

NMR PIPETECTOR Installation Report, in UK

Anti-Corrosion Application, Addenbrooke's Hospital, located in Cambridge

NMR Corporation

* Appearance of Building and Installation Place



Appearance of the building



Outlet pipes of the hot water tank

* Installation Purpose and result

Addenbrooke's Hospital is one of the largest hospitals in the UK (1300 beds). The NMR units have been fitted to the hot water service pipe work within the main ward block which was built approximately thirty four years ago. The hot water pipes were replaced with new galvanized pipes three years ago, however, due to the increase of corrosion within the pipe work leaks were occurring in many places, with discoloured water coming out of the faucets every morning.

For the protection of hot water pipe work from corrosion, two units of NMR Pipetector were installed on the outlet pipes from the hot water cylinders, and one NMR unit was installed on the cold water supply pipe on the third floor, as the cold water is mixed with hot water for controlling the temperature at the faucets. The water samples for analysis were taken from the third floor.

Just 66 days after the installation of the NMR Pipetector, the Fe content decreased from **1.07mg/l** to **0.11 mg/l**. It means that the corrosion ($\text{FeO}(\text{OH})$) inside of the pipe work was terminated and reduced to magnetite (Fe_3O_4) which is not dissolved into the water.

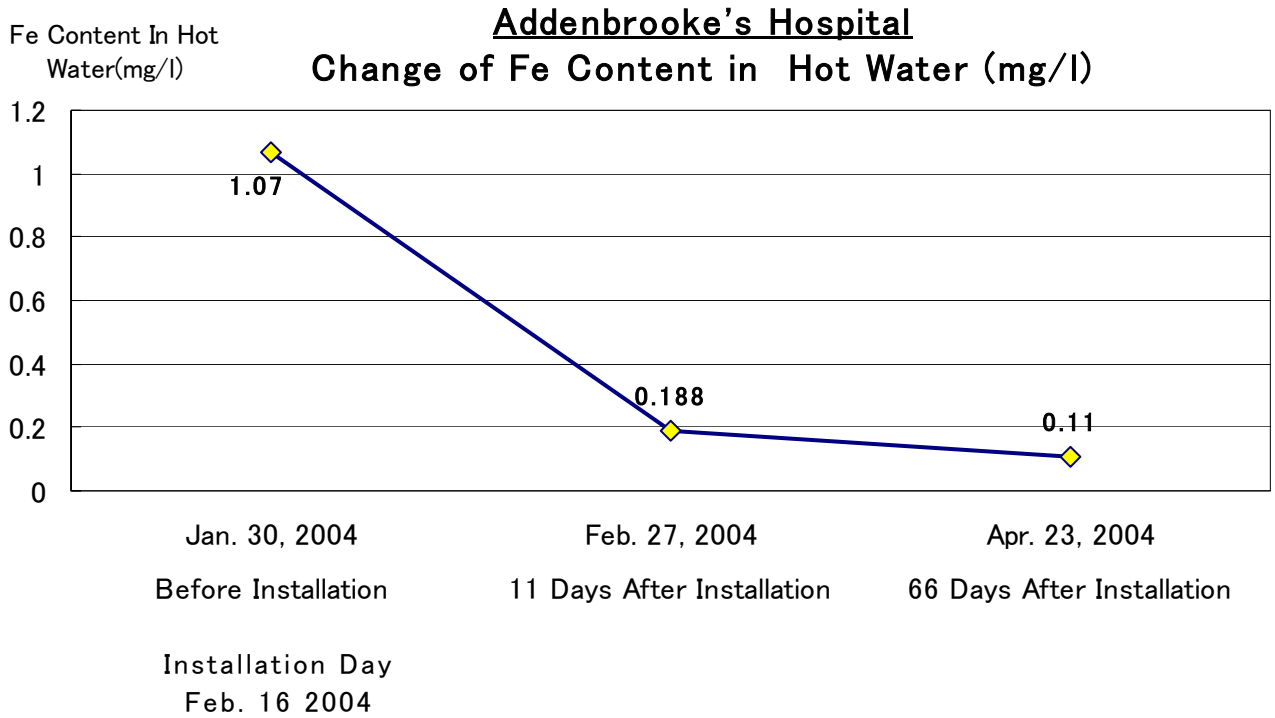
* Installation Summary

Name of Building:Address	Addenbrooke's Hospital: Hills RD, Cambridge, CB2 2QQ England
Building Summary	One of the largest hospital in UK(1300 beds), Old building, hot water pipe was renewed 3 years ago.
Installation Place	Outlet pipes of 2 hot water tanks
Installation Day	February 16 in 2004
Installation Place Number of installed NMR PIPETECTOR	Outlet pipes of 2 hot water tanks PT-75DSx2units On the branch cold water pipe of the third floor PT-30DSx1unit

***Fe content in hot water (mg/l)**

Before Installation Jan. 30, 2004	Installation Day Feb. 16 2004	11 Days After Installation Feb. 27, 2004	66 Days After Installation Apr. 23, 2004	British Government Standard for Drinking Water 0.2mg/l
1.07mg/l		0.188mg/l	0.11mg/l	

***Fe content in hot water (mg/l)**



Before Installation

11 Days After Installation

66 Days After Installation

certificate of analysis

Report No: 20040204100316
 Sheet 13 of 18
 File Reference : 638

4 February 2004


Anglian Water Services Limited
 Central Laboratory
 Hinchingbrooke Business Park
 Kingfisher Way
 Huntingdon PE29 6FL

Tel 01480 325710
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Sample Point : CWC MISCELLANEOUS COMMERCIAL WORK
 AWS Reference W01CAMCCT

Sample Number 04024540
 Sample Date 30/01/2004 at 00:00
 Comment ADDENBROOKES 448 1ST SAMPLE

Det	Determinand Name	Result	Units
04215X	Iron as µg/l	1070	µg/l Fe



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Report No: 20040304092618
 Sheet 14 of 17
 File Reference : 638

4 March 2004

Anglian Water Services Limited
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Tel 01480 325710
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Sample Point : CWC MISCELLANEOUS COMMERCIAL WORK
 AWS Reference W01CAMCCT

Sample Number 04075213
 Sample Date 27/02/2004 at 12:12
 Comment ADDENBROOKES STAFF KITCHEN 1ST 448

Det	Determinand Name	Result	Units
04215X	Iron as µg/l	188	µg/l Fe



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Report No: 20040429101258
 Sheet 10 of 13
 File Reference : 638

29 April 2004

Anglian Water Services Limited
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 Huntingdon PE29 6FL

Tel 01480 325710
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Sample Point : CWC MISCELLANEOUS
 AWS Reference W01CAM2BZ

Sample Number 04168335
 Sample Date 23/04/2004 at 00:00
 Comment 448 1ST SAMPLE

Det	Determinand Name	Result	Units
04215X	Iron Total	0.11	mg/l Fe



Rosie Felton
 Quality Manager

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Addenbrookes 3-3 (080226)

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