



Dungannon and South Tyrone Borough Council

Detailed Assessment for NO₂ Pollution at
Newell Road, Dungannon; Charlemont Street
(Main Street) Moy and Stewartstown Road,
Coalisland.

AUGUST 2011

Executive Summary

Dungannon and South Tyrone Borough Council submitted a Progress Report to the Department of Environment Northern Ireland in June 2010. The report concluded that the Council was required to carry out a detailed assessment for Newell Road, Dungannon; Charlemont Street (Main Street) in Moy and Stewartstown Road, Coalisland to determine if there was a consistent breach of Nitrogen Dioxide (NO₂) levels at these sites.

The results of this detailed assessment show that all three sites are in breach of the objective limit for NO₂ (40µg/m³). The site at Charlemont Street (Main Street) in Moy is also close to breaching the 1 hour mean objective as it is accepted that NO₂ results above 60µg/m³ also tend to breach the 1 hour limit value of 200µg/m³.

On the basis of the results obtained from this detailed assessment, Dungannon and South Tyrone Borough Council will be declaring an AQMA for all three locations.

Contents

1.0 Introduction	5
2.0 Results	6
3.0 Conclusion	9
4.0 Recommendations	9
Appendices	10

1.0 Introduction

Dungannon and South Tyrone Borough Council submitted a Progress Report to the Department of Environment Northern Ireland in June 2010. The report concluded that the Council was required to carry out a detailed assessment for Newell Road, Dungannon; Charlemont Street (Main Street) in Moy and Stewartstown Road, Coalisland to determine if there was a consistent breach of Nitrogen Dioxide (NO₂) levels at these sites (see Table 1 below).

In order to get a more accurate representation of the extent of NO₂ pollution at these sites, 2 additional diffusion tubes were placed at each location in September 2010 to complement the existing tubes. These were situated on a drain pipe at the façade of No 14 Newell Road; on a drain pipe at the façade of No.3 Charlemont Street (Main Street) in Moy and on a drain pipe at the façade of No.6 Stewartstown Road, Coalisland. The additional tubes were to be situated at the new location for an initial period of seven months.

An outcome of the seven month evaluation was that the Council resolved that it would be more prudent to continue the program of triplicate monitoring at all three sites indefinitely. Considering that previous diffusion tube results had demonstrated that the results for these sites were critically close to breaching the objective limits for NO₂, a more cautious approach was required for greater acuity in concluding whether an AQMA should be declared or not.

Table 1: Results of Nitrogen Dioxide Diffusion Tubes January 2009 to December 2009.

Site ID	Location	Within AQMA?	Data Capture 2009 %	Annual mean concentrations
				2009 (µg/m ³) Adjusted for bias
Site 1	Market Square	N	92	25
Site 2	Howard Primary School	N	100	22
Site 3	Ardgannon	N	92	12
Site 4	11 Bushvale	N	92	9
Site 5	Church Street 1	Y	100	44*
-	Church Street A	Y	92	31
-	Church Street B	Y	92	28
-	Church Street C	Y	92	44*
Site 6	Newell Road	N	75	52
Site 7	Charlemont Street, Moy	N	83	57
Site 8	Dungannon Road, Coalisland	N	83	37
Site 9	Stewartstown Road, Coalisland	N	75	41

*Existing AQMA

2.0 RESULTS

Presented in Table 2 below are the results of the NO₂ diffusion tube monitoring surveys carried out in Armagh from September 2010 to the end of March 2011.

Table 2: NO₂ Diffusion Tube Results for 3 sites in Dungannon, Moy and Coalisland from September 2010 to April 2011 analysed by Gradko Environmental Ltd

Month	Newell Road, Dungannon	Charlemont Street, Moy	Stewartstown Road, Coalisland
SEPTEMBER	53	81	55
OCTOBER	60	70	53
NOVEMBER	77	65	56
DECEMBER	63	58	66
JANUARY	50	54	53
FEBRUARY	37	56	53
MARCH	56	57	45
AVERAGE	57	63	54
BIAS ADJUSTED	52	58	50

BIAS FACTOR

The bias factor used in this detailed assessment is derived from Defra's website. The 2010 bias factor was used as it best represents the time period during which the diffusion tubes were in situ. The bias factor in this case was 0.92.

The results in Table 1 above show that all three sites are in breach of the objective limit for NO₂ (40µg/m³). The site at Charlemont Street (Main Street) in Moy is also close to breaching the 1 hour mean objective as it is accepted that NO₂ results above 60µg/m³ also tend to breach the 1 hour limit value of 200µg/m³.

Table 2: NO₂ Diffusion Tube Results For 16 sites in Armagh from January 2010 to December 2010 analysed by Harwell Scientifics Ltd

Site ID	Location	Within AQMA?	Data Capture 2010 %	Annual mean concentrations
				2010 (µg/m ³) Adjusted for bias
Site 1	Market Square	N	100	26
Site 2	Howard Primary School	N	83	28
Site 3	Ardgannon	N	100	13
Site 4	11 Bushvale	N	92	10
Site 5	Church Street 1	Y	100	43
-	Church Street A	Y	92 ¹	36
-	Church Street B	Y	92 ¹	29
-	Church Street C	Y	92 ¹	47
Site 6	Newell Road	N	75 ²	56
Site 7	Charlemont Street, Moy	N	83 ²	60
Site 8	Dungannon Road, Coalisland	N	83 ²	40
Site 9	Stewartstown Road, Coalisland	N	75 ²	48

Note: A separate detailed assessment is being prepared for the site at Dungannon Road in Coalisland. This site was not included in this assessment as it was not put forward for assessment in the same monitoring year as the sites above.

3.0 Conclusions

The result in Table 1 shows that there is a breach of the objective limit of $40 \mu\text{g}/\text{m}^3$ for NO_2 at Newell Road, Dungannon; Charlemont Street (Main Street) in Moy and at Stewartstown Road in Coalisland. Dungannon and South Tyrone Borough Council will be declaring an AQMA for all three locations.

4.0 Recommendations

It is recommended that the Council continues to monitor NO_2 emissions at Newell Road, Dungannon; Charlemont Street (Main Street) in Moy and at Stewartstown Road in Coalisland using the triplicate sampling method and provide an AQMA Action Plan for the site within 18 months of the declaration.

APPENDIX 1

SamplingLocations



Scale: NTS



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NO2 MONITORING LOCATION MAP

Newell Road, Dungannon (8)

 NO2 Monitoring Point
(Passive Diffusion Tube)



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NO2 MONITORING LOCATION MAP

Moy Hill, Charlemont Street, Moy (9)

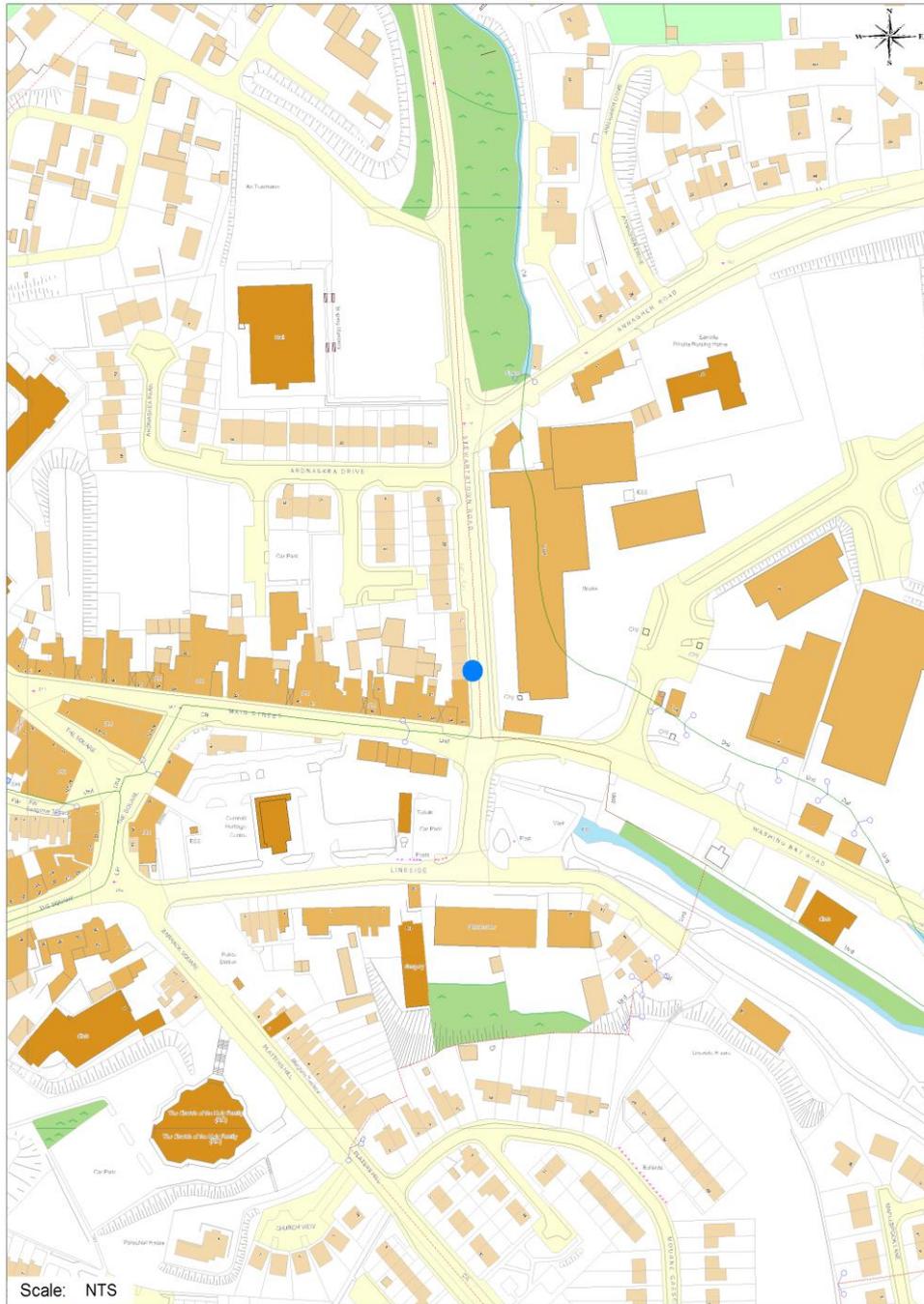


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Scale: NTS

NO2 MONITORING LOCATION MAP

Stewartstown Road, Coalisland (11)



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