CORK CITY COUNCIL

KINSALE ROAD LANDFILL SITE

Waste Licence Register No: W0012-03

Annual Environmental Report

January 2014 – December 2014

Prepared by:-

Cork City Council,
Kinsale Road Landfill Site,
Cork.

August 2015

DOCUMENT CONTROL SHEET

Kinsale Road Landfill Site Annual Report

Reporting Period January 2014 to December 2014

User is Responsible for the Revision Status of this Document

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1 INTRODUCTION

1.1 Scope and Purpose of the Report

Cork City Council holds a Waste Licence (Register No. W0012-03) to operate a landfill site at the Kinsale Road, Cork. The aim of this Annual Environmental Report is to provide a review of activities at Kinsale Road landfill site within the past 12 months.

1.2 Background to the Report

The Landfill site at Kinsale Road has been in operation since the 1960's. The site was issued with a waste licence by the Environmental Protection Agency (EPA) on 2nd February 2000 (Register No. 12-1), with a new licence issued on 29th November 2002 (Register No. W0012-02). The most recent licence was issued on 3rd May 2011 (Register No. W0012-03).

In accordance with Condition 11.10 of the Waste Licence, Cork City Council is required to submit to the Agency for its agreement, an Annual Environmental Report for its activities during the previous 12 months.

This report covers the period from January 2014 to December 2014.

1.3 Site Location and Operator details

The landfill is owned and operated by Cork City Council, City Hall, Cork. The address of the facility is as follows.

Kinsale Road Landfill Site,
Ballyphehane,
Curraghconway,
Inchisarsfield,
South City Link Road,
Cork.
The National Grid Reference for the site is 168033E 069658N.

The facility contact details are as below

- Facility Manger: Kevin Ryan
- Contact No: 021 4705913
- Fax No: 021 4319930

- Landfill Technicians: Fiona O'Connor / Liam Brick
- Contact No: 021 4705914 / 4705911

- Supervisor: Michael Rawley

- Junior Foreman: Michael Reck

- Weighbridge Operator
- Contact No: 021 4705920

- Environment Department,
  City Hall,
  Cork
- Contact No: 021 4924726
- Fax No: 021 4924054

- City Hall
- Contact No. 021 4924000 / 4966222

2 SITE DESCRIPTION AND ACTIVITIES

2.1 Description of the Site

The facility was a municipal solid waste and non-hazardous industrial waste disposal facility. The site (including former land filling areas) is approximately 72 hectares.
Landfilling at the site ceased on the 15th July 2009.
Up to the 15th July 2009, the facility accepted domestic and commercial MSW and limited quantities of approved non-hazardous industrial sludges. The facility also includes a Civic Amenity Site and a Landfill Gas Combustion plant that operates on site.

The facility is located within 3 km of Cork City at the South City Link Road, in the townlands of Ballyphehane, Curraghconway and Inchisarsfield. The site occupies a large expanse of low-lying peat bog, bounded by the north and east by the Trabeg River, to the west by the South City Link Road and on the south by the Tramore River and South Ring Road.

The site has been operational since the early 1960's. The majority of the developments (commercial and residential) within 500m of the landfill have occurred subsequent to the commencement of waste disposal operations.

Works are ongoing at the site to upgrade the facility in accordance with the conditions of the Waste Licence. These works include leachate collection and treatment system, surface water collection, road infrastructure as well as final capping and restoration of the site.

2.2 Waste Management activities at the Facility

Waste Activities Licensed at the Kinsale Road Landfill Site are restricted to those outlined in the Waste Licence as outlined below in Tables 2.1 and 2.2.

Table 2.1 Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts 1996 – 2010.

Class 1.	Deposit on, in or under land (including landfill) [Principal Activity].
Class 2.	Land treatment, including biodegradation of liquid or sludge discards in soils
Class 4.	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
Class 5.	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
Class 7.	Physico-chemical treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 5 or paragraphs 8 to 10 of this Schedule (including evaporation, drying and calcination).
Class 11.	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 12.	Repacking prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13.	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

Table 2.2 Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 – 2010.

Class 2.	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes).
Class 3.	Recycling or reclamation of metals and metal compounds.
Class 4.	Recycling or reclamation of other inorganic materials.
Class 10.	The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
Class 11.	Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
Class 12.	Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13.	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

2.3 Quantities and Composition of Waste Received, Disposed of and Recovered.

Kinsale Road landfill site is licensed to send municipal waste off site for disposal / recovery up to a maximum of 22,000 tonnes of per annum.
Other waste types and quantities allowed for disposal as per Schedule A of the Waste Licence are as per Table 2.3 below.

Table 2.3 Waste Acceptance Criteria

Waste Type			Maximum [Note 2] (Tonnes Per Annum)
Non-Hazardous Wastes Note 1	Mixed Municipal Waste for recovery/disposal off-site *Accepted at Civic Waste Facility*		5,000
	Storage of Waste prior to Recovery *(including glass, beverage/food cans, textiles, paper and cardboard, plastics, timber, metals, non-hazardous batteries, non-hazardous WEEE accepted at the Civic Waste Facility)*		
	Construction & Demolition Waste *Accepted at the facility for recovery and use in site construction works and landfill restoration.*		300,000 [Note 3]
	Residual Municipal Waste for off–site recovery and/or disposal *Accepted at Waste Transfer Station*		22,000 [Note 4]
	Green Waste (for Composting) *Accepted at Civic Waste Facility*		**Note 5**
	Inert Waste - Imported for restoration purposes		**Note 6**
Non-Hazardous Waste Total			**327,000**
Hazardous Wastes **Note 7**	20 01 21	Fluorescent Tubes and other mercury-containing waste	6
	20 01 27 16 05 04	Paints, inks, adhesives and resins containing dangerous substances Gases in pressure containers (including halons) containing dangerous substances)	20
	20 01 34	Batteries and accumulators other than those mentioned in 20 01 33	12
	All Chapter 13 Wastes [Note 8]	Waste Oils	12
	20 01 35	Discarded electrical and electronic equipment other that those mentioned in 20 01 21 & 20 01 23 containing hazardous components.	1,000
Hazardous Waste Total			**1,050**
TOTAL INCLUDING DISPOSAL AND RECOVERY			**328,050**

Note 1: Any proposals to accept other compatible non-hazardous waste types must be agreed in advance by the Agency.
Note 2: The limitation on individual non-hazardous waste types may be varied with the agreement of the Agency subject to the total limit for non-hazardous waste staying the same.
Note 3: The maximum tonnage to be processed at the Construction and Demolition Waste Recovery Area shall not exceed 2,000 tonnes per day, unless subject to the prior agreement of the Agency, subject to Condition 3.27.
Note 4: Acceptance of Residual Municipal Waste at the facility for off-site disposal, other than that received at the Civic Waste Facility from members of the public, shall not take place until such time as the Waste Transfer Station infrastructure has been installed to the satisfaction of the Agency in accordance with Condition 8.2 of this licence.
Note 5: Quantity of Green Waste/ Compost at the facility is limited to a maximum of 2,400m^3 at any one time.
Note 6: Quantity of waste imported for restoration purposes is limited to 100,000 tonnes per annum for a period of two years from the date of grant of licence, unless otherwise agreed by the Agency.
Note 7: Hazardous waste types as detailed, or as may otherwise be agreed in advance by the Agency.
Note 8: All Chapter 13 wastes: *Oil Wastes and Wastes of Liquid Fuels* (except, 13 01 01, 13 03 01, 13 05 01, 13 05 02, 13 05 03, 13 07 01, 13 07 02, 13 07 03 and 13 08 01) of the *European Waste Catalogue and Hazardous Waste List*.

Table 2.3.1 Quantities of Waste received prior to reporting period.

	Non-Hazardous Waste	*Hazardous Waste*
Deposited in landfill prior to report period.	2.737 million tonnes estimated	Not known if any
C&D waste stored at C&D facility prior to report period.	15,000 tonnes	Nil

No waste was landfilled at the site during the reporting period.

Table 2.3.2 Quantities of Waste transferred offsite during the reporting period

	Waste transferred off site in 2014 (tonnes)
Total	**905**

Table 2.3.3 Classes of Waste received for recovery / recycling off site.

Waste Description	*EWC Code*	*Name of Recovery Company*
Paper	20 01 01	Greenstar
		Cork Recycling
Metal	20 01 06	Pouladuff Dismantlers
Timber	20 01 07	CTO Environmental
Plastic	20 01 03	Cork Recycling
Glass Bottles	20 01 02	Rehab Recycling Partnership
Aluminium Cans	20 01 05	Rehab Recycling Partnership
Oil	13 00 00	ENVA
Green Waste	20 02 01	CTO Environmental Solutions
Cardboard	20 01 01	Cork Recycling
WEEE	20 01 35	KMK
Aerosols	16 05 04	SLR
Paints	20 01 27	SLR
Car Batteries	16 06 01	KMK
Household Batteries	16 06 01 / 16 06 02 16 06 04 / 20 01 34	KMK

2.3.4 Landfill Inputs and Outputs (Waste and Recycling)

2.4 Landfill Capacity

2.4.1 The landfilling of waste at the facility ceased as of 15th July 2009.

2.5 Economic Contribution

Provision made for Site Operations expenditure in the reporting period was €1,066,000

Waste Totals for Kinsale Road Landfill Site - 2014

All weights in tonnes

Commodity	Total
Municipal	865
Non Levy	40
Waste Rubble	132
Total Transferred Off Site	**905**

Commodity	Total
Soil imported for capping	3,451

Domestic Recycling	Total
WEEE Out	568.74
Plastic Bottles	11.46
Plastic Wrappers	15.87
Cardboard	53.52
Paper	96.46
Metal	70.94
Green Waste (CA)	214.52
Timber (CA)	109.94
Glass	132.86
Drink Cans	4.32
Oil	5.94
Paint	19.14
Batteries	
Clothes	11.50
CA Site Recycling Total inc. WEEE Out	1315.21

Commercial Recycling	Total
Timber Waste	2,625
Green Waste	1,558

Total (inc CA Site)	Total
Timber	2,735
Green (inc Xmas Trees)	1,773

3 SITE DEVELOPMENT WORKS

3.1 Site Development Works during the Reporting Period.

The Waste Licence sets out conditions relating to the completion of certain works within the designated periods following the date of grant of the licence. The works referred to generally formed part of site development works.

M&E works for landfill gas and leachate management

M & E works are ongoing. These include maintenance of the Leachate Conditioning Plant and the continued balancing of the landfill gas field.

Miscellaneous Works Completed in 2014:

1. Ongoing maintenance of Site Roads.
2. Regular cleaning of Gravel Trap at Leachate Conditioning Plant with replacement of gravel as required.
3. Commissioning of 4 no. borehole pumps and 3 no. pump sumps in Contract 10 capping area to collect deep seated leachate within the waste body and leachate from low points below the capped landfill dome.
4. Final Capping of the site and establishment of a grass sward over capped areas as well as provisional tree planting.

Commencement of Final Capping and Restoration Works (Contract 9)

The final phase of capping and landscaping for the facility commenced in November 2013
The total area to be capped is 7.5ha.

The works entail the following:

1. Mobilisation to site by the Contractor
2. Regrading including some cut and fill to achieve the required cap profile
3. The installation of gas collection nertwork
4. The installation of a subliner gas collection system (including pipework and drainage geo-composite)
5. The installation of an LLDPE liner or other as approved by the Agency
6. The installation of a subsurface water collection layer (i.e. a drainage geocomposite)
7. The placement of subsoil above the liner
8. The placement of topsoil
9. Grass seeding and landscaping
10. The construction of an access road including pedestrian walkway and cycle way

Capping works are expected to be completed in April 2015.

Other planned works for 2015 are:

- SCADA system upgrades (reporting/management system).
- Installation /renewal of control valves and systems to optimise gas collection.
- Installation /renewal of control valves and systems to optimise storm water treatment.
- Upgrading of site roadways.
- Miscellaneous minor capital works and works arising from Operational Procedures.
- Implementation of landscape design plan for the Tramore Valley Park

4 ENVIRONMENTAL INCIDENTS AND COMPLAINTS

4.1.1 Incidents

All Incidents, Non-Conformances and Non–Compliances are uploaded to the EDEN/ALDER System.

4.2 Complaints

There were no complaints during 2014.

4.3 Review of Nuisance Controls

In accordance with Condition 6 of the Waste License Cork City Council are required to ensure that vermin, birds, flies, mud, dust and litter do not give rise to nuisances at the facility or in the immediate area of the facility.
Cork City Council ensures that the activities are carried out in a manner such that odours do not result in significant impairment or interference with amenities or the environment beyond the facility boundary.
The road network in the vicinity of the facility is kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials is removed without delay.

Litter Control
Litter fencing is no longer required at the facility as landfilling has ceased (July 2009).
Litter picking teams are organised as required to collect any wind blown litter or other waste, placed on or in the vicinity of the facility.
All vehicles removing waste and materials from the facility (Civic Amenity Site) are appropriately covered.

Dust Control
In dry weather, site roads and any other areas used by vehicles are sprayed with water as and when required to minimise airborne dust nuisance.
Prior to exiting the facility, all waste vehicles use the vehicle wash.

Bird Control
This is no longer an issue as all the waste has been covered and final capping of the site is ongoing.

Odour
Odour from the landfill site is minimised through the extraction of landfill gas and through the application of odour control substances as required.
No odour complaints were received during the reporting period.

Flies
Flies are controlled through the use of control substances as deemed necessary by the pest control experts.

Vermin

Vermin are controlled through the use of baiting as deemed necessary by the pest control experts.

Noise

Noise is minimised / controlled by operating the facility between the hours of 8am – 4pm. Contractors may operate between the hours of 8am – 6pm in agreement with the City Council.

5 ENVIRONMENTAL MANAGEMENT PROGRAMME

5.1 Environmental Objectives

1 Environmental Objective 1: Final Capping and Amenity Park Development

Environmental Objectives and Targets

Management Programme

Objective 1: Final Capping and Amenity Park Development				
Responsibility: Facility Management & appointed contractor		**Start Date:** April 2012 **Revised Date:** August 2015		
Target: To restore & cap the northern area of the site to complete site capping and restoration with an aim to developing a regional amenity park				
Task	**Details**	**Due Date**	**By Whom**	**Status**
1	Preliminary discussions held with appointed consultants to discuss the size & scope of the project	April 2012	CCC & RPS Group	Complete
2	CCC to develop a master plan for the site	Nov 2012	CCC & BSM Consultants	Complete
3	Invite expression of interest for prequalification for site capping works	January 2013	CCC & RPS Group	Complete
4	Final contract documents to be prepared for Spring 2013	March 2013	CCC & RPS Group	Complete
5	Invite contractors successful at the prequalification stage to tender for site capping works	July 2013	CCC & RPS Group	Complete
6	Assess received tenders & award contract	August 2013	CCC & RPS Group	Complete
7	Award Contract Wills Bros. Contracting engineers were successful contractors	Aug/ Sept 2013	CCC & RPS Group	Complete
8	Commence site capping works and construction of associated engineering infrastructure and landscaping works	~~October 2013~~ Nov 2013	Wills Bros. Contractor	Complete
9	Invite landscape Architect led multi disciplinary teams to tender for landscaping design of landfill site surrounding lands for detailed park design	Q1 2014	CCC / BSM	Complete
10	Assess received landscape design tenders & award contract	Q2 2014	CCC / BSM	Complete
11	Invite Landscaping led Contract Teams to tender for Carrying out landscaping works	Q2 2014	CCC / BSM	Complete
12	Assess received landscape construction tenders & award contract	Q2 2014	CCC / BSM	Complete
13	Commence Phase 1 site landscaping works and associated works	Q3 2014	CCC / BSM	Complete
14	Capping works due for completion in 2015	Q1 2015	Wills Bros. Contractor	Complete
15	Completion of Phase 1 landscaping works	Q1 2015	Wills Bros. Contractor	Complete
16	Opening of regional park to the public	Q 1 2016		
17	Ongoing phased delivery of landscaping	2016 - 2018		
Objective Complete: Signed: _____ Date: _____				

5.2 Site Management Structure

The Staff Management Structure for the facility is detailed in the Organisational Chart.
The responsibilities of the site staff are listed below.

Facility Manager

The Facility Manager has overall responsibility for operation of the facility in accordance with the conditions of the Waste Licence and best operational practices.

The Facility Manager co-ordinates all of the activities and contractors on site and implements procedures and practices in accordance with the Environmental Management Programme.

Landfill Technicians

The Environmental Technicians carry out monitoring, sampling and analysis at the facility under the supervision of the facility manager and are based at the landfill site.

Site Supervisor and Junior Foreman

The Supervisor and Junior Foreman are responsible for ensuring that the site staff carry out their designated duties, and liaises with the Facility Manager in the implementation of procedures and practices at the facility. They have completed the certified "Waste Management" course.

Relief Site Supervisor

The Relief Site Supervisor performs the functions of the Site Supervisor in the event of his / her absence. The Relief Site Supervisor has also completed the certified "Waste Management" course.

Weighbridge Operator

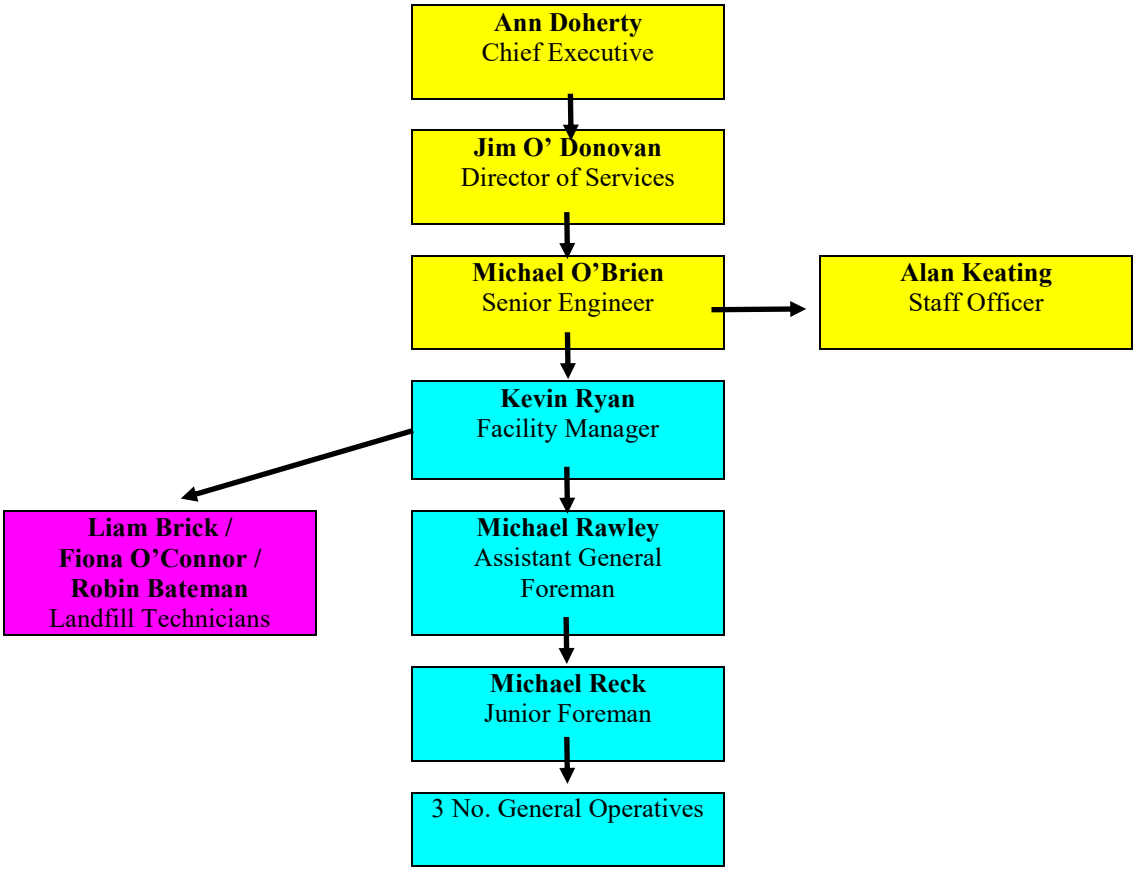
The Weighbridge Operator records incoming waste and controls access to the facility.

Staff Officer Environment

The Staff Officer Environment (not based on site) is responsible for the maintenance of the Waste Licence public file including dealing with queries from the public. Duties also include liaising with waste contractors regarding acceptance of waste and accounts etc.

5.2.1 Organisational Chart

The Management Structure of Kinsale Road Landfill Site, including Environmental Monitoring (Site Technicians and Laboratory Analysis) and Administration (City Hall).



6 ENVIRONMENTAL MONITORING AND CONTROL

The following areas were monitored during the reporting period:

6 Summary Report on Emissions

6.1 Dust

6.2 PM_{10}

6.3 Landfill Gas Monitoring

6.4 Groundwater

- Overburden Wells
- Deep Wells (NW)
- Greenhills & Nemo Rangers Wells
- Bedrock Wells (BR)

6.5 Surface Water Monitoring

6.6 Emissions to Sewer

- Selected Parameters
- Dissolved Methane

6.7 Discharge from Storm Water Pond and Reed Beds

External Reports

- Biological Survey of Streams Report
- Air Emissions testing of the Landfill Gas Flare Unit
- PRTR Table for Flare Unit & Gas Utilisation Engine
- Landfill Gas Surface Emissions Survey
- Compost Reports
  - Independent Report # 1
  - Independent Report # 2
- Meteorological Data

Parameter: **Dust Monitoring**
Frequency: **Quarterly**
Guide Limit: **350 (mg/m^2/day)**

Quarter 1

Location	Grid Co-Ordinates	Date	mg/m2/day
D1	168081E,069747N	6th Jan to 5th Feb 2014	184
D2	168373E,070046N	6th Jan to 5th Feb 2014	153
D3	168600E,069691N	6th Jan to 5th Feb 2014	173
D4	168178E,069276N	6th Jan to 5th Feb 2014	39
D5	167982E,069648N	6th Jan to 5th Feb 2014	46

Quarter 2

Location	Grid Co-Ordinates	Date	mg/m2/day
D1	168081E,069747N	No Access	
D2	168373E,070046N	28th Apr to 28th May 2014	227
D3	168600E,069691N	28th Apr to 28th May 2014	163
D4	168178E,069276N	28th Apr to 28th May 2014	66
D5	167982E,069648N	28th Apr to 28th May 2014	102

Quarter 3

Location	Grid Co-Ordinates	Date	mg/m2/day
D1	168081E,069747N	No Access	
D2	168373E,070046N	1st Sept to 30th Sept 2014	82
D3	168600E,069691N	1st Sept to 30th Sept 2014	36
D4	168178E,069276N	1st Sept to 30th Sept 2014	68
D5	167982E,069648N	1st Sept to 30th Sept 2014	336

Quarter 4

Location	Grid Co-Ordinates	Date	mg/m2/day
D1	168081E,069747N	No Access	
D2	168373E,070046N	28th Oct to 27th Nov 2014	90
D3	168600E,069691N	28th Oct to 27th Nov 2014	147
D4	168178E,069276N	28th Oct to 27th Nov 2014	54
D5	167982E,069648N	28th Oct to 27th Nov 2014	214

Ambient Monitoring

Parameter: PM_{10} ($\mu g/m^3$)

Frequency: Quarterly

24 hour limit value of 50 $\mu g/m^3$

Quarter 1

Location	Grid Co-Ordinates	Date	PM_{10} $\mu g/m^3$
S1	168399E,069753N	12th Feb 2014	69
S2	168222E,069651N	Removed	Removed
S4	167982E,069648N	14th Feb 2014	20

Quarter 2

Location	Grid Co-Ordinates	Date	PM_{10} $\mu g/m^3$
S1	168399E,069753N	8th May 2014	36
S2	168222E,069651N	Removed	Removed
S4	167982E,069648N	15th May 2014	16

Quarter 3

Location	Grid Co-Ordinates	Date	PM_{10} $\mu g/m^3$
S1	168399E,069753N	10th Sept 2014	78
S2	168222E,069651N	Removed	Removed
S4	167982E,069648N	11th Sept 2014	40

Quarter 4

Location	Grid Co-Ordinates	Date	PM_{10} $\mu g/m^3$
S1	168399E,069753N	4th Nov 2014	50
S2	168222E,069651N	Removed	Removed
S4	167982E,069648N	26th Nov 2014	18

Parameter: Total Suspended Particulates
Frequency: Quarterly
Guide Limit: 150(µg/m^3)

Quarter 1

Location	Grid Co-Ordinates	Date	TSP µg/m^3
D1	168081E,069747N	18th Feb 2014	29
D2	168373E,070046N	18th Feb 2014	14
D3	168600E,069691N	12thFeb 2014	17
D4	168178E,069276N	26thFeb 2014	28
D5	167982E,069648N	26thFeb 2014	11

Quarter 2

Location	Grid Co-Ordinates	Date	TSP µg/m^3
D1	168081E,069747N	No Access	No Access
D2	168373E,070046N	8thMay 2014	14
D3	168600E,069691N	21stMay 2014	26
D4	168178E,069276N	21stMay 2014	11
D5	167982E,069648N	27th May 2014	11

Quarter 3

Location	Grid Co-Ordinates	Date	TSP µg/m^3
D1	168081E,069747N	No Access	No Access
D2	168373E,070046N	15thSept 2014	77
D3	168600E,069691N	11thSept 2014	46
D4	168178E,069276N	17th Sept 2014	74
D5	167982E,069648N	23th Sept 2014	63

Quarter 4

Location	Grid Co-Ordinates	Date	TSP µg/m^3
D1	168081E,069747N	No Access	No Access
D2	168373E,070046N	11th Nov 2014	35
D3	168600E,069691N	25th Nov 2014	25
D4	168178E,069276N	1st Dec 2014	54
D5	167982E,069648N	17th Dec 2014	47

Landfill Gas Monitoring Report

AER gas well data compilation

Gas Well Graphs

Blue Demons Gas Wells

Perimeter and Greenhills Estate Gas Wells

Park and Ride Gas Wells

Perimeter Gas Monitoring Wells

WELL NO.	DP3	
LOCATION	BLUE DEMONS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	23.60	15.40
Mean	0.77	1.04
n	43	43
Over limit	3	12

WELL NO.	DP4	
LOCATION	BLUE DEMONS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	29.90	16.60
Mean	7.86	4.08
n	43	43
Over limit	31	27

WELL NO.	DP3A	
LOCATION	BLUE DEMONS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	42.00	24.60
Mean	1.18	1.60
n	43	43
Over limit	2	20

WELL NO.	DP4A	
LOCATION	BLUE DEMONS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	23.30	4.60
Mean	2.33	1.81
n	43	43
Over limit	10	26

WELL NO.	DP3 OLD	
LOCATION	BLUE DEMONS	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	26.00	5.70
Max	75.70	33.20
Mean	54.70	15.16
n	43	43
Over limit	43	43

WELL NO.	DP4 OLD	
LOCATION	BLUE DEMONS	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	65.70	7.40
Mean	8.53	1.74
n	43	43
Over limit	13	13

WELL NO.	LG2	
LOCATION	LANDFILL NORTH	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	7.90
Mean	0.00	2.56
n	41	41
Over limit	0	36

WELL NO.	LG3	
LOCATION	LANDFILL NORTH	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	1.30
Max	6.40	11.90
Mean	0.81	6.34
n	41	41
Over limit	13	40

WELL NO.	LG4	
LOCATION	LANDFILL NORTH	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	3.10
Mean	0.00	1.09
n	41	41
Over limit	0	7

WELL NO.	LG5	
LOCATION	GREENHILLS	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	3.30
Mean	0.00	0.84
n	201	201
Over limit	0	24

WELL NO.	LG5A	
LOCATION	GREENHILLS	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	20.00	16.70
Mean	5.76	6.62
n	206	206
Over limit	156	190

WELL NO.	LG6	
LOCATION	GREENHILLS	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	3.80
Mean	0.00	0.58
n	207	207
Over limit	0	34

WELL NO.	LG6A	
LOCATION	GREENHILLS	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.20
Max	11.00	9.80
Mean	2.40	5.18
n	207	207
Over limit	80	206

WELL NO.	LG7A	
LOCATION	GREENHILLS	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	2.60
Mean	0.00	0.68
n	206	206
Over limit	0	6

WELL NO.	LG8A	
LOCATION	GREENHILLS	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.90	0.90
Mean	0.02	5.21
n	205	205
Over limit	0	155

WELL NO.	LG8	Well Flooded
LOCATION	GREENHILLS	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min		
Max		
Mean		
n	0	0
Over limit		

WELL NO.	LG12	
LOCATION	LANDFILL SOUTH	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	1.20
Max	2.80	4.80
Mean	0.28	2.76
n	40	40
Over limit	5	36

WELL NO.	LG13	
LOCATION	LANDFILL SOUTH	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	1.30
Mean	0.00	0.39
n	41	41
Over limit	0	0

WELL NO.	LG14	
LOCATION	LANDFILL SOUTH	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	1.40
Max	0.00	13.40
Mean	0.00	5.14
n	40	40
Over limit	0	39

WELL NO.	LG46	Broken Well
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min		
Max		
Mean		
n	0	0
Over limit		

WELL NO.	LG47	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	1.90
Mean	0.00	0.08
n	207	207
Over limit	0	2

WELL NO.	LG48	Broken Well
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min		
Max		
Mean		
n	0	0
Over limit		

WELL NO.	LG49	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	5.90
Mean	0.00	0.63
n	207	207
Over limit	0	21

WELL NO.	LG51	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	2.30
Mean	0.00	0.69
n	206	206
Over limit	0	20

WELL NO.	LG52	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	14.30
Mean	0.00	2.52
n	207	207
Over limit	0	132

WELL NO.	LG53	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	2.50
Mean	0.00	0.40
n	203	203
Over limit	0	2

WELL NO.	LG54	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	5.80
Mean	0.00	1.66
n	206	206
Over limit	0	109

WELL NO.	LG55	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.10
Max	0.00	8.40
Mean	0.00	2.86
n	207	207
Over limit	0	147

WELL NO.	LG58	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	1.90
Mean	0.00	0.79
n	207	207
Over limit	0	14

WELL NO.	TP9	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.20
Max	1.40	9.70
Mean	0.01	4.23
n	207	207
Over limit	1	199

WELL NO.	TP12	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	5.00
Mean	0.00	1.38
n	207	207
Over limit	0	79

WELL NO.	TP17	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	2.80
Mean	0.00	0.42
n	207	207
Over limit	0	14

WELL NO.	TP21	**Broken Well**
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min		
Max		
Mean		
n	0	0
Over limit		

WELL NO.	TP27	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	3.90
Mean	0.00	1.23
n	204	204
Over limit	0	66

WELL NO.	TP32	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.20
Max	1.80	8.10
Mean	0.02	3.06
n	207	207
Over limit	2	159

WELL NO.	TP33	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.10
Max	0.00	9.80
Mean	0.00	3.30
n	208	208
Over limit	0	188

WELL NO.	GH1	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.10
Max	0.00	4.90
Mean	0.00	1.84
n	187	187
Over limit	0	114

WELL NO.	GH2	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	4.30
Mean	0.00	0.99
n	159	159
Over limit	0	43

WELL NO.	GH3	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	8.90
Mean	0.00	3.64
n	153	153
Over limit	0	134

WELL NO.	GH4	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.30	9.80
Mean	0.00	2.78
n	191	191
Over limit	0	151

WELL NO.	GH5	
LOCATION	GREENHILLS	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	32.40
Mean	0.00	2.41
n	181	181
Over limit	0	139

WELL NO.	137	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	3.40	4.30
Mean	0.03	0.04
n	210	210
Over limit	2	2

WELL NO.	138	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	0.40
Mean	0.00	0.05
n	210	210
Over limit	0	0

WELL NO.	139	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	0.50
Mean	0.00	0.05
n	222	222
Over limit	0	0

WELL NO.	140	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	1.80	1.80
Mean	0.01	0.11
n	209	209
Over limit	2	1

WELL NO.	141	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	1.50
Mean	0.00	0.17
n	210	210
Over limit	0	2

WELL NO.	142	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	1.90
Mean	0.00	0.49
n	173	173
Over limit	0	5

WELL NO.	143	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	0.01	0.015
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	4.50
Mean	0.00	1.19
n	49	49
Over limit	0	14

WELL NO.	144	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	0.30
Mean	0.00	3.51
n	48	48
Over limit	0	0

WELL NO.	145	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.50
Max	0.00	4.10
Mean	0.00	2.01
n	49	49
Over limit	0	38

WELL NO.	146	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	0.80
Mean	0.00	0.29
n	48	48
Over limit	0	0

WELL NO.	171	
LOCATION	PARK AND RIDE	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	1.30
Mean	0.00	0.53
n	49	49
Over limit	0	0

WELL NO.	172	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	1.30
Mean	0.00	0.56
n	49	49
Over limit	0	0

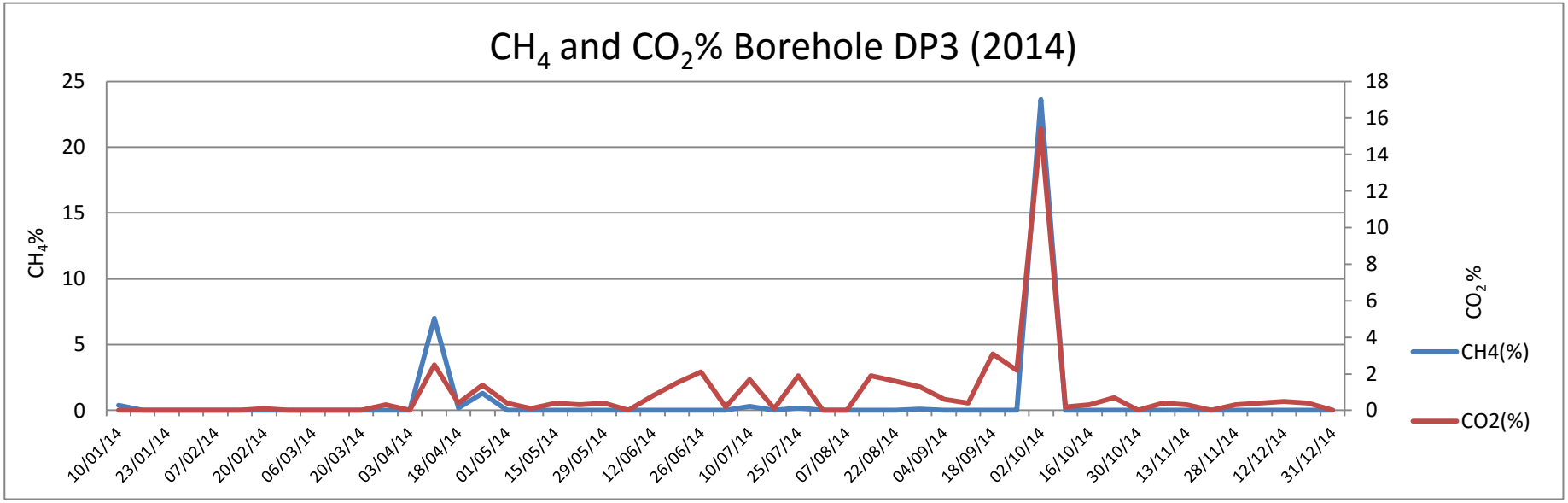
WELL NO.	173	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.10
Max	0.00	1.60
Mean	0.00	0.73
n	49	49
Over limit	0	1

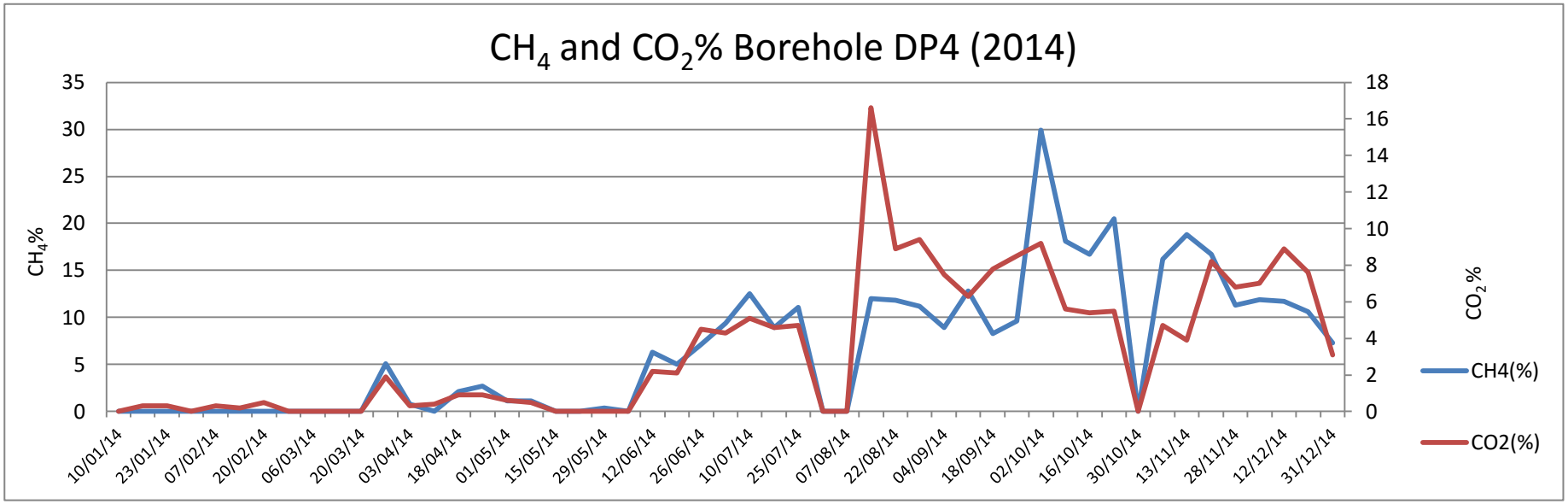
WELL NO.	174	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	1.90
Mean	0.00	0.83
n	49	49
Over limit	0	2

WELL NO.	175	
LOCATION	PARK AND RIDE	
LICENSED	Y	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.70
Max	0.00	3.90
Mean	0.00	2.01
n	38	38
Over limit	0	21

WELL NO.	TERMINAL	
LOCATION	PARK AND RIDE	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	0.20
Mean	0.00	0.00
n	210	210
Over limit	0	0

WELL NO.	KITCHEN	
LOCATION	PARK AND RIDE	
LICENSED	N	
License Limit	1%	1.50%
	CH4 %	CO2 %
Min	0.00	0.00
Max	0.00	0.20
Mean	0.00	0.00
n	210	210
Over limit	0	0


CH4 and CO2% Borehole DP3 (2014)
CH4%
CO2%
CH4(%)
CO2(%)
25
20
15
10
5
0
18
16
14
12
10
8
6
4
2
0
10/01/14
23/01/14
07/02/14
20/02/14
06/03/14
20/03/14
03/04/14
18/04/14
01/05/14
15/05/14
29/05/14
12/06/14
26/06/14
10/07/14
25/07/14
07/08/14
22/08/14
04/09/14
18/09/14
02/10/14
16/10/14
30/10/14
13/11/14
28/11/14
12/12/14
31/12/14


CH4 and CO2% Borehole DP4 (2014)
CH4%
CO2%
CH4(%)
CO2(%)
35
30
25
20
15
10
5
0
18
16
14
12
10
8
6
4
2
0
10/01/14
23/01/14
07/02/14
20/02/14
06/03/14
20/03/14
03/04/14
18/04/14
01/05/14
15/05/14
29/05/14
12/06/14
26/06/14
10/07/14
25/07/14
07/08/14
22/08/14
04/09/14
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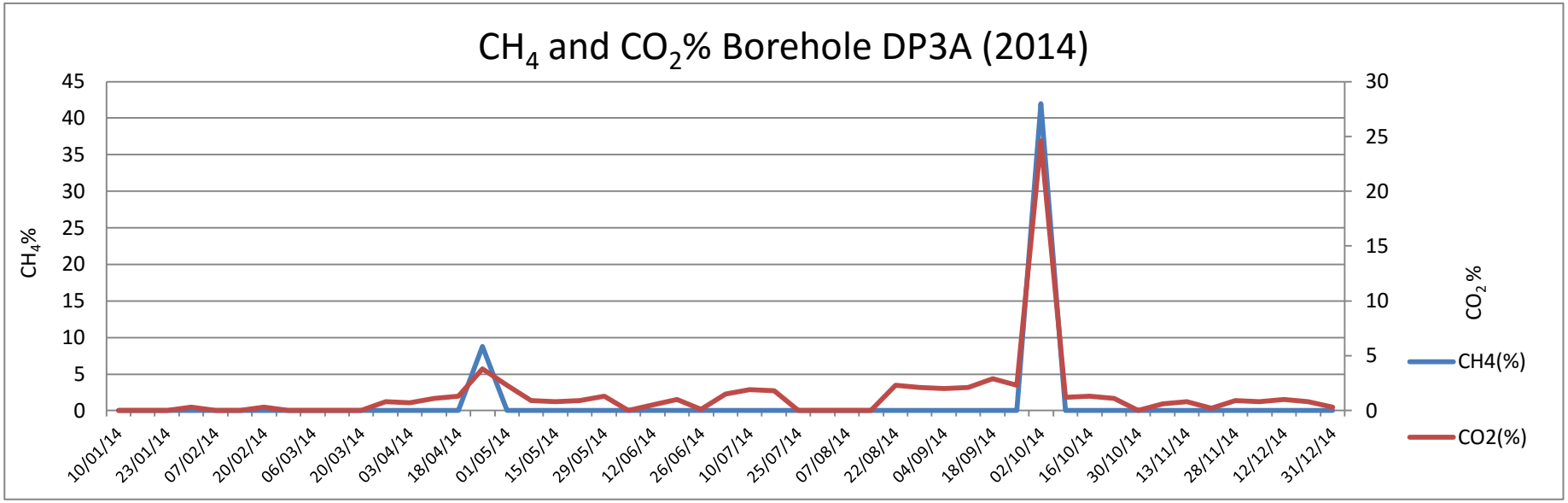
30/10/14
13/11/14
28/11/14
12/12/14
31/12/14


CH4 and CO2% Borehole DP3A (2014)
CH4%
CO2 %
CH4(%)
CO2(%)
45
40
35
30
25
20
15
10
5
0
30
25
20
15
10
5
0
10/01/14
23/01/14
07/02/14
20/02/14
06/03/14
20/03/14
03/04/14
18/04/14
01/05/14
15/05/14
29/05/14
12/06/14
26/06/14
10/07/14
25/07/14
07/08/14
22/08/14
04/09/14
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16/10/14
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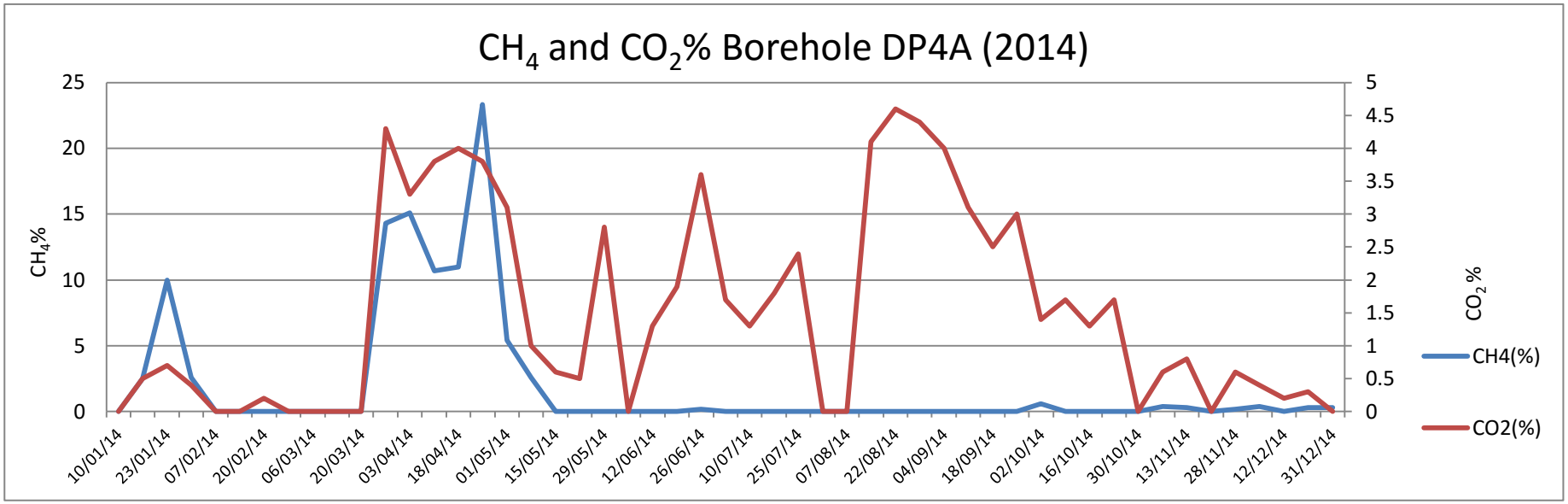
13/11/14
28/11/14
12/12/14
31/12/14


CH4 and CO2% Borehole DP4A (2014)
CH4%
CO2 %
CH4(%)
CO2(%)
25
20
15
10
5
0
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
10/01/14
23/01/14
07/02/14
20/02/14
06/03/14
20/03/14
03/04/14
18/04/14
01/05/14
15/05/14
29/05/14
12/06/14
26/06/14
10/07/14
25/07/14
07/08/14
22/08/14
04/09/14
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16/10/14
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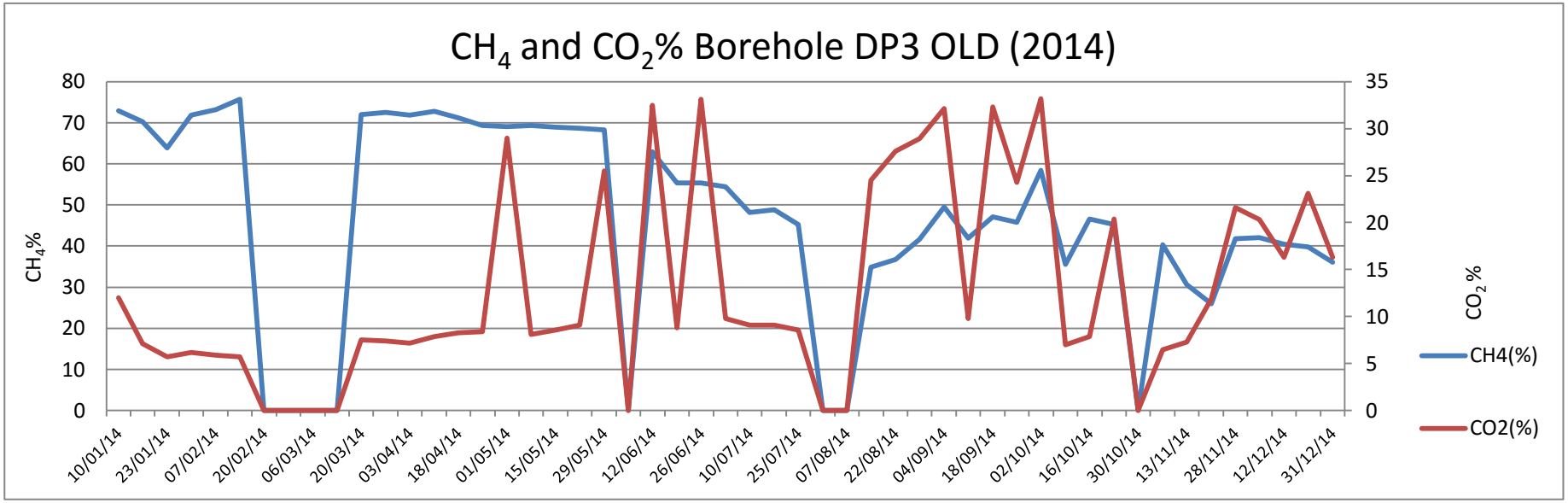
28/11/14
12/12/14
31/12/14


CH4 and CO2% Borehole DP3 OLD (2014)
CH4%
CO2 %
CH4(%)
CO2(%)
0
10
20
30
40
50
60
70
80
0
5
10
15
20
25
30
35
10/01/14
23/01/14
07/02/14
20/02/14
06/03/14
20/03/14
03/04/14
18/04/14
01/05/14
15/05/14
29/05/14
12/06/14
26/06/14
10/07/14
25/07/14
07/08/14
22/08/14
04/09/14
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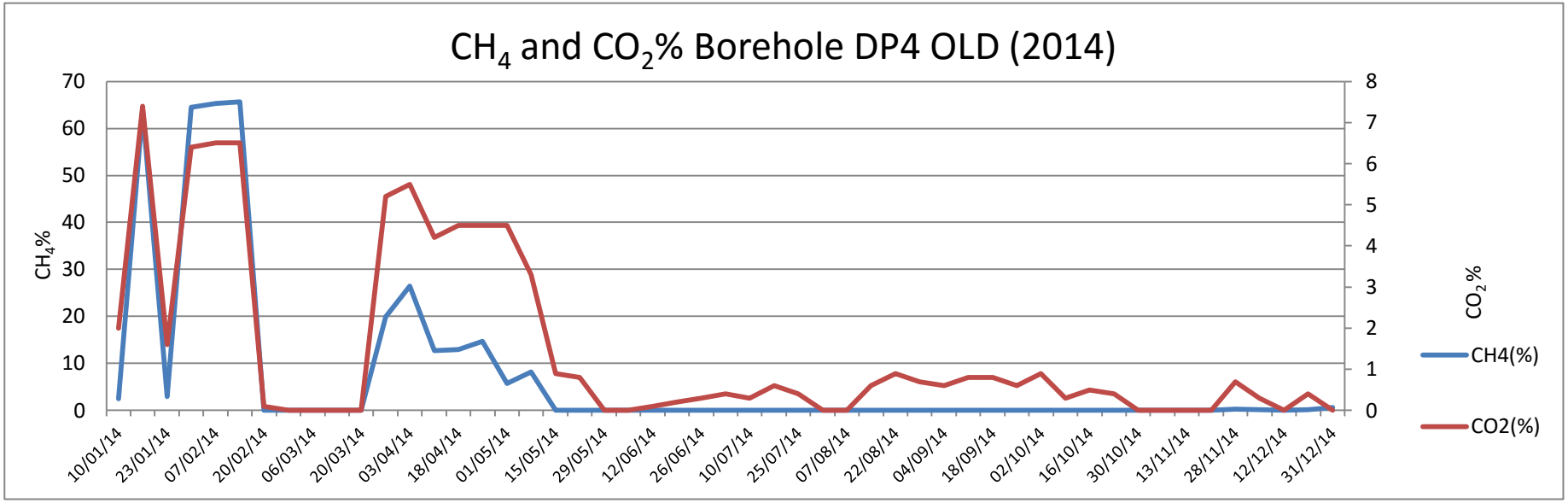
12/12/14
31/12/14


CH4 and CO2% Borehole DP4 OLD (2014)
CH4%
CO2 %
CH4(%)
CO2(%)
0
10
20
30
40
50
60
70
0
1
2
3
4
5
6
7
8
10/01/14
23/01/14
07/02/14
20/02/14
06/03/14
20/03/14
03/04/14
18/04/14
01/05/14
15/05/14
29/05/14
12/06/14
26/06/14
10/07/14
25/07/14
07/08/14
22/08/14
04/09/14
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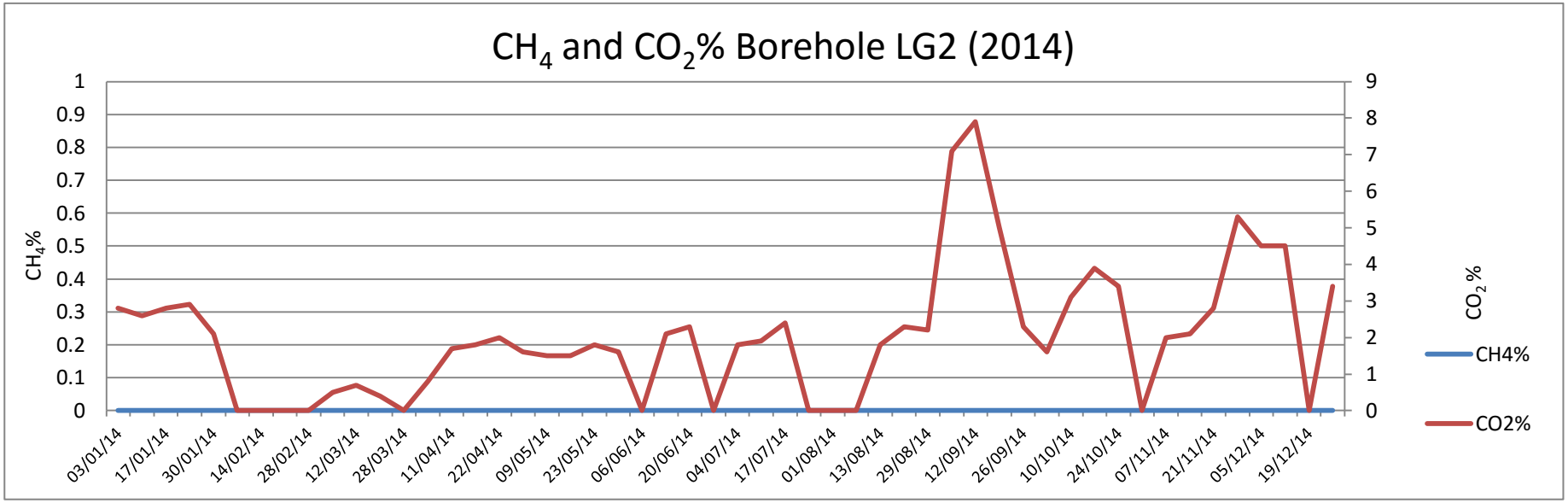
02/10/14
16/10/14
30/10/14
13/11/14
28/11/14
12/12/14
31/12/14


CH4 and CO2% Borehole LG2 (2014)
CH4%
CO2 %
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
9
8
7
6
5
4
3
2
1
0
03/01/14
17/01/14
30/01/14
14/02/14
28/02/14
12/03/14
28/03/14
11/04/14
22/04/14
09/05/14
23/05/14
06/06/14
20/06/14
04/07/14
17/07/14
01/08/14
13/08/14
29/08/14
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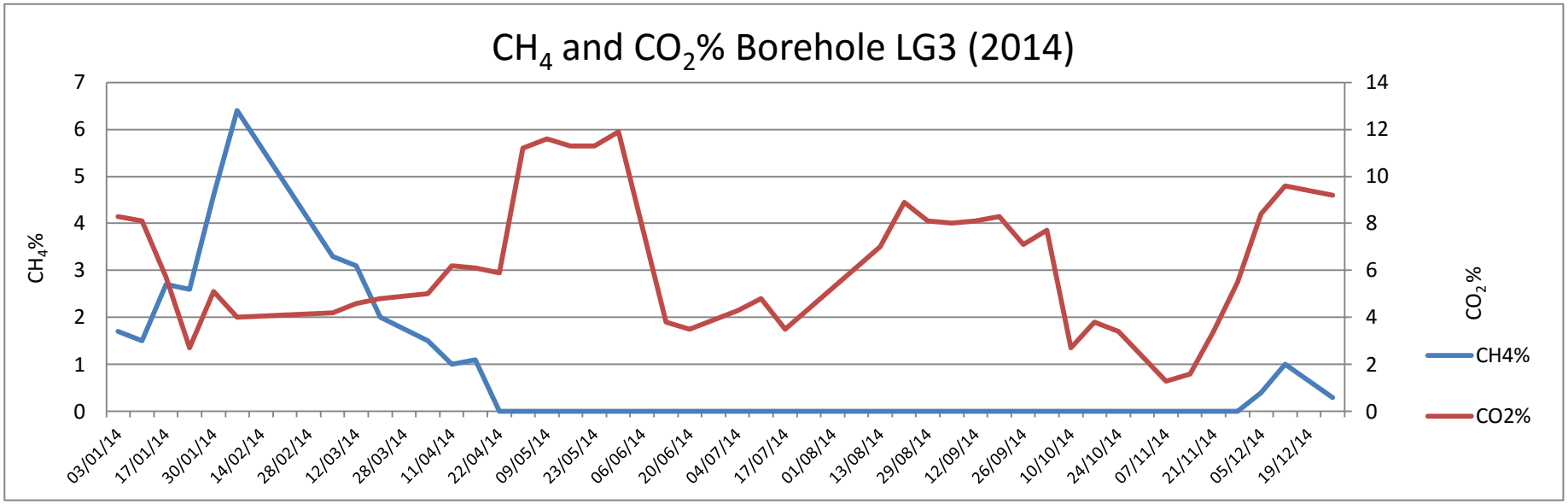
05/12/14
19/12/14


CH4 and CO2% Borehole LG3 (2014)
CH4%
CO2 %
CH4%
CO2%
7
6
5
4
3
2
1
0
14
12
10
8
6
4
2
0
03/01/14
17/01/14
30/01/14
14/02/14
28/02/14
12/03/14
28/03/14
11/04/14
22/04/14
09/05/14
23/05/14
06/06/14
20/06/14
04/07/14
17/07/14
01/08/14
13/08/14
29/08/14
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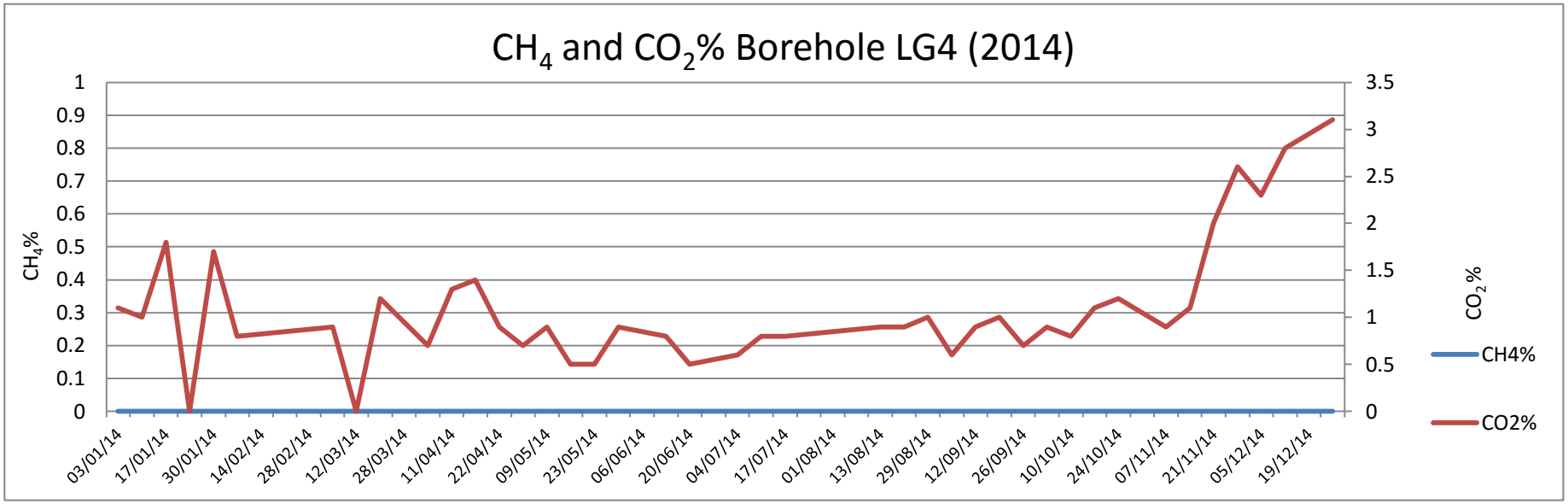
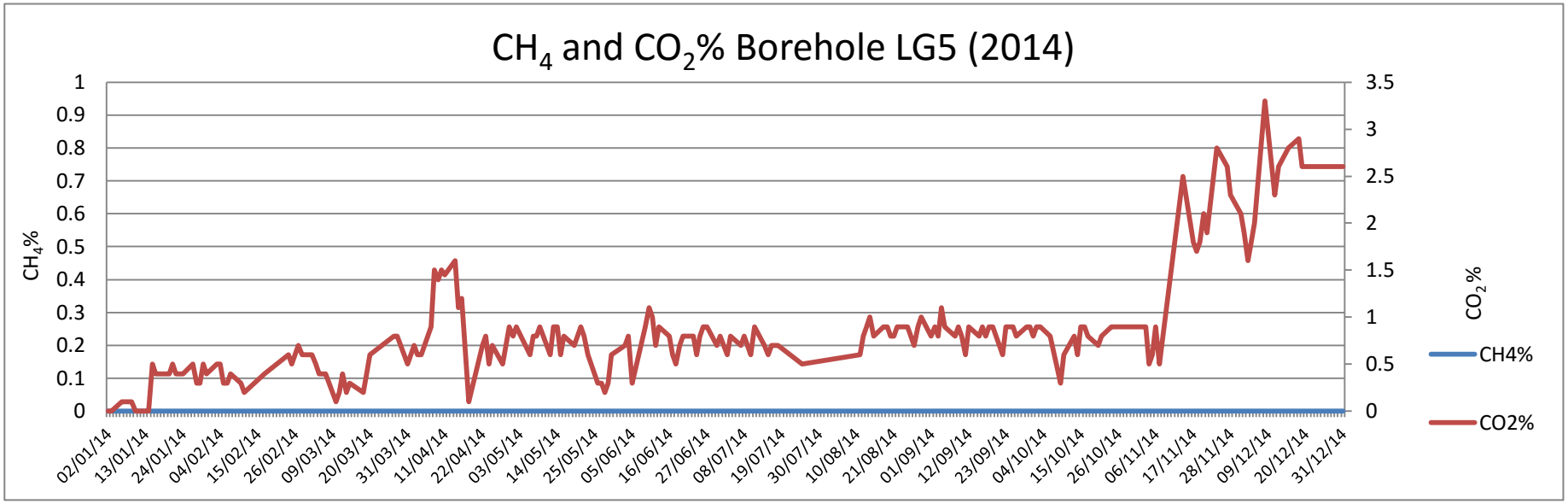
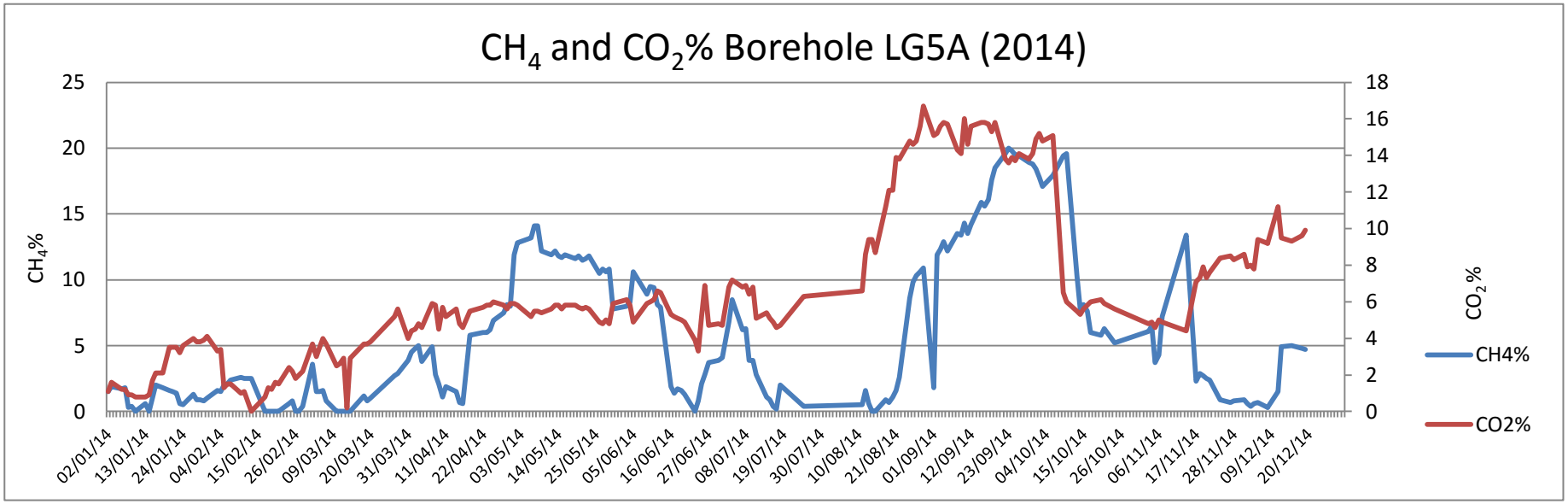
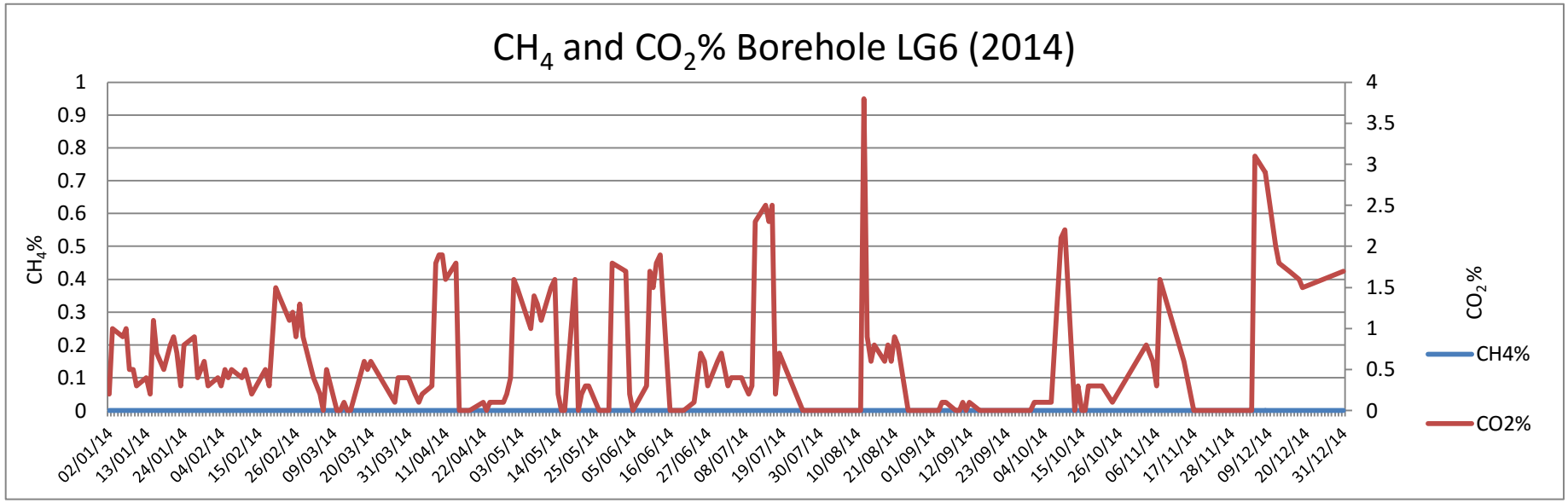
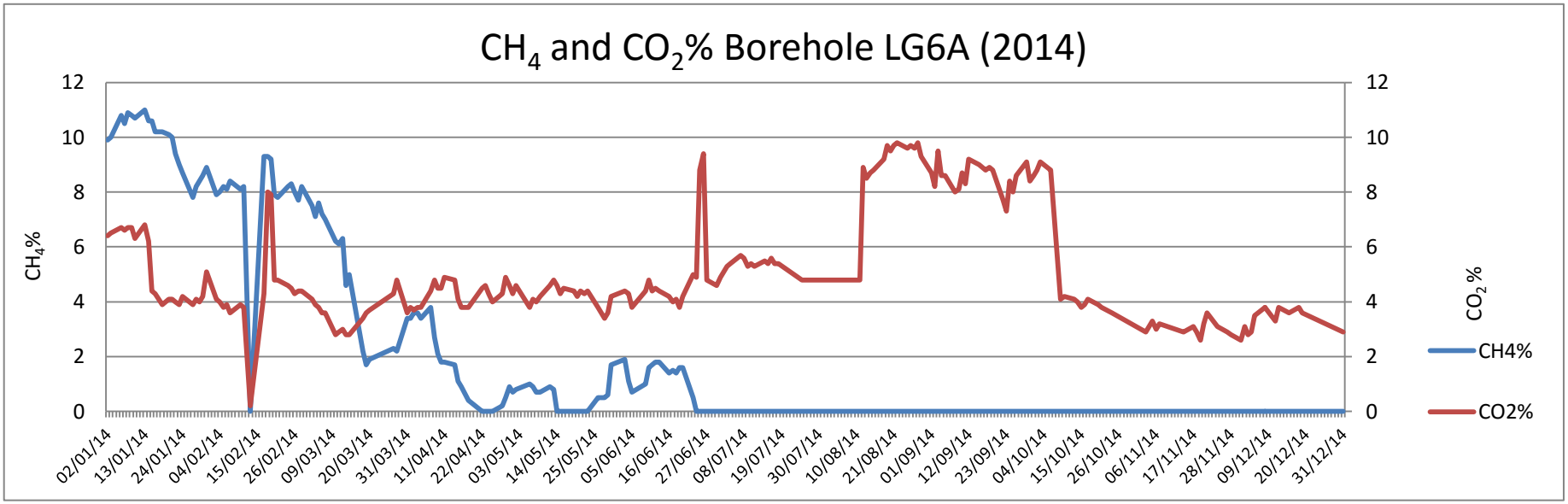
24/10/14
07/11/14
21/11/14
05/12/14
19/12/14


CH4 and CO2% Borehole LG4 (2014)
CH4%
CO2%
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
3.5
3
2.5
2
1.5
1
0.5
0
03/01/14
17/01/14
30/01/14
14/02/14
28/02/14
12/03/14
28/03/14
11/04/14
22/04/14
09/05/14
23/05/14
06/06/14
20/06/14
04/07/14
17/07/14
01/08/14
13/08/14
29/08/14
12/09/14
26/09/14
10/10/14
24/10/14
07/11/14
21/11/14
05/12/14
19/12/14


CH4 and CO2% Borehole LG5 (2014)
CH4%
CO2%
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
3.5
3
2.5
2
1.5
1
0.5
0
02/01/14
13/01/14
24/01/14
04/02/14
15/02/14
26/02/14
09/03/14
20/03/14
31/03/14
11/04/14
22/04/14
03/05/14
14/05/14
25/05/14
05/06/14
16/06/14
27/06/14
08/07/14
19/07/14
30/07/14
10/08/14
21/08/14
01/09/14
12/09/14
23/09/14
04/10/14
15/10/14
26/10/14
06/11/14
17/11/14
28/11/14
09/12/14
20/12/14
31/12/14


CH4 and CO2% Borehole LG5A (2014)
CH4%
CO2%
CH4%
CO2%
0
5
10
15
20
25
0
2
4
6
8
10
12
14
16
18
02/01/14
13/01/14
24/01/14
04/02/14
15/02/14
26/02/14
09/03/14
20/03/14
31/03/14
11/04/14
22/04/14
03/05/14
14/05/14
25/05/14
05/06/14
16/06/14
27/06/14
08/07/14
19/07/14
30/07/14
10/08/14
21/08/14
01/09/14
12/09/14
23/09/14
04/10/14
15/10/14
26/10/14
06/11/14
17/11/14
28/11/14
09/12/14
20/12/14


CH4 and CO2% Borehole LG6 (2014)
CH4%
CO2%
CH4%
CO2%
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
0.5
1
1.5
2
2.5
3
3.5
4
02/01/14
13/01/14
24/01/14
04/02/14
15/02/14
26/02/14
09/03/14
20/03/14
31/03/14
11/04/14
22/04/14
03/05/14
14/05/14
25/05/14
05/06/14
16/06/14
27/06/14
08/07/14
19/07/14
30/07/14
10/08/14
21/08/14
01/09/14
12/09/14
23/09/14
04/10/14
15/10/14
26/10/14
06/11/14
17/11/14
28/11/14
09/12/14
20/12/14
31/12/14


CH4 and CO2% Borehole LG6A (2014)
CH4%
CO2 %
CH4%
CO2%
0
2
4
6
8
10
12
02/01/14
13/01/14
24/01/14
04/02/14
15/02/14
26/02/14
09/03/14
20/03/14
31/03/14
11/04/14
22/04/14
03/05/14
14/05/14
25/05/14
05/06/14
16/06/14
27/06/14
08/07/14
19/07/14
30/07/14
10/08/14
21/08/14
01/09/14
12/09/14
23/09/14
04/10/14
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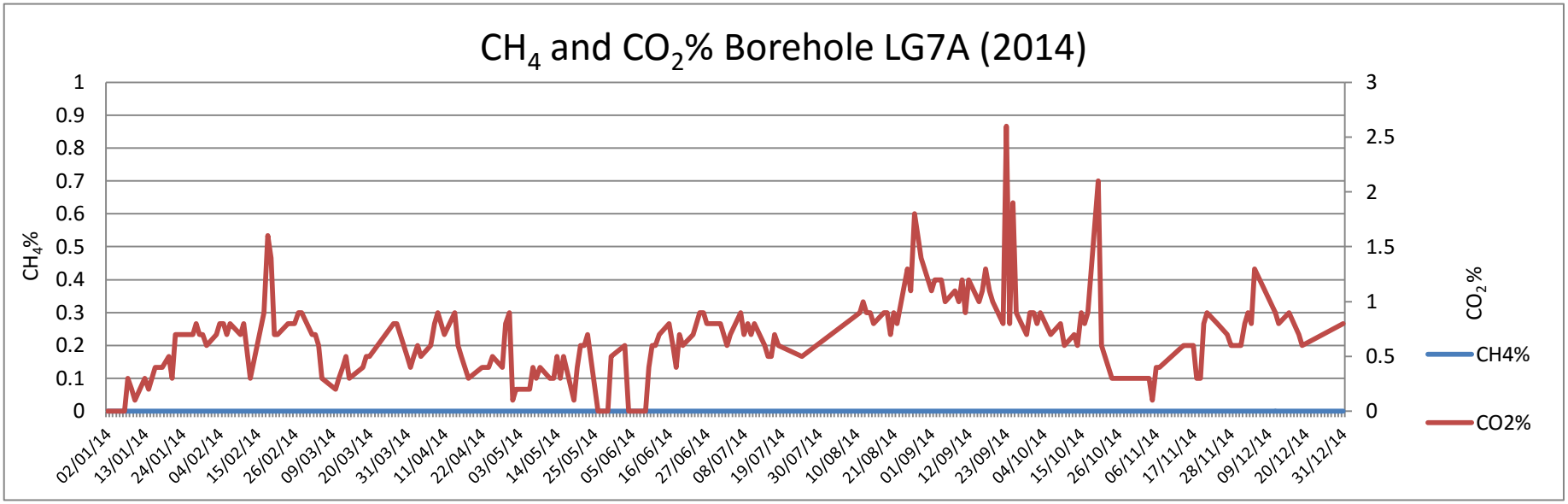
26/10/14
06/11/14
17/11/14
28/11/14
09/12/14
20/12/14
31/12/14


CH4 and CO2% Borehole LG7A (2014)
CH4%
CO2 %
CH4%
CO2%
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
0.5
1
1.5
2
2.5
3
02/01/14
13/01/14
24/01/14
04/02/14
15/02/14
26/02/14
09/03/14
20/03/14
31/03/14
11/04/14
22/04/14
03/05/14
14/05/14
25/05/14
05/06/14
16/06/14
27/06/14
08/07/14
19/07/14
30/07/14
10/08/14
21/08/14
01/09/14
12/09/14
23/09/14
04/10/14
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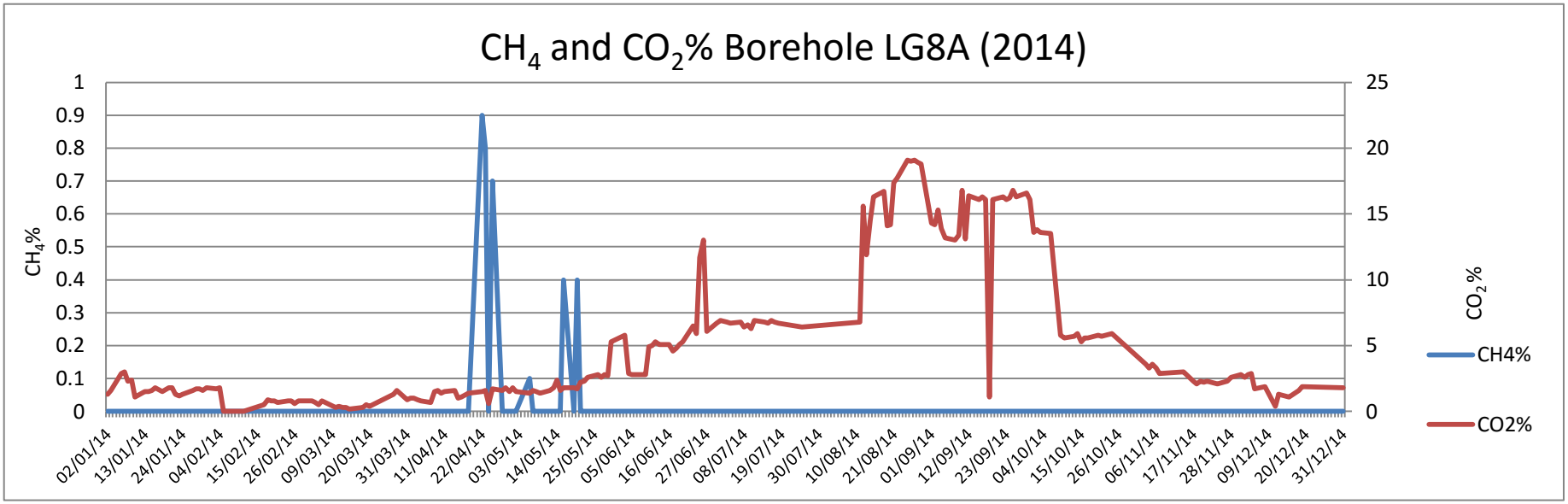
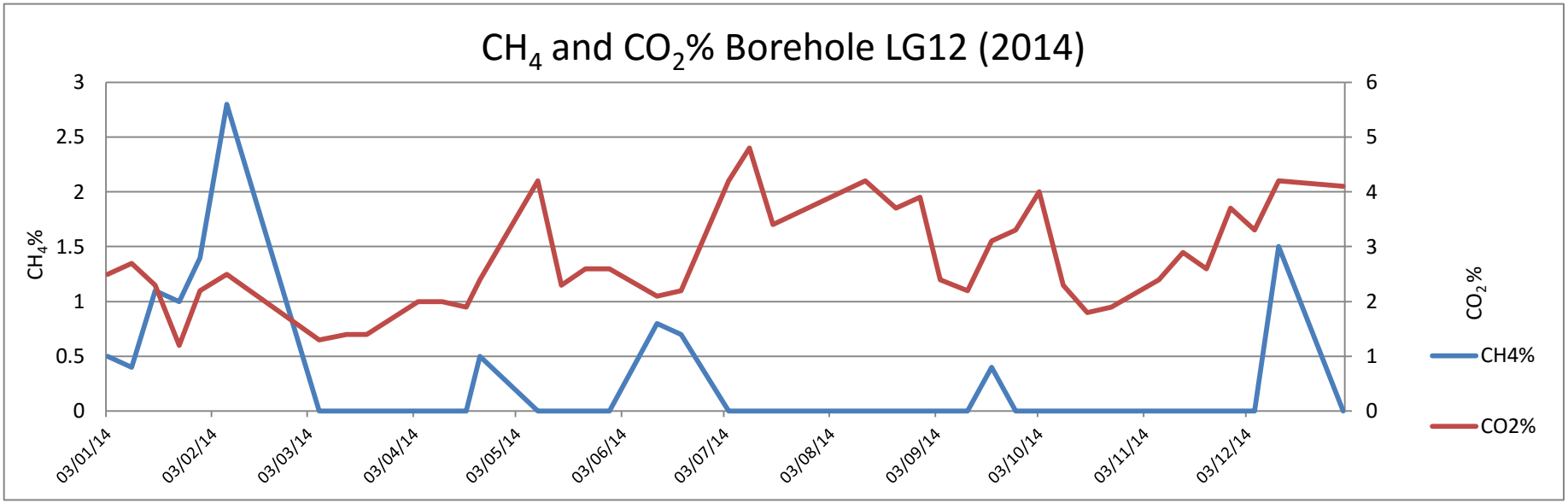
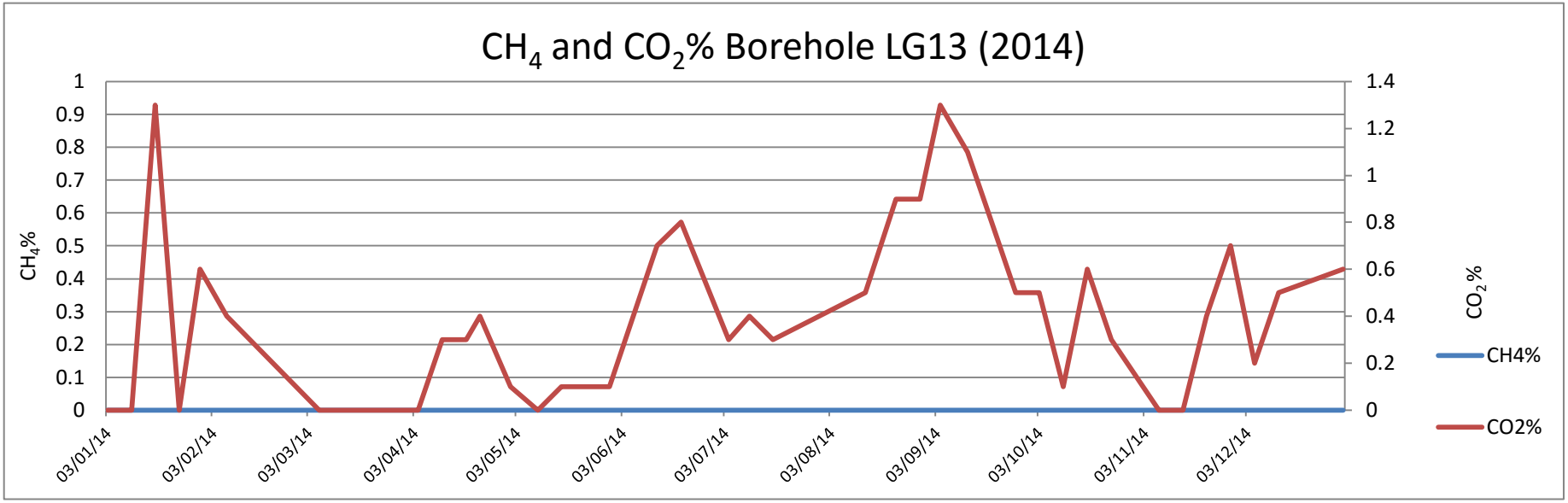
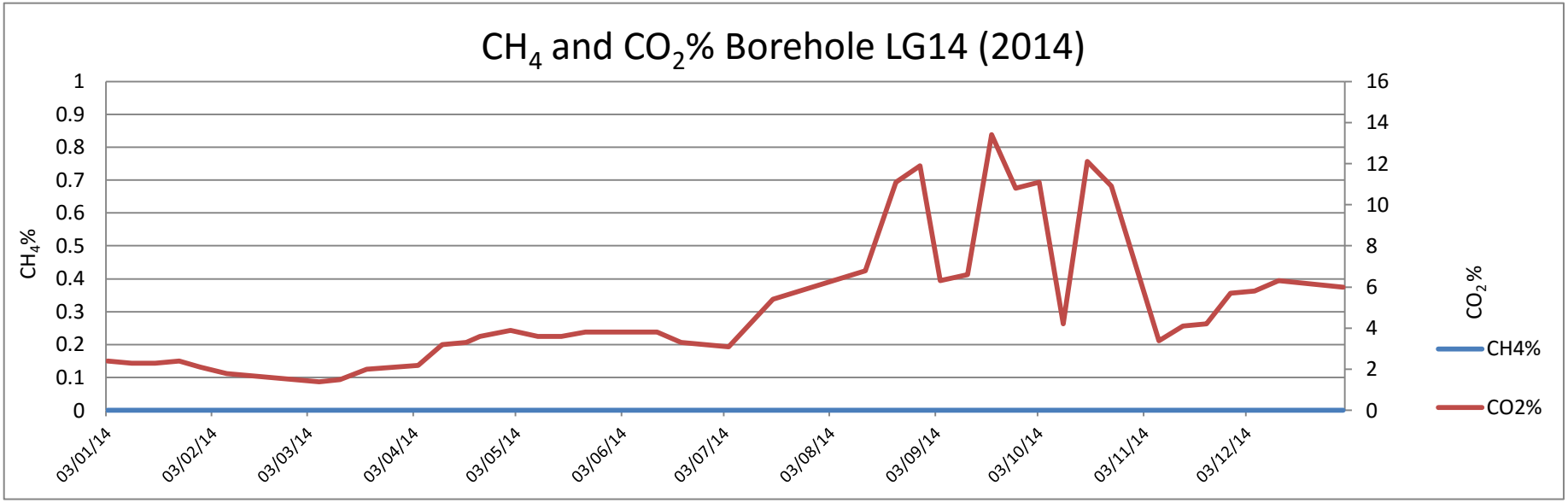
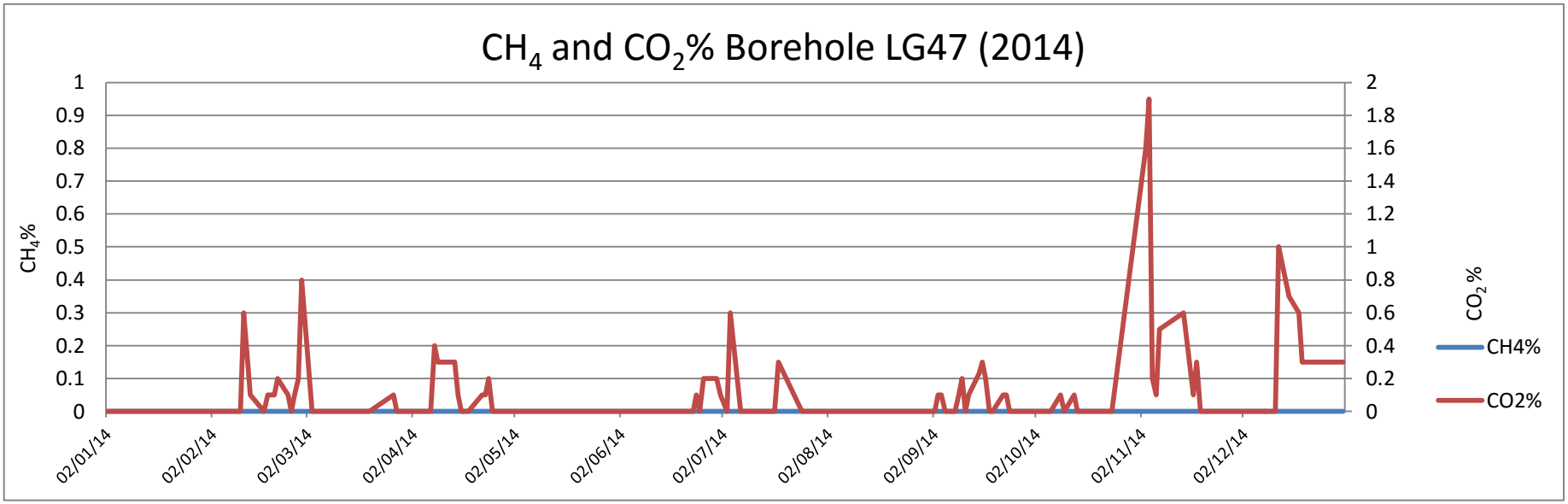
26/10/14
06/11/14
17/11/14
28/11/14
09/12/14
20/12/14
31/12/14

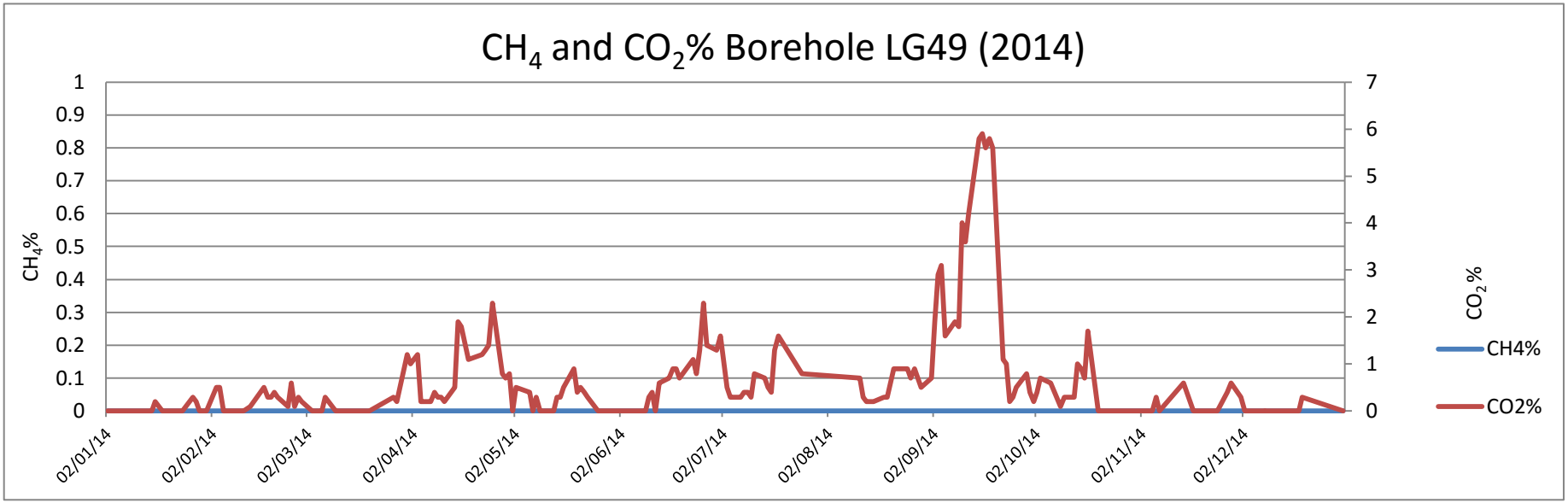

CH4 and CO2% Borehole LG8A (2014)
CH4%
CO2%
CH4%
CO2%
02/01/14
13/01/14
24/01/14
04/02/14
15/02/14
26/02/14
09/03/14
20/03/14
31/03/14
11/04/14
22/04/14
03/05/14
14/05/14
25/05/14
05/06/14
16/06/14
27/06/14
08/07/14
19/07/14
30/07/14
10/08/14
21/08/14
01/09/14
12/09/14
23/09/14
04/10/14
15/10/14
26/10/14
06/11/14
17/11/14
28/11/14
09/12/14
20/12/14
31/12/14

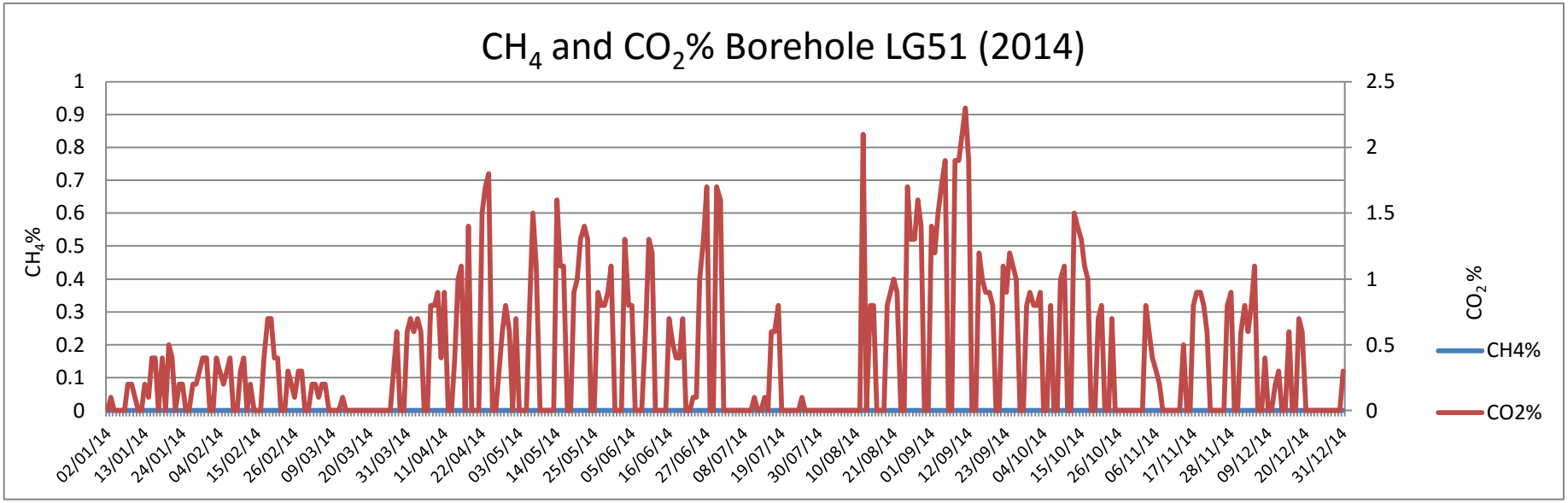

CH4 and CO2% Borehole LG12 (2014)
CH4%
CO2%
CH4%
CO2%
03/01/14
03/02/14
03/03/14
03/04/14
03/05/14
03/06/14
03/07/14
03/08/14
03/09/14
03/10/14
03/11/14
03/12/14

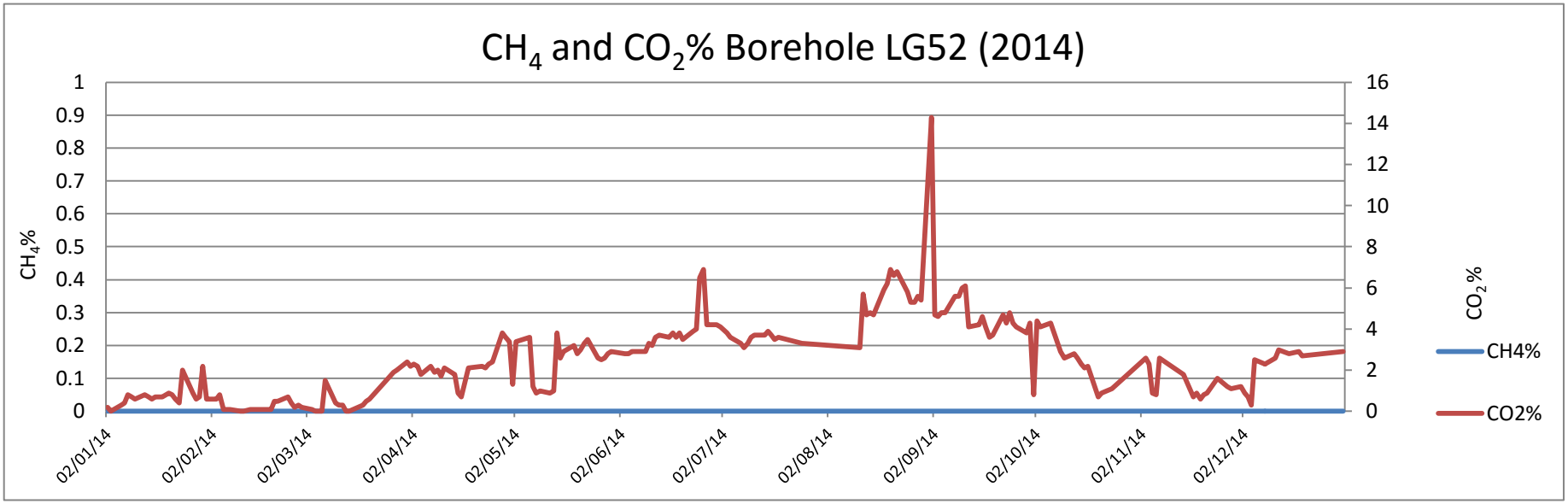

CH4 and CO2% Borehole LG13 (2014)
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1.4
1.2
1
0.8
0.6
0.4
0.2
0
03/01/14
03/02/14
03/03/14
03/04/14
03/05/14
03/06/14
03/07/14
03/08/14
03/09/14
03/10/14
03/11/14
03/12/14
CH4%
CO2%

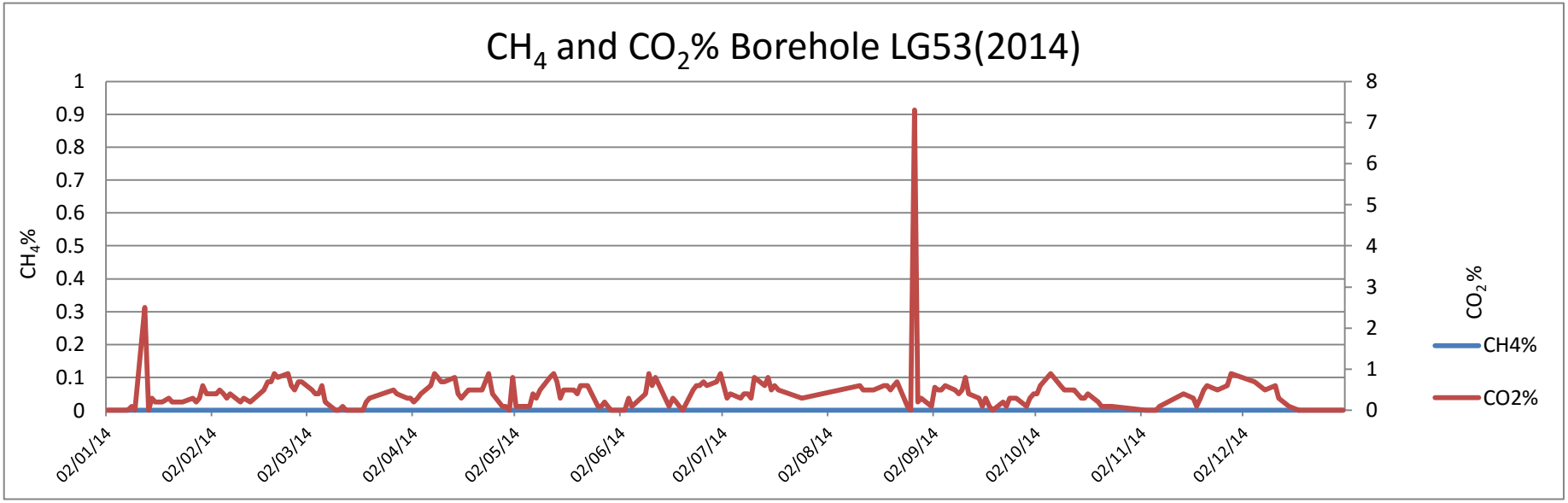

CH4 and CO2% Borehole LG14 (2014)
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
16
14
12
10
8
6
4
2
0
03/01/14
03/02/14
03/03/14
03/04/14
03/05/14
03/06/14
03/07/14
03/08/14
03/09/14
03/10/14
03/11/14
03/12/14
CH4%
CO2%

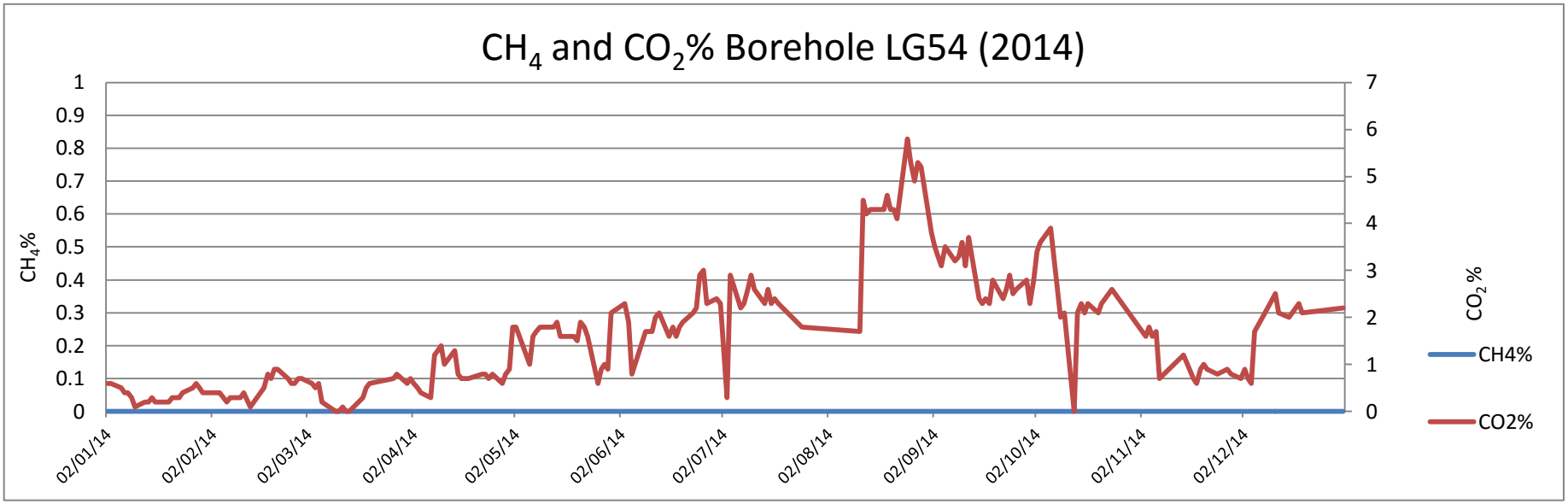

CH4 and CO2% Borehole LG47 (2014)
CH4%
CO2 %
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14
CH4%
CO2%

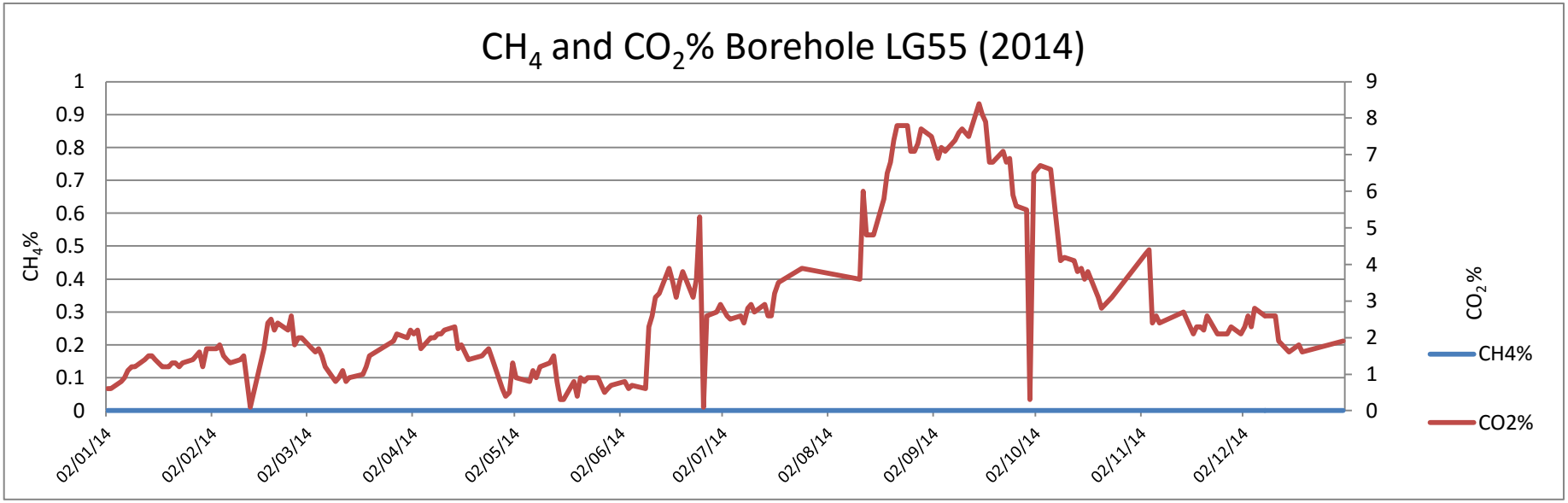

CH4 and CO2% Borehole LG49 (2014)
CH4%
CO2 %
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
7
6
5
4
3
2
1
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14
CH4%
CO2%

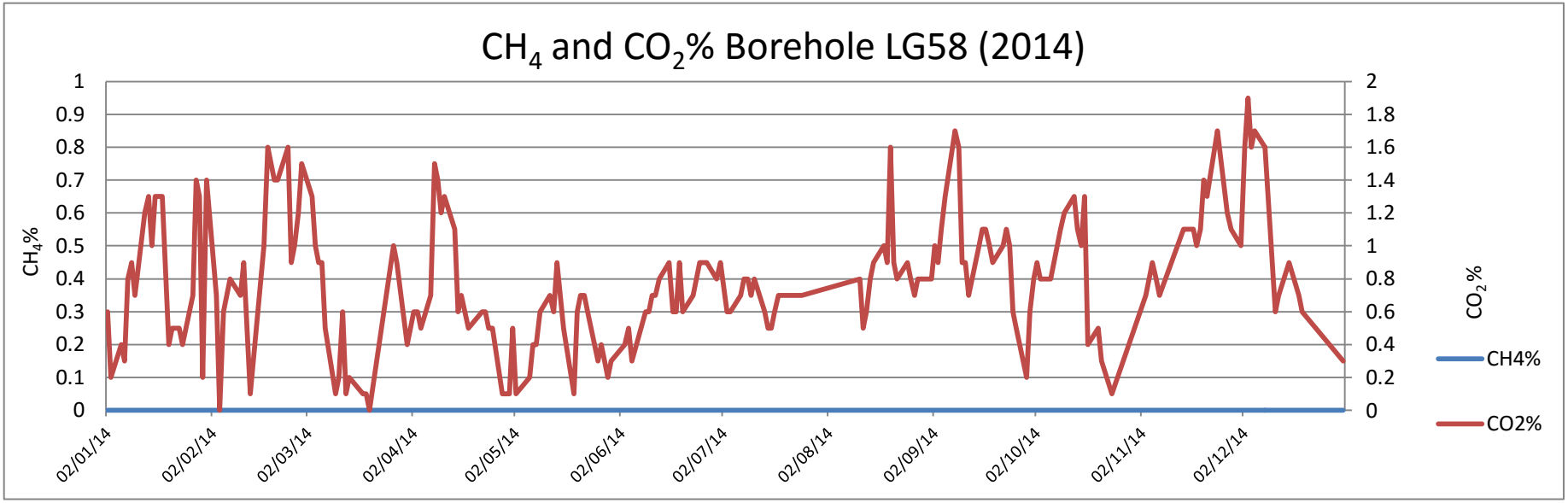

CH4 and CO2% Borehole LG51 (2014)
CH4%
CO2 %
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2.5
2
1.5
1
0.5
0
02/01/14
13/01/14
24/01/14
04/02/14
15/02/14
26/02/14
09/03/14
20/03/14
31/03/14
11/04/14
22/04/14
03/05/14
14/05/14
25/05/14
05/06/14
16/06/14
27/06/14
08/07/14
19/07/14
30/07/14
10/08/14
21/08/14
01/09/14
12/09/14
23/09/14
04/10/14
15/10/14
26/10/14
06/11/14
17/11/14
28/11/14
09/12/14
20/12/14
31/12/14

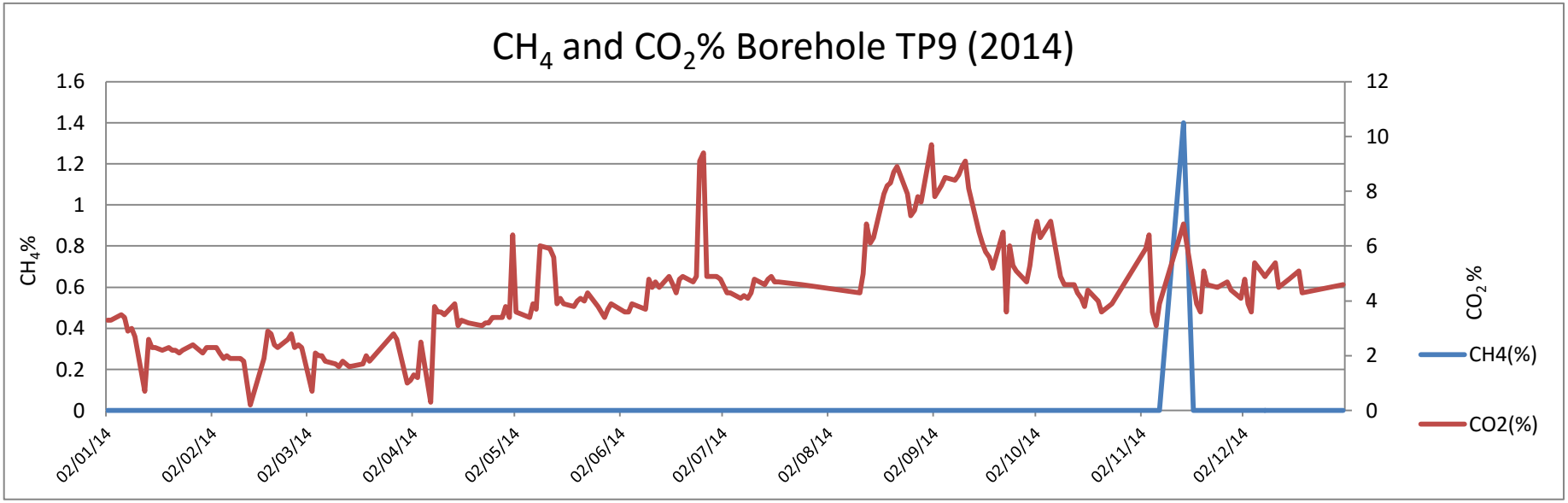

CH4 and CO2% Borehole LG52 (2014)
CH4%
CO2 %
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
16
14
12
10
8
6
4
2
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14

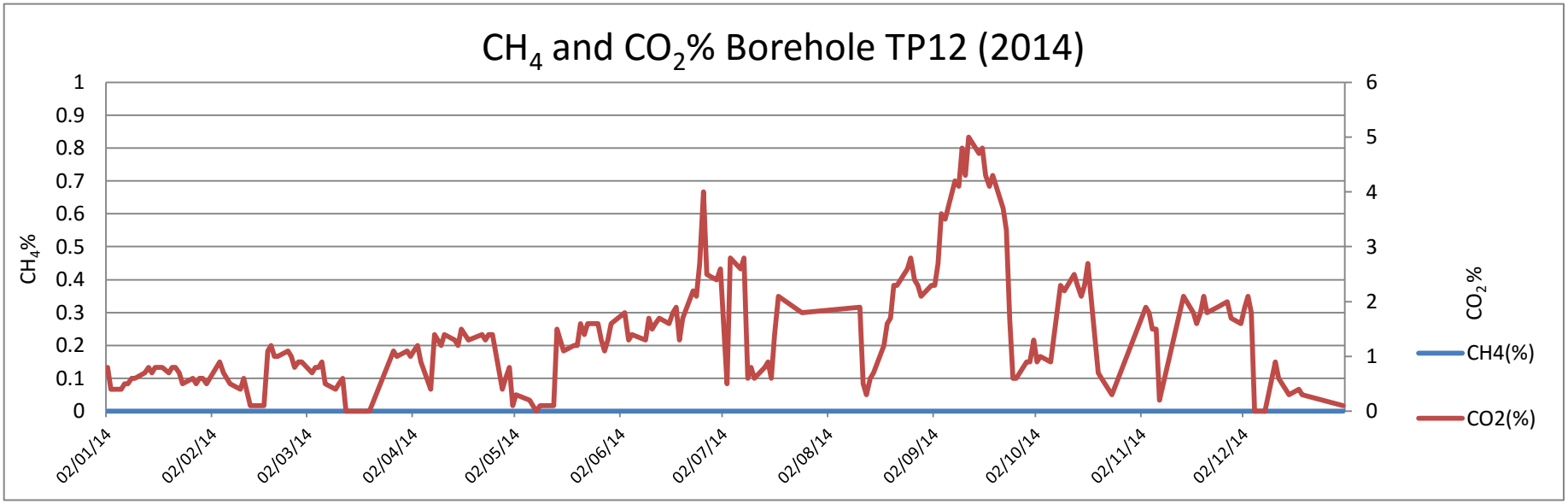

CH4 and CO2% Borehole LG53(2014)
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
8
7
6
5
4
3
2
1
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14
CH4%
CO2%

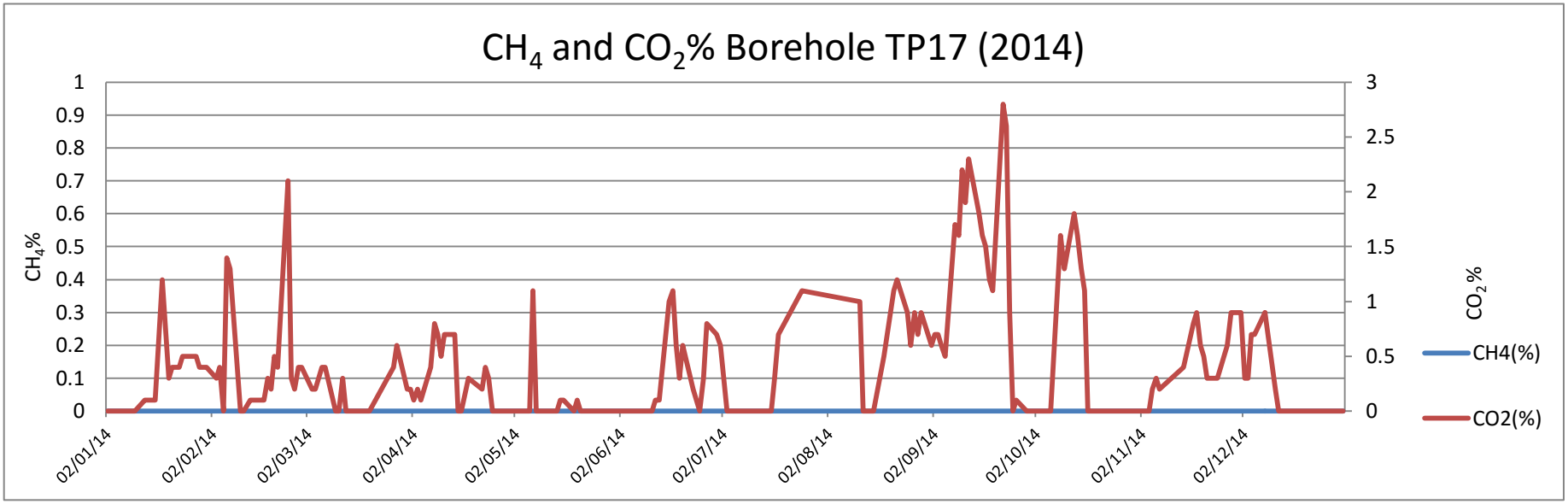

CH4 and CO2% Borehole LG54 (2014)
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
7
6
5
4
3
2
1
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14
CH4%
CO2%

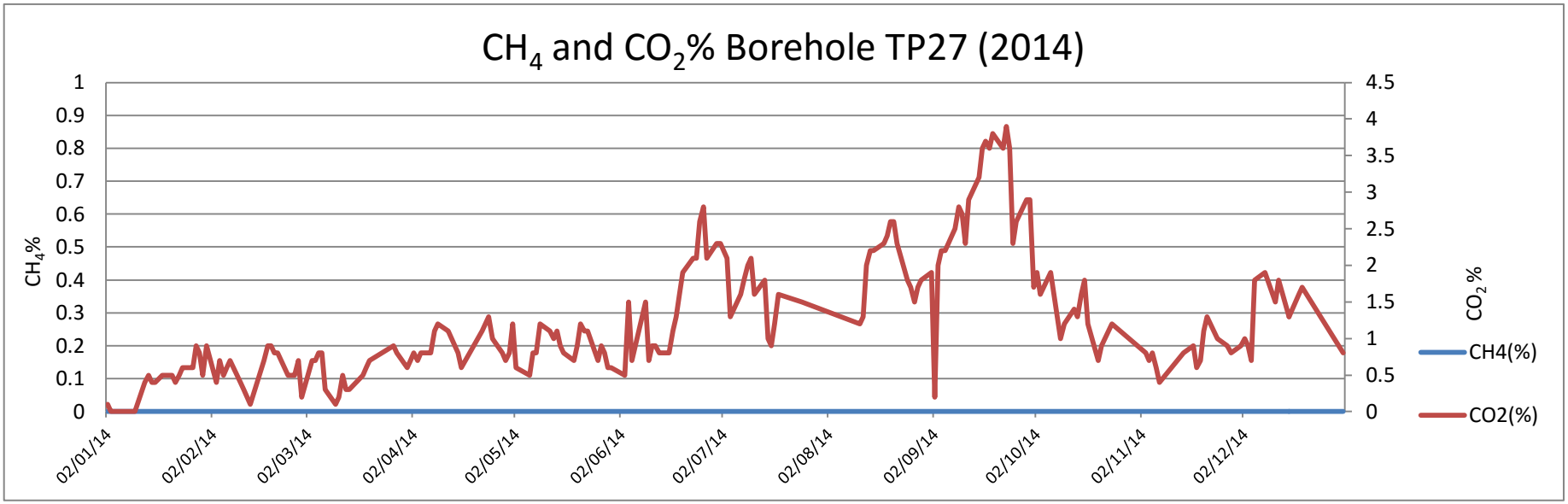

CH4 and CO2% Borehole LG55 (2014)
CH4%
CO2%
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
9
8
7
6
5
4
3
2
1
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14

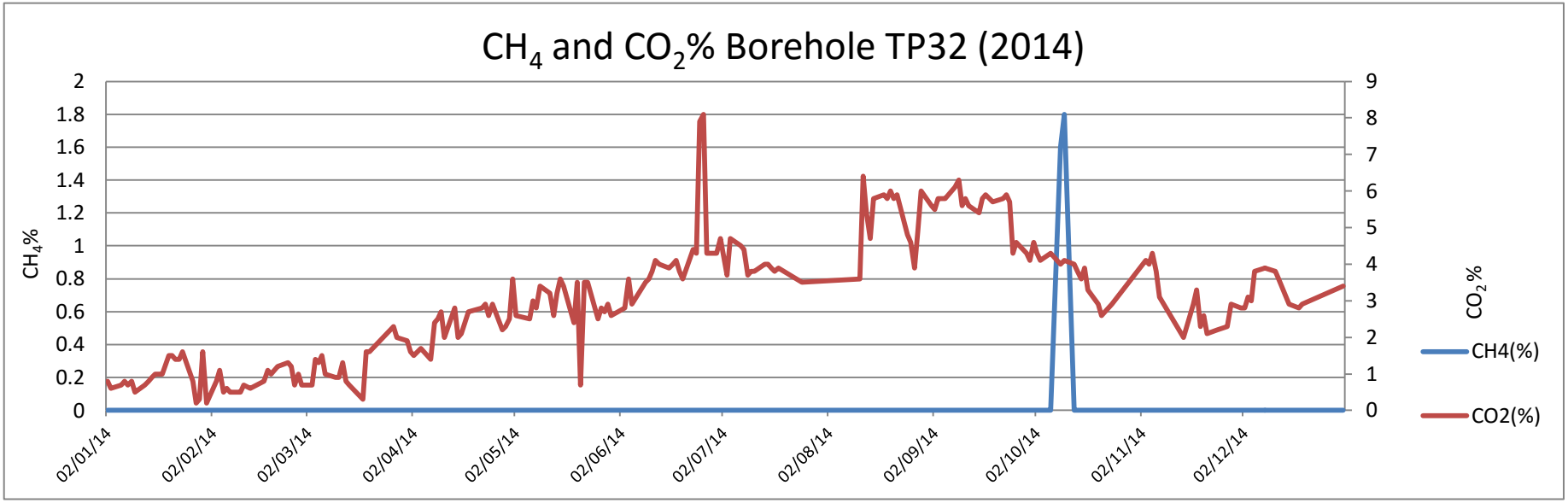

CH4 and CO2% Borehole LG58 (2014)
CH4%
CO2%
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14

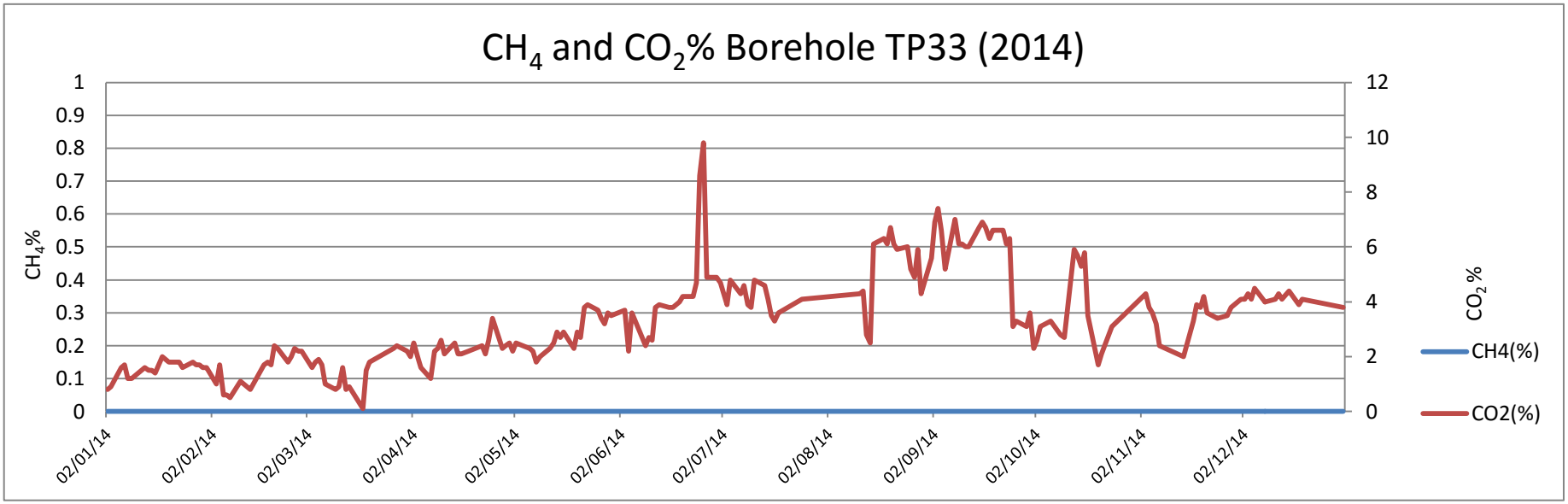

CH4 and CO2% Borehole TP9 (2014)
CH4%
CO2 %
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
12
10
8
6
4
2
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14
CH4(%)
CO2(%)

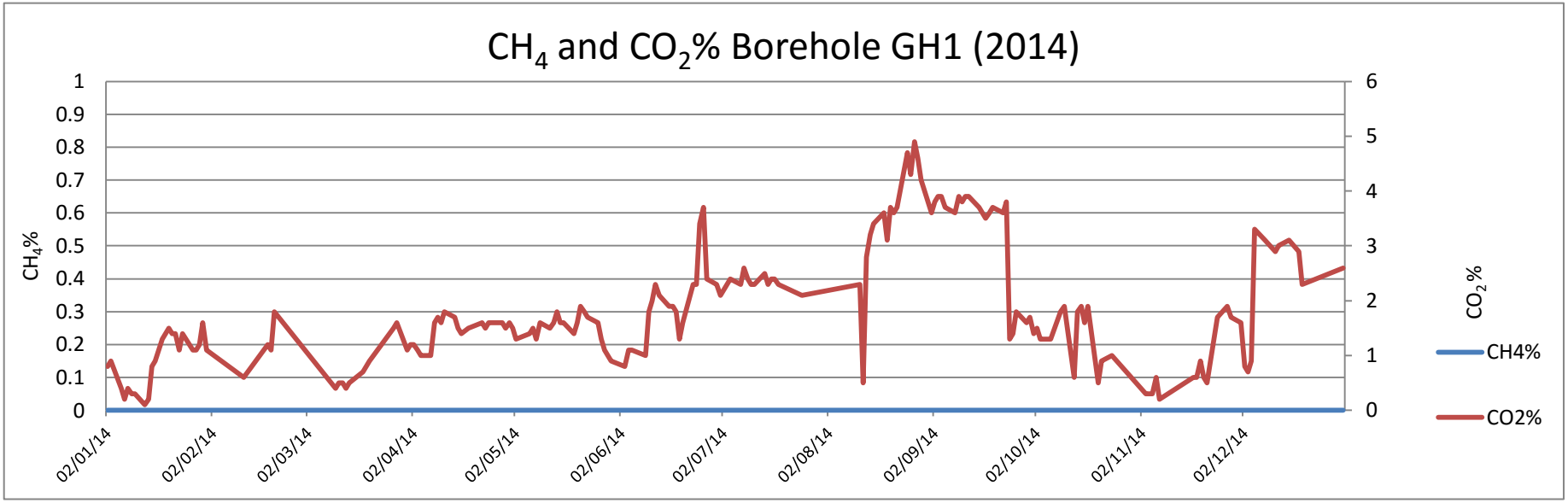

CH4 and CO2% Borehole TP12 (2014)
CH4%
CO2 %
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
6
5
4
3
2
1
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14
CH4(%)
CO2(%)

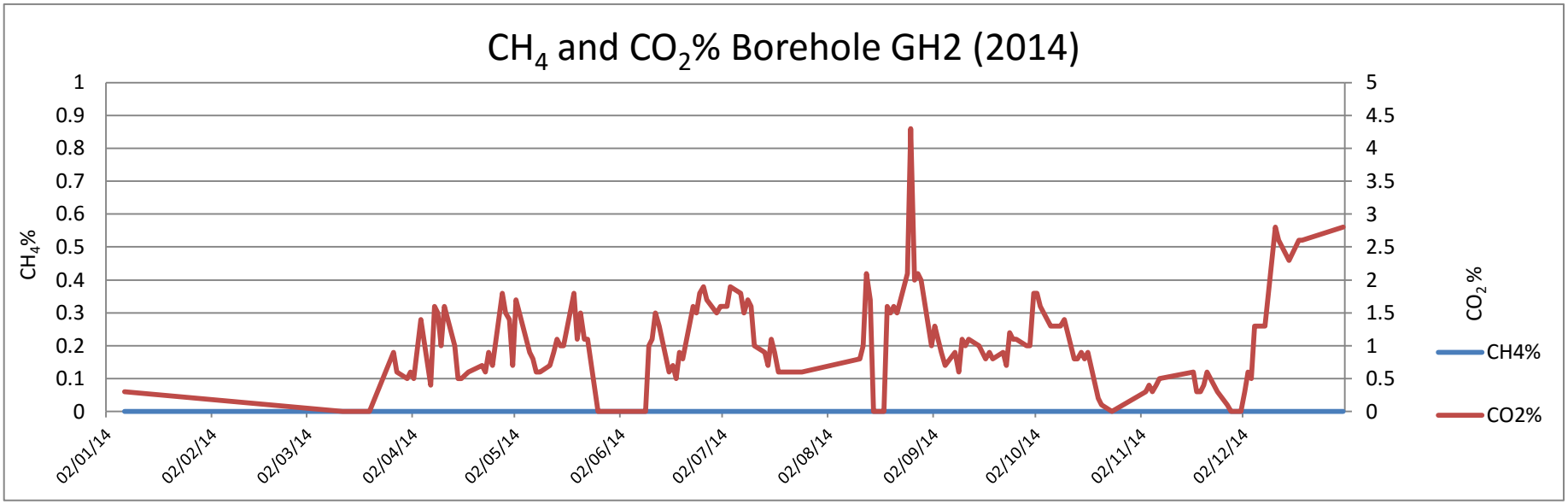

CH4 and CO2% Borehole TP17 (2014)
CH4%
CO2%
CH4(%)
CO2(%)
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14

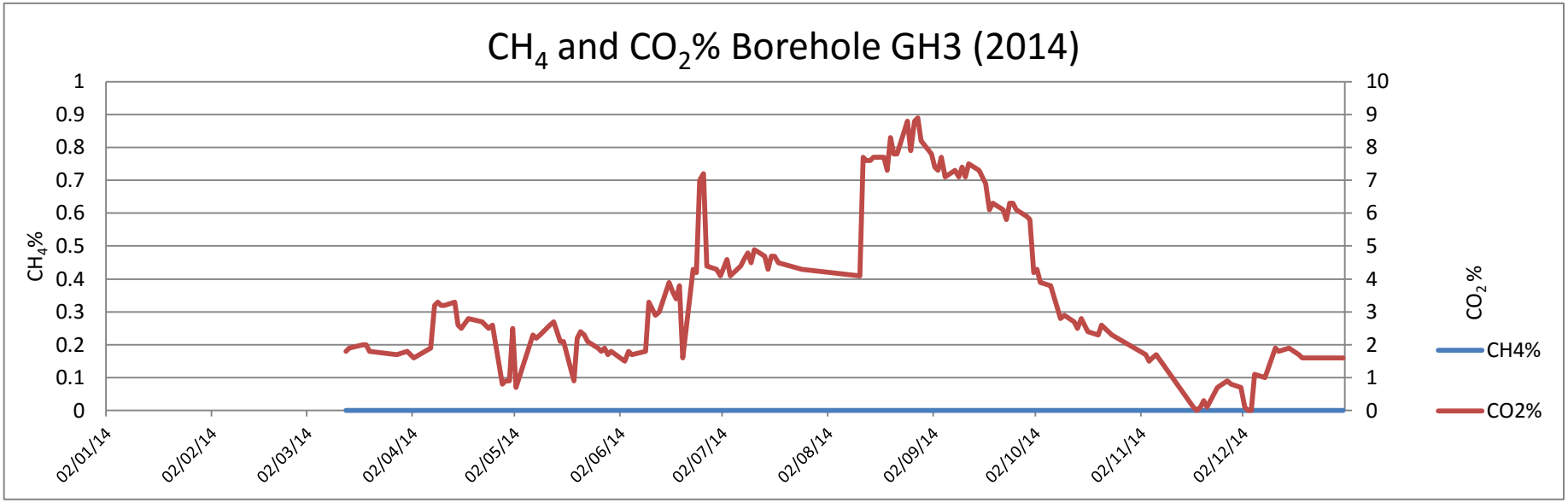

CH4 and CO2% Borehole TP27 (2014)
CH4%
CO2%
CH4(%)
CO2(%)
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14

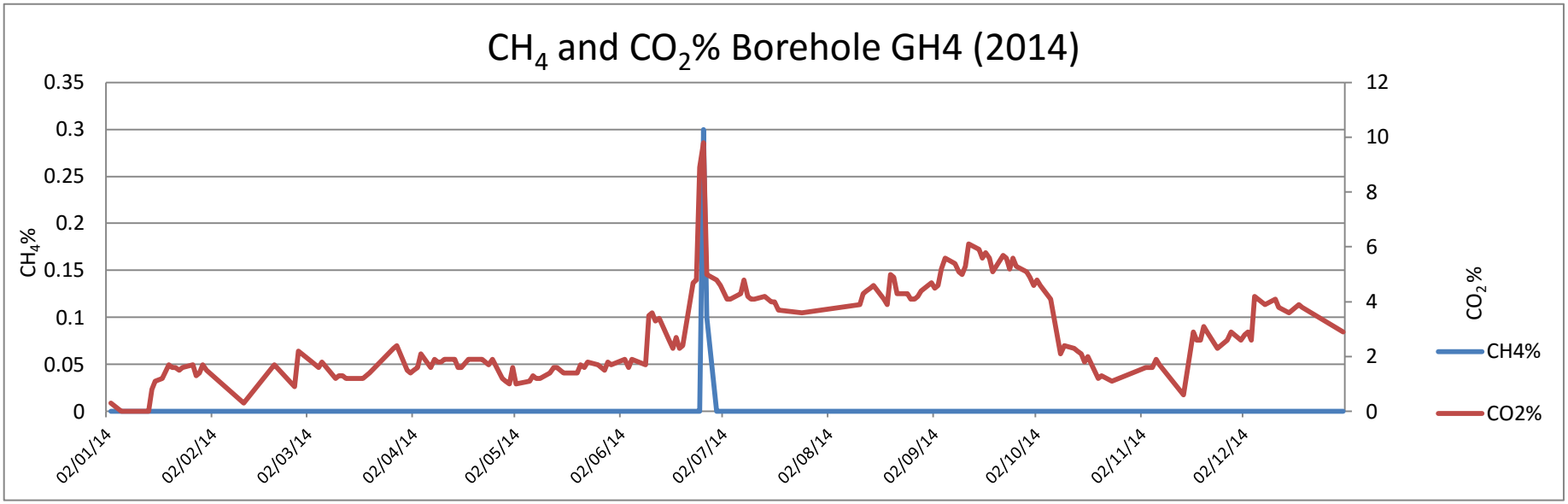

CH4 and CO2% Borehole TP32 (2014)
CH4%
CO2%
CH4(%)
CO2(%)
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14

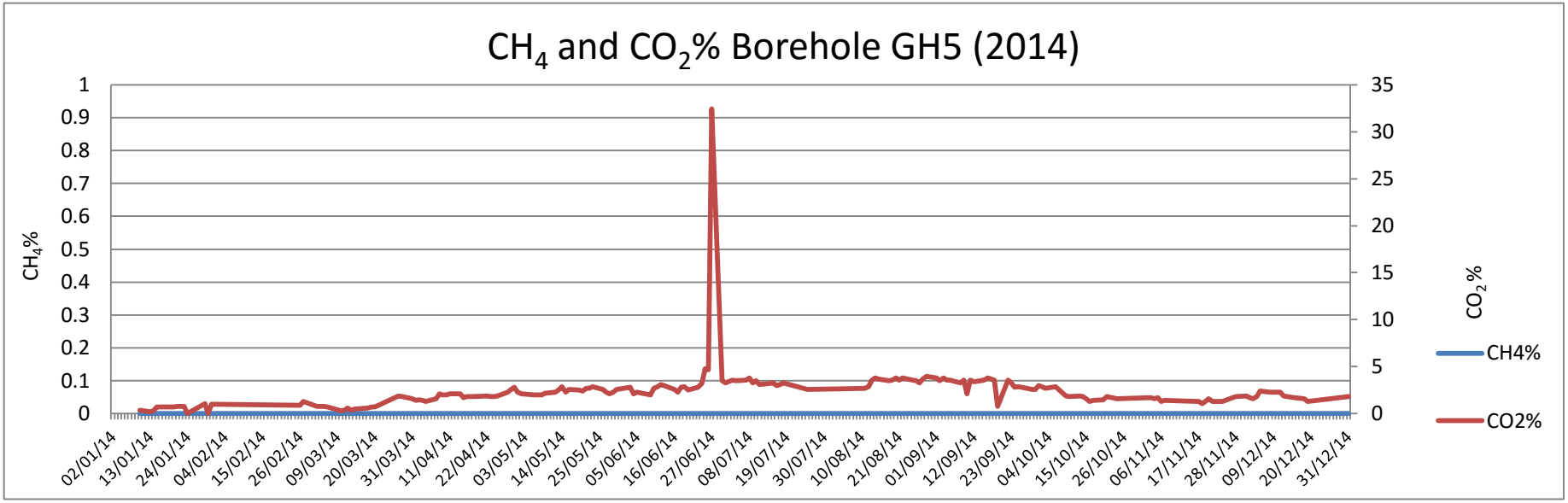

CH4 and CO2% Borehole TP33 (2014)
CH4%
CO2%
CH4(%)
CO2(%)
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14

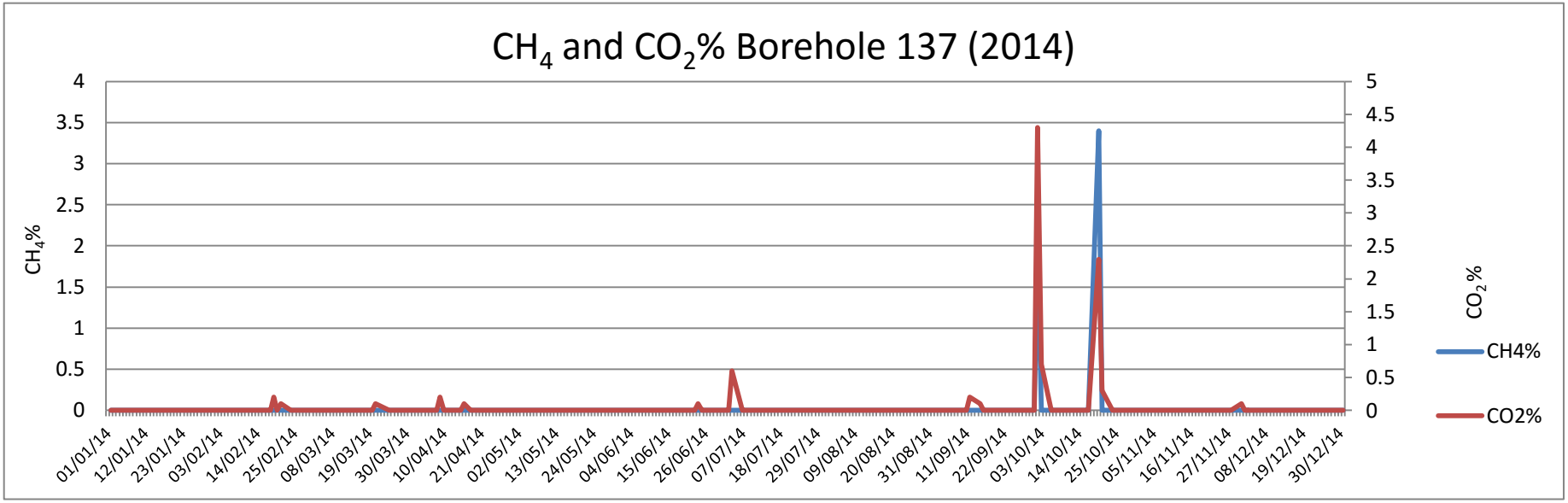

CH4 and CO2% Borehole GH1 (2014)
CH4%
CO2%
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
6
5
4
3
2
1
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14

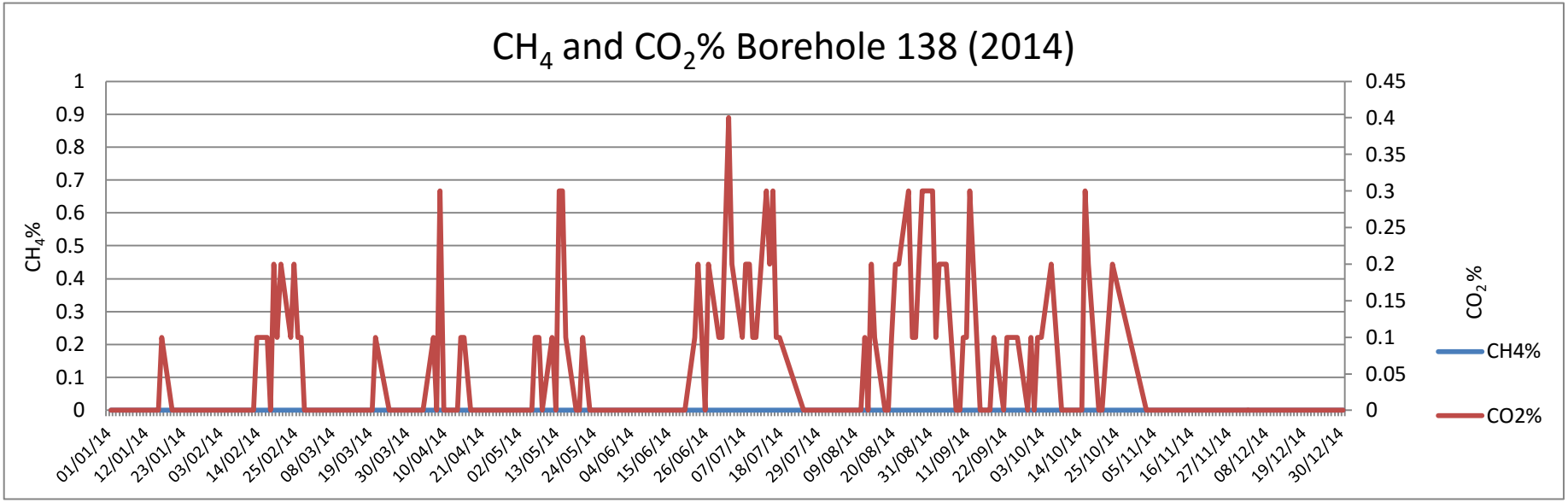

CH4 and CO2% Borehole GH2 (2014)
CH4%
CO2%
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14

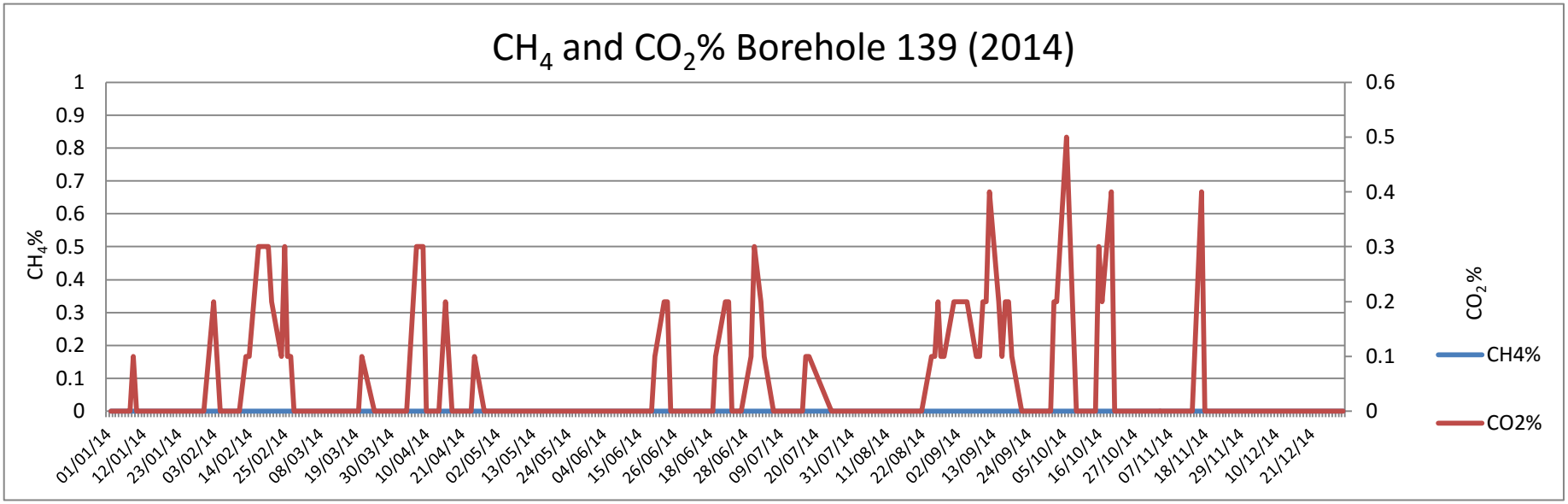

CH4 and CO2% Borehole GH3 (2014)
CH4%
CO2 %
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
10
9
8
7
6
5
4
3
2
1
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14
CH4%
CO2%

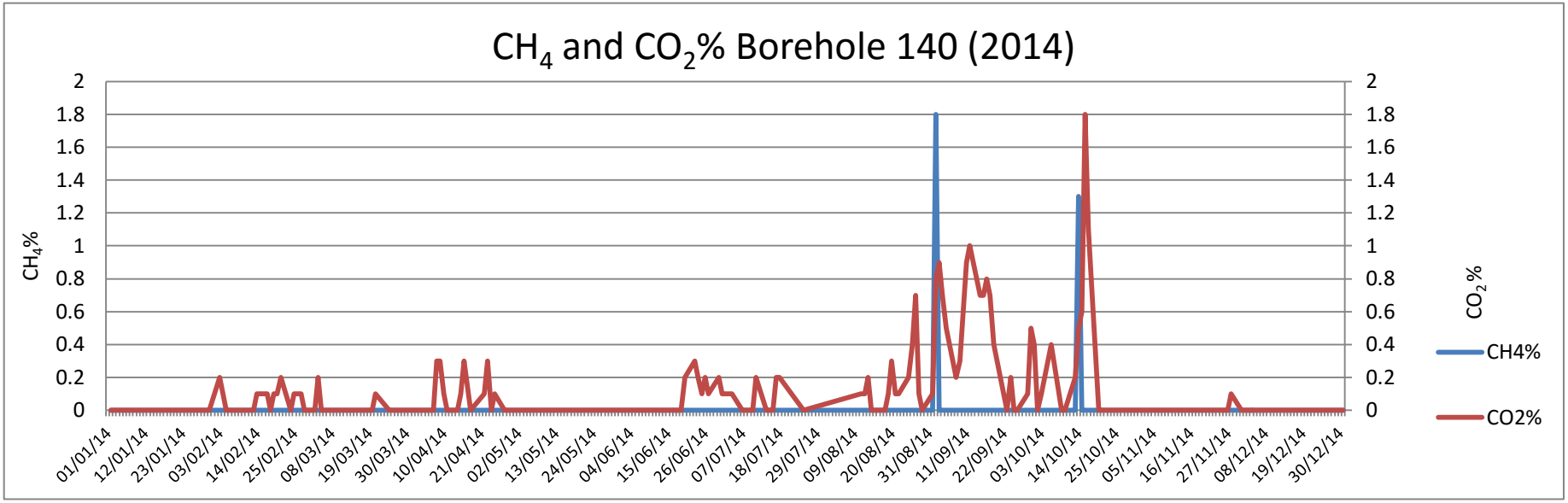

CH4 and CO2% Borehole GH4 (2014)
CH4%
CO2 %
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
12
10
8
6
4
2
0
02/01/14
02/02/14
02/03/14
02/04/14
02/05/14
02/06/14
02/07/14
02/08/14
02/09/14
02/10/14
02/11/14
02/12/14
CH4%
CO2%

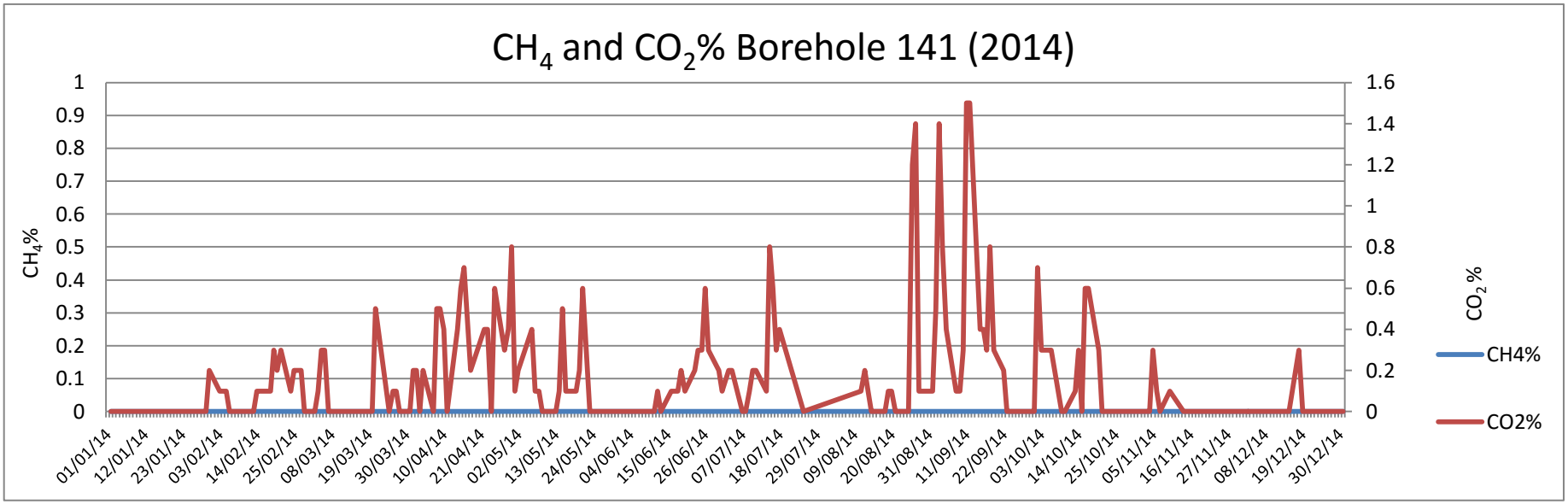

CH4 and CO2% Borehole GH5 (2014)
CH4%
CO2%
CH4%
CO2%

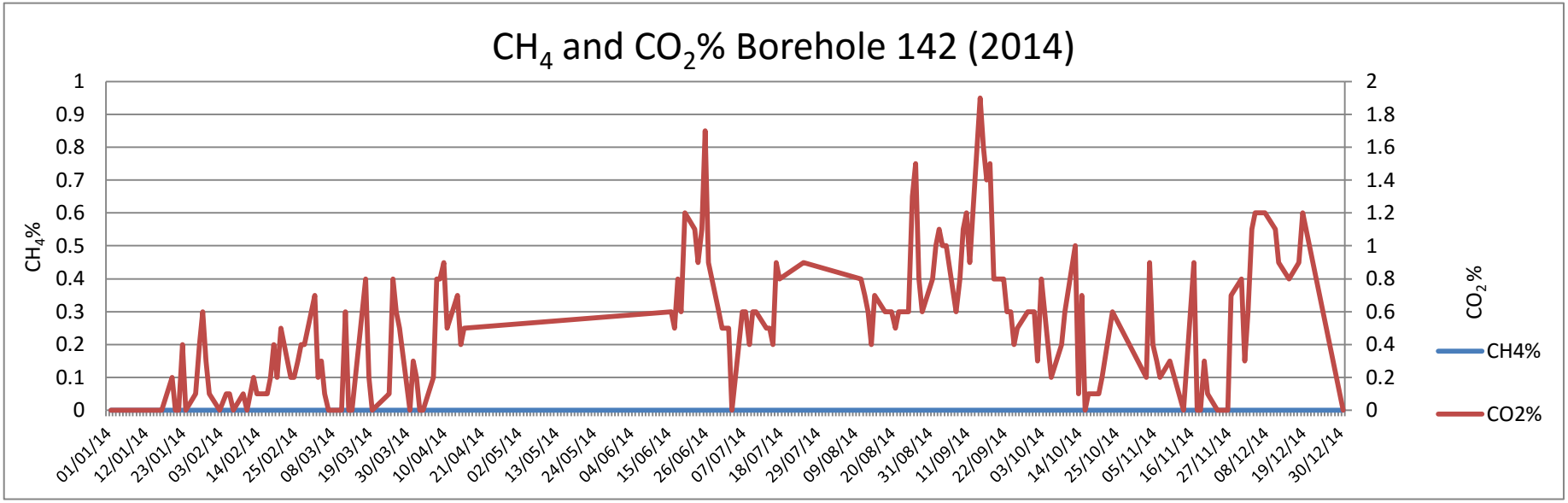

CH4 and CO2% Borehole 137 (2014)
CH4%
CO2%
CH4%
CO2%

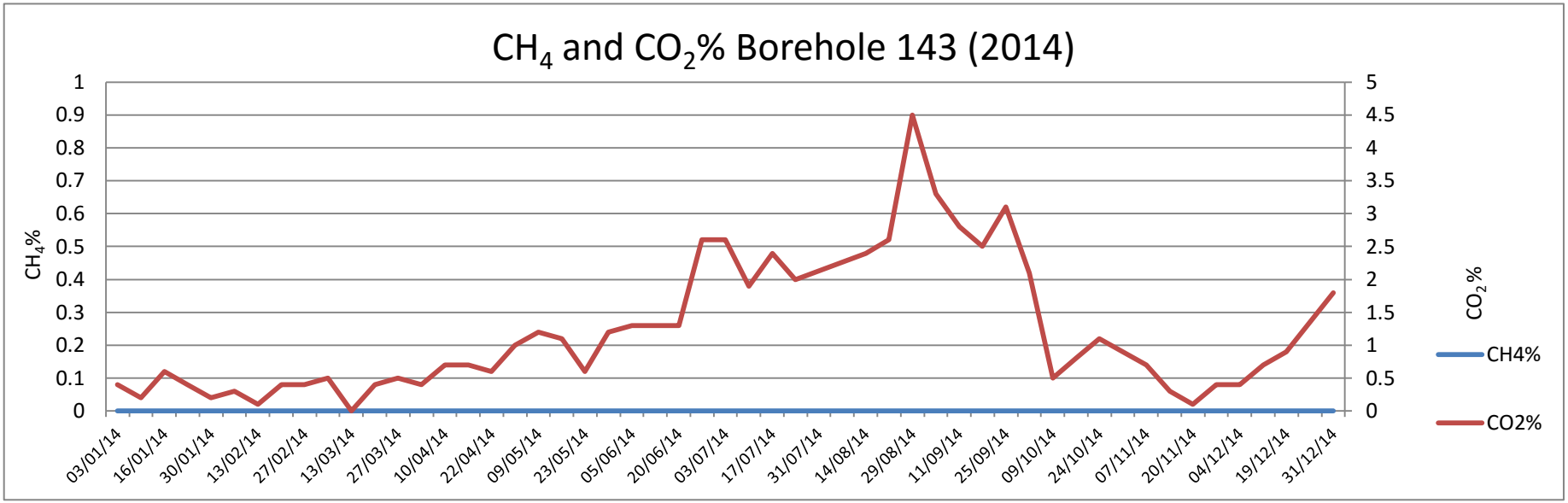

CH4 and CO2% Borehole 138 (2014)
CH4%
CO2 %
CH4%
CO2%

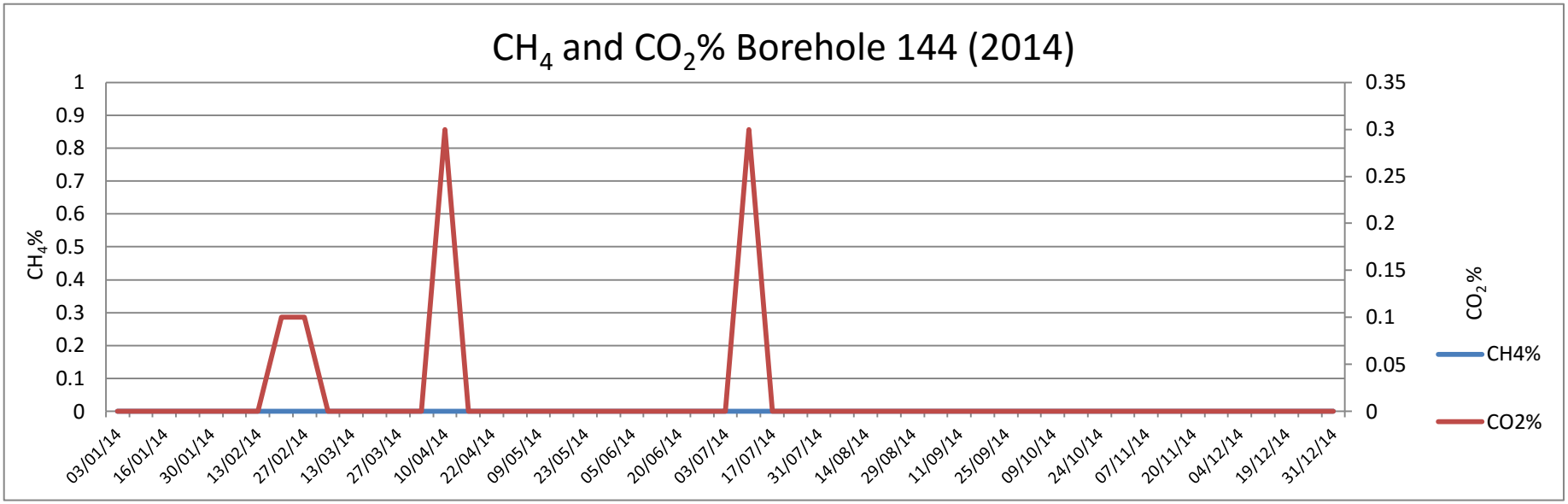

CH4 and CO2% Borehole 139 (2014)
CH4%
CO2 %
CH4%
CO2%

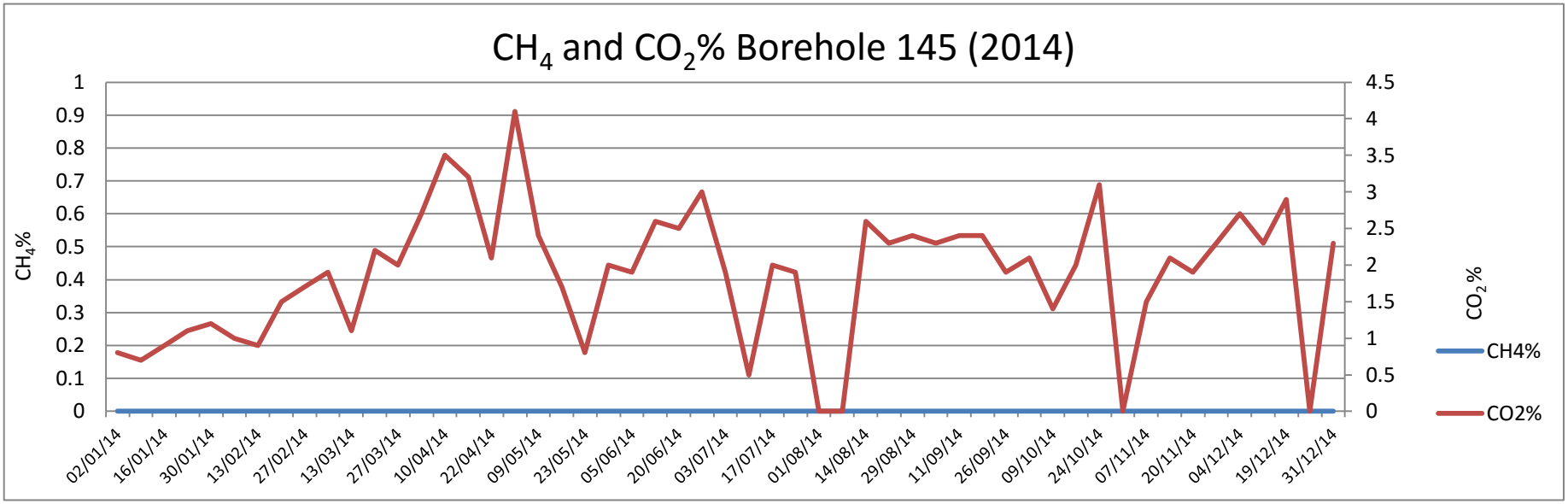

CH4 and CO2% Borehole 140 (2014)
CH4%
CO2%
CH4%
CO2%
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
01/01/14
12/01/14
23/01/14
03/02/14
14/02/14
25/02/14
08/03/14
19/03/14
30/03/14
10/04/14
21/04/14
02/05/14
13/05/14
24/05/14
04/06/14
15/06/14
26/06/14
07/07/14
18/07/14
29/07/14
09/08/14
20/08/14
31/08/14
11/09/14
22/09/14
03/10/14
14/10/14
25/10/14
05/11/14
16/11/14
27/11/14
08/12/14
19/12/14
30/12/14

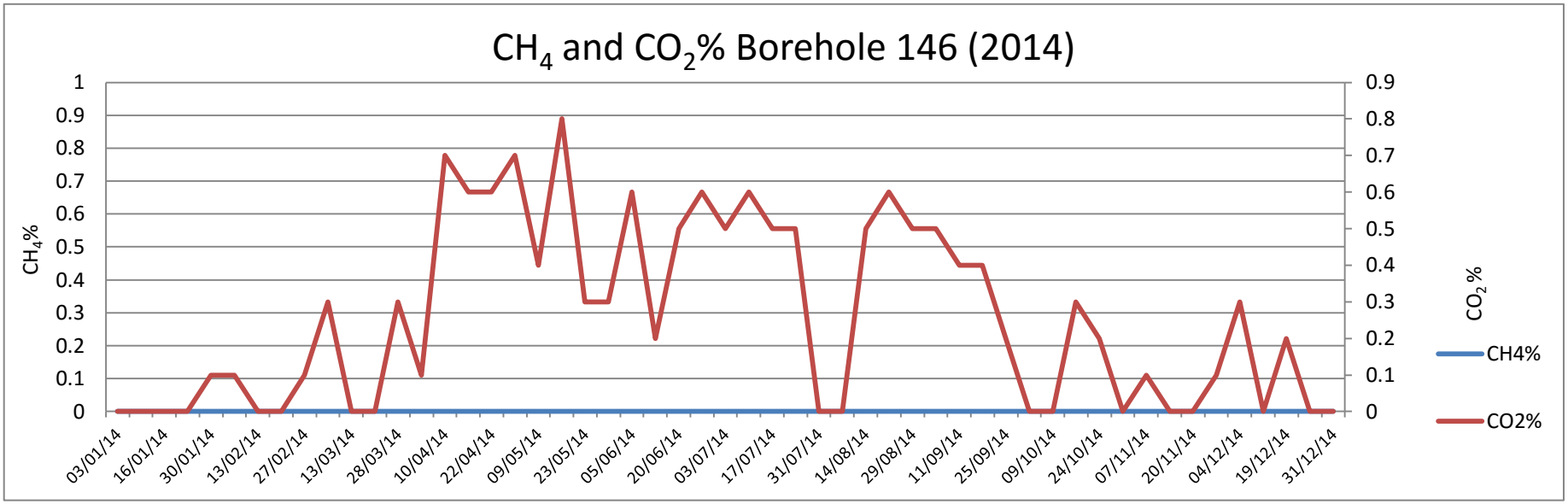

CH4 and CO2% Borehole 141 (2014)
CH4%
CO2%
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
01/01/14
12/01/14
23/01/14
03/02/14
14/02/14
25/02/14
08/03/14
19/03/14
30/03/14
10/04/14
21/04/14
02/05/14
13/05/14
24/05/14
04/06/14
15/06/14
26/06/14
07/07/14
18/07/14
29/07/14
09/08/14
20/08/14
31/08/14
11/09/14
22/09/14
03/10/14
14/10/14
25/10/14
05/11/14
16/11/14
27/11/14
08/12/14
19/12/14
30/12/14


CH4 and CO2% Borehole 142 (2014)
CH4%
CO2%
CH4%
CO2%


CH4 and CO2% Borehole 143 (2014)
CH4%
CO2%
CH4%
CO2%


CH4 and CO2% Borehole 144 (2014)
CH4%
CO2%
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
03/01/14
16/01/14
30/01/14
13/02/14
27/02/14
13/03/14
27/03/14
10/04/14
22/04/14
09/05/14
23/05/14
05/06/14
20/06/14
03/07/14
17/07/14
31/07/14
14/08/14
29/08/14
11/09/14
25/09/14
09/10/14
24/10/14
07/11/14
20/11/14
04/12/14
19/12/14
31/12/14


CH4 and CO2% Borehole 145 (2014)
CH4%
CO2%
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
02/01/14
16/01/14
30/01/14
13/02/14
27/02/14
13/03/14
27/03/14
10/04/14
22/04/14
09/05/14
23/05/14
05/06/14
20/06/14
03/07/14
17/07/14
01/08/14
14/08/14
29/08/14
11/09/14
26/09/14
09/10/14
24/10/14
07/11/14
20/11/14
04/12/14
19/12/14
31/12/14


CH4 and CO2% Borehole 146 (2014)
CH4%
CO2 %
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
03/01/14
16/01/14
30/01/14
13/02/14
27/02/14
13/03/14
28/03/14
10/04/14
22/04/14
09/05/14
23/05/14
05/06/14
20/06/14
03/07/14
17/07/14
31/07/14
14/08/14
29/08/14
11/09/14
25/09/14
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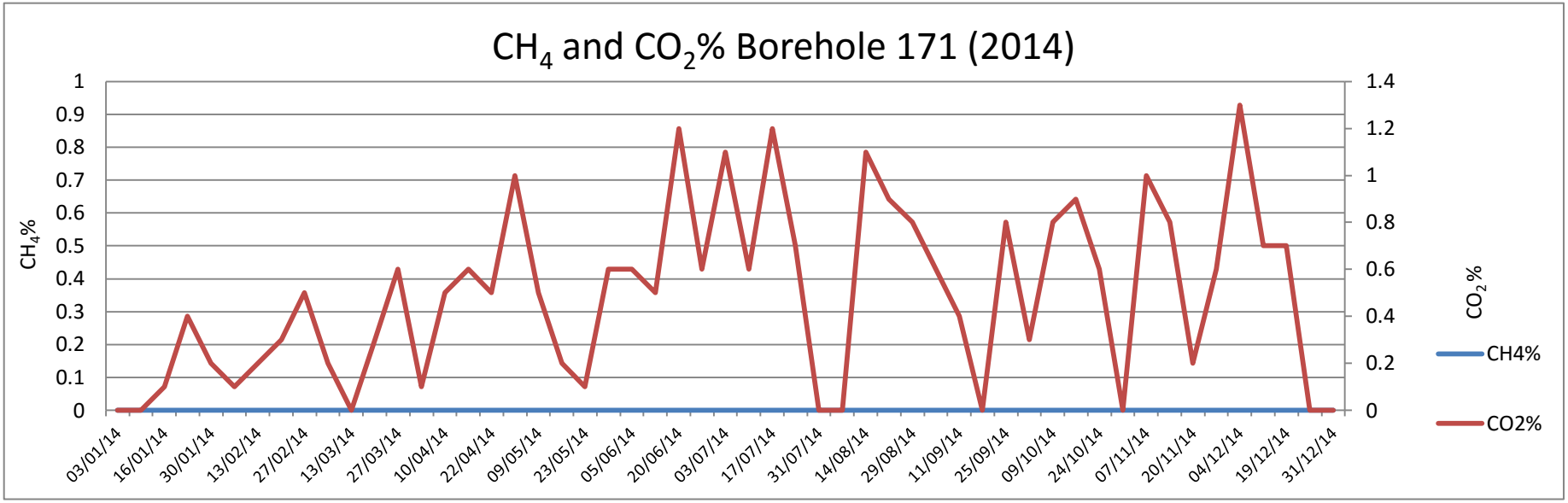
24/10/14
07/11/14
20/11/14
04/12/14
19/12/14
31/12/14


CH4 and CO2% Borehole 171 (2014)
CH4%
CO2 %
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1.4
1.2
1
0.8
0.6
0.4
0.2
0
03/01/14
16/01/14
30/01/14
13/02/14
27/02/14
13/03/14
27/03/14
10/04/14
22/04/14
09/05/14
23/05/14
05/06/14
20/06/14
03/07/14
17/07/14
31/07/14
14/08/14
29/08/14
11/09/14
25/09/14
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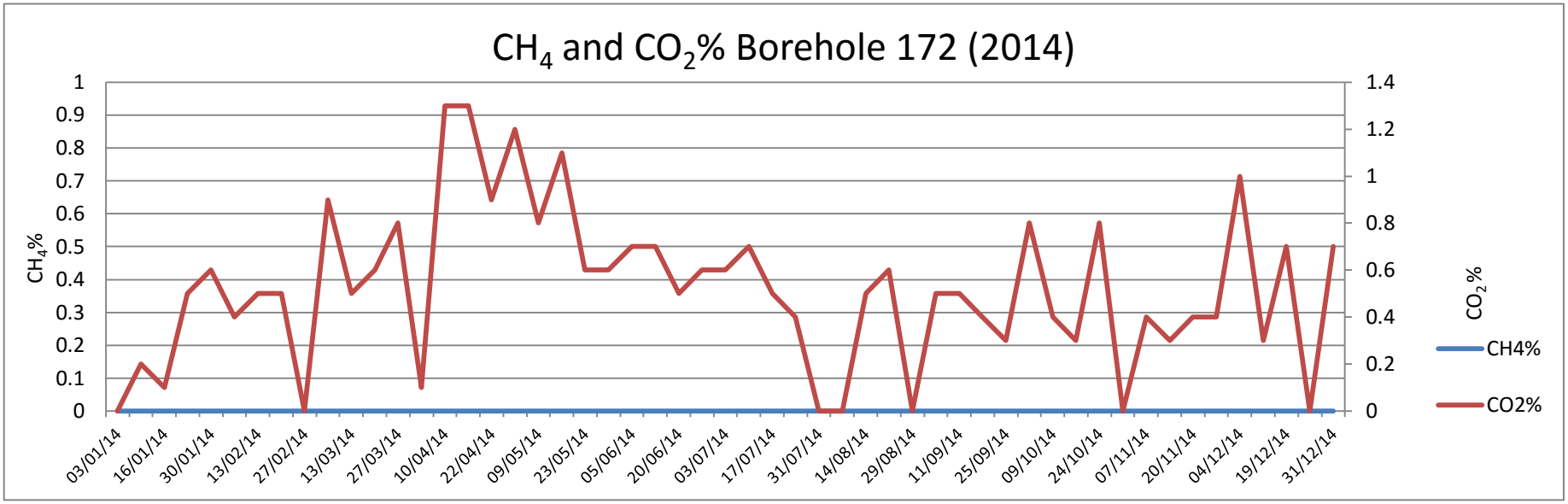
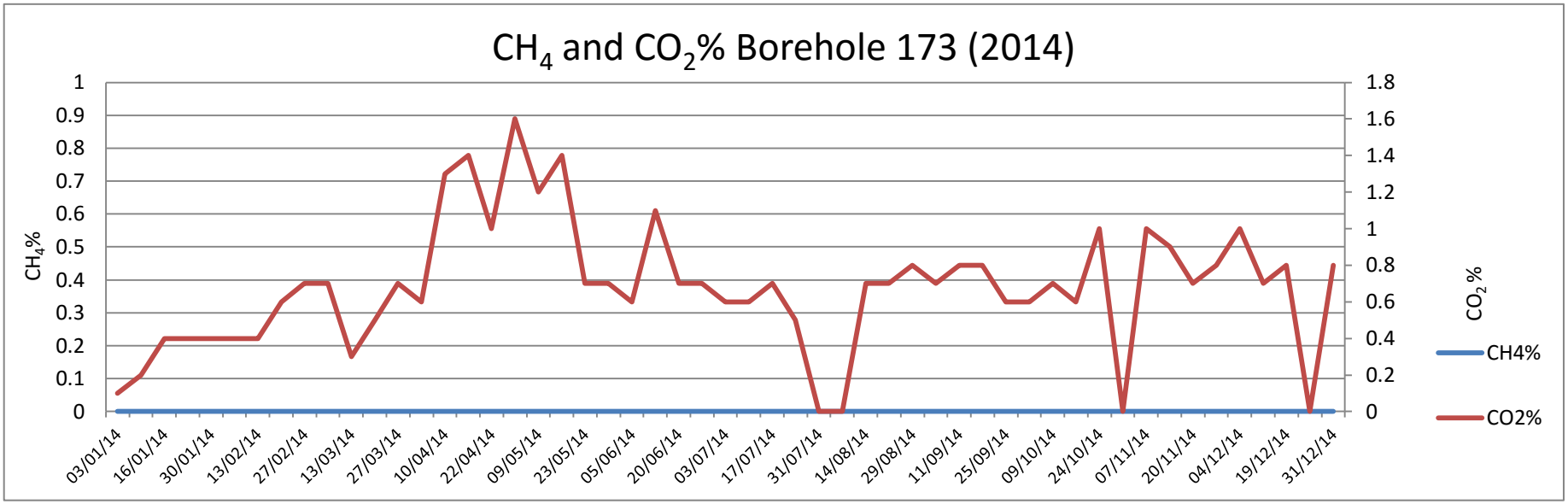
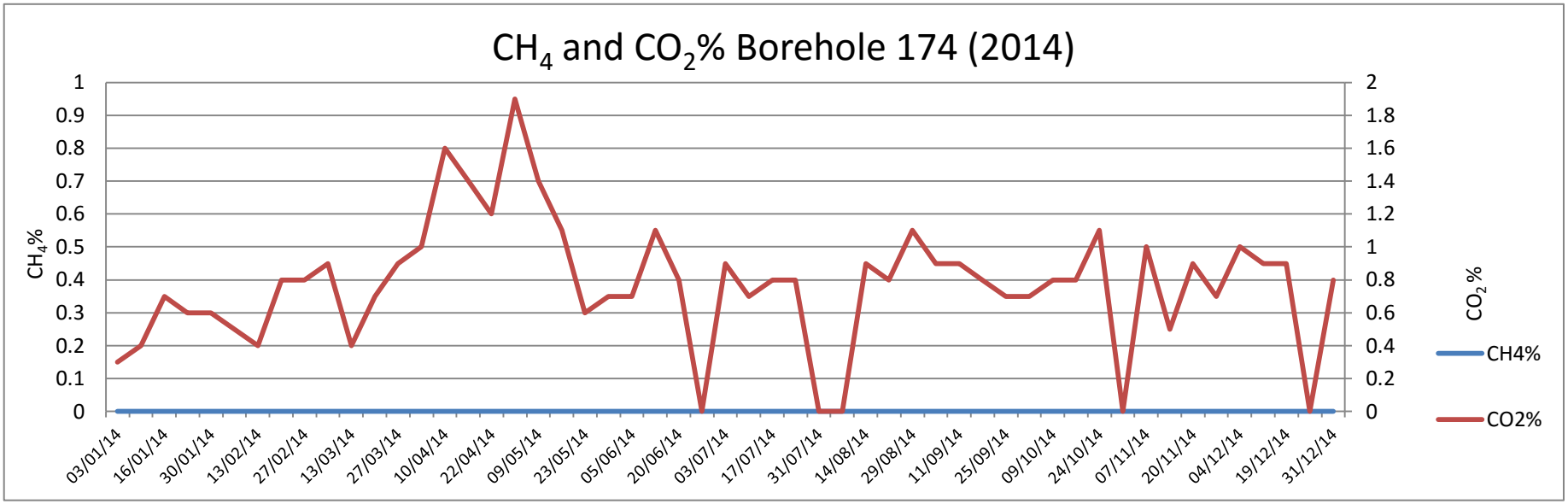
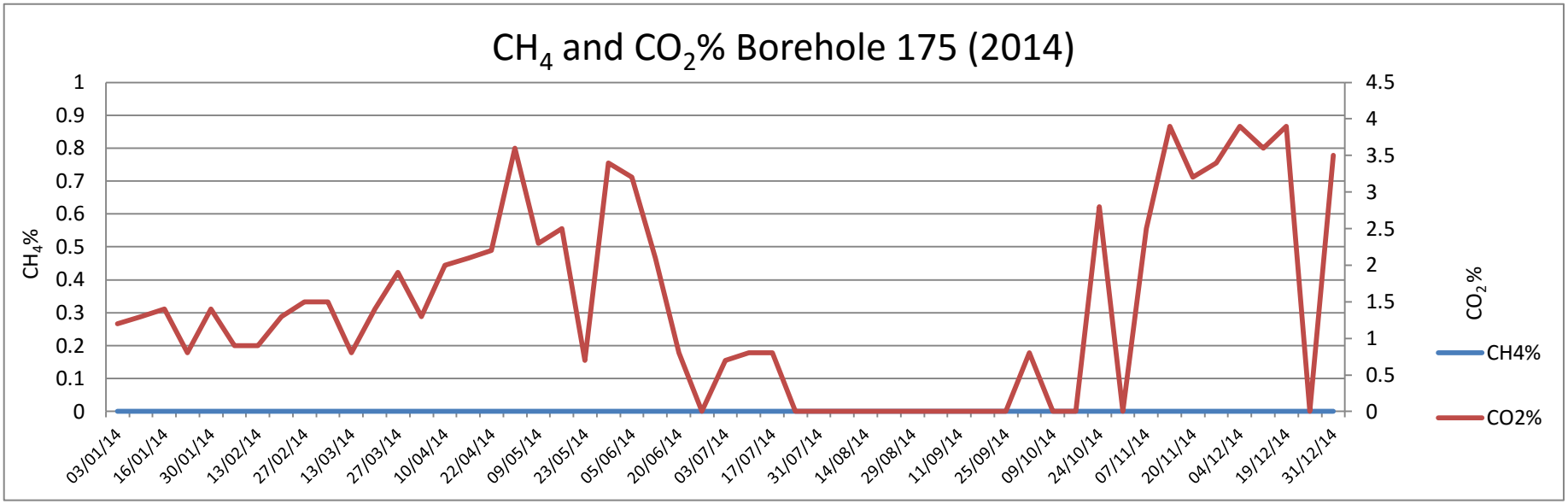
07/11/14
20/11/14
04/12/14
19/12/14
31/12/14


CH4 and CO2% Borehole 172 (2014)
CH4%
CO2%
CH4%
CO2%
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
0.2
0.4
0.6
0.8
1
1.2
1.4
03/01/14
16/01/14
30/01/14
13/02/14
27/02/14
13/03/14
27/03/14
10/04/14
22/04/14
09/05/14
23/05/14
05/06/14
20/06/14
03/07/14
17/07/14
31/07/14
14/08/14
29/08/14
11/09/14
25/09/14
09/10/14
24/10/14
07/11/14
20/11/14
04/12/14
19/12/14
31/12/14


CH4 and CO2% Borehole 173 (2014)
CH4%
CO2%
CH4%
CO2%
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
03/01/14
16/01/14
30/01/14
13/02/14
27/02/14
13/03/14
27/03/14
10/04/14
22/04/14
09/05/14
23/05/14
05/06/14
20/06/14
03/07/14
17/07/14
31/07/14
14/08/14
29/08/14
11/09/14
25/09/14
09/10/14
24/10/14
07/11/14
20/11/14
04/12/14
19/12/14
31/12/14


CH4 and CO2% Borehole 174 (2014)
CH4%
CO2 %
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
03/01/14
16/01/14
30/01/14
13/02/14
27/02/14
13/03/14
27/03/14
10/04/14
22/04/14
09/05/14
23/05/14
05/06/14
20/06/14
03/07/14
17/07/14
31/07/14
14/08/14
29/08/14
11/09/14
25/09/14
09/10/14
24/10/14
07/11/14
20/11/14
04/12/14
19/12/14
31/12/14


CH4 and CO2% Borehole 175 (2014)
CH4%
CO2 %
CH4%
CO2%
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
03/01/14
16/01/14
30/01/14
13/02/14
27/02/14
13/03/14
27/03/14
10/04/14
22/04/14
09/05/14
23/05/14
05/06/14
20/06/14
03/07/14
17/07/14
31/07/14
14/08/14
29/08/14
11/09/14
25/09/14
09/10/14
24/10/14
07/11/14
20/11/14
04/12/14
19/12/14
31/12/14

OverBurden Wells
Location: Landfill
Parameters: all data in mg/l unless stated otherwise

Well No.	OB1									
DATE	**pH.**	**Temp.**	**Cond**	**NH_4**	**NH_4 (as N)**	**Vis/Od**	**Cl**	**O2**	**TOC**	**TON**
			uS/cm							
10/03/2014	7.96	11.3.C	514	0.08	0.06	POOR	21	2.5	4	12
16/09/2014	7.93	17.7.C	451	0.05	0.04	POOR	24	1.7	2	2
02/12/14	7.86	14.C	387	0.2	0.16	FAIR	24	7.6	2	5

Well No.	OB2									
DATE	**pH.**	**Temp.**	**Cond**	**NH_4**	**NH_4 (as N)**	**Vis/Od**	**Cl**	**O2**	**TOC**	**TON**
			uS/cm							
10/03/2014	7.28	11.4.C	451	0.07	0.05	POOR	31	2.5	5	3
16/09/2014	7.71	13.4.C	584	0.11	0.09	POOR	49	<1	4	0.5
02/12/14	8.23	10.8.C	500	0.3	0.23	FAIR	35	3.2	3	3

Well No.	OB3									
DATE	**pH**	**Temp.**	**Cond**	**NH_4**	**NH_4 (as N)**	**Vis/Od**	**Cl**	**O2**	**TOC**	**TON**
			uS/cm							
10/03/14	7.33	12.6.C	3,700	250	194.50	POOR	255	1.8	62	1
16/09/14	7.47	13.2.C	3,270	230	178.94	POOR	312	1.1	48	2
02/12/14	8.17	12.5.C	4,000	270	210.06	POOR	499	1.1	60	10

Well No.	OB7									
DATE	**pH**	**Temp**	**Cond**	**NH_4**	**NH_4 (as N)**	**Vis/Od**	**Cl**	**O2**	**TOC**	**TON**
			uS/cm							
10/03/2014	6.5	10.8.C	1,050	58	45.12	POOR	90	1.2	26	1
16/09/2014	6.89	12.1.C	670	35	27.23	POOR	57	1.1	4	2
02/12/14	7.78	11.7.C	724	0.2	0.16	POOR	78	1.7	14	3

OverBurden Wells
Location: Landfill
Parameters: all data in mg/l unless stated otherwise

	Frequency	Method	Range	Sample	OB1		OB2		OB3		OB7
Vis/Odour	q			Grab	POOR		POOR		POOR		POOR
Amonium	m	ISE	0.01-10		0.1		0.04		260		51
Chloride	q	ArgentSM	1-100		28.4		35.4		71		85
D.O.	q	Meter	0.1-20		6.4		2.3		4.4		1.7
Cond.us/cm	m	Meter	1-200000		470		448		3,560		1,033
pH	m	Meter	1.0-14.0		7.81		7.46		7.49		6.57
Temp	m	Meter	1.0-100		11.9.C		9.4.C		12.1.C		10.1.C
Boron	a	GFAA	0.01-1.0		0.03		<0.02		0.8		0.04
Cadmium	a	GFAA	0.001-0.5		<0.002		<0.002		<0.002		<0.002
Calcium	a	Titre SM	1-100		76		80		80		52
Chromium	a	GFAA	0.001-0.2		<0.002		<0.002		<0.002		<0.002
Copper	a	AA	0.001-1.0		0.02		0.02		0.02		0.02
Cyanide	a	ISE	0.005-1.0		<0.005		<0.005		<0.005		<0.005
Fluoride	a	ISE	0.5-1.0		0.12		0.08		0.09		0.05

OverBurden Wells
Location: Landfill
Parameters: all data in mg/l unless stated otherwise

	Frequency	Method	Range	Sample	OB1		OB2		OB3		OB7
Iron	a	AA	0.01-5.0	Grab	0.02		0.02		0.02		0.02
Lead	a	GFAA	0.001-0.1		<0.002		<0.002		<0.002		<0.002
Magnesium	a	AA	0.01-5.0		2.5		3.7		32		6.1
Manganese	a	AA	0.01-3.0		0.004		0.13		0.2		0.9
Mercury	a	Hydride-AA			<0.00002		<0.00002		0.00005		<0.00002
Potassium	q	AA	0.1-5.0		4.9		4		125		22.2
Sulphate	a	Turb. SM	1.0-30		52		<5		6		<5
Sodium	q	AA	0.1-3.0		14.9		16.2		250		125
Tot Phos	a	Stann.SM	0.05-0.25		0.03		0.18		0.2		0.15
T.O.N.	q	SM			12		8		1		1
T.O.C.	q	SM	1-100		2		4		58		22
Res/Evap	a	SM	1.0-5000		708		296		1,232		1,012
Zinc	a	AA	0.01-5.0		0.02		0.02		0.02		0.02
Alkalinity	a	SM	1-1000		220		230		1,850		370
Nickel	a	GFFA	0.002-1		<0.005		0.01		0.03		0.02

Overburden Wells - Depth 2014

	Jan	Feb	Mar	Apr	May	June	July	August	September	October	November	December
BOREHOLE	Depth (m)	Depth (m)	Depth (m)	Depth (m)	Depth (m)	Depth (m)	Depth (m)	Depth (m)	Depth (m)	Depth (m)	Depth (m)	Depth (m)
OB1	1.21	1.06	1.35	1.32	1.47		1.69	1.67	1.88	1.56	1.47	1.33
OB2	0.37	Flooded	0.69	0.46	0.84		1.06	1.2	1.17	1.04	0.93	0.7
OB3	1.02	1.07	1.32	1.03	1.55		1.86	1.63	1.78	1.64	1.19	1.24
OB7	0.5	0.59	0.54	0.55	0.54		1.04	1.2	1.17	2.01	0.68	0.68
BR1	0.91	0.7	1.25	1.22	1.55		1.75	1.72	1.87	2.02	1.6	1.1
BR2	Flooded	Flooded	Flooded	Flooded	0.37		1.15	1.15	0.85	Flooded	Flooded	Flooded
BR3	1.03	1.11	1.17	1.12	1.66		2.04	1.84	2.02	1.55	1.25	1.21
BR7	1.31	1.1	1.49	1.42	1.7		1.81	1.85	1.98	2.01	1.56	1.32
BH1	gone	gone	gone	gone	gone	gone	gone	gone	gone	gone	gone	gone
BH12	gone	gone	gone	gone	gone	gone	gone	gone	gone	gone	gone	gone
KC8	3.93	3.62	4.2	4.17	4.49		4.74	4.86	4.96	4.62	4.45	3.75

Groundwater: NW Wells

Location: Landfill

Parameters: All data in mg/l unless stated otherwise

Well No.	NW1				
DATE	pH	Cond uS/cm	NH_4	NH_4 (as N)	TOC
28/01/14	7.37	1,113	1	0.78	21
19/02/14	7.74	721	0.1	0.08	15
10/03/14	7.41	1,223	22	17.12	19
01/04/14		SEE ANNUAL			
06/05/14	7.36	800	18	14.00	17
Jun-14		NOT DONE			
28/07/14	7.36	853	10	7.78	48
26/08/14	7.1	935	28	21.78	57
16/09/14	6.71	917	30	23.34	54
07/10/14	7.12	820	20	15.56	35
04/11/14	7.11	1,050	11	8.56	36
02/12/14	8.11	970	0.2	0.16	23

Well No.	NW3				
DATE	pH	Cond uS/cm	NH_4	NH_4 (as N)	TOC
Trigger levels	5.6-9.0	1500	60		100
28/01/14	6.32	614	37	28.79	13
19/02/14	6.44	670	44	34.23	13
10/03/14	6.45	720	45	35.01	14
01/04/14		SEE ANNUAL			
06/05/14	6.57	700	37	28.79	10
Jun-14		NOT DONE			
28/07/14	6.64	428	16	12.45	10
26/08/14	6.95	511	39	30.34	10
16/09/14	6.27	467	29	22.56	13
07/10/14	6.48	393	12	9.34	8
04/11/14	6.69	713	42	32.68	14
02/12/14	5.68	550	2.3	1.79	13

Well No.	NW2				
DATE	pH	Cond uS/cm	NH_4	NH_4 (as N)	TOC
28/01/14	7.65	851	50	38.90	11
19/02/14	7.66	890	43	33.45	11
10/03/14	7.27	925	52	40.46	11
01/04/14		SEE ANNUAL			
06/05/14	7.61	910	45	35.01	14
Jun-14		NOT DONE			
28/07/14	7.29	560	9	7.00	10
26/08/14	7.47	640	22	17.12	8
16/09/14	7.41	705	37	28.79	13
07/10/14	7.23	615	20	15.56	7
04/11/14	7.57	768	38	29.56	12
02/12/14	7.19	680	1.7	1.32	19

Well No.	NW4				
DATE	pH	Cond uS/cm	NH_4	NH_4 (as N)	TOC
28/01/14	6.8	986	43	33.45	24
19/02/14	6.91	926	0.08	0.06	22
10/03/14	6.64	970	50	38.90	24
01/04/14		SEE ANNUAL			
06/05/14	6.57	950	27	21.01	20
Jun-14		NOT DONE			
28/07/14	6.86	631	24	18.67	18
26/08/14	7.28	734	51	39.68	19
16/09/14	6.51	712	45	35.01	24
07/10/14	6.98	623	24	18.67	15
04/11/14	6.93	958	44	34.23	21
02/12/14	7.61	785	0.77	0.60	20

Well No.	NW5				
DATE	pH	Cond uS/cm	NH_4	NH_4 (as N)	TOC
28/01/14	8.01	842	0.06	0.05	21
19/02/14	7.76	624	0.19	0.15	15
10/03/14	7.09	680	7.2	5.60	17
01/04/14		SEE ANNUAL			
06/05/14	7.1	630	0.37	0.29	15
Jun-14		NOT DONE			
28/07/14	7.55	636	9	7.00	14
26/08/14	7.41	623	10	7.78	18
16/09/14	7.14	600	6	4.67	13
07/10/14	7.84	536	0.05	0.04	15
04/11/14	7.48	535	1.4	1.09	18
02/12/14	8.06	577	0.35	0.27	16

Well No.	NW7				
DATE	pH	Cond uS/cm	NH_4	NH_4 (as N)	TOC
Trigger levels	5.6-9.0	6000	500		200
28/01/14	7.07	378	0.11	0.09	7
19/02/14	7.64	296	0.06	0.05	3
10/03/14	7.03	290	0.07	0.05	2
01/04/14		SEE ANNUAL			
06/05/14	7.11	300	0.1	0.08	1
Jun-14		NOT DONE			
28/07/14	7.66	307	0.08	0.06	7
26/08/14	7.73	310	0.11	0.09	3
16/09/14	6.17	300	0.11	0.09	2
07/10/14	7.77	322	0.4	0.31	2
04/11/14	7.22	1,551	76	59.13	22
02/12/14	7.81	750	2	1.56	4

Well No.	NW6				
DATE	pH	Cond uS/cm	NH_4	NH_4 (as N)	TOC
28/01/14	7.37	1,660	98	76.24	24
19/02/14	7.38	1,440	85	66.13	17
10/03/14	7.24	1,350	63	49.01	17
01/04/14		SEE ANNUAL			
06/05/14	7.07	1,420	58	45.12	12
Jun-14		NOT DONE			
28/07/14	7.18	1,403	50	38.90	17
26/08/14	7.37	1,460	63	49.01	21
16/09/14	7.08	1,405	52	40.46	21
07/10/14	7.23	1,500	50	38.90	21
04/11/14	7.24	2,100	100	77.80	31
02/12/14	7.37	1,750	4	3.11	30

Well No.	NW8				
DATE	pH	Cond uS/cm	NH_4	NH_4 (as N)	TOC
28/01/14	6.21	390	20	15.56	10
19/02/14	6.42	365	20	15.56	7
10/03/14	6.33	500	25	19.45	8
01/04/14		SEE ANNUAL			
06/05/14	6.27	410	20	15.56	10
Jun-14		NOT DONE			
28/07/14	7.29	450	9	7.00	9
26/08/14	6.45	321	21	16.34	6
16/09/14	6.3	394	28	21.78	5
07/10/14	6.52	340	20	15.56	4
04/11/14	6.46	360	22	17.12	10
02/12/14	6.3	375	4.5	3.50	9

Well No.	NW9				
DATE	**pH**	**Cond uS/cm**	**NH_4**	**NH_4 (as N)**	**TOC**
Trigger levels	5.6-9.0	1500	5		35
28/01/14	7.01	1,317	30	23.34	10
19/02/14	7.18	1,270	10	7.78	8
10/03/14	6.93	1,420	22	17.12	10
01/04/14		SEE ANNUAL			
06/05/14	7.11	1,200	15	11.67	10
Jun-14		NOT DONE			
28/07/14	7.58	1,051	15	11.67	10
26/08/14	7.3	1,286	21	16.34	21
16/09/14	7.06	1,300	20	15.56	5
07/10/14	7.3	1,330	20	15.56	7
04/11/14	7.25	1,430	31	24.12	12
02/12/14	6.91	1,350	1.4	1.09	11

Groundwater: NW Wells

Location: Landfill

Parameters: All data in mg/l unless stated otherwise

	Frequecy	Method	Range	**NW1**	**NW2**	**NW3**	**NW4**	**NW5**	**NW6**	**NW7**	**NW8**	**NW9**
Vis/Odour	q			POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR
Amonium	m	ISE	0.01-10	21	56	50	29	9	4	28	35	0.4
Chloride	q	Argent SM	1-100	92	35	78	64	31	149	57	49	112
D.O.	q	Meter	0.1-20	1.9	2.9	1.4	1.4	1.1	2.4	3.1	1.2	2.1
Cond.us/cm	m	Meter	1-200000	1,082	913	716	902	724	1,630	570	411	1,250
pH	m	Meter	1.0-11	7.77	7.92	7.41	7.62	7.89	7.44	7.25	7.17	7.58
Temp	m	Meter	1.0-50	9.1.C	10.3.C	10.2.C	10.2.C	11.3.C	9.5.C	11.2.C	11.1.C	10.5.C
Boron	a	GFAA	0.01-1.0	0.16	0.08	<0.02	0.06	0.02	0.3	0.09	<0.02	0.15
Cadmium	a	GFAA	0.001-0.5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Calcium	a	Titre SM	1.0-100	104	72	32	72	88	76	48	24	100
Copper	a	AA	0.001-1.0	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04
Cyanide	a	ISE	0.01-1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	a	ISE	0.5-1.0	0.1	0.08	0.01	0.04	0.05	0.08	0.07	0.03	0.03

	Frequency	Method	Range	NW1	NW2	NW3	NW4	NW5	NW6	NW7	NW8	NW9
Iron	q	AA	0.01-5.0	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04
Lead	a	GFFA	0.001-0.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Magnesium	a	AA	0.01-5.0	9.6	7.2	10.2	9.9	5.8	16.5	7.5	3.7	3.4
Manganese	a	AA	0.01-3.0	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.2
Mercury	a	GFFA		<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Potassium	q	AA	0.1-5.0	39	12	16	25	11	28	21	13	22
Sulphate	a	Turb SM	1.0-30	<5	<5	<5	<5	<5	<5	<5	5	40
Sodium	q	AA	0.1-3.0	68	54	57	68	44	106	59	43	74
TotPhos	a	Stann SM	0.05-0.25	0.07	0.1	0.12	0.14	0.22	0.12	0.2	0.6	0.2
T.O.N.	q	SM		1	1	1	8	1	1	3	2	3
Res/Evap	a	SM	1.0-5000	840	518	1,192	852	538	716	1,188	1,734	1,006
Zinc	a	AA	0.01-5.0	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.03	0.03
T.O.C.	q	HACH	15-150	24	10	13	24	14	22	6	7	9
Alkalinity	a	SM	1-1000	220	280	80	150	270	500	110	50	340
Ni	a	GFFA	0.002-1	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.01
Cr	a	GFFA	0.002-1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.006	<0.002

NW Wells - Depth 2014

Jan-14

Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
28/01/2014	NW1	5.38	1.75	3.63
28/01/2014	NW2	5.4	1.03	4.37
28/01/2014	NW3	4.18	0.65	3.53
28/01/2014	NW4	4.6	0.87	3.73
28/01/2014	NW5	15	2.63	12.37
28/01/2014	NW6	3.79	0	3.79
28/01/2014	NW7	4.26	0.7	3.56
28/01/2014	NW8	4.2	0.95	3.25
28/01/2014	NW9	3.5	0	3.5

Feb-14

Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
19/02/2014	NW1	5.38	1.66	3.72
19/02/2014	NW2	5.4	1.09	4.31
19/02/2014	NW3	4.18	0.63	3.55
19/02/2014	NW4	4.6	0.92	3.68
19/02/2014	NW5	15	2.62	12.38
19/02/2014	NW6	3.79	0	3.79
19/02/2014	NW7	4.26	0.71	3.55
19/02/2014	NW8	4.2	0.94	3.26
19/02/2014	NW9	3.5	0	3.5

Mar-14

Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
18/03/2014	NW1	5.38	1.86	3.52
18/03/2014	NW2	5.4	1.43	3.97
18/03/2014	NW3	4.18	0.7	3.48
18/03/2014	NW4	4.6	1.29	3.31
18/03/2014	NW5	15	3.03	11.97
18/03/2014	NW6	3.79	0.62	3.17
18/03/2014	NW7	4.26	1.31	2.95
18/03/2014	NW8	4.2	1.33	2.87
18/03/2014	NW9	3.5	0	3.5

Apr-14

Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
01/04/2014	NW1	5.38	1.78	3.6
01/04/2014	NW2	5.4	1.08	4.32
01/04/2014	NW3	4.18	0.67	3.51
01/04/2014	NW4	4.6	0.93	3.67
01/04/2014	NW5	15	3.01	11.99
01/04/2014	NW6	3.79	0	3.79
01/04/2014	NW7	4.26	0.73	3.53
01/04/2014	NW8	4.2	0.99	3.21
01/04/2014	NW9	3.5	0	3.5

NW Wells - Depth 2014

May-14

Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
06/05/2014	NW1	5.38	1.84	3.54
06/05/2014	NW2	5.4	1.63	3.77
06/05/2014	NW3	4.18	0.78	3.4
06/05/2014	NW4	4.6	1.64	2.96
06/05/2014	NW5	15	1.78	13.22
06/05/2014	NW6	3.79	1.22	2.57
06/05/2014	NW7	4.26	1.38	2.88
06/05/2014	NW8	4.2	1.04	3.16
06/05/2014	NW9	3.5	0.36	3.14

Jun-14 (No data)

Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
	NW1	5.38		
	NW2	5.4		
	NW3	4.18		
	NW4	4.6		
	NW5	15		
	NW6	3.79		
	NW7	4.26		
	NW8	4.2		
	NW9	3.5		

Jul-14

Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
28/07/2014	NW1	5.38	1.96	3.42
28/07/2014	NW2	5.4	1.11	4.29
28/07/2014	NW3	4.18	0.89	3.29
28/07/2014	NW4	4.6	1.86	2.74
28/07/2014	NW5	15	3.34	11.66
28/07/2014	NW6	3.79	1.73	2.06
28/07/2014	NW7	4.26	1.69	2.57
28/07/2014	NW8	4.2	1.55	2.65
28/07/2014	NW9	3.5	0.44	3.06

Aug-14

Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
26/08/2014	NW1	5.38	1.88	3.5
26/08/2014	NW2	5.4	1.86	3.54
26/08/2014	NW3	4.18	1.14	3.04
26/08/2014	NW4	4.6	1.66	2.94
26/08/2014	NW5	15	3.43	11.57
26/08/2014	NW6	3.79	1.2	2.59
26/08/2014	NW7	4.26	1.65	2.61
26/08/2014	NW8	4.2	2.12	2.08
26/08/2014	NW9	3.5	0.56	2.94

NW Wells - Depth 2014

Sep-14

Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
16/09/2014	NW1	5.38	1.87	3.51
16/09/2014	NW2	5.4	2.07	3.33
16/09/2014	NW3	4.18	1.12	3.06
16/09/2014	NW4	4.6	1.74	2.86
16/09/2014	NW5	15	3.41	11.59
16/09/2014	NW6	3.79	1.06	2.73
16/09/2014	NW7	4.26	1.56	2.7
16/09/2014	NW8	4.2	1.26	2.94
16/09/2014	NW9	3.5	0.49	3.01

Nov-14

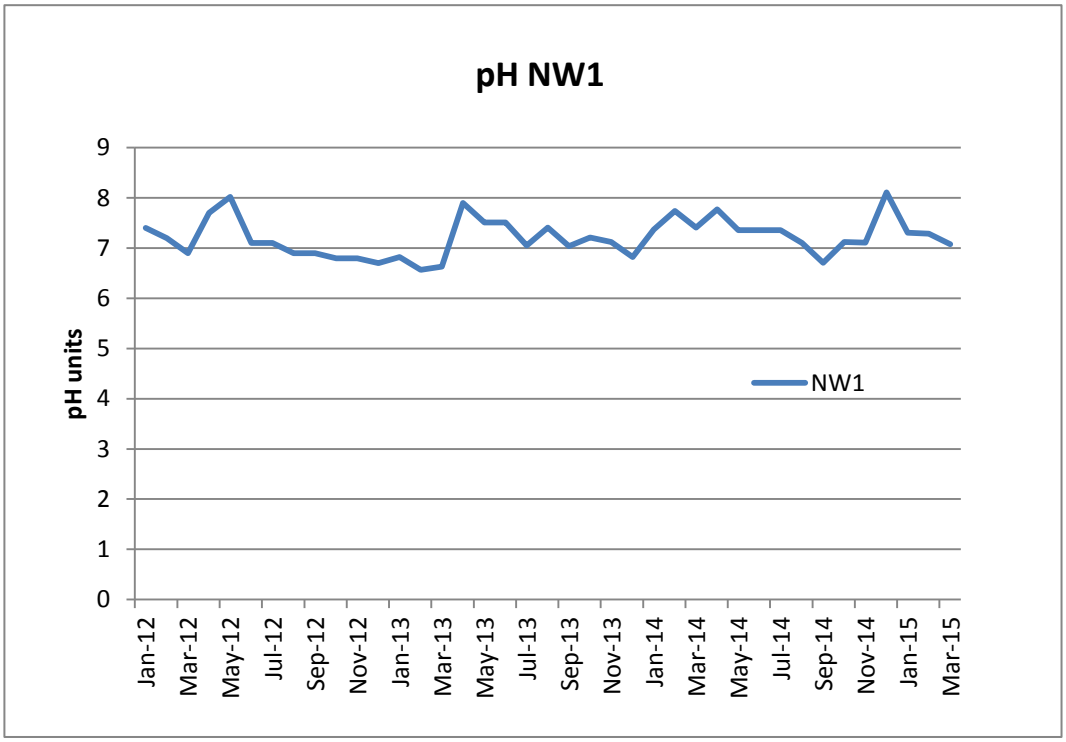
Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
04/11/2014	NW1	5.38	2.25	3.13
04/11/2014	NW2	5.4	1.58	3.82
04/11/2014	NW3	4.18	0.97	3.21
04/11/2014	NW4	4.6	1.02	3.58
04/11/2014	NW5	15	2.96	12.04
04/11/2014	NW6	3.79	0	3.79
04/11/2014	NW7	4.26	1.01	3.25
04/11/2014	NW8	4.2	1.12	3.08
04/11/2014	NW9	3.5	0.38	3.12

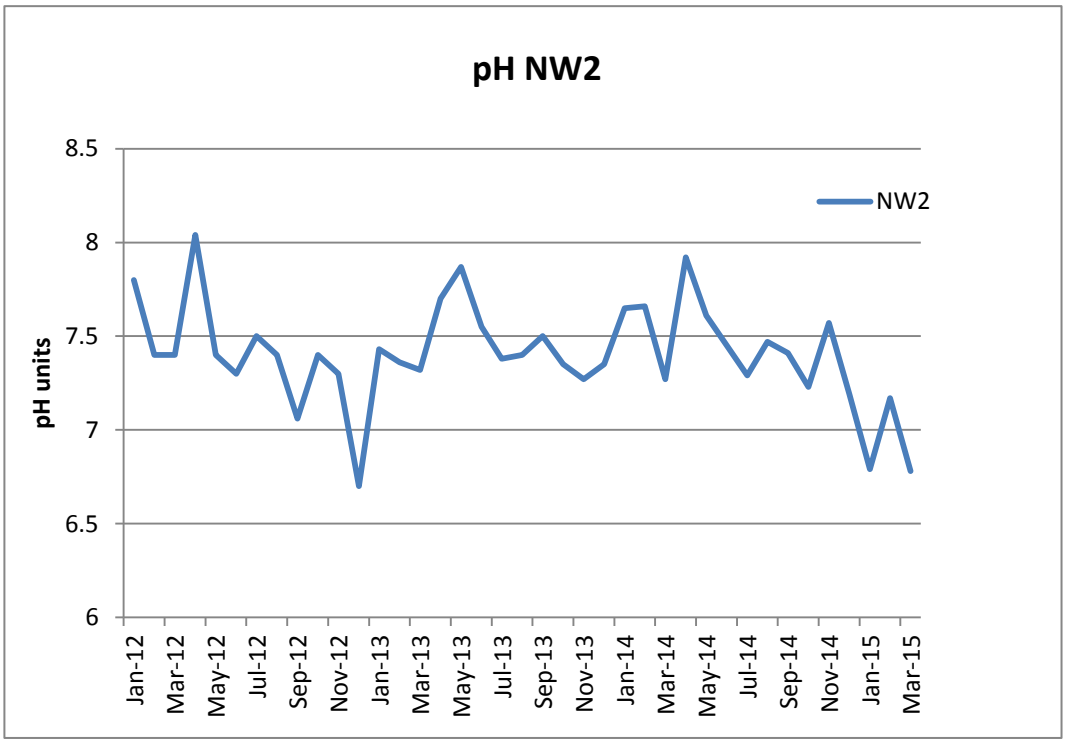
Oct-14

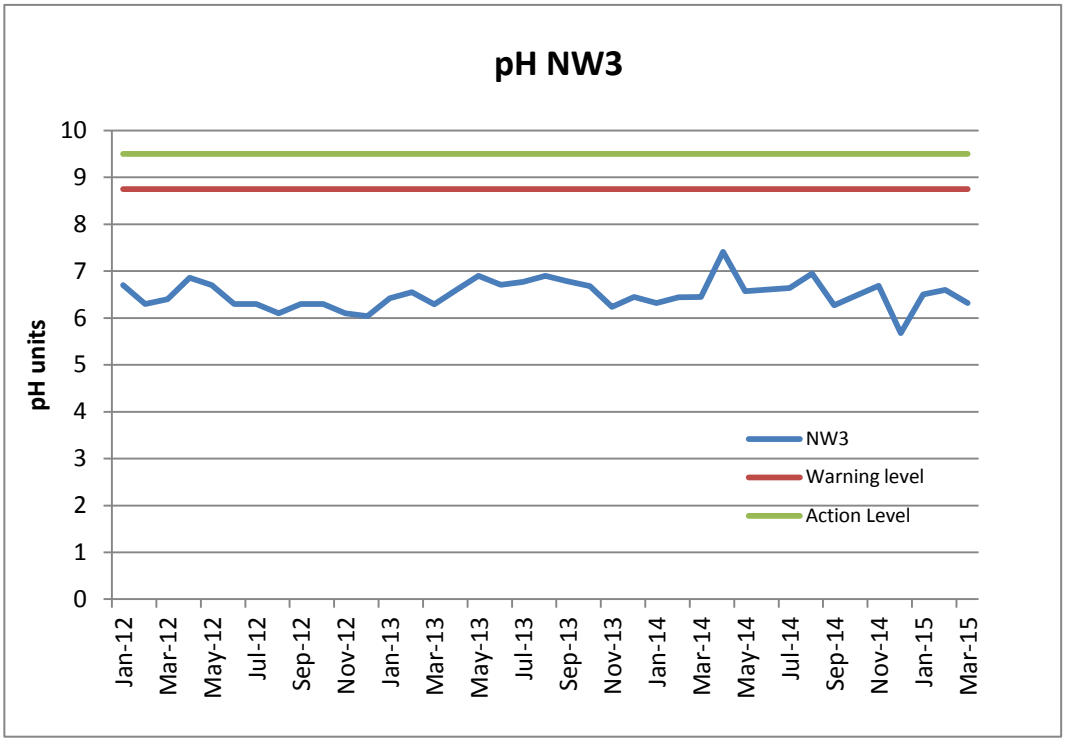
Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
07/10/2014	NW1	5.38	2.06	3.32
07/10/2014	NW2	5.4	1.46	3.94
07/10/2014	NW3	4.18	1.02	3.16
07/10/2014	NW4	4.6	1.89	2.71
07/10/2014	NW5	15	3.46	11.54
07/10/2014	NW6	3.79	0	3.79
07/10/2014	NW7	4.26	1.55	2.71
07/10/2014	NW8	4.2	1.43	2.77
07/10/2014	NW9	3.5	0.39	3.11

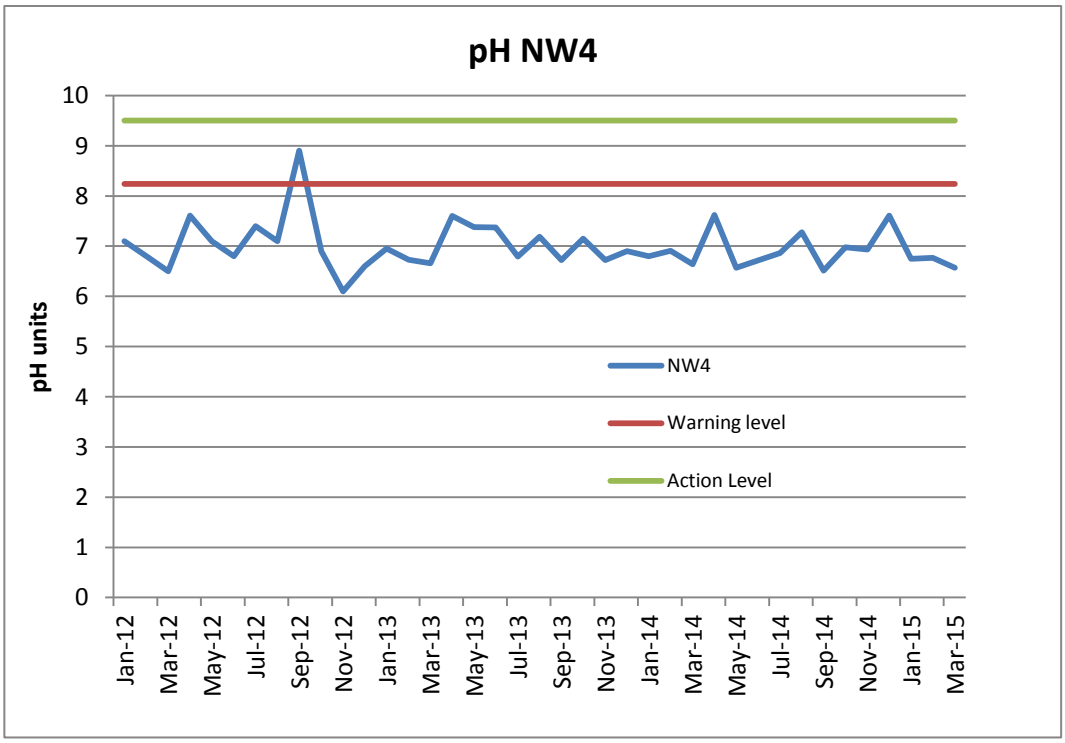
Dec-14

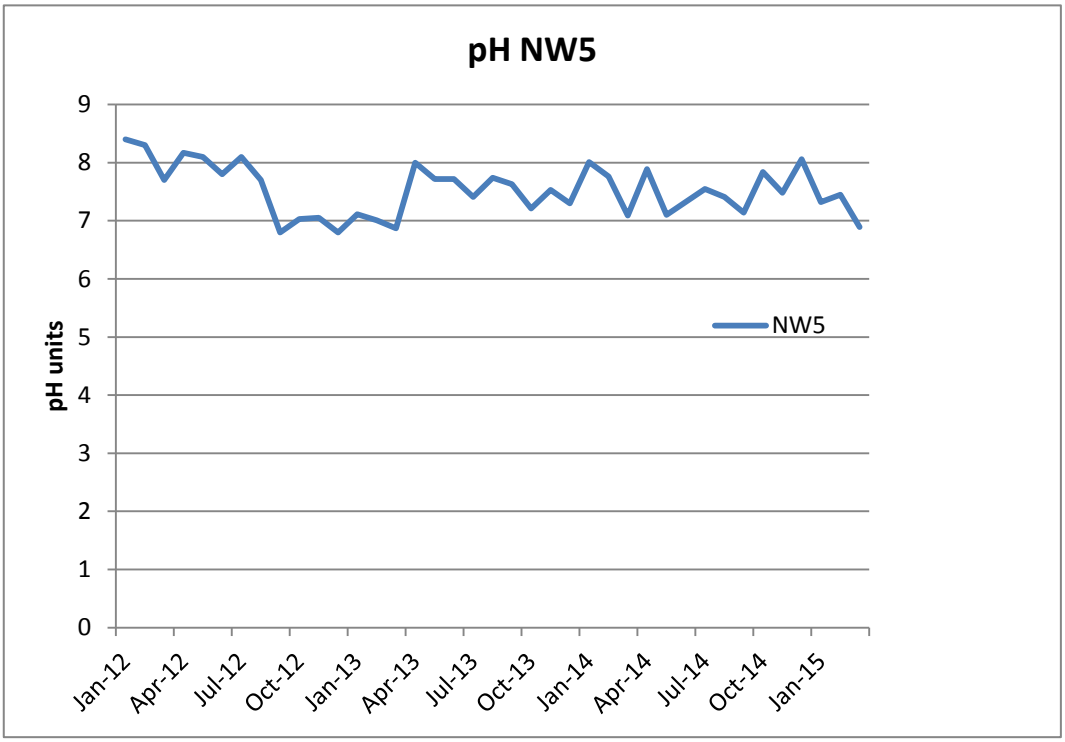
Date	LOCATION	WELL HEIGHT (m)	Depth to Ground water (m)	Water Height in Well (m)
02/12/2014	NW1	5.38	1.87	3.51
02/12/2014	NW2	5.4	1.36	4.04
02/12/2014	NW3	4.18	0.8	3.38
02/12/2014	NW4	4.6	1.32	3.28
02/12/2014	NW5	15	2.3	12.7
02/12/2014	NW6	3.79	0	3.79
02/12/2014	NW7	4.26	0.86	3.4
02/12/2014	NW8	4.2	1.35	2.85
02/12/2014	NW9	3.5	0	3.5

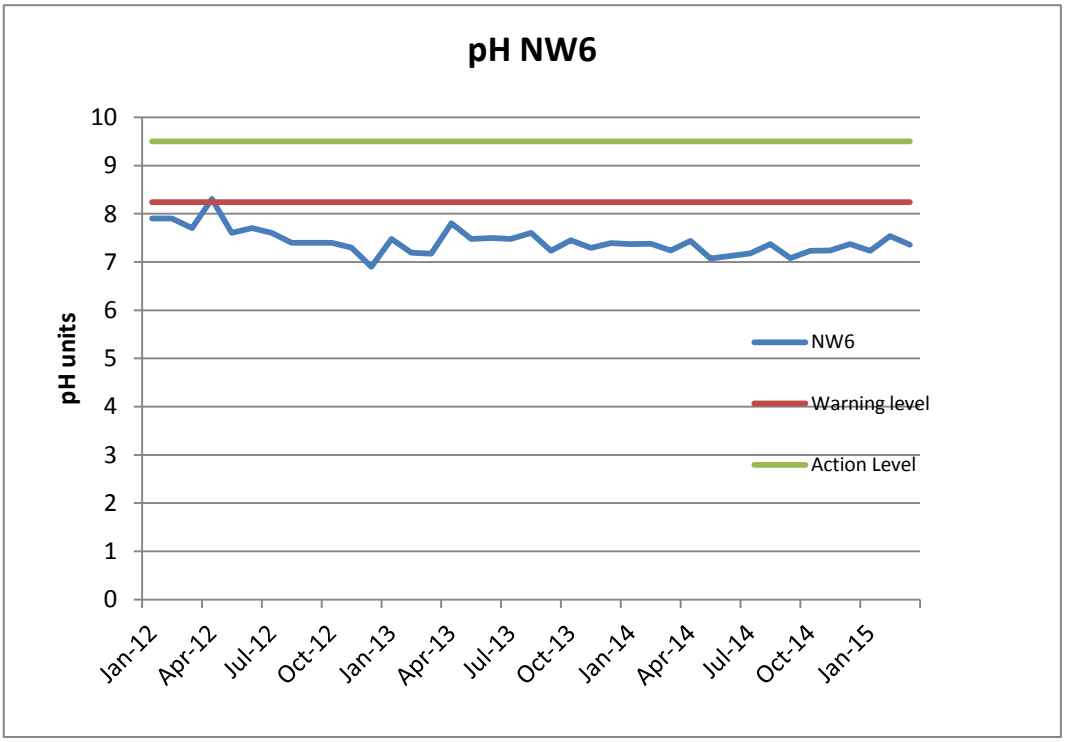

pH NW1
pH units
9
8
7
6
5
4
3
2
1
0
NW1
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

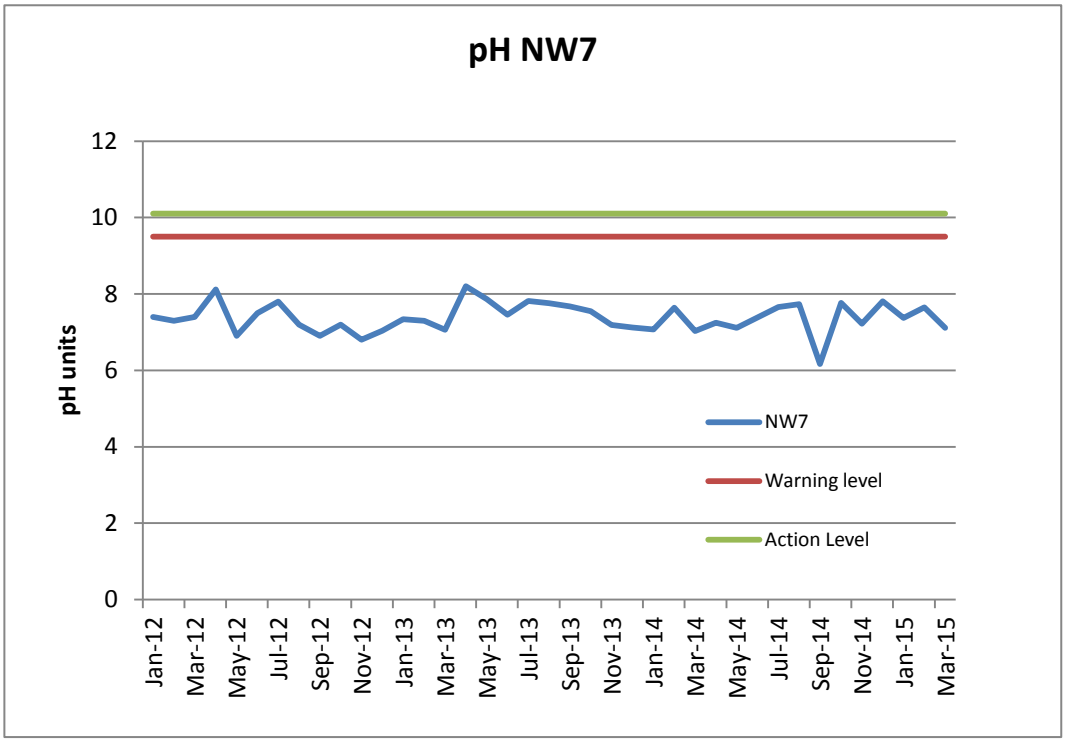

pH NW2
pH units
8.5
8
7.5
7
6.5
6
NW2
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

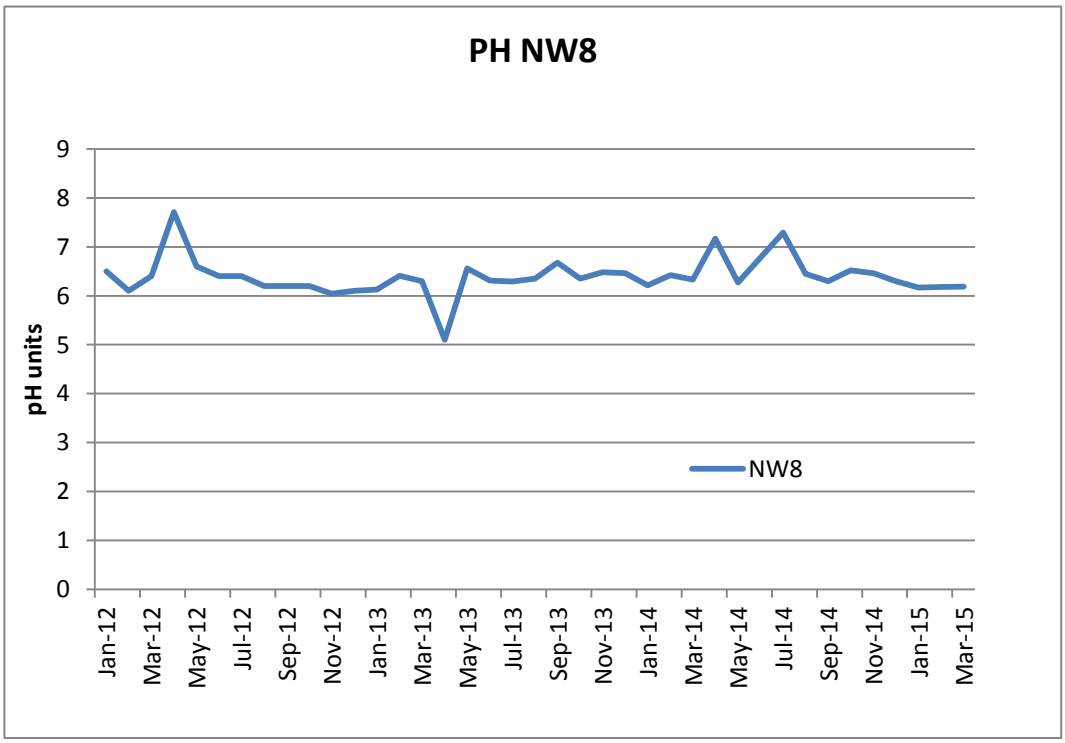

pH NW3
pH units
10
9
8
7
6
5
4
3
2
1
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15
NW3
Warning level
Action Level

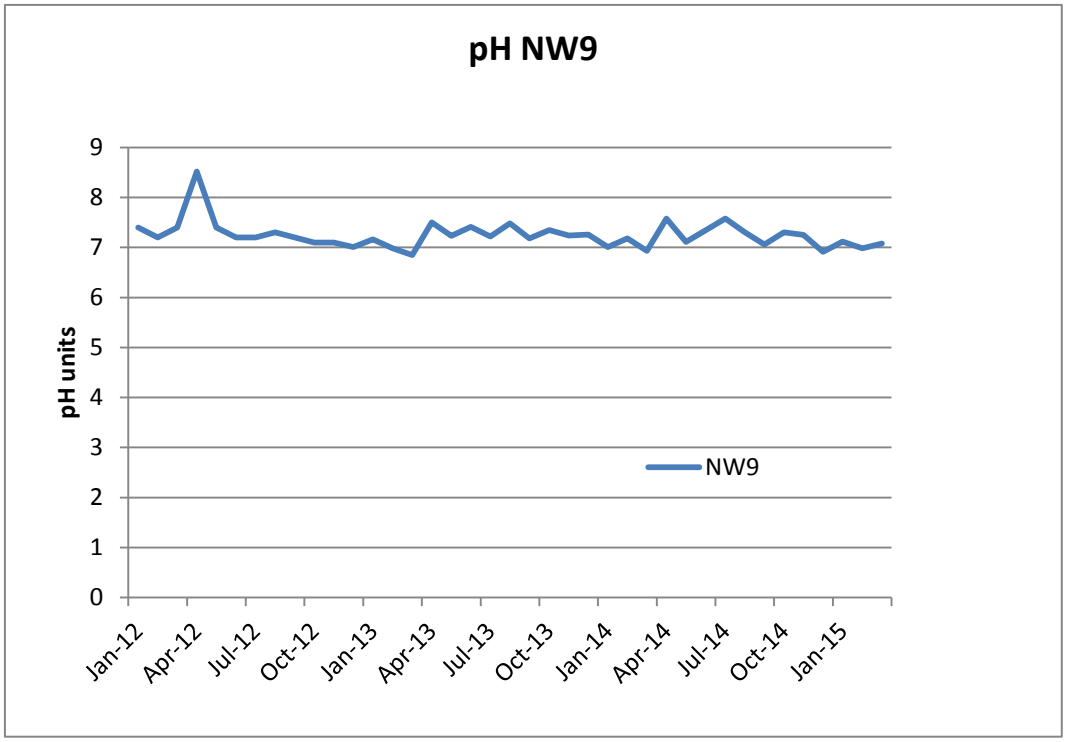

pH NW4
pH units
10
9
8
7
6
5
4
3
2
1
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15
NW4
Warning level
Action Level

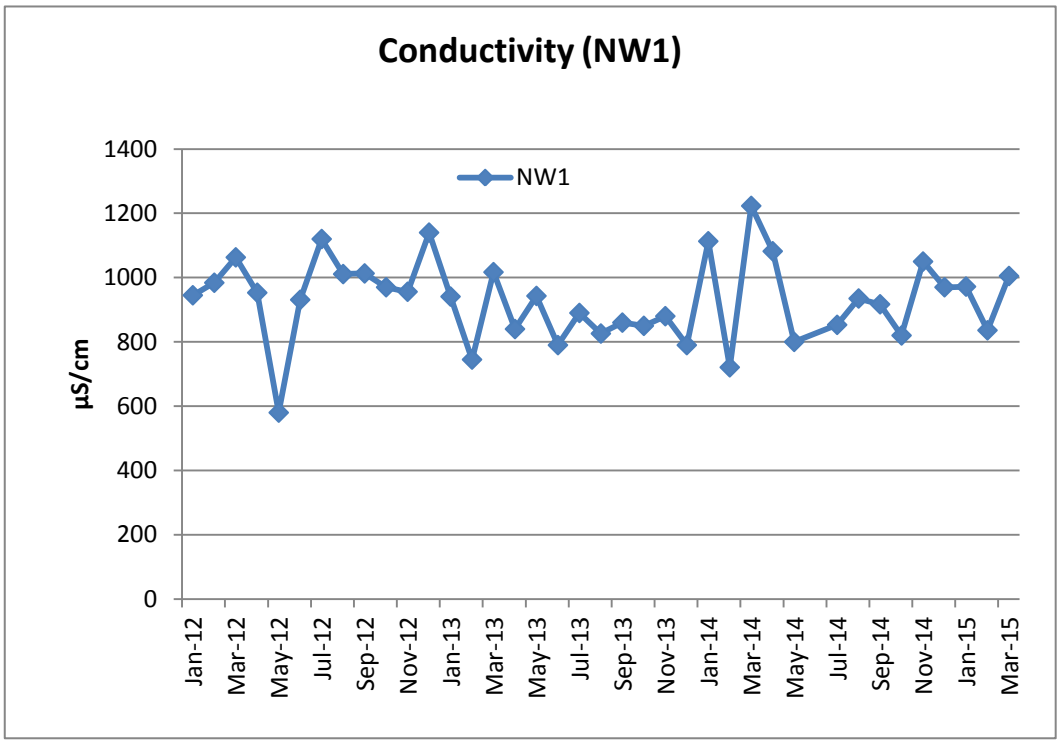

pH NW5
pH units
9
8
7
6
5
4
3
2
1
0
NW5
Jan-12
Apr-12
Jul-12
Oct-12
Jan-13
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15

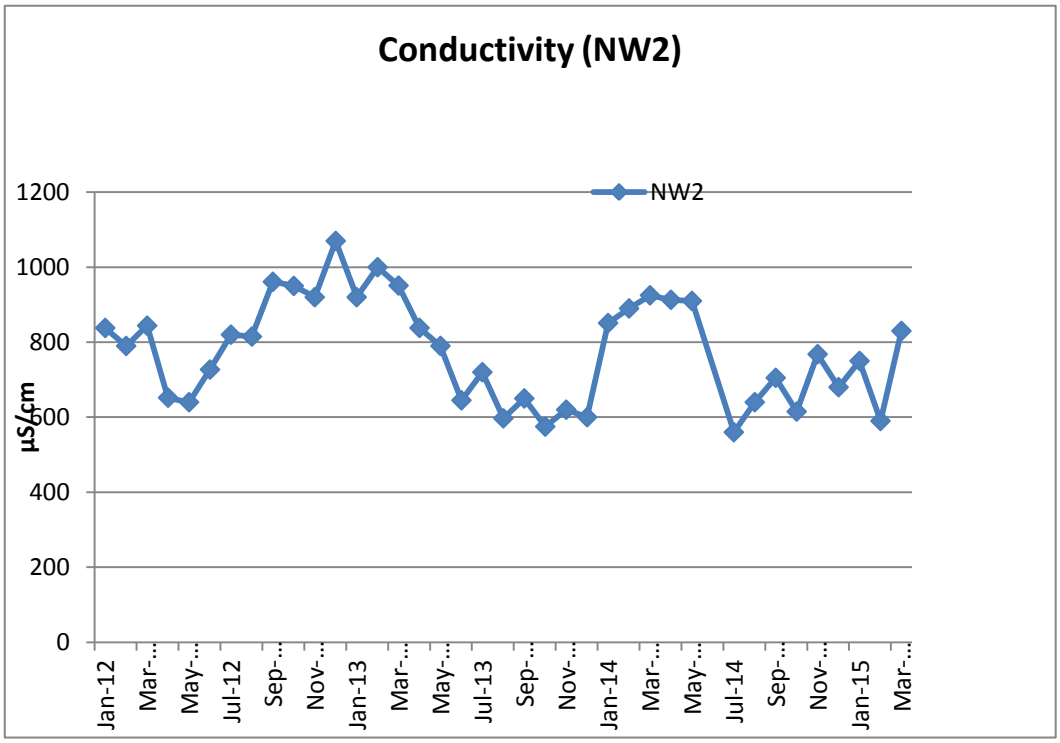

pH NW6
pH units
10
9
8
7
6
5
4
3
2
1
0
NW6
Warning level
Action Level
Jan-12
Apr-12
Jul-12
Oct-12
Jan-13
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15

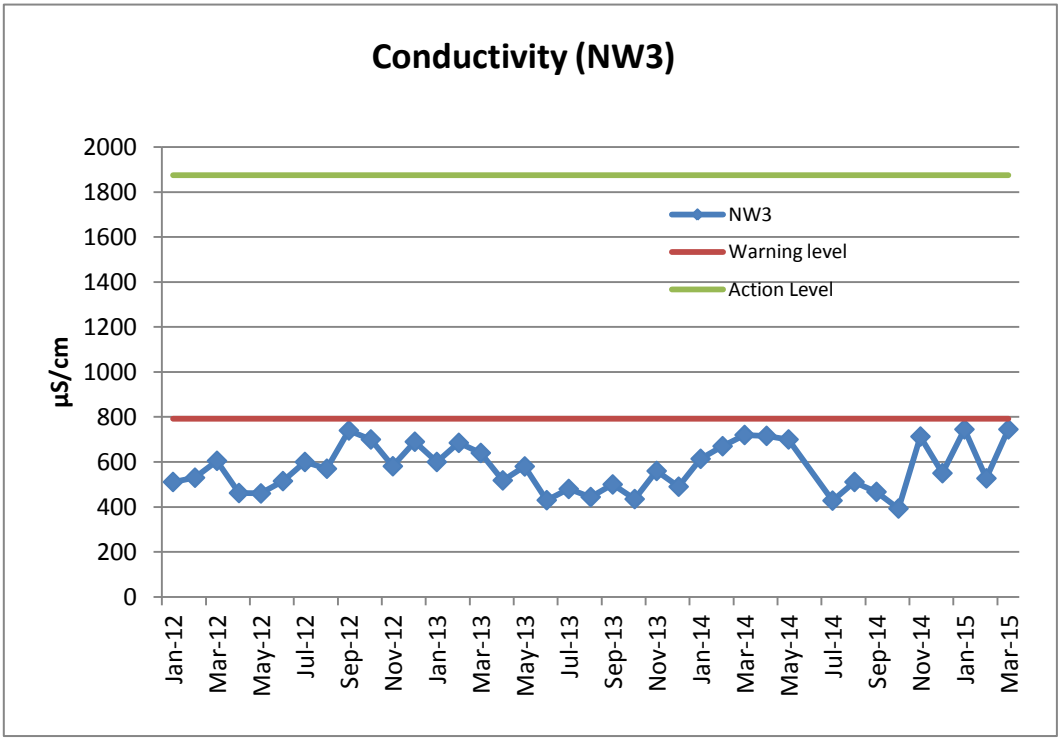

pH NW7
12
10
8
6
4
2
0
pH units
NW7
Warning level
Action Level
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

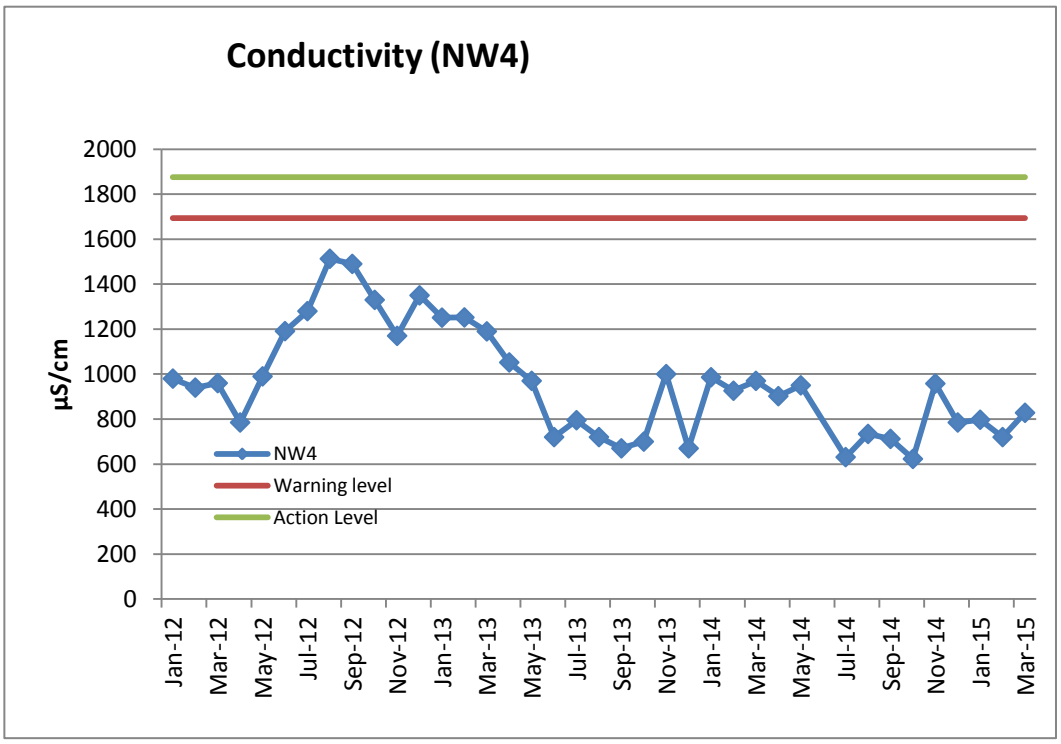

PH NW8
9
8
7
6
5
4
3
2
1
0
pH units
NW8
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

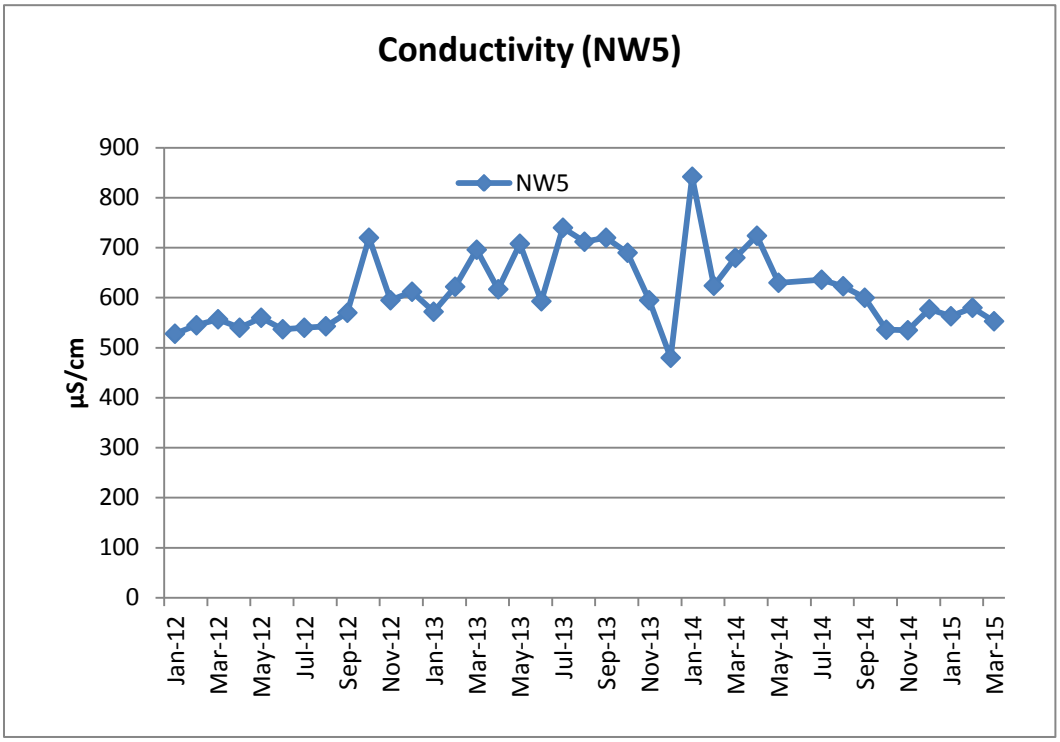

pH NW9
pH units
9
8
7
6
5
4
3
2
1
0
Jan-12
Apr-12
Jul-12
Oct-12
Jan-13
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
NW9

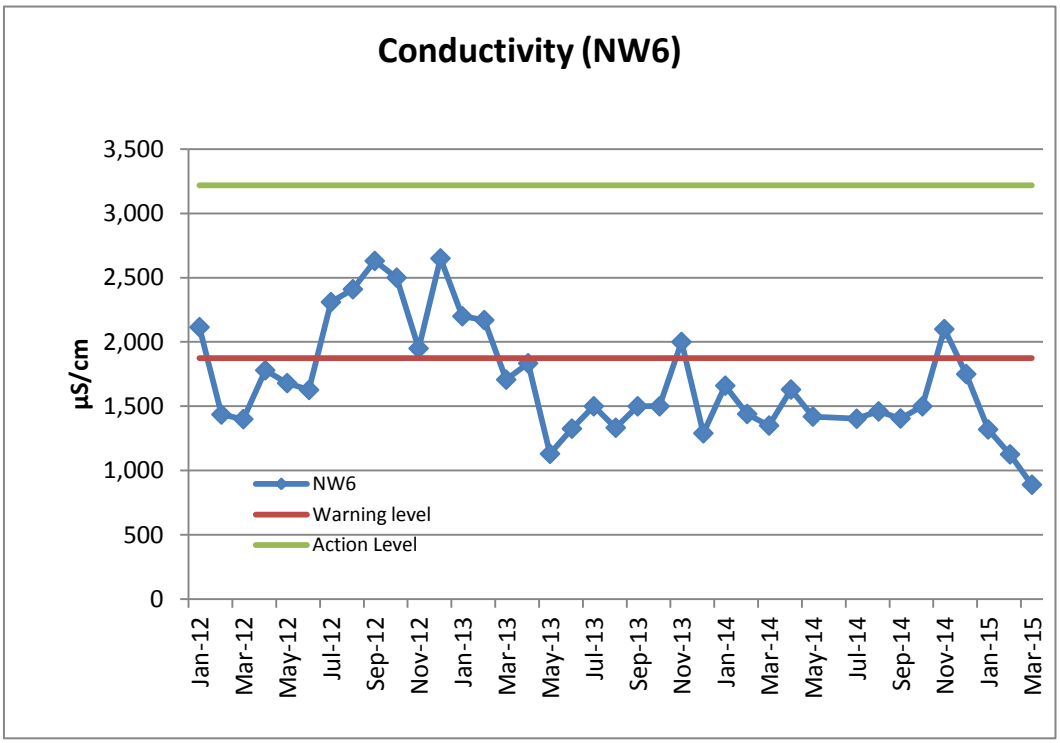

Conductivity (NW1)
NW1
µS/cm
1400
1200
1000
800
600
400
200
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

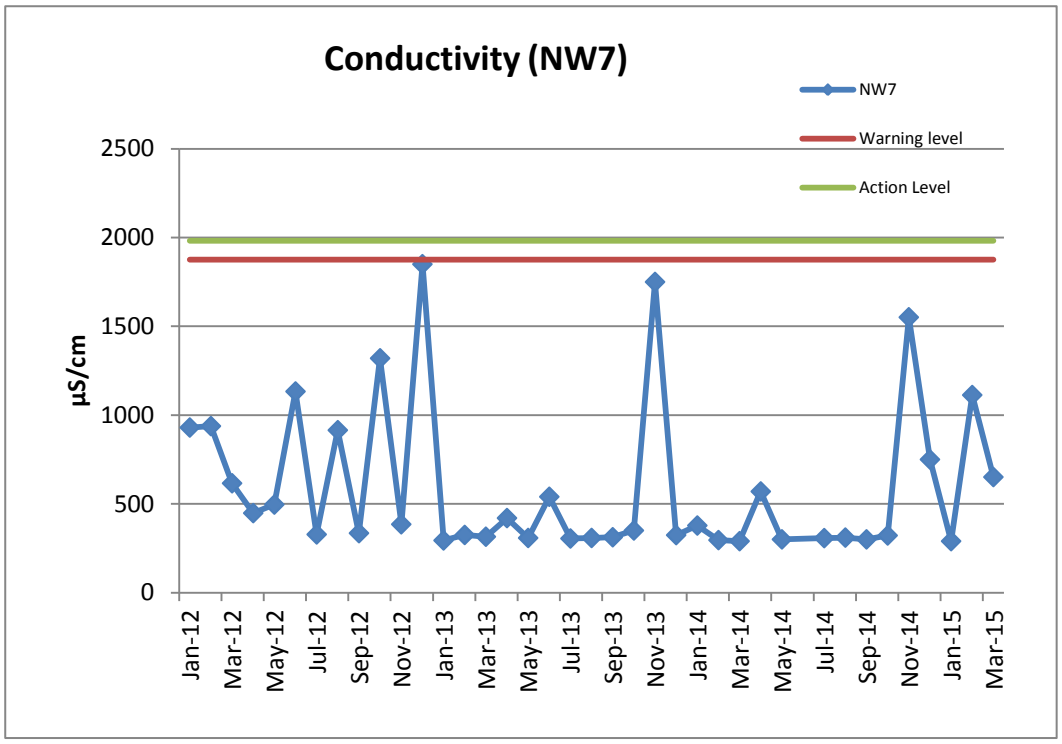

Conductivity (NW2)
NW2
µS/cm
1200
1000
800
600
400
200
0
Jan-12
Mar-...
May-...
Jul-12
Sep-...
Nov-...
Jan-13
Mar-...
May-...
Jul-13
Sep-...
Nov-...
Jan-14
Mar-...
May-...
Jul-14
Sep-...
Nov-...
Jan-15
Mar-...

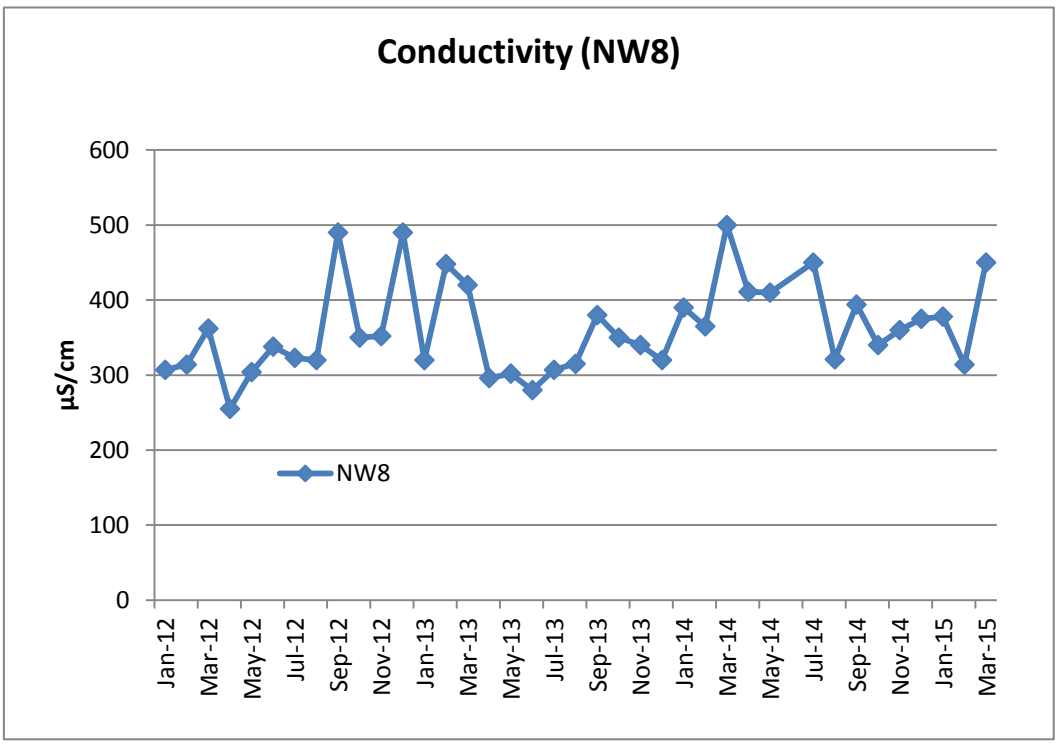

Conductivity (NW3)
µS/cm
2000
1800
1600
1400
1200
1000
800
600
400
200
0
NW3
Warning level
Action Level
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

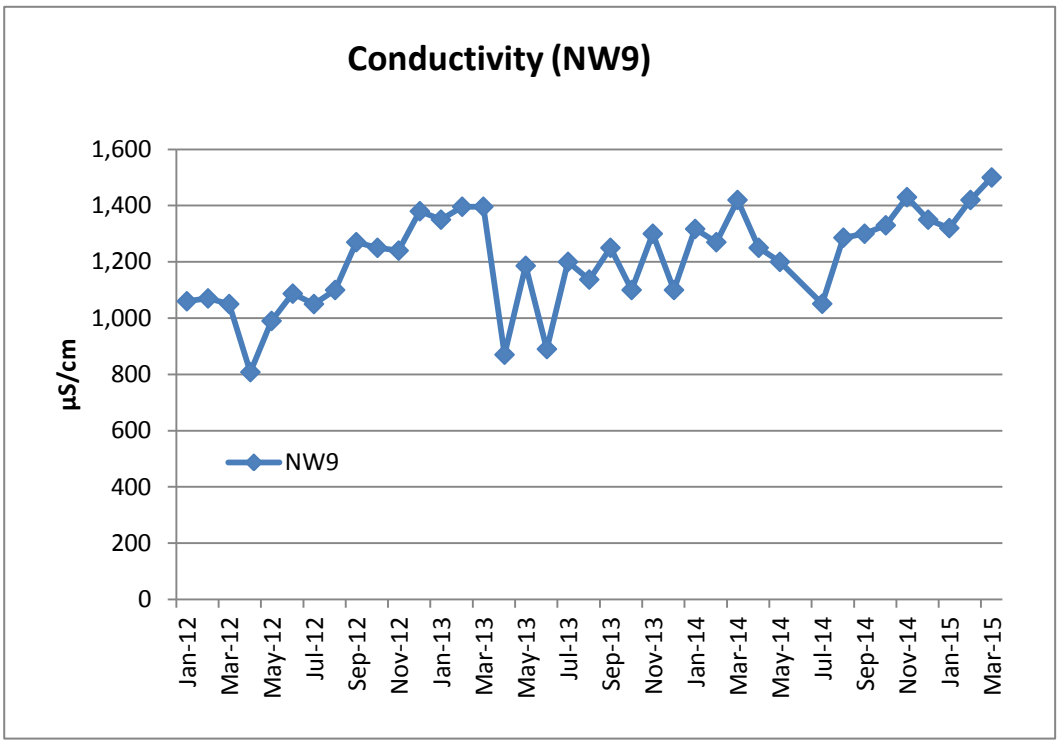

Conductivity (NW4)
µS/cm
2000
1800
1600
1400
1200
1000
800
600
400
200
0
NW4
Warning level
Action Level
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

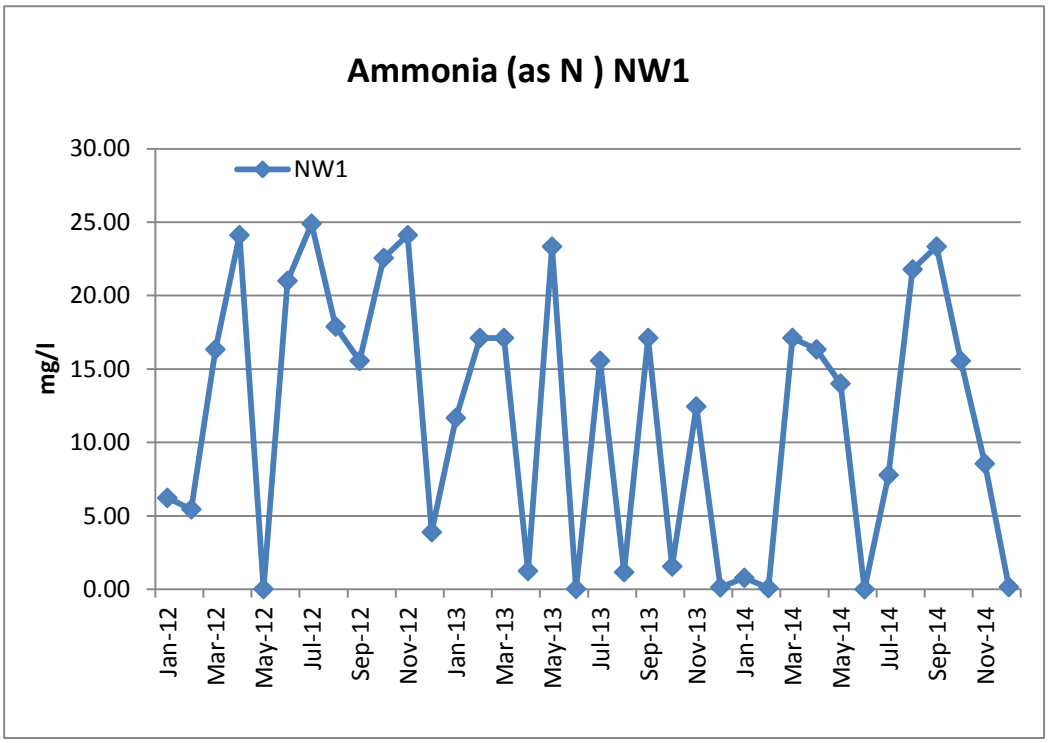

Conductivity (NW5)
µS/cm
900
800
700
600
500
400
300
200
100
0
NW5
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

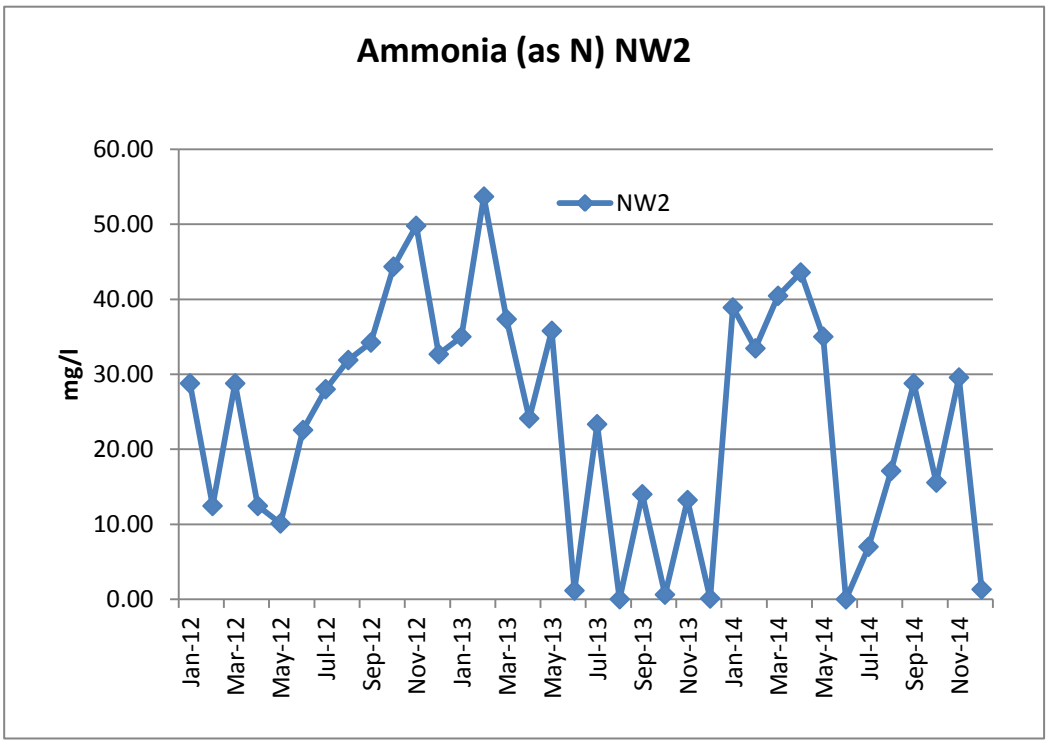

Conductivity (NW6)
µS/cm
3,500
3,000
2,500
2,000
1,500
1,000
500
0
NW6
Warning level
Action Level
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

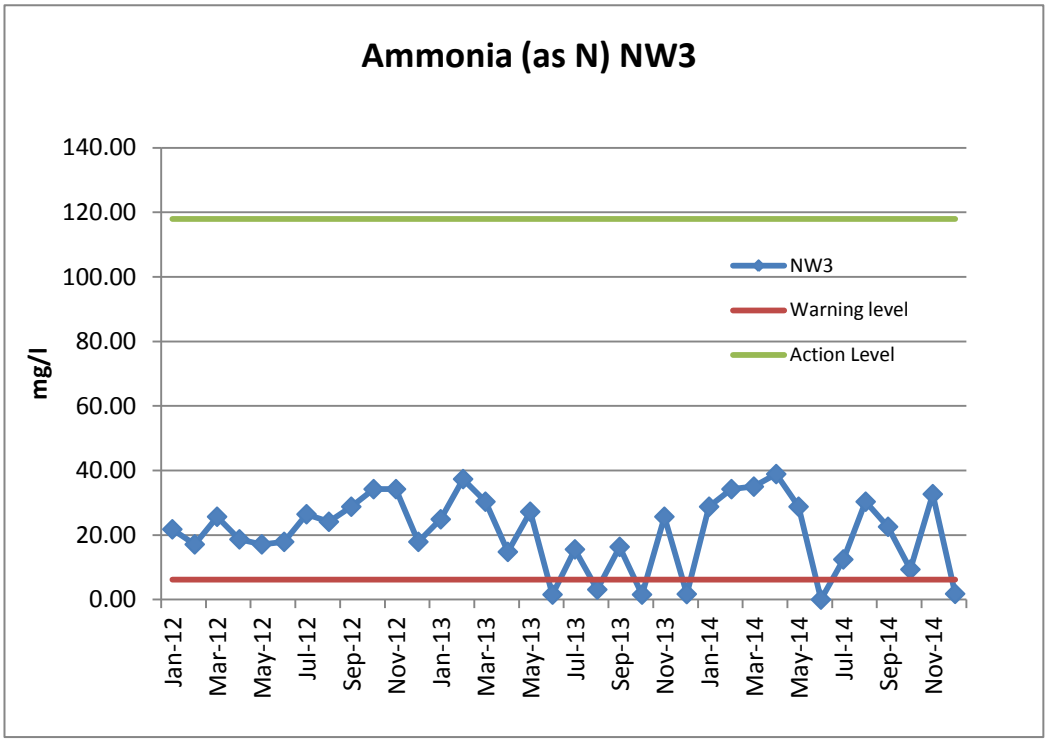

Conductivity (NW7)
NW7
Warning level
Action Level
µS/cm
2500
2000
1500
1000
500
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

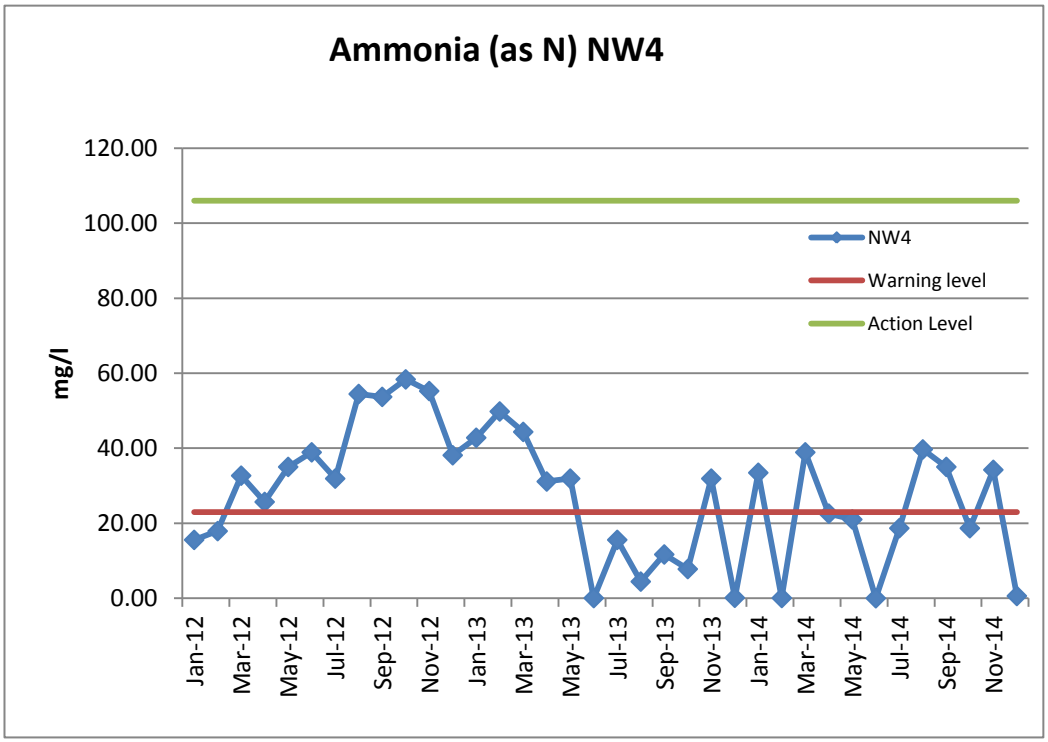

Conductivity (NW8)
µS/cm
600
500
400
300
200
100
0
NW8
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

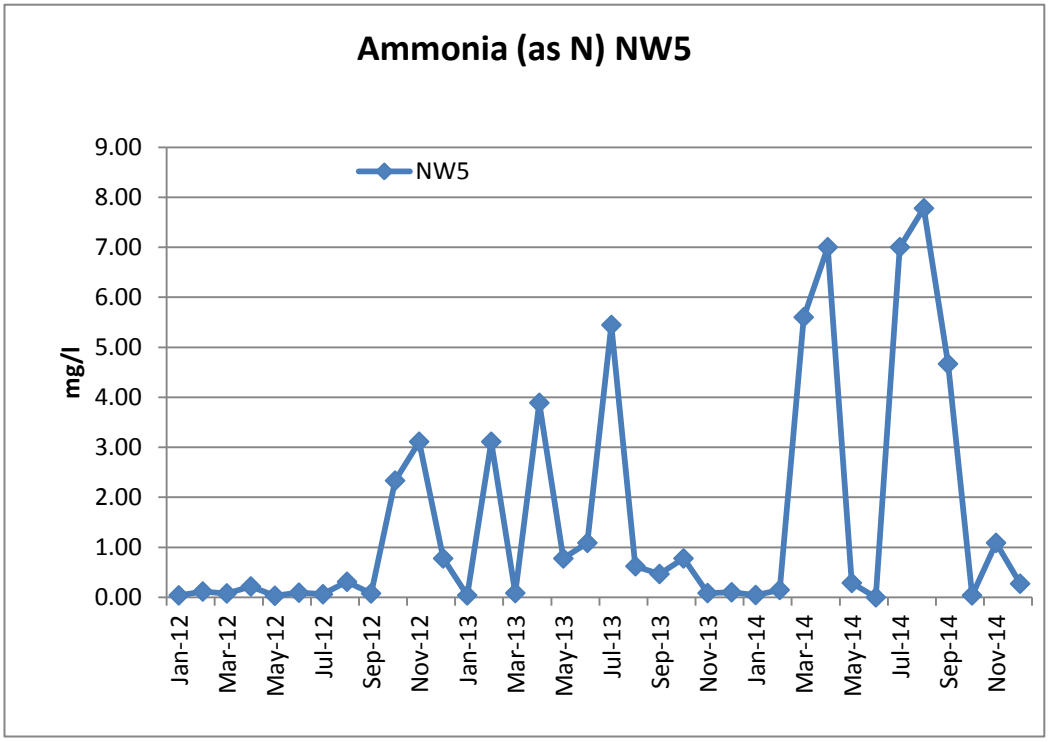

Conductivity (NW9)
µS/cm
1,600
1,400
1,200
1,000
800
600
400
200
0
NW9
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

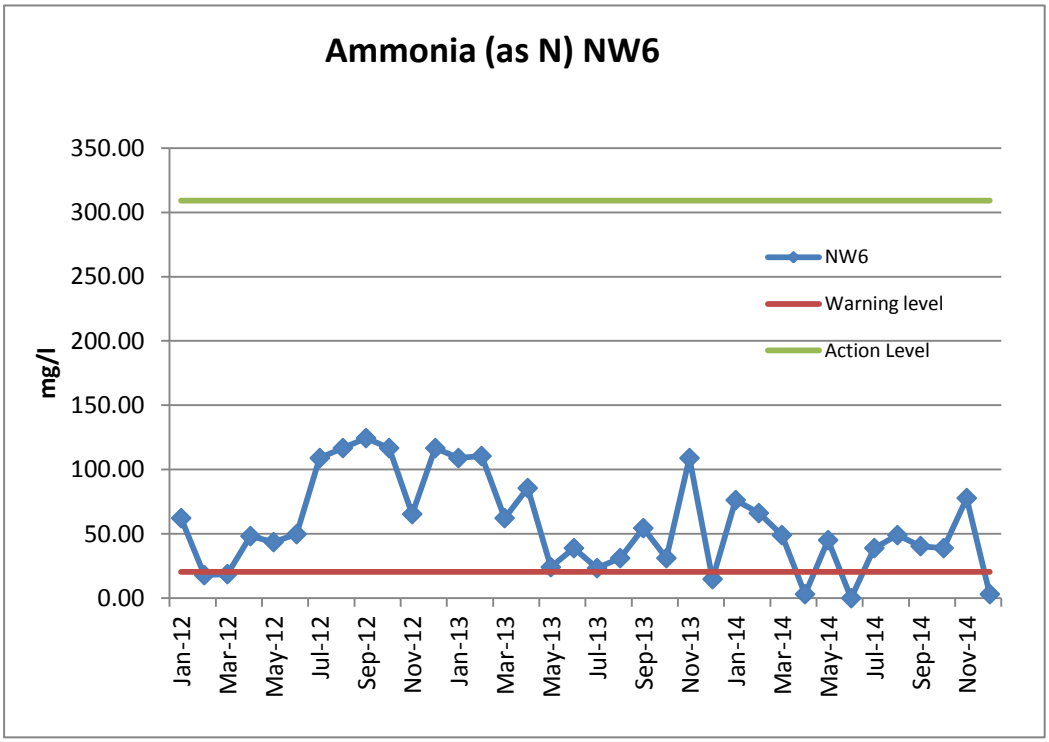

Ammonia (as N) NW1
NW1
mg/l
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

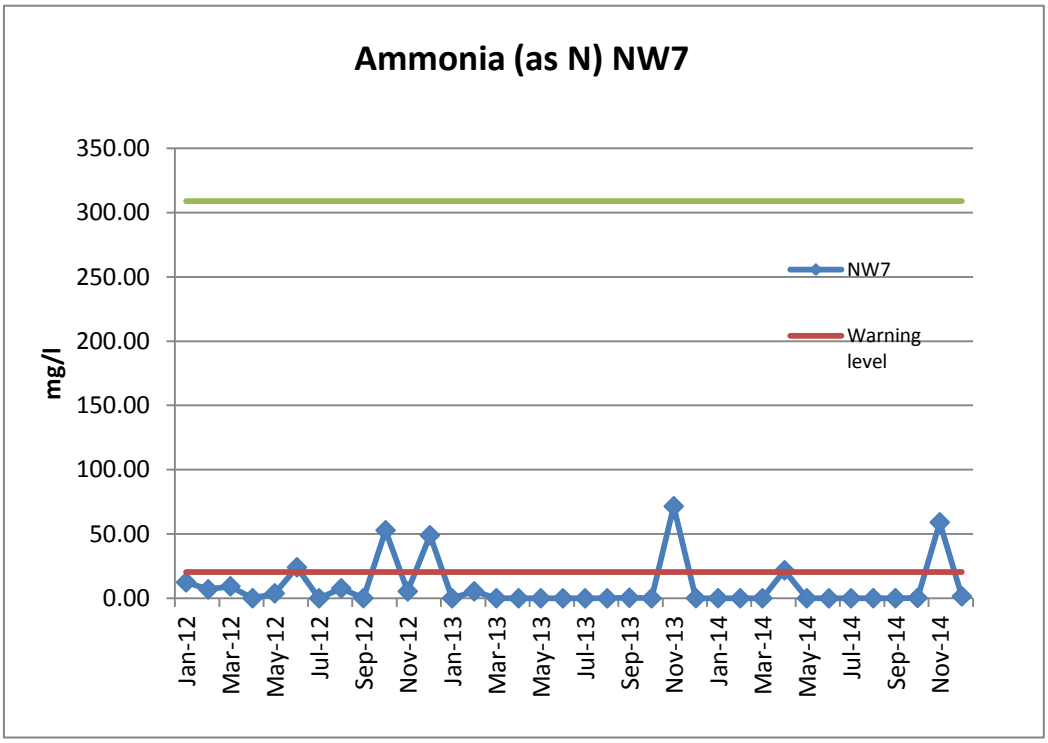

Ammonia (as N) NW2
NW2
mg/l
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

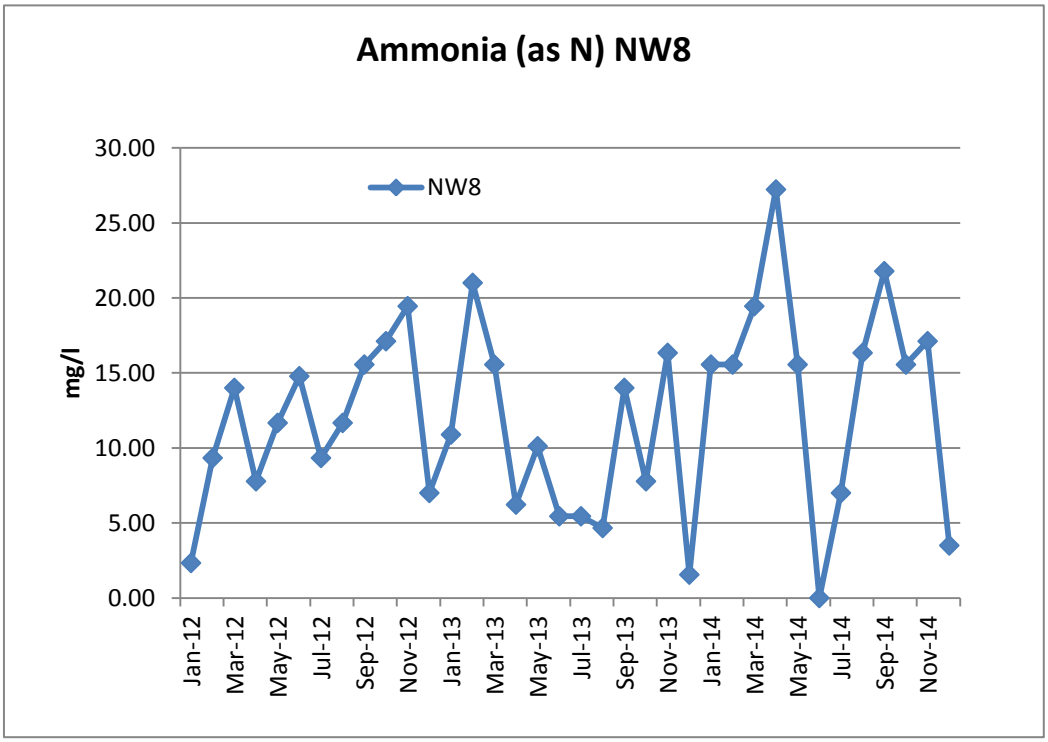

Ammonia (as N) NW3
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
mg/l
NW3
Warning level
Action Level
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

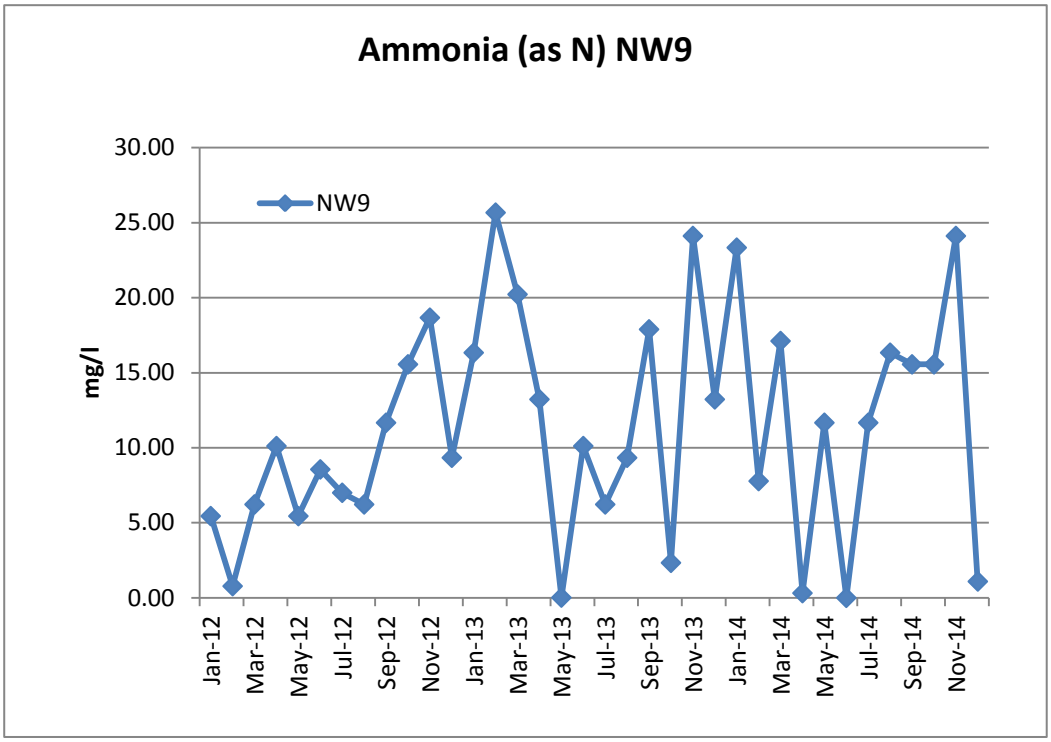

Ammonia (as N) NW4
120.00
100.00
80.00
60.00
40.00
20.00
0.00
mg/l
NW4
Warning level
Action Level
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

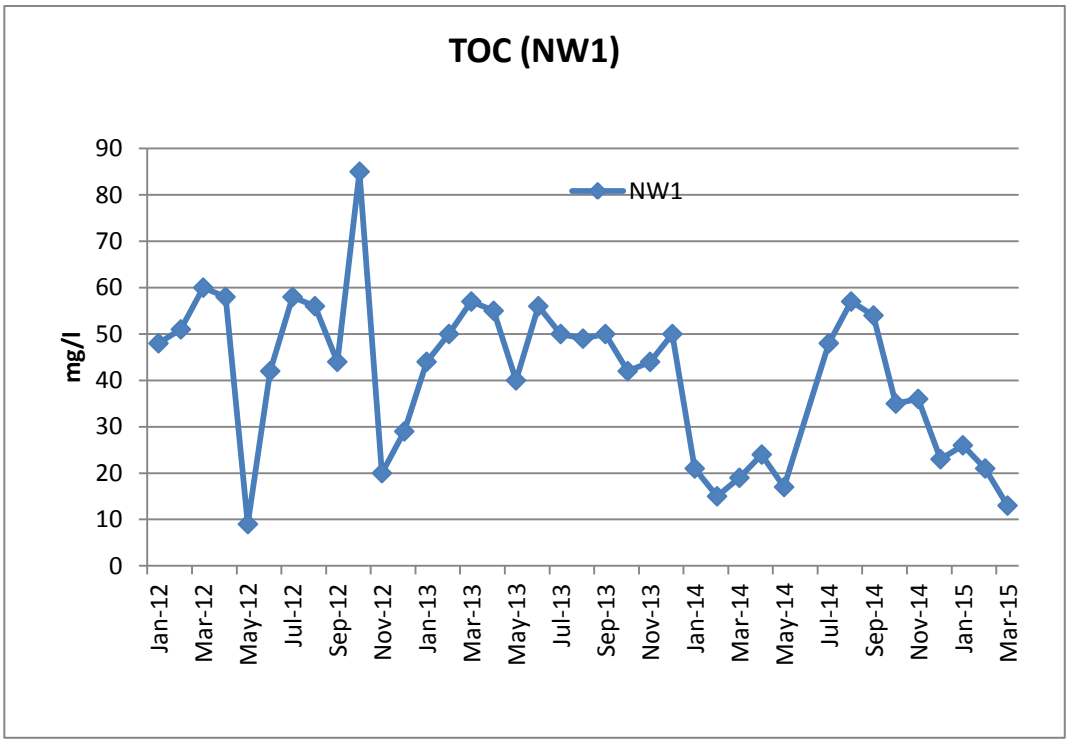

Ammonia (as N) NW5
mg/l
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
NW5
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

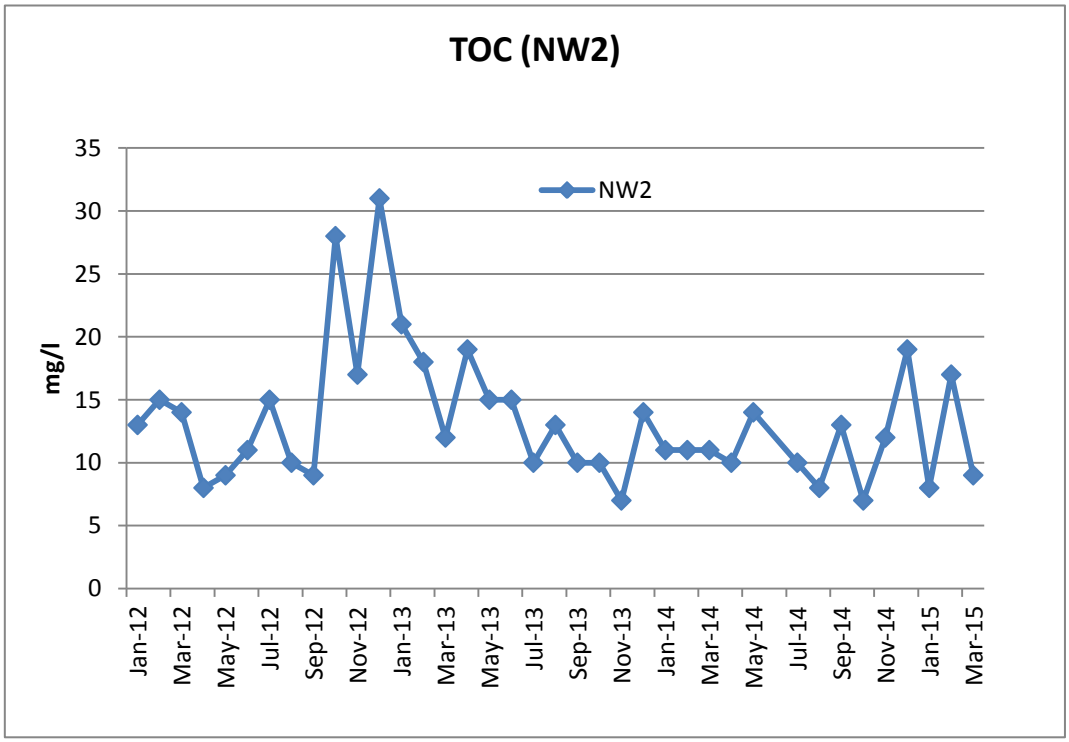

Ammonia (as N) NW6
mg/l
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00
NW6
Warning level
Action Level
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

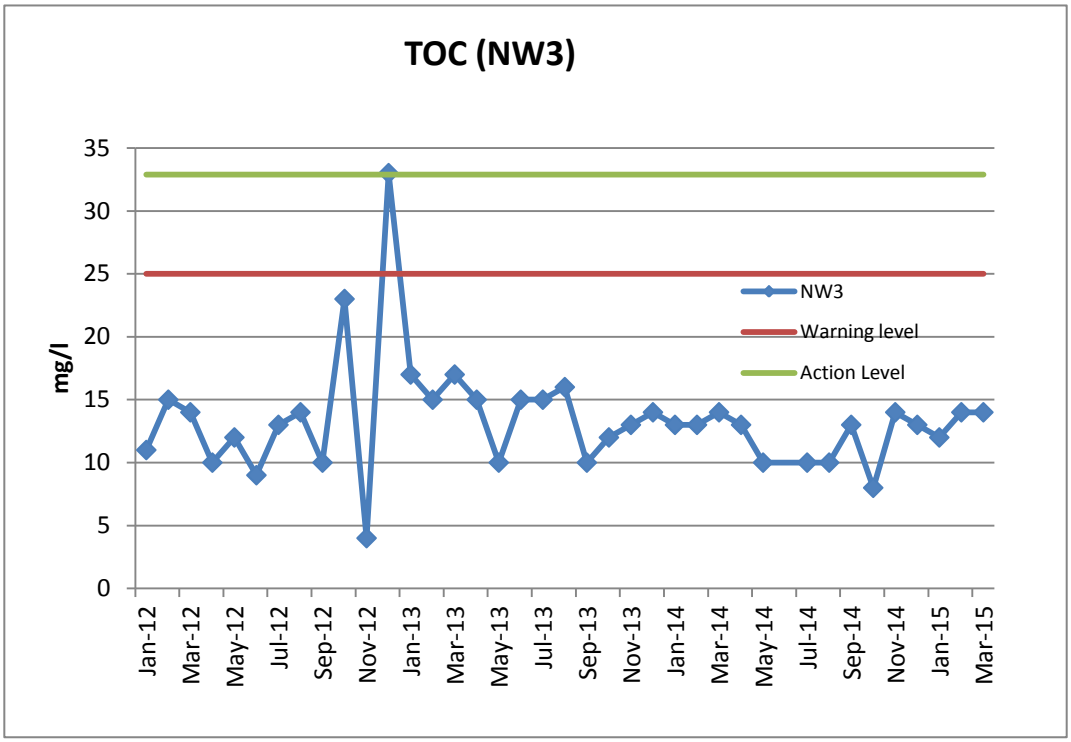

Ammonia (as N) NW7
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00
mg/l
NW7
Warning level
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

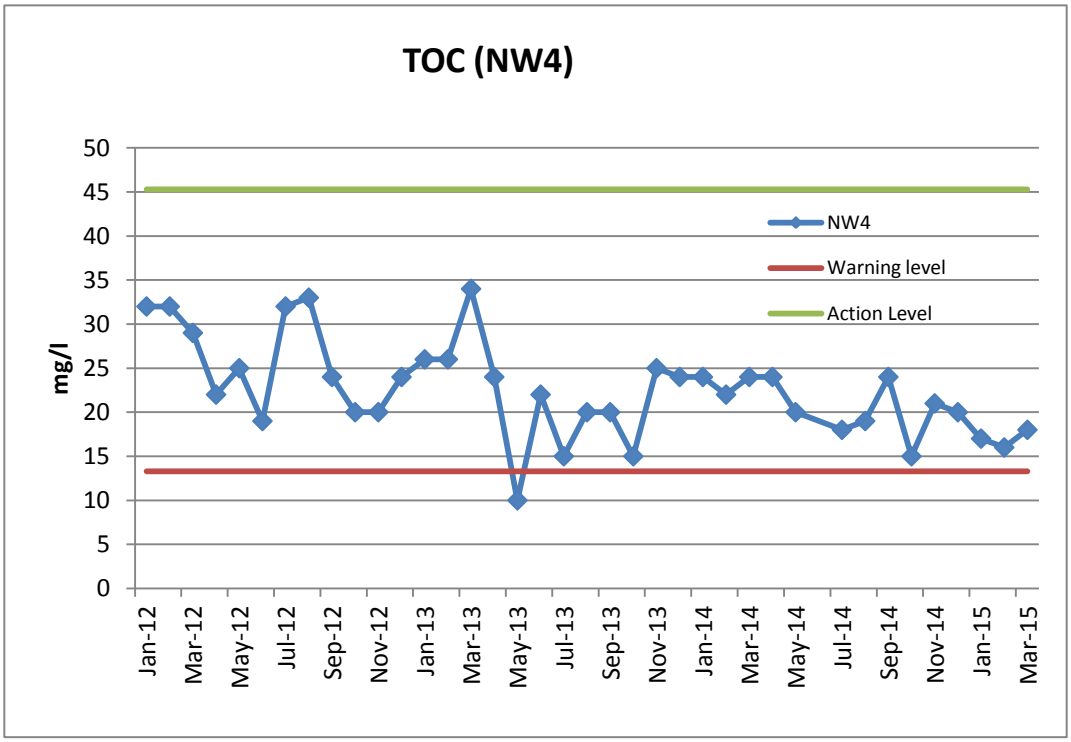

Ammonia (as N) NW8
30.00
25.00
20.00
15.00
10.00
5.00
0.00
mg/l
NW8
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

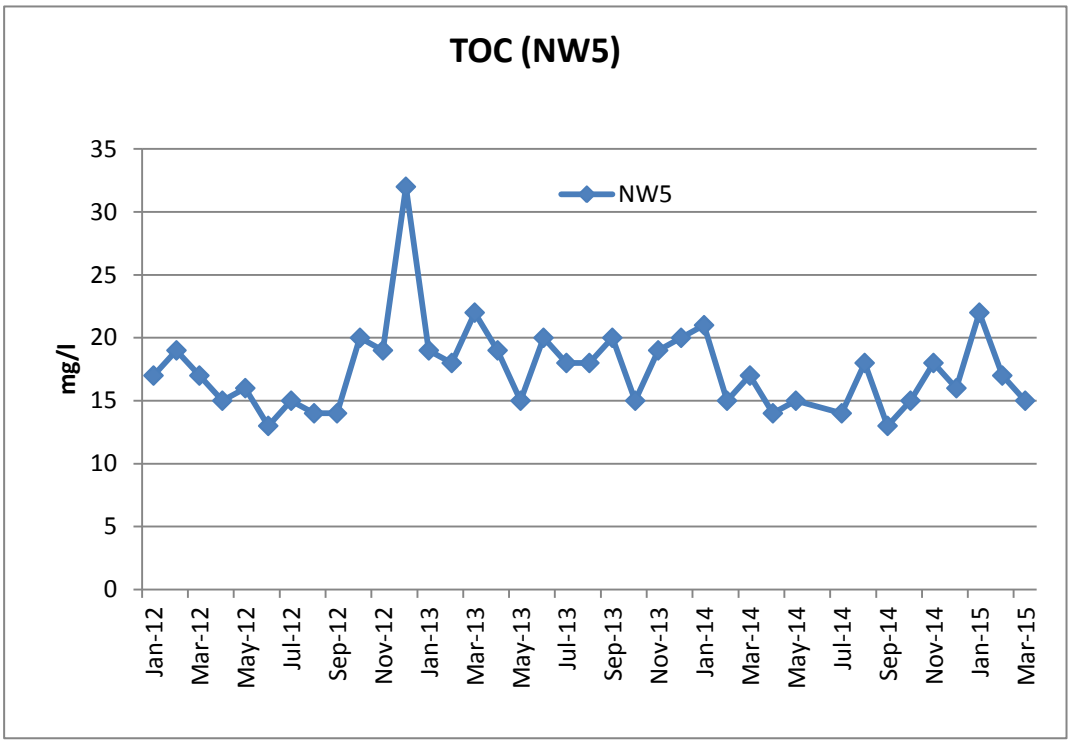

Ammonia (as N) NW9
30.00
25.00
20.00
15.00
10.00
5.00
0.00
mg/l
NW9
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

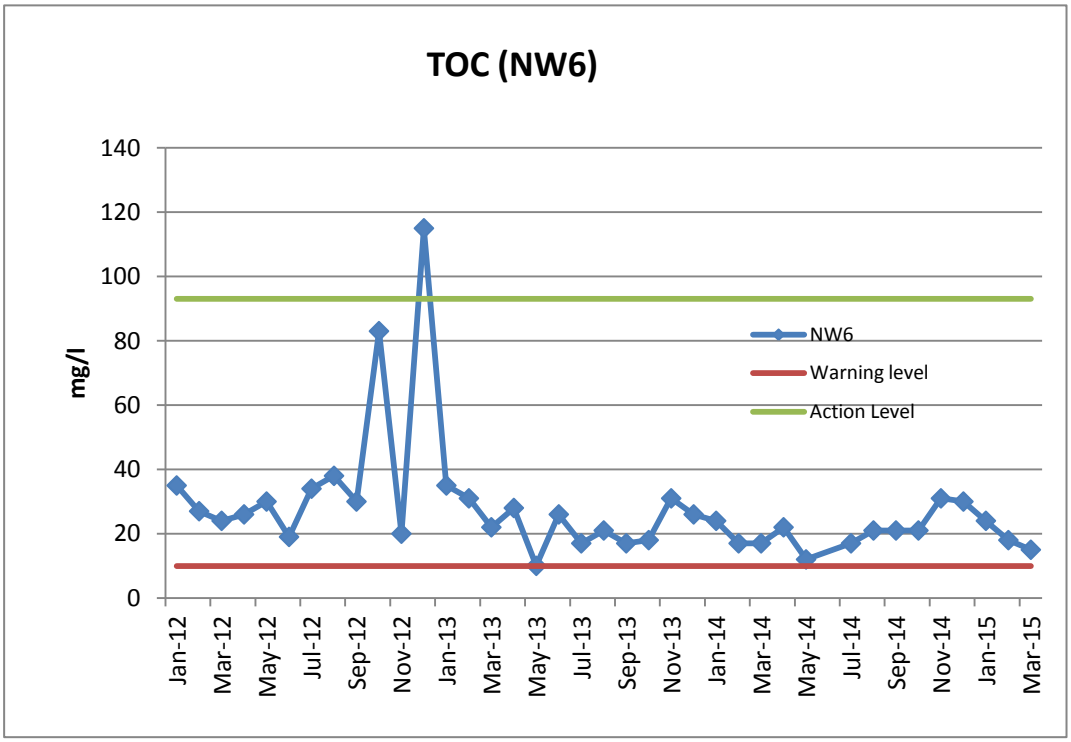

TOC (NW1)
mg/l
NW1
90
80
70
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

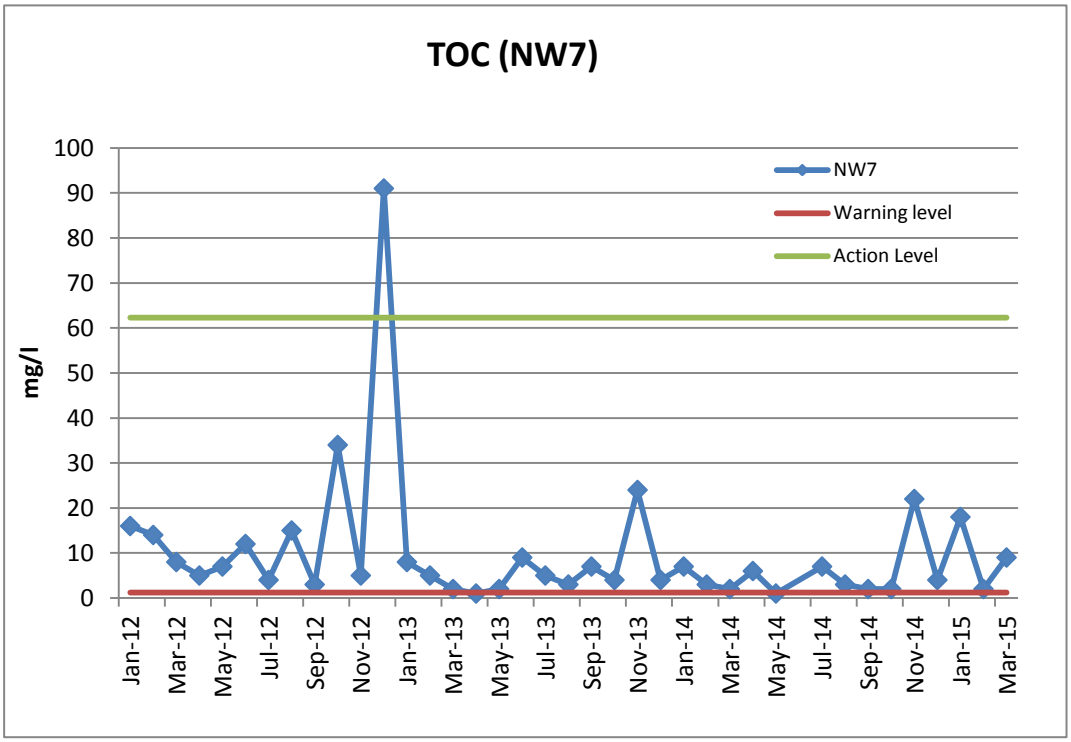

TOC (NW2)
mg/l
NW2
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

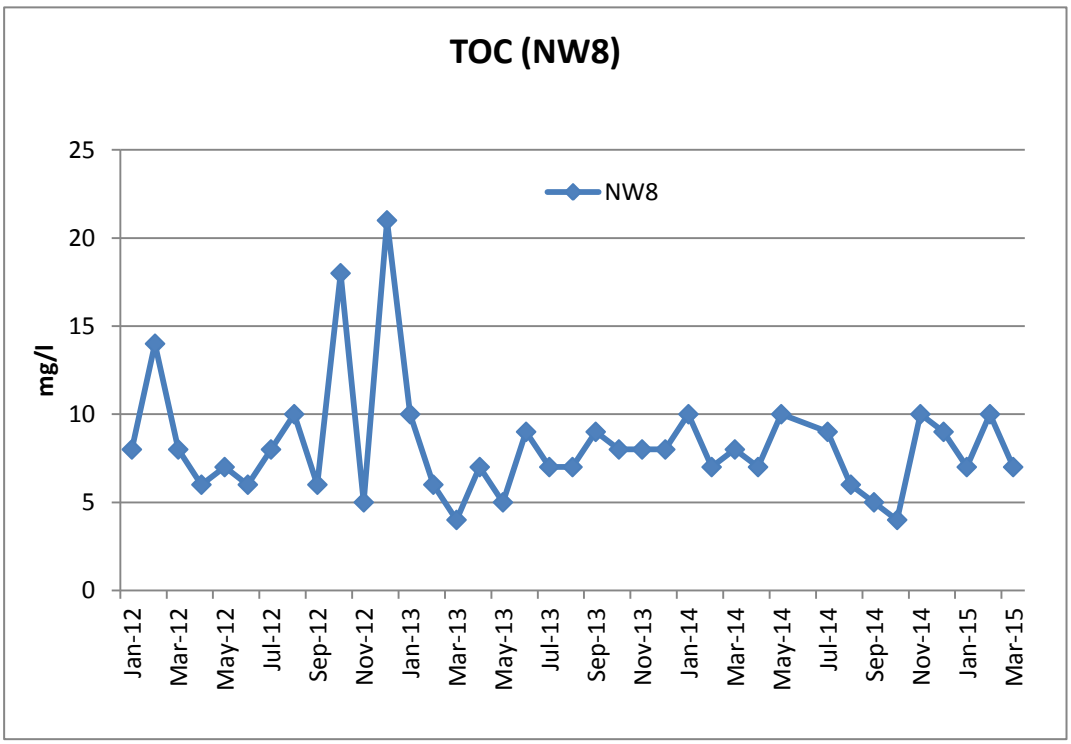

TOC (NW3)
mg/l
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15
NW3
Warning level
Action Level

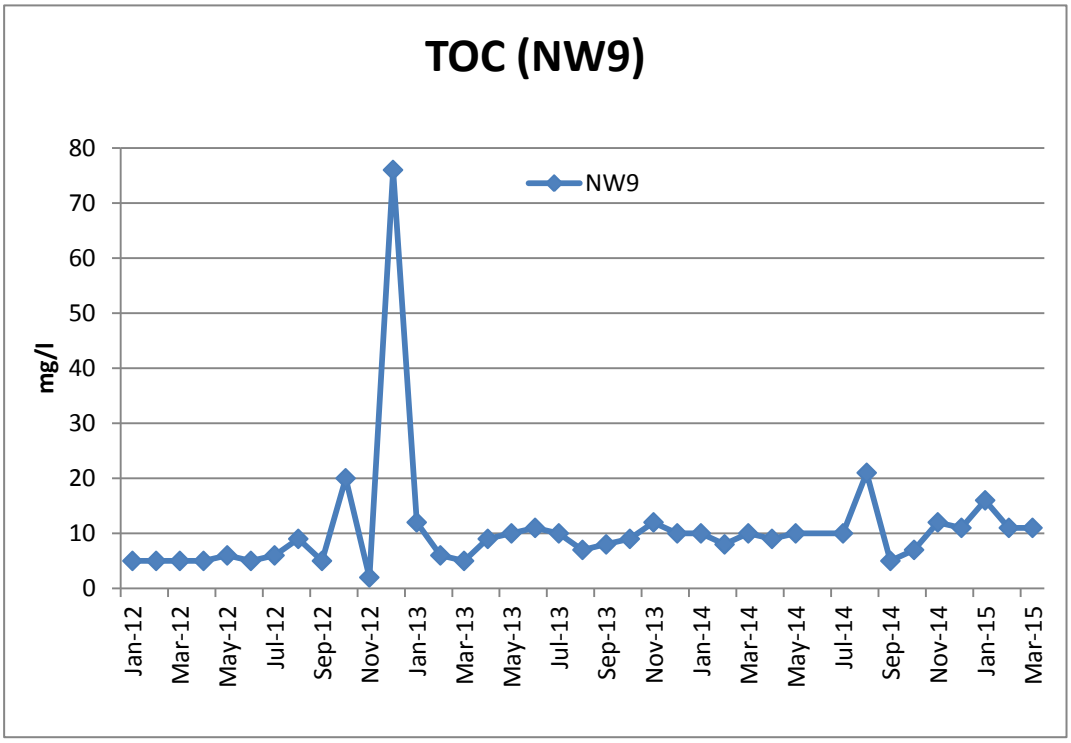

TOC (NW4)
mg/l
50
45
40
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15
NW4
Warning level
Action Level


TOC (NW5)
mg/l
NW5
35
30
25
20
15
10
5
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15


TOC (NW6)
mg/l
NW6
Warning level
Action Level
140
120
100
80
60
40
20
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15


TOC (NW7)
mg/l
100
90
80
70
60
50
40
30
20
10
0
NW7
Warning level
Action Level
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

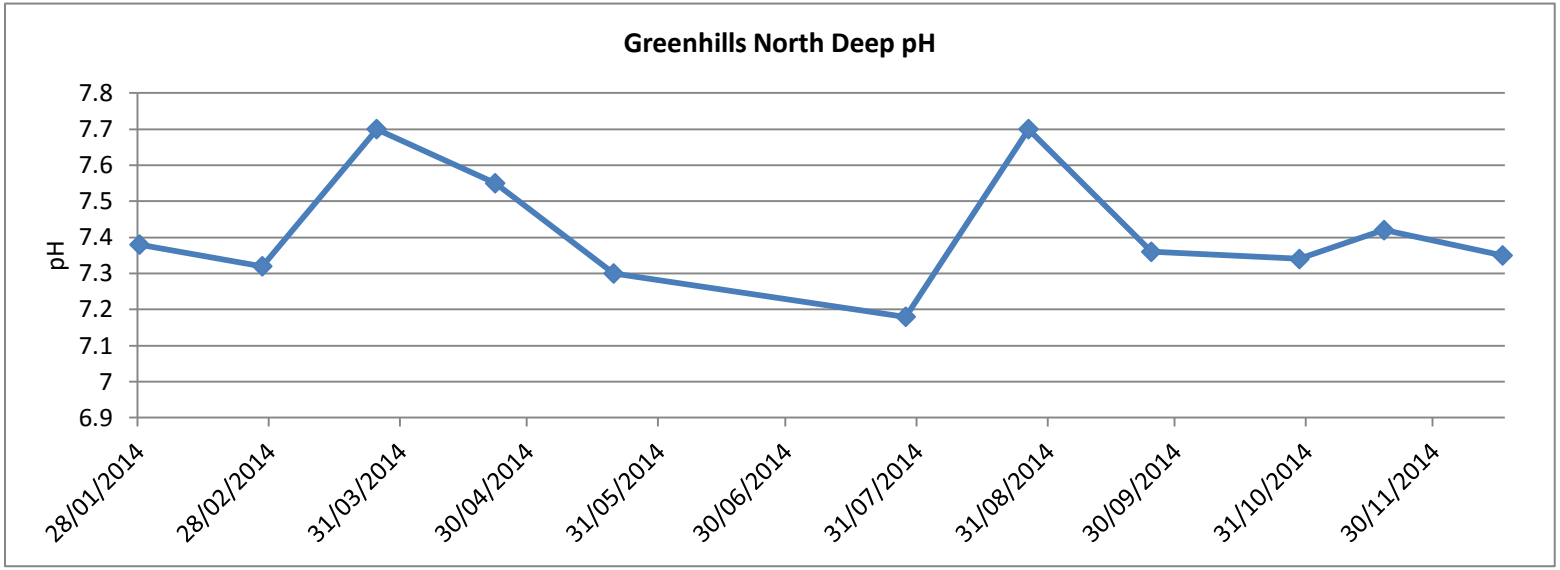

TOC (NW8)
mg/l
25
20
15
10
5
0
NW8
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

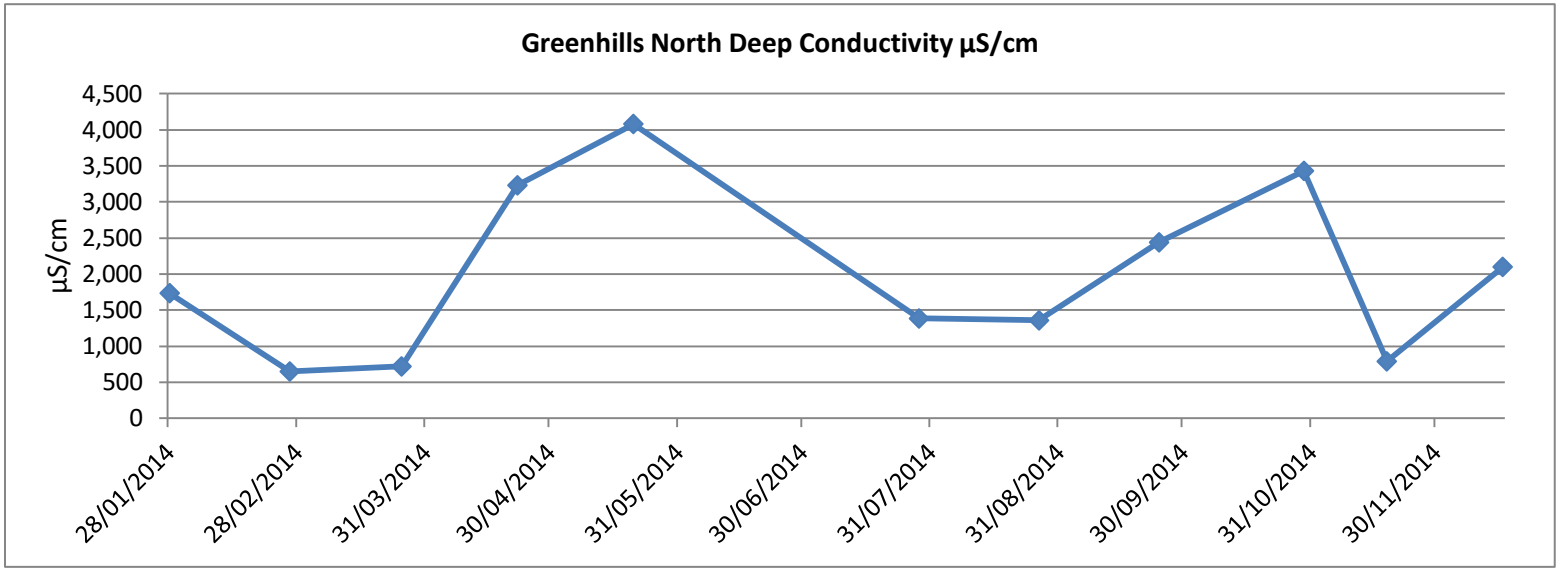

TOC (NW9)
NW9
mg/l
80
70
60
50
40
30
20
10
0
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

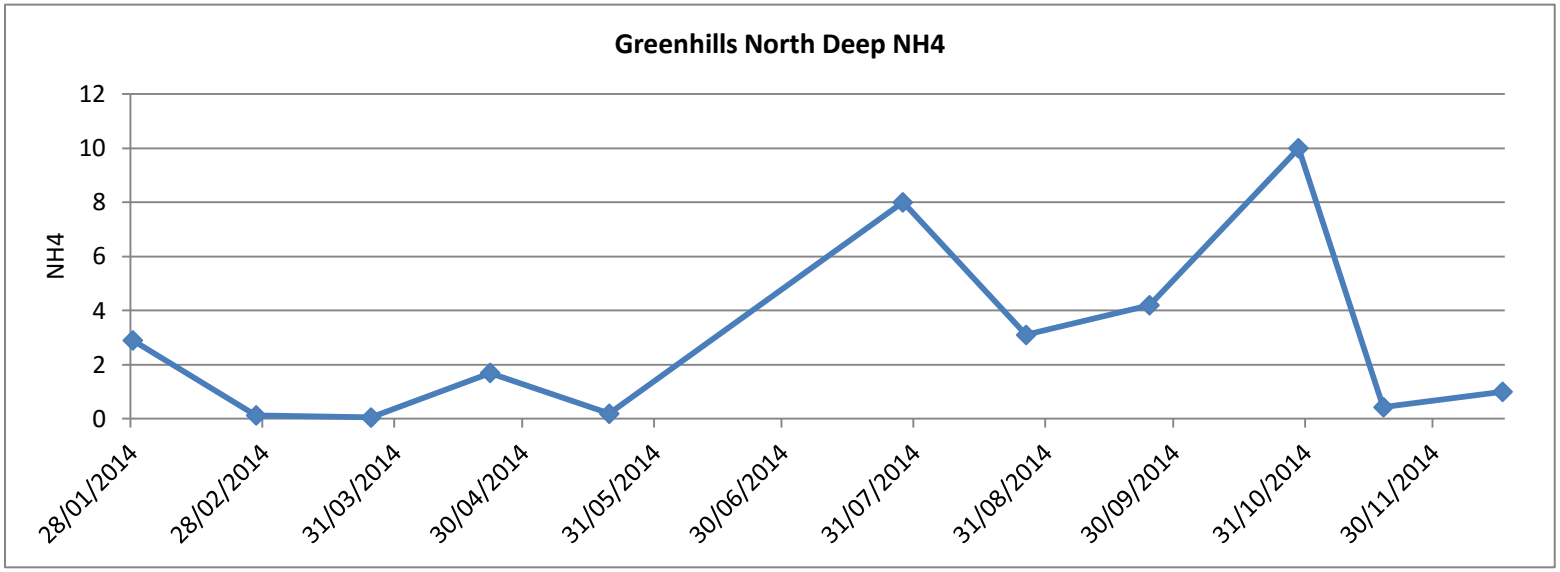
Well: Greenhills & Nemo Groundwater Wells (mg/l)
Location: Greenhills Green and Nemo Rangers GAA Pitch
All parameter data in mg/l unless stated otherwise

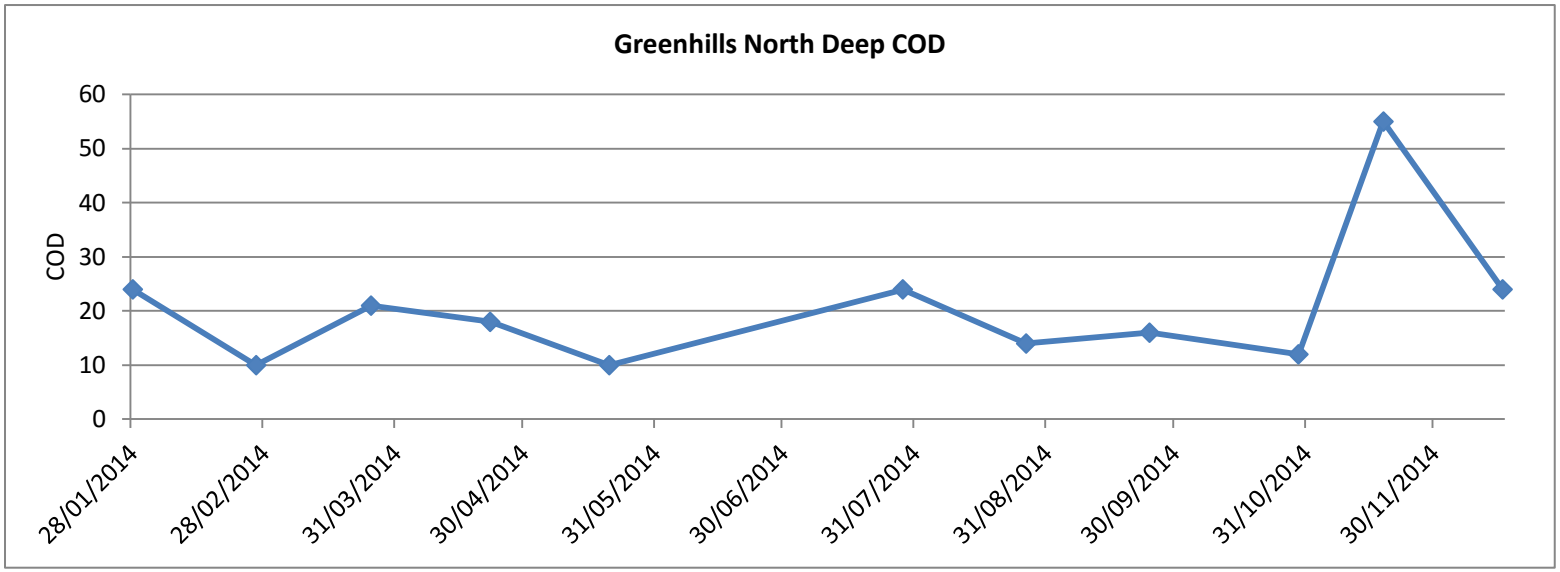
Greenhills North Deep 2014

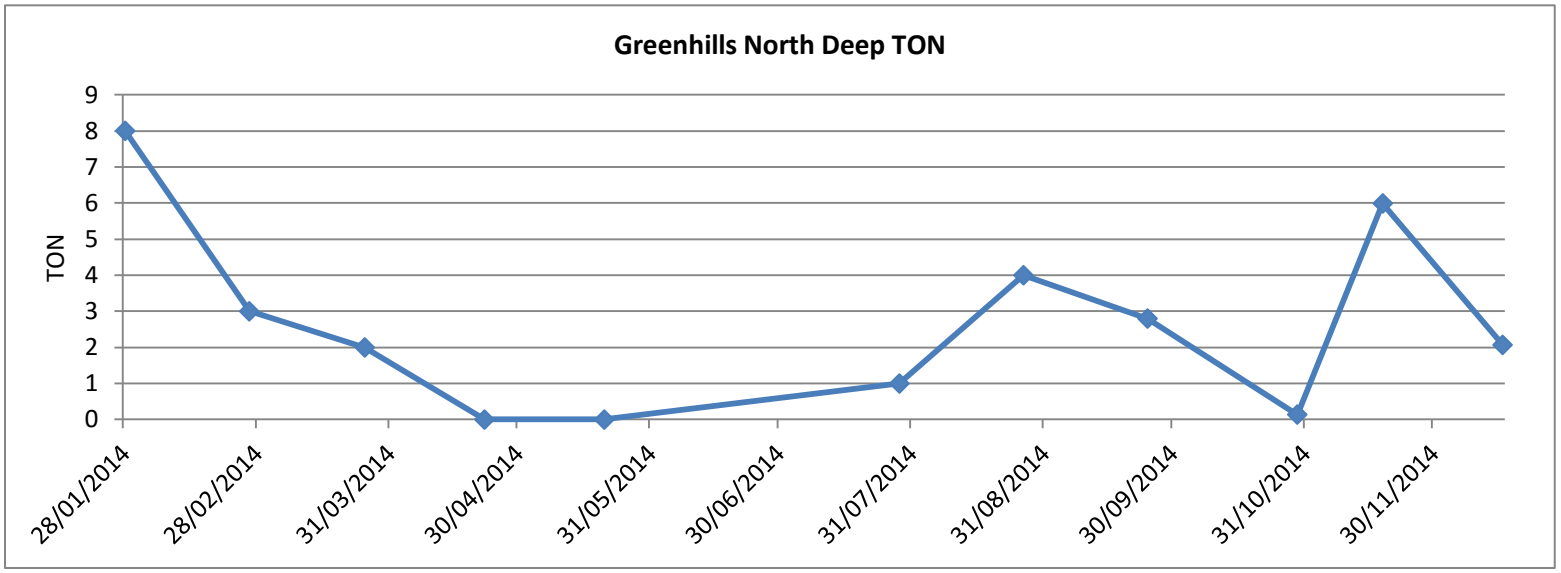
Date	Temp *C	pH	Conductivity µS/cm	NH4	Ammonia (as N)	Chloride	Oxygen	COD	TON	TOC	S. Solids	Well Depth (m)	Depth to Water (m)	Water Height in Well (m)
28/01/2014	12.2	7.38	1,736	2.9	2.26	452	5.71	24	8	7	3.6	35	0.42	34.58
26/02/2014	15.2	7.32	651	0.13	0.10	86	6.04	10	3	5.3	19.2	35	0.24	34.76
25/03/2014	12.4	7.7	721	0.05	0.04	84	6.33	21	2	11	20.8	35	0.82	34.18
22/04/2014	13.3	7.55	3,230	1.7	1.32	996	5.31	18	<1	29	15.6	35	1.12	33.88
20/05/2014	13.4	7.3	4,080	0.19	0.15	1,329	2.01	10	<1	4	38.8	35	1.43	33.57
28/07/2014	12.7	7.18	1,385	8	6.22	28	3.4	24	1	20	25	35	1.89	33.11
26/08/2014	15	7.7	1,359	3.1	2.41	28	1.7	14	4	2	8	35	1.82	33.18
24/09/2014	15.4	7.36	2,440	4.2	3.27	725	4.03	16	2.8	19.7	11.2	35	1.97	33.03
29/10/2014	13.3	7.34	3,430	10	7.78	1,070	2.34	12	0.14	7	7.6	35	1.43	33.57
18/11/2014	14	7.42	791	0.43	0.33	126	2.42	55	5.99	5	12.8	35	1.45	33.55
16/12/2014	13	7.35	2,100	1	0.78	605	4.11	24	2.07	4	14.4	35	1.46	33.54

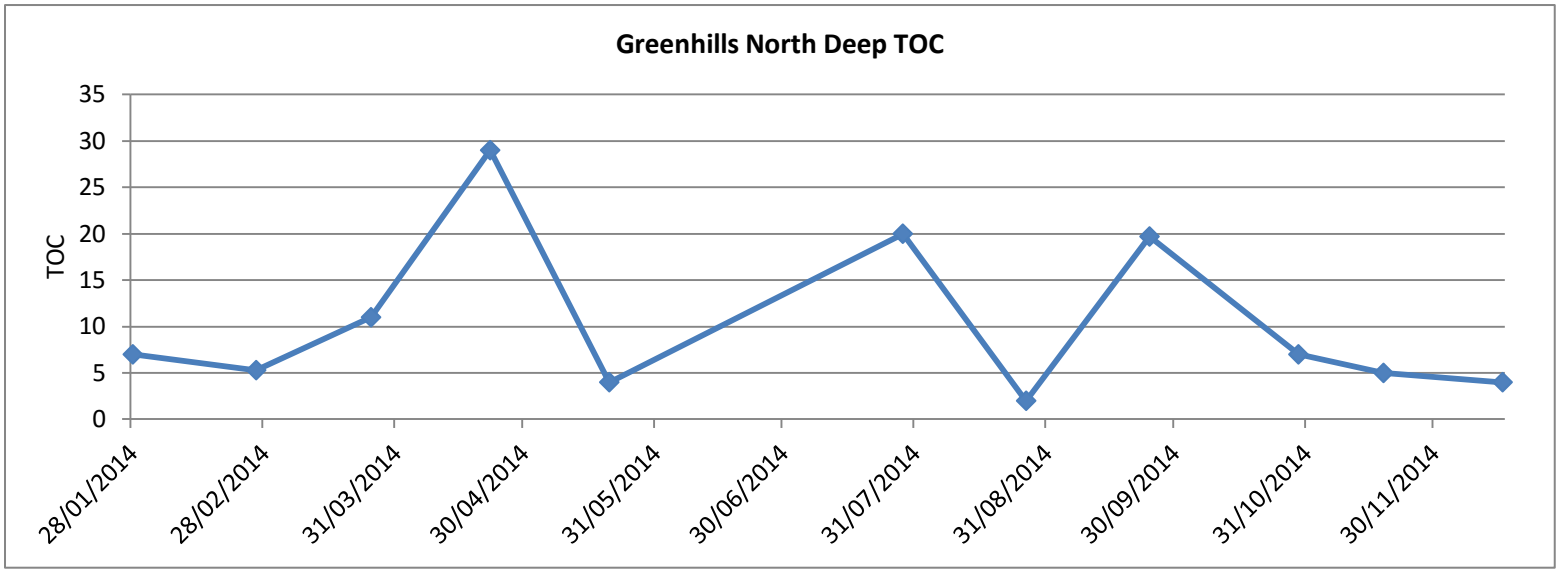

Greenhills North Deep pH
pH
7.8
7.7
7.6
7.5
7.4
7.3
7.2
7.1
7
6.9
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

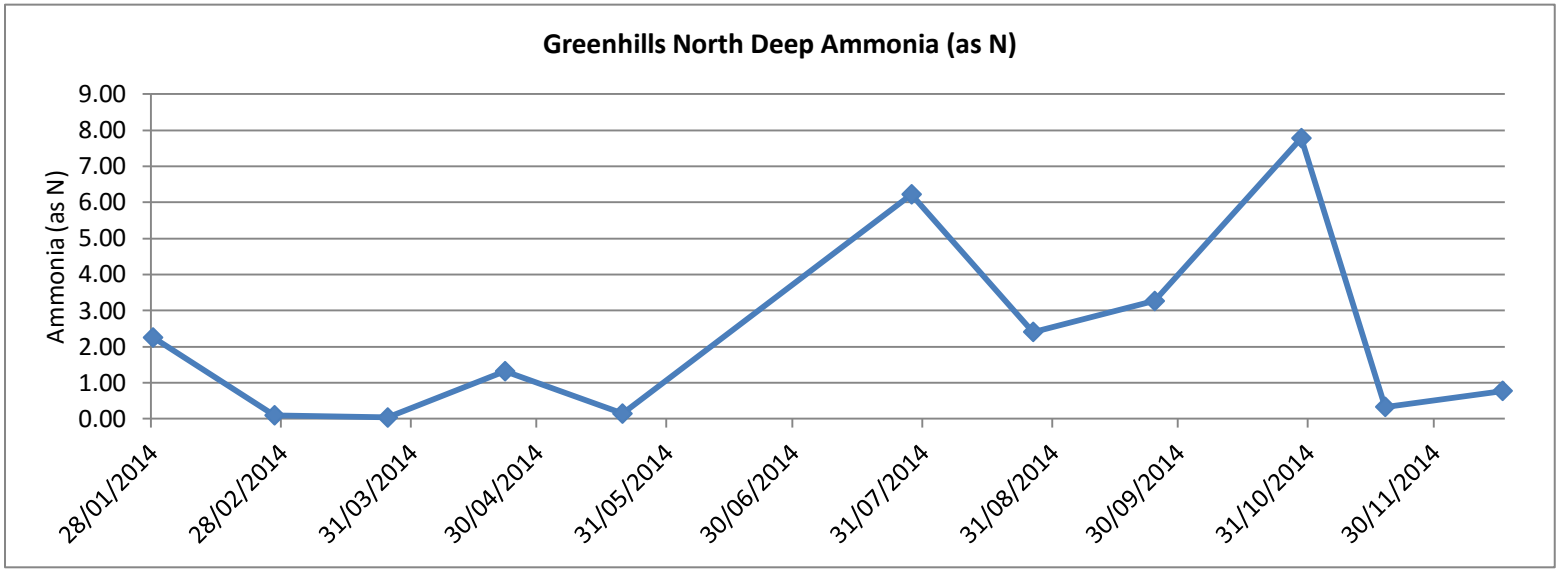

Greenhills North Deep Conductivity µS/cm
µS/cm
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

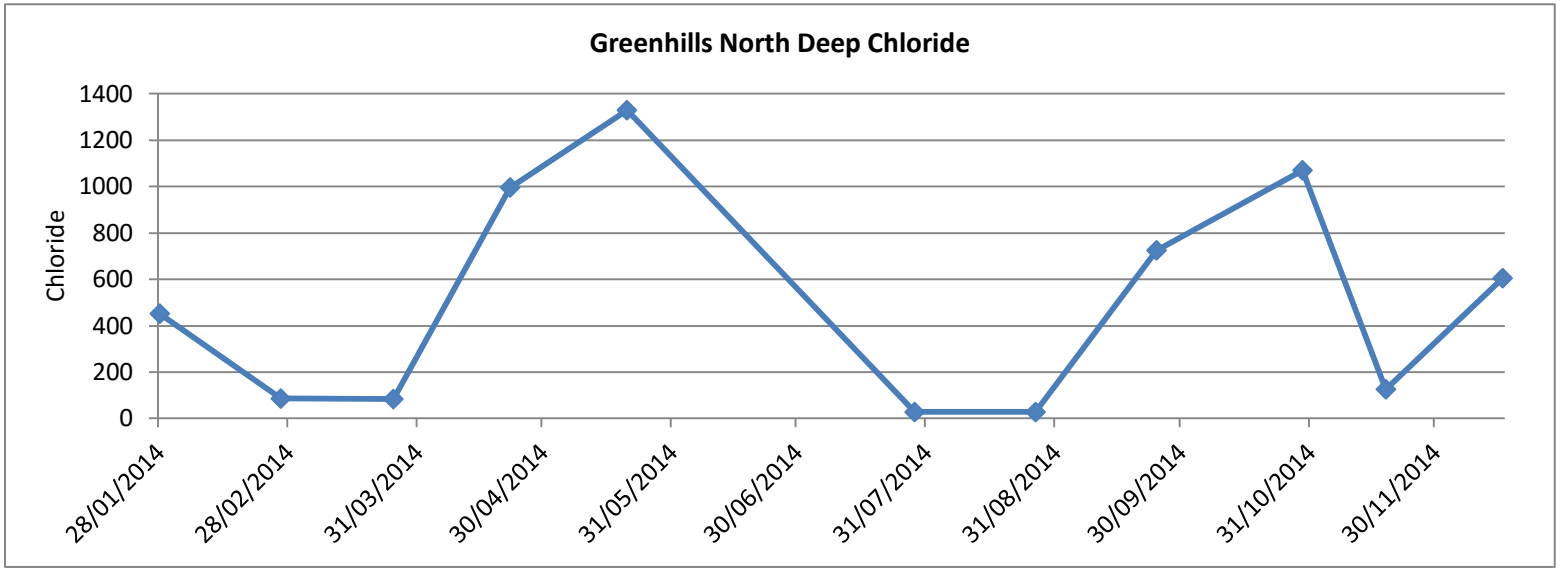

Greenhills North Deep NH4
NH4
12
10
8
6
4
2
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

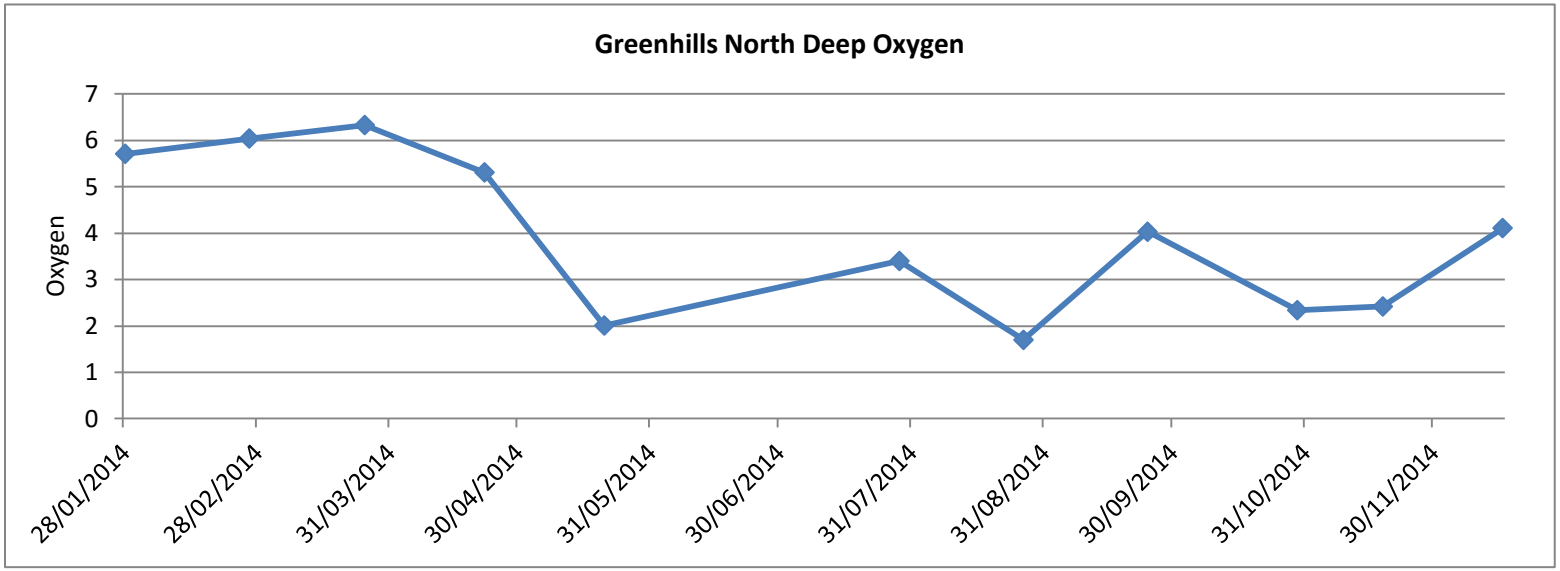

Greenhills North Deep COD
COD
60
50
40
30
20
10
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

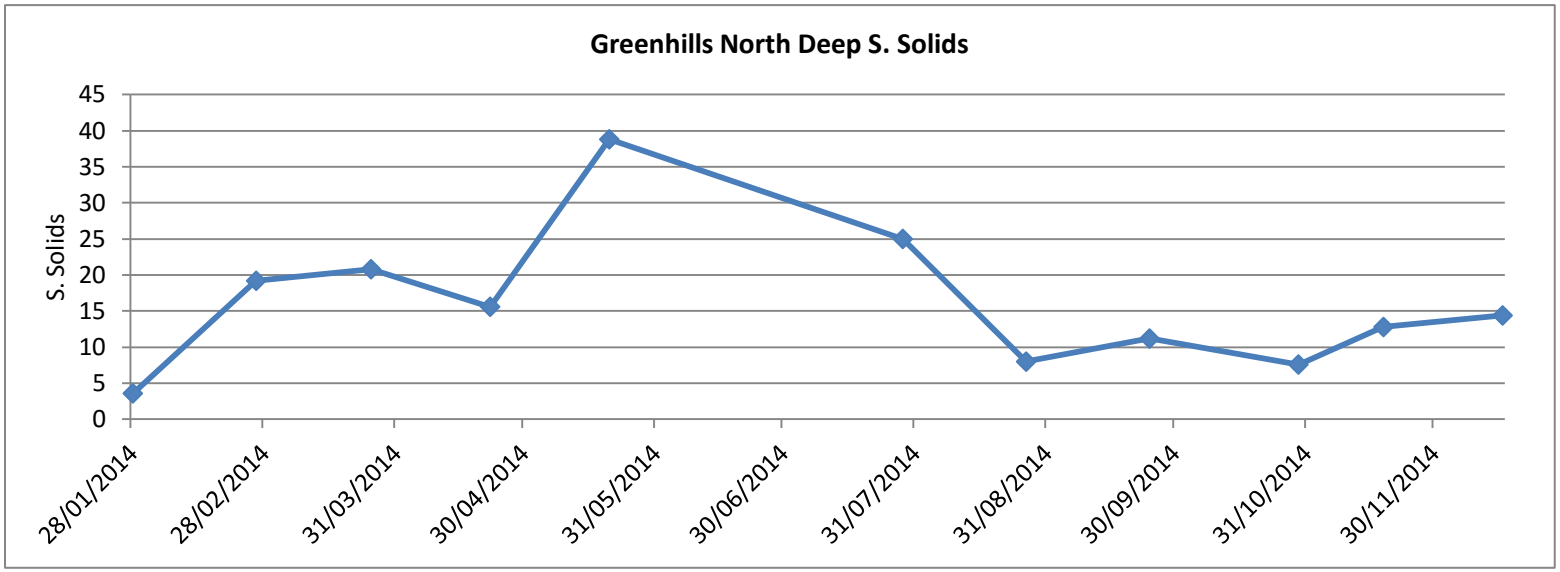

Greenhills North Deep TON
TON
9
8
7
6
5
4
3
2
1
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills North Deep TOC
TOC
35
30
25
20
15
10
5
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills North Deep Ammonia (as N)
Ammonia (as N)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills North Deep Chloride
Chloride
1400
1200
1000
800
600
400
200
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

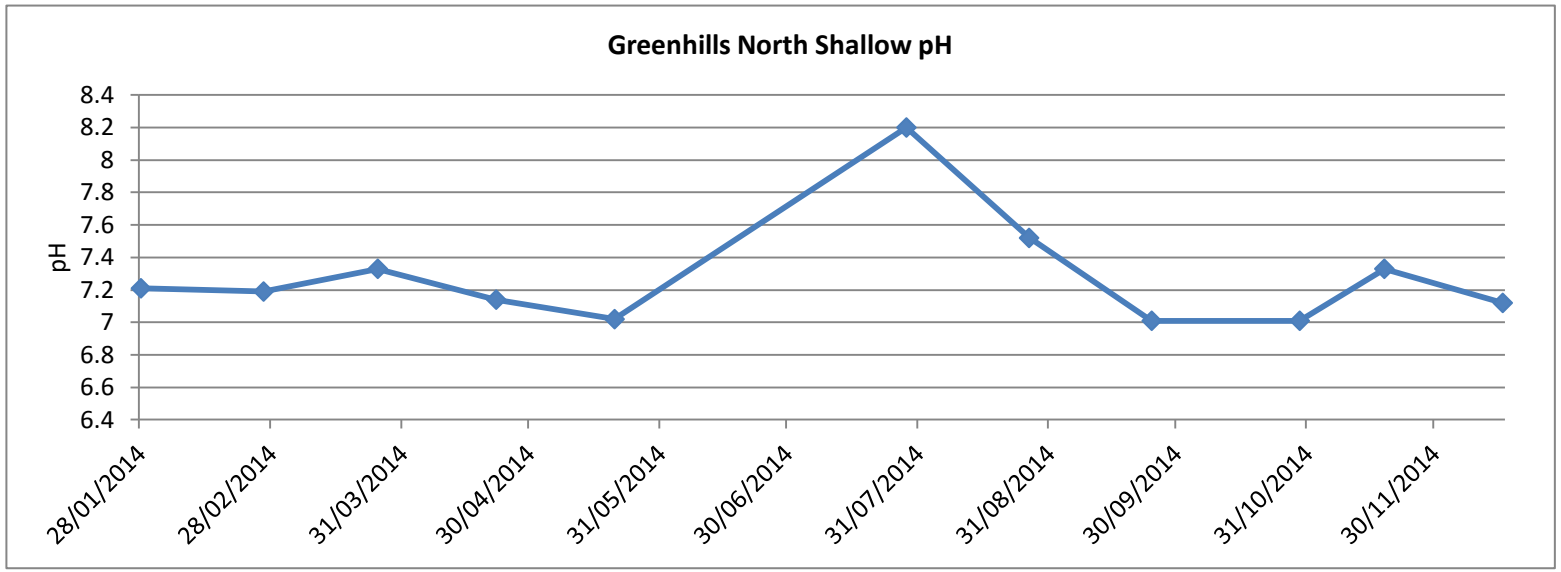

Greenhills North Deep Oxygen
Oxygen
7
6
5
4
3
2
1
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

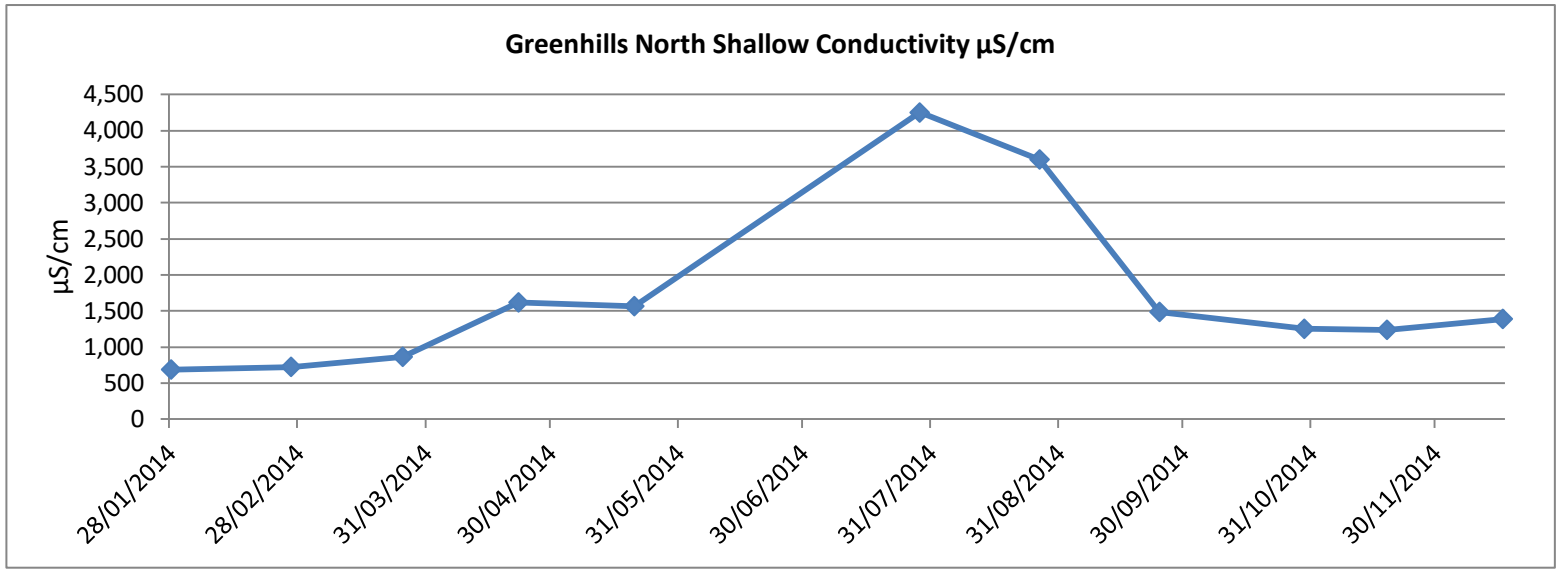

Greenhills North Deep S. Solids
S. Solids
45
40
35
30
25
20
15
10
5
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

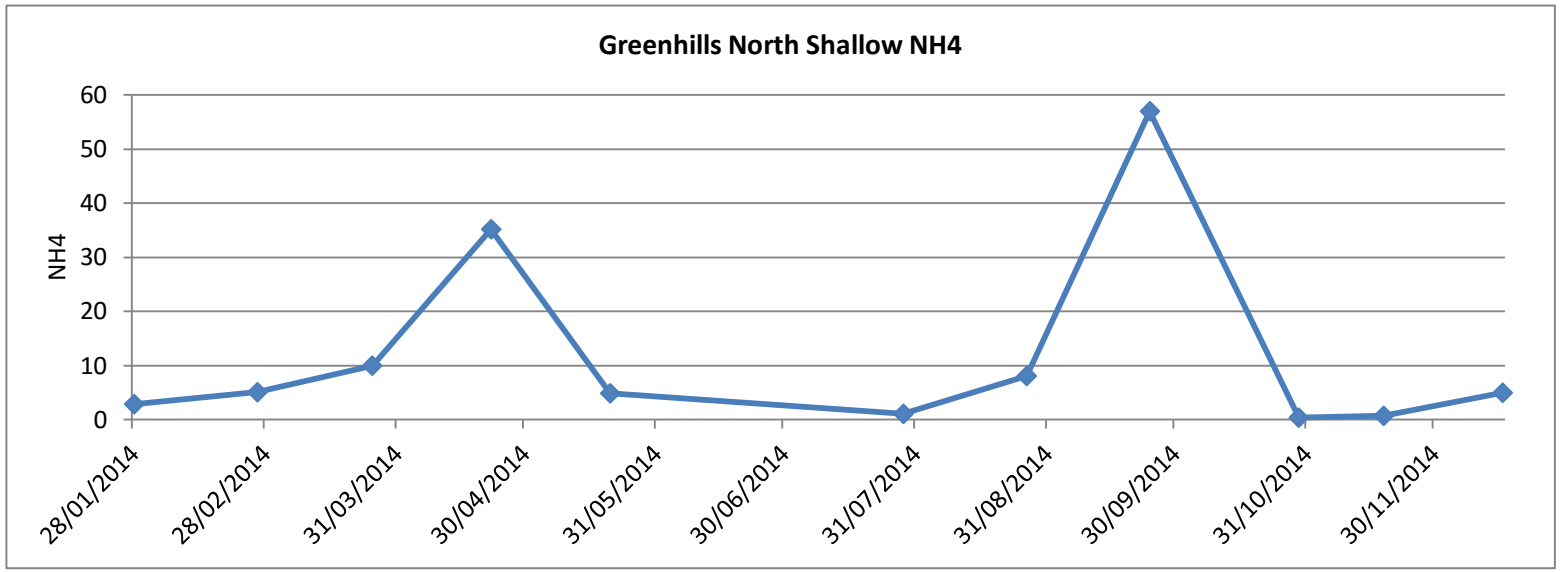
Well: Greenhills & Nemo Groundwater Wells (mg/l)
Location: Greenhills Green and Nemo Rangers GAA Pitch
All parameter data in mg/l unless stated otherwise

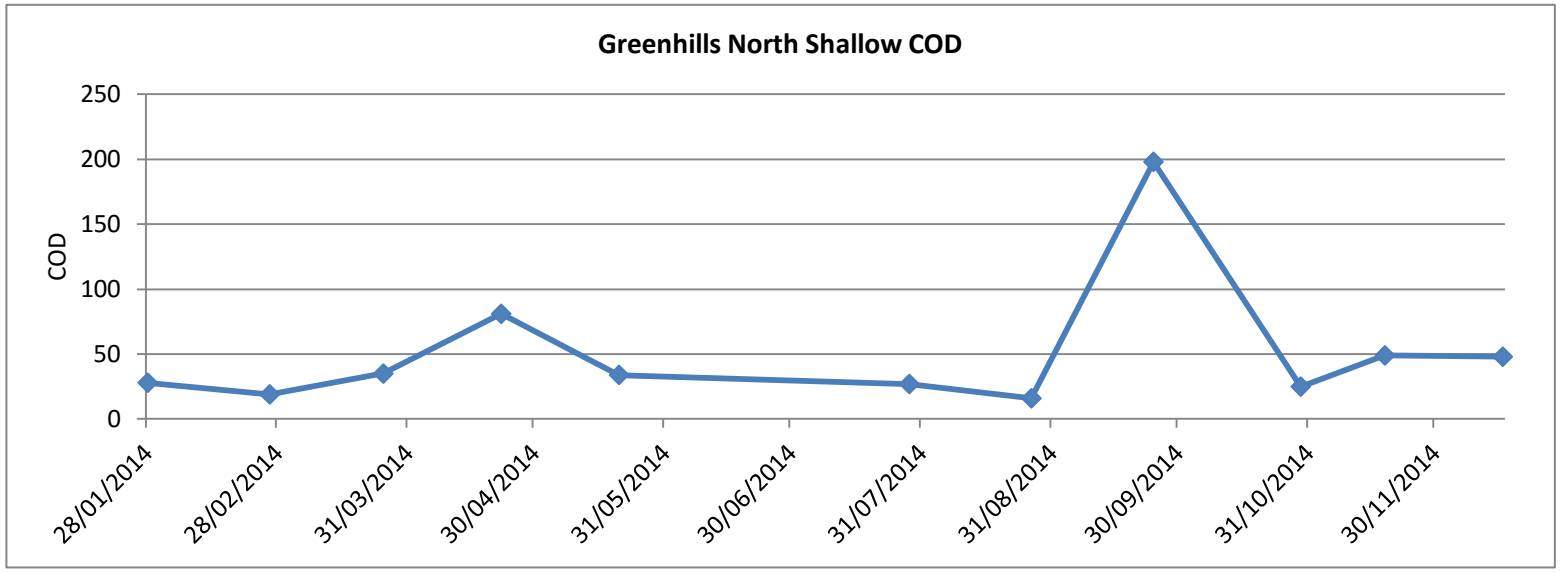
Greenhills North Shallow 2014

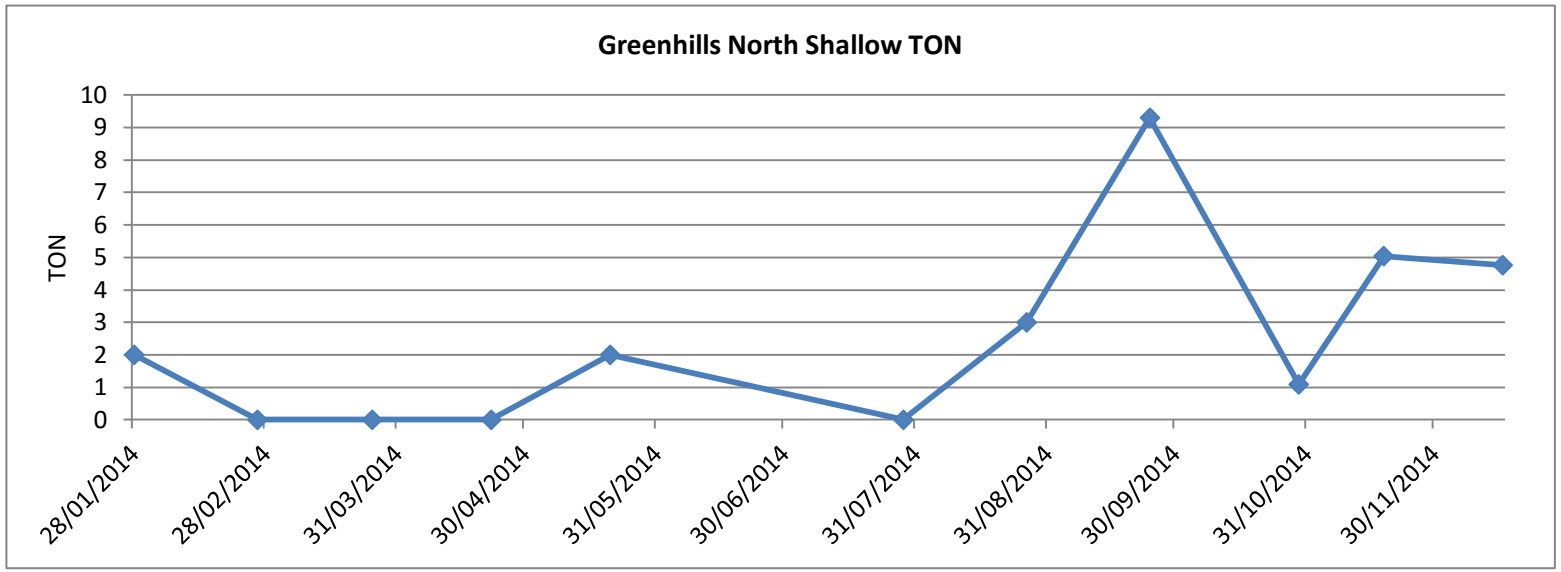
Date	Temp *C	pH	Conductivity µS/cm	NH4	Ammonia (as N)	Chloride	Oxygen	COD	TON	TOC	S. Solids	Well Depth (m)	Depth to Water (m)	Water Height in Well (m)
28/01/2014	10.4	7.21	690	2.9	2.26	24.1	6.93	28	2	20	11.6	2.61	0.87	1.74
26/02/2014	14.7	7.19	727	5.1	3.97	25.5	6.23	19	<1	19	11.6	2.61	0.95	1.66
25/03/2014	10.4	7.33	866	10	7.78	27	5.8	35	<1	15	20.8	2.61	1.35	1.26
22/04/2014	12	7.14	1,620	35.2	27.39	69	5.15	81	<1	4	157.5	2.61	1.47	1.14
20/05/2014	13.3	7.02	1,568	4.9	3.81	26	3.4	34	2	14	207	2.61	1.55	1.06
28/07/2014	12.1	8.2	4,250	1.1	0.86	1,560	4.3	27	<1	11	90	2.61	1.71	0.9
26/08/2014	16	7.52	3,600	8.1	6.30	69	2.1	16	3	<1	4.4	2.61	1.88	0.73
24/09/2014	16	7.01	1,488	57	44.35	54	1.85	198	9.3	67	41.2	2.61	1.91	0.7
29/10/2014	14	7.01	1,254	0.4	0.31	23	4.23	25	1.09	10	4	2.61	1.45	1.16
18/11/2014	14	7.33	1,240	0.74	0.58	11	4.13	49	5.04	5	24.8	2.61	1.48	1.13
16/12/2014	12.8	7.12	1,391	5	3.89	21	4.48	48	4.76	9	88	2.61	1.49	1.12

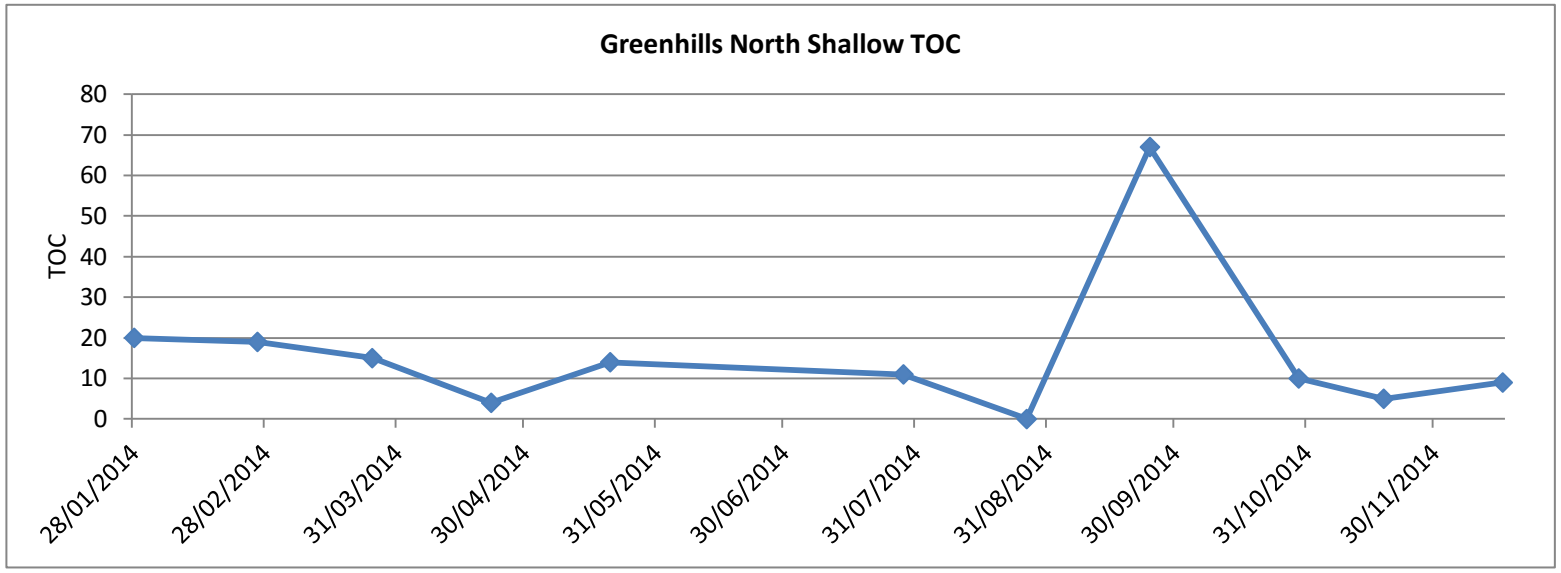

Greenhills North Shallow pH
pH
8.4
8.2
8
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

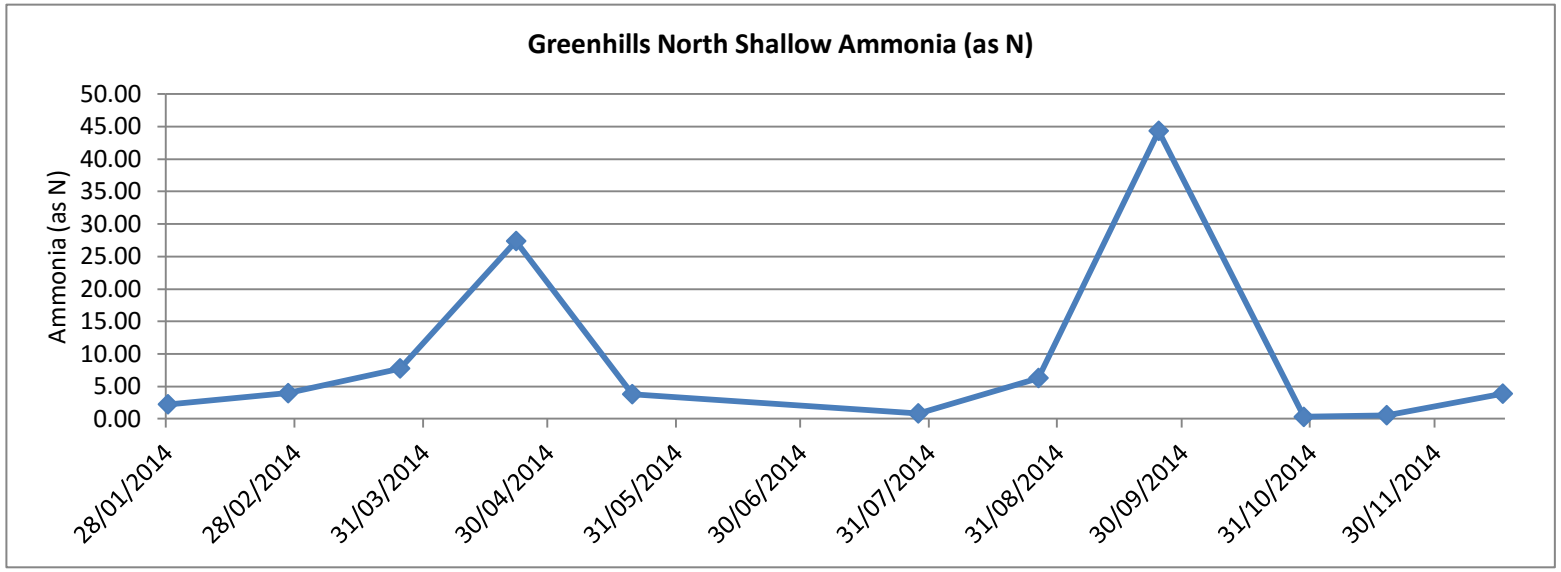

Greenhills North Shallow Conductivity µS/cm
µS/cm
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

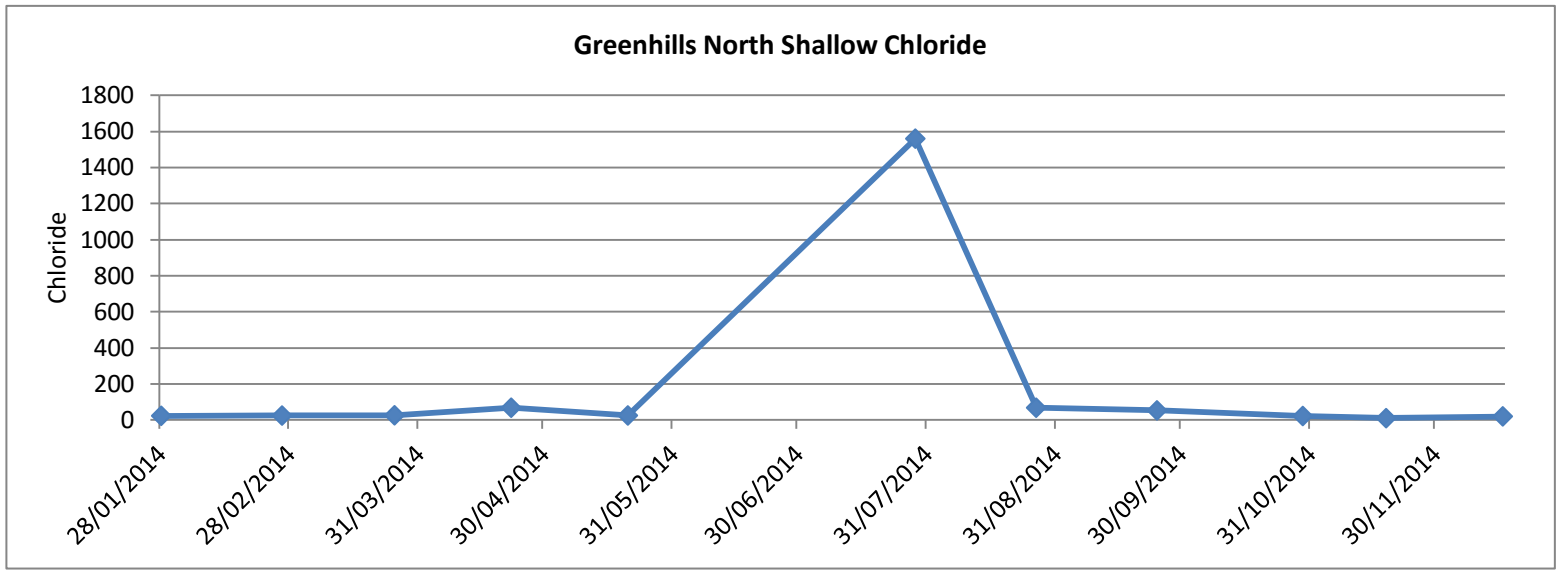

Greenhills North Shallow NH4
NH4
60
50
40
30
20
10
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

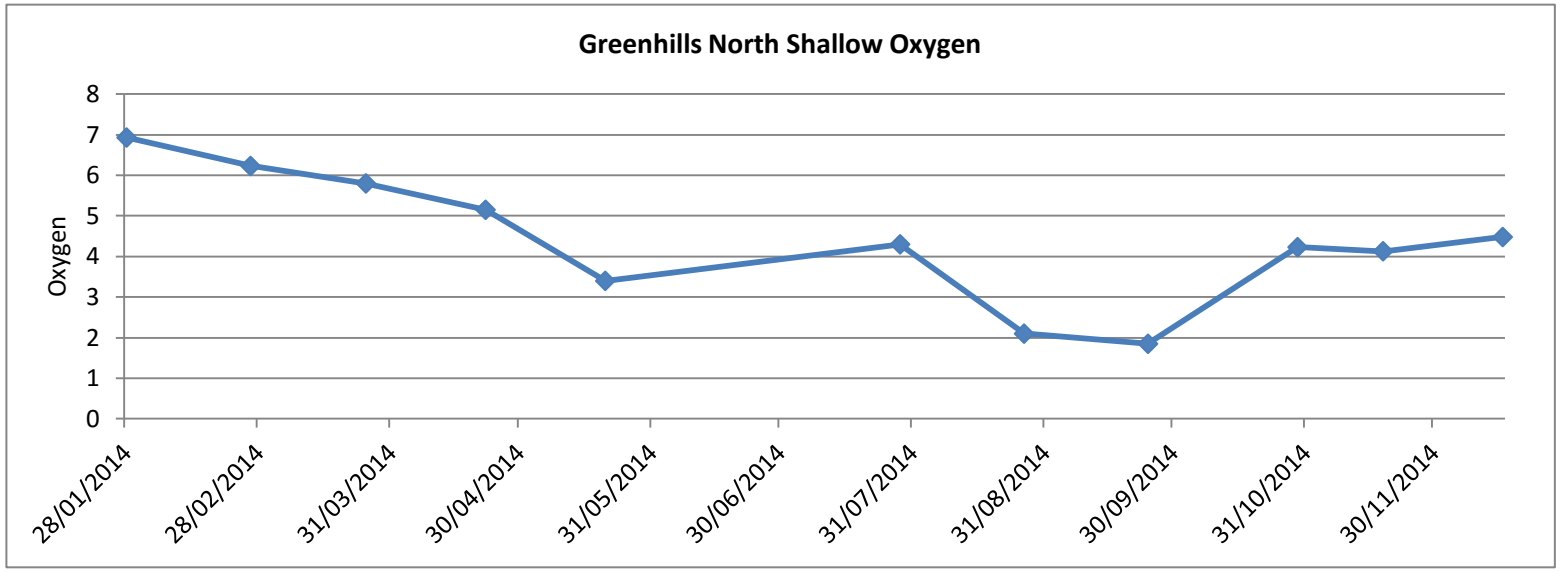

Greenhills North Shallow COD
COD
250
200
150
100
50
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

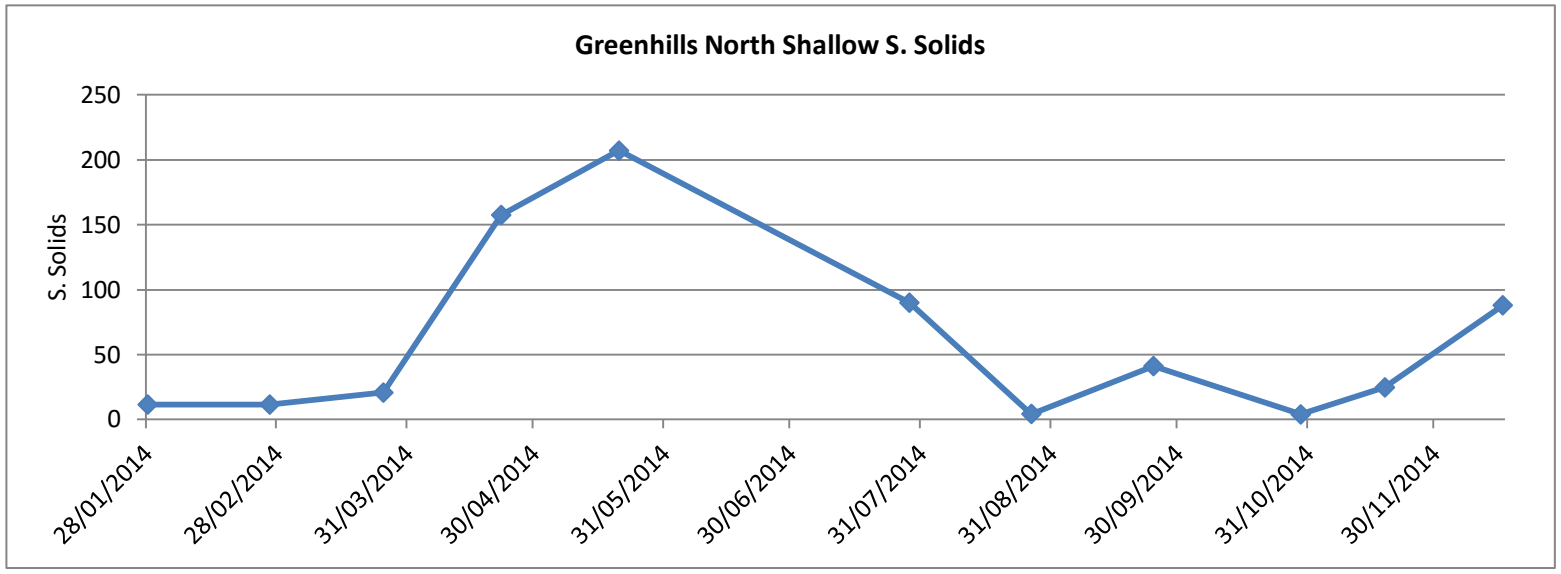

Greenhills North Shallow TON
TON
10
9
8
7
6
5
4
3
2
1
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills North Shallow TOC
TOC
80
70
60
50
40
30
20
10
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills North Shallow Ammonia (as N)
Ammonia (as N)
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills North Shallow Chloride
Chloride
1800
1600
1400
1200
1000
800
600
400
200
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

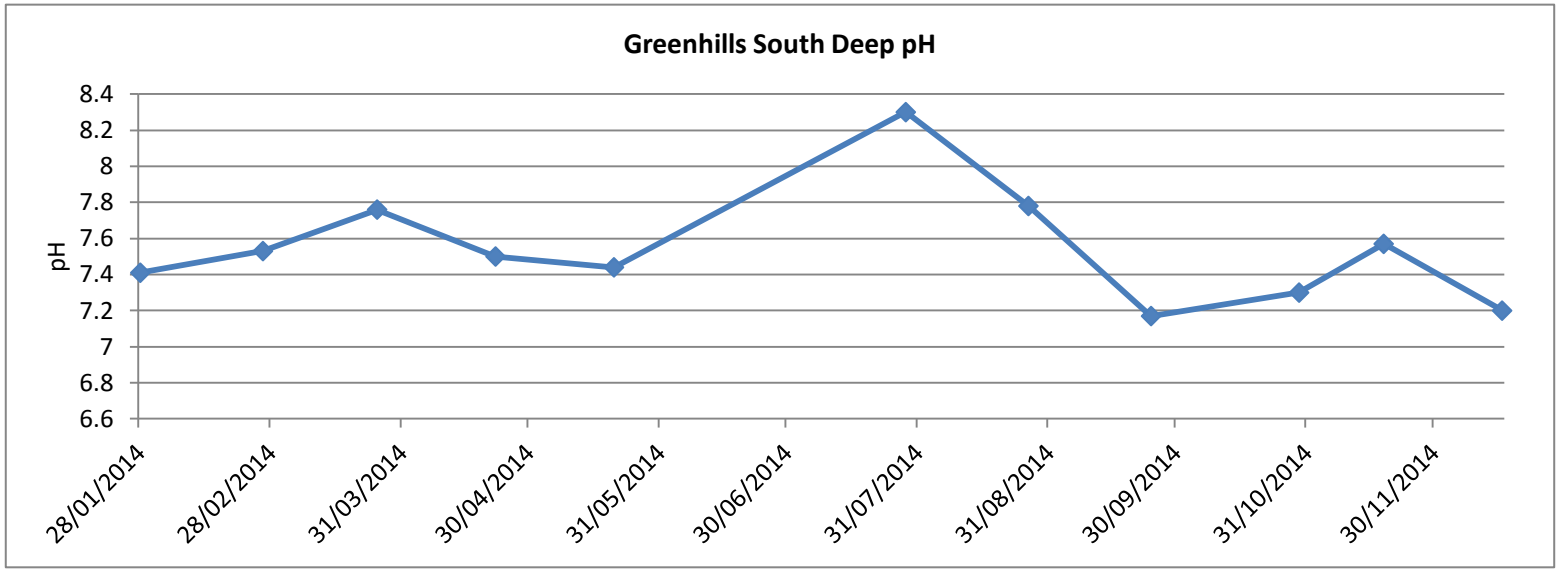

Greenhills North Shallow Oxygen
Oxygen
8
7
6
5
4
3
2
1
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

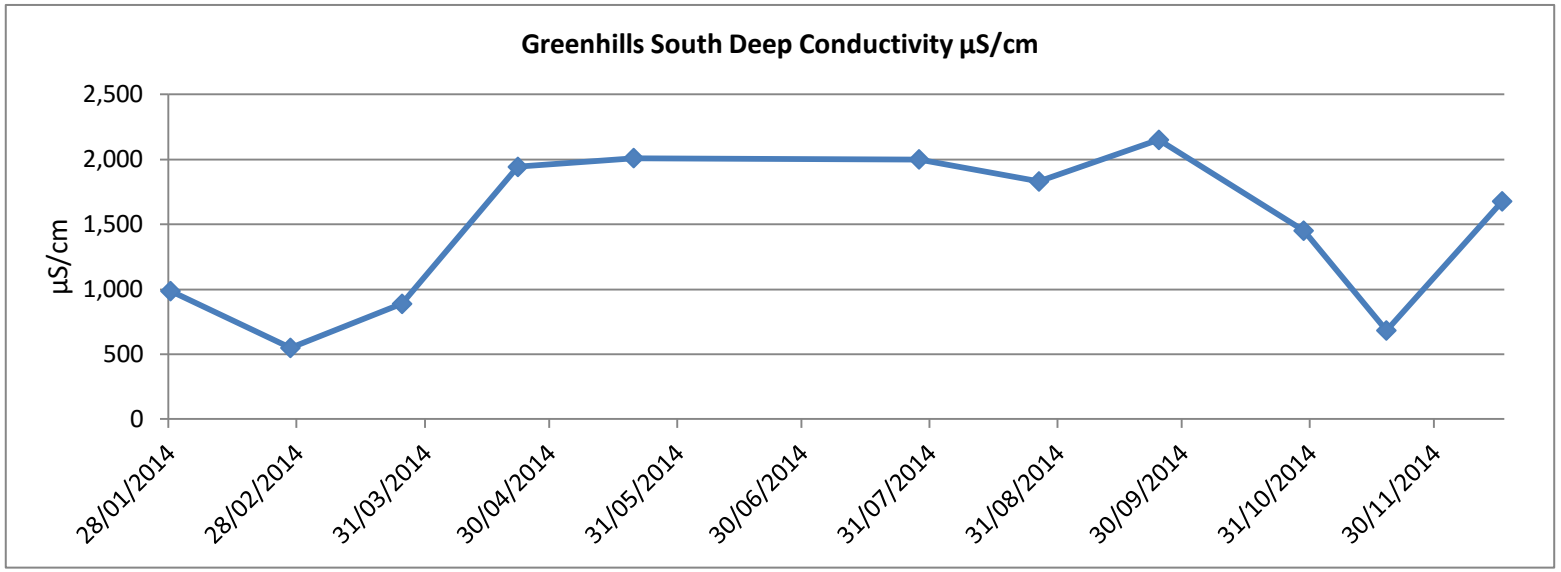

Greenhills North Shallow S. Solids
S. Solids
250
200
150
100
50
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

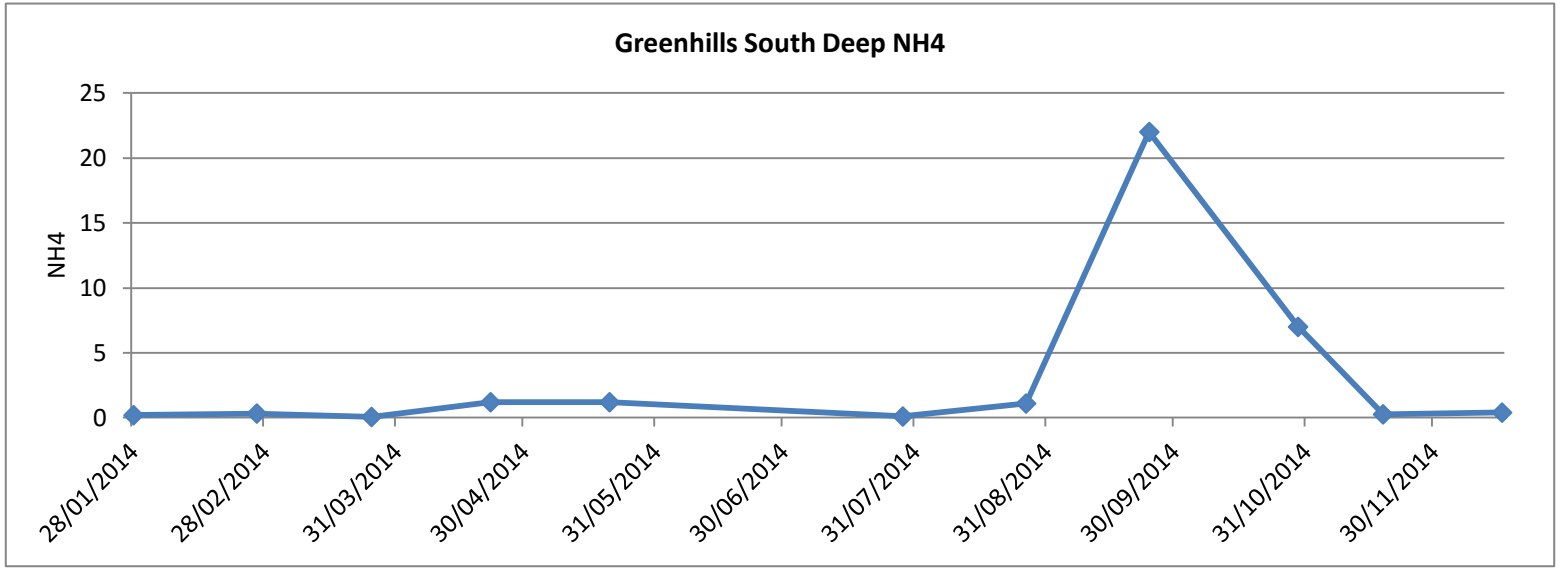
Well: Greenhills & Nemo Groundwater Wells (mg/l)
Location: Greenhills Green and Nemo Rangers GAA Pitch
All parameter data in mg/l unless stated otherwise

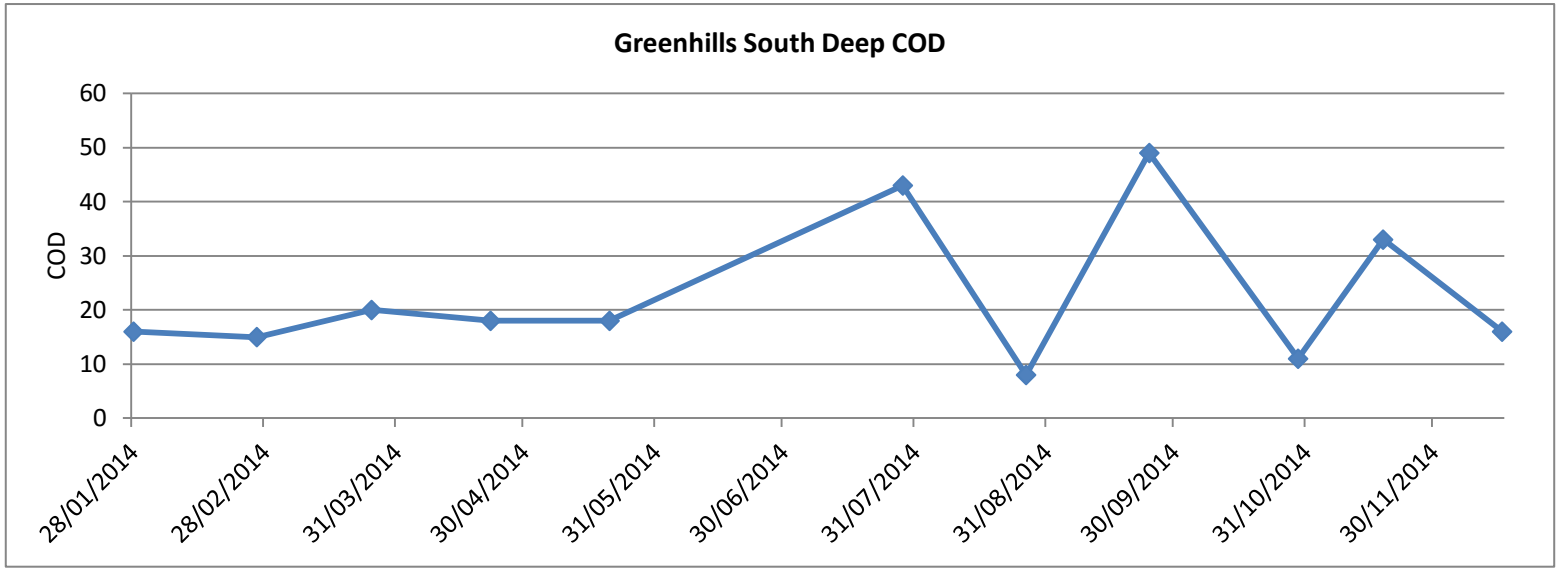
Greenhills South Deep 2014

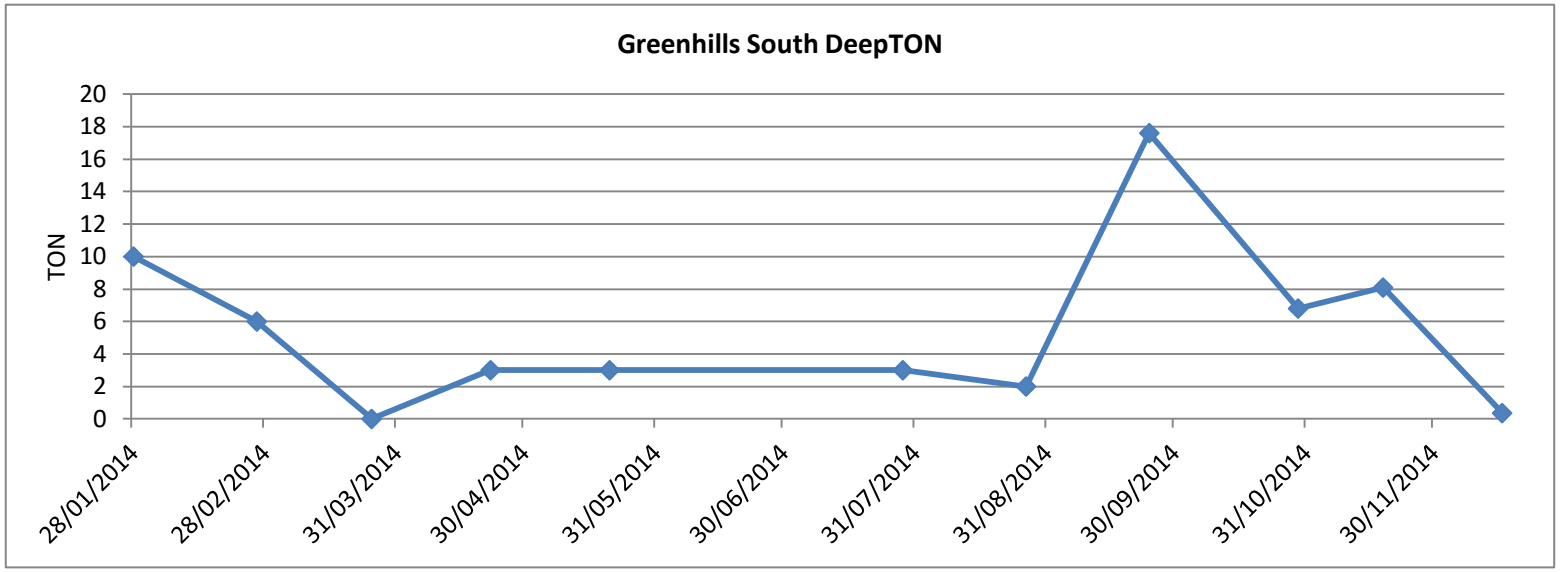
Date	Temp *C	pH	Conductivity µS/cm	NH4	Ammonia (as N)	Chloride	Oxygen	COD	TON	TOC	S. Solids	Well Depth (m)	Depth to Water (m)	Water Height in Well (m)
28/01/2014	12.3	7.41	986	0.2	0.16	207	5.96	16	10	4	4.4	34.7	1.09	33.61
26/02/2014	15.1	7.53	549	0.33	0.26	69	6.15	15	6	4.6	18.8	34.7	0.91	33.79
25/03/2014	12.7	7.76	888	0.066	0.05	193	5.6	20	<1	6	26	34.7	1.28	33.42
22/04/2014	13.1	7.5	1,942	1.2	0.93	535	2.76	18	3	2	21.2	34.7	1.41	33.29
20/05/2014	13.4	7.44	2,010	1.2	0.93	553	1.76	18	3	2	236	34.7	1.56	33.14
28/07/2014	12.9	8.3	2,000	0.1	0.08	478	3.1	43	3	7	55	34.7	1.83	32.87
26/08/2014	14	7.78	1,830	1.1	0.86	444	2.8	8	2	<1	44	34.7	1.83	32.87
24/09/2014	15.3	7.17	2,150	22	17.12	540	4.91	49	17.6	18.5	38	34.7	2.22	32.48
29/10/2014	12.9	7.3	1,451	7	5.45	319	3.26	11	6.8	2	2.8	34.7	1.67	33.03
18/11/2014	13.6	7.57	683	0.267	0.21	81	4.23	33	8.09	5	10.4	34.7	1.69	33.01
16/12/2014	12.7	7.2	1,677	0.4	0.31	455	1.72	16	0.36	1	5.6	34.7	1.53	33.17

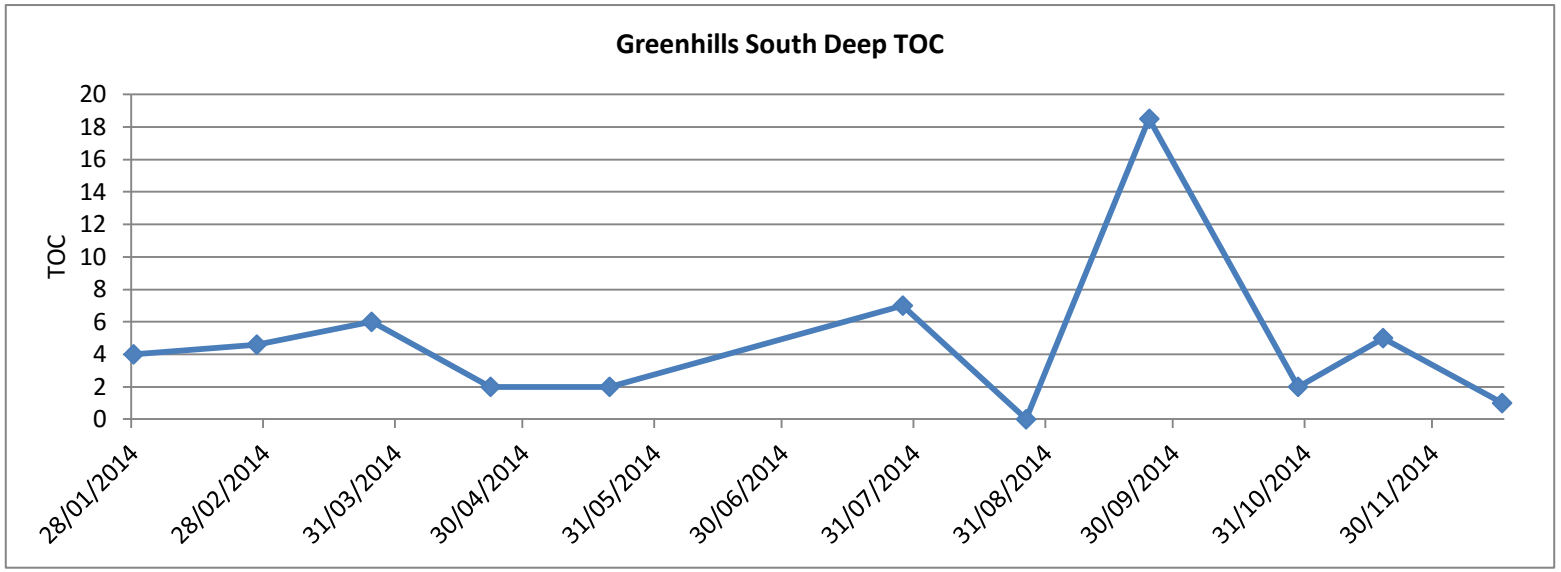

Greenhills South Deep pH
pH
8.4
8.2
8
7.8
7.6
7.4
7.2
7
6.8
6.6
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

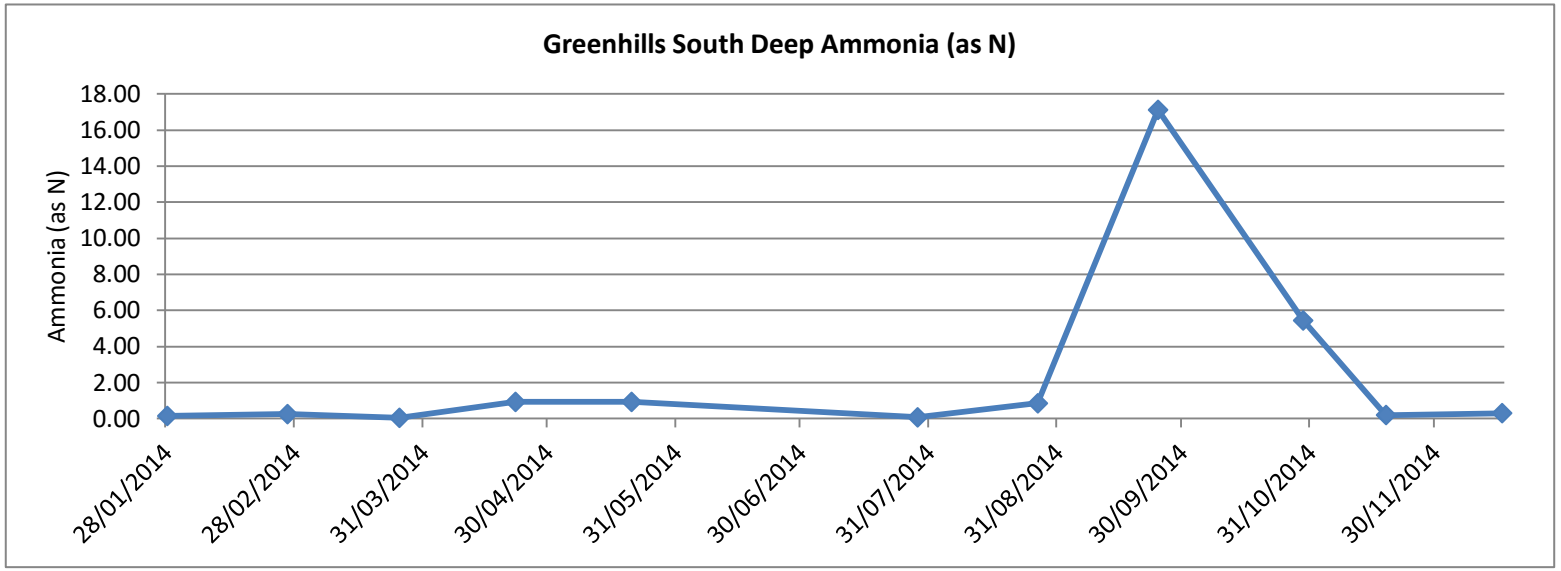

Greenhills South Deep Conductivity µS/cm
µS/cm
2,500
2,000
1,500
1,000
500
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

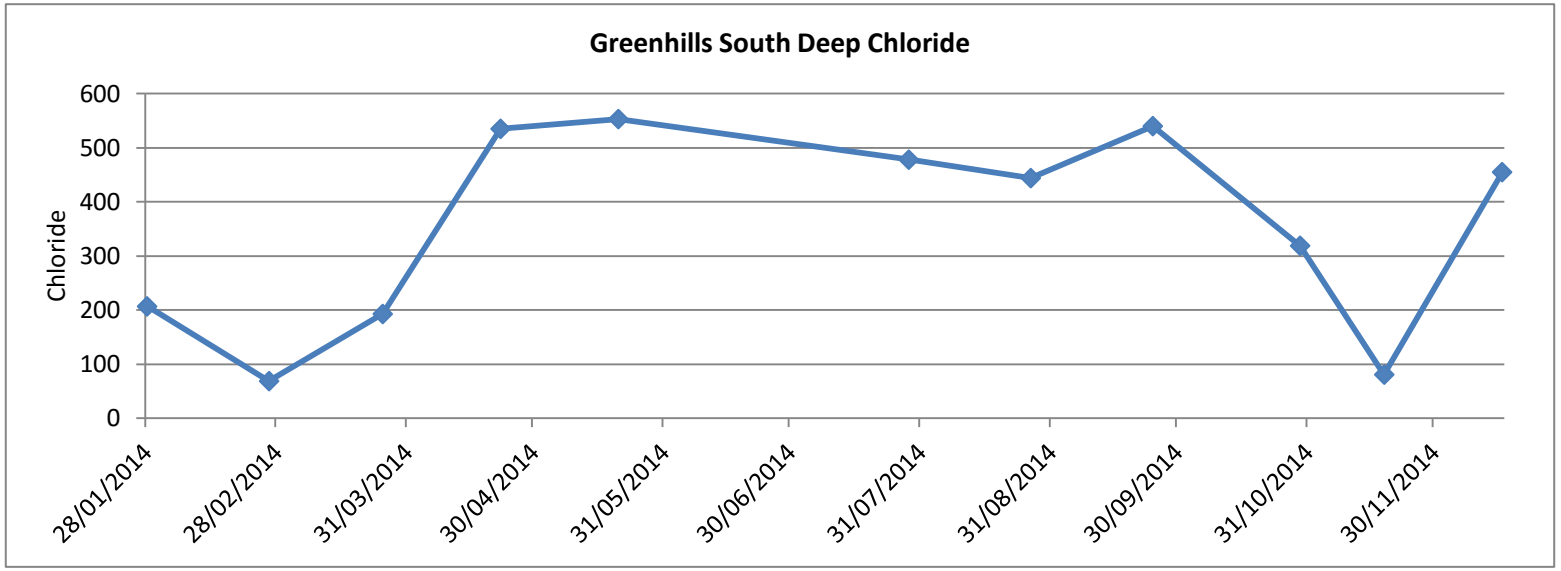

Greenhills South Deep NH4
NH4
25
20
15
10
5
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

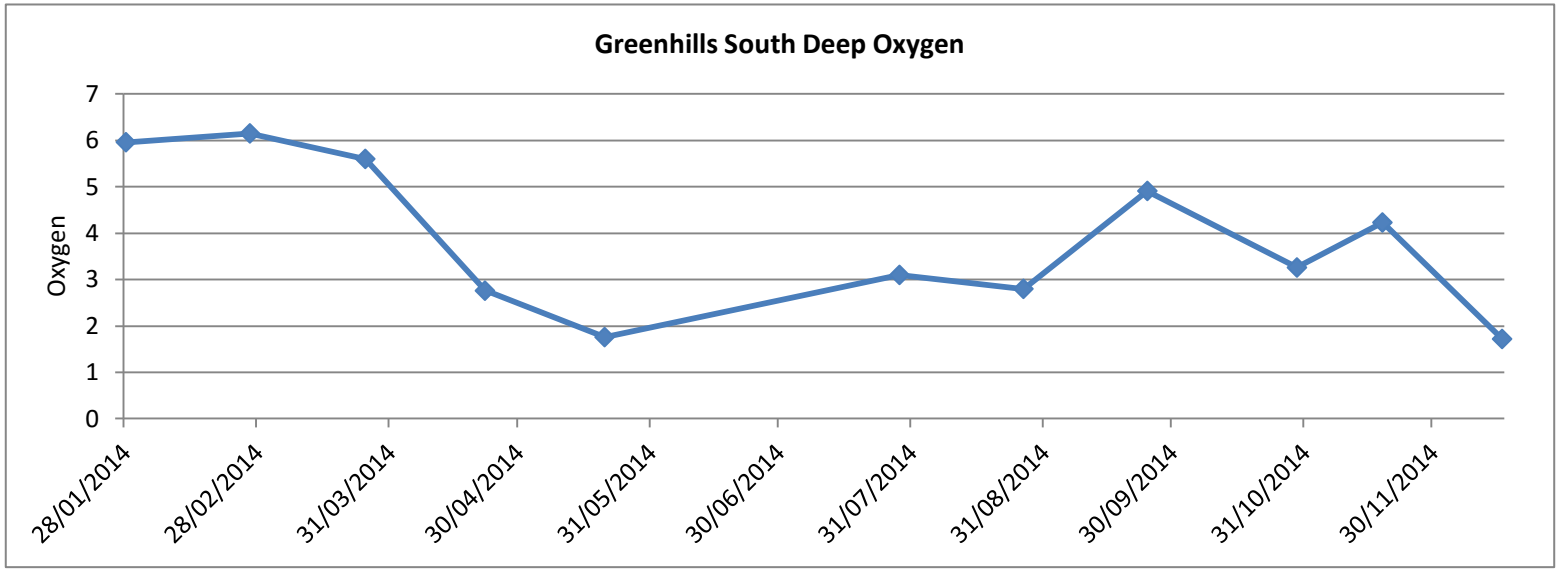

Greenhills South Deep COD
COD
60
50
40
30
20
10
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

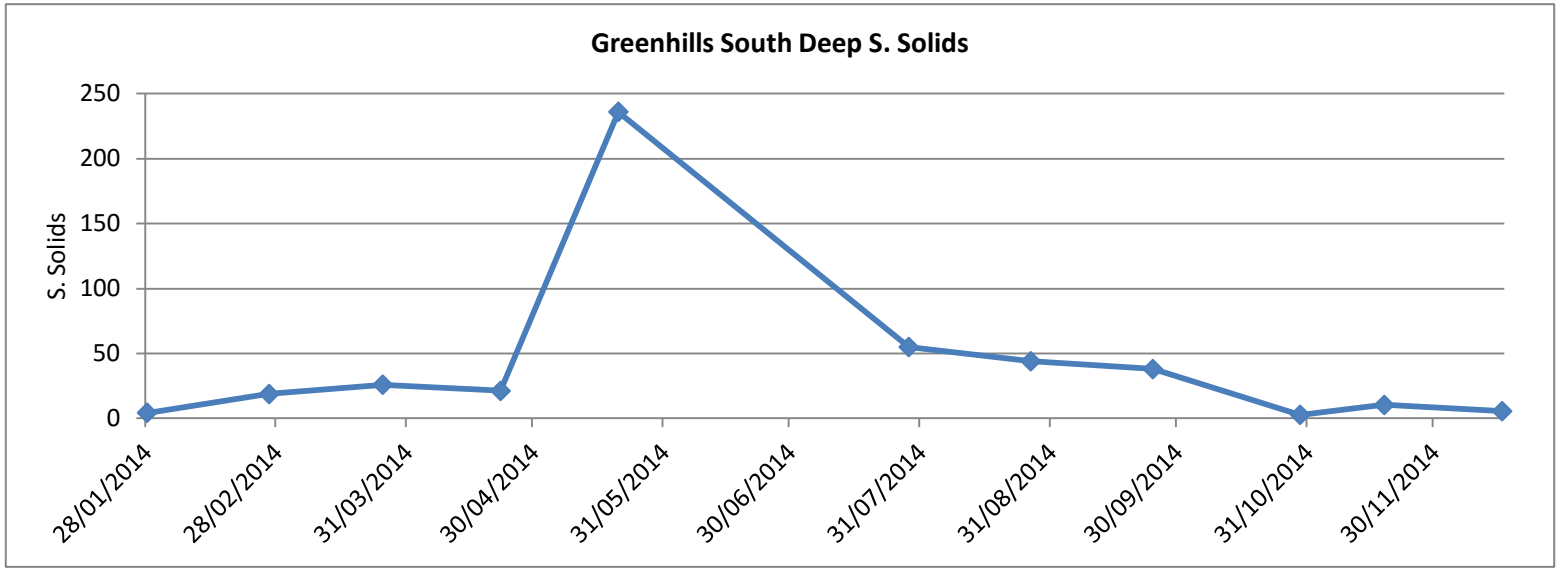

Greenhills South DeepTON
TON
20
18
16
14
12
10
8
6
4
2
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills South Deep TOC
TOC
20
18
16
14
12
10
8
6
4
2
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills South Deep Ammonia (as N)
Ammonia (as N)
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills South Deep Chloride
Chloride
600
500
400
300
200
100
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

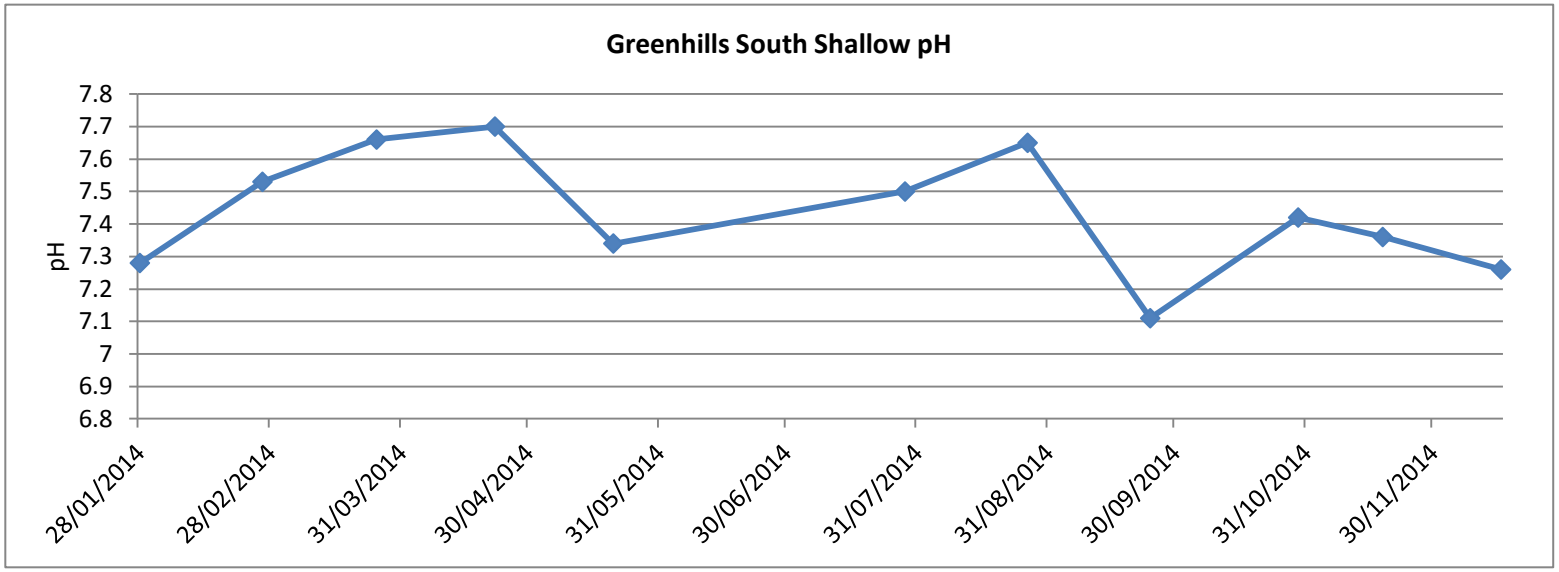

Greenhills South Deep Oxygen
Oxygen
7
6
5
4
3
2
1
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

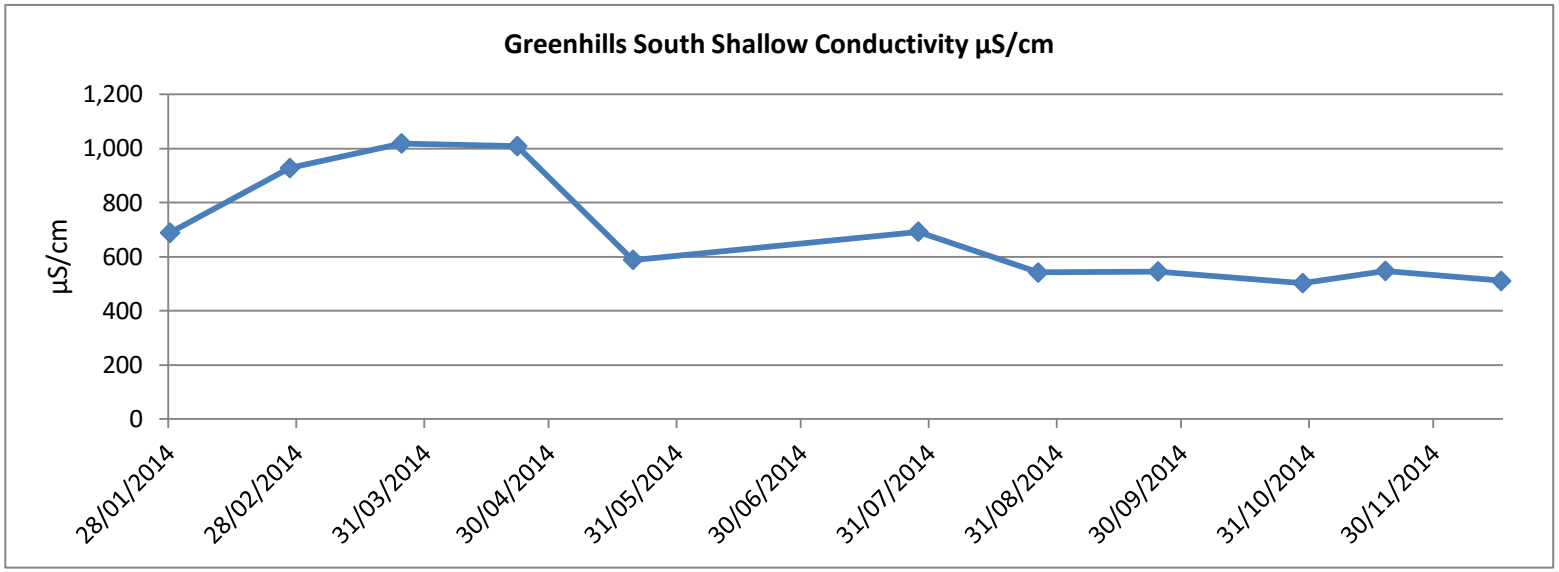

Greenhills South Deep S. Solids
S. Solids
250
200
150
100
50
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

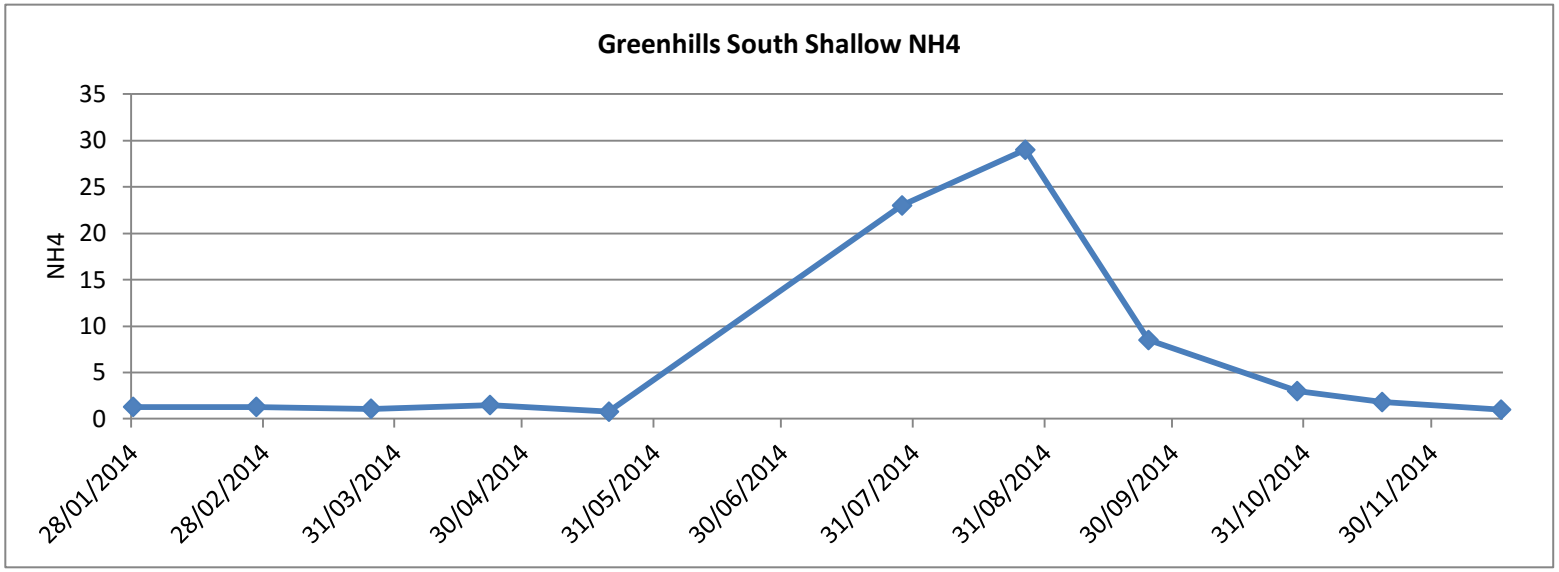
Well: Greenhills & Nemo Groundwater Wells (mg/l)
Location: Greenhills Green and Nemo Rangers GAA Pitch
All parameter data in mg/l unless stated otherwise

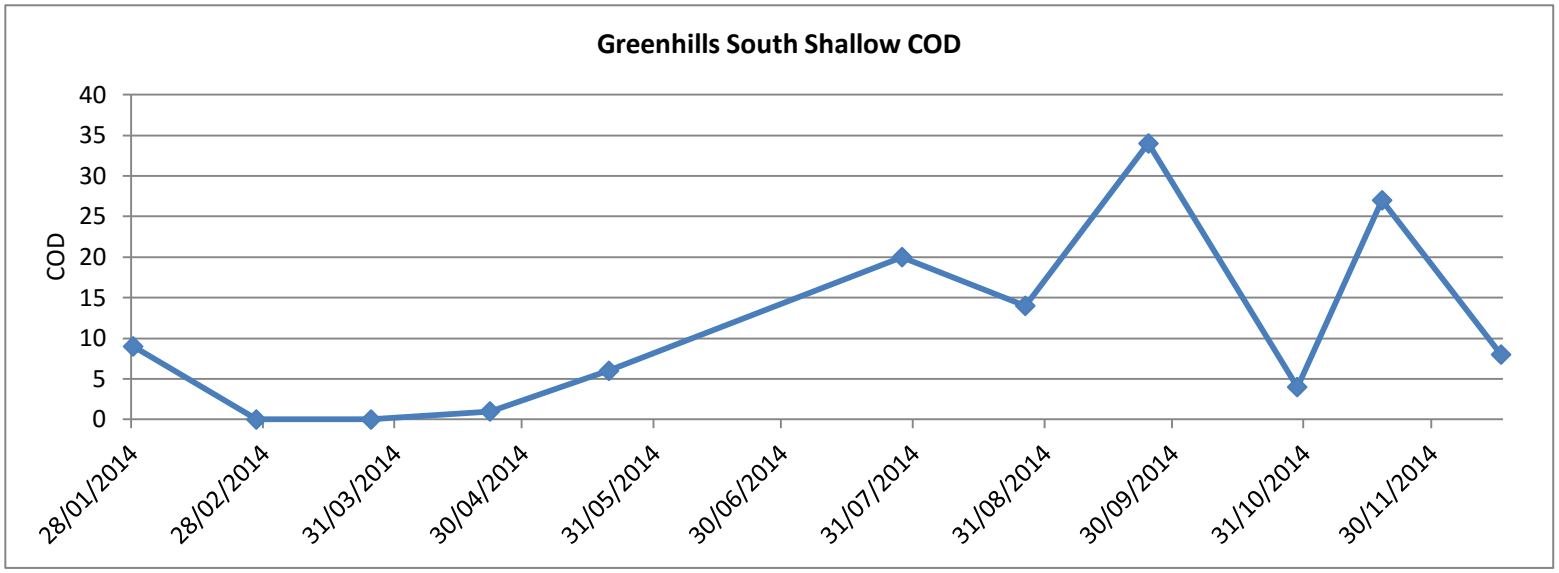
Greenhills South Shallow 2014

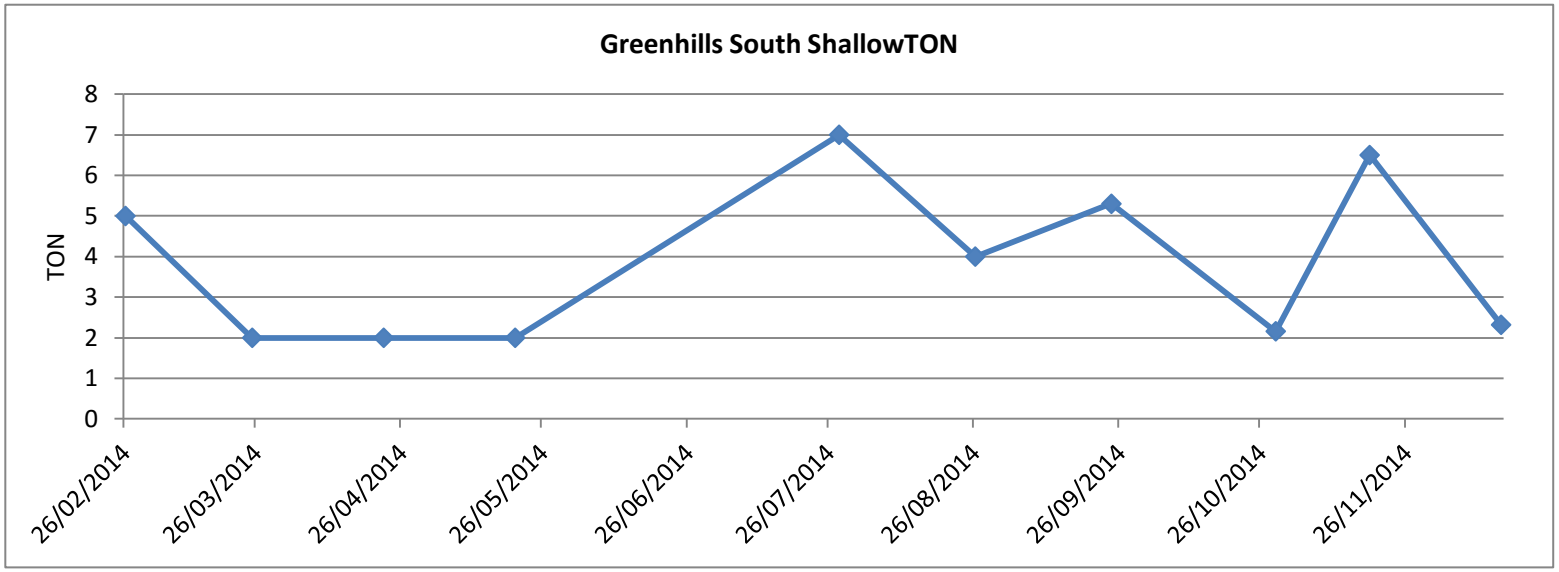
Date	Temp *C	pH	Conductivity µS/cm	NH4	Ammonia (as N)	Chloride	Oxygen	COD	TON	TOC	S. Solids	Well Depth (m)	Depth to Water (m)	Water Height in Well (m)
28/01/2014	12	7.28	689	1.3	1.01	111	6.78	9	<1	4	8.4	11.94	1.01	10.93
26/02/2014	15.3	7.53	928	1.3	1.01	200	4.08	<1	5	1.6	8.8	11.94	0.66	11.28
25/03/2014	12.3	7.66	1,019	1.1	0.86	199	3.85	<1	2	3	10	11.94	1.24	10.7
22/04/2014	12.9	7.7	1,009	1.5	1.17	239	2.69	1	2	3	7.2	11.94	1.32	10.62
20/05/2014	13.2	7.34	589	0.78	0.61	79	2.65	6	2	2	204	11.94	1.53	10.41
28/07/2014	13.1	7.5	693	23	17.89	25	1.9	20	7	11	10	11.94	1.88	10.06
26/08/2014	14	7.65	542	29	22.56	82	1.7	14	4	2	8	11.94	1.87	10.07
24/09/2014	13.9	7.11	546	8.5	6.61	38	2.13	34	5.3	9.3	31.6	11.94	1.97	9.97
29/10/2014	12.9	7.42	503	3	2.33	58	3.12	4	2.16	1	0.8	11.94	1.57	10.37
18/11/2014	13.7	7.36	548	1.82	1.42	58	2.34	27	6.5	2	66	11.94	1.61	10.33
16/12/2014	12.7	7.26	511	1	0.78	673	1.26	8	2.32	1	17.2	11.94	1.52	10.42

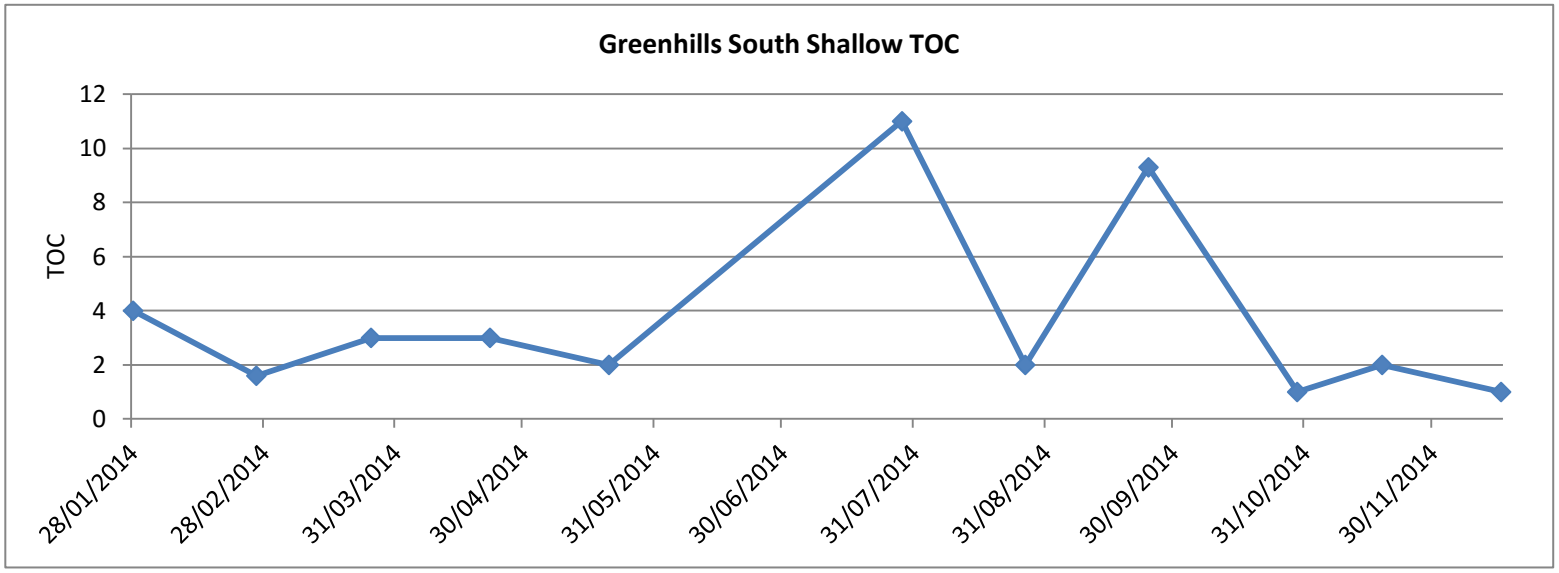

Greenhills South Shallow pH
pH
7.8
7.7
7.6
7.5
7.4
7.3
7.2
7.1
7
6.9
6.8
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

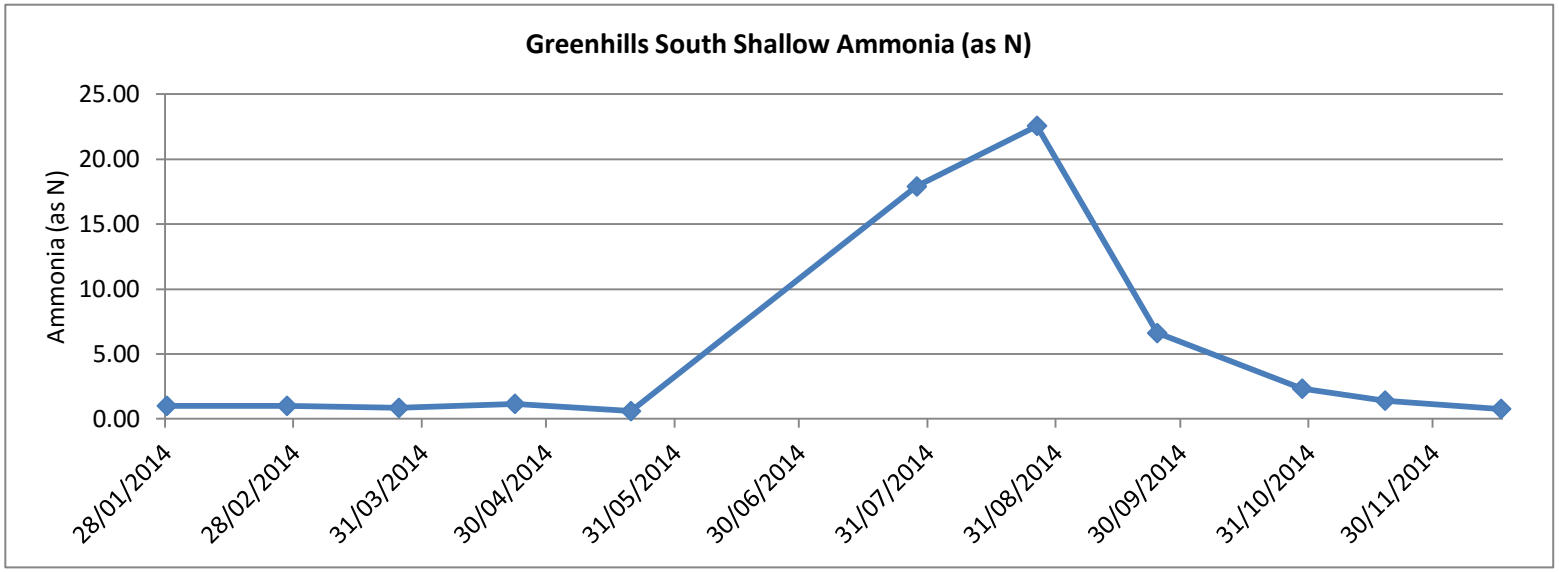

Greenhills South Shallow Conductivity µS/cm
µS/cm
1,200
1,000
800
600
400
200
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

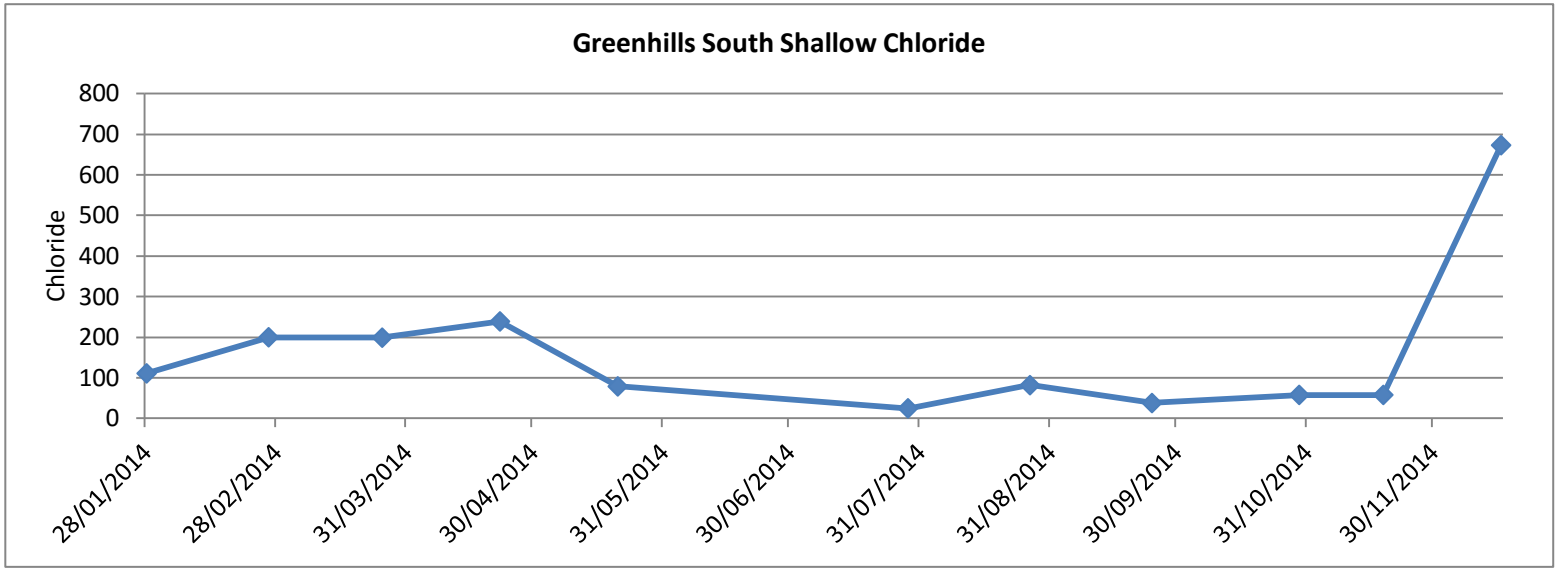

Greenhills South Shallow NH4
NH4
35
30
25
20
15
10
5
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

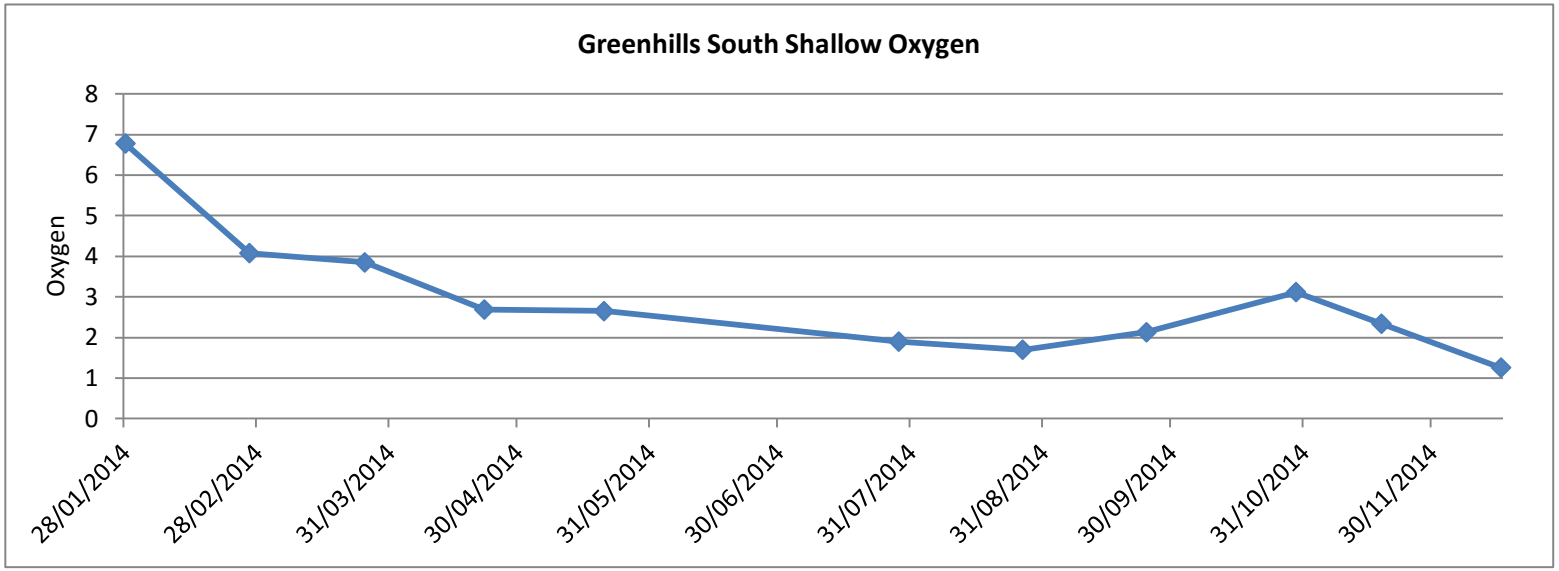

Greenhills South Shallow COD
COD
40
35
30
25
20
15
10
5
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

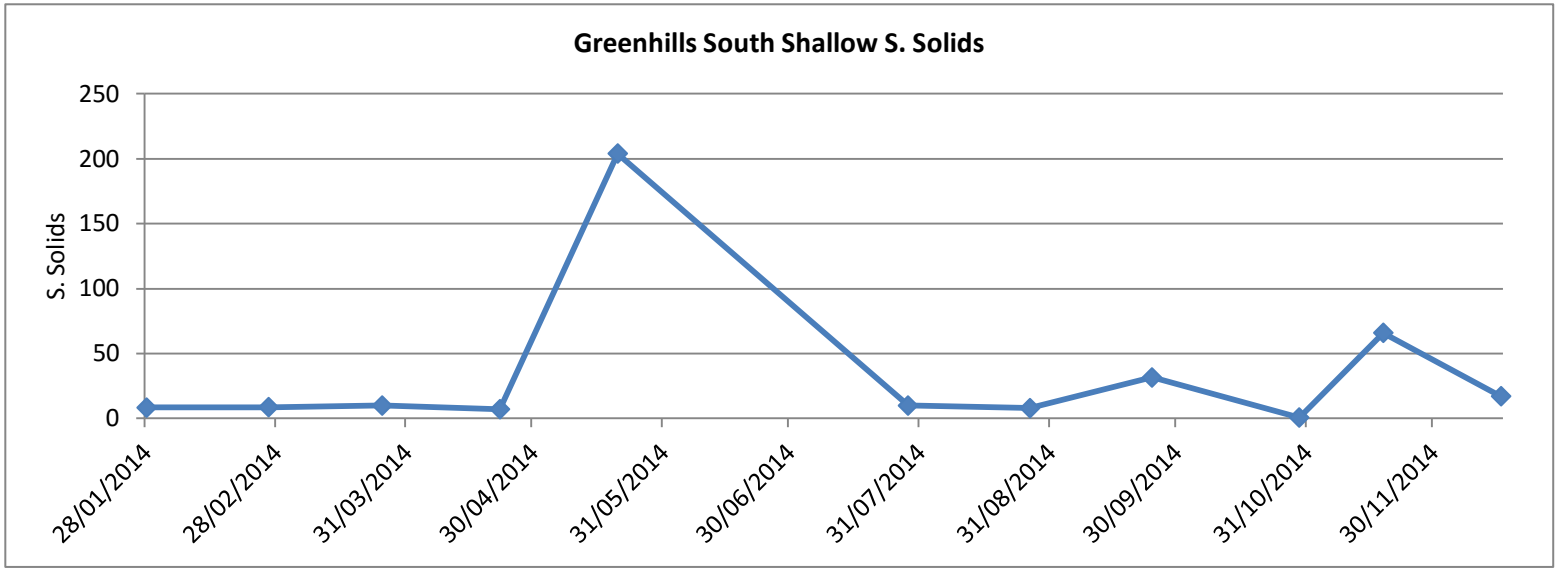

Greenhills South ShallowTON
TON
8
7
6
5
4
3
2
1
0
26/02/2014
26/03/2014
26/04/2014
26/05/2014
26/06/2014
26/07/2014
26/08/2014
26/09/2014
26/10/2014
26/11/2014


Greenhills South Shallow TOC
TOC
12
10
8
6
4
2
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills South Shallow Ammonia (as N)
Ammonia (as N)
25.00
20.00
15.00
10.00
5.00
0.00
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Greenhills South Shallow Chloride
Chloride
800
700
600
500
400
300
200
100
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

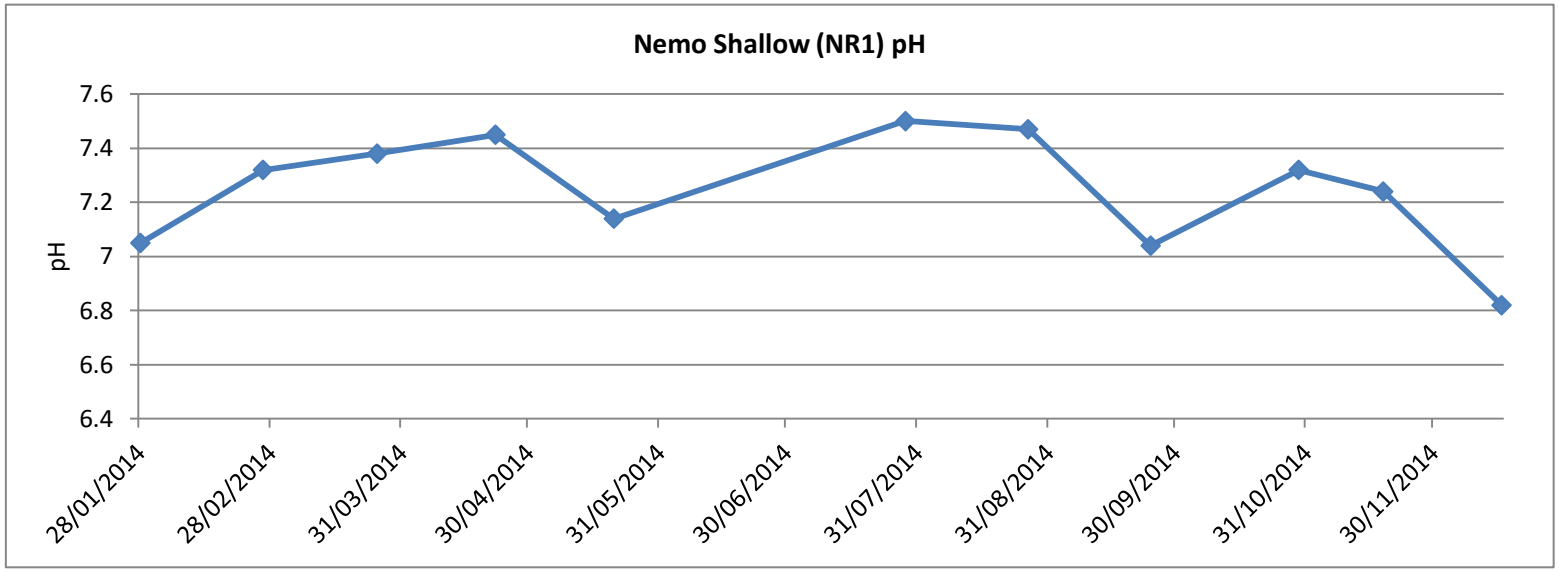

Greenhills South Shallow Oxygen
Oxygen
8
7
6
5
4
3
2
1
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

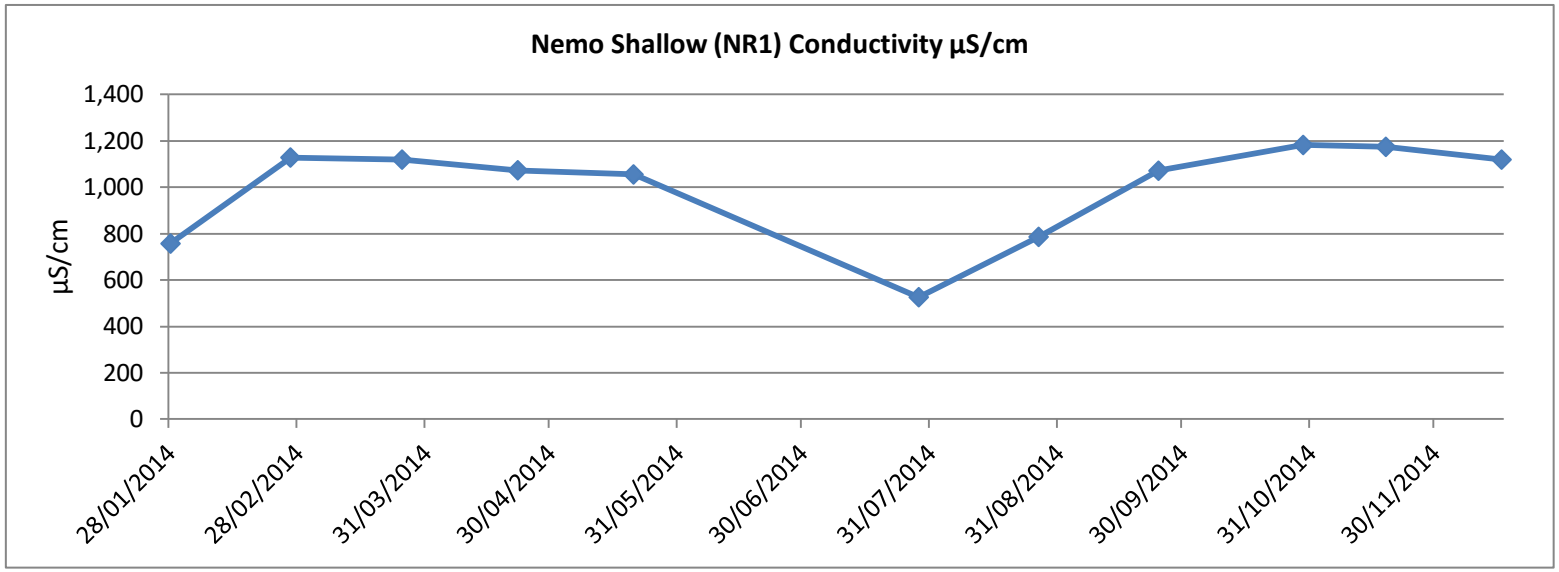

Greenhills South Shallow S. Solids
S. Solids
250
200
150
100
50
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

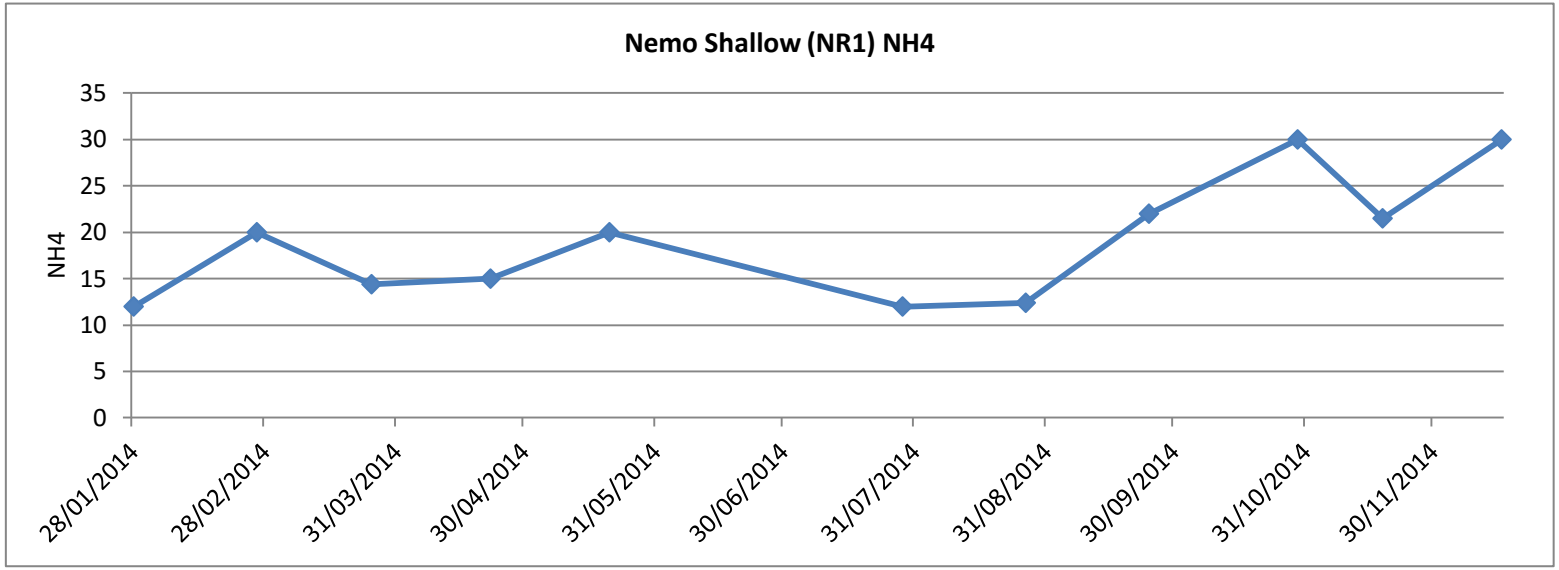
Well: Greenhills & Nemo Groundwater Wells (mg/l)
Location: Greenhills Green and Nemo Rangers GAA Pitch
All parameter data in mg/l unless stated otherwise

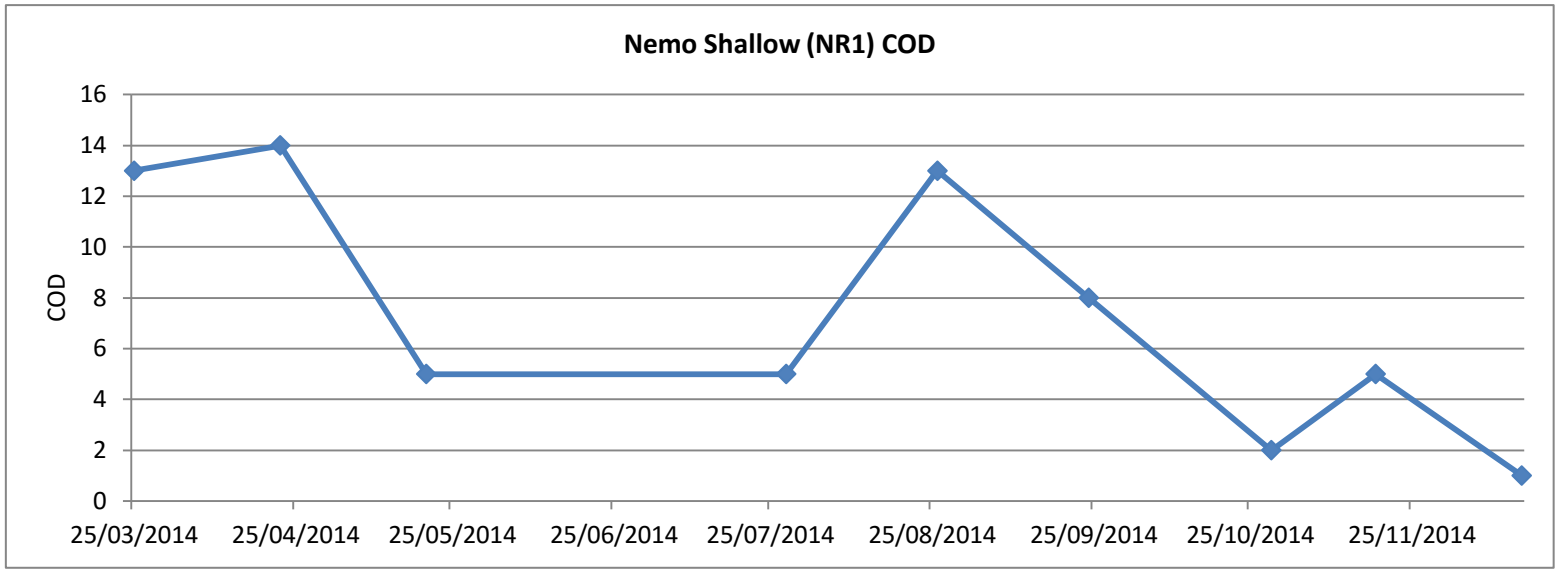
Nemo Shallow (NR1) 2014

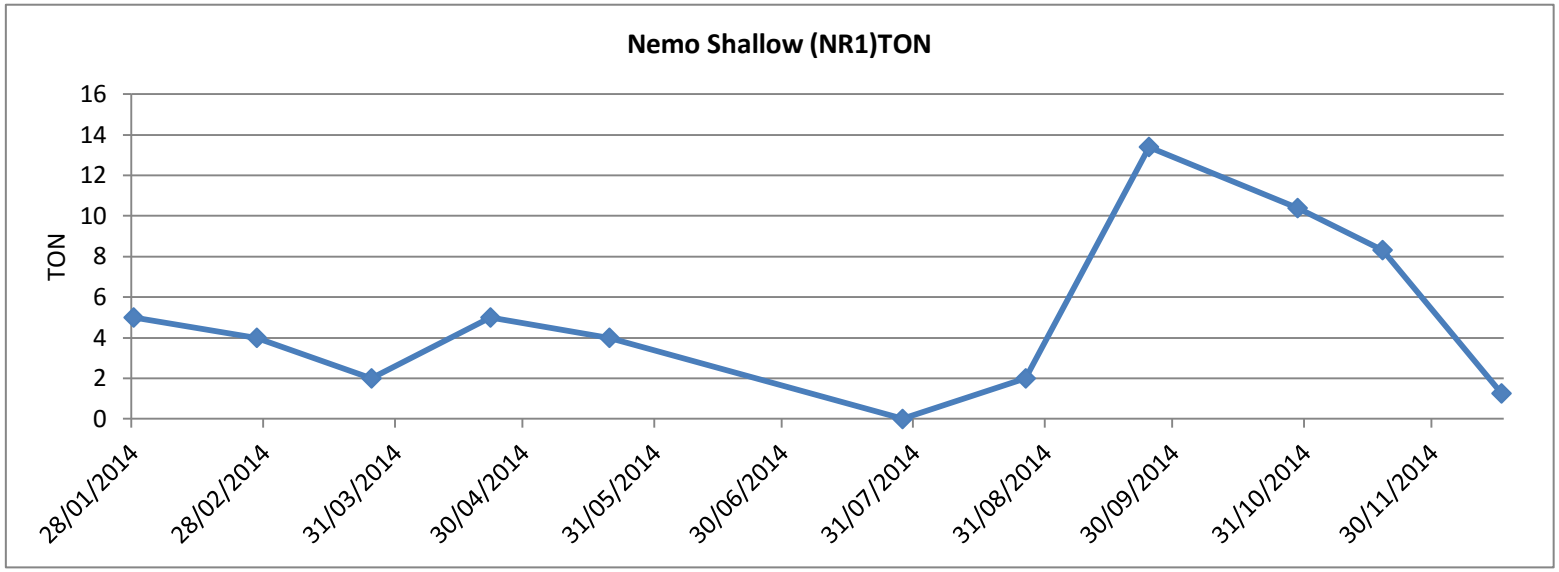
Date	Temp *C	pH	Conductivity µS/cm	NH4	Ammonia (as N)	Chloride	Oxygen	COD	TON	TOC	S. Solids	Well Depth (m)	Depth to Water (m)	Water Height in Well (m)
28/01/2014	11.1	7.05	757	12	9.34	55	4.48	<1	5	11	2.8	5.9	0.64	5.26
26/02/2014	14.9	7.32	1,128	20	15.56	221	2.93	<1	4	3.4	29.2	5.9	0.64	5.26
25/03/2014	11.5	7.38	1,119	14.4	11.20	69	3.54	13	2	7	82	5.9	0.91	4.99
22/04/2014	12.1	7.45	1,073	15	11.67	184	2.11	14	5	5	50.4	5.9	1.04	4.86
20/05/2014	12.9	7.14	1,055	20	15.56	177	2.55	5	4	5	999	5.9	1.21	4.69
28/07/2014	12.7	7.5	526	12	9.34	15	2.1	5	<1	5	27	5.9	1.2	4.7
26/08/2014	16	7.47	786	12.4	9.65	15	3.1	13	2	1	2.8	5.9	1.27	4.63
24/09/2014	13.9	7.04	1,071	22	17.12	237	1.07	8	13.4	4.5	12.4	5.9	1.39	4.51
29/10/2014	12.9	7.32	1,182	30	23.34	267	2.68	2	10.39	2	402	5.9	1.16	4.74
18/11/2014	13.6	7.24	1,174	21.5	16.73	250	1.58	5	8.32	3	74.4	5.9	1.21	4.69
16/12/2014	12.7	6.82	1,119	30	23.34	236	0.86	1	1.26	3	32.8	5.9	1.24	4.66

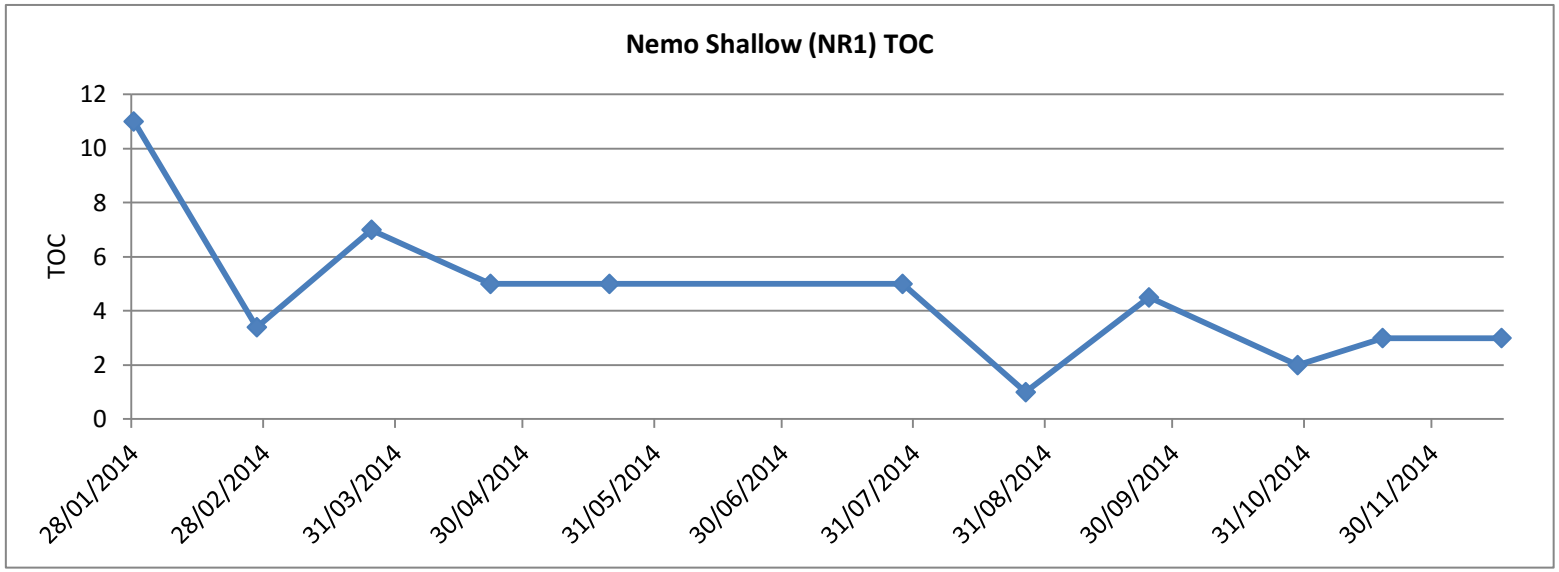

Nemo Shallow (NR1) pH
pH
7.6
7.4
7.2
7
6.8
6.6
6.4
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

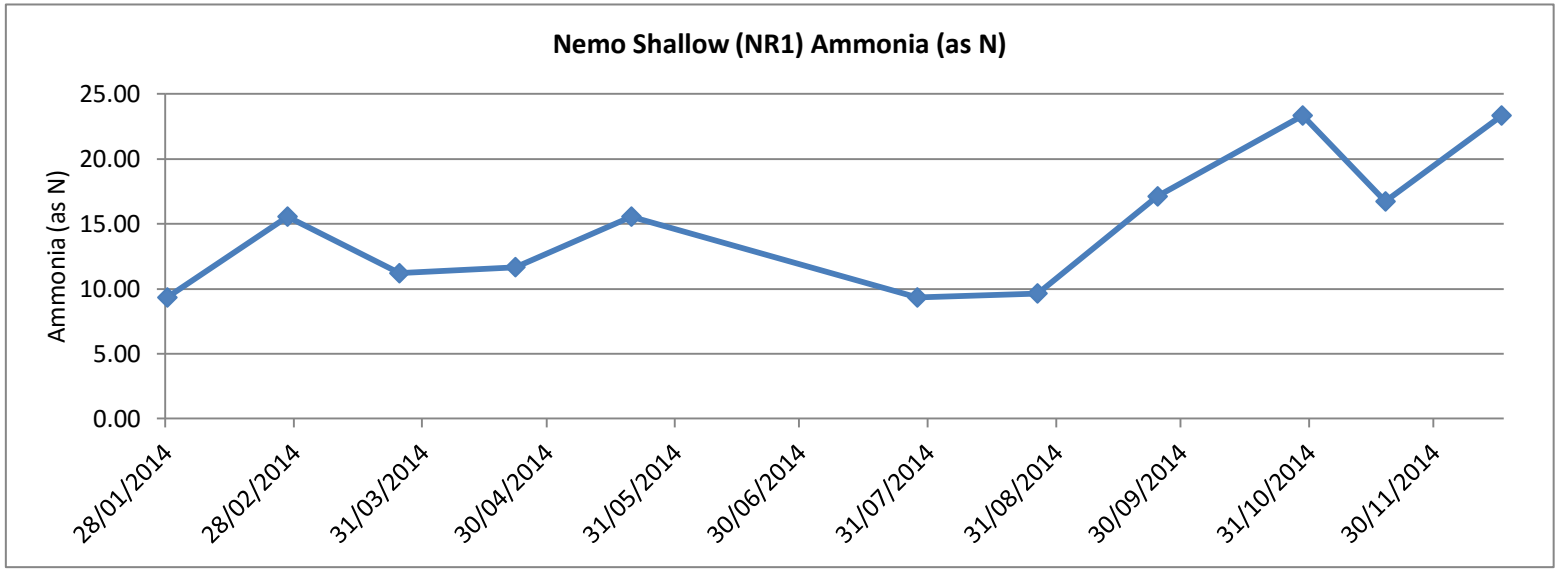

Nemo Shallow (NR1) Conductivity µS/cm
µS/cm
1,400
1,200
1,000
800
600
400
200
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

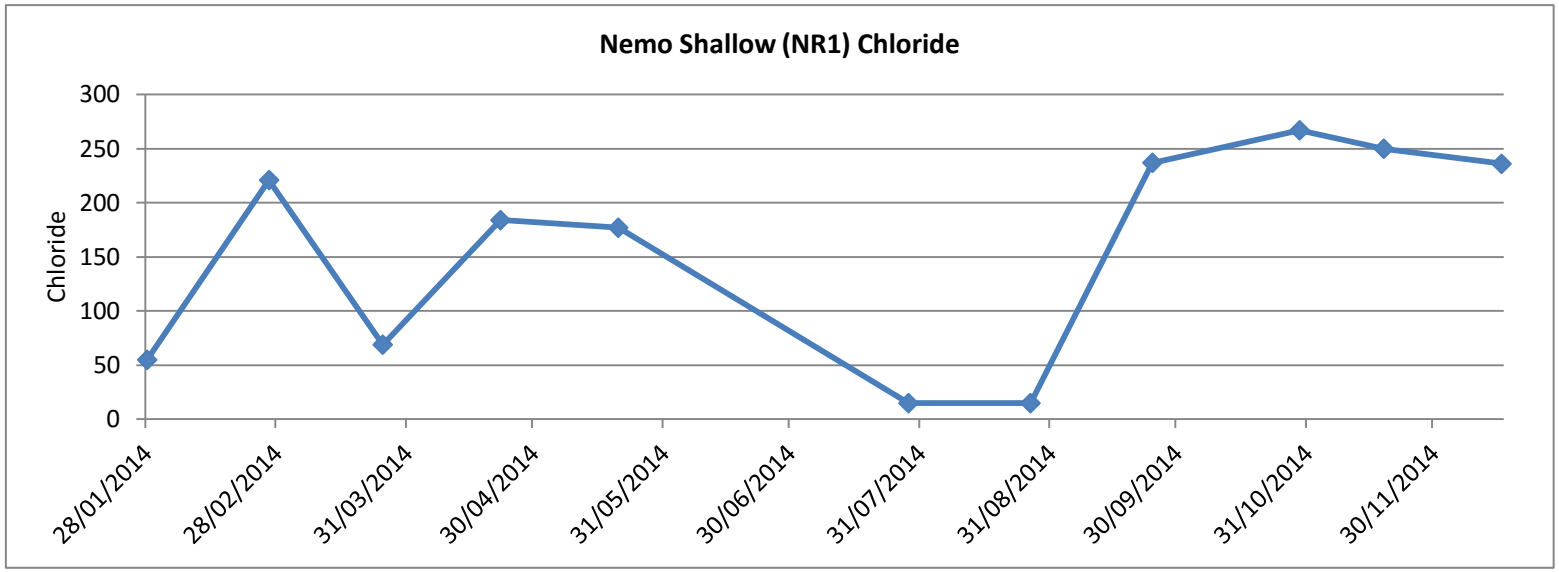

Nemo Shallow (NR1) NH4
NH4
35
30
25
20
15
10
5
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

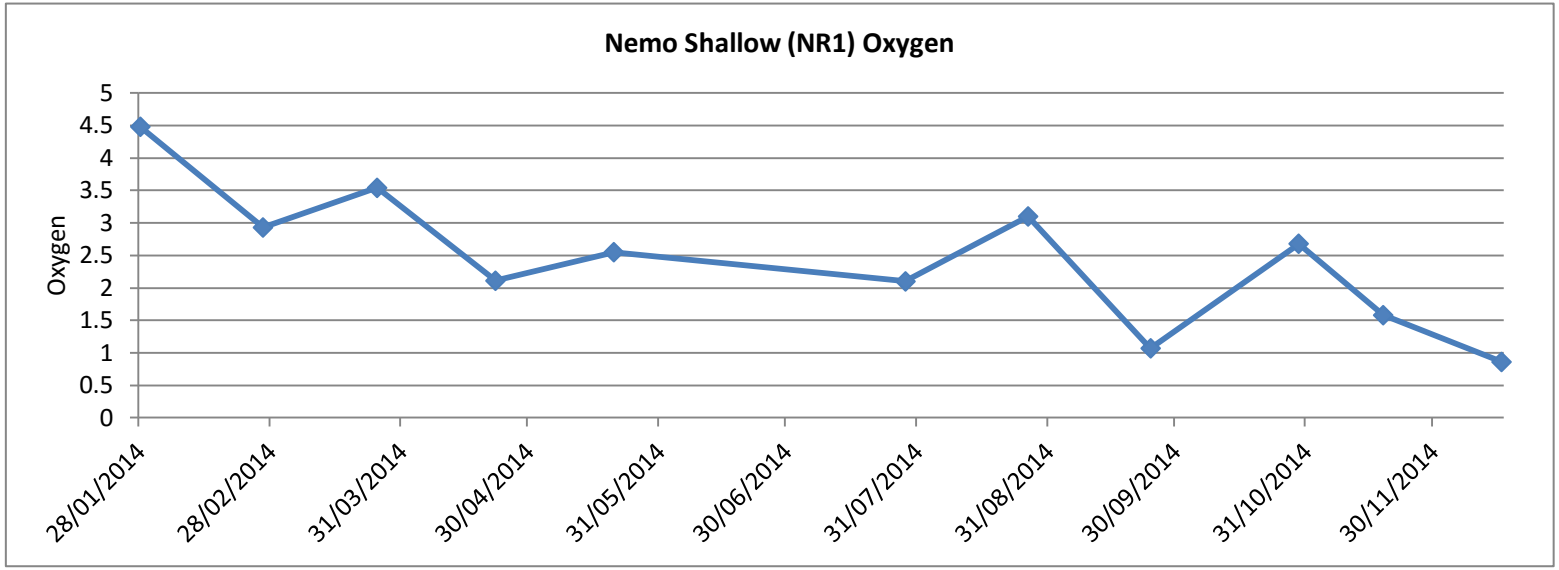

Nemo Shallow (NR1) COD
COD
16
14
12
10
8
6
4
2
0
25/03/2014
25/04/2014
25/05/2014
25/06/2014
25/07/2014
25/08/2014
25/09/2014
25/10/2014
25/11/2014

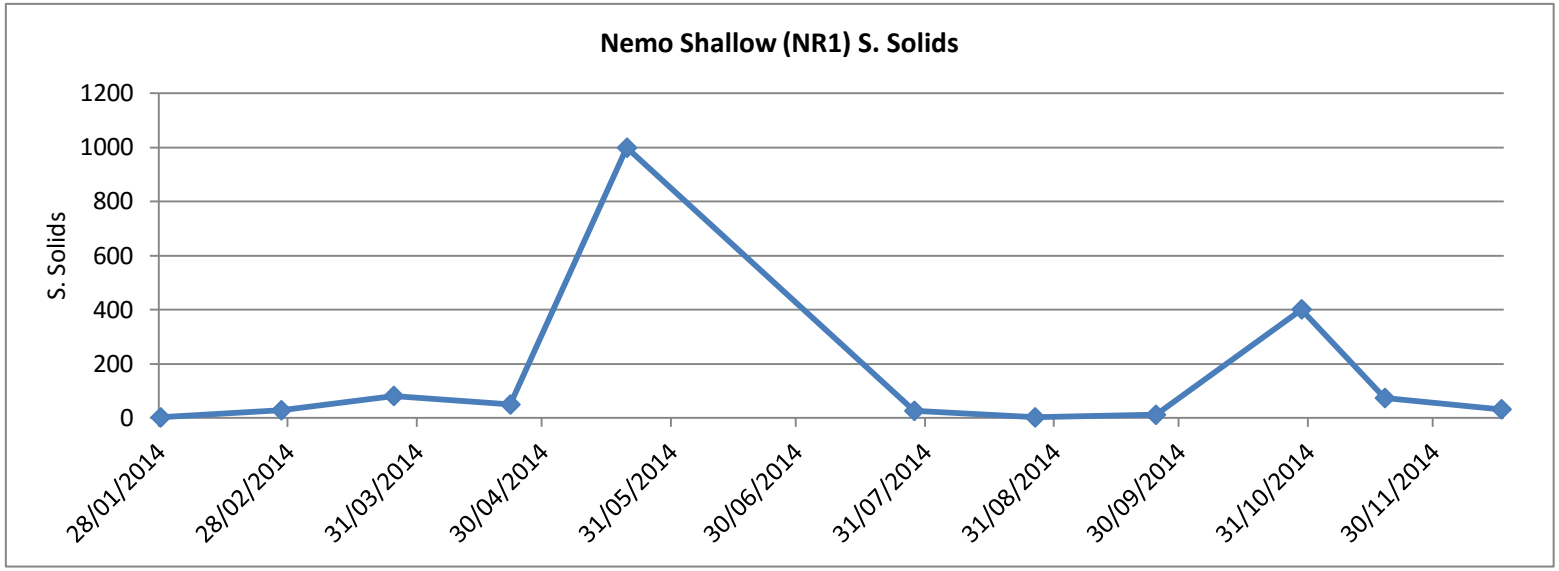

Nemo Shallow (NR1)TON
TON
16
14
12
10
8
6
4
2
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Nemo Shallow (NR1) TOC
TOC
12
10
8
6
4
2
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Nemo Shallow (NR1) Ammonia (as N)
Ammonia (as N)
25.00
20.00
15.00
10.00
5.00
0.00
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Nemo Shallow (NR1) Chloride
Chloride
300
250
200
150
100
50
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Nemo Shallow (NR1) Oxygen
Oxygen
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Nemo Shallow (NR1) S. Solids
S. Solids
1200
1000
800
600
400
200
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

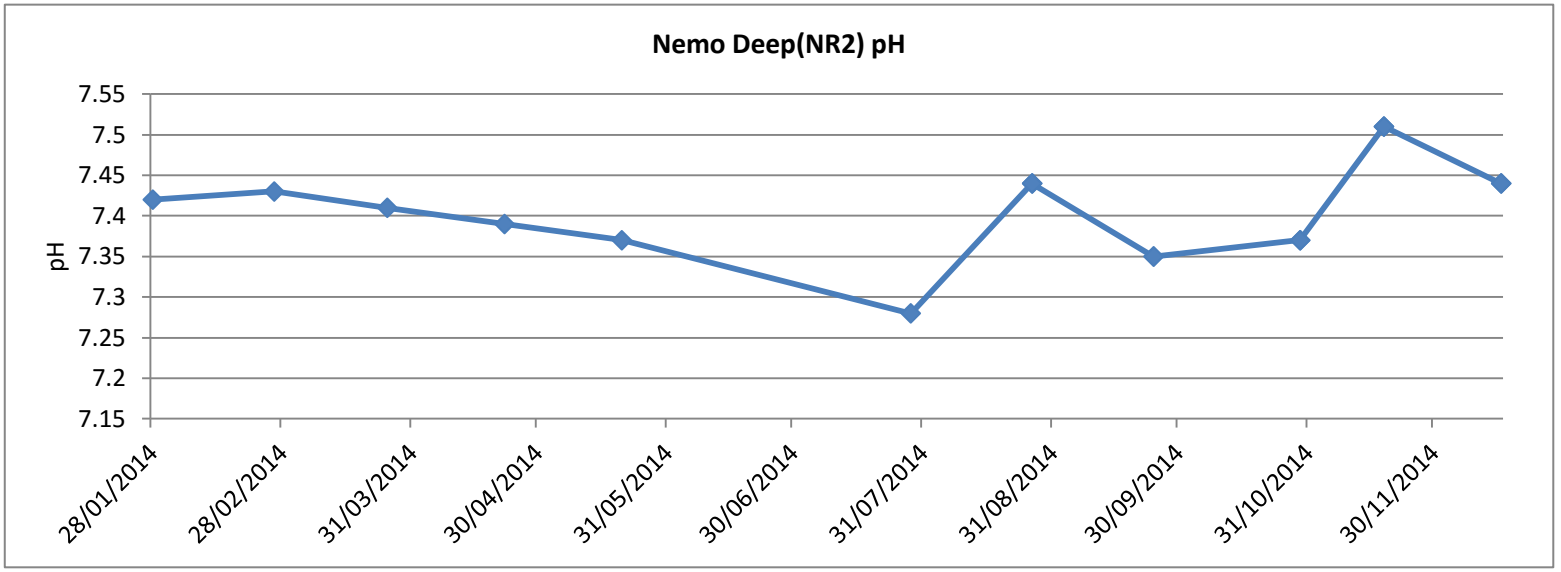
emo Groundwater Wells (mg/l)

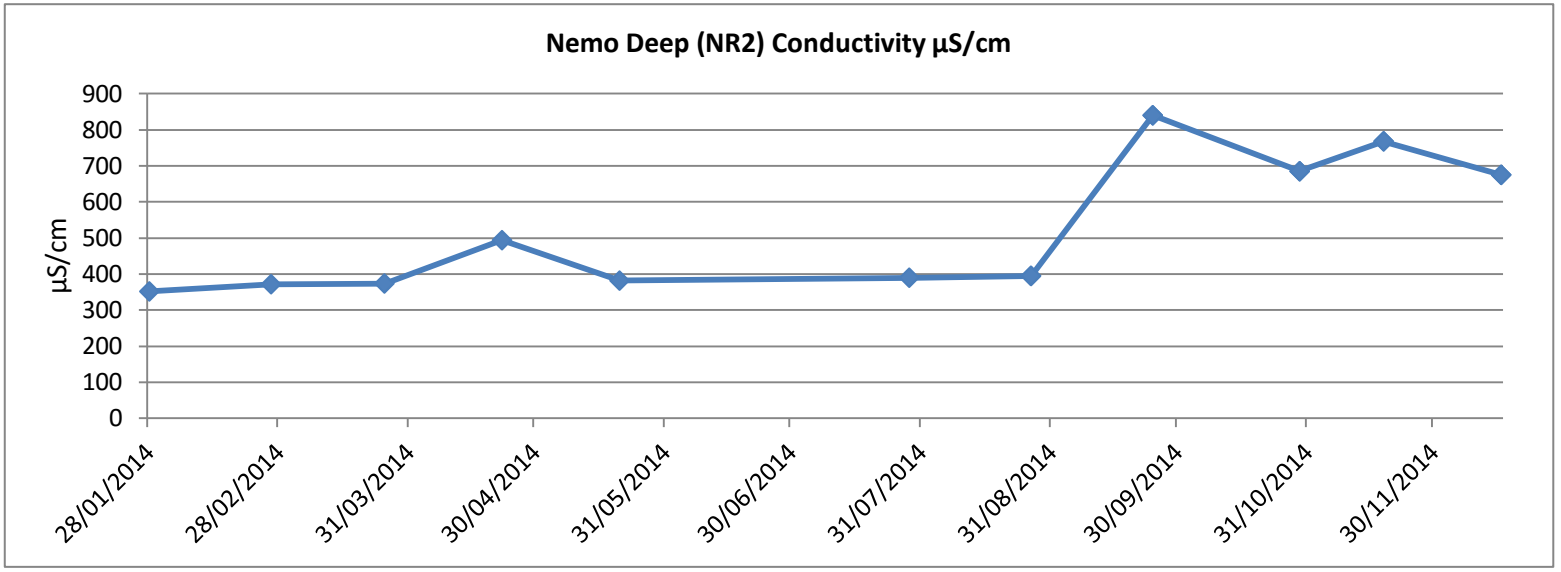
Location: Greenhills Green and Nemo Rangers GAA Pitch

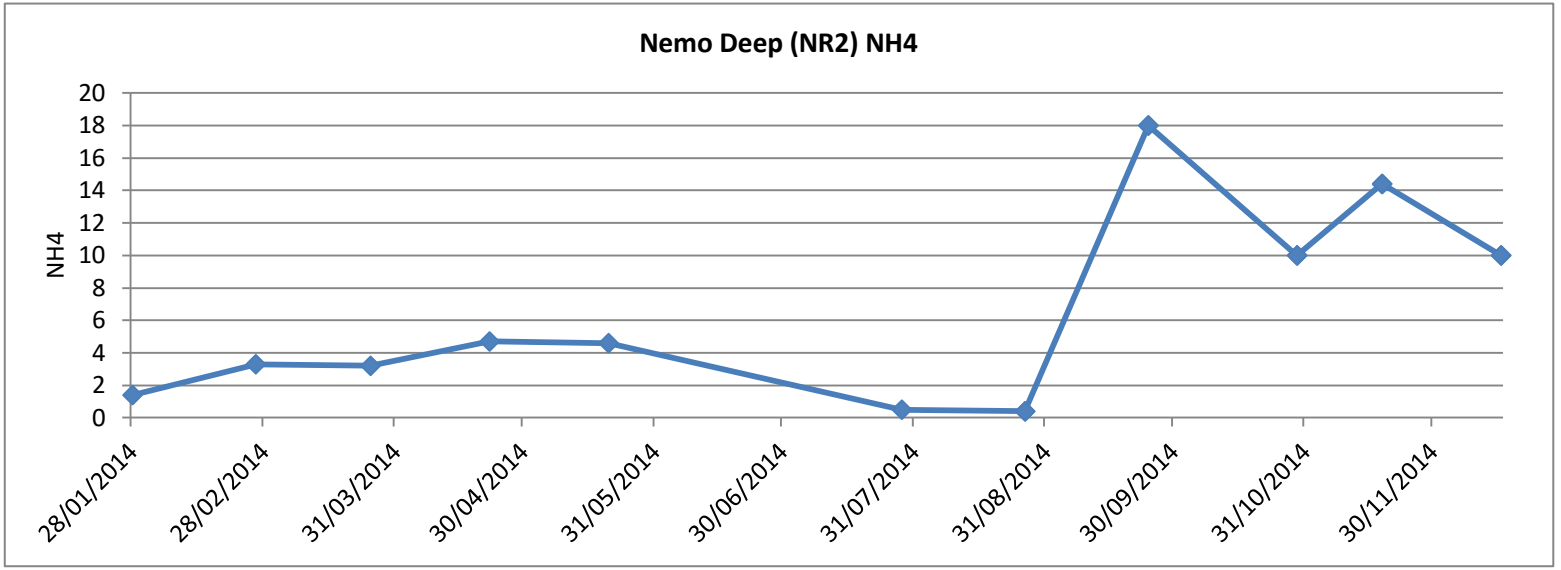
All parameter data in mg/l unless stated otherwise

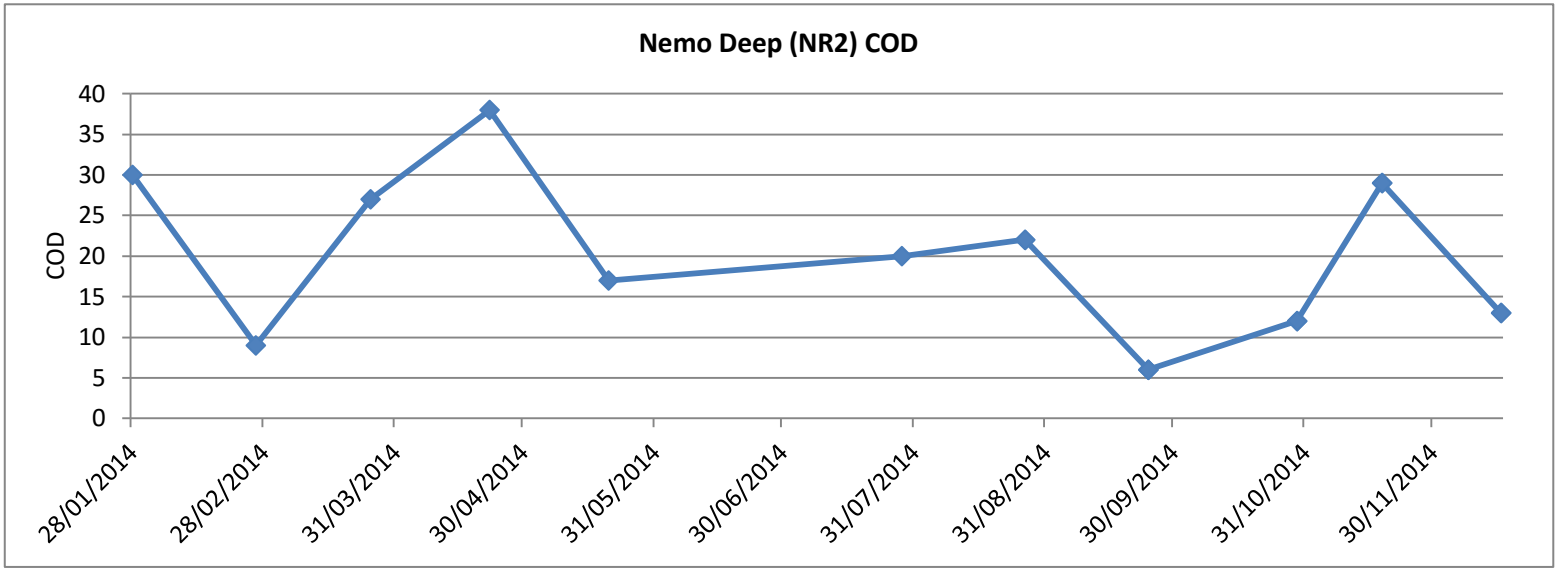
Nemo Deep (NR2) 2014

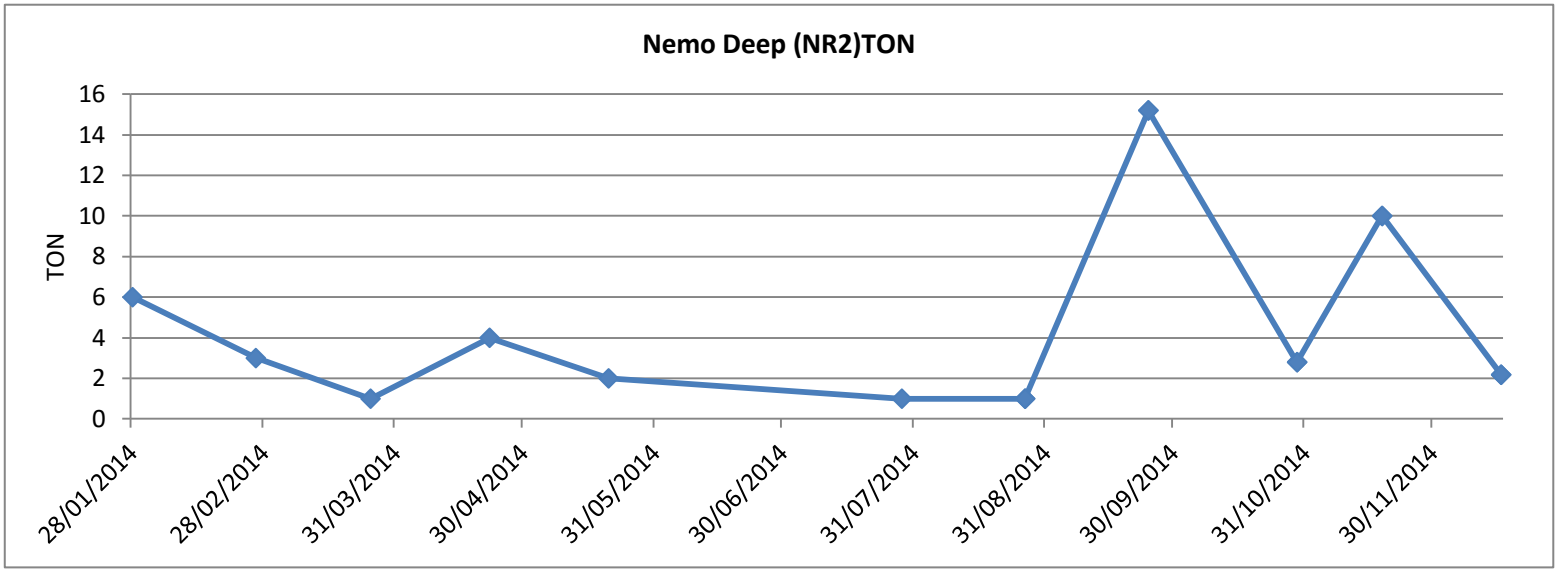
Date	Temp *C	pH	Conductivity µS/cm	NH4	Ammonia (as N)	Chloride	Oxygen	COD	TON	TOC	S. Solids	Well Depth (m)	Depth to Water (m)	Water Height in Well (m)
28/01/2014	12.4	7.42	352	1.4	1.09	27	5.81	30	6	9	45.2	16.8	0.56	16.24
26/02/2014	15.6	7.43	372	3.3	2.57	34	4.45	9	3	4	41.6	16.8	0.52	16.28
25/03/2014	12.5	7.41	374	3.2	2.49	28	8.1	27	1	3	52	16.8	0.62	16.18
22/04/2014	13.1	7.39	494	4.7	3.66	35	4.49	38	4	4	53.6	16.8	0.94	15.86
20/05/2014	13.5	7.37	382	4.6	3.58	24	1.93	17	2	2	11	16.8	1.02	15.78
28/07/2014	13.1	7.28	390	0.5	0.39	27	2.7	20	1	4	21	16.8	1	15.8
26/08/2014	16	7.44	395	0.4	0.31	27	2.29	22	1	1	21	16.8	1.1	15.7
24/09/2014	13.8	7.35	840	18	14.00	163	1.97	6	15.2	2.3	6	16.8	1.37	15.43
29/10/2014	12.9	7.37	685	10	7.78	88	2.3	12	2.8	2	10	16.8	1.06	15.74
18/11/2014	13.6	7.51	768	14.4	11.20	139	2.81	29	10	8.8	8.8	16.8	1.1	15.7
16/12/2014	12.8	7.44	675	10	7.78	116	1.7	13	2.18	3	70	16.8	1.32	15.48
26/08/2014	16	7.44	395	0.4	0.31	27	2.29	22	1	1	21	16.8	1.1	15.7
24/09/2014	13.8	7.35	840	18	14.00	163	1.97	6	15.2	2.3	6	16.8	1.37	15.43
29/10/2014	12.9	7.37	685	10	7.78	88	2.3	12	2.8	2	10	16.8	1.06	15.74
18/11/2014	13.6	7.51	768	14.4	11.20	139	2.81	29	10	8.8	8.8	16.8	1.1	15.7
16/12/2014	12.8	7.44	675	10	7.78	116	1.7	13	2.18	3	70	16.8	1.32	15.48

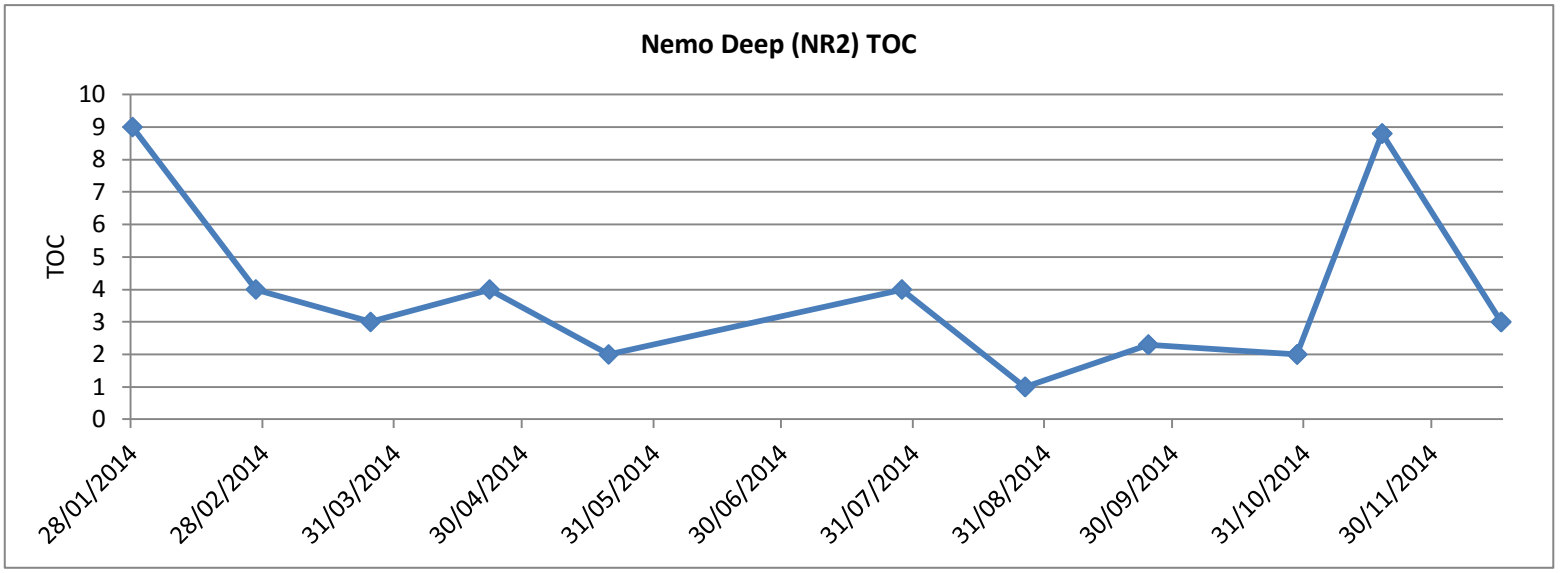

Nemo Deep(NR2) pH
pH
7.55
7.5
7.45
7.4
7.35
7.3
7.25
7.2
7.15
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

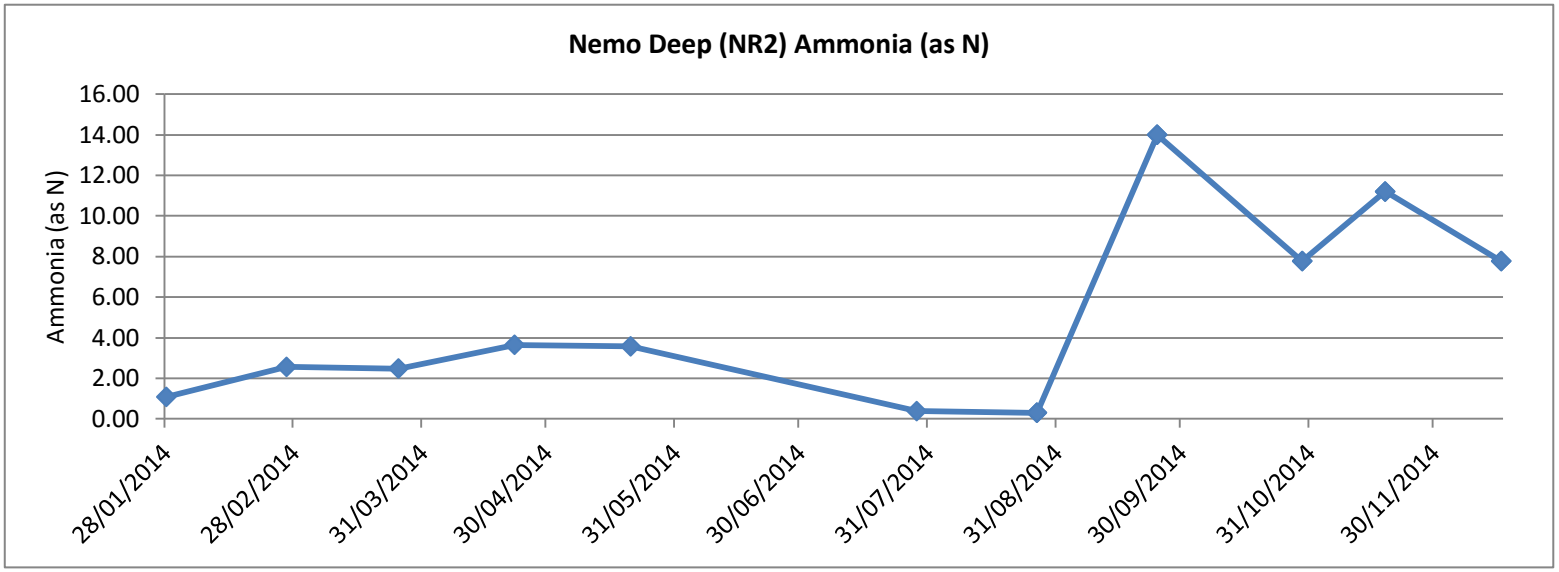

Nemo Deep (NR2) Conductivity µS/cm
µS/cm
900
800
700
600
500
400
300
200
100
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

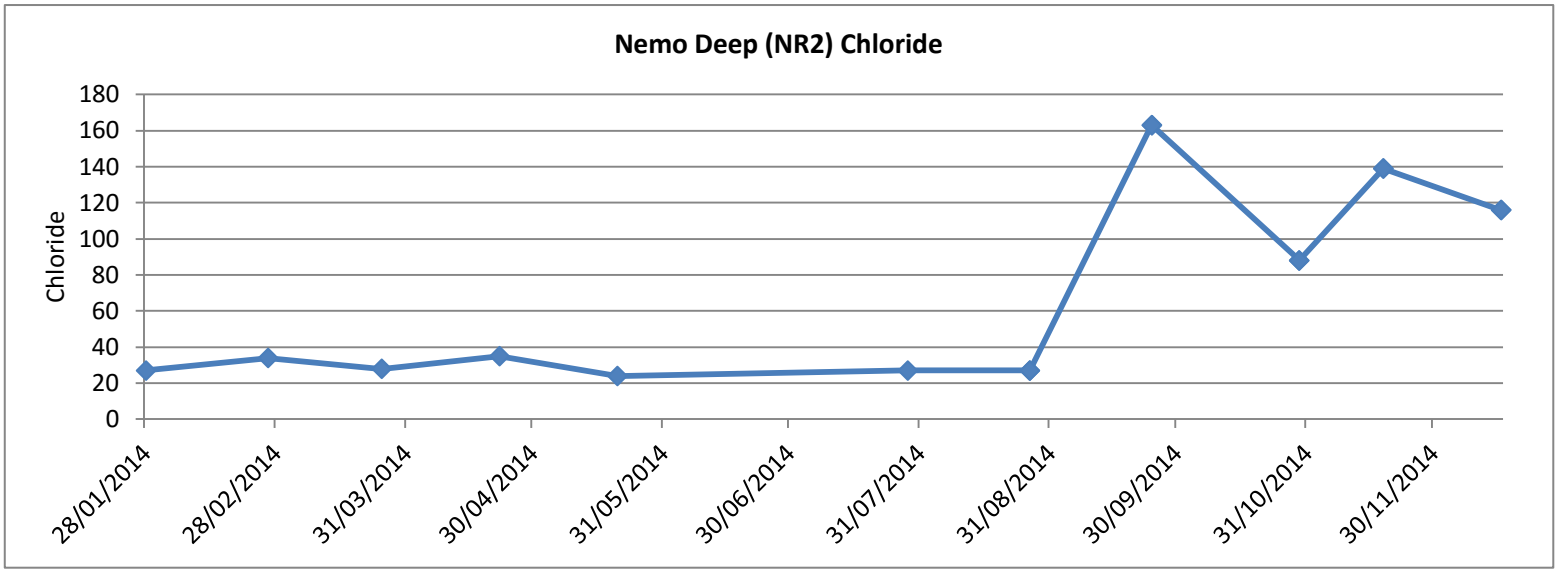

Nemo Deep (NR2) NH4
NH4
20
18
16
14
12
10
8
6
4
2
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

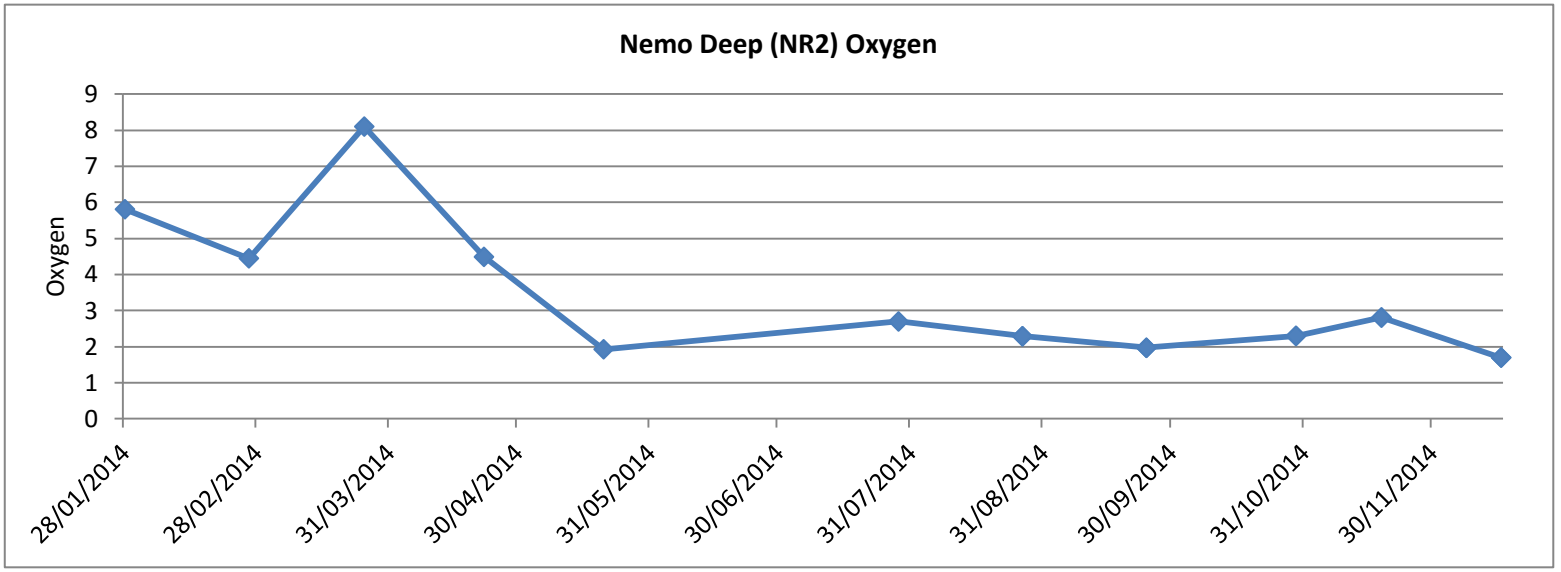

Nemo Deep (NR2) COD
COD
40
35
30
25
20
15
10
5
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

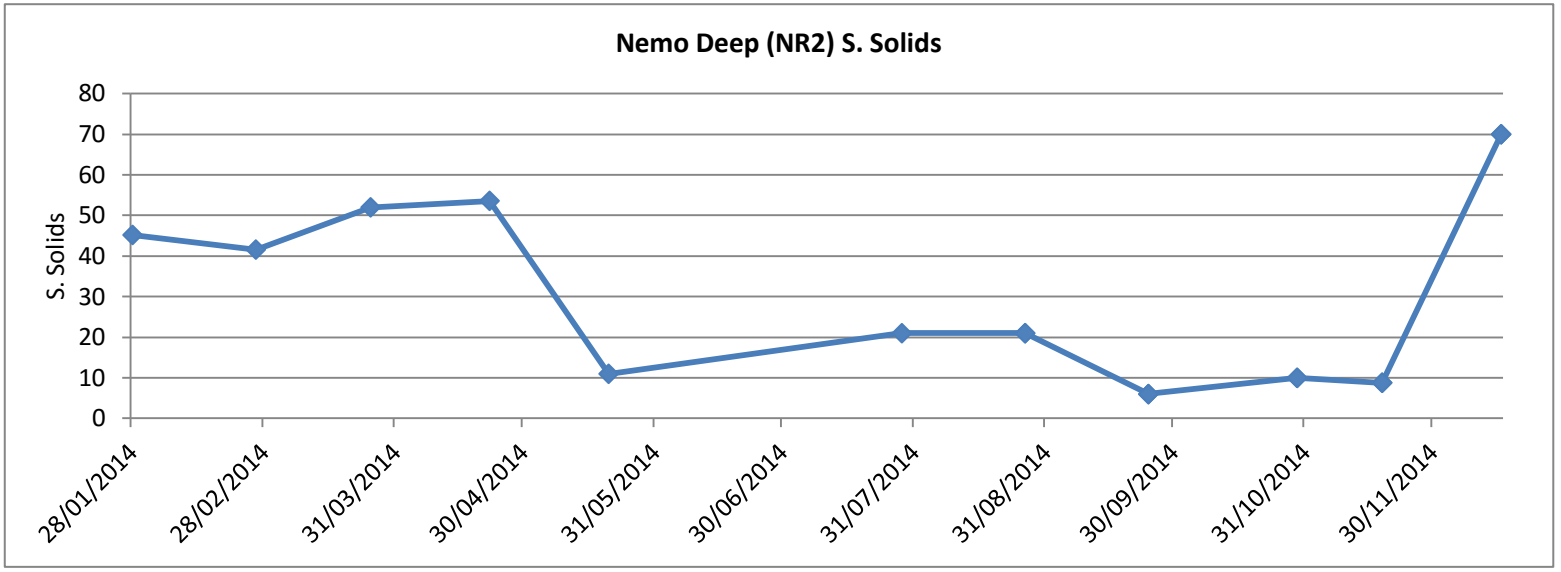

Nemo Deep (NR2)TON
TON
16
14
12
10
8
6
4
2
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Nemo Deep (NR2) TOC
TOC
10
9
8
7
6
5
4
3
2
1
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014


Nemo Deep (NR2) Ammonia (as N)
Ammonia (as N)
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

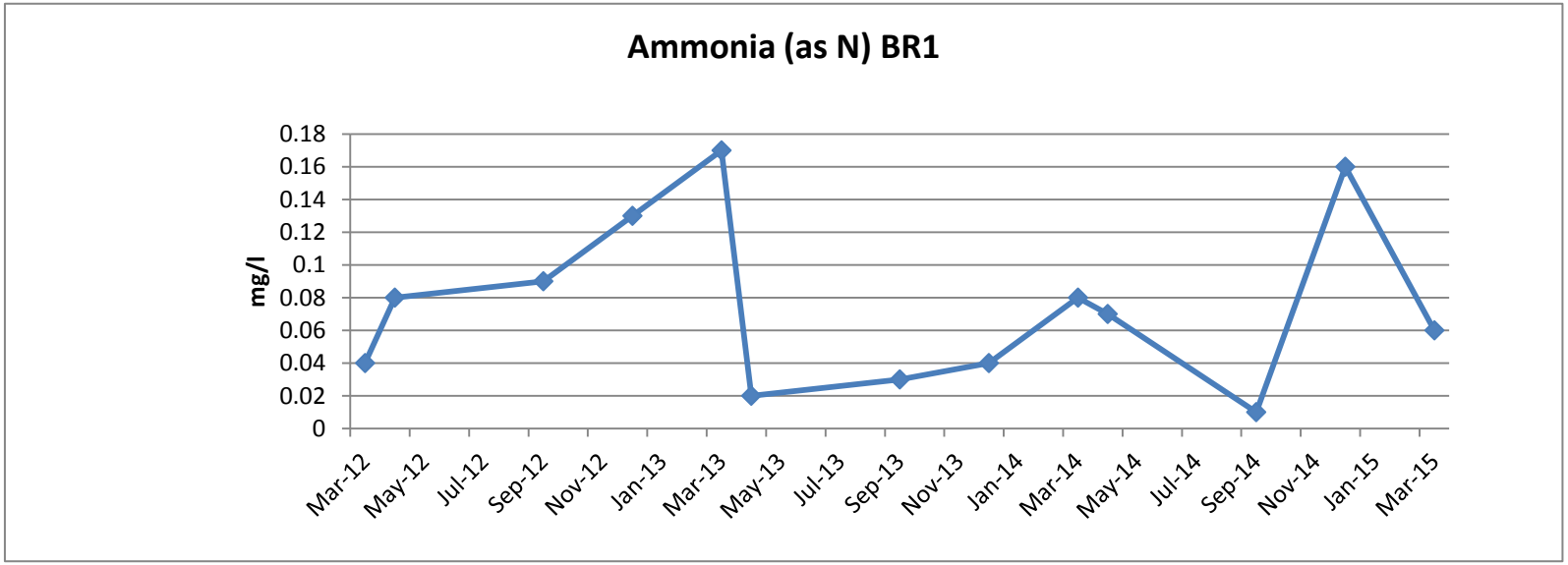

Nemo Deep (NR2) Chloride
Chloride
180
160
140
120
100
80
60
40
20
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

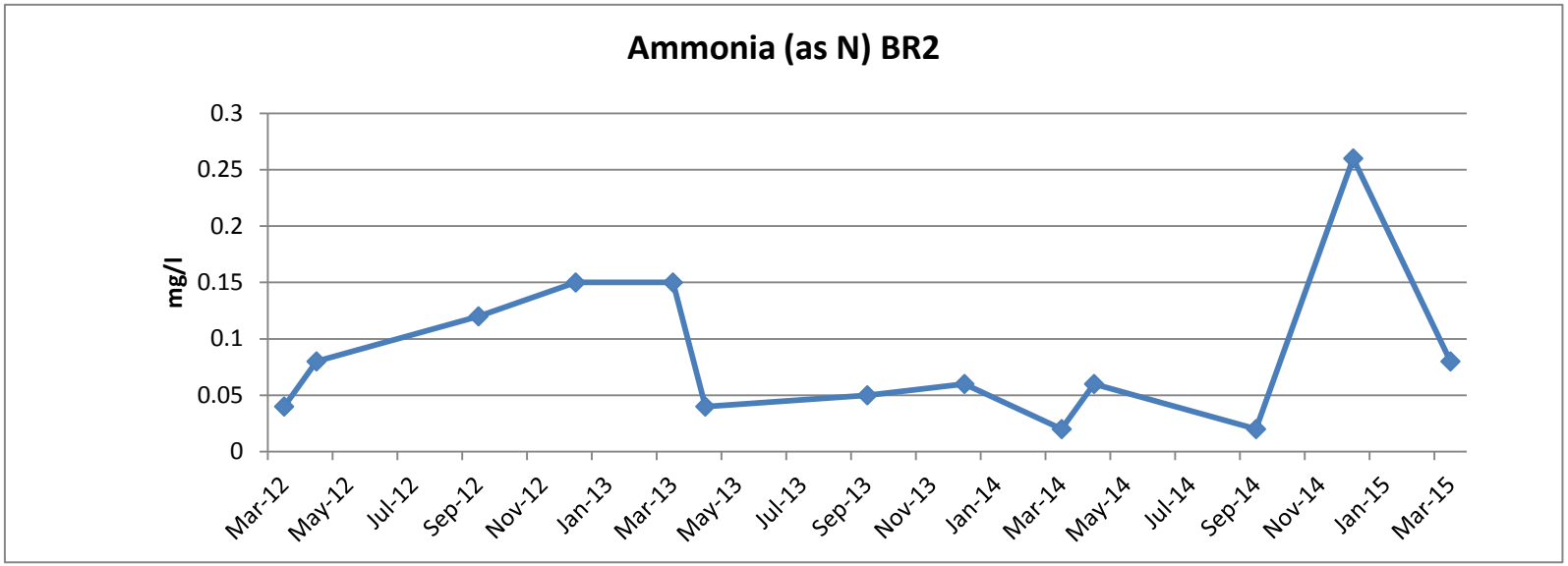

Nemo Deep (NR2) Oxygen
Oxygen
9
8
7
6
5
4
3
2
1
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

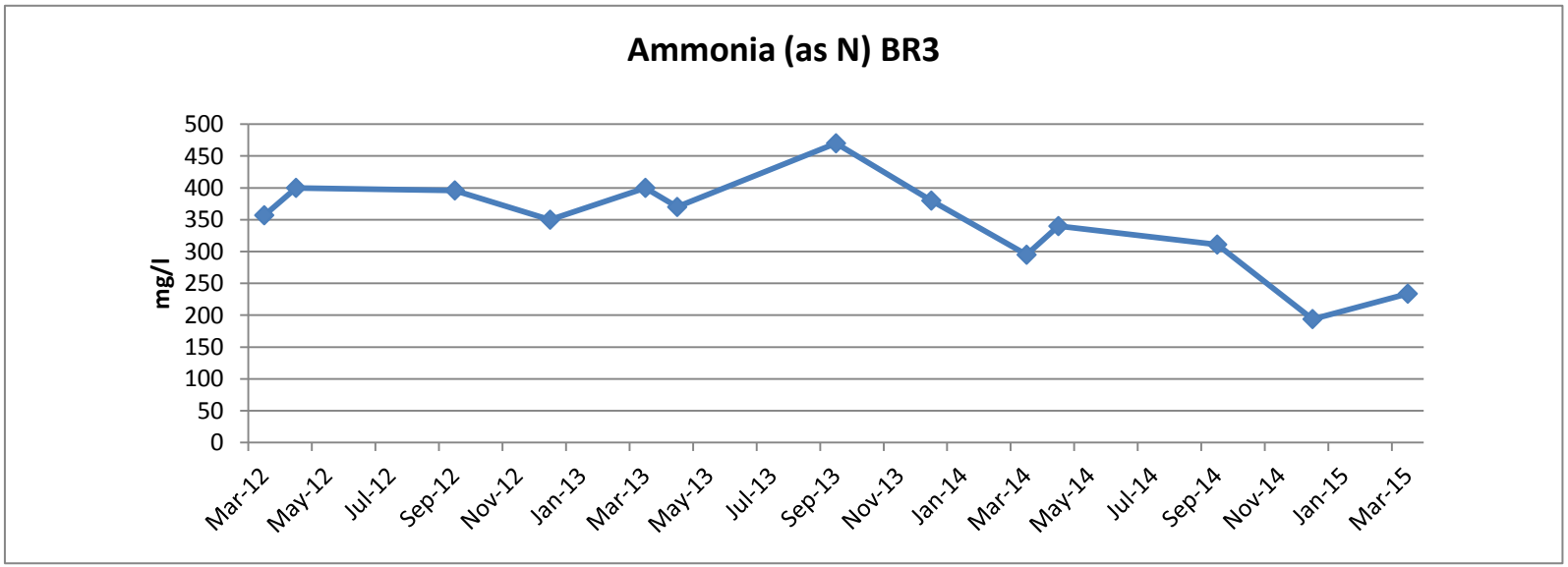

Nemo Deep (NR2) S. Solids
S. Solids
80
70
60
50
40
30
20
10
0
28/01/2014
28/02/2014
31/03/2014
30/04/2014
31/05/2014
30/06/2014
31/07/2014
31/08/2014
30/09/2014
31/10/2014
30/11/2014

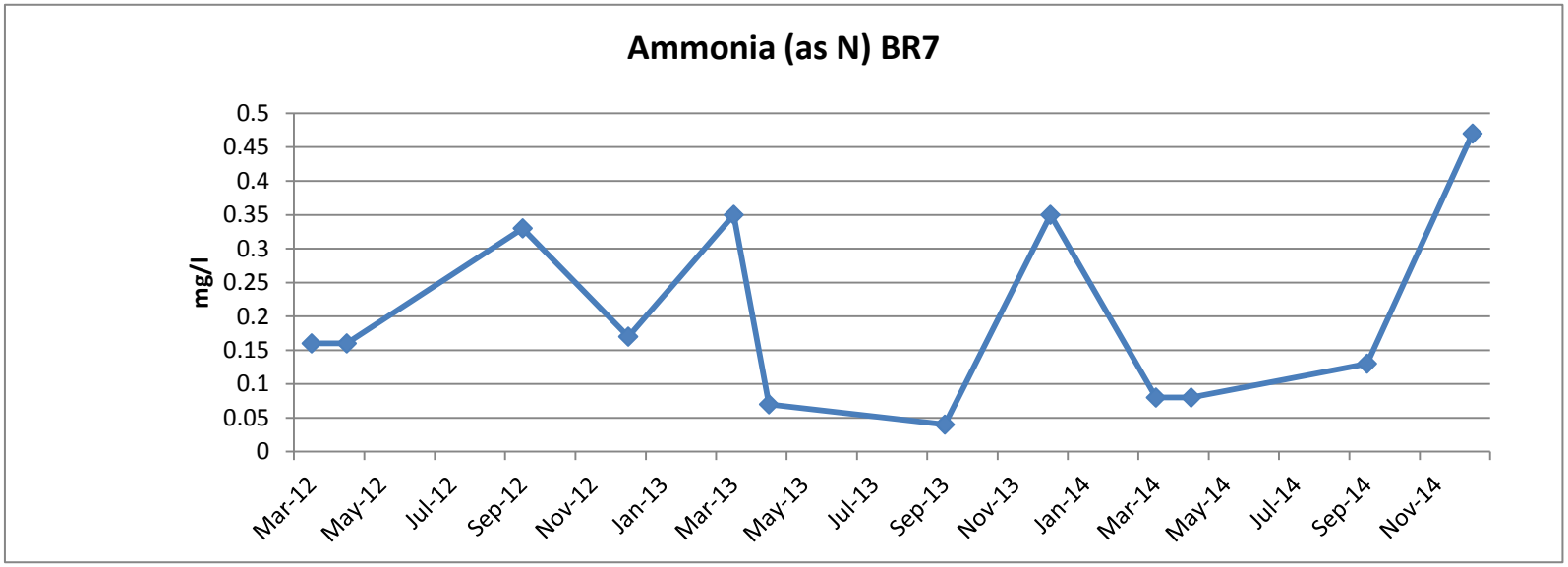
Bedrock Wells

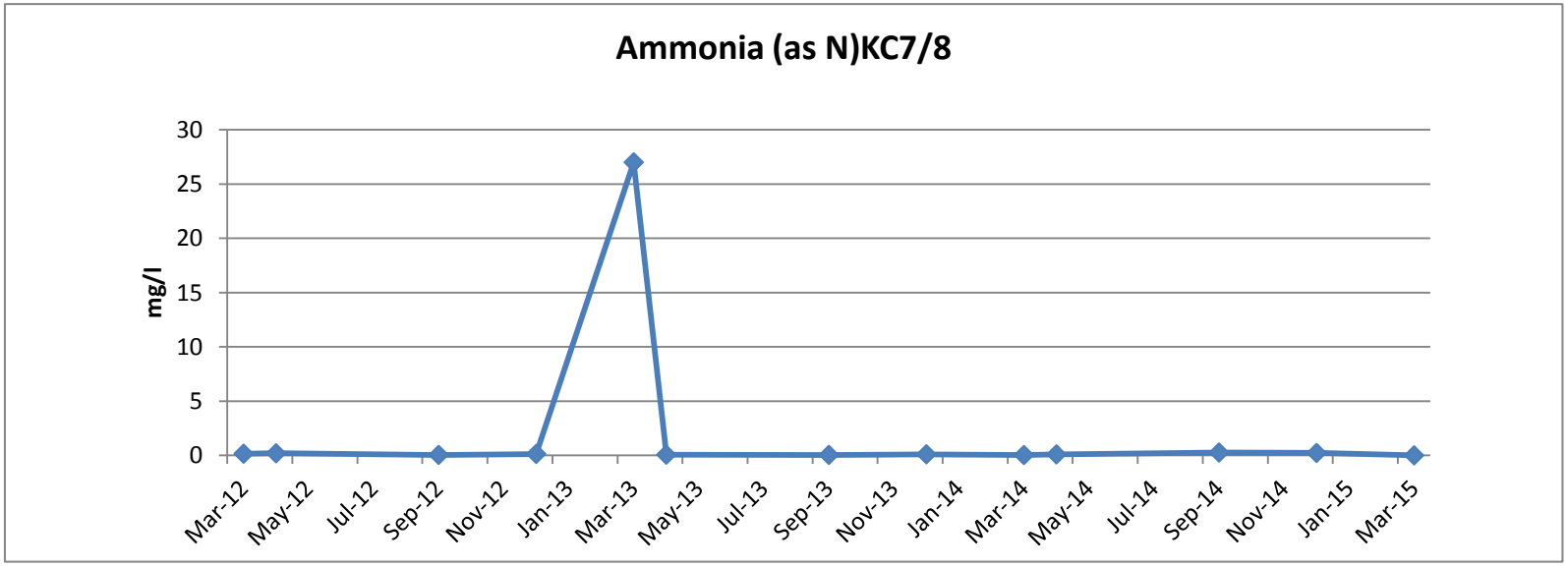
Ammonia (N) (mg/l)					
Date	BR1	BR2	BR3	BR7	KC7/8
Mar-12	0.04	0.04	357	0.16	0.16
Apr-12	0.08	0.08	400	0.16	0.2
Sep-12	0.09	0.12	396	0.33	0.05
Dec-12	0.13	0.15	350	0.17	0.14
Mar-13	0.17	0.15	400	0.35	27
Apr-13	0.02	0.04	370	0.07	0.07
Sep-13	0.03	0.05	470	0.04	0.05
Dec-13	0.04	0.06	380	0.35	0.11
Mar-14	0.08	0.02	295	0.08	0.04
Apr-14	0.07	0.06	340	0.08	0.1
Sep-14	0.01	0.02	311	0.13	0.27
Dec-14	0.16	0.26	194	0.47	0.23
Mar-15	0.06	0.08	233.8	0.02	0.01




Ammonia (as N) BR2
mg/l
0.3
0.25
0.2
0.15
0.1
0.05
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

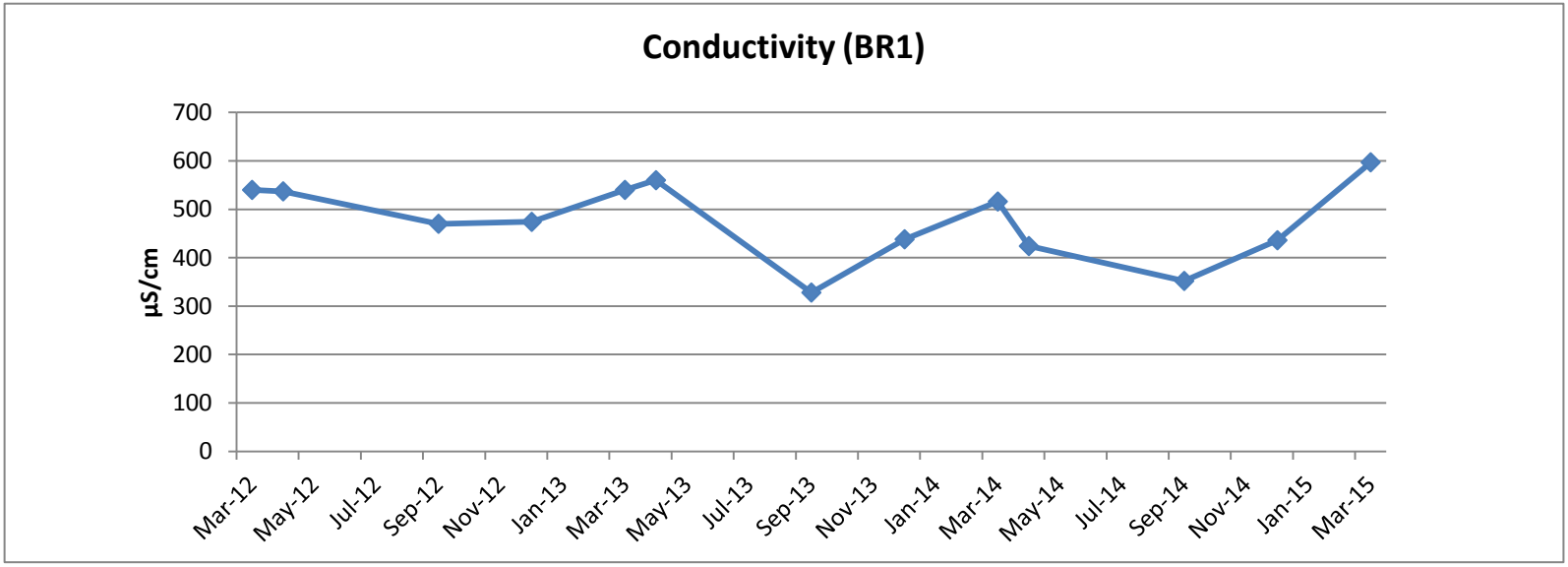

Ammonia (as N) BR3
mg/l
500
450
400
350
300
250
200
150
100
50
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

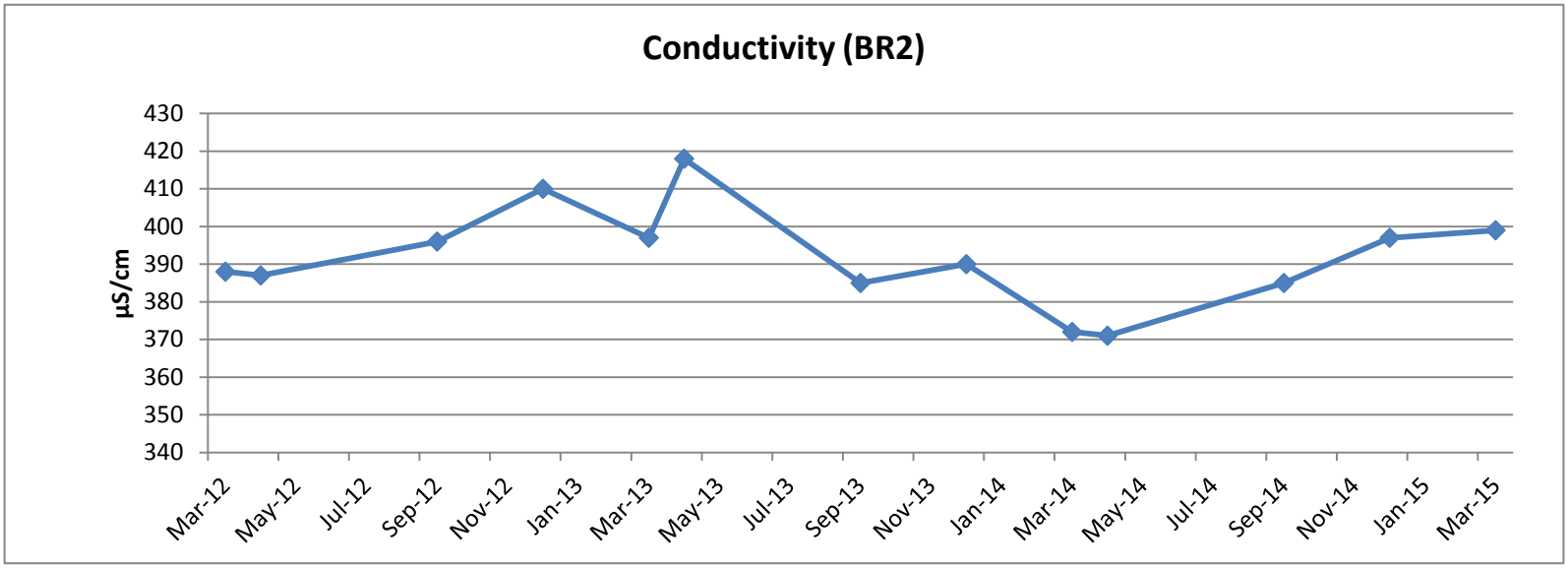

Ammonia (as N) BR7
mg/l
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

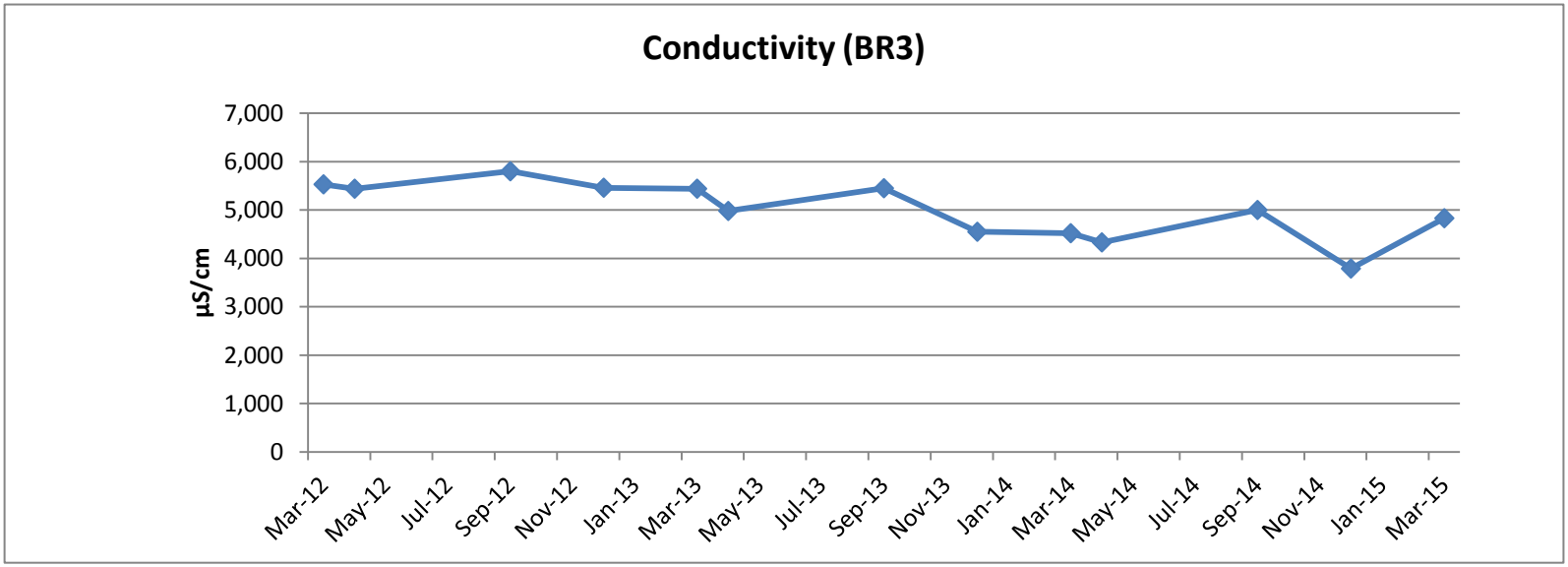

Ammonia (as N)KC7/8
mg/l
30
25
20
15
10
5
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

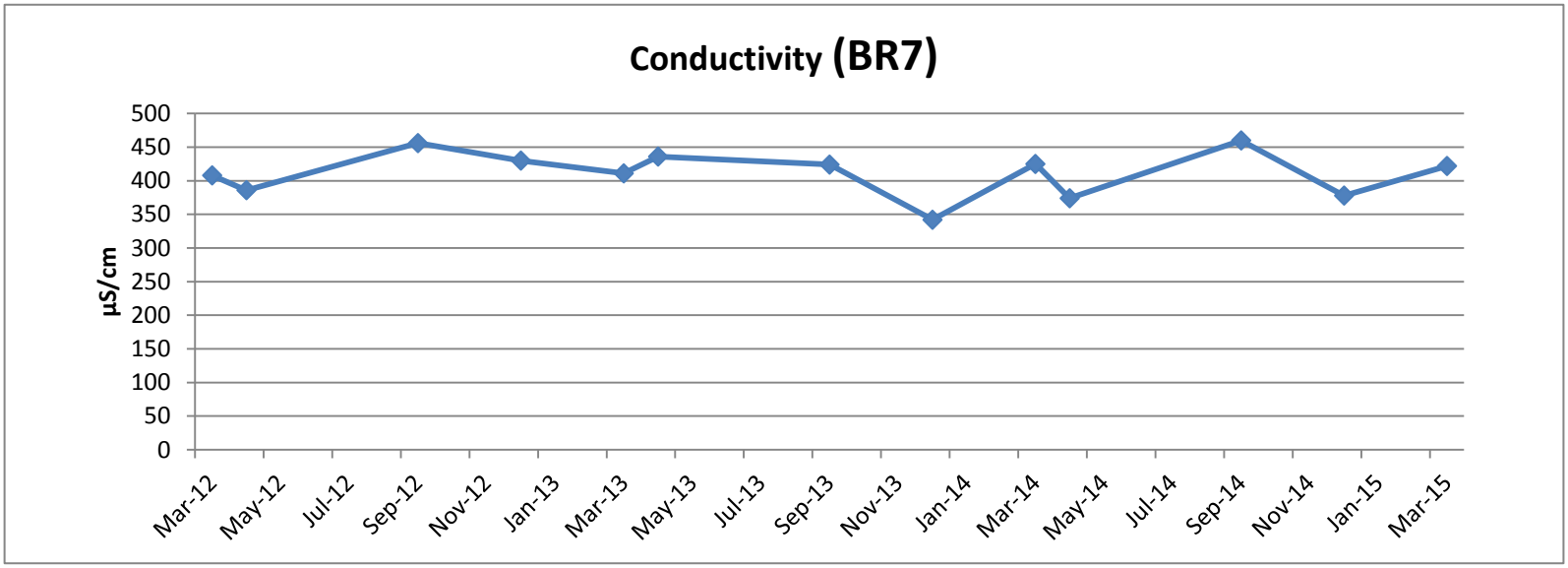
Bedrock Wells

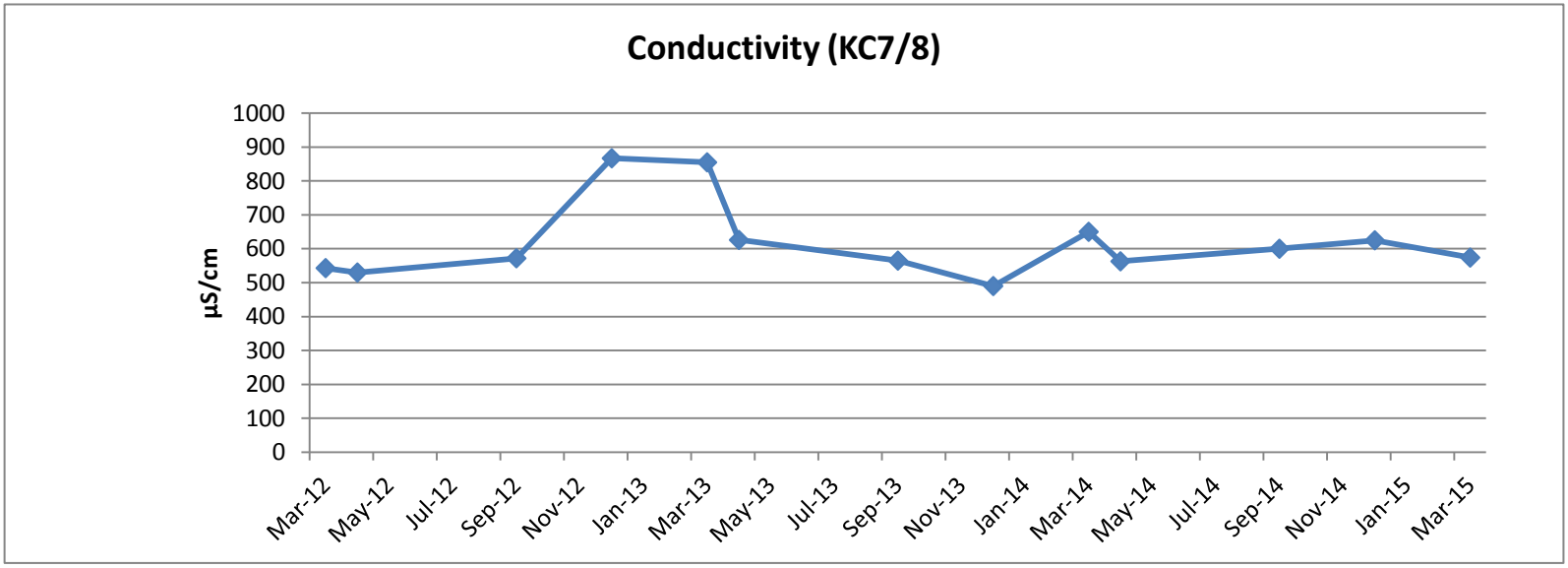
Conductivity (µS/cm)					
Date	BR1	BR2	BR3	BR7	KC7/8
Mar-12	540	388	5,530	408	543
Apr-12	537	387	5,440	386	530
Sep-12	470	396	5,800	456	572
Dec-12	474	410	5,460	430	867
Mar-13	540	397	5,440	411	855
Apr-13	560	418	4,980	436	626
Sep-13	328	385	5,450	424	565
Dec-13	438	390	4,550	342	490
Mar-14	516	372	4,520	425	650
Apr-14	424	371	4,331	374	563
Sep-14	352	385	5,000	460	600
Dec-14	436	397	3,790	378	625
Mar-15	597	399	4,830	422	574




Conductivity (BR2)
µS/cm
430
420
410
400
390
380
370
360
350
340
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

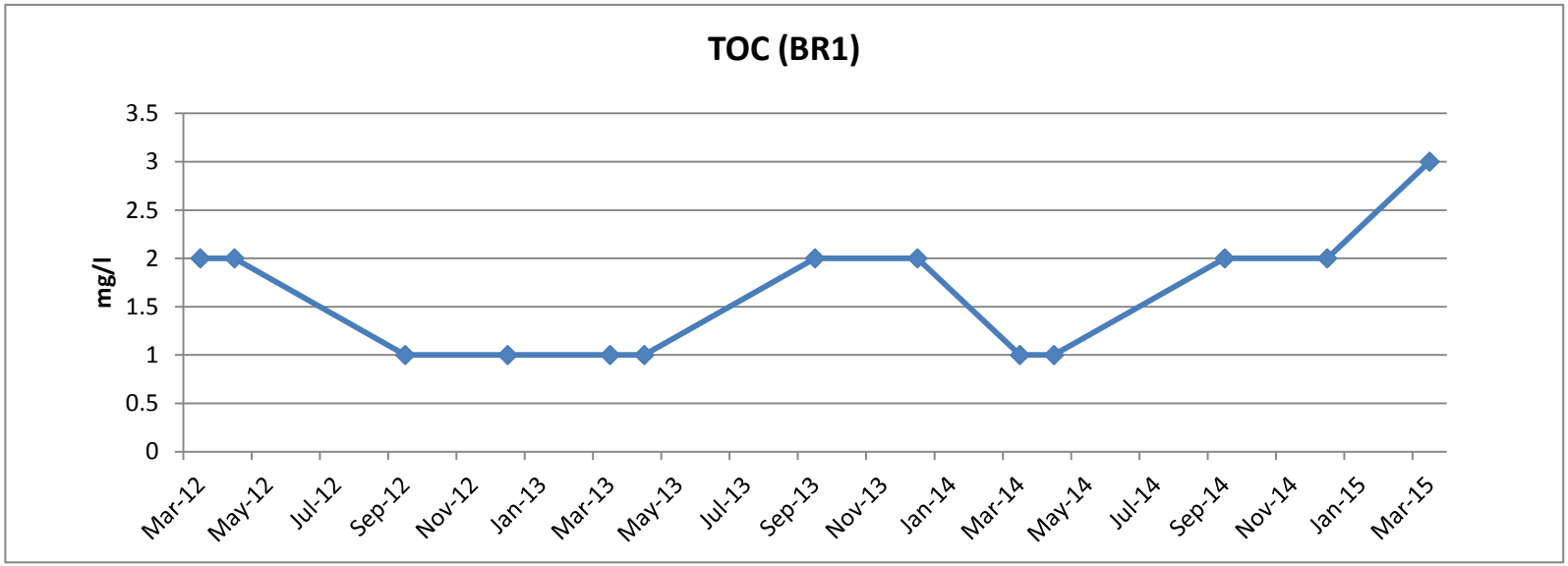

Conductivity (BR3)
µS/cm
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

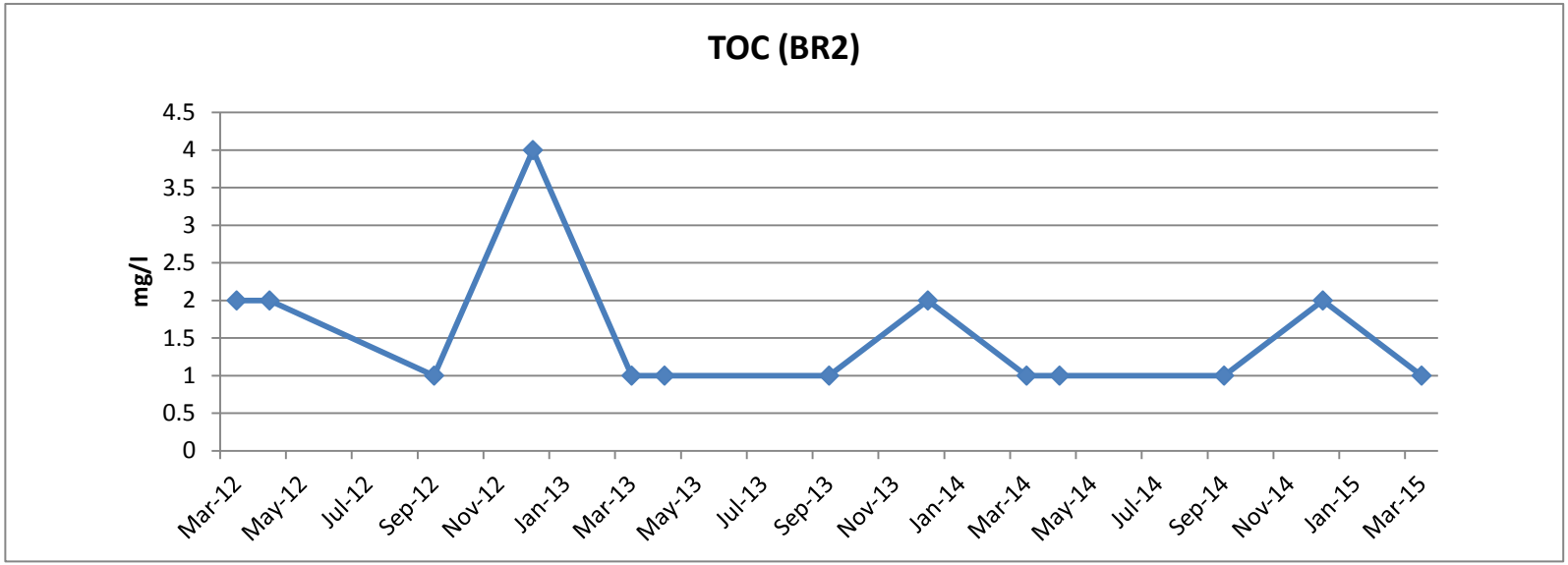

Conductivity (BR7)
µS/cm
500
450
400
350
300
250
200
150
100
50
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

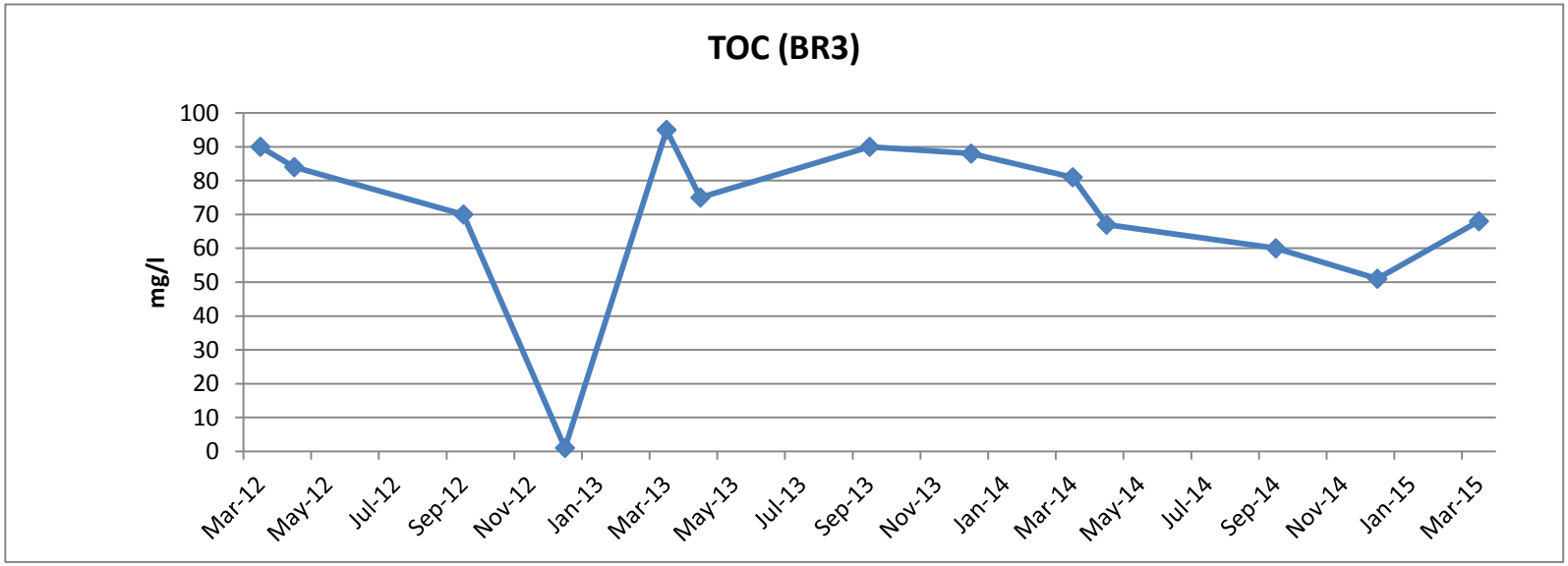

Conductivity (KC7/8)
µS/cm
1000
900
800
700
600
500
400
300
200
100
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

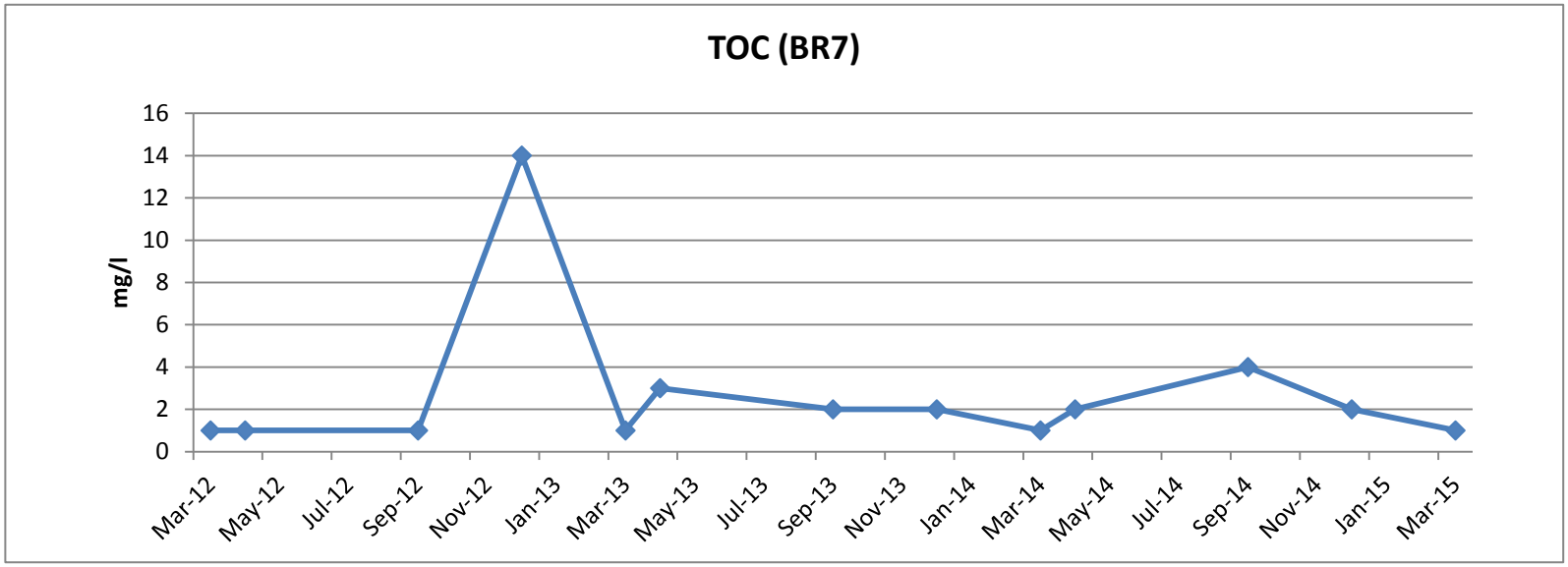
Bedrock Wells

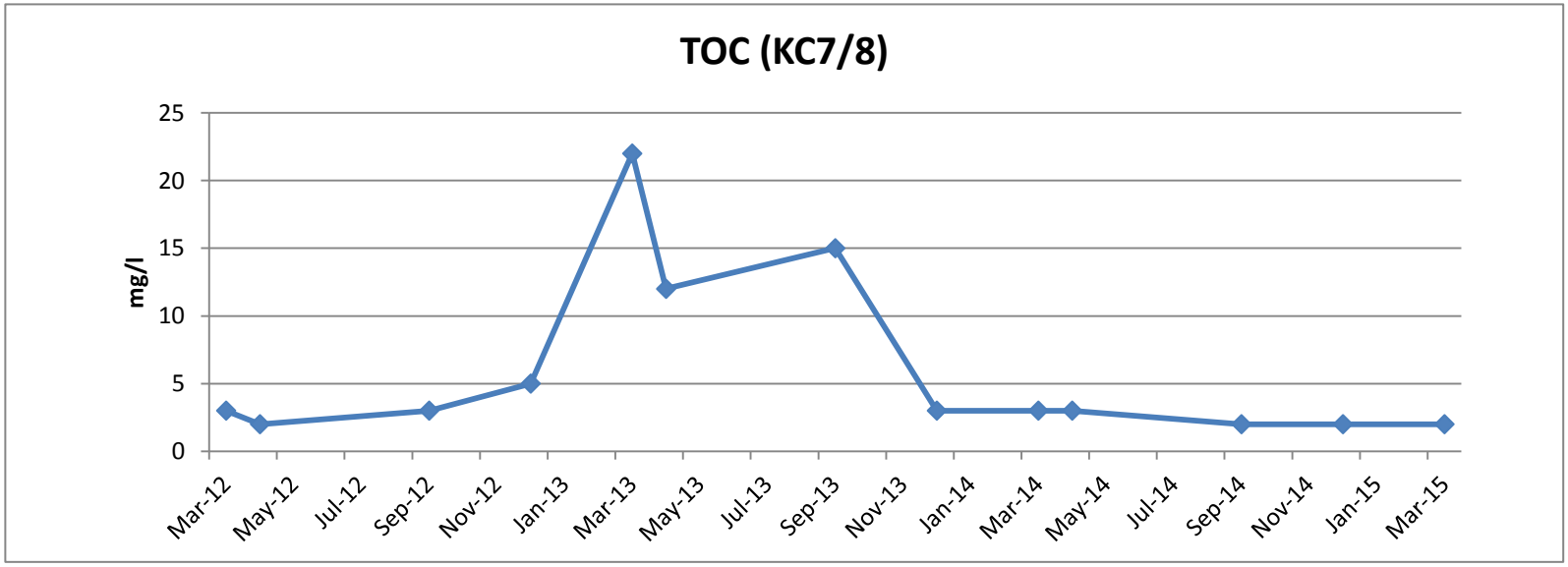
TOC (mg/l)					
Date	BR1	BR2	BR3	BR7	KC7/8
Mar-12	2	2	90	1	3
Apr-12	2	2	84	1	2
Sep-12	1	1	70	1	3
Dec-12	1	4	1	14	5
Mar-13	1	1	95	1	22
Apr-13	1	1	75	3	12
Sep-13	2	1	90	2	15
Dec-13	2	2	88	2	3
Mar-14	1	1	81	1	3
Apr-14	1	1	67	2	3
Sep-14	2	1	60	4	2
Dec-14	2	2	51	2	2
Mar-15	3	1	68	1	2




TOC (BR2)
mg/l
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

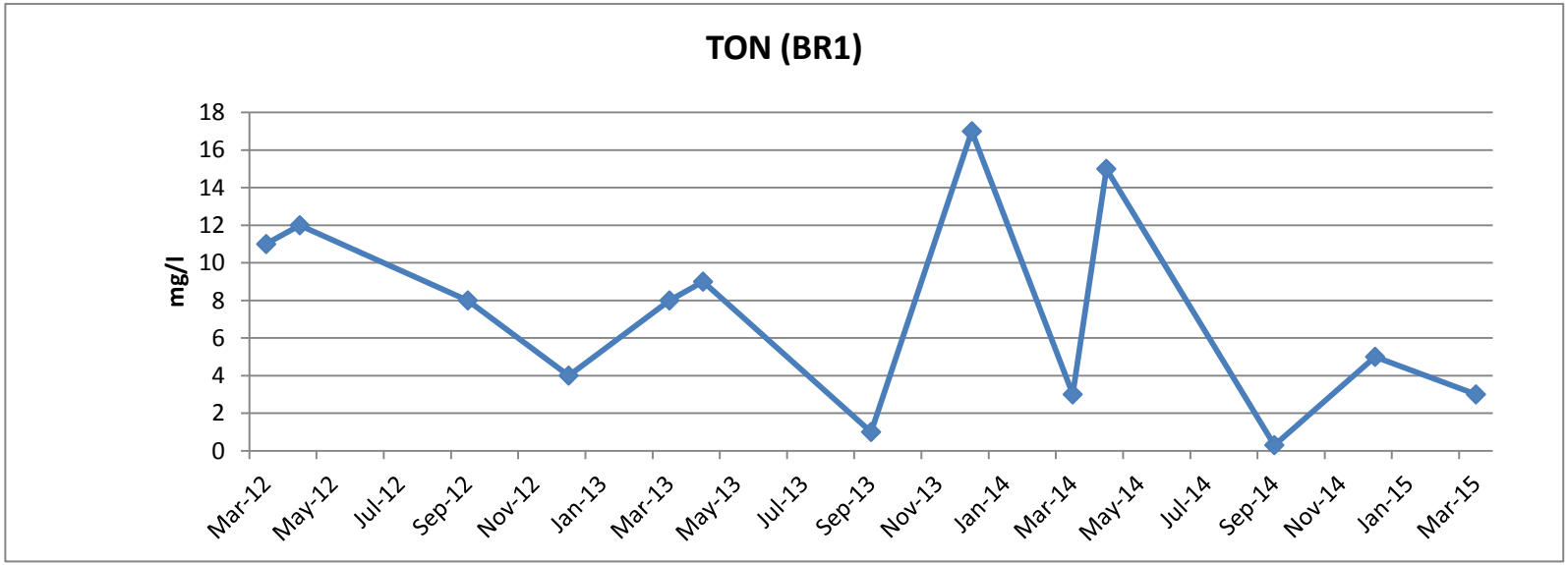

TOC (BR3)
mg/l
100
90
80
70
60
50
40
30
20
10
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

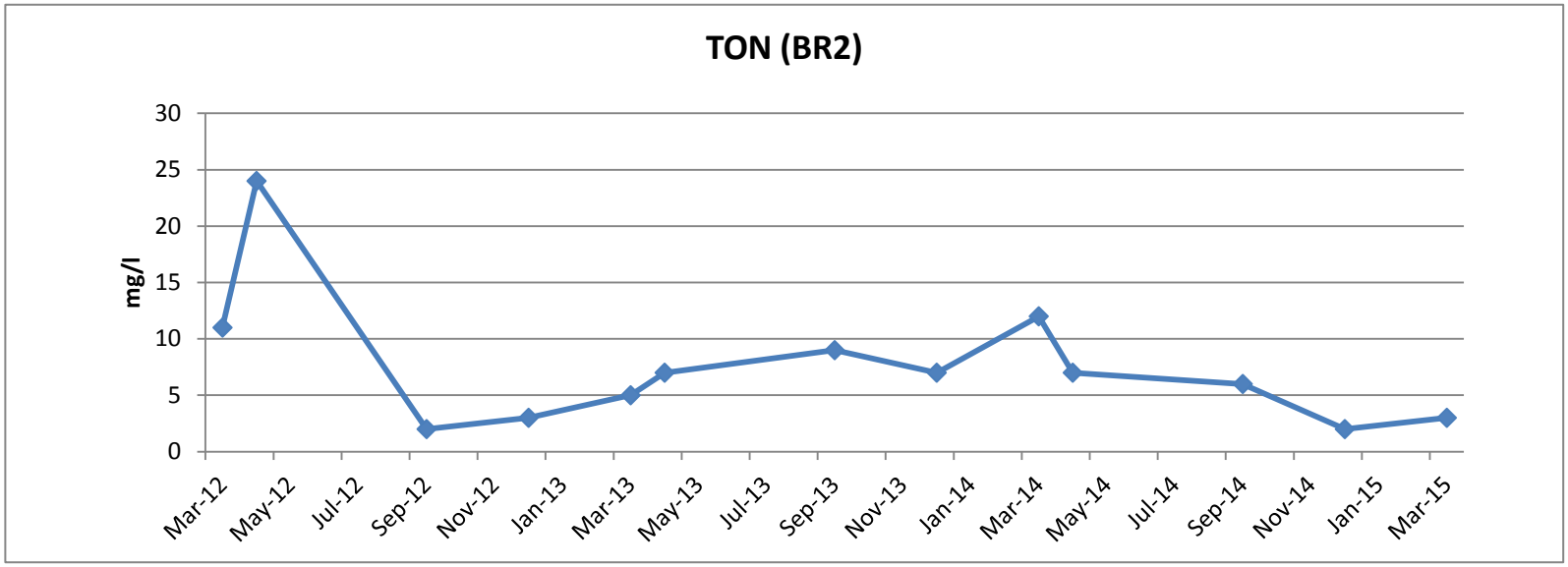

TOC (BR7)
mg/l
16
14
12
10
8
6
4
2
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

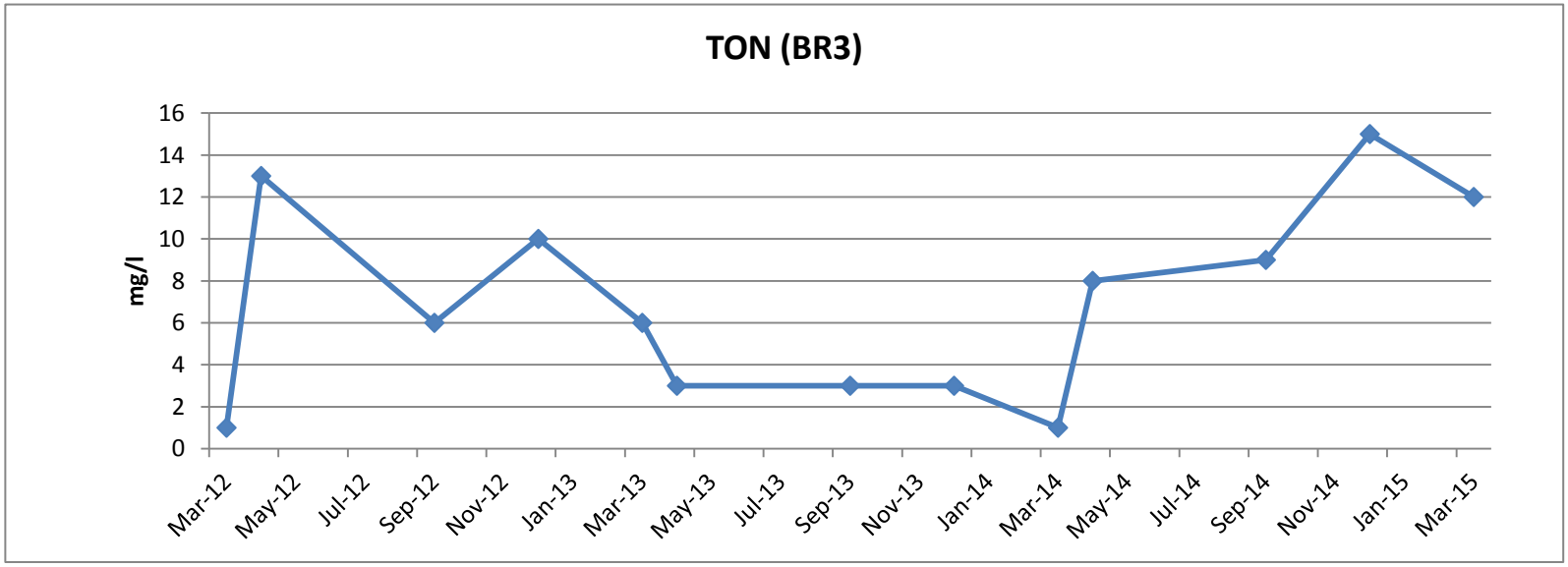

TOC (KC7/8)
mg/l
25
20
15
10
5
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

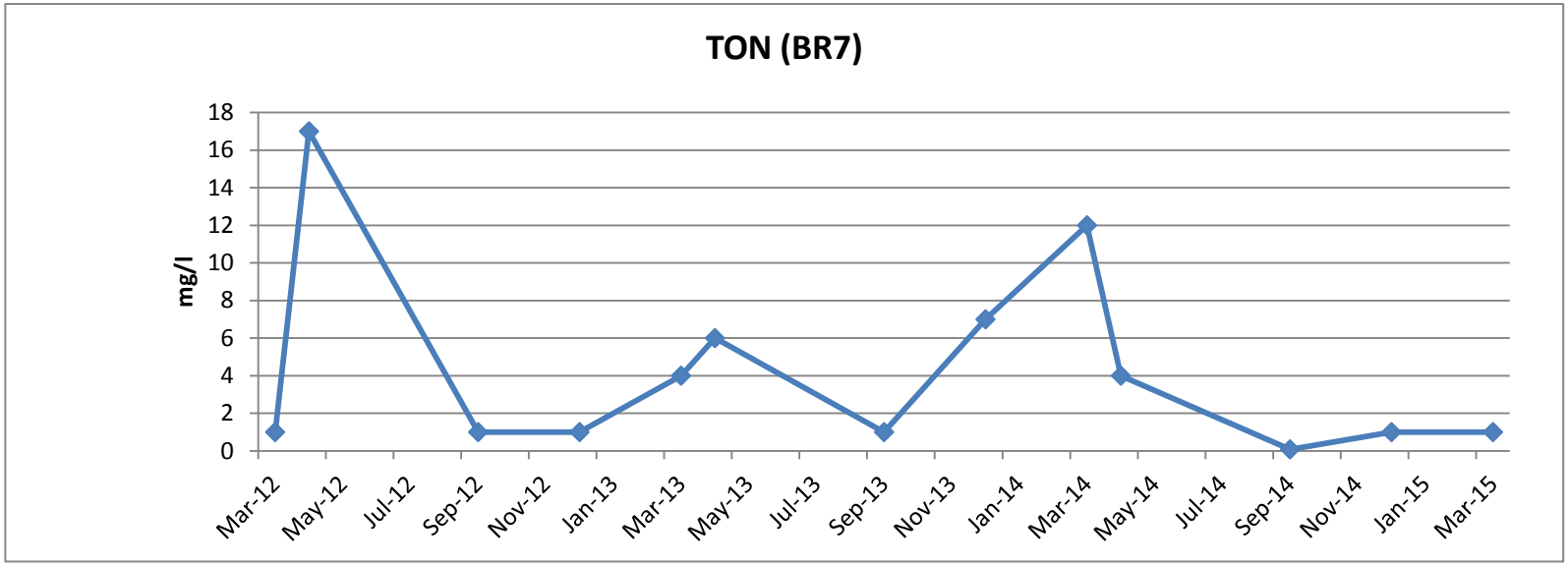
Bedrock Wells

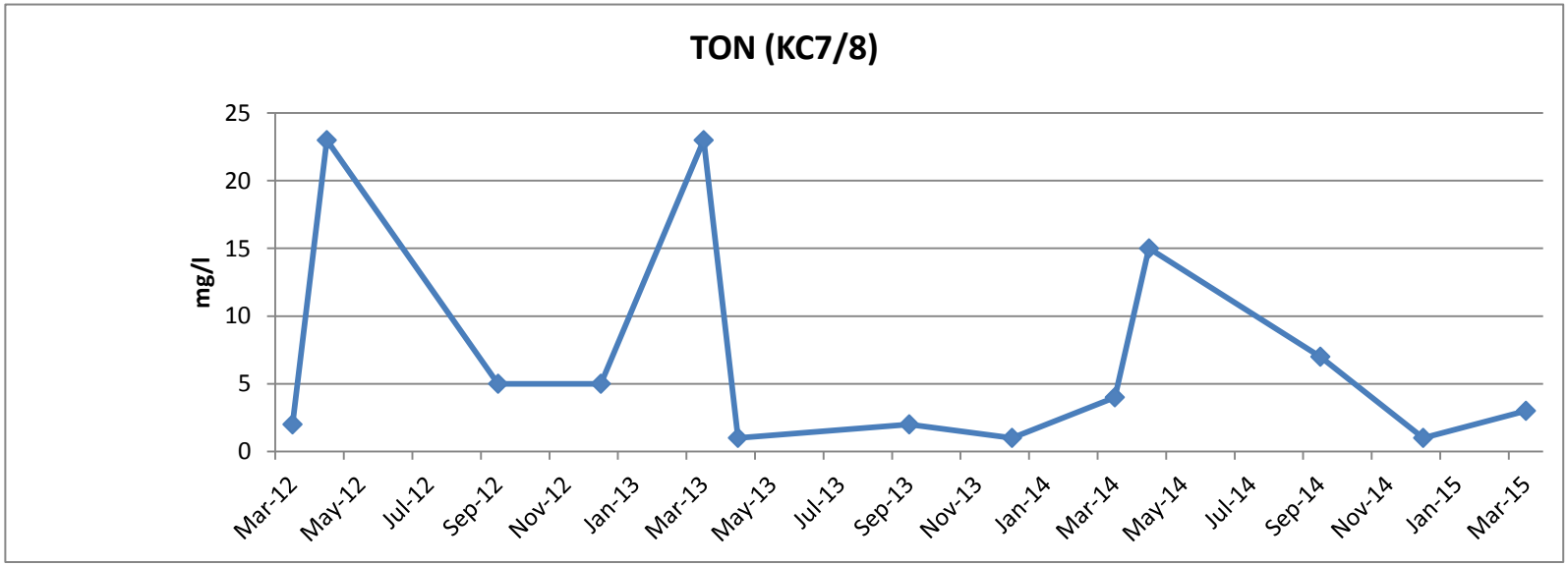
TON (mg/l)					
Date	BR1	BR2	BR3	BR7	KC7/8
Mar-12	11	11	1	1	2
Apr-12	12	24	13	17	23
Sep-12	8	2	6	1	5
Dec-12	4	3	10	1	5
Mar-13	8	5	6	4	23
Apr-13	9	7	3	6	1
Sep-13	1	9	3	1	2
Dec-13	17	7	3	7	1
Mar-14	3	12	1	12	4
Apr-14	15	7	8	4	15
Sep-14	0.3	6	9	0.08	7
Dec-14	5	2	15	1	1
Mar-15	3	3	12	1	3




TON (BR2)
mg/l
30
25
20
15
10
5
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

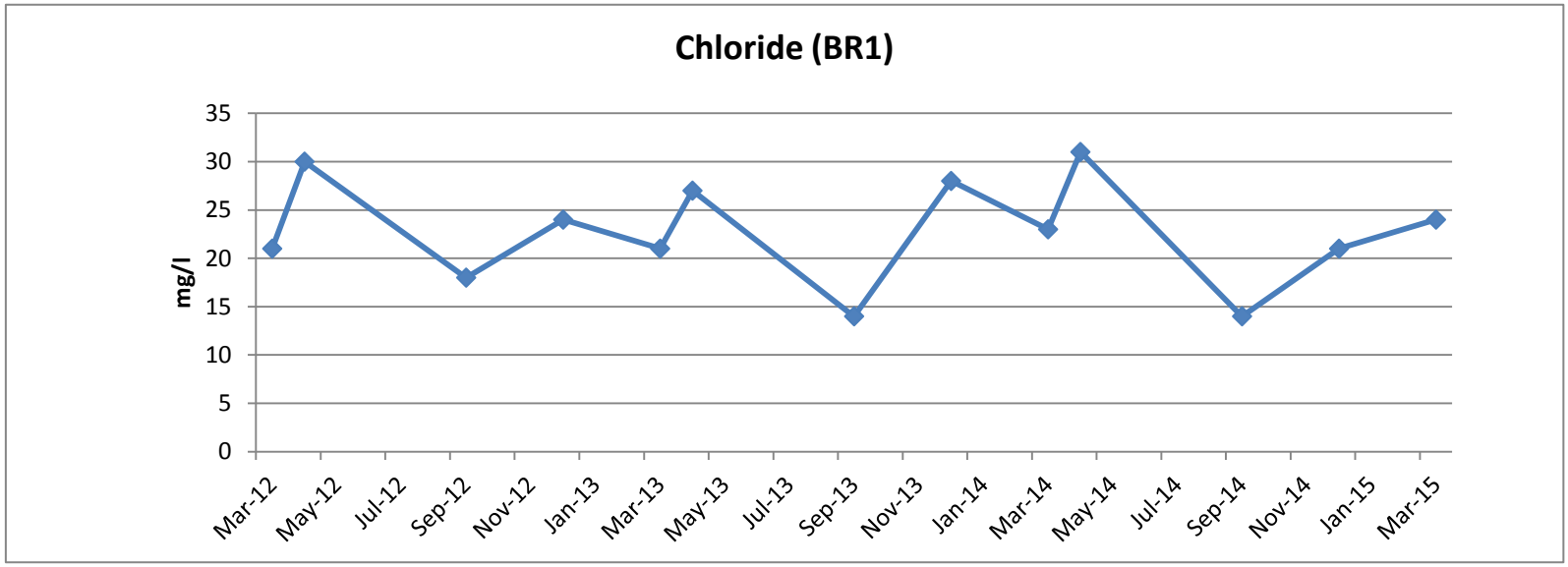

TON (BR3)
mg/l
16
14
12
10
8
6
4
2
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

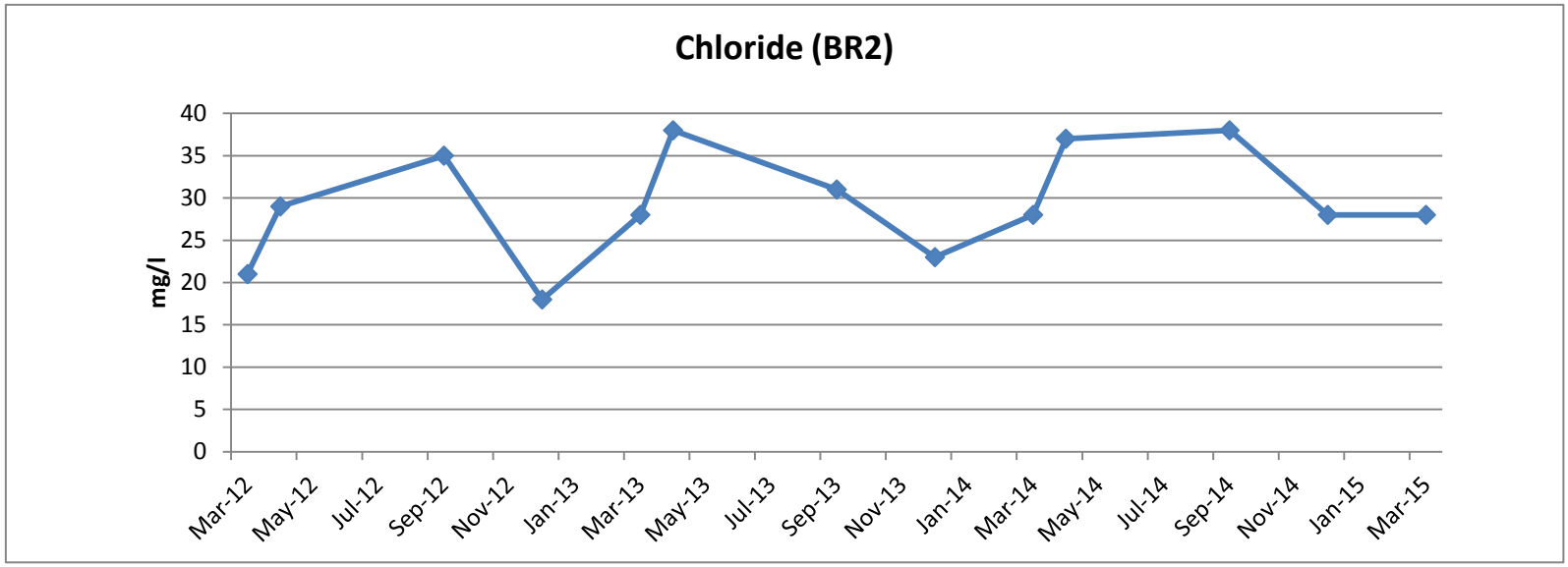

TON (BR7)
mg/l
18
16
14
12
10
8
6
4
2
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

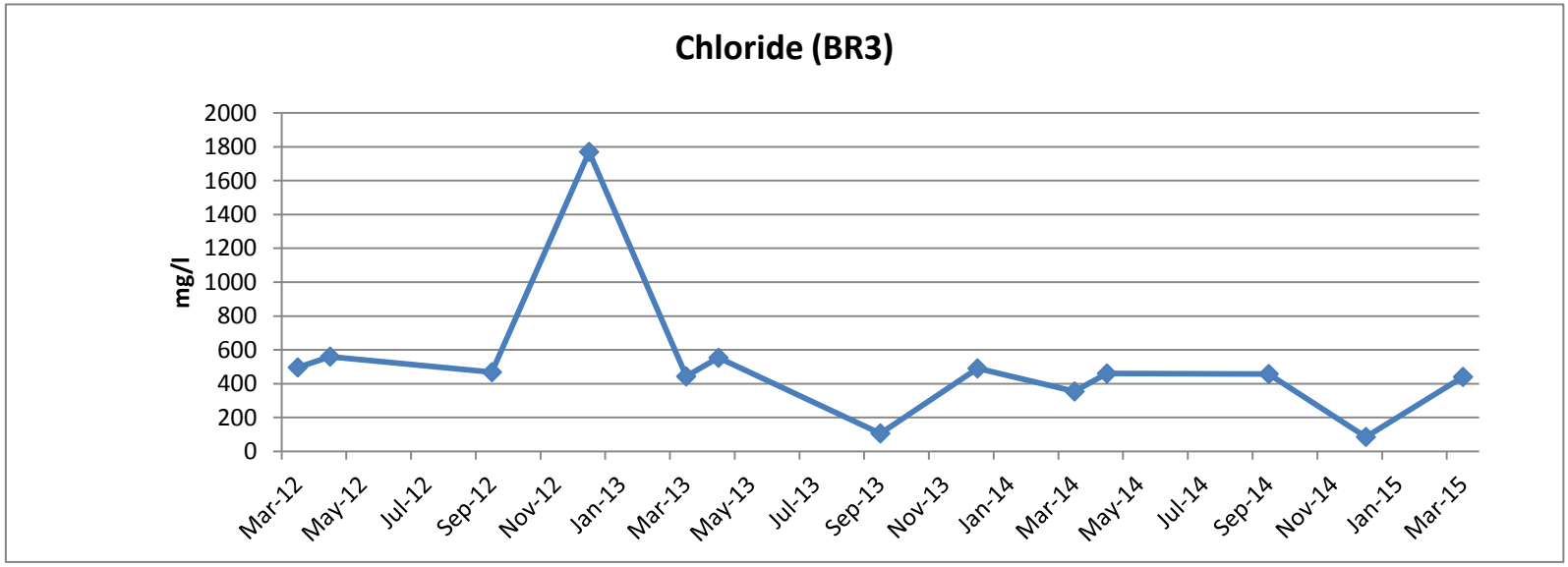

TON (KC7/8)
mg/l
25
20
15
10
5
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

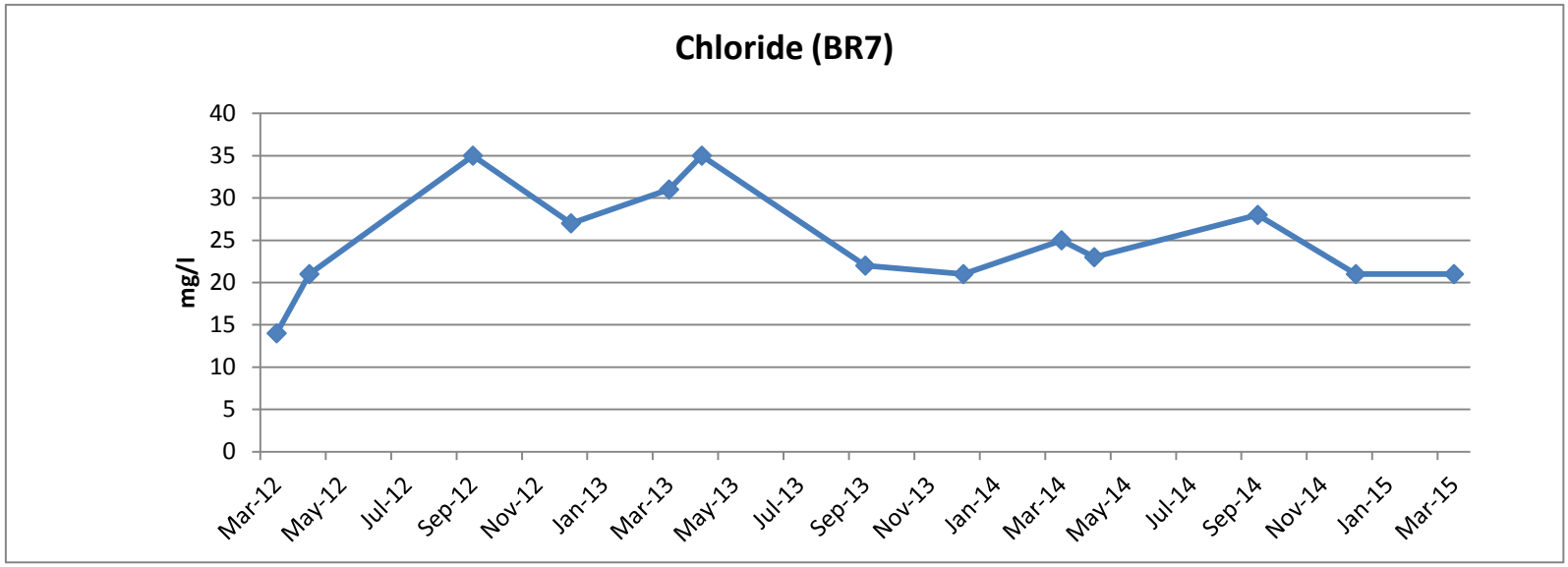
Bedrock Wells

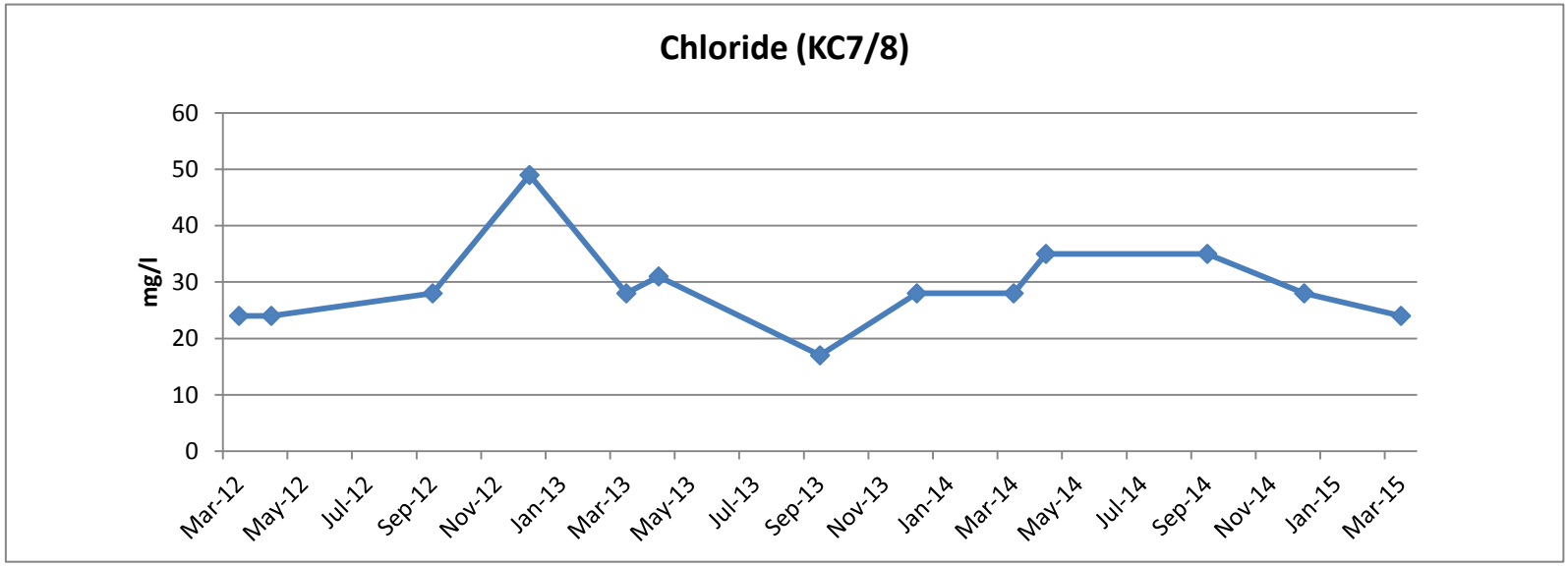
Chloride (mg/l)					
Date	BR1	BR2	BR3	BR7	KC7/8
Mar-12	21	21	496	14	24
Apr-12	30	29	560	21	24
Sep-12	18	35	468	35	28
Dec-12	24	18	1,770	27	49
Mar-13	21	28	443	31	28
Apr-13	27	38	553	35	31
Sep-13	14	31	106	22	17
Dec-13	28	23	490	21	28
Mar-14	23	28	354	25	28
Apr-14	31	37	460	23	35
Sep-14	14	38	457	28	35
Dec-14	21	28	85	21	28
Mar-15	24	28	440	21	24




Chloride (BR2)
mg/l
40
35
30
25
20
15
10
5
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

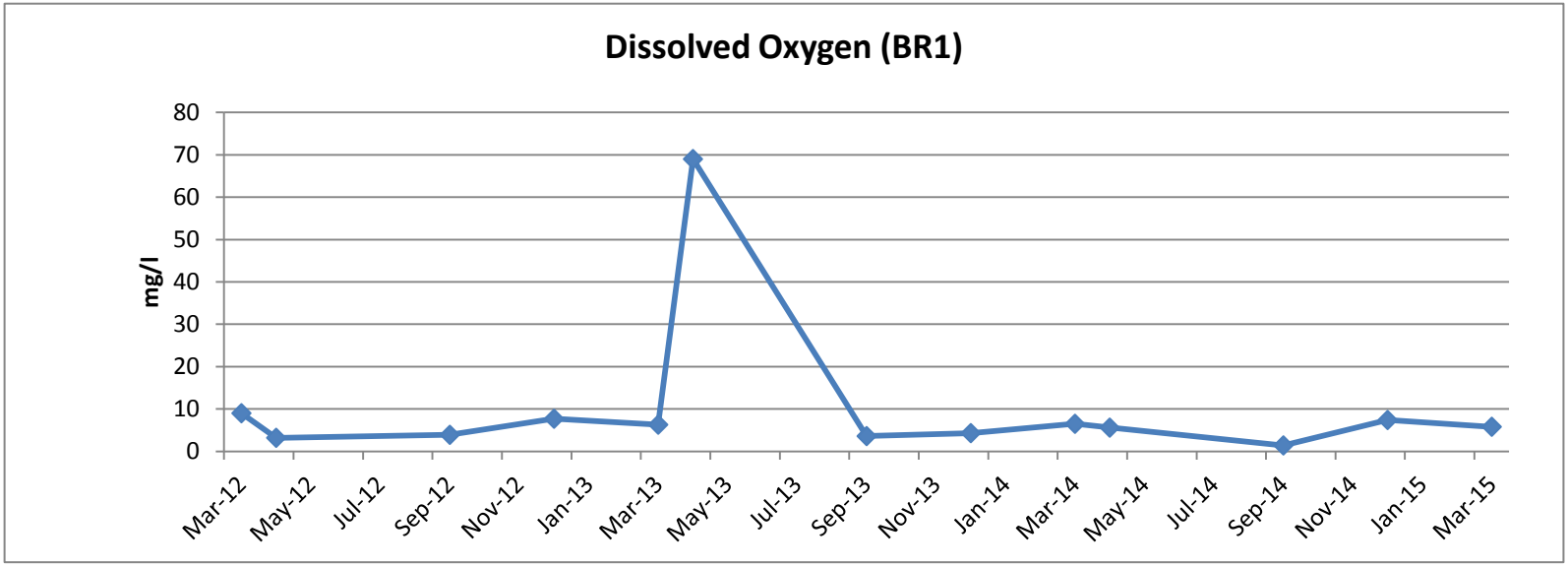

Chloride (BR3)
mg/l
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

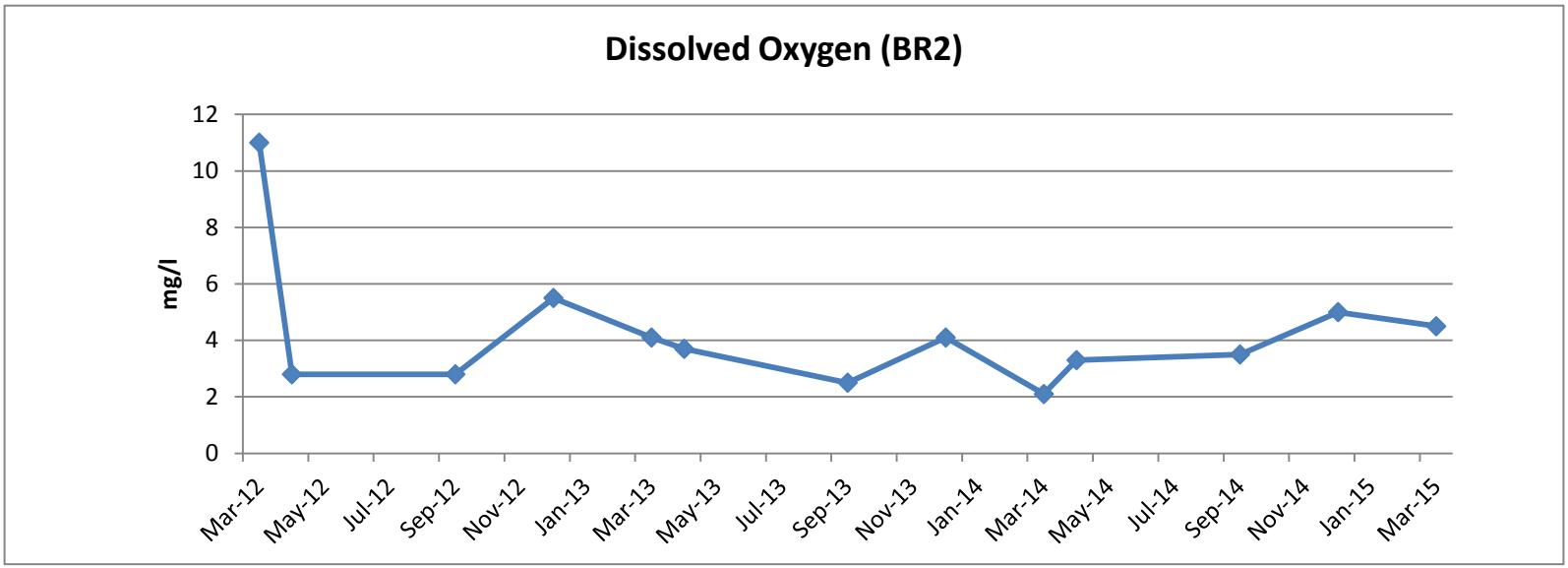

Chloride (BR7)
mg/l
40
35
30
25
20
15
10
5
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

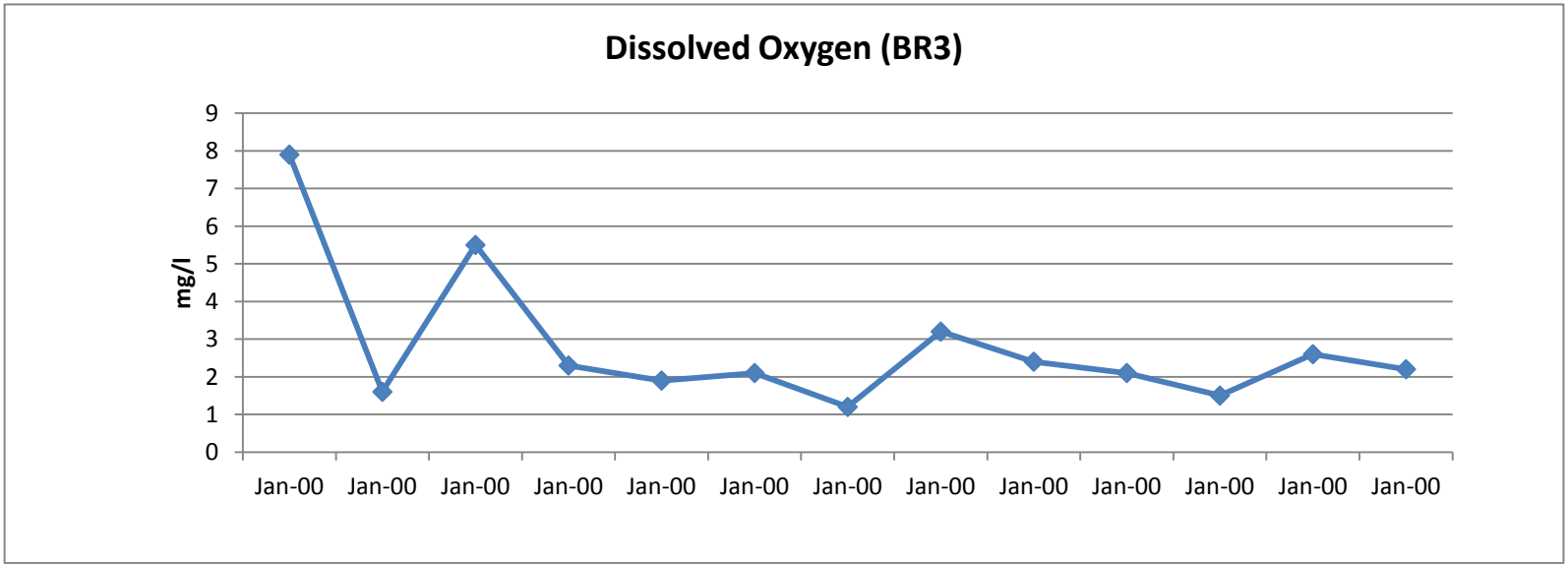

Chloride (KC7/8)
mg/l
60
50
40
30
20
10
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

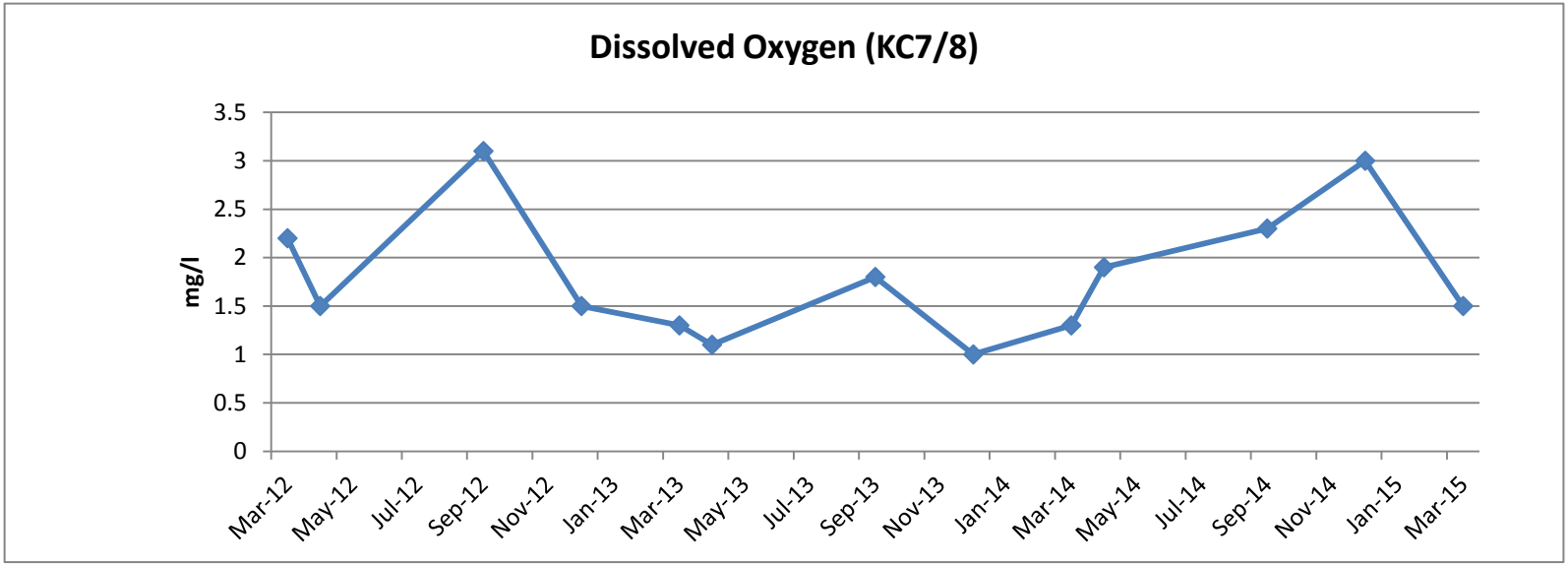
Bedrock Wells

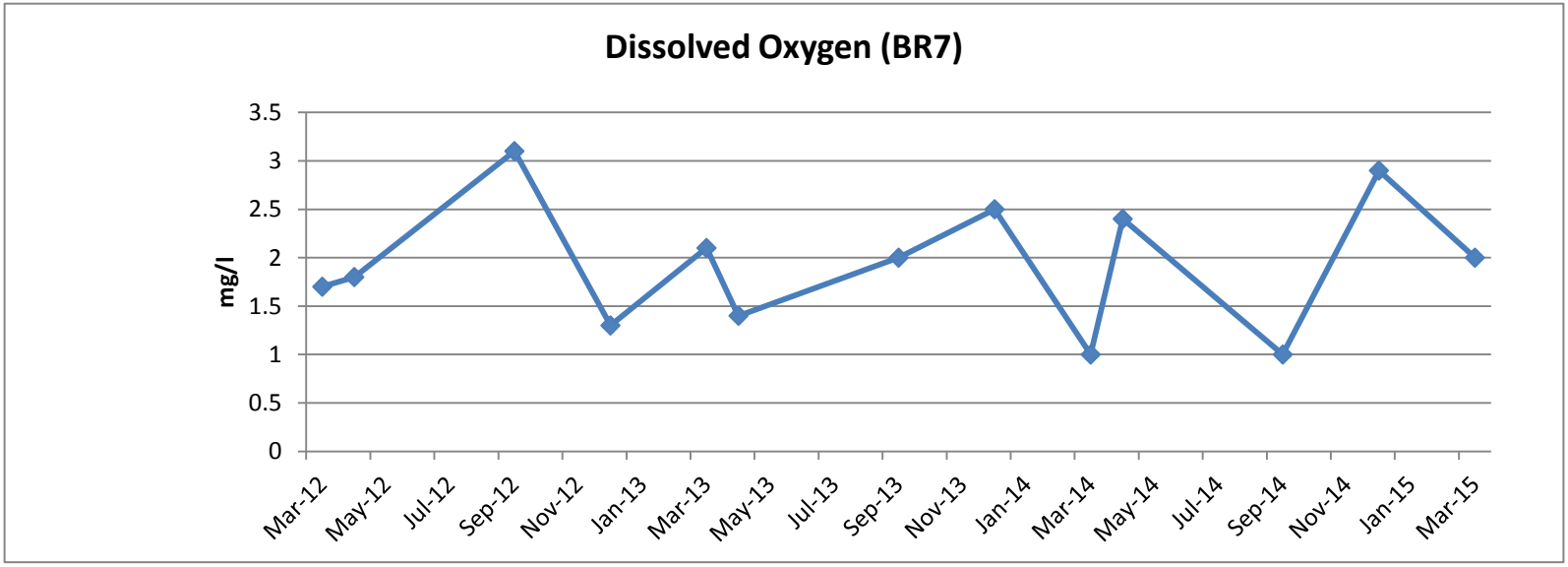
Dissolved Oxygen (mg/l)					
Date	BR1	BR2	BR3	BR7	KC7/8
Mar-12	9	11	7.9	1.7	2.2
Apr-12	3.2	2.8	1.6	1.8	1.5
Sep-12	3.9	2.8	5.5	3.1	3.1
Dec-12	7.7	5.5	2.3	1.3	1.5
Mar-13	6.3	4.1	1.9	2.1	1.3
Apr-13	69	3.7	2.1	1.4	1.1
Sep-13	3.6	2.5	1.2	2	1.8
Dec-13	4.3	4.1	3.2	2.5	1
Mar-14	6.5	2.1	2.4	1	1.3
Apr-14	5.6	3.3	2.1	2.4	1.9
Sep-14	1.4	3.5	1.5	1	2.3
Dec-14	7.4	5	2.6	2.9	3
Mar-15	5.8	4.5	2.2	2	1.5




Dissolved Oxygen (BR2)
mg/l
12
10
8
6
4
2
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15


Dissolved Oxygen (BR3)
mg/l
9
8
7
6
5
4
3
2
1
0
Jan-00
Jan-00
Jan-00
Jan-00
Jan-00
Jan-00
Jan-00
Jan-00
Jan-00
Jan-00
Jan-00
Jan-00


Dissolved Oxygen (KC7/8)
mg/l
3.5
3
2.5
2
1.5
1
0.5
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15


Dissolved Oxygen (BR7)
mg/l
3.5
3
2.5
2
1.5
1
0.5
0
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15

Surface Water:
Location: Trabeg Stream & Tramore river
Parameters: All data in mg/l unless stated otherwise

Sampling Point:		EM7								
DATE	pH	Temp *C	DO	Cond.	NH4	Ammonia (as N)	BOD	COD	Sus.Sol	Chloride
				uS/cm						
10/03/14	7.81	11.2.C	7.5	634	0.3	0.23	11.6	15	9	35
16/09/14	7.91	15.3.C	2.2	550	0.06	0.05	12.8	15	7	28
02/12/14	8.1	11.6.C	3.5	441	0.14	0.11	6.6	9	59	28

Sampling Point:		EM8								
DATE	pH	Temp *C	DO	Cond.	NH4	Ammonia (as N)	BOD	COD	Sus Sol	Chloride
				uS/cm						
10/03/14	8.04	11.4.C	4.2	640	0.2	0.16	8.6	12	5	32
16/09/14'	7.98	15.4.C	5.3	650	0.07	0.05	6.4	9	6	24
02/12/14	7.89	11.4.C	4.1	442	0.14	0.11	5.8	15	6	26

Sampling Point:		EM0								
DATE	pH	Temp *C	D.O.	Cond.	NH4	Ammonia (as N)	BOD	COD	Sus.Sol	Chloride
				uS/cm						
10/03/14	7.87	10.2.C	9.8	388	0.4	0.31	0.8	5	2	20
16/09/14	8.13	13.7.C	7.9	437	0.35	0.27	0.9	12	2	21
02/12/14	7.81	10.7.C	11.5	353	0.13	0.10	1.5	15	5	28

Sampling Point:		EM1								
DATE	pH	Temp *C	D.O.	Cond.	NH4	Ammonia (as N)	BOD	COD	Sus.Sol.	Chloride
				uS/cm						
10/03/14	7.86	10.5.C	9.5	361	0.2	0.16	1.3	3	2	28
16/09/14	7.91	14.1.C	3.3	424	0.08	0.06	5.6	14	8	28
02/12/14	7.88	10.2.C	11	351	0.23	0.18	1.4	5	12	28

Sampling Point:		EM2									
DATE	pH	Temp *C	D.O.	Cond	NH4	Ammonia (as N)	BOD	COD	Sus.Sol	Chloride	TOC
				uS/cm							
10/03/14	7.81	10.2.C	8.8	395	0.2	0.16	3	5	2	28	2
16/09/14	8.14	17.8.C	3.3	427	0.15	0.12	2.4	15	4	22	2
02/12/14	7.99	11.1.C	11.2	370	0.3	0.23	2.5	17	6	25	2

Sampling Point:		EM11									
DATE	pH	Temp *C	D.O.	COND	NH4	Ammonia (as N)	BOD	COD	Sus.Sol	Chloride	TOC
				uS/cm							
10/03/14	7.86	10.2.C	9.6	376	0.2	0.16	2.8	6	4	28	1
16/09/14	8.17	15.1.C	3.5	418	0.08	0.06	5.6	7	4	24	2
02/12/14	8.03	10.8.C	10.2	348	0.15	0.12	1.8	12	2	21	3

Sampling Point:		EM6/10								
DATE	pH	Temp *C	D.O.	COND	NH4	Ammonia (as N)	BOD	COD	Sus.Sol	Chloride
				uS/cm						
10/03/14	7.74	10.3.C	8.8	443	0.2	0.16	3.2	5	2	35
16/09/14	8.11	14.8.C	6.1	890	0.22	0.17	4.5	11	9	33
02/12/14	8.09	10.7.C	9	650	0.09	0.07	1.5	9	3	142

Surface Water:

Location: Trabeg Stream & Tramore river

Parameters: All data in mg/l unless stated otherwise

	Frequency	Method	Range	Sample	EM0	EM1	EM2	EM11	EM6/10	EM7	EM8
Vis/Odour	W			Grab	GOOD	GOOD	GOOD	GOOD	GOOD	FAIR	FAIR
Ammonium	q	ISE	0.01-10		0.03	0.05	0.1	0.03	0.04	0.05	0.04
B.O.D.	q	Meter Brit	0.1-8.0		1	<1	6.5	1.5	1.8	4.2	9.4
C.O.D.	q	Closed Tube	1-500		9	3	9	14	4	8	12
Chloride	q	Argent SM	1-100		28	27	29	29	78	22	25
D.O.	q	Meter	0.1-20		9.8	9.5	8.2	9.2	8	6.5	3.8
Cond.us/cm	q	Meter	1-200000		364	350	385	376	540	560	570
pH	q	Meter	05-Nov		7.92	7.91	7.93	8.09	8.18	7.99	8.11
Sus.Sol.	q	Grav	0.1-200		7	4	8	13	6	6	4
Temp*C	q	Meter	0-50		10	10	10	10	9.8	10.2	10.6
Cadmium	a	GFAA	0.001-0.5		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Calcium	a	AA	1-100		56	52	52	52	56	72	80
Chromium	a	GFAA	0.001-0.2		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Copper	a	AA	0.001-1.0		0.06	0.06	0.07	0.07	0.07	0.07	0.07

Surface Water: **Location: Trabeg Stream & Tramore river**

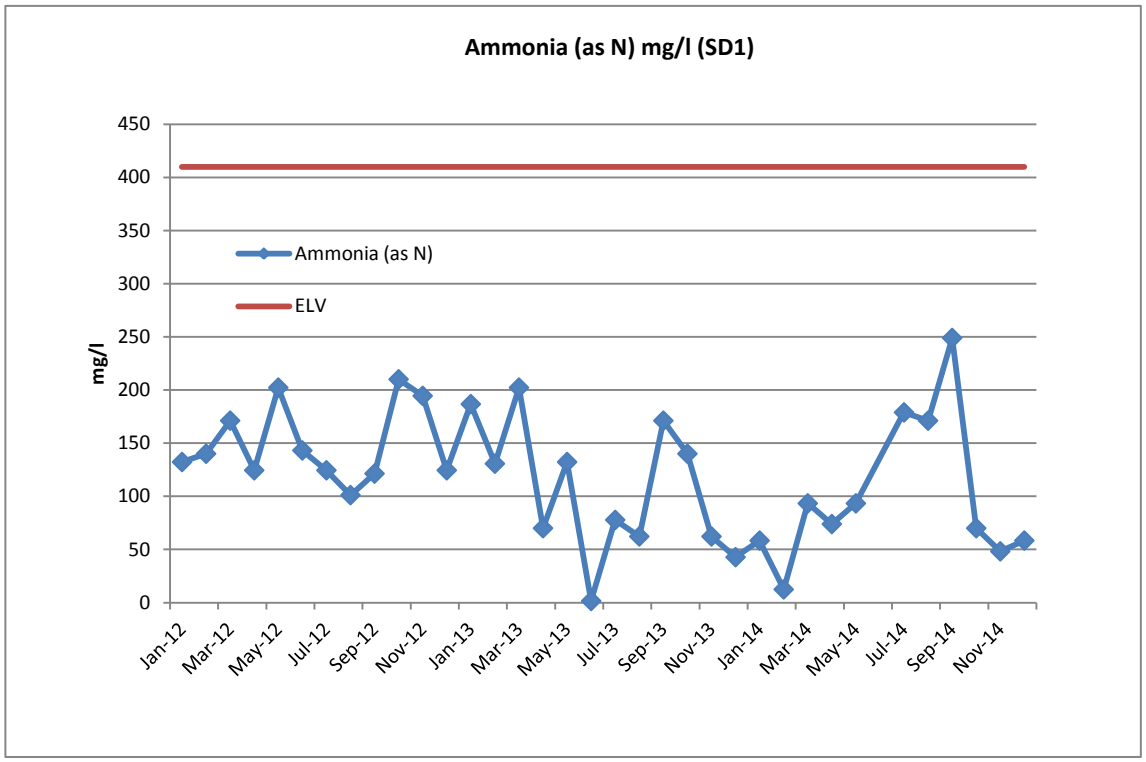
Parameters: All data in mg/l unless stated otherwise

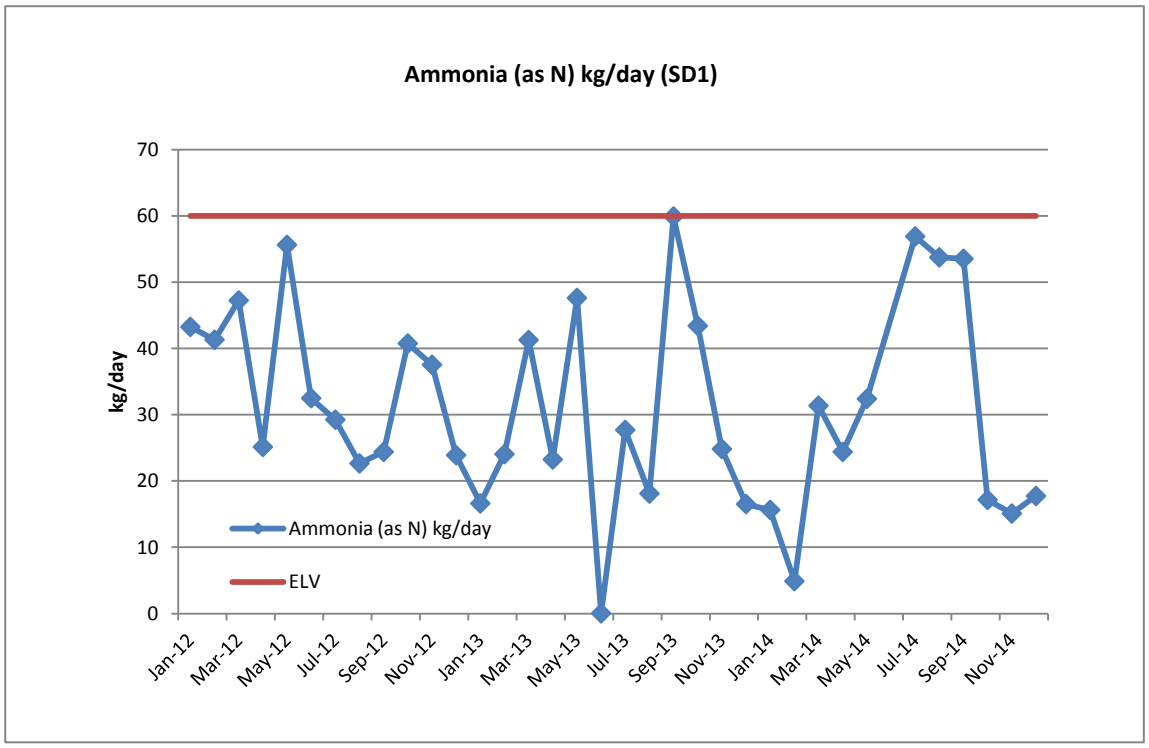
	Frequency	Method	Range	Sample	EM0	EM1	EM2	EM11	EM6/10	EM7	EM8
				Grab							
Iron	a	AA	0.01-5.0		<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Lead	a	GFAA	0.001-0.1		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Magnesium	a	AA	0.01-5.0		3.9	3.8	3.9	4.3	5.1	4.3	3.9
Manganese	a	AA	0.01-3.0		0.08	0.08	0.09	0.09	0.09	0.09	0.09
Mercury	a	GFAA			<0.00002	0.00002	0.0001	0.0003	<0.00002	<0.00002	<0.00002
Potassium	a	AA	0.1-5.0		11	13	15	14	15	18	19
Sulphate	a	Turb. SM	1.0-3.0		27	29	29	29	39	43	40
Sodium	a	AA	0.1-3.0		14	14	16	16	67	49	51
Tot Phos	a	Stann SM	0.05-0.25		0.16	0.11	0.3	1	0.07	0.04	0.08
T.O.N.	a	SM			7	6	9	10	11	12	10
Zinc	a	AA	0.01-5.0		0.02	0.02	0.02	0.02	0.02	0.02	0.02
Ni	a	GFFA	0.002-1		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Alk	a	SM	1-1000		120	140	120	140	140	140	160
Boron	a	GFFA	0.01-1.0		<0.02	<0.02	<0.02	<0.02	0.02	0.08	0.07
T.O.C							2	4			

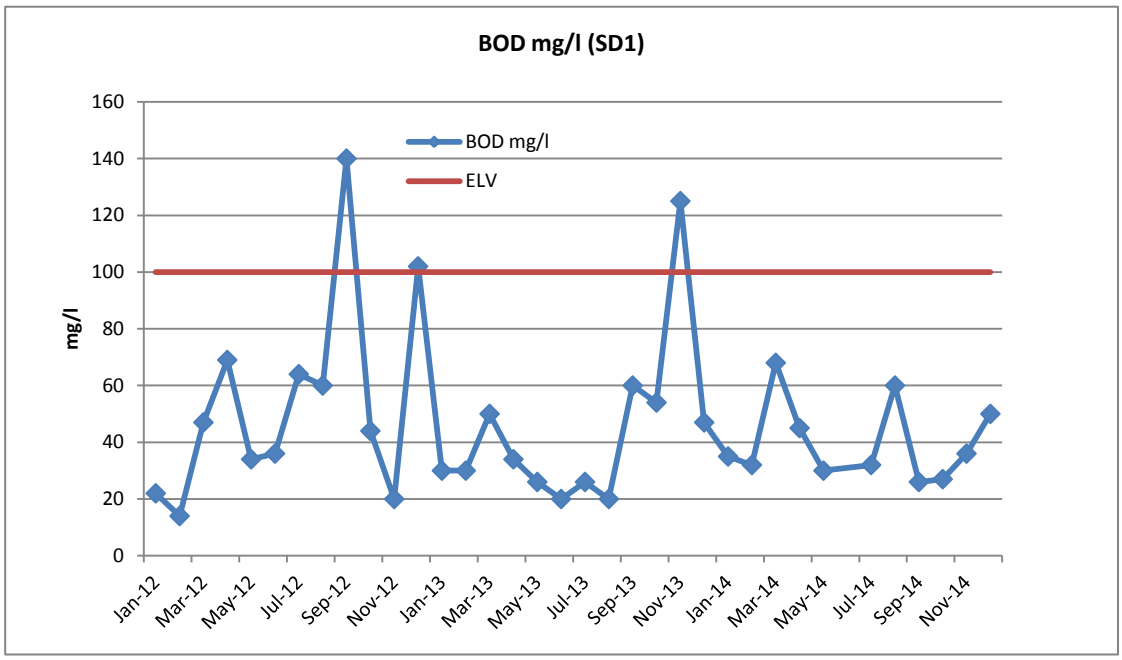
Emission Point: **SD1**
Location: **Sewer Outlet**
Year: **2014**

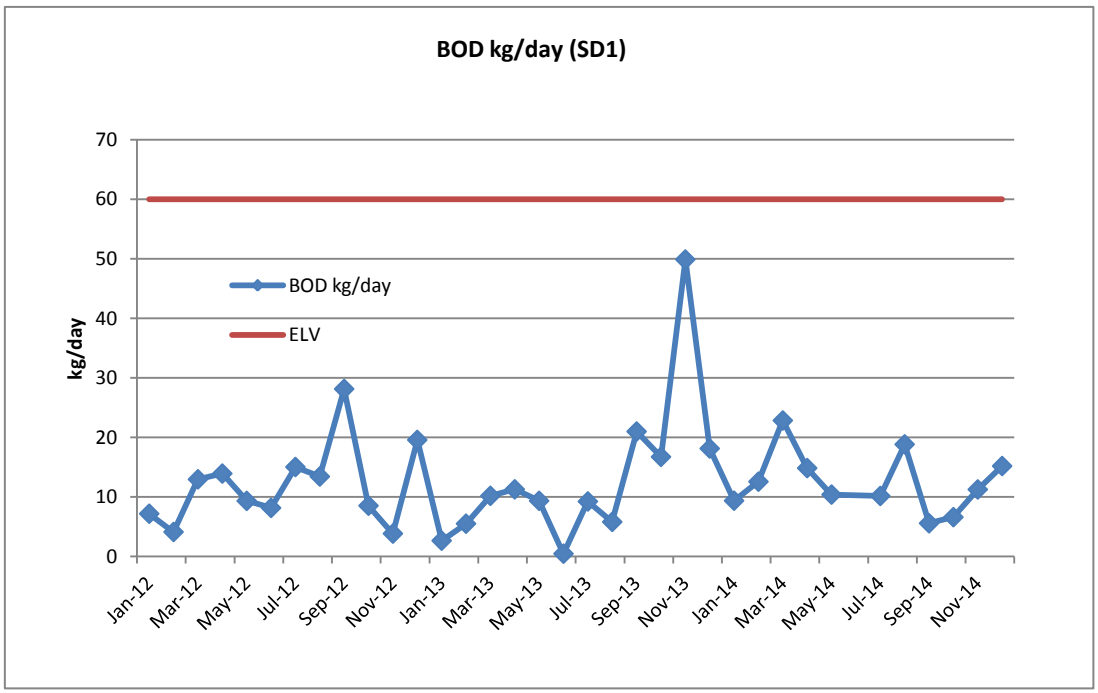
EMISSIONS TO SEWER 2014 (mg/l)

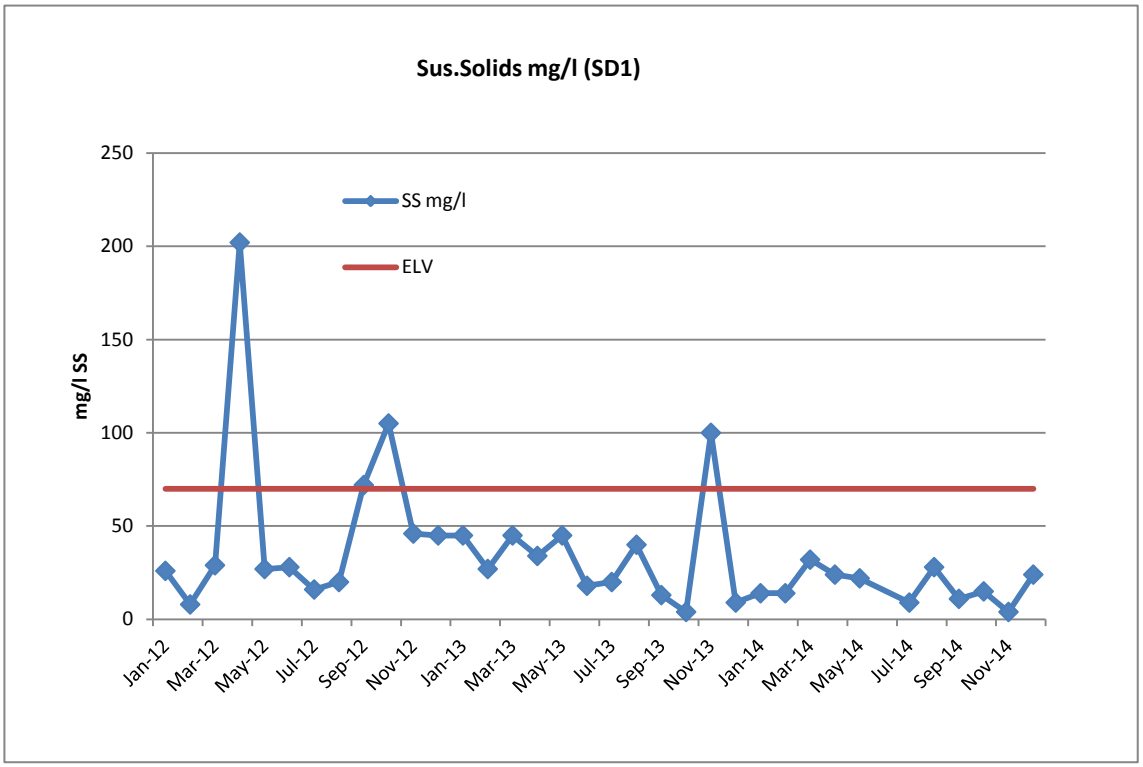
			mg/l	kg/d	mg/l	kg/d	mg/l	kg/d	mg/l	kg/d
DATE	m^3/day	pH	NH_4	NH_4	BOD	BOD	Sulphate	Sulphate	SS	SS
28/01/14	268	7.4	75	20.1	35	9.4	<5	<1.3	14	3.8
19/02/14	393	7.2	16	6.3	32	12.6	<5	<2.0	14	5.5
10/03/14	336	7.7	120	40.3	68	22.8	<5	<1.7	32	10.8
01/04/14	330	6.9	95	31.4	45	14.9	<5	<1.7	24	7.9
06/05/14	347	7.1	120	41.6	30	10.4	<5	<1.7	22	7.6
01/06/14	no flow									
28/07/14	318	7.4	230	73.1	32	10.2	<5	<1.6	9	2.9
26/08/14	314	7.8	220	69.1	60	18.8	<5	<1.6	28	8.8
16/09/14	215	8.1	320	68.8	26	5.59	<5	<1.1	11	2.4
07/10/14	245	7.3	90	22.05	27	6.62	<5	<1.2	15	3.7
04/11/14	313	7.3	62	19.41	36	11.27	<5	<1.6	4	1.3
02/12/14	304	7.1	75	22.8	50	15.2	<5	<1.5	24	7.3

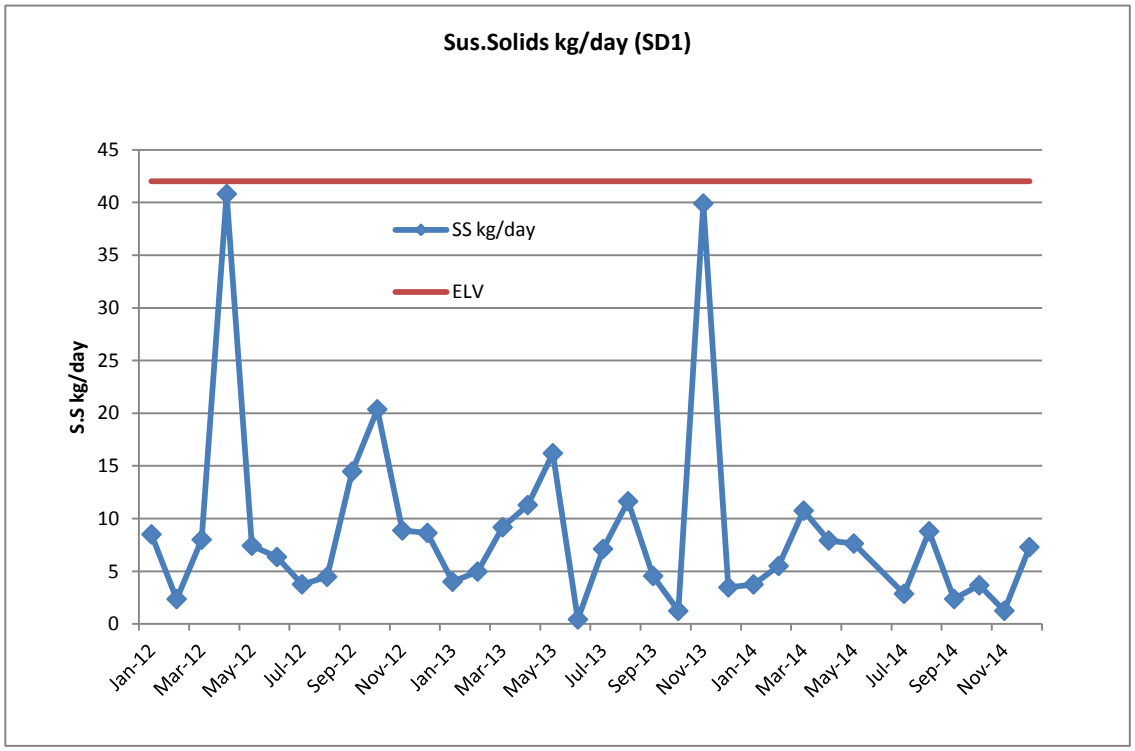

Ammonia (as N) mg/l (SD1)
mg/l
450
400
350
300
250
200
150
100
50
0
Ammonia (as N)
ELV
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

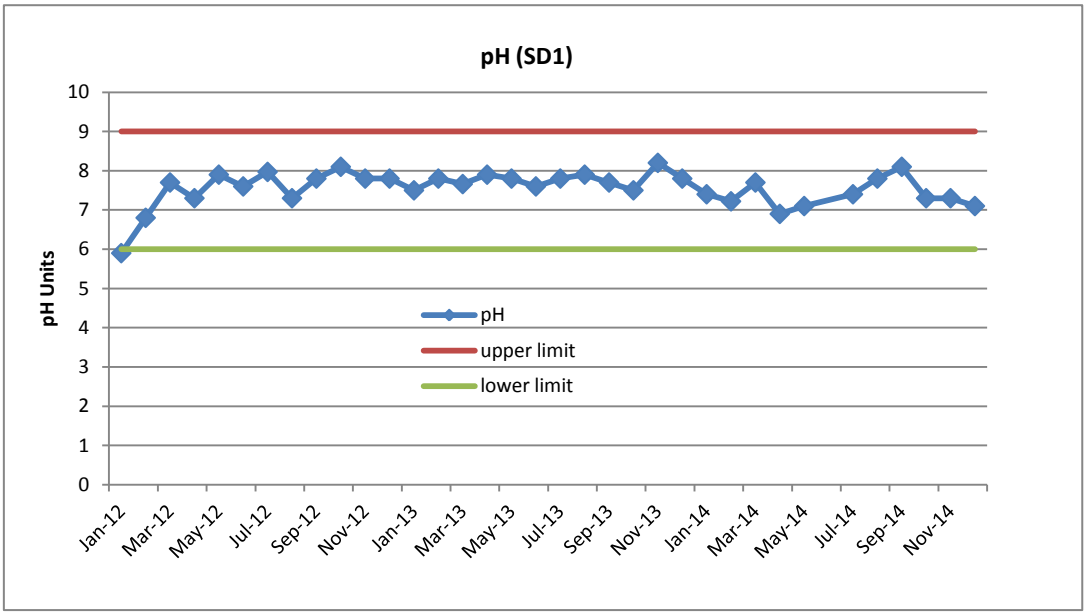

Ammonia (as N) kg/day (SD1)
kg/day
70
60
50
40
30
20
10
0
Ammonia (as N) kg/day
ELV
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14


BOD mg/l (SD1)
mg/l
160
140
120
100
80
60
40
20
0
BOD mg/l
ELV
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14


BOD kg/day (SD1)
kg/day
70
60
50
40
30
20
10
0
BOD kg/day
ELV
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14


Sus.Solids mg/l (SD1)
mg/l SS
250
200
150
100
50
0
SS mg/l
ELV
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

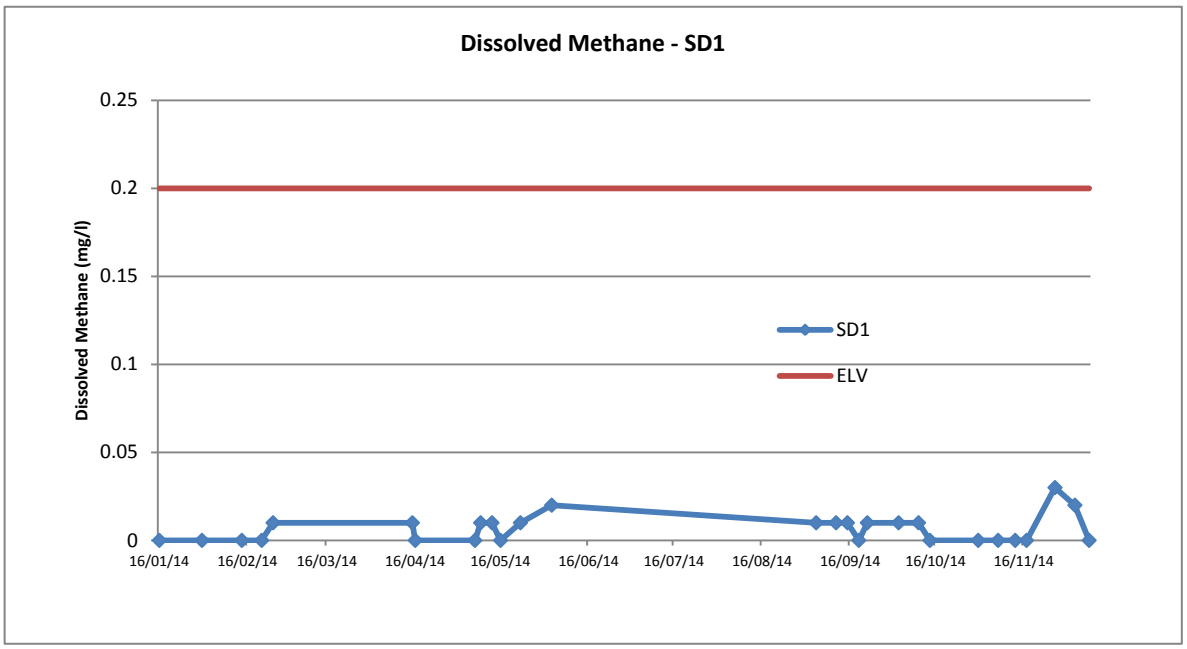

Sus.Solids kg/day (SD1)
S.S kg/day
45
40
35
30
25
20
15
10
5
0
SS kg/day
ELV
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14


pH (SD1)
pH Units
10
9
8
7
6
5
4
3
2
1
0
pH
upper limit
lower limit
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14

Emission Point: **SD1**
Location: **Sewer Outlet**
Parameter: **Dissolved Methane**

All data in mg/l unless stated otherwise

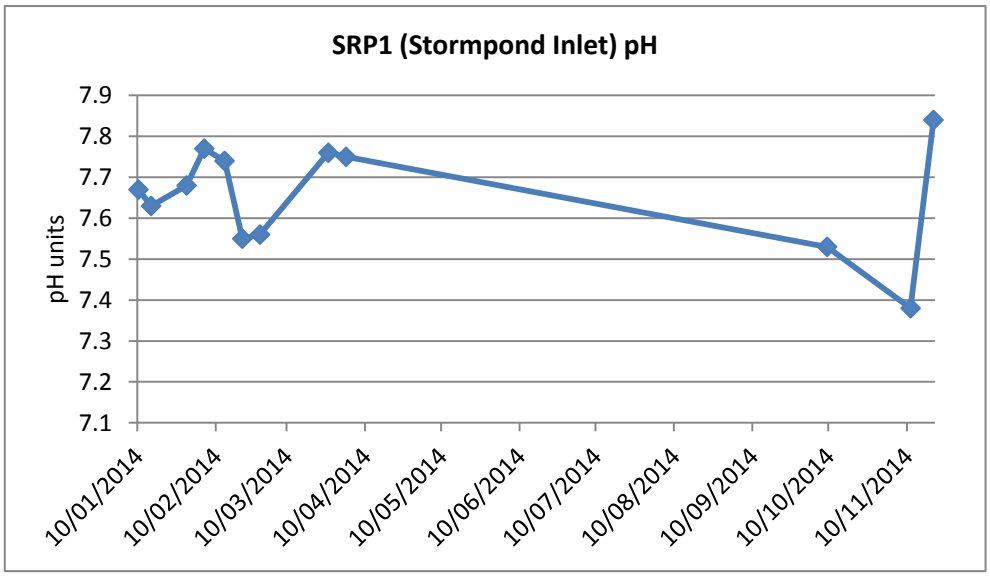
	Inlet (Balance Tank)	FHS Tank	SD1	ELV
16/01/14	0.83	0.05	0.01	0.2
31/01/14	0.81	0.03	<0.01	0.2
14/02/14	0.07	<0.01	<0.01	0.2
21/02/14	1.05	0.02	<0.01	0.2
25/02/14	1.01	0.01	<0.01	0.2
15/04/14	1.33	0.03	0.01	0.2
16/04/14	1.32	0.06	0.01	0.2
07/05/14	0.68	0.04	<0.01	0.2
09/05/14	1.85	0.06	<0.01	0.2
13/05/14	0.98	0.03	0.01	0.2
16/05/14	1.05	0.05	0.01	0.2
23/05/14	0.9	0.04	<0.01	0.2
03/06/14	0.78	0.02	0.01	0.2
04/09/14	0.61	0.03	0.02	0.2
11/09/14	0.65	0.01	0.01	0.2
15/09/14	1.88	0.01	0.01	0.2
19/09/14	1.81	0.01	0.01	0.2
22/09/14	1.87	0.01	<0.01	0.2
03/10/14	2.08	0.01	0.01	0.2
10/10/14	0.66	0.01	0.01	0.2
14/10/14	0.81	0.01	0.01	0.2
31/10/14	1.59	0.01	<0.01	0.2
07/11/14	0.61	0.01	<0.01	0.2
13/11/14	0.3	<0.01	<0.01	0.2
17/11/14	0.55	0.01	<0.01	0.2
27/11/14	0.85	<0.01	<0.01	0.2
04/12/14	1.56	0.04	0.03	0.2
09/12/14	1.22	0.04	0.02	0.2
19/12/14	0.88	0.01	<0.01	0.2

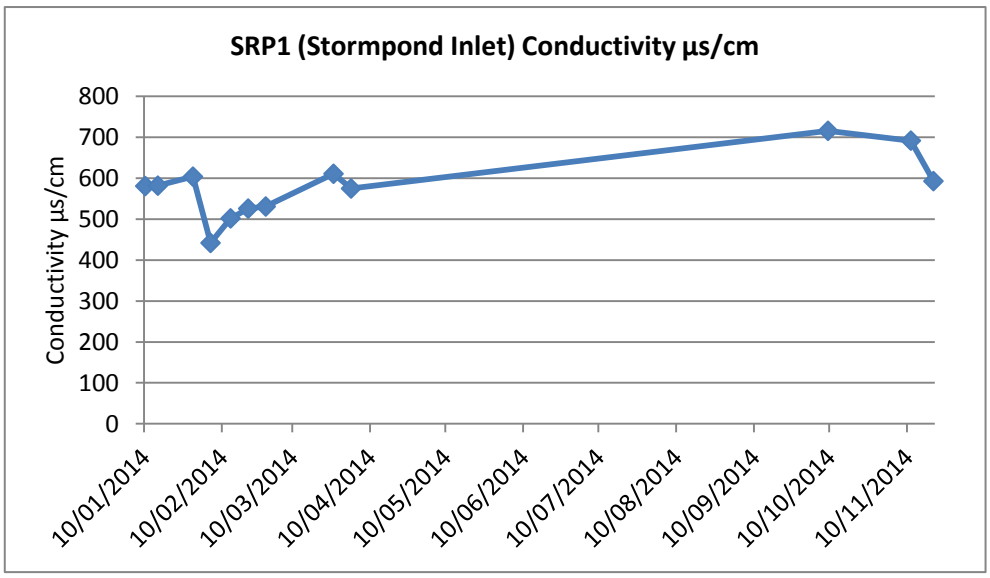

Dissolved Methane - SD1
Dissolved Methane (mg/l)
0.25
0.2
0.15
0.1
0.05
0
16/01/14
16/02/14
16/03/14
16/04/14
16/05/14
16/06/14
16/07/14
16/08/14
16/09/14
16/10/14
16/11/14
SD1
ELV

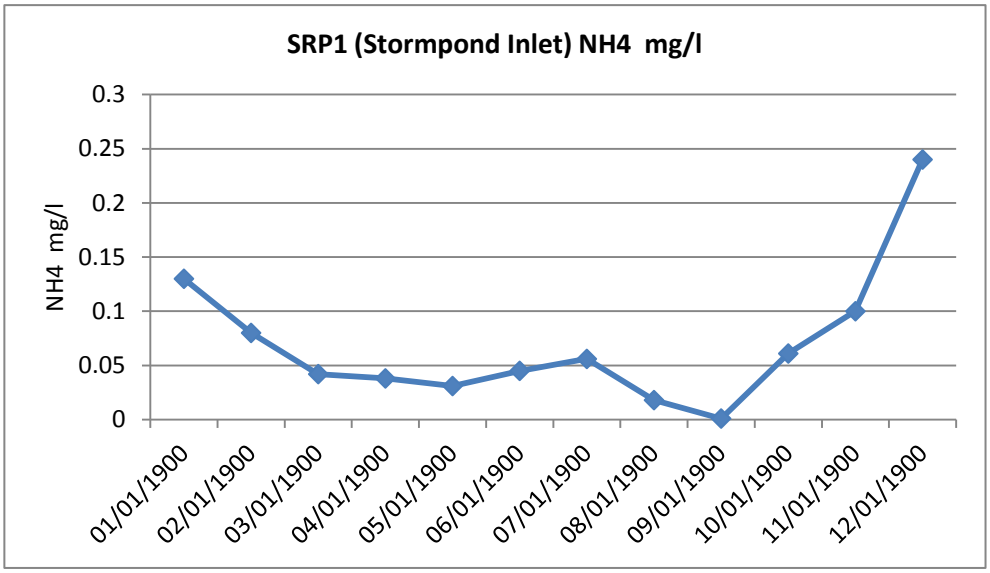
Stormpond Inlet Parameter Data

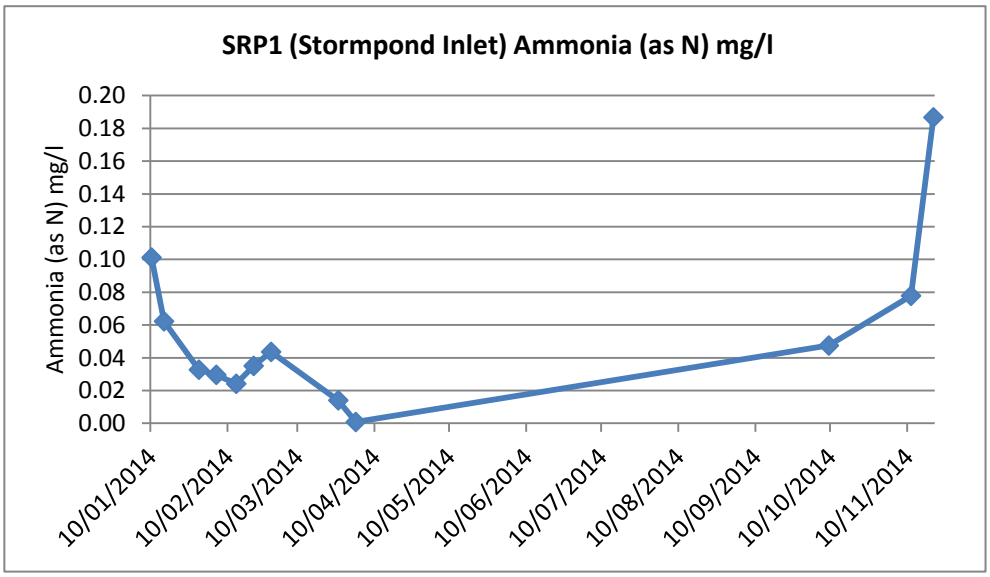
All data in mg/l unless stated otherwise

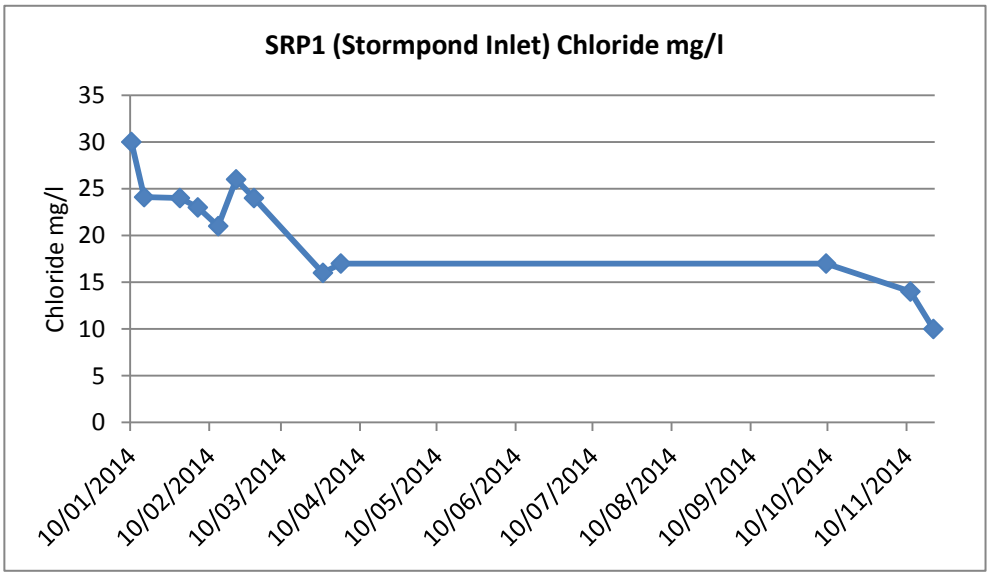
Date	Temp *C	pH	Conductivity µs/cm	NH_4	Ammonia (as N)	Chloride	COD	TOC	BOD	Suspended Solids
10/01/2014	9	7.67	581	0.13	0.10	30	20	5.5	1.26	0.4
15/01/2014	11.8	7.63	582	0.08	0.06	24.1	3	8.7	1.55	0.4
29/01/2014	6.9	7.68	604	0.042	0.03	24	24	5.8	0.63	3.2
05/02/2014	11.8	7.77	442	0.038	0.03	23	14	3.7	1.22	2.4
13/02/2014	7.5	7.74	502	0.031	0.02	21	15	4.6	1.64	1.2
20/02/2014	8.4	7.55	526	0.045	0.04	26	22	6	0.87	1.6
27/02/2014	7.7	7.56	531	0.056	0.04	24	15	5.8	0.95	0.8
26/03/2014	12.6	7.76	611	0.018	0.01	16	18	7.5	1.57	0.4
02/04/2014	11.4	7.75	575	0.001	0.001	17	33	7.5	0.87	0.8
09/10/2014	13.5	7.53	716	0.061	0.05	17	40	12	1.14	3.2
11/11/2014	10.9	7.38	692	0.1	0.08	14	21	8.3	1.35	0.4
20/11/2014	10.9	7.84	593	0.24	0.19	10	11	1	2.44	0.8

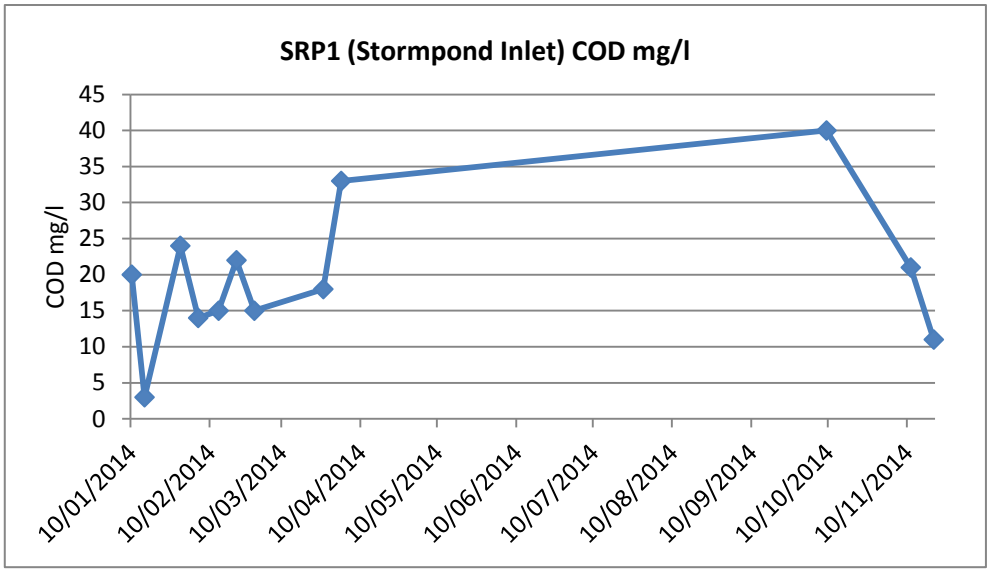


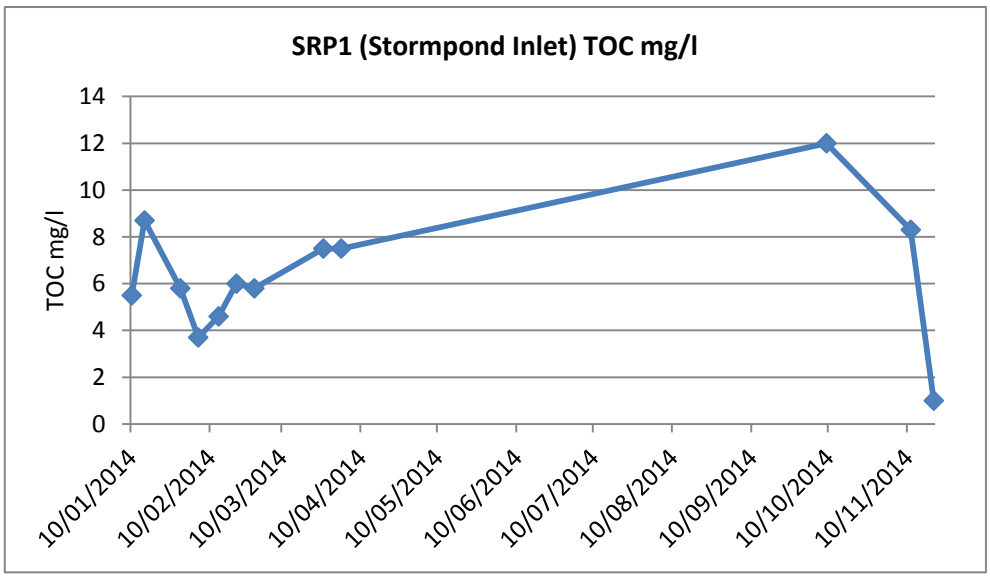


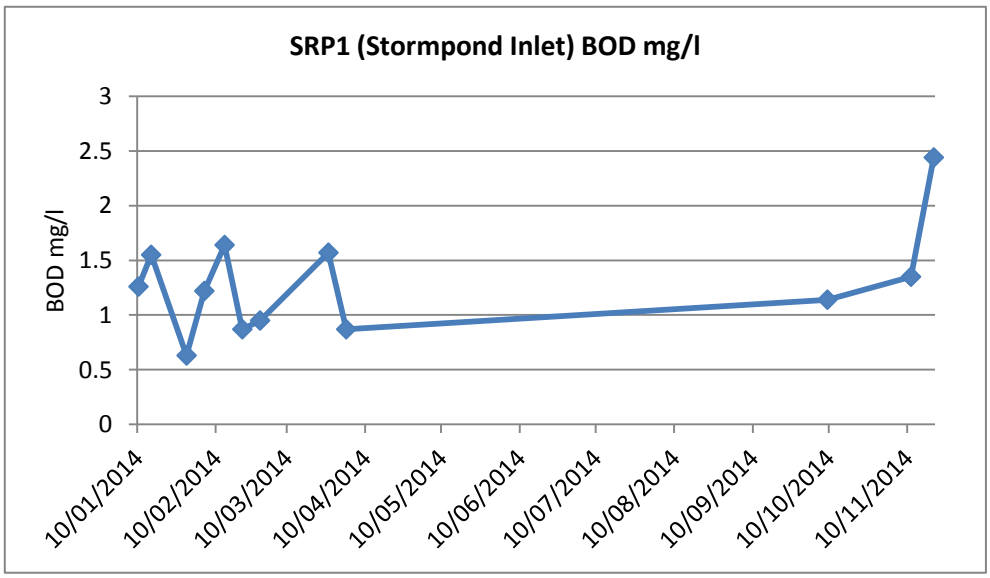

SRP1 (Stormpond Inlet) NH4 mg/l
NH4 mg/l
0.3
0.25
0.2
0.15
0.1
0.05
0
01/01/1900
02/01/1900
03/01/1900
04/01/1900
05/01/1900
06/01/1900
07/01/1900
08/01/1900
09/01/1900
10/01/1900
11/01/1900
12/01/1900

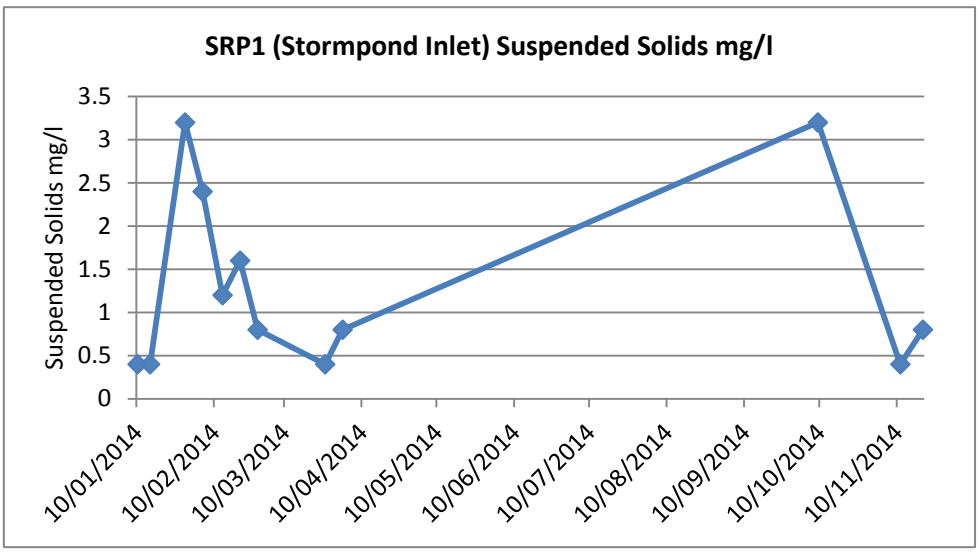

SRP1 (Stormpond Inlet) Ammonia (as N) mg/l
Ammonia (as N) mg/l
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014


SRP1 (Stormpond Inlet) Chloride mg/l
Chloride mg/l
35
30
25
20
15
10
5
0
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014


SRP1 (Stormpond Inlet) COD mg/l
COD mg/l
45
40
35
30
25
20
15
10
5
0
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014


SRP1 (Stormpond Inlet) TOC mg/l
TOC mg/l
14
12
10
8
6
4
2
0
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014

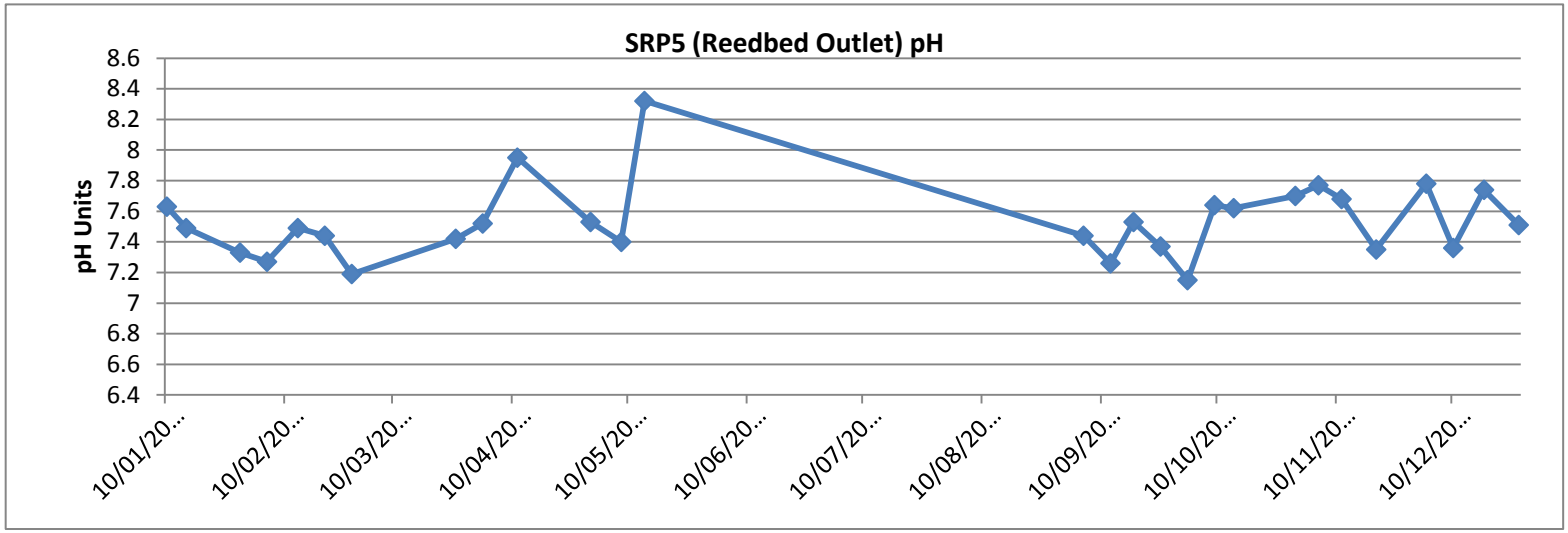

SRP1 (Stormpond Inlet) BOD mg/l
BOD mg/l
3
2.5
2
1.5
1
0.5
0
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014

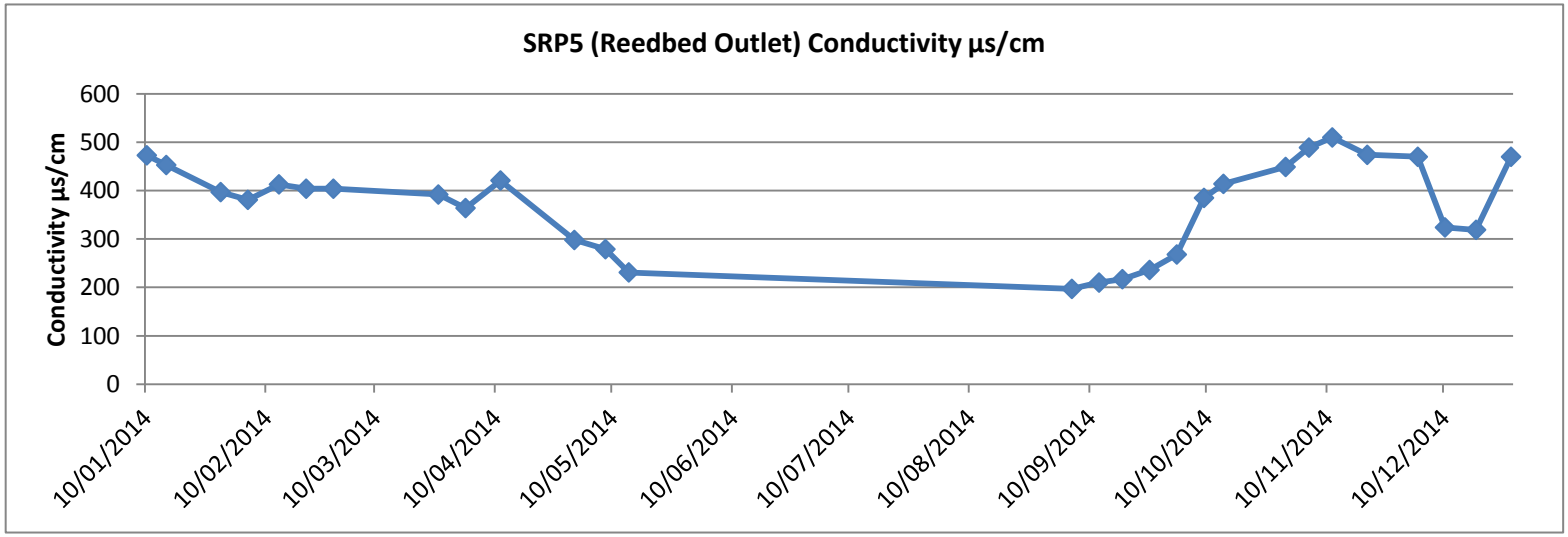

SRP1 (Stormpond Inlet) Suspended Solids mg/l
Suspended Solids mg/l
3.5
3
2.5
2
1.5
1
0.5
0
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014

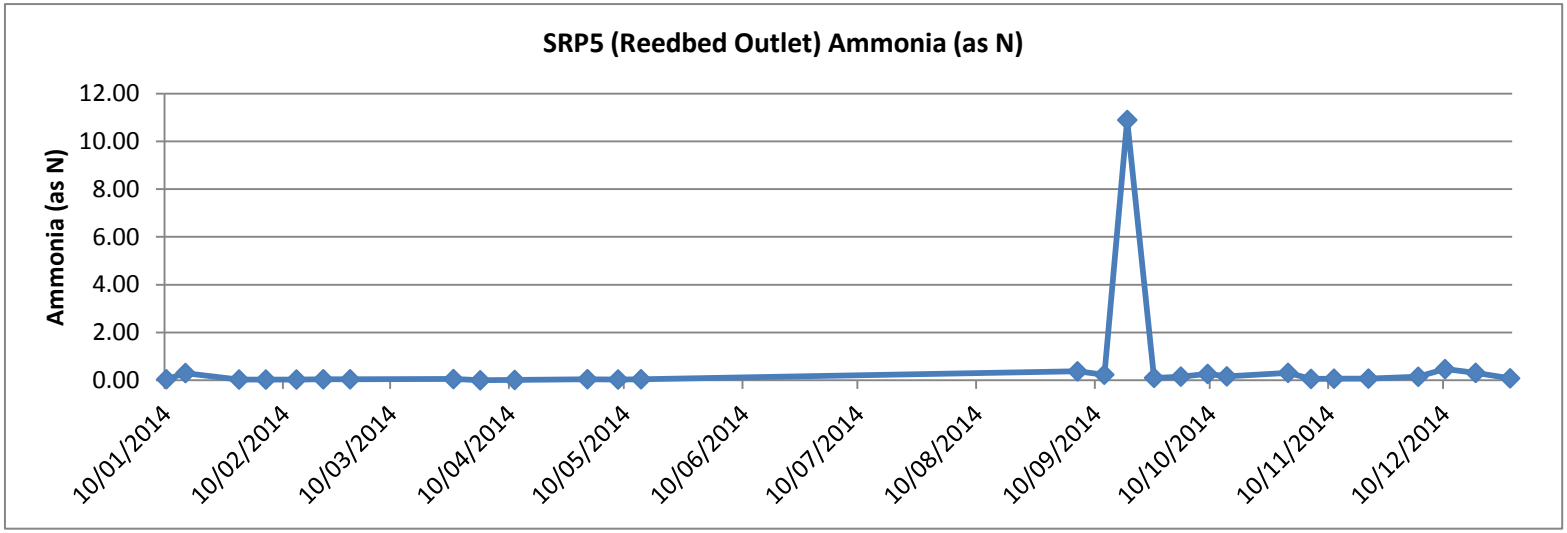
Reedbed Outlet Parameter Data

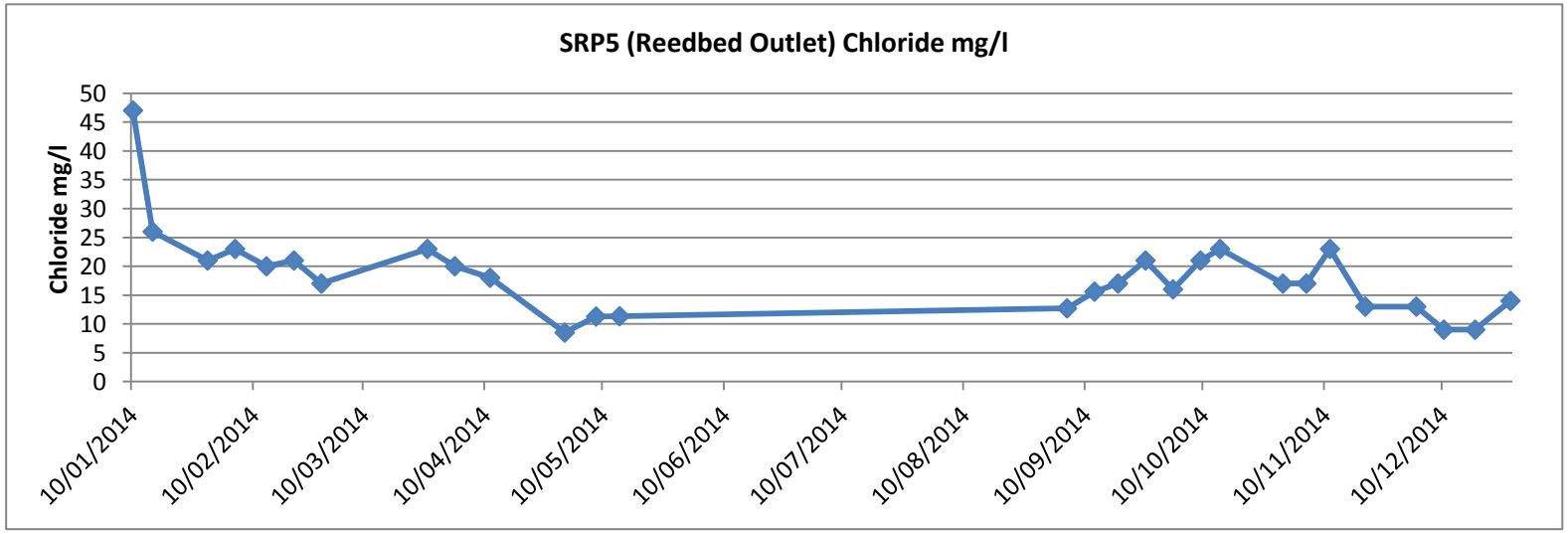
All data in mg/l unless stated otherwise

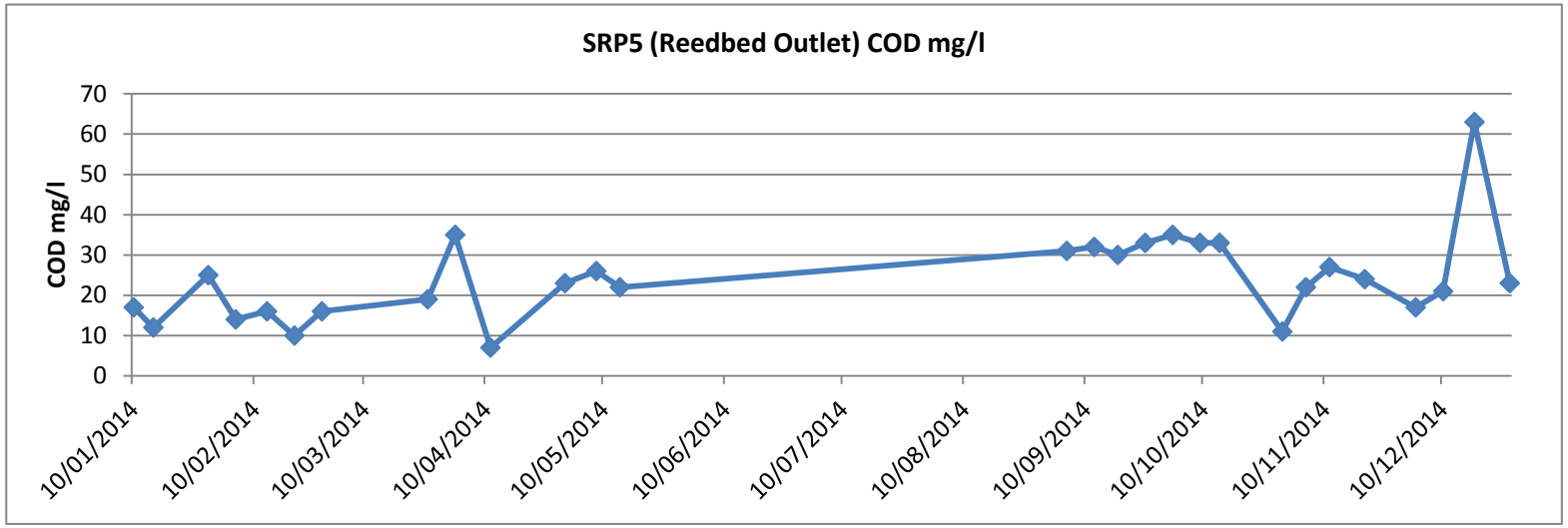
Date	Temp *C	pH	Conductivity µs/cm	NH_4	Ammonia (as N)	Chloride	COD	TOC	BOD	Suspended Solids
10/01/2014	7.8	7.63	473	0.053	0.04	47	17	4.9	1.36	0.4
15/01/2014	11.3	7.49	453	0.39	0.30	26	12	5.3	1.07	0.8
29/01/2014	6.1	7.33	397	0.04	0.03	21	25	5.2	2.83	2
05/02/2014	11.2	7.27	381	0.039	0.03	23	14	5.6	1.5	2.4
13/02/2014	6.4	7.49	413	0.041	0.03	20	16	1.4	1.24	0.4
20/02/2014	8.8	7.44	404	0.054	0.04	21	10	5.9	0.75	0.4
27/02/2014	7.2	7.19	404	0.052	0.04	17	16	6.4	0.81	0.4
26/03/2014	10.1	7.42	392	0.064	0.05	23	19	8.3	1.34	4.4
02/04/2014	10.8	7.52	364	0.001	0.001	20	35	8.8	0.75	0.4
11/04/2014	12.1	7.95	421	0.0171	0.01	18	7	4.1	1.4	0.5
30/04/2014	14.3	7.53	298	0.058	0.05	8.5	23	2.9	1.92	1.2
08/05/2014	14.5	7.4	279	0.0426	0.03	11.3	26	9.6	1.72	0.8
14/05/2014	16.2	8.32	231	0.055	0.04	11.34	22	7.3	1.52	2.8
05/09/2014	18.3	7.44	197	0.48	0.37	12.7	31	26	1.69	9.6
12/09/2014	17	7.26	210	0.3	0.23	15.6	32	13.9	3.55	22
18/09/2014	17.3	7.53	217	14	10.89	17.01	30	6.6	3.08	13.6
25/09/2014	17.6	7.37	236	0.13	0.10	21	33	12.1	2.4	6.4
02/10/2014	16.4	7.15	268	0.197	0.15	16	35	3.5	2.1	2.8
09/10/2014	13.9	7.64	385	0.34	0.26	21	33	10	2.71	2.8
14/10/2014	13.2	7.62	414	0.21	0.16	23	33	3.8	5.04	5.2
30/10/2014	15.5	7.7	449	0.4	0.31	17	11	11.8	2.13	0.4
05/11/2014	12.4	7.77	489	0.073	0.06	17	22	8.5	2.31	1.6
11/11/2014	10.8	7.68	510	0.085	0.07	23	27	9.8	6.84	2
20/11/2014	10.8	7.35	474	0.091	0.07	13	24	6.9	3.41	2
27/12/2014	9.2	7.51	470	0.105	0.08	14	23	1.9	6.21	5.6
03/12/2014	9.9	7.78	470	0.19	0.15	13	17	2	2.78	2.4
10/12/2014	12.2	7.36	324	0.6	0.47	9	21	2	3.42	1
18/12/2014	10	7.74	319	0.4	0.31	9	63	0.6	0	6.8

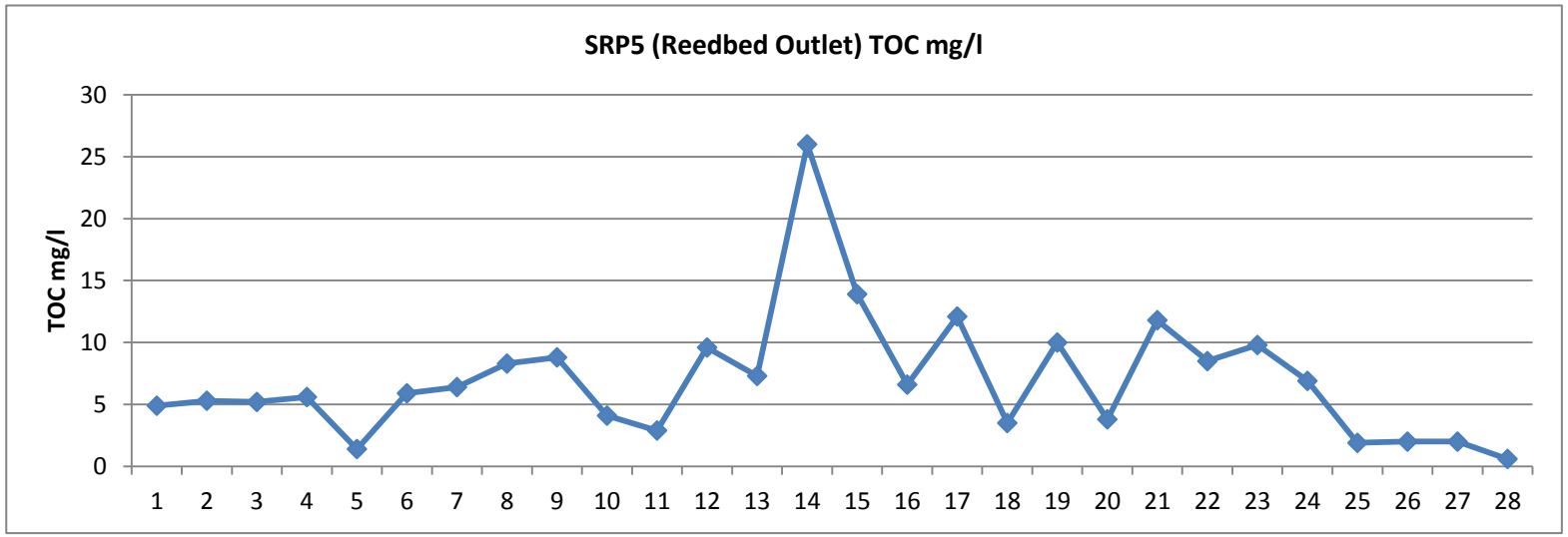

SRP5 (Reedbed Outlet) pH
pH Units
8.6
8.4
8.2
8
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
10/01/20...
10/02/20...
10/03/20...
10/04/20...
10/05/20...
10/06/20...
10/07/20...
10/08/20...
10/09/20...
10/10/20...
10/11/20...
10/12/20...

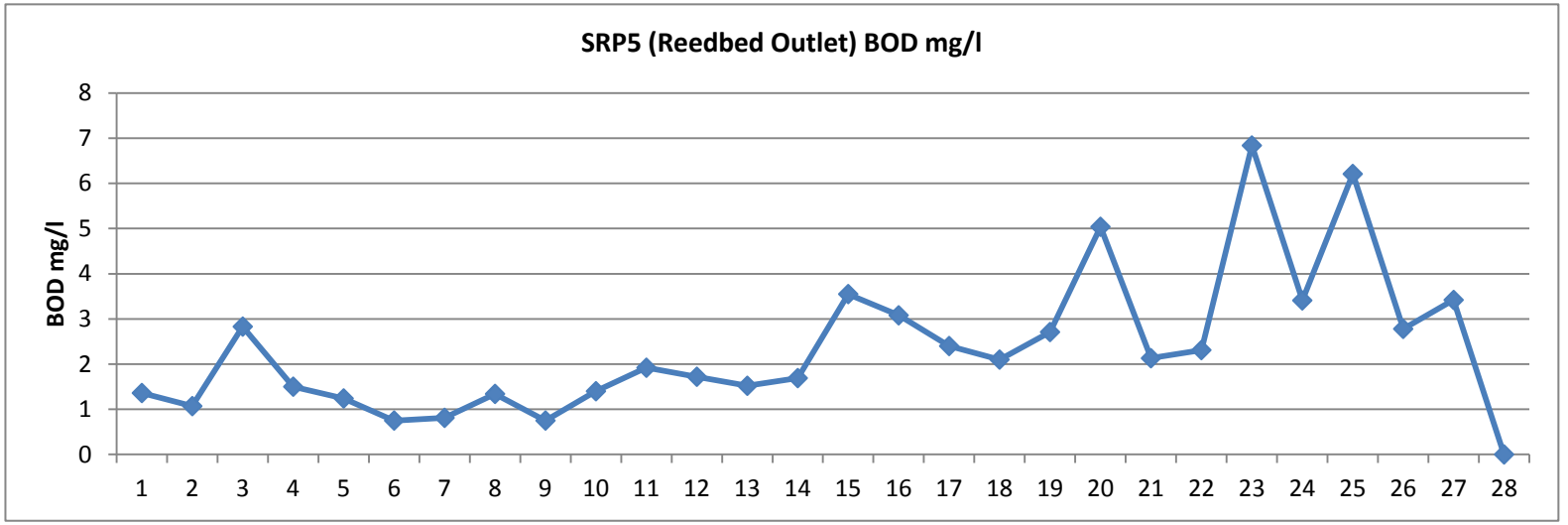

SRP5 (Reedbed Outlet) Conductivity µs/cm
Conductivity µs/cm
600
500
400
300
200
100
0
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014
10/12/2014

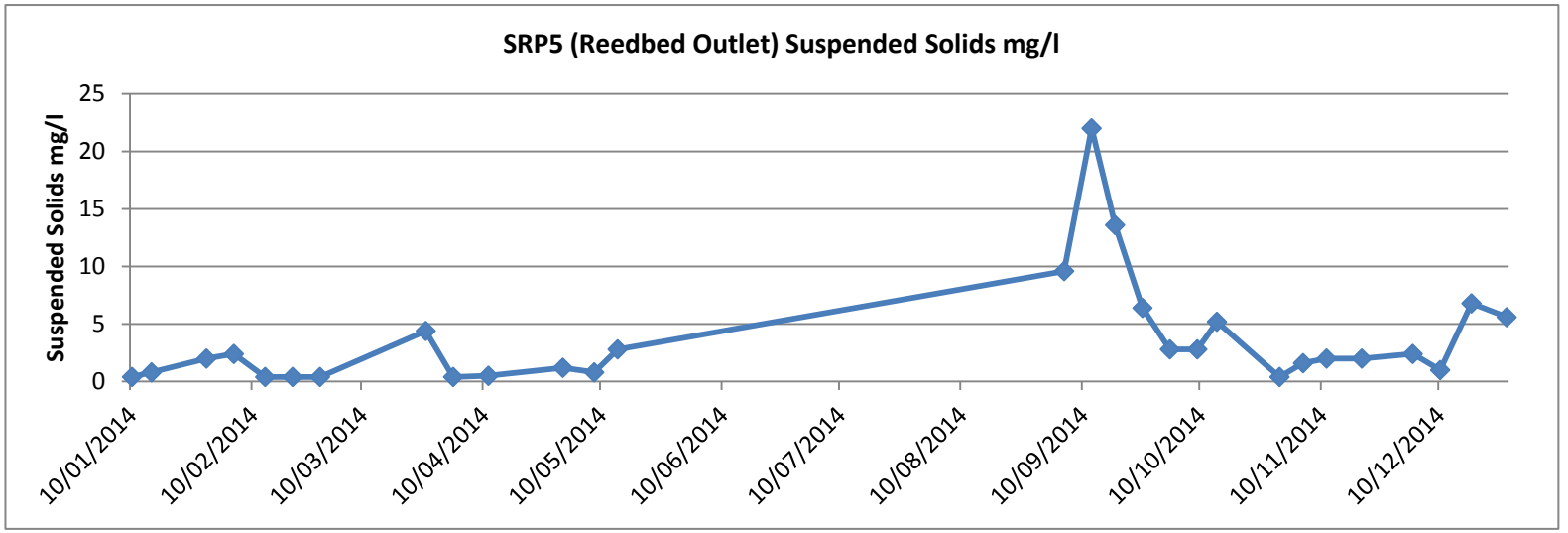

SRP5 (Reedbed Outlet) Ammonia (as N)
Ammonia (as N)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014
10/12/2014


SRP5 (Reedbed Outlet) Chloride mg/l
Chloride mg/l
50
45
40
35
30
25
20
15
10
5
0
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014
10/12/2014


SRP5 (Reedbed Outlet) COD mg/l
COD mg/l
70
60
50
40
30
20
10
0
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014
10/12/2014


SRP5 (Reedbed Outlet) TOC mg/l
TOC mg/l
30
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28


SRP5 (Reedbed Outlet) BOD mg/l
BOD mg/l
0
1
2
3
4
5
6
7
8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28


SRP5 (Reedbed Outlet) Suspended Solids mg/l
Suspended Solids mg/l
0
5
10
15
20
25
10/01/2014
10/02/2014
10/03/2014
10/04/2014
10/05/2014
10/06/2014
10/07/2014
10/08/2014
10/09/2014
10/10/2014
10/11/2014
10/12/2014