

Southern Internal Audit Partnership

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Waverley Borough Council
Investigation report

Air Quality Management (2017/18)

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1 Introduction

- 1.1 Following concerns raised with regard the collection and administration of air quality management data, the Southern Internal Audit Partnership were commissioned to undertake an independent investigation into the operational processes and procedures for air quality management at Waverley Borough Council (WBC). This report sets out the results of the investigation.

2 Details of irregularity

- 2.1 During the course of responding to a freedom of information request, management identified anomalies regarding the reported diffusion tube data results for the 2016 calendar year, as reported in the 2017 Annual Status Report (ASR).
- 2.2 This matter came to light when management were attempting to trace a specific months data for 2016, which was needed to complete the freedom of information request. Management intervention was required due to the Environmental Health Officer responsible for air quality monitoring being on leave at the time it was identified that a months worth of data was omitted in the release of information.
- 2.3 In trying to trace this data, management identified that for the 2016 calendar year no diffusion tube monitoring had been undertaken and the results as presented in the 2017 ASR report had been fabricated.
- 2.4 Additionally, the member of public who had submitted the freedom of information request, was also contesting the bias factor used in the 2016 ASR.
- 2.5 As a result of these two issues being identified the responsible Environmental Health Officer was suspended on the 18th September 2017 whilst these issues were investigated. The EHO subsequently resigned and left the employment of WBC on the 8th December 2016 .
- 2.6 WBC have separately commissioned two independent air quality consultants to review the bias factor applied in the 2016 ASR report. At this time, WBC have withdrawn the published 2016 ASR report and the 2017 ASR report has not been signed off by DEFRA.

3 Scope of investigation

- 3.1 As agreed with management the scope of this investigation was focused on the operational processes for air quality management to establish where and how the opportunities to fabricate diffusion tube data results were facilitated.

3.2 The agreed detailed scope for the review covered the following:

Management and supervision

- Roles and responsibilities for all staff involved in the process, including management & supervision of the activity have been clearly defined, documented and followed;
- Management control arrangements in place for the review and approval of air quality monitoring data prior to submission or publication; and
- Review of relevant activity logs, electronic file history or other associated documentation in regards to version control of air quality data used for publication.

Procurement of laboratory services

- Procurement and selection of the laboratory has been done in accordance with financial regulations and based on a sound business case.

Operational processes for air quality monitoring

- Review of the operational communication procedures between WBC and ESG Didcot for the issue of new diffusion tubes and the receipt of diffusion tubes for analysis;
- Review of the process that should be completed regarding timeframes, collection, recording, analysis and reporting of the data collected. Establish whether the processes in place at WBC met these requirements; and
- Review of the receipt and retention arrangement for diffusion tubes supplied by the laboratory, their installation and return, the management of results returned from the laboratory.

3.3 During the course of our investigation we identified the following additional areas that were subsequently incorporated into our investigation:

- Undeclared second employment held by the Environmental Health Officer and how this may have affected operational efficiency for the Council;
- Diffusion tube results for 2015 as reported in the 2016 ASR had also been fabricated; and
- Co-located diffusion data required to be submitted to DEFRA as part of the national bias adjustment calculations have not been submitted since 2011.

3.4 As part of this investigation we have interviewed the following people:

- [REDACTED], Head of Environmental Services;
- [REDACTED] Environmental Services Manager; and
- [REDACTED], Deputy Environmental Health Manager

We have also met with [REDACTED], Financial Administrator and [REDACTED], Service Accountant.

3.7 We were precluded from interviewing the Environmental Health Officer (EHO) responsible for air quality monitoring. [REDACTED]

[REDACTED] secondly, we were advised by the police not to progress an interview until such time as they had undertaken their enquiries, following WBC's referral of this matter to them.

3.8 For the purposes of this investigation we were supplied with a complete 'blind' electronic copy of the EHO's Windows desktop file contents, 'myspace' file contents and email account. We were also given 'read only' access to the Environmental Services section of 'Sharepoint' (the Council's document management system).

3.9 We also undertook, in conjunction with the Deputy Environmental Health Manager, a search of the EHO's storage areas to retrieve any source documentation that may be relevant to this investigation.

4 Findings

Contextual background

4.1 WBC has in place a detailed Staff Code of Conduct, which amongst other requirements states that all staff are expected to comply with the Seven Principles of Public Life (the Nolan Principles). These being – selflessness, integrity, objectivity, accountability, openness, honesty and leadership.

4.2 Internal control systems are designed to ensure the effective operations of processes as well as to provide the checks and balances to ensure that procedures are adhered to. Poorly designed controls as well as an absence of routine management check provides an opportunity for an individual performing to less than expected standards to go undetected and unchallenged.

4.3 The routine operational processes for air quality monitoring are relatively simple and account for approximately 30% of the role of the assigned EHO. However, the subject area itself is very much in the public interest and the results of monitoring can be influential in the decisions made on planning applications.

4.4 The EHO was appointed in February 2013, and a specific part of the role appointed to was air quality monitoring. [REDACTED] that they had previous experience with air quality monitoring.

- 4.5 The EHO post responsible for air quality monitoring falls within the line management of the Deputy Environmental Health Manager post, which up until May 2016, had been held by a long standing manager whom we are informed had extensive knowledge of air quality monitoring processes.
- 4.6 Between May – December 2016, following the departure of the existing Deputy Environmental Health Manager and 3 unsuccessful attempts to recruit a replacement, line management was covered by the Environmental Health Manager until such time as a new permanent appointment to the post could be made. Line management arrangements reverted back to the Deputy Environmental Health Manager post when the new appointee took up position in December 2016.

Management and supervision

- 4.7 We established that a clear and documented management and reporting structure chart is in place covering the Environmental Health Section.
- 4.8 However, at an operational level there is an absence of a single clearly defined and documented operational procedure that sets out the process for air quality monitoring tasks, including supervision and quality review.
- 4.9 We have been presented with a procedure that has been developed by Regulatory Information and Management Systems (RIAMS) and is used by WBC as the basis for the administration of diffusion tubes. However this only explains in general principles how diffusion tubes should be handled. We have also found on Sharepoint two versions of some informal procedural guidance on how diffusion tubes are administered at WBC, but these do not cover the complete process.
- 4.10 Although there is no formally documented management review procedure for the ASR and supporting data, we are informed by management that these reports are scrutinised at both a management and committee level. However, it is acknowledged that in hindsight the focus of scrutiny at an operational level has not been sufficiently detailed .
- 4.11 Although no evidence of management review and check of source data results can be found we have confirmed that diffusion tube data results as reported in annual reports for the period 2012 – 2015 (based on diffusion tube results for the calendar years 2011 – 2014) are those as received from Lambeth Scientific Services.
- 4.12 As WBC were unable to successfully recruit for a period of months to the vacant Deputy Environmental Health Manager post, interim management arrangements were put in place. Responsibilities were covered by the Environmental Health Manager, increasing their span of control to 13 officers, consequently there was less routine supervision and management of the EHO. Additionally, the loss of experience regarding air quality at a management level resulted in the reduced capacity to scrutinise air quality monitoring tasks.

- 4.13 However, if detailed operational procedures had been in place these would have provided a mechanism for scrutiny, although it is acknowledged that in this instance may not necessarily have uncovered the problem. However, we believe that more robust procedures may have deterred the EHO from taking this course of action and provided the Environmental Health Manager greater transparency of the role and expectations of the EHO.
- 4.14 It is WBC policy that all work related documentation should be stored on Sharepoint. We have reviewed the Environmental Services Sharepoint records and for the 2016 and 2017 annual reports the only record we have been able to find is a cumulative spreadsheet summarising the diffusion tube data results from 2003 – 2016.
- 4.15 Therefore there were no records readily available for management to review if needed.
- 4.16 Our search of the EHO's Windows desktop found the following bona fide air quality records:
- Multiple versions of the ASR reports; and
 - Automatic analyser information.
- 4.17 During our search of the EHO's Windows desktop we also found the following records:
- Fabricated LSS results for diffusion tubes analysis for 2015; and
 - Fabricated ESG Didcot (ESG) results for diffusion tubes analysis for 2016.
- 4.18 For the LSS fabricated results we found a partially constructed template designed to replicate the format of the bona fide LSS reports. The file properties show that this document was created by the EHO on the 3rd August 2017 at 10.06 am. Although not completed or used, points of note on this document are:
- This document has been constructed from fresh i.e. no obvious copying in from another template/PDF file;
 - It reflects the correct current address of LSS;
 - It reflects the typographical error that an original LSS report contains; and
 - The font and column layout is different to a bona fide LSS report.
- 4.19 We also found on the EHO's Windows desktop, contained in an electronic folder entitled 'Lambeth data 15', a full set of fabricated results for 2015 using a second template created by the EHO on the 3rd August 2017 at 14.19 pm. The initial template created was used to populate fabricated results for January 2015 and has then apparently been copied 11 times to create fabricated data for the remaining months for 2015. This was done over a period of 2 days, with the final December 2015 template being completed on the 4 August 2017 at 19.31 pm. Points of note on this template:

- The document appears to have been constructed by copying in from an electronic version of an original LSS report as all fields within the document appear in 'boxes';
- It resembles more closely the style and font of the bona fide LSS document;
- It replicates the typographical errors in the bona fide LSS document;
- It contains the incorrect address for LSS as it shows their previous address;
- One of the chemical symbols has not been replicated correctly;
- The document for December 2015 is exactly the same as that for January 2015; and
- The template contains a falsified electronic signature for the Director at LSS.

4.20 It is this second template that has been used to populate fabricated results for 2015 that we have verified have been used in the 2016 ASR. It is not known why these results were fabricated for 2015 as a full set of results had been supplied for the year by LSS. For LSS to be able to have provided the 2015 results they would of had to have been supplied each month with the diffusion tubes for analysis. Therefore the monthly process of replacing and sending off for analysis the diffusion tubes had been followed by the EHO.

4.21 From the commencement of 2016, the Council switched to ESG for the supply and analysis of diffusion tubes. As had already been established by management prior to our investigation ESG had confirmed that they had received no diffusion tubes for analysis since their appointment. Additionally, ESG had already confirmed that the documents that had been put forward as their results for 2016 were fictitious.

4.22 During our search of the EHO's Windows desktop we identified an electronic folder entitled 'ESG data'. Contained within this folder are 12 Word documents, each purporting to be one months data results for the period January – December 2016 from ESG. These documents have all been created on the 8th September 2017.

4.23 During our search we also found contained under the main desktop folder a spreadsheet entitled 'ESG Didcot tubes' that had also been created by the EHO on the 8th September 2017. This spreadsheet contains 12 work sheets one for each month of 2016 that contains fabricated results. The format for this spreadsheet we believe comes from a copy of the London Borough of Redbridge results for 2015 which is also stored on the EHO's Windows desktop.

- 4.24 The Gradko laboratory logo as used on the London Borough of Redbridge results has been substituted for an ESG logo for the fabricated 2016 results for Waverley. It has already been established by ESG that this is an out of date logo. We believe that the EHO has copied in this logo from an earlier electronic invoice (combined invoice for the supply and analysis of diffusion tubes) submitted by ESG prior to the logo change.
- 4.25 It is from this spreadsheet that we believe that the 12 individual Word documents were created and saved under the 'ESG data' folder. We also note that the results as copied in for both January and December 2016 are the same. The January 2016 results on the spreadsheet differ to those copied in to the Word document. We believe the December 2016 results have been copied in twice in error.
- 4.26 We have found no evidence that suggests that the EHO was acting other than on their own in fabricating these results. Although the results themselves had already been fabricated for the ASR's, the timing of the creation of the falsified laboratory reports fits in with the pressure WBC were under to release the source data as part of a Freedom of Information request.
- 4.27 During the course of our investigation it was brought to our attention by management that they had just been made aware that the EHO had a second employment.
- 4.28 We have investigated this issue and have confirmed:
- The EHO has been working a second employment since June 2014; and
 - [REDACTED]
- 4.29 In investigating this issue we have, for the period December 2016 – November 2017 obtained confirmation of the hours being worked for this second employment. During the course of the normal working week, where second employment hours have been worked these have been very early morning shifts (usually 4am- 8am).
- 4.30 These hours are being routinely worked on a Wednesday and Thursday morning, although there are occasions on the remaining 3 days per week where these hours are also being worked. Additionally, shifts on a Saturday and Sunday were also being routinely worked.
- 4.31 As [REDACTED] we are unable to determine whether there has been any overlap in these working hours. However, anecdotally, we are aware that the EHO was regularly not in before 9.30 – 10am. Therefore, it is likely that these additional hours were worked without any conflict. (note: a full set of timesheets for the period December 2013 – June 2016 had been maintained in line with the flexi time policy).

- 4.32 However, consideration needs to be given to the likely impact that this additional employment has had on the EHO's ability to undertake their role for WBC. For example, allowing for travel time, the EHO would have been up and working for at least 8 hours, before beginning work for WBC.
- 4.33 Additionally, we have identified that since being suspended on the 18th September [REDACTED], the EHO has been working full time in the second employment.


Procurement of laboratory services

- 4.34 Currently, WBC has 52 diffusion tubes in use. 46 across a number of locations within the borough and 3 co-located at each of the 2 automatic analysers (Farnham and Godalming)..
- 4.35 At the instigation of the EHO, the laboratory that WBC used for the issue and analysis of diffusion tubes was changed with effect from February 2016. From this point WBC contracted with ESG, having previously used LSS for a considerable number of years (from at least 2011).
- 4.36 We have confirmed that WBC Financial Regulations and procurement procedures were complied with in changing over to ESG. The contract has an annual value of around £2.5k. Additionally, from the supporting information supplied by the EHO there is evidence that a sound business case was put forward for this decision. ESG were contracted to supply all 52 diffusion tubes required.
- 4.37 The EHO gave notice to LSS in November 2015; therefore the last diffusion tube analysis to be done by LSS would be for December 2015.
- 4.38 From the correspondence available, we have established that the final approval to change laboratories was given early in January 2016. Therefore, for January 2016 there was technically no contract in place for the issue and analysis of distribution tubes.
- 4.39 In January 2016 the EHO emailed LSS to obtain a quote for the provision of tubes (and analysis) for January 2016 as well as the ongoing provision of 3 tubes per month for the period February – December 2016.
- 4.40 LSS have confirmed that they supplied the tubes for January and for the period February – November 2016 they also supplied the 3 tubes per month. We reviewed the payments system and have established that LSS have not invoiced for these tubes.
- 4.41 Although we are not aware of why LSS have not invoiced, had they done so then this may have acted as a trigger for management when authorising any payments to LSS, as they would not have expected any invoices from LSS as they were by this time authorising ESG invoices for the supply and analysis of diffusion tubes We also identified that LSS have not invoiced for the entire 2015 calendar year for the services they provided.

- 4.42 Whilst we can see some email discussion (November 2015) between Air Quality Officers in Surrey, regarding the possible merits in using a separate lab for co-located tubes in order to provide comparisons, these emails indicate that the EHO was not considering this as an option for WBC.
- 4.43 We are assuming that despite correspondence to the contrary, the EHO was intending to use LSS for the co-located tubes. However, guidance available on the use of diffusion tubes recommends that all tubes in use should be analysed by the same laboratory as there can be significant differential between laboratories in terms of analysis results.
- 4.44 Furthermore, there is no apparent discussion or agreement with management on record for this change in process (albeit a moot point as no tubes were sent for analysis during 2016).

Operational processes

- 4.45 As far as we have been able to determine, the EHO was the sole contact provided to ESG at the time of arranging the contract. There is no obvious communications with management that they required to be copied in on any correspondence or that their details were to be provided for contact/information purposes.
- 4.46 As we have previously identified, there are no fully documented procedures in place for air quality monitoring. Through reading best practice guidance and anecdotal evidence from those interviewed we have determined that the basic process in place should have been:
- Diffusion tubes received in advance of the month from the laboratory and stored in a sealed bag in a refrigerator until required;
 - Used tubes removed and replaced monthly;
 - Details of dates of change and location recorded on the tube documentation form sent by the laboratory (each tube has a reference number which can then be traced back to location as written up on the sheet supplied);
 - Any missing tubes, notated on the sheet;
 - Tubes and sheet sent back to the laboratory in sealed bag; and
 - Results subsequently returned from the laboratory
- 4.47 The form that the laboratory sends each month with the diffusion tubes, is the single point of reference for being able to check whether the time frames for the collection and recording of diffusion tubes meets requirements. We have been unable to evidence that any copies of these documents have been retained. We are therefore unable to provide an opinion as to whether the processes followed met expected requirements.

- 4.48 We have not contacted LSS to ascertain whether they have copies of these documents. ESG have already confirmed that they have not been sent any tubes for analysis between February 2016 – September 2017 so no records will exist.
- 4.49 In order to get air quality monitoring back up and running, all diffusion tubes were replaced in September 2017. In conducting this exercise, the majority of the used tubes removed were found to have been in place since July 2016, with 2 being September 2016. There is indication that up until July 2016 tubes were being replaced, although to what extent this is unknown, but not being sent for analysis. As previously referred to, no diffusion tubes have been sent for analysis since December 2015.
- 4.50 
- 4.51 Additionally, on those days that the EHO was recorded as being out replacing diffusion tubes, we conclude that they were absent without leave as clearly the recorded purpose for being out was not being conducted.
- 4.52 Diffusion tube analysis results as undertaken by LSS were always posted out as hard copy reports. We have only been able to locate original copies of these documents for 2011 and 2012. These were found when undertaking the search of the EHO's storage areas. As these predate the EHO being in post we assume that these were handed over when taking up appointment. Copies of reports for 2013 – 2015 have subsequently been obtained by management directly from LSS.
- 4.53 There is no evidence through reviewing 1:1 records or available emails that diffusion tube results were reviewed or discussed with management in any level of detail.
- 4.54 We have obtained and reviewed a copy of the corporate Document Retention Policy. The Policy states that reports/returns to central government should be retained for 7 years. The Policy is not specific in detailing whether any supporting documentation used to compile these reports should also be kept.
- 4.55 We have traced all reports submitted to DEFRA going back to 2011 so can confirm that in strict terms the Document Retention Policy has been adhered to.
- 4.56 However, whether detailed specifically within the Document Retention Policy or not, we would have expected to be able to trace the original laboratory reports used in the compilation of the main report to DEFRA. As indicated earlier, the original documentation for diffusion tube results for the period 2013 – 2015 could not be located. Although we did find during this review original LSS reports for 2011 and 2012 diffusion tube results, management were unaware these reports existed.

- 4.57 Although not part of the scope of this review, during the course of our investigation we did identify that the National Physics Laboratory, on behalf of DEFRA, maintain a national bias adjustment spreadsheet. As we were aware that one of the concerns identified with the 2016 ASR was in relation to the application of a local bias factor rather than a national bias factor we looked at this issue further.
- 4.58 Through contacting DEFRA we confirmed that local authorities should be submitting diffusion tube data results for co-located tubes in order for this to be populated into the spreadsheet. We identified that no such data for WBC has been submitted since 2011.
- 4.59 We acknowledge that there is a degree of contention over the validity of using the national bias factors published, due to apparent limited number of studies used to compile this figure, as not all authorities appear to be submitting the required data. However, it is still currently a requirement that authorities submit this information. We have seen no evidence to suggest that management were aware of or had made a decision that co-located tube data results were not to be submitted.
- 4.60 Although not originally part of this review, we have undertaken a desk top review of the data submitted for the automatic analysers and have confirmed that no apparent manipulation of this data has occurred. This exercise was done in conjunction with the Deputy Environmental Health Manager.

5 Conclusion.

- 5.1 The EHO has abused the position of trust that they were in by undertaking the following actions:
- Fabricating diffusion tube data results for the 2015 and 2016 calendar years, and creating falsified laboratory reports in an attempt to disguise this, including the falsification of a signature on the LSS documentation created;;
 - Failing to administer the correct process for diffusion tubes throughout the 2016 calendar year and also through the 2017 calendar year (up to their suspension in September 2017);
 - Fraudulent claiming of mileage, from at least August 2016, for diffusion tube changes that were not undertaken;

[REDACTED]

[REDACTED]

5.2 However, this investigation has also identified a number of factors that have afforded the opportunity for the EHO to have abused this position. These are:

- General line management and supervision has not been at a sufficiently operational level of detail;
- Too much reliance was placed on one person, without sufficient safeguards within the process;
- An absence of detailed operational procedures has contributed, in a time of staff turnover, to the inability to effectively manage air quality processes; and
- Time recording has not been undertaken or managed in line with the flexi time policy

