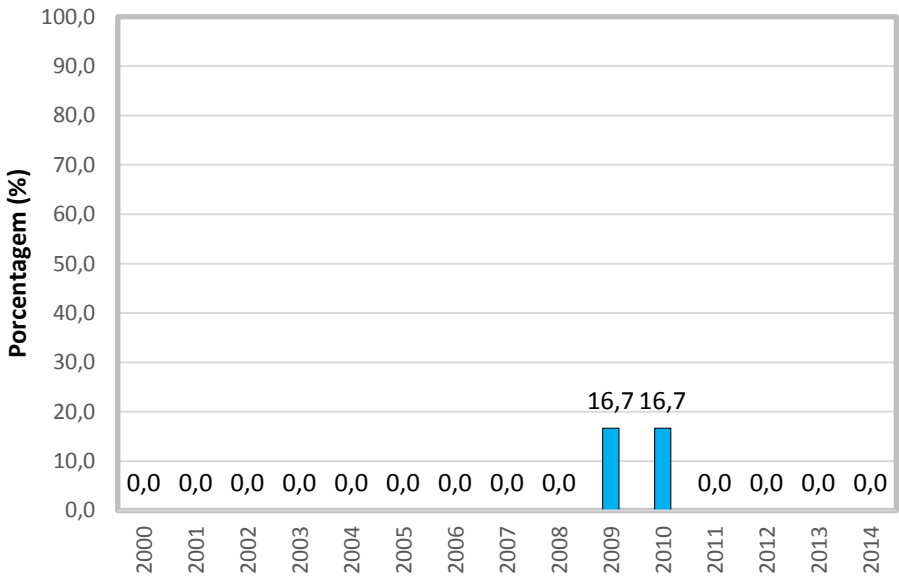


Evolução Temporal

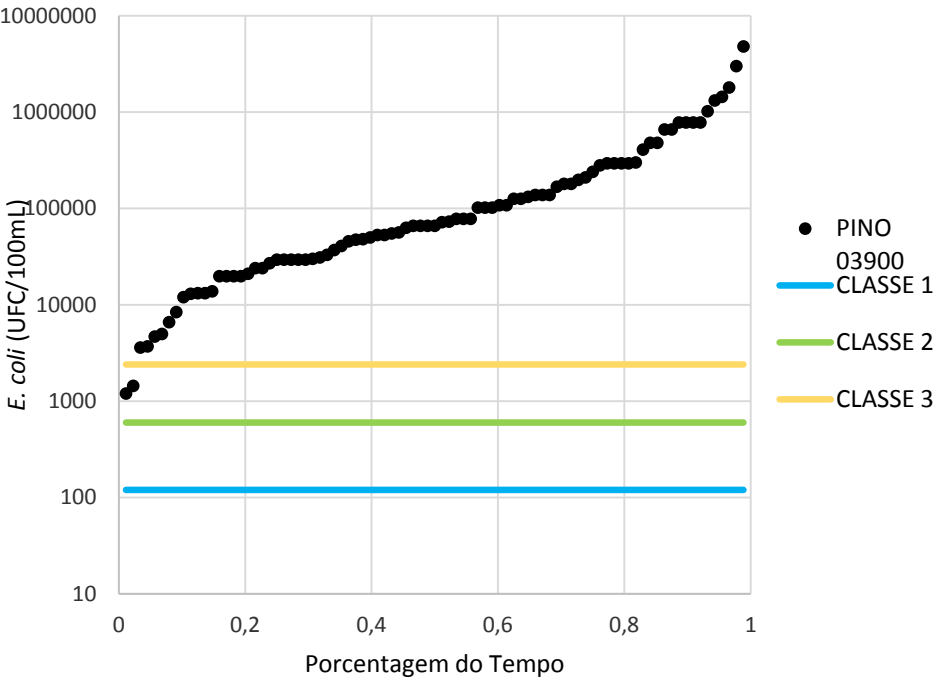


PINO 03900 – *Escherichia coli* (UFC/100mL)

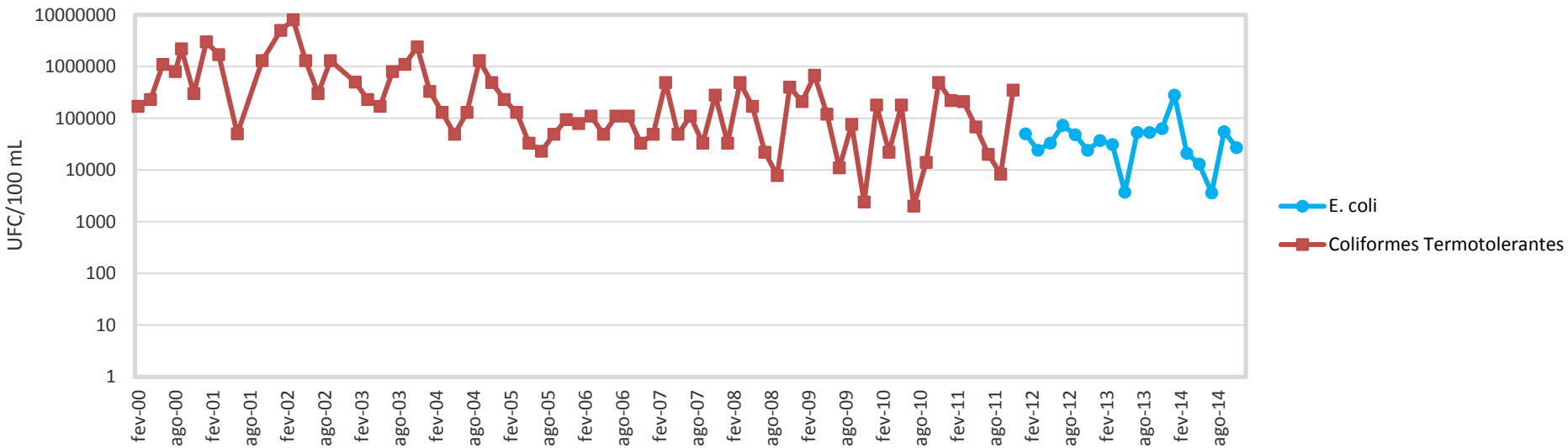
Porcentagem de Atendimento ao Padrão Classe 2 - Colif. Term. e *E. coli*



Curva de Permanência

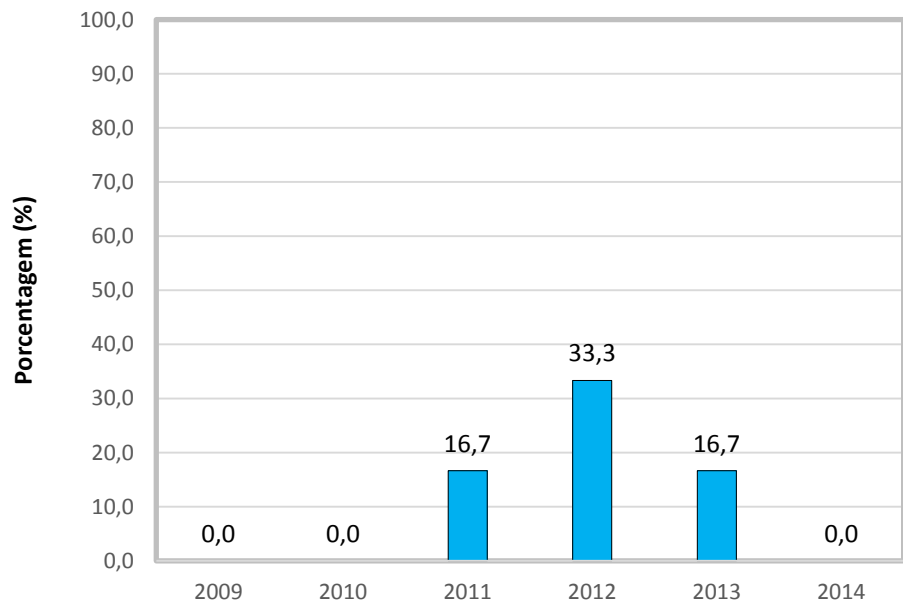


Evolução Temporal

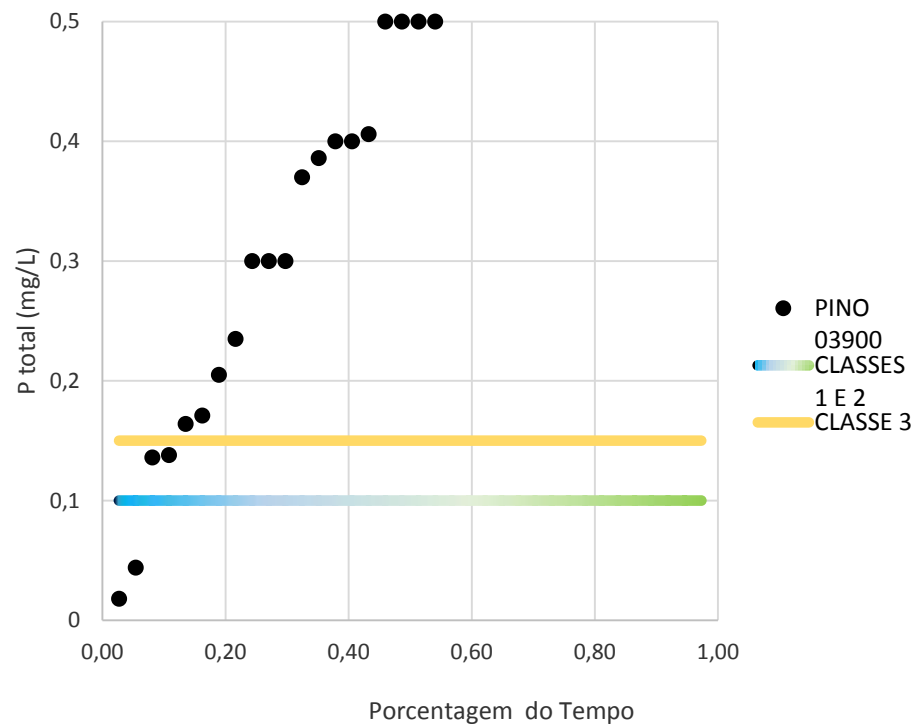


PINO 03900 – Fósforo Total (mg/L)

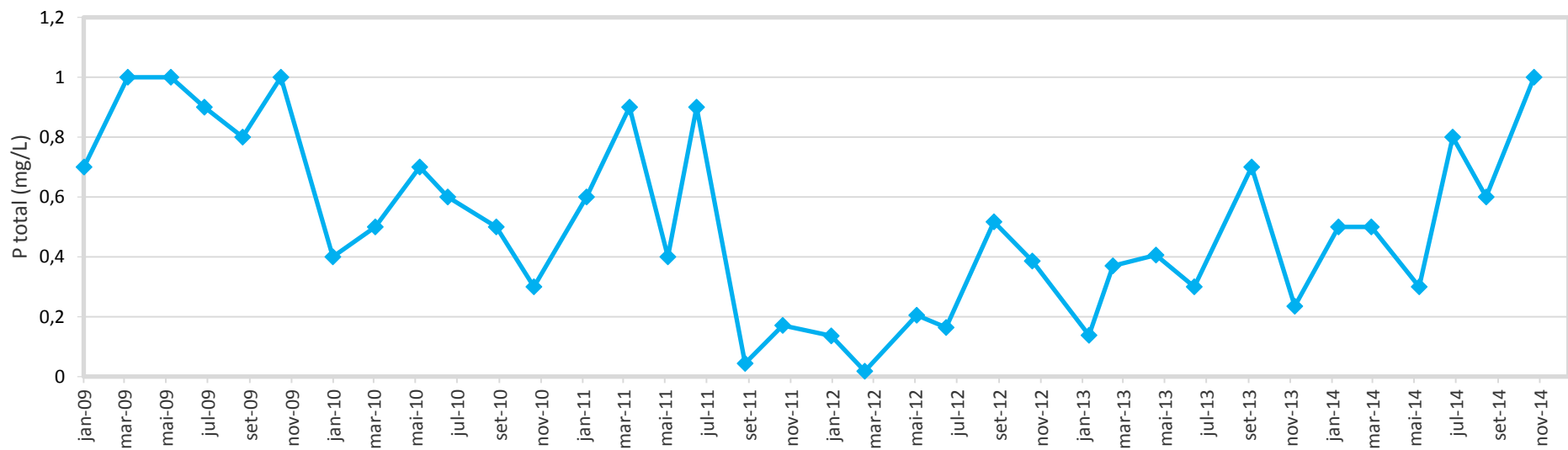
Porcentagem de Atendimento ao Padrão Classe 2 - P total



Curva de Permanência

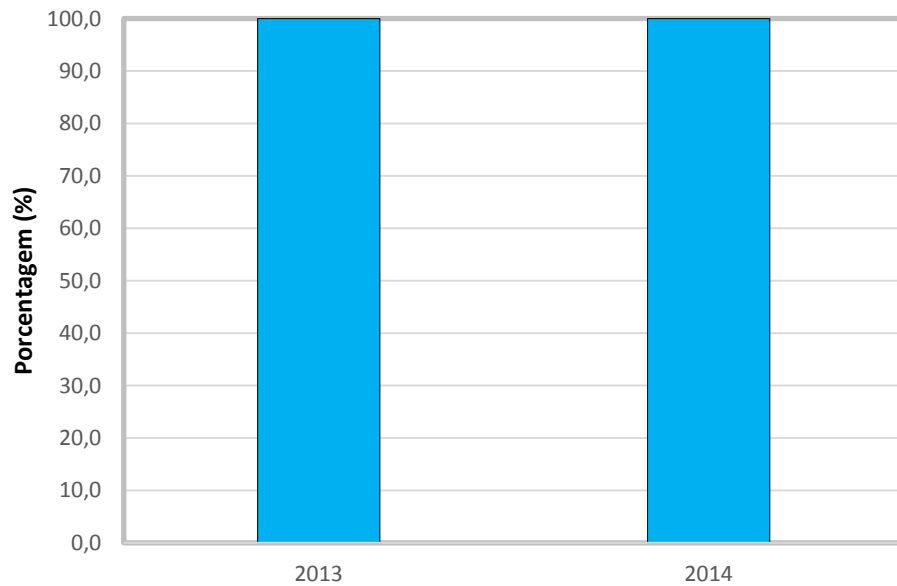


Evolução Temporal

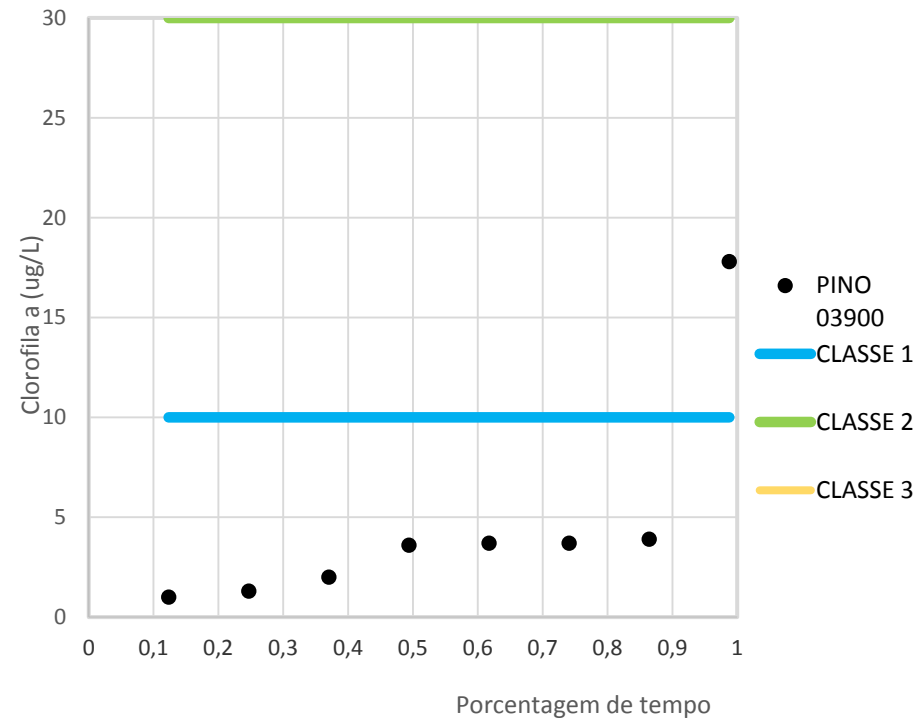


PINO 03900 – Clorofila a (µg/L)

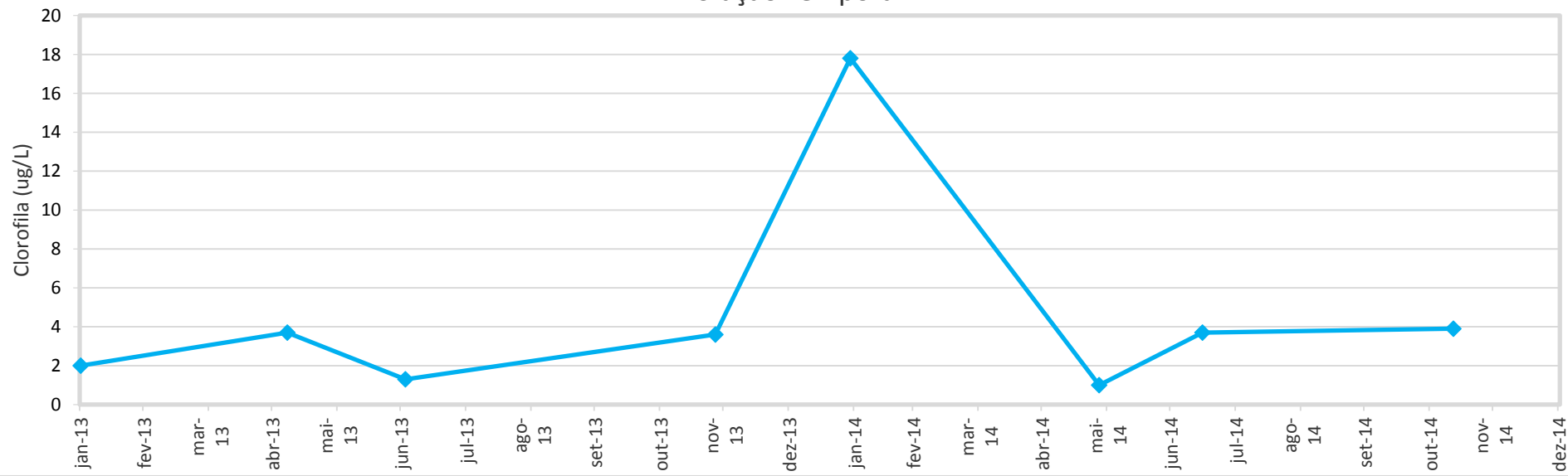
Porcentagem de Atendimento ao Padrão Classe 2 -
Clorofila



Curva de Permanência

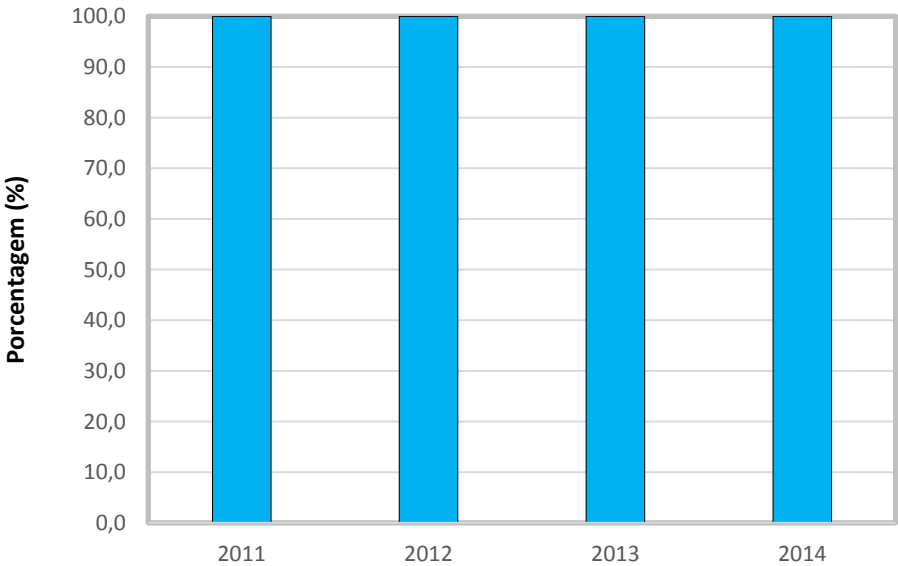


Evolução Temporal

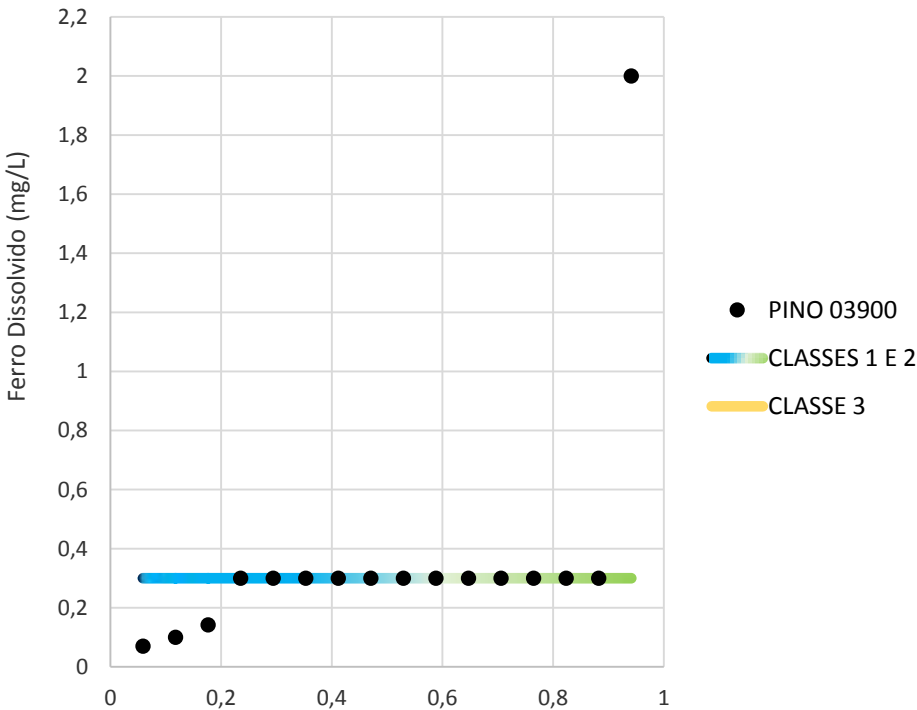


PINO 03900 – Ferro Dissolvido (mg/L)

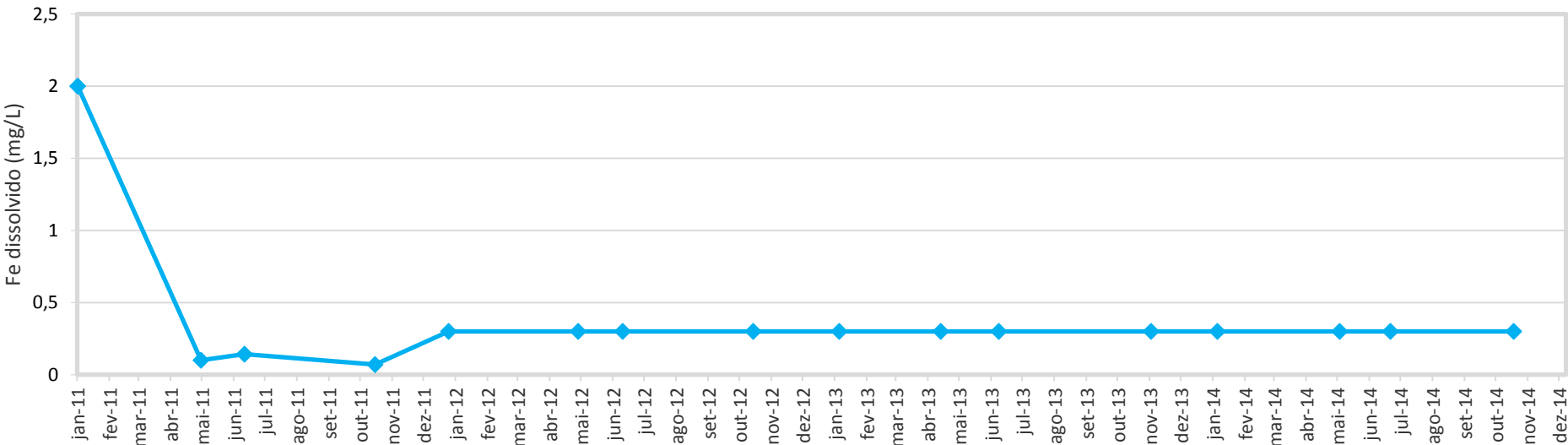
Porcentagem de Atendimento ao Padrão Classe 2 - Fe dissolvido



Curva de Permanência

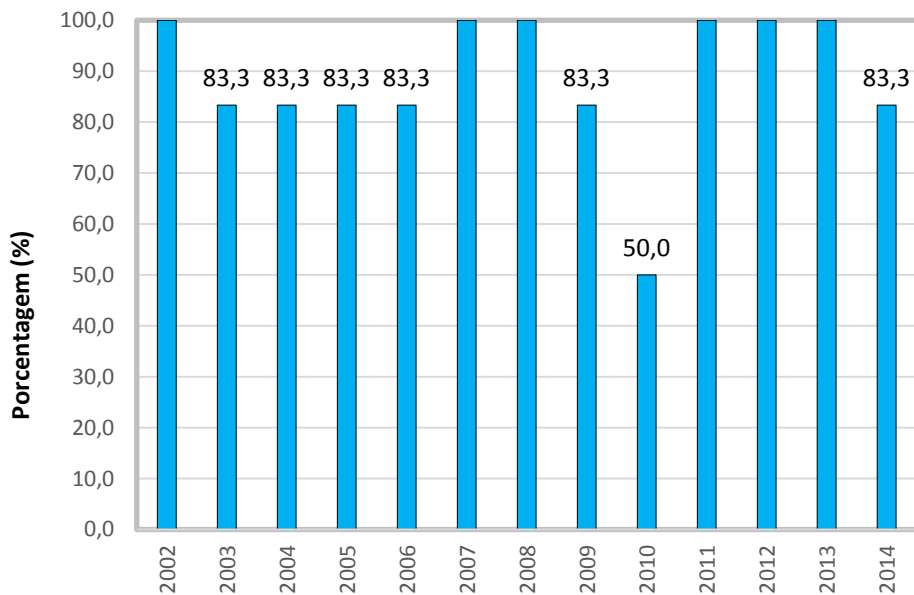


Evolução Temporal

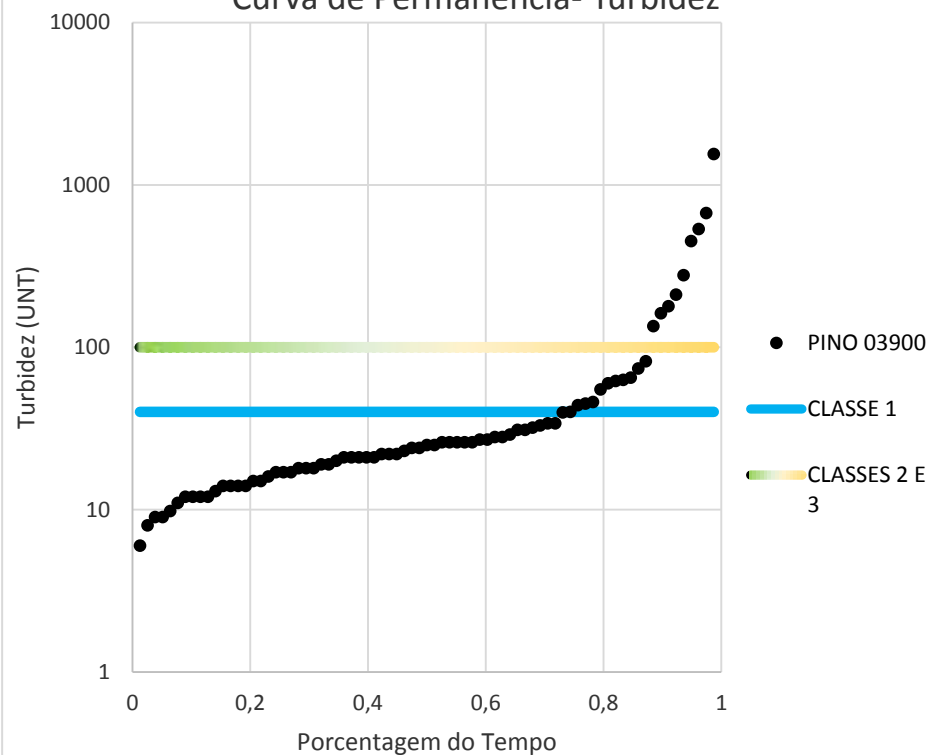


PINO 03900 – Turbidez (UNT)

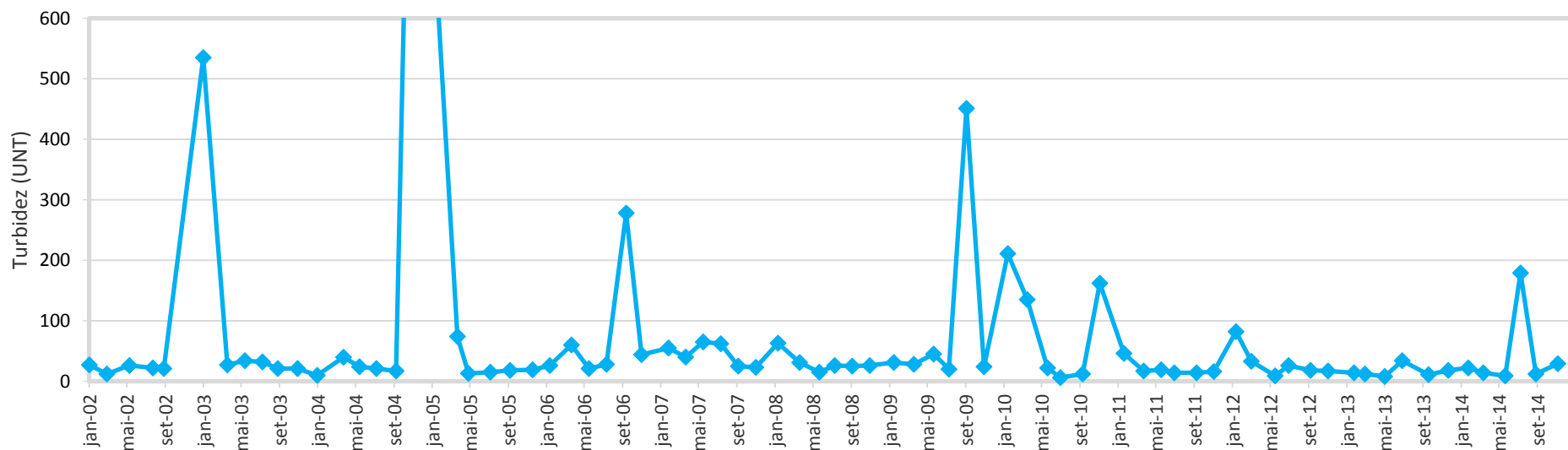
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (geral)



Curva de Permanência- Turbidez

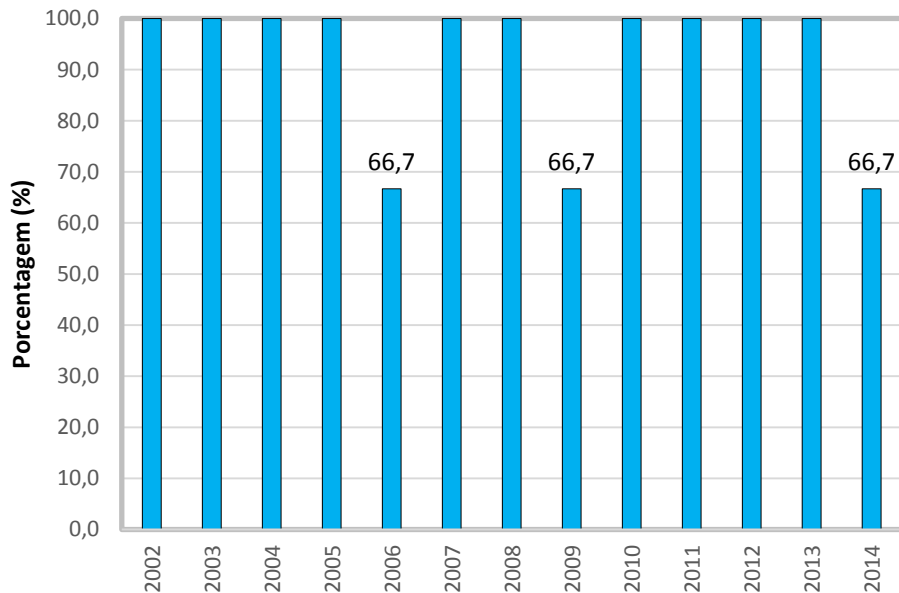


Evolução Temporal

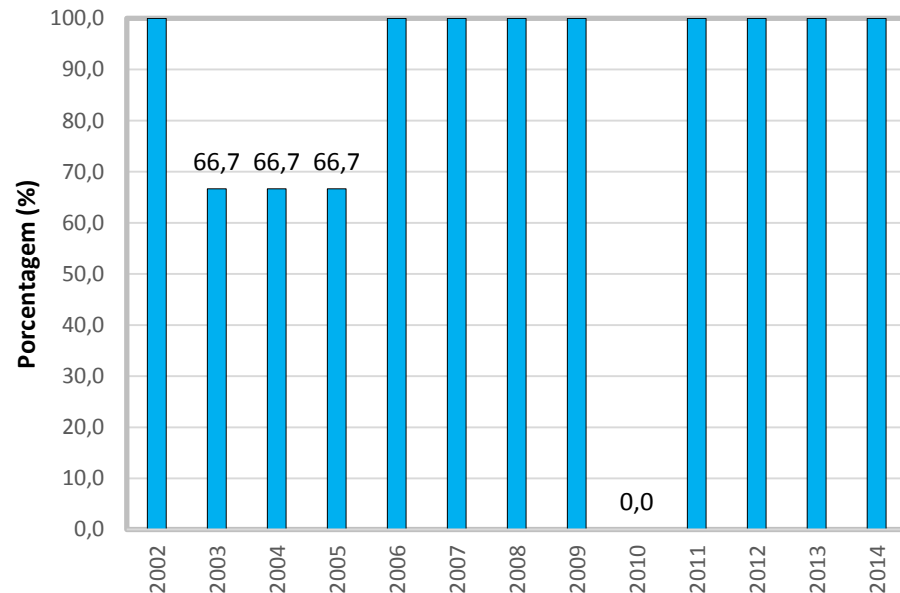


PINO 03900 – Turbidez (Período Seco x Período Chuvoso)

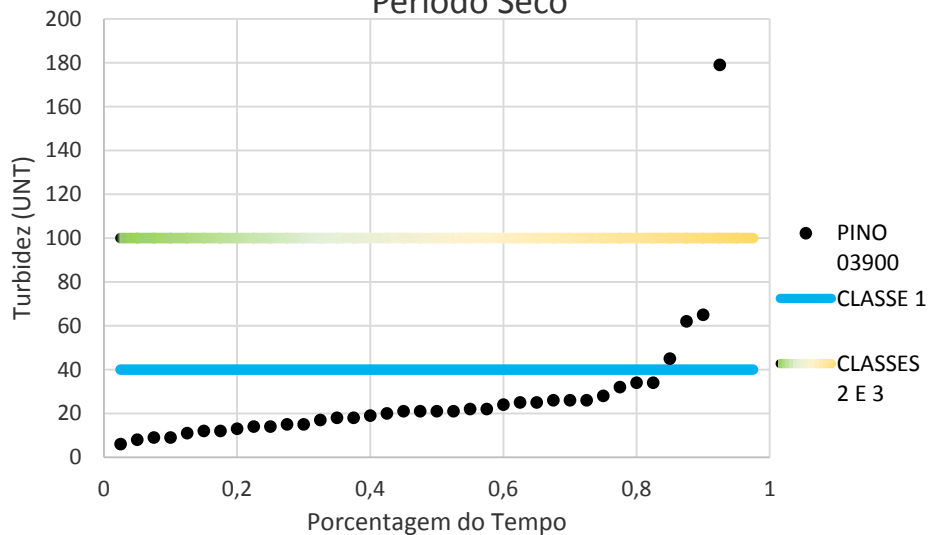
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (seco)



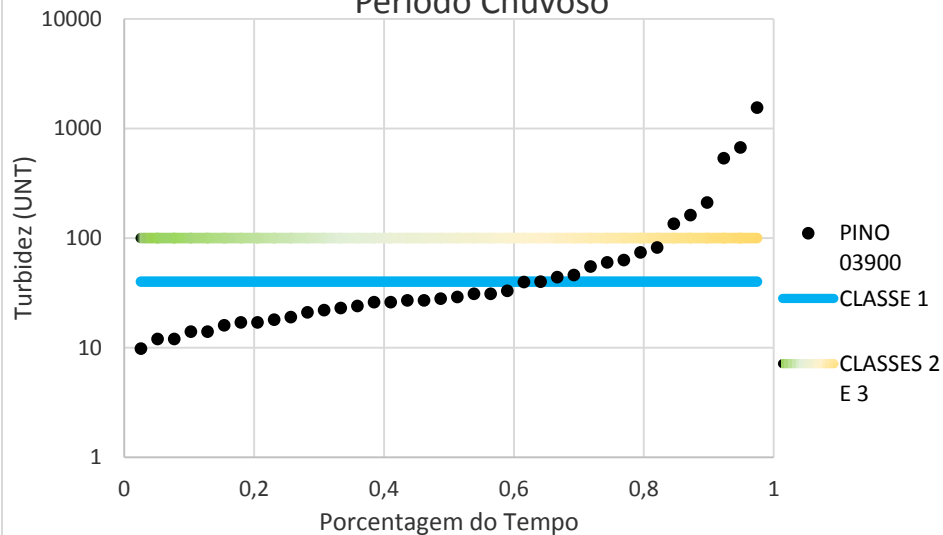
Porcentagem de Atendimento ao Padrão Classe 2 -
Turbidez (chuvoso)



Curva de Permanência- Turbidez
Período Seco

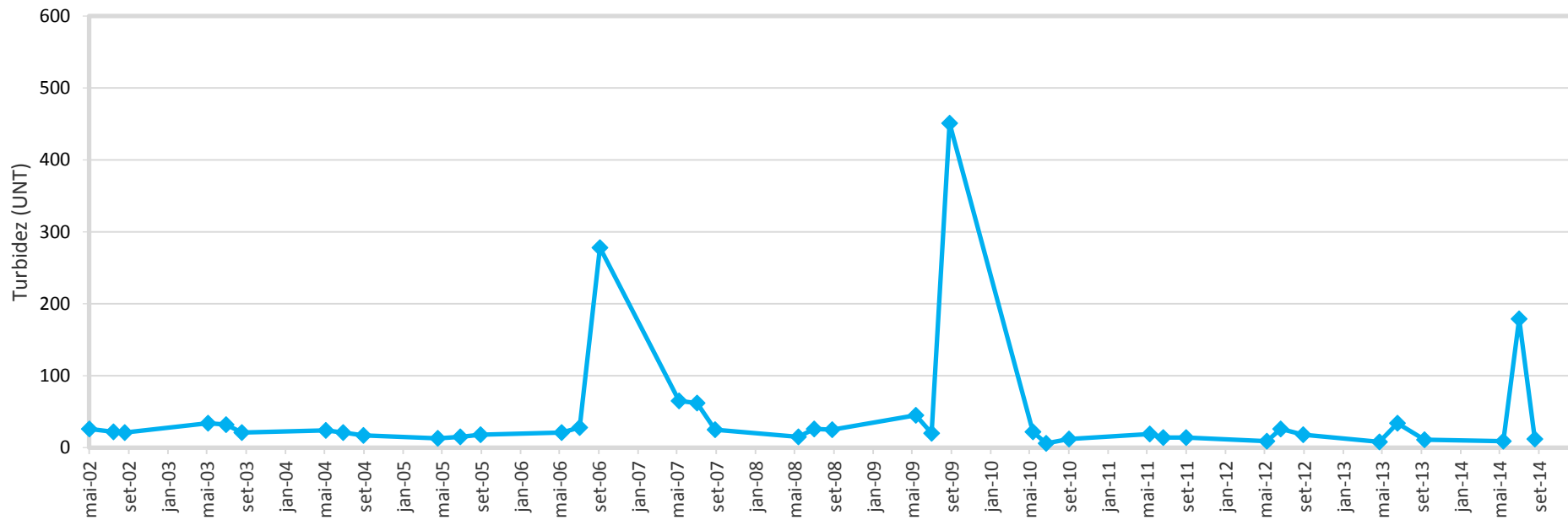


Curva de Permanência- Turbidez
Período Chuvoso

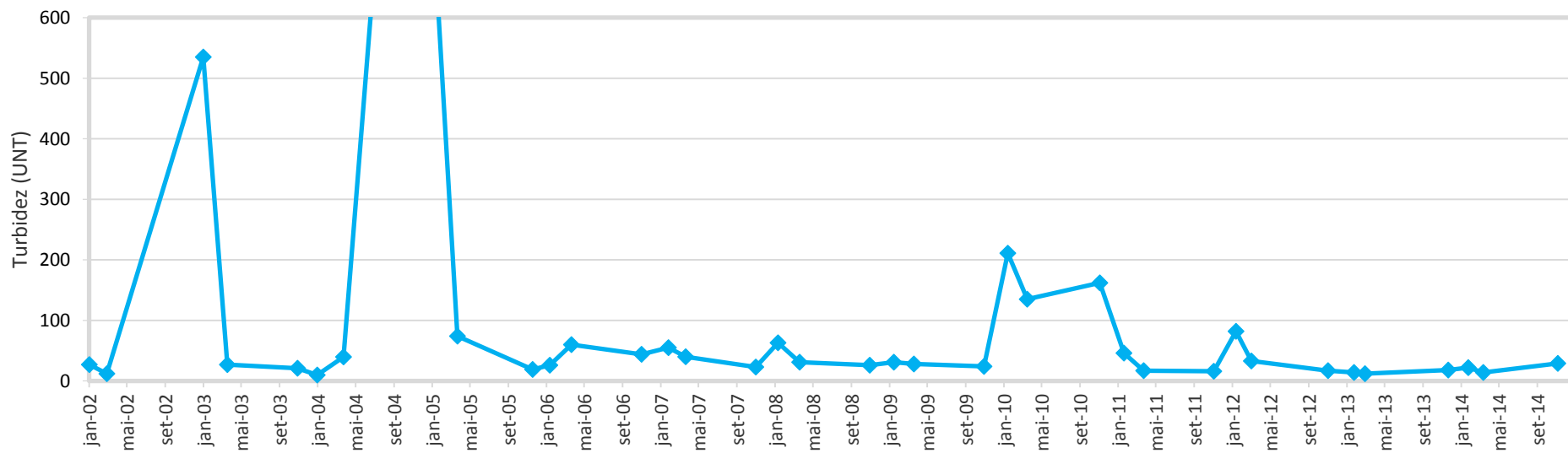


PINO 03900 – Turbidez (Período Seco x Período Chuvoso)

Evolução Temporal - Período Seco



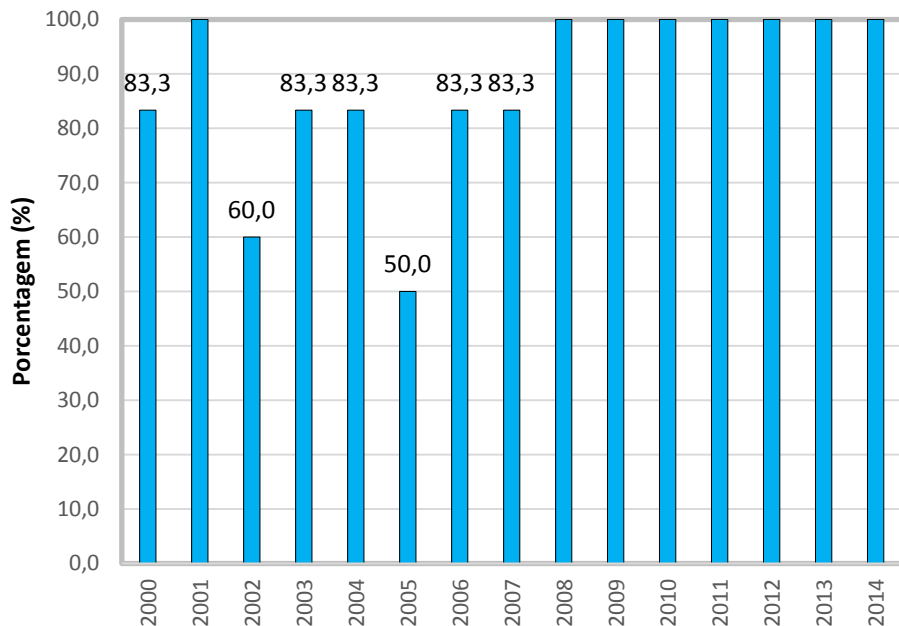
Evolução Temporal - Período Chuvoso



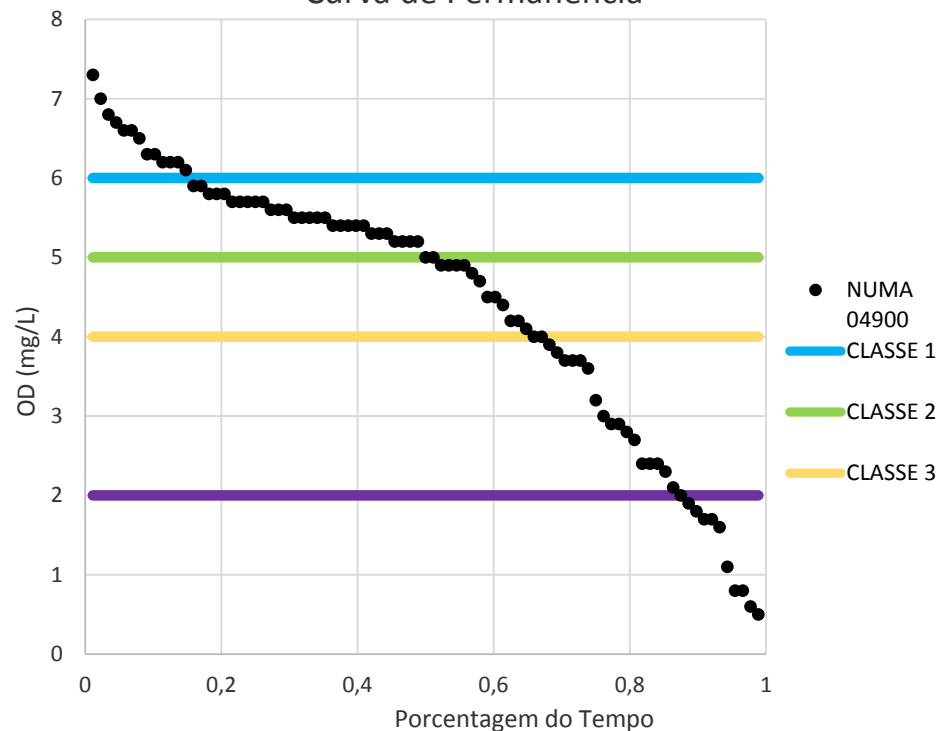
Ribeirão Anhumas
NUMA 04900

NUMA 04900 – Oxigênio Dissolvido (mg/L)

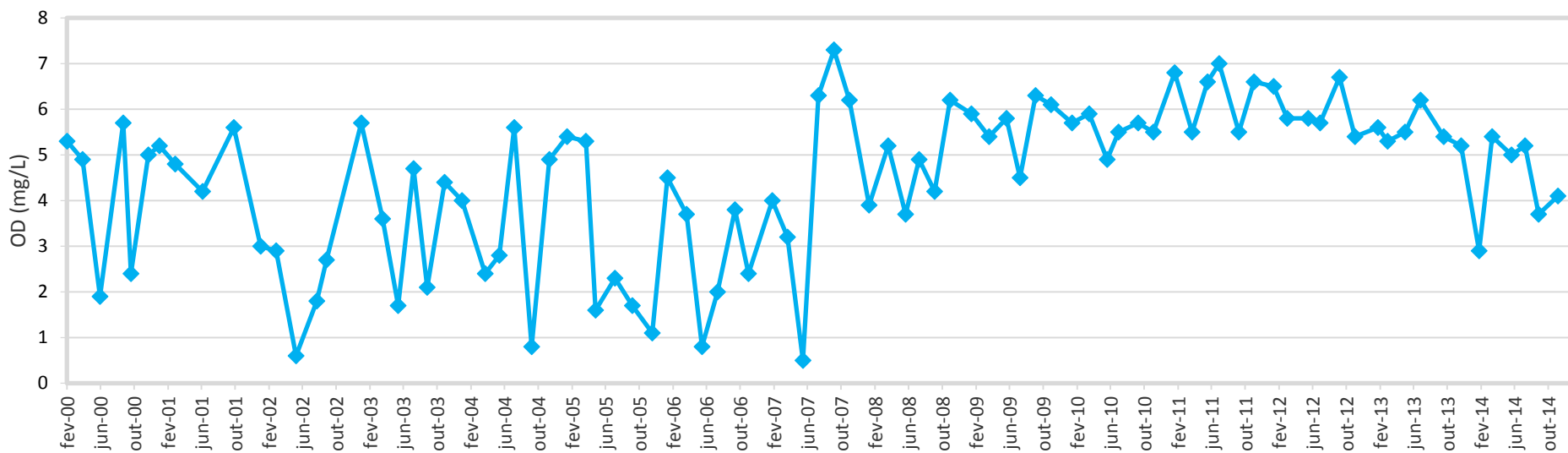
Porcentagem de Atendimento ao Padrão Classe 2 - OD



Curva de Permanência



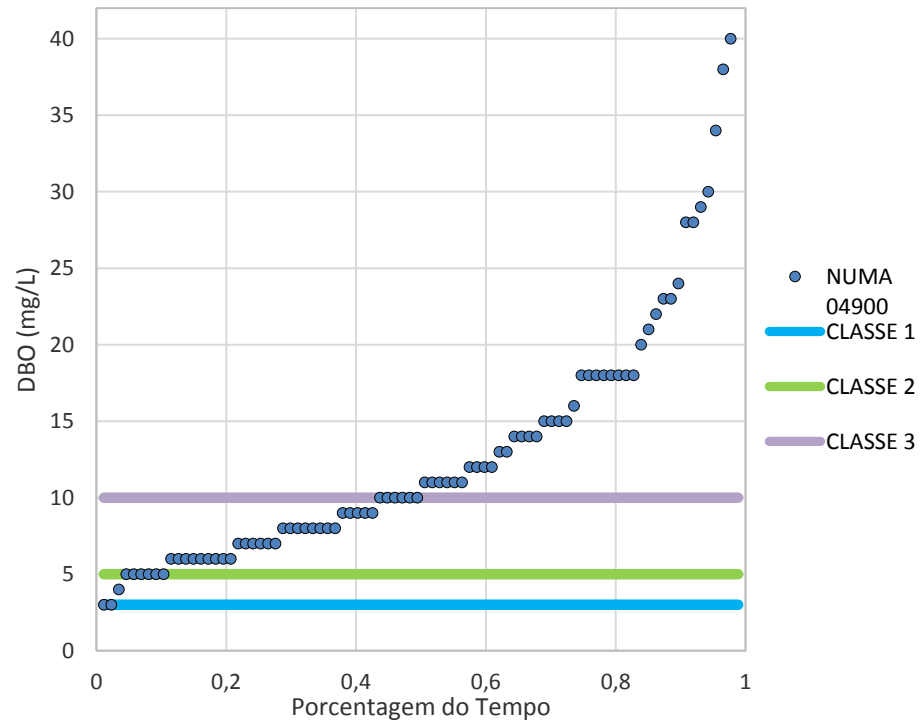
Evolução Temporal



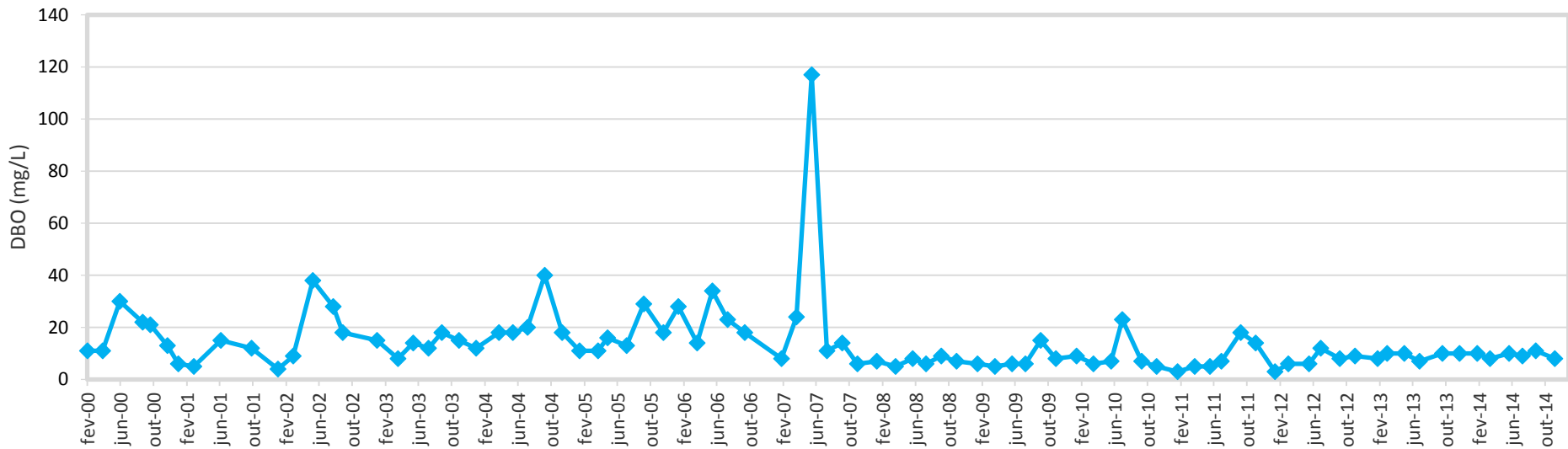
NUMA 04900 – DBO (mg/L)

Não há padrão para Classe 04

Curva de Permanência



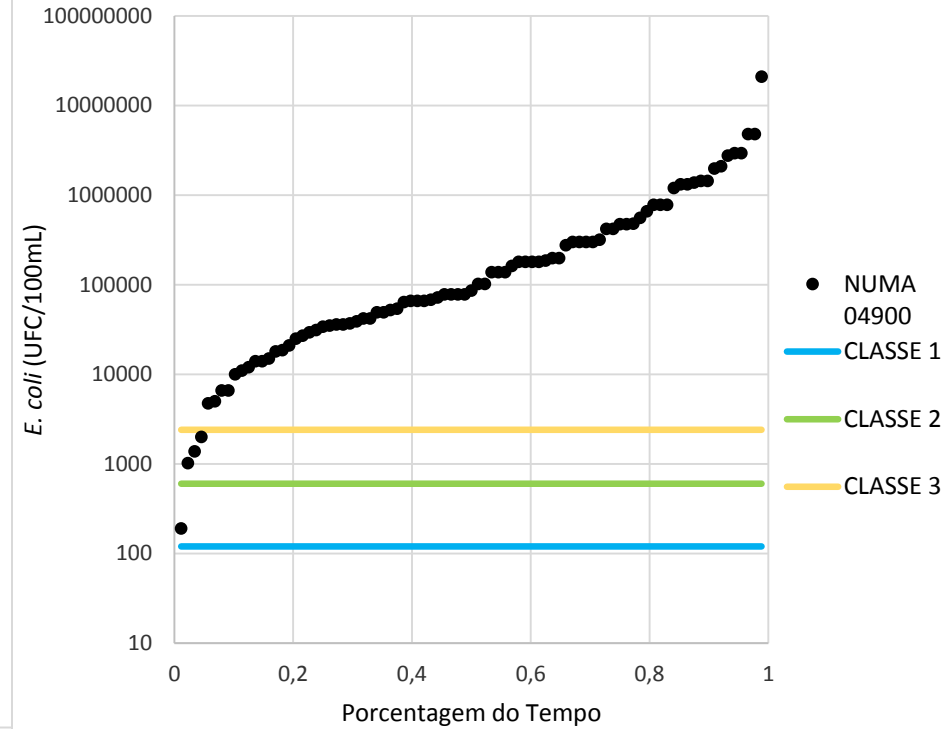
Evolução Temporal



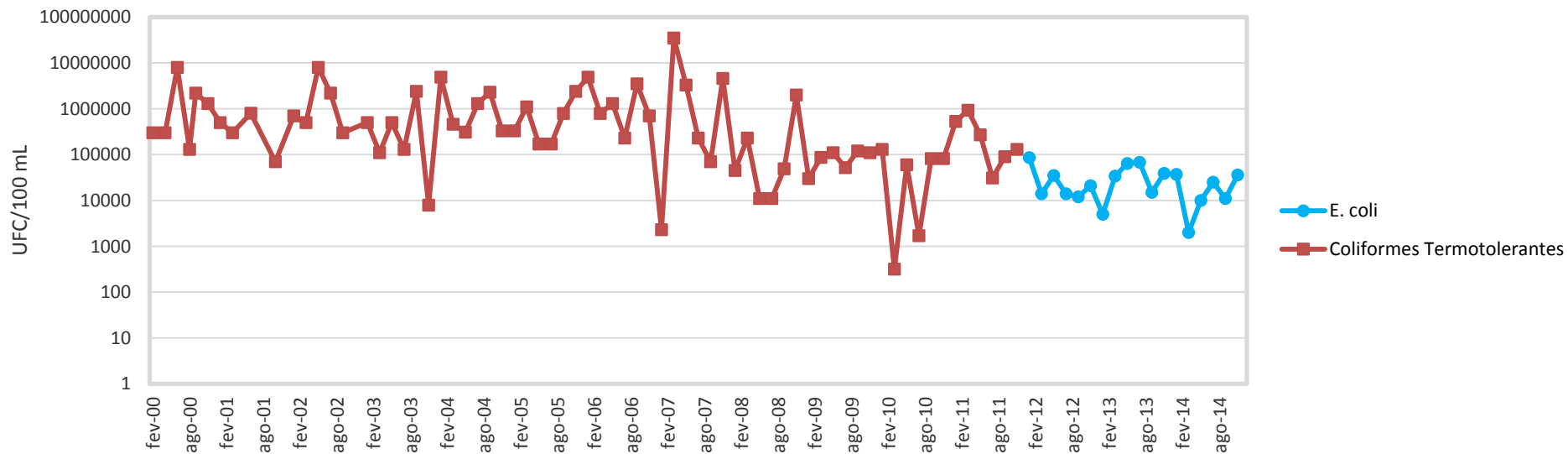
NUMA 04900 – *Escherichia coli* (UFC/100mL)

Não há padrão para Classe 04

Curva de Permanência



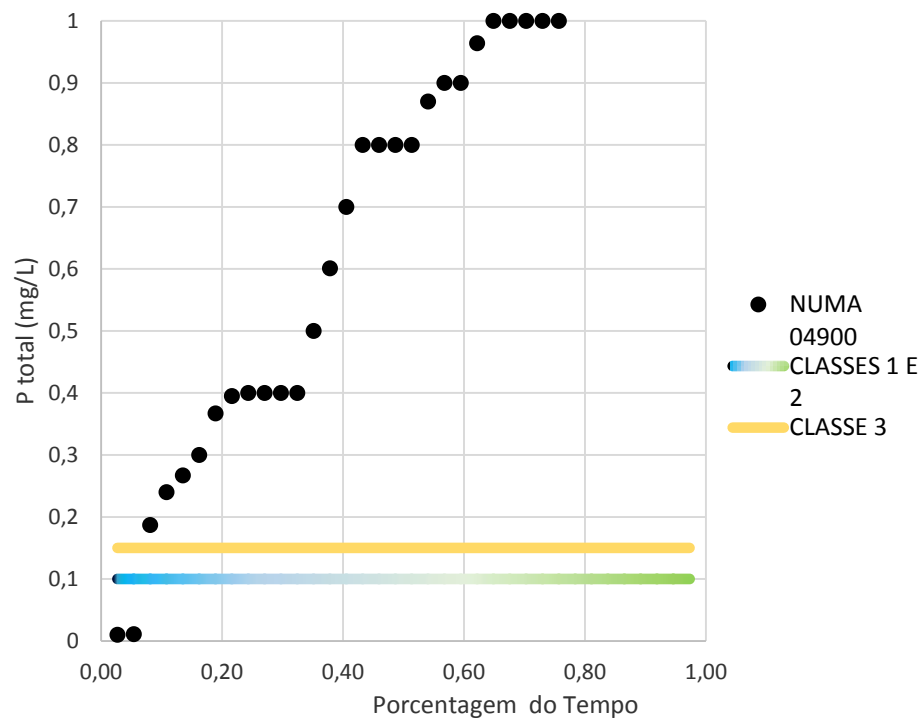
Evolução Temporal



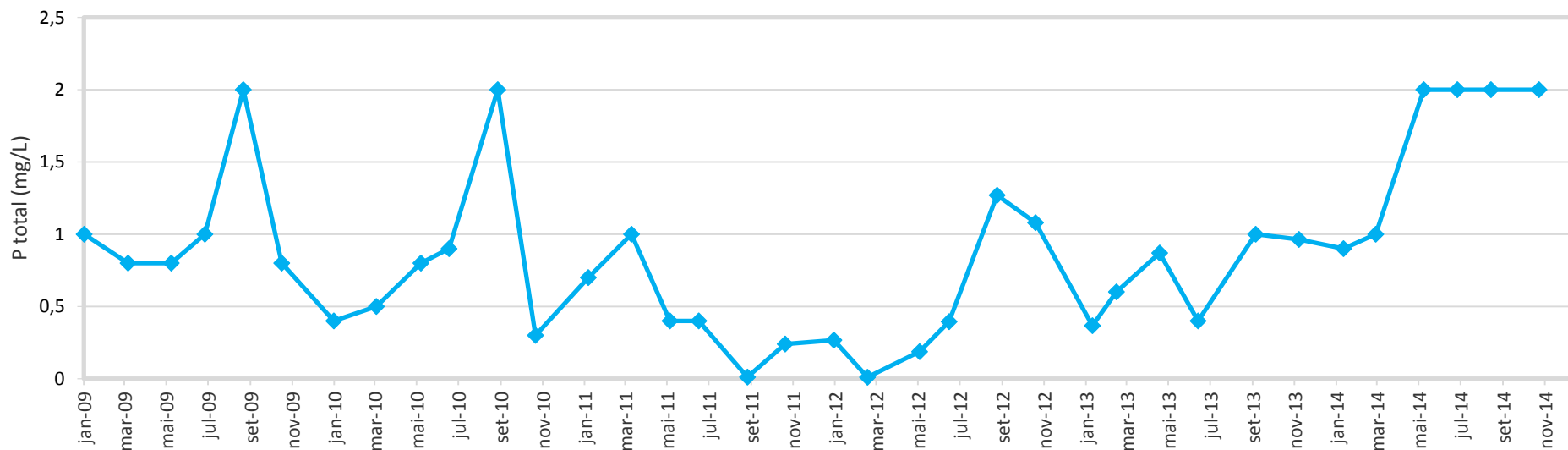
NUMA 04900 – Fósforo Total (mg/L)

Não há padrão para Classe 04

Curva de Permanência



Evolução Temporal

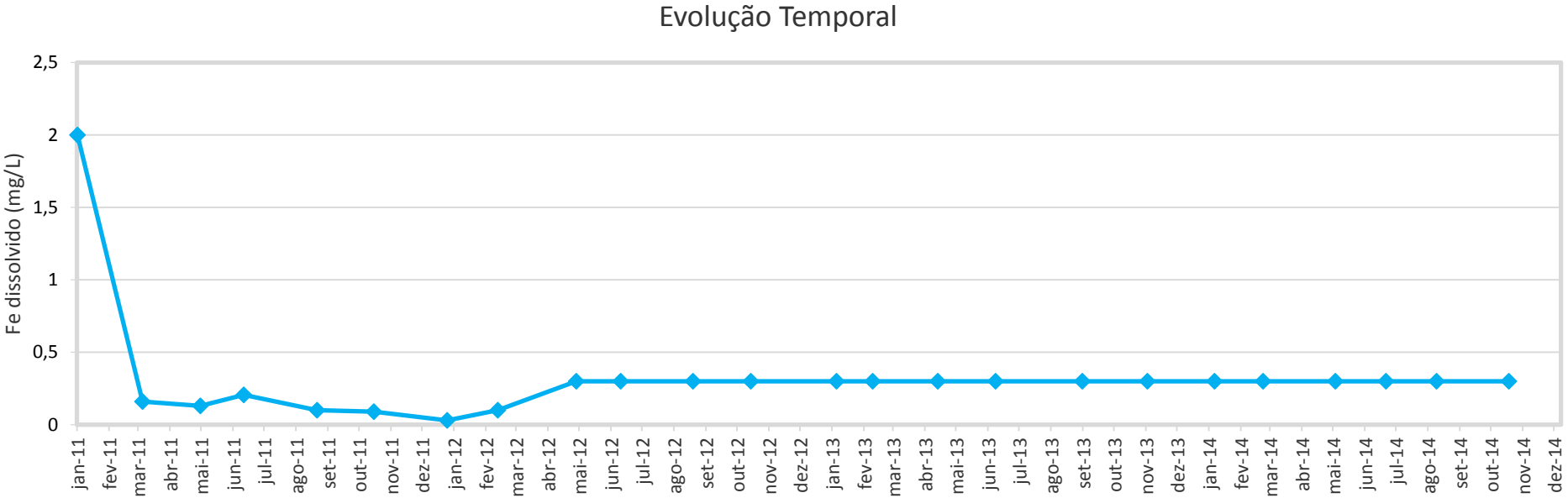
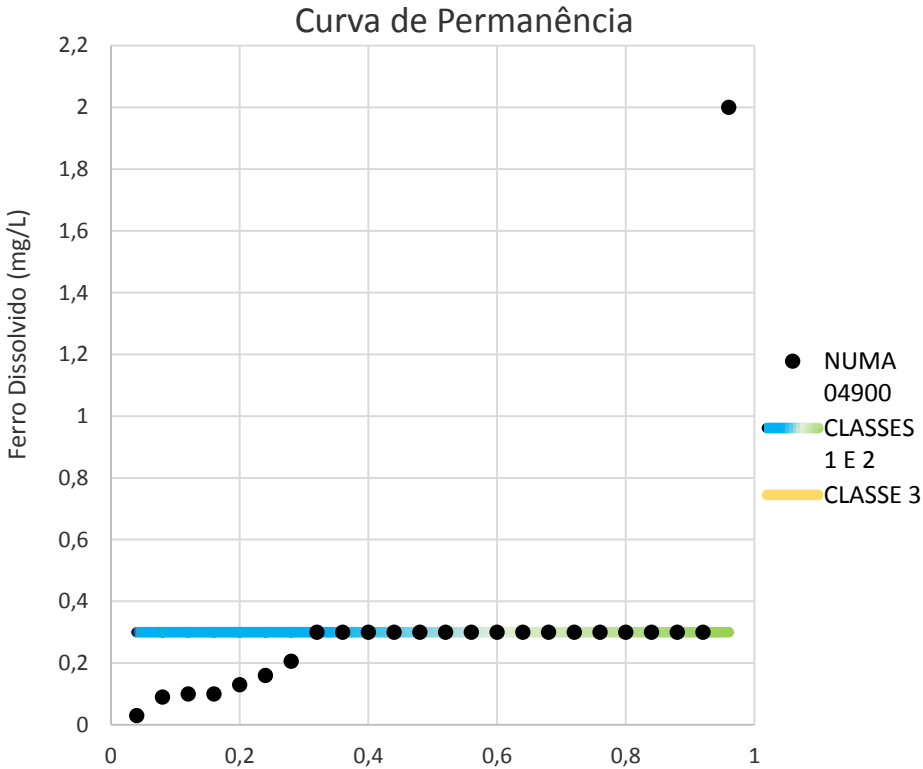


NUMA 04900 - Clorofila a ($\mu\text{g/L}$)

Variável não monitorada

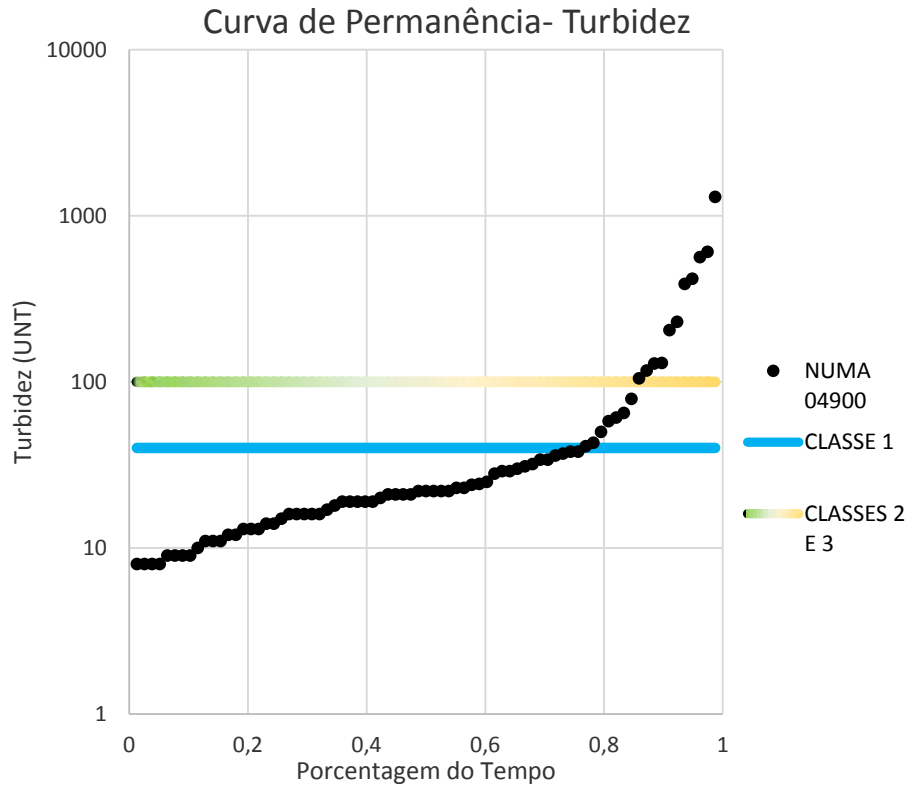
NUMA 04900 – Ferro Dissolvido (mg/L)

Não há padrão para Classe 04

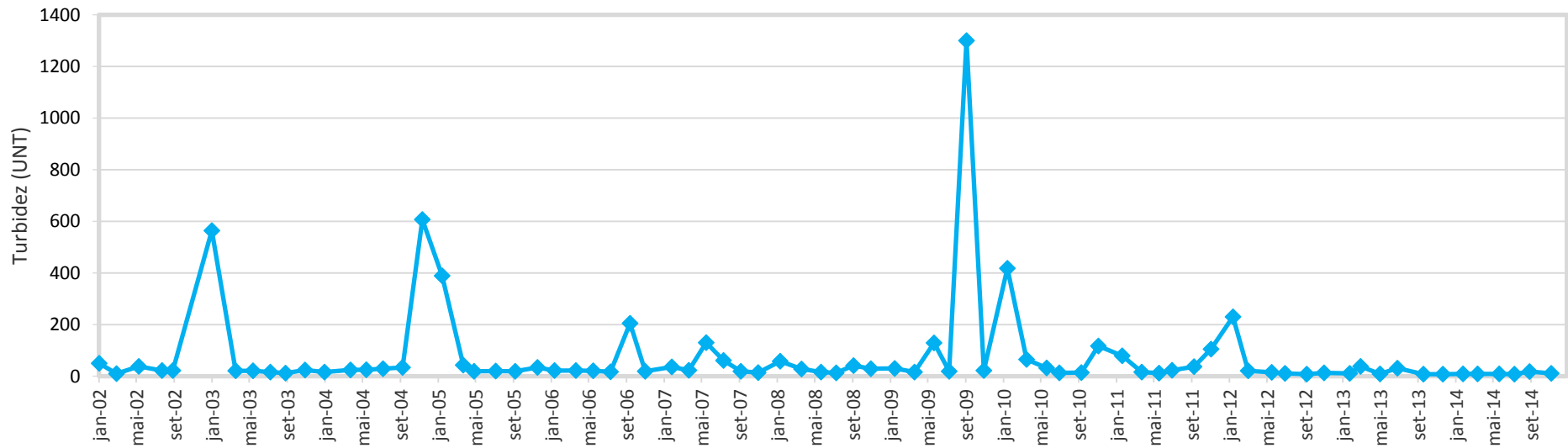


NUMA 04900 – Turbidez (UNT)

Não há padrão para Classe 04

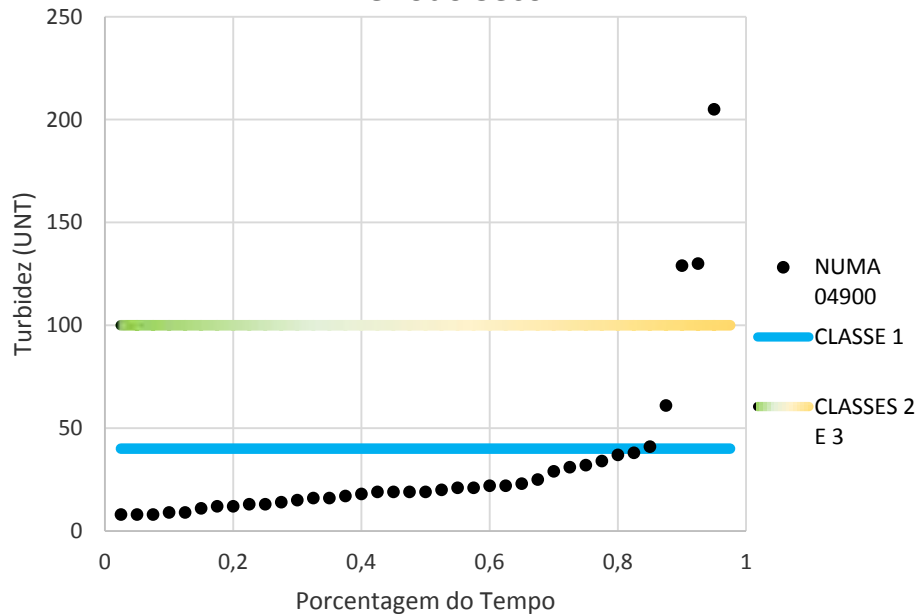


Evolução Temporal

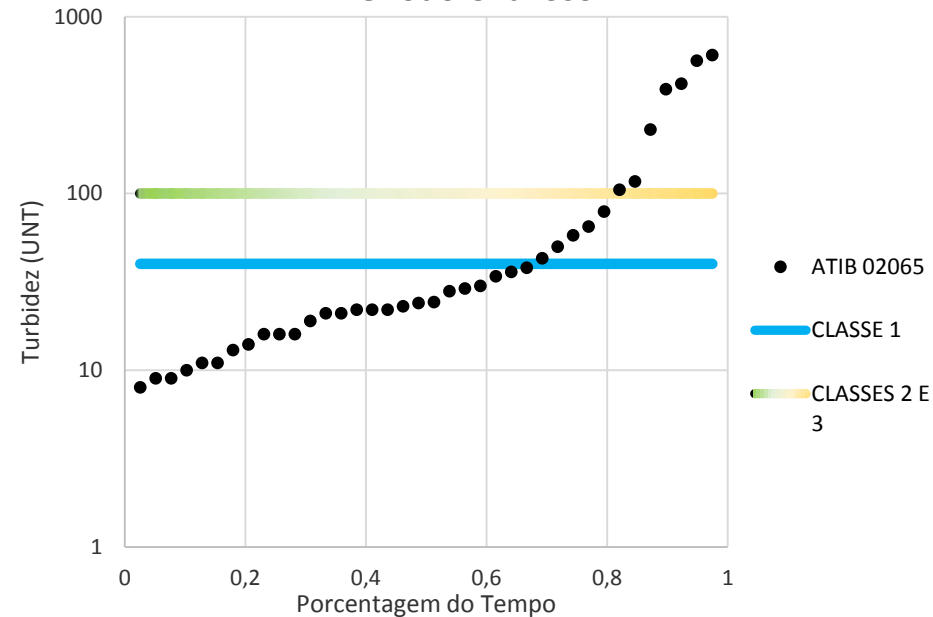


NUMA 04900 – Turbidez (Período Seco x Período Chuvoso)

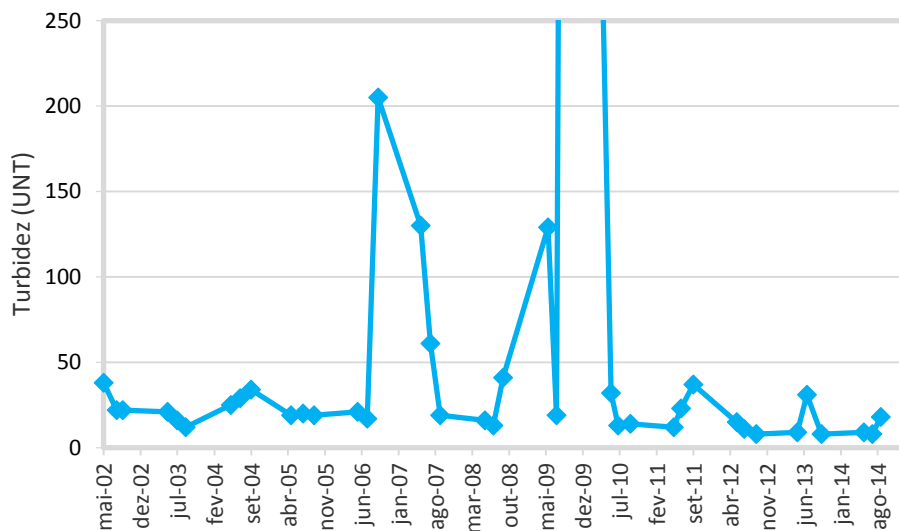
Curva de Permanência- Turbidez Período Seco



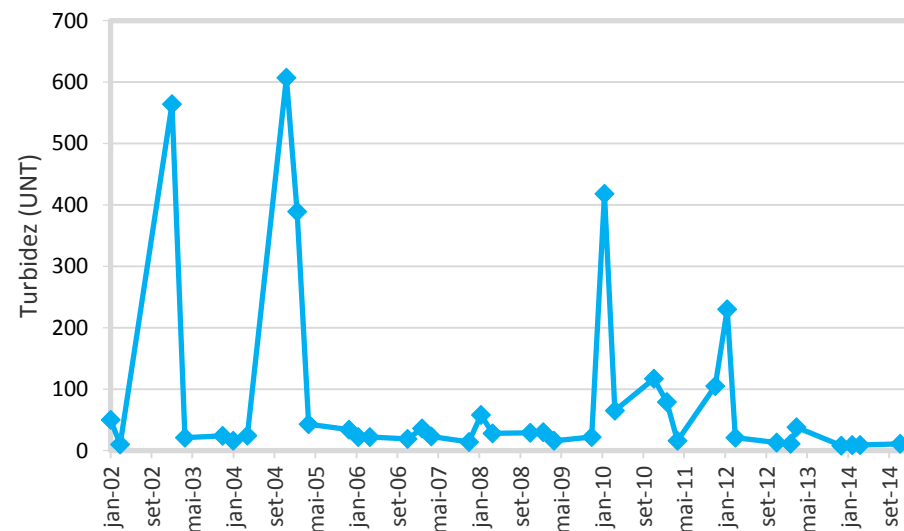
Curva de Permanência- Turbidez Período Chuvoso



Evolução Temporal - Período Seco



Evolução Temporal - Período Chuvoso



RESUMO

Tabela Resumo – Matéria Orgânica

Variável	Ponto	Classe do Padrão			
		Classe 1	Classe 2	Classe 3	Classe 4
DBO (5, 20)	BAIN02950	42	66	80	
	CAXO02800	92	97	100	
	ATIB02010	89	91	96	
	ATIB02030	77	95	100	
	ATIB02035	85	97	100	
	ATIB02065	43	83	99	
	ATIB02300	81	93	99	
	ATIB02605	13	67	92	
	ATIB02800	10	40	85	
	ATIB02900	51	80	95	
	PINO02100	3	17	67	
	PINO03900	1	11	66	
	NUMA04900	2	10	50	

Oxigênio Dissolvido	BAIN02950	7	12	20	61
	CAXO02800	71	89	93	100
	ATIB02010	19	47	74	98
	ATIB02030	60	95	98	100
	ATIB02035	97	99	100	100
	ATIB02065	81	93	100	100
	ATIB02300	69	91	95	100
	ATIB02605	43	81	91	98
	ATIB02800	20	49	76	93
	ATIB02900	21	36	60	92
	PINO02100	80	86	89	99
	PINO03900	2	26	49	89
	NUMA04900	15	52	68	89

Tabela Resumo - Nutrientes

Variável	Ponto	Classe do Padrão			
		Classe 1	Classe 2	Classe 3	Classe 4
Nitrogênio Amoniacal	BAIN02950	100	100	100	
	CAXO02800	100	100	100	
	ATIB02010	99	99	99	
	ATIB02030	100	100	100	
	ATIB02035	100	100	100	
	ATIB02065	99	99	99	
	ATIB02300	100	100	100	
	ATIB02605	92	92	99	
	ATIB02800	89	89	99	
	ATIB02900	100	100	100	
	PINO02100	43	43	86	
	PINO03900	25	25	81	
	NUMA04900	25	25	53	

Fósforo Total	BAIN02950	43	43	47	
	CAXO02800	52	52	53	
	ATIB02010	61	61	66	
	ATIB02030	57	57	59	
	ATIB02035	53	53	55	
	ATIB02065	17	17	29	
	ATIB02300	56	56	56	
	ATIB02605	10	10	16	
	ATIB02800	15	15	18	
	ATIB02900	59	59	66	
	PINO02100	29	29	40	
	PINO03900	6	6	11	
	NUMA04900	6	6	6	

Tabela Resumo - Nutrientes

Variável	Ponto	Classe do Padrão			
		Classe 1	Classe 2	Classe 3	Classe 4
Clorofila-a	BAIN02950	100	100	100	
	CAXO02800	100	100	100	
	ATIB02010	100	100	100	
	ATIB02030	100	100	100	
	ATIB02035	100	100	100	
	ATIB02065	95	98	100	
	ATIB02300	88	100	100	
	ATIB02605	94	100	100	
	ATIB02800	94	100	100	
	ATIB02900	25	75	75	
	PINO02100	14	86	86	
	PINO03900	88	100	100	
	NUMA04900	75	100	100	

Tabela Resumo - Microbiológico

Variável	Ponto	Classe do Padrão			
		Classe 1	Classe 2	Classe 3	Classe 4
Coliformes Termotolerantes / Escherichia coli	BAIN02950	1	3	5	
	CAXO02800	1	32	70	
	ATIB02010	13	46	82	
	ATIB02030	0	2	33	
	ATIB02035	3	21	60	
	ATIB02065	2	4	24	
	ATIB02300	20	55	77	
	ATIB02605	1	7	39	
	ATIB02800	0	0	3	
	ATIB02900	64	91	97	
	PINO02100	0	1	3	
	PINO03900	0	0	2	
	NUMA04900	0	1	5	

Tabela Resumo - Sólidos

Variável	Ponto	Classe do Padrão			
		Classe 1	Classe 2	Classe 3	Classe 4
Ferro Dissolvido	BAIN02950	52	52	100	
	CAXO02800	52	52	100	
	ATIB02010	14	14	100	
	ATIB02030	26	26	100	
	ATIB02035	28	28	100	
	ATIB02065	34	34	100	
	ATIB02300	50	50	94	
	ATIB02605	55	55	100	
	ATIB02800	59	59	100	
	ATIB02900	88	88	94	
	PINO02100	93	93	100	
	PINO03900	94	94	100	
	NUMA04900	96	96	100	

Turbidez	BAIN02950	88	96	96	
	CAXO02800	83	96	96	
	ATIB02010	81	96	96	
	ATIB02030	82	97	97	
	ATIB02035	77	90	90	
	ATIB02065	71	88	88	
	ATIB02300	78	90	90	
	ATIB02605	71	87	87	
	ATIB02800	67	85	85	
	ATIB02900	96	99	99	
	PINO02100	86	95	95	
	PINO03900	75	88	88	
	NUMA04900	77	86	86	

Tabela Resumo: Turbidez (Seco x Chuvoso)

Variável	Ponto	Classe do Padrão			
		Classe 1	Classe 2	Classe 3	Classe 4
Turbidez (chuvoso)	ATIB02010	64	91	91	
	ATIB02030	66	95	95	
	ATIB02035	61	79	79	
	ATIB02065	53	82	82	
	ATIB02300	63	82	82	
	ATIB02605	54	78	78	
	ATIB02800	54	74	74	
	ATIB02900	92	97	97	
	BAIN02950	84	97	97	
	CAXO02800	71	92	92	
	NUMA04900	68	82	82	
	PINO02100	92	95	95	
	PINO03900	66	84	84	

Turbidez (seco)	ATIB02010	98	100	100	
	ATIB02030	97	100	100	
	ATIB02035	92	100	100	
	ATIB02065	89	93	93	
	ATIB02300	92	97	97	
	ATIB02605	89	96	96	
	ATIB02800	79	95	95	
	ATIB02900	100	100	100	
	BAIN02950	92	95	95	
	CAXO02800	95	100	100	
	NUMA04900	85	90	90	
	PINO02100	79	95	95	
	PINO03900	85	92	92	