



County of Allegheny

Office of the Controller

Analysis of the Allegheny County
Health Department's Air Quality Program
For the Period January 1, 2014
through December 31, 2014

(Non-Audit Service)

May 16, 2016

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January 19, 2016

Dr. Karen Hacker
Director
Allegheny County Health Department
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Analysis of the Allegheny County
Health Department's Air Quality Program
for the Period January 1, 2014
through December 31, 2014

Dear Dr. Hacker:

We have applied procedures to evaluate whether the Allegheny County Health Department ("ACHD") Air Quality Program is monitoring air quality and complying with applicable air quality regulations. Our procedures were applied to the period from January 1, 2014 through December 31, 2014. Our engagement was performed as a non-audit service. Therefore, our engagement was not performed in accordance with *Government Auditing Standards*.

As we performed our engagement, we gained an understanding of each phase of the Air Quality Program. During that process, we identified a number of conditions that are having an adverse impact on the operation of the Program. We have offered recommendations to assist in remediating these conditions, which should improve the operation of the Program. The results of our procedures are included in the attached report.

Dr. Karen Hacker
January 19, 2016

We would like to thank the management and staff of the Allegheny County Health Department for their courtesy and cooperation during our engagement.

Kind regards,



Chelsa Wagner
Controller



Lori A. Churilla
Assistant Deputy Controller, Auditing

cc: Honorable John DeFazio, President, County Council
Honorable Nicholas Futules, Vice-President, County Council
Honorable Rich Fitzgerald, Allegheny County Executive
Mr. William McKain, County Manager, Allegheny County
Ms. Jennifer Liptak, Chief of Staff, County Executive
Ms. Mary Soroka, Budget Director, Allegheny County
Mr. Joseph Catanese, Director of Constituent Services, County Council
Mr. Walter Szymanski, Budget Director, County Council
Mr. James Thompson, Deputy Director, Environmental Health, ACHD

I. Introduction

In the 1940s, cities suffered from heavy smog and pollution that lingered over them. People suffered from many health problems, which led professionals to investigate, and conclude that, air pollution from the industrial boom was causing negative health effects across the country. Major industrial cities, like Pittsburgh, lost lives due to the pollution. Scientists and states began to realize the need for air pollution control and soon the legislation followed. In 1970, Congress passed the Clean Air Act which developed the nation's air quality standards. In the Clean Air Act, six criteria pollutants are identified. Criteria pollutants are simply common air pollutants that can be harmful to your health. The six criteria pollutants for which emission standards have been set by the EPA include ozone, nitrogen oxides, lead, sulfur oxides, particulate matter, and carbon monoxide.

The Allegheny County Health Department (ACHD) came into existence in 1957 as a merger of several city and county functions. Air Quality, Bureau of Air Pollution at the time, had been a function in both the City of Pittsburgh and Allegheny County prior to the merger. The Air Quality Program has made strides over the past 50 years in reducing the pollution in Allegheny County. Numerous amendments have been made to the Clean Air Act in order to continuously improve air quality in the United States. The 1990 Amendment established the national permits program for stationary sources. Through this, the permitting responsibilities were broken down into levels, most remaining at the state level. However, Allegheny County and Philadelphia County have been authorized to operate their own permitting agencies in Pennsylvania. The Pennsylvania Department of Environmental Protection requested approval of an operating permit program for Allegheny County on November 9, 1998. The EPA approved the program for Allegheny County to issue permits on December 17, 2001. ACHD began collecting permit applications under the new permit program in the late 1990s but was unable to process them until the approval was granted in December 2001.

ACHD's Role in Improving Air Quality

In general, ACHD's Air Quality Program is unable to require members of the regulated community to take action to control their emissions beyond the measures necessary to ensure compliance with the National Ambient Air Quality Standards (NAAQS) issued by the US Environmental Protection Agency (EPA). The perception of many that ACHD's Air Quality Program is not doing enough to control pollution appears to be largely attributable to the lack of public awareness regarding this limitation. (A perceived lack of Program transparency and the difficulty that the general public may have in obtaining air quality related information are likely also leading to that perception.)

Federal regulations require ACHD to maintain a network of air quality monitoring sites within the County, which the EPA periodically reviews and approves. The EPA reviews the air quality data generated by the Air Quality Program's monitoring site network and the networks of other jurisdictions throughout the country to monitor for compliance with the NAAQS. When air quality does not comply with the NAAQS, the EPA can designate areas as nonattainment areas for specific criteria pollutants. A non-attainment area designated by the EPA can be a County, a portion of a county, or a larger area that includes a county. The EPA's designation of Allegheny County or a portion of the County as a nonattainment area requires the Air Quality Program to impose additional compliance requirements, stipulate increased emissions monitoring activities,

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and take enforcement actions on members of the regulated community within the County whose emissions impact the nonattainment areas.

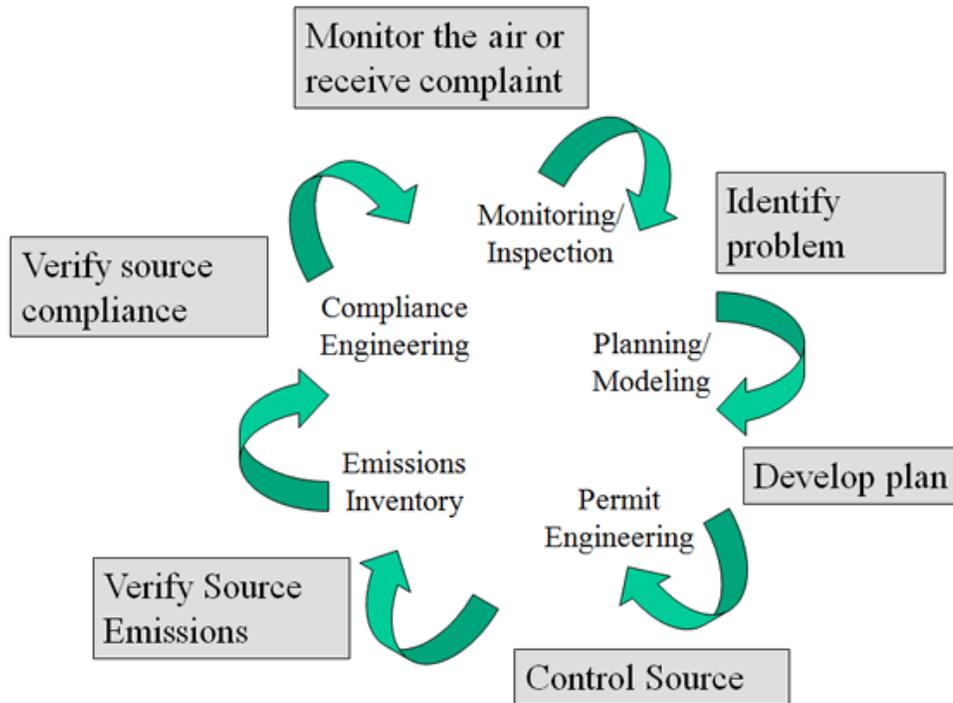
After the area has been designated as a nonattainment area, the Air Quality Program ordinarily must prepare, submit, and implement a State Implementation Plan (SIP). These Plans are actually submitted to the state, and the state reviews them and submits them to the EPA. SIPs are required to identify the measures that the Air Quality Program and the regulated community will take to bring air quality in the nonattainment area into compliance with the NAAQS, and to prove that the measures to be taken will result in achievement of the standards. In putting these Plans together, ACHD must conduct modeling activities of emissions dispersion to identify the sources impacting the nonattainment area and the extent to which they are impacting the area, in order to help determine what measures are necessary to ensure compliance with the NAAQS. To the extent that attainment of the NAAQS may not be achieved by the deadline established by the EPA for attainment, the Air Quality Program maintains responsibility for achievement of the NAAQS.

In order for an area that has been designated by the EPA as a nonattainment area to be re-designated as an attainment area, federal regulations, specifically Section 107(d)(3)(E) of the Clean Air Act, require a demonstration that the applicable air quality standard has been achieved. The standards for ozone, particulate matter, and sulfur dioxide are based on three-year averages, so a minimum of three years of “clean data” would be required to demonstrate achievement of the standards. However, obtaining a minimum of three years of “clean data” (which is evidenced by the EPA’s publication of clean data determinations) is only the first step in the re-designation process. The other requirements are: a fully approved State Implementation Plan, permanent and enforceable controls or other reductions, a modeled demonstration that the area will continue to meet the standards in 10 years (a maintenance plan), and meeting any other requirements of the Clean Air Act Section 110 (including Reasonably Available Control Technology and transportation plans) and Part D (new source review.) Once those conditions are met a permitting agency can request re-designation of a nonattainment area as an attainment area.

I. Introduction

Operation of the Air Quality Program

ACHD's Air Quality Program is made up of 5 components. The diagram below is from ACHD's website and represents their Air Quality Program structure.



Monitoring/Inspection

The monitoring/inspection section is comprised of air quality instrument technicians, analysts, and engineers. The monitoring/inspection staff is primarily responsible for the maintenance of ACHD's network of air quality monitors. This includes the daily maintenance of monitoring equipment, installation of new equipment, verification of monitored data, initial data analysis, overall quality assurance, and oversight of specialized monitoring studies.

Planning/Modeling

The planning/modeling section is comprised of air quality engineers, modelers, a meteorologist, and an epidemiologist. The planning/modeling section is primarily responsible for analyzing daily air monitoring data for unusual patterns and for engaging in modeling activities to assist in the issuance of new permits and development of State Implementation Plans (SIPs). This includes the daily review and validation of monitored air quality data, analyzing the data for trends and sources, modeling monitored data, and developing control strategies ranging from new regulations to SIPs. ACHD writes the SIP portion specific to Allegheny County, detailing the plans that the area will follow to reach attainment of new air quality standards, and sends it to the State for inclusion with their submission to the EPA. SIPs are written for non-attainment

I. Introduction

areas, areas where three years after new standards were created still contain emissions of the specific criteria pollutant in exceedance of the new standards.

Permit Engineering (Permitting)

The permit engineering section is comprised of air quality engineers whose primary responsibility is processing installation and operating permit applications received from major and minor sources. Source emission levels determine whether a source must apply for an operating permit and what type of operating permit. A major source is a stationary source that has the potential to emit 10 tons per year or more of any hazardous air pollutant, 25 tons per year of any combination of hazardous air pollutants, or 100 tons per year of any air pollutant. (A minor source is a source that does not meet any of these major source thresholds.) Changes to facilities or the installation of new equipment require installation permits. All permits detail what the expected emissions will be, the necessary monitoring requirements, and any applicable limitations on pollution production.

Emissions Inventory

The emissions inventory team, part of the enforcement section, is comprised of an air quality engineer and an air quality scientist whose primary responsibilities are to verify emissions from permitted sources in the County to determine compliance with regulations and with individual facility permits.

Compliance Engineering (Enforcement)

The compliance engineering section is comprised of air quality engineers and inspectors whose primary responsibilities are to identify violations of air quality regulations. The compliance engineering staff utilizes information from other sections, as well as direct evidence from inspectors, to require actions by facilities and individuals to control emissions. Enforcement can levy fines against polluters, and can require polluters to take specific actions to remedy the problems.

The Current State of Air Quality in Allegheny County

There are currently three criteria pollutants (of six) for which areas have been designated by the EPA as nonattainment. These areas either include Allegheny County or a portion of the County. These criteria pollutants are ozone, fine particulate matter (PM_{2.5}), and sulfur dioxide (SO₂). Specifically:

- For the 2008 8-hour ozone standard of 75 parts per billion, a multi-county area which includes Allegheny County is currently legally designated as nonattainment. However, as of October 31, 2015, which is the end of the 2015 ozone season, the area is measuring meeting the standard.
- For the 2006 24-hour standard for PM_{2.5} of 35 micrograms per cubic meter (ug/m³), a five-municipality area (Lincoln, Glassport, Liberty Borough, Port Vue Borough, and the

I. Introduction

City of Clairton) within Allegheny County is currently legally designated as nonattainment, but measuring meeting the standard since the end of 2014. The EPA published a clean data determination on July 10, 2015.

- For the 1997/2006 annual standard of 15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for $\text{PM}_{2.5}$, the five-municipality area within Allegheny County is currently legally designated as nonattainment, but measuring attainment since the end of 2011. The EPA published a clean data determination on October 25, 2013.
- For the 2012 annual standard for $\text{PM}_{2.5}$ of 12 $\mu\text{g}/\text{m}^3$, the entire county is currently nonattainment, both by legal definition and by measurements.
- For the 2010 SO_2 standard of 75 parts per billion, a 22-municipality area within Allegheny County is currently nonattainment, both by legal determination and by measurements.

II. Scope and Methodology

We applied procedures to evaluate whether the Allegheny County Health Department (“ACHD”) Air Quality Program is monitoring air quality and complying with applicable air quality regulations. As we performed our engagement, we gained an understanding of each phase of the Air Quality Program. Our engagement covered the period from January 1, 2014 through December 31, 2014. Specifically, we performed the following procedures:

- Reviewed the US Clean Air Act, the US National Ambient Air Quality Standards (NAAQS), PA Air Pollution Control Act, the Allegheny County Health Department’s Rules and Regulations – Article XXI Air Pollution Control, and other air quality regulations.
- Reviewed *A Report of the Environmental Air Quality Task Force* dated December 21, 2009, the American Lung Association’s 2015 *State of the Air Report*, data on ACHD’s website applicable to the Air Quality Program, relevant news articles, and other data pertaining to air quality in Allegheny County.
- Interviewed Air Quality Program Management Personnel and Staff as needed.
- Applied procedures to evaluate the propriety of the placement of a sampled air monitoring site (the nitrous oxides near-road monitor) and reviewed the logbook for the site to assess the adequacy of site maintenance activities.
- Reviewed ACHD’s permit application to assess adequacy/ease of completion and use.
- Analyzed invoicing of annual administrative fees for 2014 to assess completeness.
- Traced fees and fines received by the Air Quality Program to recording in the general ledger.
- Reviewed the emissions inventories for a sample of minor sources to verify submission and assess the adequacy of the measures taken by Air Quality Program staff to evaluate the reasonableness of the reported emissions data.
- Sampled citizen air quality complaints to evaluate proper handling.
- Reviewed the 2014-2015 full compliance evaluation for a sampled major source to assess the completeness of the evaluation.
- Reviewed other ACHD policies pertaining to carbon monoxide, asbestos removal, open burning, abrasive blasting, etc.
- Applied other procedures as deemed necessary.

We conducted our procedures from September 2015 through January of 2016. We provided a draft copy of this report to the Director of the Allegheny County Health Department for comment. Her response begins on page 32.

III. Findings and Recommendations

Finding #1

The Methodology Used to Assess Fines for Air Quality Violations Needs to be Improved

Criteria: While the revenue attributable to fines for violations of air quality regulations assessed against the regulated community can be used to subsidize Air Quality Program activities, the primary objective of fines as a punitive measure should be to deter future violations. Not all violations of air quality regulations have the same impact on air quality, and exceptions to policy may be warranted from time to time based on applicable facts and circumstances. However, fines for violations of air quality regulations that have a significant impact on air quality should generally continue to increase to the extent that the violations continue, especially when such violations impact areas designated by the US Environmental Protection Agency (EPA) as nonattainment areas for one or more criteria pollutants.

Condition: We reviewed the enforcement actions taken against two major sources, US Steel Clairton Works and Shenango, Inc., associated with a variety of air quality violations in 2014. These major sources were assessed monetary penalties in 2014 in excess of \$650,000 and \$500,000, respectively (see Exhibits I and II). We noted that both of those two sources were subject to multiple consent orders and agreements reached between the major sources and ACHD. Such orders and agreements ordinarily address specific violation types that the sources have committed, and contain civil penalties and stipulated penalties that are to be assessed in the event that such violations occur in the future. The sources may also be provided the opportunity to conduct a supplemental environmental project in lieu of paying a portion of the penalty. We noted that both of the major sources paid stipulated penalties for air quality violations in 2014. We also noted that the same two sources were fined multiple times for air quality violations in 2014 that were not addressed by consent orders and agreements.

We inquired regarding penalties assessed by ACHD in 2014 (see Exhibit 3) and gained an understanding of the methodology used by the Air Quality Program to assess fines for air quality violations. We determined that while a source may be fined more if the air quality violation is not its first violation, the methodology used by ACHD does not result in the fines continuing to increase as the number of violations increases (up to the \$25,000 per day maximum amount). We noted that US Steel Clairton Works impacts areas designated by the EPA as nonattainment areas for two criteria pollutants, particulate matter (PM_{2.5}) and sulfur dioxide (SO₂). We also noted that ACHD did not finalize and submit its State Implementation Plan (SIP) for SO₂ prior to the deadline, April 6, 2015,

III. Findings and Recommendations

contained in the applicable federal regulations and is therefore technically out of compliance.

Cause:

As we gained an understanding of the Air Quality Program's enforcement section, we learned that ACHD has had only one attorney to negotiate and litigate air quality matters for a number of years. Given the limited available legal resources, ACHD has elected to settle air quality matters in lieu of litigation. While Air Quality Program management believes that the Program has not relinquished any significant rights or its ability to control air quality in Allegheny County by entering into consent orders and agreements, the stipulated penalties agreed to in the agreements provided the sources with relative certainty about the penalties that would be assessed in connection with specific types of violations, and were apparently not large enough to serve as an effective deterrent, as the sources continued to violate the air quality regulations and pay the stipulated penalties. Regarding the methodology used to assess fines for violations of air quality regulations that are not covered by consent orders and agreements, Air Quality Program management views the process for determining fine amounts as subjective. The methodology that was initially developed years ago has been periodically revised. The most recent revision (currently in effect) is viewed by Air Quality Program management as acceptable, although management is willing to consider further revision.

Effect:

The effect of this condition is that achieving and maintaining air quality in Allegheny County that meets the air quality standards established by the EPA may be more difficult to accomplish, given that sources may continue to violate air quality regulations to the extent that doing so is viewed as affordable.

Recommendations:

We were advised by Air Quality Program management that a second attorney capable of negotiating and litigating air quality matters has recently been engaged. We recommend that Air Quality Program management:

- Review the process of entering into consent orders and agreements to ensure that the source will achieve and maintain compliance with the standards and that the monetary penalties are strict enough to act as a deterrent.
- Consider whether the utilization of additional legal resources is warranted.
- Refine the Program's methodology for the assessment of fines so that fines for violations that have a significant impact on air quality are increased to the extent that violations continue to occur, up to the \$25,000 per day maximum amount.
- Ensure that State Implementation Plans are submitted timely.

III. Findings and Recommendations

Finding #2

Adequate Measures to Eliminate the Backlog of Outstanding Permit Applications Have Not Been Taken in a Timely Fashion

Criteria: To effectively eliminate a backlog in a timely fashion, management would need to identify the operational factors contributing to the backlog, develop measures to address each of those factors to the extent possible/practical, and implement those measures in a timely way.

Condition: The Air Quality Program has a significant backlog of permit applications that have not yet been processed. During the 2014 financial statement audit of ACHD's Title V Air Quality Fund, we determined that five Title V (major source) operating permits were not issued or denied within 18 months, a condition which represents noncompliance with applicable federal regulations. The major sources had all submitted operating permit applications a number of years ago, some as early as 1995. We attempted to gain a better understanding of the overall permit application backlog as we performed our engagement, and determined that:

- Operating permits have not yet been issued or denied for 50 outstanding initial operating permit applications.

Number of Sources	Operating Permit Application Submitted in
2	1995
3	1996
1	1997
1	1998
1	1999
1	2006
2	2007
7	2008
4	2010
4	2011
7	2012
5	2013
8	2014
4	2015

III. Findings and Recommendations

- Renewal operating permits have not yet been issued or denied for 140 outstanding renewal operating permit applications. (Operating permits are issued for 5 year terms.)

Number of Sources	Operating Permit Was Last Issued in
1	1973
2	1992
1	1995
1	1996
6	1997
6	1998
2	1999
1	2002
2	2003
5	2004
4	2005
8	2006
10	2007
3	2008
42	2009
46	2010

- Installation permits have not yet been issued or denied in connection with 29 outstanding installation permit applications. While the Air Quality Program prioritizes the processing of installation permits, 20 of the 29 outstanding installation permit applications have been outstanding for more than 180 days, the Program's internal processing goal.

We also noted that 19 minor sources have not yet submitted operating permit applications. Of these 19 minor sources, 18 were issued installation permits from 2009 to 2015, and one submitted an installation permit application in 2009 but has not yet been issued an installation permit.

As we performed our procedures, we observed that the backlog of permit applications to be processed appears to be attributable to several operational factors:

III. Findings and Recommendations

- First, the Air Quality Program lacks a software application that adequately addresses its operational needs (see Finding #3). As we began our procedures, we were informed that the Air Quality Program did not have a list of all of the permit applications that had not yet been processed. It seems that compiling such a list (which should have been relatively easy if the Program had a software application that adequately addressed its operational needs) would be critical to assessing the severity of the backlog problem and evaluating the progress made (or lack thereof) in eliminating the backlog over time. In order to provide us with lists of the outstanding operating and installation permit applications, Program staff were required to compare operational data in two separate databases and investigate any discrepancies.
- Second, the Program has a poor framework in place for the processing of permit applications, which makes the processing unnecessarily difficult and time-consuming. A number of needed process improvements should have been developed and implemented (see Finding #4).
- Finally, adequate personnel resources are not being applied to the permitting function. At the time we performed our procedures, permitting engineers were assigned 59 sources on average (5 major sources and 54 minor sources each).

The Air Quality Program has experienced difficulties in processing permits timely for a number of years, and adequate measures have not been taken to address any of the aforementioned operational factors contributing to the permit processing backlog in a timely fashion. The processing of the renewal Title V operating permit application for Gulf Oil serves to demonstrate this. The initial Title V operating permit was issued to Gulf Oil in February of 2003. The renewal permit application was submitted timely to the Air Quality Program by Gulf Oil in August of 2007. However, the Air Quality Program did not issue the renewal operating permit to Gulf Oil until July of 2014, almost seven years after the renewal permit application was submitted, which is more than four times longer than the 18-month maximum permit processing time mandated by the Clean Air Act. The Air Quality Program prioritizes the issuance of installation permits, and we were advised that the issuance of new installation permits can delay the processing of operating permit applications (including renewal operating permit applications). However, we were advised that the most recent installation permit had been issued to Gulf Oil in 2008, which suggests that the issuance of installation permits did not cause such a lengthy delay in the processing of the renewal Title V operating permit.

We also noted that two of the measures Air Quality Program management has advised us that it has taken to address the backlog in the processing of

III. Findings and Recommendations

Title V operating permit applications (contained in management's response to our 2014 Title V Fund financial audit findings) will likely do nothing to help to eliminate the overall permit processing backlog. Specifically, we are addressing the reallocation of personnel resources in the permitting section and the institution of management by objectives. The reallocation of personnel resources in the permitting section is helping to ensure that the Title V operating permits that have not been issued for many years are being issued, but other permit applications that would have been processed in their place have not been processed. There is no net gain in that no additional personnel resources have been applied to the permitting process.

Management by objectives is one of a variety of management styles that managers can employ to facilitate the achievement of organizational objectives. Management by objectives involves participative goal setting and decision-making. Employee performance is then measured by comparing actual performance with the established goals. It appears that the Air Quality Program's implementation of management by objectives may not be comprehensive, as we were advised by Air Quality Program management that its implementation of management by objectives began with modification of the performance appraisal process, and that other changes may be implemented over time. While tying compensation to the achievement of organizational objectives is reasonable, it is most effective when the objectives established are achievable and the organization is doing its part to support its employees and create an environment that facilitates the achievement of the objectives. As we indicated earlier, needed process improvements have not been developed and implemented and adequate personnel resources have not been allocated to the permitting process.

Cause:

Despite the difficulty that the Air Quality Program has experienced with its software application for many years, Air Quality Program management was not permitted to hire a dedicated IT professional until early 2015. Prior to the hiring of the dedicated IT professional, the Program relied on the provision of IT services from a few IT professionals that were tasked with meeting the needs of the entire Health Department. We were advised that those individuals were not able to assist the Air Quality Program at all times, and the assistance that those individuals provided was typically limited to small projects.

The permitting section has not developed and implemented needed process improvements because management has not prioritized the development and implementation of the process improvements, and the permitting engineers have been devoting their time primarily to processing permit applications to avoid falling further behind and increasing the severity of the permit application processing backlog.

III. Findings and Recommendations

As we performed our procedures, we were advised that the Director of ACHD had not authorized the hiring of additional permitting engineers. We initially intended to use time data maintained by the Air Quality Program to determine exactly how many permitting engineers the Air Quality Program may need to hire. However, we learned that the software application used by the Air Quality Program to track its permits does not track the time actually spent on each permit by the permitting engineers, and that the bi-weekly timesheets completed by the engineers indicate the sources that they devoted time to, but not the type of permit that they worked on (or other type of service that they may have performed). The lack of adequate time records has not only inhibited us from evaluating the adequacy of the personnel resources being applied to the permitting process, it has also limited Air Quality Program management's ability to effectively demonstrate to the Director of ACHD that the application of additional personnel resources is warranted.

Effect: The backlog in permit application processing will likely continue to exist until adequate measures are taken to address each of the operational factors contributing to the backlog.

Recommendations: We recommend that Air Quality Program management take adequate measures timely to address each of the operational factors contributing to the permit application processing backlog. This should involve:

- Developing a software application to meet the Air Quality Program's operational needs (see Finding #3),
- Improving the framework for the processing of permitting applications to increase the ease and speed of processing (see Finding #4), and
- Applying adequate personnel (engineering) resources to the permitting process.

Air Quality Program management should also refrain from utilizing management by objectives until management accomplishes all of the aforementioned items and the permit process backlog is eliminated.

III. Findings and Recommendations

Finding #3

The Lack of a Software Application that Adequately Addresses the Air Quality Program's Operational Needs Has Posed Significant Program Management Challenges

- Criteria:** A variety of data must be gathered, recorded, retrieved, tracked, analyzed, utilized, and reported every day by Air Quality Program personnel to accomplish the Program's objectives. An effective information system is essential for Program staff to be able to perform their day-to-day activities and for management to effectively manage the Program.
- Condition:** As we began our procedures, we were informed that the Air Quality Program did not have a list of all of the permit applications that had not yet been processed. We were advised that the software application being utilized by the Air Quality Program is unable to generate an accurate listing of the outstanding permit applications. We also learned that the software application being used does not enable the Program to effectively track the time it takes sources to provide information needed to process their permit applications, or track the actual time that the Program's permitting engineers spend on the processing of each permit application. We determined that 19 minor sources were not invoiced for 2014 annual administrative fees to which the Air Quality Program was entitled due to a programming error that resulted in the sources being omitted from the list of sources to be billed. We determined that \$7,125 of the \$7,500 in unbilled 2014 annual administrative fees were attributable to this condition (see Finding #5). Air Quality Program Management has acknowledged that there are also other weaknesses in the software application that are adversely impacting Program management.
- Cause:** The software application was not initially designed to effectively meet all of the operational needs of the Air Quality Program, and as a result, the development of the software application is deficient. Consequently, IT resources have been needed to modify the application, which has occurred on a piecemeal basis. At present, the Air Quality program has one dedicated IT professional to accomplish application development. Prior to the recent addition of the dedicated IT professional, the Air Quality Program's IT needs were being addressed by a limited number of IT professionals responsible for serving the entire Health Department. The Air Quality Program's IT needs were not effectively being met during that time period. The billing issue we identified was caused by a programming error. The IT professional that worked on that part of the application apparently didn't fully understand the circumstances in which the Program intended to invoice sources for annual administrative fees.

III. Findings and Recommendations

Effect: The deficiencies in the software application have posed significant program management challenges. Specifically, we noted that at a minimum:

- The software application's inability to easily generate a list of outstanding permit applications on an as-needed basis makes it difficult for Program management to assess the severity of the permit processing backlog, and to assess the extent to which any measures being taken to address the backlog are actually having an impact.
- The software application's inability to effectively track the time it takes sources to provide information needed to process their permit applications has impacted the timeliness of permit processing, as well as the Program's compliance with federal regulations that require Title V operating permit applications to be issued or denied within 18 months.
- The software application's inability to effectively track the time permitting engineers spend on each permit hampers Program management's ability to evaluate and hold permitting engineers accountable for performance, and makes it difficult for management to determine the extent to which additional personnel resources should be applied to the permitting process.
- The software application's inability to generate an accurate detail of annual administrative fees due from sources could result in the Program's inability to collect the fees, which are intended to subsidize the operation of the Air Quality Program.

Recommendations: We recommend that Air Quality Program management:

- Arrange for the Program's new dedicated IT professional to meet with each section of the Program so that he gains a better understanding of the Program's operational needs and how the Air Quality Program data is being used.
- Work with Program staff to identify all of the changes that need to be made to the software application in order for the application to effectively meet all of the Program's operational needs.
- Clearly document all of the needed application changes in writing, providing as much information as possible to facilitate the IT professional's understanding of the Program's operational needs.
- Provide all of the documentation on needed program changes to the IT professional at the same time, as multiple change requests may relate to a single component of the software application, and he may be able to achieve a number of the Program's desired outcomes in a shorter timeframe.

III. Findings and Recommendations

Finding #4

Needed Process Improvements in the Permitting Section Have Not Been Implemented

Criteria: Developing and implementing process improvements can be critical to the achievement of organizational objectives. Managers should consider initiating process improvements when they determine that a process being used is making it difficult for organizational objectives to be achieved.

Condition: As we gained a better understanding of the operations of the permitting section, we learned that the processing of permit applications involves many steps and is quite time-consuming. There is not much that the Air Quality Program can do about the time associated with certain components of the permitting process, such as the EPA-mandated 30-day public comment period and 45-day EPA technical review period. However, a variety of process improvements could have been implemented to facilitate the processing of permit applications and shorten the timeframe for processing. Air Quality Program management and the Program's permitting engineers have identified a number of such process improvements, but these process improvements have not yet been fully developed and implemented. These include:

- *A Guide for New Permitting Engineers*

Each new permitting engineer serves as the single engineer that processes all permit applications for the specific sources to which he or she assigned, just as the experienced permitting engineers do. We were advised that new permitting engineers begin processing permit applications upon being hired. They are assisted by experienced permitting engineers, but given the backlog of outstanding permit applications, new permitting engineers may not always be getting the assistance that they need. Without adequate guidance, permitting engineers could each be approaching their work differently, and some permitting engineers may be deviating from best practices. The development of a guide that assists new permitting engineers with accomplishing permit processing functions would likely help to ensure that permit processing objectives are being accomplished, to bring about a degree of uniformity in the approach to permit processing, and to reduce permit processing time.

- *Revision of the Permit Application*

The same permit application, approximately 47 pages, must be completed and submitted for every type of permit. As a result, as

III. Findings and Recommendations

the regulated community submits multiple permit applications, much of the same information must be provided over and over again. The permit application has clearly not been subject to a comprehensive update in many years. We noted, for example, that the permit application requests sources to provide driving directions to site locations from downtown Pittsburgh, information that can now be obtained easily using the internet. It also appears that the permit application being used does not clearly describe in adequate detail all of the information needed by the permitting engineers to process the permit applications, because we were advised that sources frequently misinterpret what is required and fail to provide ACHD with the needed information. Consequently, permitting engineers have been required to make many requests of sources for additional information. Developing permit application instructions that are easier to understand would likely increase the extent to which all of the needed information is supplied with the initial permit applications. The development of different permit applications for each type of permit should facilitate the gathering of only information that is applicable to each specific permit type, which would make it easier for the regulated community to complete permit applications and for the permitting engineers to process them. Once the Air Quality Program is able to develop a software application that meets its operational needs (see Finding #3), it may be able to develop online permit applications able to prepopulate draft permits with limited data, such as source names and addresses, source equipment locations and specifications, etc.

- *Permits by Rule/General Permits*

The time spent by the permitting section on the processing of minor source permits is excessive given the limited impact that the minor sources have on air quality in Allegheny County in relation to the major sources. Minor sources with relatively insignificant emissions, such as schools operating a single boiler, are currently obligated to submit the same permit application (approximately 47 pages) as all other sources. With a change to the Air Quality Program's Rules and Regulations, such minor sources could be treated as having a permit without the need to apply for one, as long as the sources certify that specific stipulated maintenance requirements are being met. This change, if implemented, would result in what was described to us as the institution of "permits by rule". The Air Quality Program could also potentially develop general (standard) installation permits that cover certain relatively common types of equipment. Sources could apply for the predeveloped general permits instead of completing and submitting

III. Findings and Recommendations

the current permit application, which would reduce the number of installation permit applications that the permitting engineers would need to process for similar equipment. The Air Quality Program will need to ensure that permits by rule and the issuance of general permits will comply with all applicable air quality regulations.

- *Permit Templates*

There are a number of compliance requirements and stipulated monitoring activities that are consistent among permits that cover the same types of emissions sources. However, the permitting section has developed only a limited number of permit templates to assist in the drafting of permits. While permit engineers must still verify that the compliance requirements and stipulated monitoring activities are appropriate on a case-by-case basis based on the applicable facts and circumstances, developing more permit templates should help to reduce the amount of time it takes to process permit applications.

It appears that other sections of the Air Quality Program may be attempting to implement process improvements to a greater extent than the permitting section. For example, the enforcement section proposed a revision of Allegheny County Health Department Rules and Regulations, Article XXI, Air Pollution Control (Article XXI) for 2014 which would exempt minor sources with negligible emissions from submitting annual emissions inventory statements. Unfortunately, ACHD had notified a certain minor sources that they were exempt from submitting emissions inventory statements for 2014 prior to Allegheny County Council's passage of the proposed revision, technically rendering the minor sources out of compliance with Article XXI for 2014. Despite this condition, the revision to Article XXI will enable the enforcement section to devote more of its attention to significant sources of emissions over the long term.

Cause:

Air Quality Program management and the Permitting Chief have not been prioritizing the development and implementation of these process improvements. The permitting engineers must be involved in development and implementation of the process improvements since they are the most familiar with all of the relevant issues. Management is aware that the permitting engineers are already subject to a severe permit issuance backlog (see Finding #2), and that time that they devote to other matters will likely only cause the backlog to get worse. The application of additional personnel (engineering) resources will be necessary to bring about these process improvements.

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Effect:

The failure to fully develop and implement the aforementioned process improvements has made permit application processing more difficult and time consuming. Specifically:

- While limited progress has been made, the lack of a guide for new permitting engineers has made it more challenging for new permitting engineers to accomplish certain permit processing tasks without assistance, to ensure that they are processing permit applications in a manner similar to other permitting engineers, to ensure that they are accomplishing all applicable permit processing objectives, and to process permit applications in a timely manner.
- The use of a single permit application for all types of permits that has not been subjected to a comprehensive update in many years has resulted in the collection of information from the regulated community that may not be necessary, and yet not enough information to be able to fully process the permit applications. The additional requests for information, combined with the fact that the Air Quality Program cannot effectively track the time it takes for sources to comply with the requests (see Finding #3), has significantly increased the amount of time needed to process permit applications, thereby contributing significantly to the overall permit processing backlog.
- The failure to fully develop and implement permits by rule and general permits has likely resulted in the permitting section processing more minor source permit applications than necessary. Utilizing these methods to reduce the number of permits that need to be processed would help to eliminate the permit processing backlog and reduce the likelihood of future backlogs.
- The lack of certain permit templates requires permitting engineers to spend more time drafting permits.

In addition, the failure to fully develop and implement these process improvements was partially responsible for a hesitance to develop and implement another process improvement that would improve the quality of permits issued but could potentially lengthen permit processing time. During our interview with enforcement personnel and our review of the Air Quality Program's enforcement activities, we identified instances in which permits did not contain compliance requirements that were adequately specific, did not contain compliance requirements that were enforceable, and did not contain stipulated monitoring activities that were reasonable. Based on this, we concluded that enforcement personnel should have an opportunity to review draft permits and offer suggestions, if appropriate, prior to their issuance. However, we were advised that the

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enforcement section has only recently begun to review draft permits due to concerns that it would lengthen the permit issuance process.

Recommendation: We recommend that Air Quality Program management focus on fully developing and implementing these process improvements once adequate personnel resources have been applied to the permitting process (see Recommendations to Finding #2). Specifically:

- Finish the guide that is intended to assist new permitting engineers in processing permit applications effectively and efficiently.
- Create separate permit applications for each type of permit, focused on obtaining all of the information needed (and only needed information) for each particular permit type.
- Establish a framework for permits by rule and a process for the issuance of general permits, and verify the compliance of these initiatives with all applicable air quality regulations prior to implementation.
- Develop a wider variety of permit templates for use by the permitting engineers.

III. Findings and Recommendations

Finding #5

Internal Controls Pertaining to Program Revenues Should Be Strengthened

Criteria: Control procedures are a key component of an organization's internal control structure, and review procedures are an important element of control procedures.

Condition: When we analyzed the Air Quality Program's billings and collections for 2014, we determined that 20 minor sources were not invoiced for annual administrative fees for 2014 to which the Program was entitled. The 2014 annual administrative fees due were \$375 from each source, \$7,500 in the aggregate. Management has advised us that it intends to invoice the minor sources for these fees on separate invoices in 2015. In addition, as we further evaluated the overall accounting cycle for Program revenues, we determined that control procedures are not being performed by Air Quality Program personnel, ACHD's Fee and Permit section, or ACHD's Fiscal Manager that serves as the accountant for the various funds associated with the Air Quality Program to verify that Program receipts are being posted to the proper funds and proper accounts in JDE, the County's accounting software.

Cause: The billing issue we identified was attributable almost entirely to a software application programming error (one of the 20 minor sources was not invoiced due to human error). However, given that Air Quality Program management is aware that the software application being utilized does not effectively meet the Program's needs, and that needed data may be unavailable or unreliable (see Finding #3), alternate procedures should have been performed to verify the completeness of the listing of the sources to be invoiced. The failure to perform control procedures to verify that Program receipts are being posted to the proper funds and proper accounts in JDE appears to be attributable to a lack of awareness regarding the need for the procedure on the part of ACHD's Fiscal Manager that serves as the accountant for the funds. The prior accountant for the funds had performed such control procedures, but all of the responsibilities of the position were apparently not identified for and communicated to the Fiscal Manager. (We identified a number of other control procedures that were not being performed for the same reason during our 2014 financial statement audit of ACHD's Title V Air Quality Fund that was recently conducted, and communicated the lack of control procedures as a finding in our report. The Director of ACHD indicated in her response that the performance of appropriate control procedures will be implemented.)

Effect: The lack of control procedures to verify the completeness of the Air Quality Program's billings could result in lost Program revenues. Had we

III. Findings and Recommendations

not determined that the Air Quality Program did not invoice 20 minor sources for 2014 annual administrative fees, it is likely that the Program would not have identified the need to invoice the sources for those fees. As fees paid by the regulated community subsidize (in part) the operation of the Air Quality Program, lost Program revenues result in a reduction of the financial resources available to the Program to conduct Program activities. To the extent that review procedures are not performed to verify that Program revenues are posted to the proper funds and proper accounts in JDE, posting errors or fraud could occur and not be detected, conditions that would further impact the Program's available financial resources.

Recommendations: We recommend that Air Quality Program management:

- Request the Program's dedicated IT professional to correct the programming error that results in the software application being utilized omitting sources from the list of sources to be invoiced for annual administrative fees.
- Require Program staff to apply alternative procedures in the meantime to ensure the completeness of invoicing.
- Work with ACHD's Deputy Director of Administration to ensure that control procedures are performed to verify that program revenues are posted to the proper funds and proper accounts in JDE.

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Finding #6

The Procedures Performed to Evaluate Source Emissions Inventories Should Be Documented and Reviewed

- Criteria:** Control procedures are a key component of an organization's internal control structure, and review procedures are an important element of control procedures. Documentation should be generated and maintained to evidence that required procedures have been performed and to explain any significant judgments made and conclusions reached, so that those performing review procedures can easily determine whether the organization's objectives are being achieved.
- Condition:** Emissions inventories are reports submitted annually by sources detailing their actual total annual emissions. We reviewed the 2014 emissions inventories submitted by a sample of minor sources, and noted that the procedures performed by the enforcement personnel to evaluate the propriety of the emissions factors used by the sources and the accuracy/legitimacy of other relevant data was not documented. While we were advised that some of the emissions inventories had been returned to the sources for revision and resubmission as a result of the evaluations conducted by the enforcement personnel, we noted that no review of the evaluations that the enforcement personnel performed was conducted.
- Cause:** Management has not perceived a need for review of the work performed by the enforcement personnel to evaluate the emissions inventories, as the personnel evaluating most of the emissions inventories submitted by the sources are experienced and skilled professionals who have performed the function for the Air Quality Program for a number of years, and are viewed as capable of performing the function without much oversight. Had review procedures been performed, it should have been evident that adequate documentary evidence of the evaluations being conducted is not being developed and maintained.
- Effect:** The result of this condition is that the Air Quality Program does not have adequate documentary evidence to demonstrate that its enforcement personnel have completed appropriate evaluations of the emissions inventories submitted by sources. The lack of review procedures provides the Air Quality Program with no further assurance that the work is actually being performed or that incorrect, invalid, or otherwise questionable data submitted by the sources is being further investigated and appropriate resolutions reached.

III. Findings and Recommendations

Recommendations: We recommend that Air Quality Program management:

- Require enforcement personnel to adequately document the work performed to evaluate the emissions inventories submitted by sources.
- Implement review procedures to ensure that an adequate review of the work is performed.

III. Findings and Recommendations

Finding #7

A Lack of Flexibility in the Timing of the Hiring Process for Air Quality Program Personnel Has Resulted in the Unnecessary Loss of Knowledge, Skills, and Competencies

Criteria: A failure to take appropriate measures to retain knowledge, skills, and competencies that an organization has attained over time can make it more challenging for the organization to achieve its objectives.

Condition: We have been advised that there have been a number of instances in which Air Quality Program management was not permitted to hire replacements or begin training personnel to take on new duties until employees already on staff retired, or were otherwise separated from service. In some instances, vacancies in positions have existed for a significant period of time before new employees have been hired. For example:

- Air Quality Program management was not permitted to hire a coke oven inspector to replace a coke oven inspector on staff that had about 30 years of experience in that specialization until the inspector had retired.
- When the current Air Quality Program Manager was promoted to her new position, a long period of time passed before a replacement was identified to take on her old position. The Air Quality Program Manager was responsible for both positions during the vacancy.
- The current Enforcement Chief was unable to apply for the Enforcement Chief position until the former Enforcement Chief retired. Because the replacement for the former Enforcement Chief was not determined prior to his departure, he was unable to provide any insight to the new Enforcement Chief in approaching his new job duties.

We noted that the Air Quality Program has adequate financial resources available to it to fund smooth personnel transitions that would facilitate the retention of knowledge, skills, and competencies attained by Program personnel over the years, in that the fund balances of the various County funds associated with the Air Quality Program are quite substantial.

Cause: It appears that this condition is likely attributable to efforts to manage employee headcount and control compensation costs.

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Effect: The effect of this condition is that knowledge, skills, and competencies attained by the Program over the years have been unnecessarily lost. With respect to the three examples noted above:

- Coke oven inspection services may be less effective for a period of time, given that the inspector that retired, that could have trained the new inspector, likely had developed greater knowledge, skills, and competencies than the inspectors on staff with far less experience.
- The replacement that filled the Air Quality Program Manager's old position will likely not benefit to the extent that he or she should have from the knowledge, skills, and competencies that the Air Quality Program Manager gained while serving in that position. Time that the Air Quality Program Manager may spend now with the replacement that filled her old position would reduce the amount of time available to her for overall Program management.
- The current Enforcement Chief gained no benefit from the knowledge, skills, and competencies that the former Enforcement Chief had attained in performing that role. The transition to the new position was unnecessarily challenging for the new Enforcement Chief, which may have had an adverse impact on the Program for a period of time.

The loss of knowledge, skills, and competencies that can result from this approach impacts the Air Quality Program to a much greater extent than the average government program. The air quality regulatory environment is rapidly-changing. Air Quality Program staff are required to stay abreast of regulatory changes in order to perform their functions effectively. Most Air Quality Program staff positions are professional positions that require specialized training in a particular discipline, along with an understanding of the corresponding federal, state, and local air quality regulations. We were advised by Air Quality Program management that the pool of qualified job applicants available to ACHD to fill these positions is typically limited. As a result, it can be very difficult for the Air Quality Program to find suitable replacements. The challenges posed by the unnecessary loss of knowledge, skills, and competencies make it even more difficult for the Air Quality Program to address other Program challenges and meet its overall objectives.

Recommendations: We recommend that Air Quality Program management work with the Director of ACHD to ensure that appropriate measures are taken going forward to provide for smooth personnel transitions and prevent the unnecessary loss of knowledge, skills, and competencies attained by Program personnel.

Exhibit 1 - Summary of 2012-2014 Enforcement Actions Taken Against Shenango, Inc.

<u>Date of Violation(s)</u>	<u>Violation #</u>	<u>Nature of Violation(s)</u>	<u>Penalty Type</u>	<u>Penalty Amount</u>
4th Qtr 2012 11/6/2012		Excessive Coke Gas Sulphur Content Various (Consent Decree Resolved Civil Claims)	Stipulated Penalties per 6/20/12 Consent Order and Agreement Civil Penalty per 11/6/12 Consent Order and Agreement	\$ 1,575 625,000 * <u>626,575</u>
6/11/2013	130601	Coal Dust on Roadway (Fugitive Emissions***)	No Penalty	0
7/31/2013	130706	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	16,250
9/25/2013	130903	Excessive Visible Emissions, Venting or Flaring of Coke Oven Gas	Civil Penalty - Settlement Offer Accepted	25,475
12/5/2013	131201	Excessive Visible Emissions, Venting or Flaring of Coke Oven Gas	Civil Penalty - Settlement Offer Accepted	24,725
1/4/13, 1/13/13		Excessive Coke Gas Sulphur Content	Stipulated Penalties per 6/20/12 Consent Order and Agreement	3,000
4/9/13, 4/10/13		Excessive Coke Gas Sulphur Content	Stipulated Penalties per 6/20/12 Consent Order and Agreement	1,000
7/1/13, 7/14/13		Excessive Coke Gas Sulphur Content	Stipulated Penalties per 6/20/12 Consent Order and Agreement	1,500
12/9/13, 12/13/13		Excessive Coke Gas Sulphur Content	Stipulated Penalties per 6/20/12 Consent Order and Agreement	1,500
11/6/12-12/31/13		Excessive Visible Emissions	Stipulated Penalties per 11/6/12 Consent Order and Agreement	74,250 ** <u>147,700</u>
6/18/2014	140602	Unreasonable Delays in Inspections	No Penalty	0
10/15/2014	141001	Coal Dust on Roadway (Fugitive Emissions***)	Civil Penalty - Settlement Offer Accepted	3,650
10/29/2014	141003	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	13,775
2nd Qtr 2014		Excessive Coke Gas Sulphur Content	Stipulated Penalties per 6/20/12 Consent Order and Agreement	18,000
1/1/14-3/31/14		Excessive Visible Emissions	Stipulated Penalties per 11/6/12 Consent Order and Agreement	28,350 ****
4/1/14-9/30/14		Excessive Visible Emissions	Stipulated Penalties per 11/6/12 Consent Order and Agreement	119,700 *****
4/8/2014		Various (Consent Order and Agreement Resolved Civil Claims)	Civil Penalty per 4/8/14 Consent Order and Agreement	300,000
2nd Qtr 2014		Excessive Coke Pushing Emissions	Stipulated Penalties per 4/8/14 Consent Order and Agreement	25,175
3rd Qtr 2014		Excessive Coke Pushing Emissions	Stipulated Penalties per 4/8/14 Consent Order and Agreement	13,000
4th Qtr 2014		Excessive Coke Pushing Emissions	Stipulated Penalties per 4/8/14 Consent Order and Agreement	20,000 <u>541,650</u>
		Total Monetary Penalties 2012-2014 (Not Including Environmental Project)		1,315,925
		Supplemental Environmental Project - Associated With 4/8/14 Consent Order and Agreement		300,000
		Total		<u>\$ 1,615,925</u>

* The total penalty was \$1,750,000. \$875,000 was payable to the US EPA and \$250,000 was payable to the PA DEP.
 ** The total penalty was \$148,500. \$74,250 was payable to the US EPA.
 *** Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening.
 **** \$14,175 of this amount was paid to the Treasurer of the United States
 ***** \$59,850 of this amount was paid to the Treasurer of the United States

Note: All penalties due to Allegheny County Health Department were collected.

Exhibit 2 - Summary of 2012-2014 Enforcement Actions Taken Against US Steel Clairton Works

<u>Date of Violation(s)</u>	<u>Violation #</u>	<u>Nature of Violation(s)</u>	<u>Violation / Penalty Type</u>	<u>Penalty Amount</u>
2/23/12	120204	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	\$ 800
5/21/12	120503	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	1,250
10/29/12	121003	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	750
1st Qtr 2012		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	81,400
2nd Qtr 2012		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	108,700
2nd Qtr 2012		Excessive Coke Pushing Emissions	<i>(Additional Amount Assessed to Remedy a Penalty Calculation Error)</i>	6,000
2nd Qtr 2012		Revised Battery Decree	Stipulated Penalties per 3/17/08 Consent Order and Agreement	27,000
3rd Qtr 2012		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	163,200
4th Qtr 2012		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	84,800
				<u>473,900</u>
2/21/13	130201	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	2,300
7/15/13	130703	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	7,900
8/16/13	130801	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	2,800
11/27/13	131106	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	6,300
1st Qtr 2013		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	66,500
2nd Qtr 2013		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	90,500
3rd Qtr 2013		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	180,000
4th Qtr 2013		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	90,500
				<u>446,800</u>
2/25/14	140204	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	5,475
10/31/14	141004	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	7,125
11/18/14	141101	Excessive Visible Emissions	Civil Penalty - Settlement Offer Accepted	17,650
1st Qtr 2014		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	112,500
2nd Qtr 2014		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	173,500
3rd Qtr 2014		Excessive Coke Pushing Emissions	Stipulated Penalties per 3/17/08 Consent Order and Agreement	118,000
8/7/14		Various (Consent Order and Agreement Resolved Civil Claims)	Civil Penalty per 8/7/14 Consent Order and Agreement	300,000
				<u>734,250</u>
		Gross Monetary Penalties 2012-2014		1,654,950
		Less: Penalties Waived in Connection With:		
		Purchase of Street Sweepers at US Steel Edgar Thompson Plant		(265,500)
		SO ² SIP Testing at Clairton Works and Edgar Thompson Plant		(161,500)
		Monetary Penalties 2012-2014, Net		<u>\$ 1,227,950</u>

Note: All penalties due to Allegheny County Health Department were collected.

Exhibit 3 - Total Penalties Assessed During 2014 by the Air Quality Program

<u>Source</u>	<u>Penalty Amount</u>
A & A Rolloff Systems	\$ 350.00
Acme Roofing and Heating	300.00
Advanced Builders Inc.	700.00
Beinhauer Family Services, LLP	2,775.00
Casturo Metals	475.00
Chase Coatings	1,354.67
Consolidated Construction	800.00
Lopresti	700.00
Percharka Architecture	1,000.00
Schaaf Excavation	1,525.00
Shenango Incorporated	
- Monetary Penalties	511,200.00
- Supplemental Environmental Projects	300,000.00
Shly Construction	1,000.00
State Restoration	225.00
Tech Met	9,734.53
USS Steel Clairton Works	
- Monetary Penalties (\$150,000 is due in 2015)	666,675.00
- State Implementation Plan Testing Payment Accepted in Lieu of Penalty	161,500.00
	<hr/>
Total	<u><u>\$ 1,660,314.20</u></u>

Note: This schedule includes only penalties assessed during 2014, some of which relate to 2013 violations.

Source: Allegheny County Health Department

COUNTY OF



ALLEGHENY

RICH FITZGERALD
COUNTY EXECUTIVE

Chelsa Wagner
Controller, Allegheny County

Lori A. Churillo
Assistant Deputy Controller, Auditing

May 10, 2016

Dear Ms. Wagner and Ms. Churillo,

We are forwarding the Allegheny County Health Department's response to the Analysis of the Allegheny County Health Department's Air Quality Program done by the Controller's office. Should you have any further questions, please let us know.

Kind Regards,

A handwritten signature in black ink, appearing to read 'KH', with a long horizontal flourish extending to the right.

Karen Hacker, MD MPH



KAREN HACKER, MD, MPH, DIRECTOR
ALLEGHENY COUNTY HEALTH DEPARTMENT
542 FOURTH AVENUE • PITTSBURGH, PA 15219
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**ALLEGHENY COUNTY HEALTH DEPARTMENT RESPONSE TO ANALYSIS OF
THE ALLEGHENY COUNTY HEALTH DEPARTMENT'S AIR QUALITY PROGRAM
JANUARY 1, 2014-DECEMBER 31, 2014**

Finding #1: The Methodology Used to Assess Fines for Air Quality Violations Needs to be Improved

Recommendations:

We were advised by Air Quality Program management that a second attorney capable of negotiating and litigating air quality matters has recently been engaged. We recommend that Air Quality Program management:

- Review the process of entering into consent orders and agreements to ensure that the source will achieve and maintain compliance with the standards and that the monetary penalties are strict enough to act as a deterrent.*
- Consider whether the utilization of additional legal resources is warranted.*
- Refine the Program's methodology for the assessment of fines so that fines for violations that have a significant impact on air quality are increased to the extent that violations continue to occur, up to the \$25,000 per day maximum amount.*
- Ensure that State Implementation Plans are submitted timely.*

ACHD Response:

Consent order process:

A Consent Order and Agreement is a primary enforcement tool used by the EPA and by states and local air agencies. The process used by the Department mirrors that of the federal government. The primary intent is to bring the source into compliance as quickly as practicable, and usually includes an initial penalty, a demand for some controls or other air quality improvement remedy, and stipulated penalties for delays and for continued non-compliance during the installation of the controls. Initial penalties include a consideration of any benefit the source may have received by non-compliant. The cost of additional controls may be in the millions of dollars; the stipulated penalties are only a portion of the final solution.

Legal Resources

We recently hired a second Air Quality attorney (6 months ago) and are finding this resource to be invaluable. At this time, the addition of the new attorney is adequately fulfilling our needs. The new attorney is making progress in addressing the Department's increasing caseload. In addition, ACHD has in the past, and will continue to acquire part-time assistance through the hiring of a legal intern. In moving forward, we will continue to assess the need for any additional legal support as suggested and should that need arise, will develop a plan to address.

Assessment of Fines

In accordance with the ACHD Rules and Regulations Article XXI "the Department shall consider: the willfulness of the violation; the actual and potential harm to the public health, safety and welfare; the damage to the air, soil, water, and other natural resources of the County and their uses; the economic benefit gained by such person by failing to comply with the Article; the deterrence of future violations; the costs of the Department; the size of the source or facility; the compliance history of the source; the nature, frequency, severity, and duration of the violation; the degree of cooperation in resolving the violation; the speed with which compliance is ultimately achieved; whether or not the violation was voluntarily reported; other factors unique to the owners, operators, or other responsible parties or the source or facility; and other relevant factors." The maximum penalty of \$25,000 per day assumes that all of these factors would be at their worst. However, the ACHD will review its penalty calculation sheet to determine whether some or all factors need to be adjusted as recommended.

SIP

While we will do everything possible to ensure that the State Implementation Plan (SIP) is submitted in a timely fashion the SIP process is complicated. ACHD completes each plan as quickly as practicable given the often delayed guidance from the federal government, requirements for testing, and discussions with all parties involved. Developing a computer modeling process for the complex terrain and mix of sources has taken the majority of two years, with support from both DEP and EPA. Also at times, such as with the present sulfur dioxide SIP, controls necessary to bring the area into attainment are expensive and innovative, requiring extensive testing and computer modeling. This portion of testing and modeling is continuing at present. As of this time, we intend to submit our SIP by October 18, 2017 which is acceptable to DEP and EPA barring unforeseen additional changes or testing requirements.

Finding #2: Adequate Measures to Eliminate the Backlog of Outstanding Permit Applications Have Not Been Taken in a Timely Fashion

Recommendations:

We recommend that Air Quality Program management take adequate measures timely to address each of the operational factors contributing to the permit application processing backlog. This should involve:

- *Developing a software application to meet the Air Quality Program's operational needs (see Finding #3),*
- *Improving the framework for the processing of permitting applications to increase the ease and speed of processing (see Finding #4), and*
- *Applying adequate personnel (engineering) resources to the permitting process.*

Air Quality Program management should also refrain from utilizing management by objectives until management accomplishes all of the aforementioned items and the permit process backlog is eliminated.

ACHD Response:

The ACHD received authority to issue operating permits under the new program in 2001. All operating permit approval dates begin at that time, even though some applications were submitted as early as 1995. Regardless, ACHD recognizes that 15 years is too long for a source to continue operating under the older permit system. However, it is important to recognize that the lack of a permit under the new system, or an expired permit, does not alleviate in any way the obligations of a source to comply with all regulations or other requirements.

The response to the first recommendation can be found under the response to Finding #3.

The response to the second recommendation can be found under the response to Finding #4.

The Department is reviewing the productivity of the permitting staff, and may be requesting additional support for this portion of the air program.

Finding #3 The Lack of a Software Application that Adequately Addresses the Air Quality Program's Operational Needs Has Posed Significant Program Management Challenges

Recommendations:

We recommend that Air Quality Program management:

- *Arrange for the Program's new dedicated IT professional to meet with each section of the Program so that he gains a better understanding of the Program's operational needs and how the Air Quality Program data is being used.*
- *Work with Program staff to identify all of the changes that need to be made to the software application in order for the application to effectively meet all of the Program's operational needs.*
- *Clearly document all of the needed application changes in writing, providing as much information as possible to facilitate the IT professional's understanding of the Program's operational needs.*

- *Provide all of the documentation on needed program changes to the IT professional at the same time, as multiple change requests may relate to a single component of the software application, and he may be able to achieve a number of the Program's desired outcomes in a shorter timeframe.*

ACHD Response:

The Department agrees the permit tracking program needs to be fixed so that permits can be properly tracked from Receipt through issuance. The recently hired air quality software engineer has resigned from the County and we are in process of refilling that position. Once hired, the new IT professional will meet with each section to best understand the needs. He/she will work with program staff to identify all needed changes in software and then work with leadership to prioritize tasks. Application changes will be document as recommended. Overall, with the new IT leadership at ACHD, the IT professional will develop a plan for ameliorating existing program issues in the shortest time frame possible. Until the IT professional is hired, the program continues to use the available programs, acknowledging that data needs to be regularly reviewed before reports are disseminated.

Finding #4 Needed Process Improvements in the Permitting Section Have Not Been Implemented

Recommendation:

We recommend that Air Quality Program management focus on fully developing and implementing these process improvements once adequate personnel resources have been applied to the permitting process (see Recommendations to Finding #2). Specifically:

- *Finish the guide that is intended to assist new permitting engineers in processing permit applications effectively and efficiently.*
- *Create separate permit applications for each type of permit, focused on obtaining all of the information needed (and only needed information) for each particular permit type.*
- *Establish a framework for permits by rule and a process for the issuance of general permits, and verify the compliance of these initiatives with all applicable air quality regulations prior to implementation.*
- *Develop a wider variety of permit templates for use by the permitting engineers.*

ACHD Response:

Guide

The present permitting guide is now in use by all the permitting engineers, and includes templates of permits, EPA guidance, information on control devices, and more. Many of the templates are in need of updates, due to changes in local and federal regulations. The Department will update all the templates throughout 2016 and the first quarter of 2017. The permitting guide is a live document, and will be updated regularly as new federal requirements and guidance change.

Permit Application

The Department's permit application has been revised and simplified for schools and apartment buildings more than a year ago. Upon renewal, most of these sources are using their previous application or a consultant is using their previous application, instead of the new application. Either is acceptable. This has already improved the process. The air program will review all permits to see which type of source would benefit from a revised application.

Permit Framework

The Department has developed and has updated the permit application consistent with state's application. Changes to the permit application and permits themselves can be made as long as this consistency is maintained. However, once the program acquires updated form development software, the expectation is to create a new format where data can be extracted directly from the application into a database structure for easier translation to permits.

The permitting group have successfully created and use a General Permit for Soil Vapor Extraction and hope to create other general permits in the future for simple sources. The Department had started on other general permits, but work has been delayed so that pending permits could be completed. "Permits by rule" is also a process that can be investigated.

Permit templates have proved to be useful, and intends to develop more, as well as update the many templates already in use.

Finding #5 Internal Controls Pertaining to Program Revenues Should Be Strengthened

Recommendations:

We recommend that Air Quality Program management:

- *Request the Program's dedicated IT professional to correct the programming error that results in the software application being utilized omitting sources from the list of sources to be invoiced for annual administrative fees.*

- *Require Program staff to apply alternative procedures in the meantime to ensure the completeness of invoicing.*
- *Work with ACHD's Deputy Director of Administration to ensure that control procedures are performed to verify that program revenues are posted to the proper funds and proper accounts in JDE.*

ACHD Response:

The programming error which led to sources being omitted has been corrected. In addition, ACHD will start conducting an annual review of permitted source billing to ensure that all sources have been correctly processed. The ACHD Air Quality software engineer has left the County's employment. The process has begun to refill the position.

Finding #6: The Procedures Performed to Evaluate Source Emissions Inventories Should Be Documented and Reviewed

Recommendations: *We recommend that Air Quality Program management:*

- *Require enforcement personnel to adequately document the work performed to evaluate the emissions inventories submitted by sources.*
- *Implement review procedures to ensure that an adequate review of the work is performed.*

ACHD Response:

Sources of emissions are required to submit their emissions directly to the Pennsylvania state inventory. ACHD staff reviews these emissions submittals by using emission factors that relate to some part of the source's operation, such as fuel use or material throughput. Most emission factors used in calculating emission rates are from the federal document called AP-42 or from stack tests. In most cases the emission factor is identified in the review documents. A review will be made of these documents to assure that adequate documentation is made.

Finding #7 A Lack of Flexibility in the Timing of the Hiring Process for Air Quality Program Personnel Has Resulted in the Unnecessary Loss of Knowledge, Skills, and Competencies

Recommendations:

We recommend that Air Quality Program management work with the Director of ACHD to ensure that appropriate measures are taken going forward to provide for smooth personnel

transitions and prevent the unnecessary loss of knowledge, skills, and competencies attained by Program personnel.

ACHD Response:

We concur with the recommendation. Loss of institutional knowledge is a difficulty in all areas of government. At this time ACHD is moving to replace staffing to help address issues in operations. In addition, ACHD is working on succession planning through all departments. This includes identifying internal candidates that may be developed to fill upcoming vacancies as well as cross-training of existing personnel. When there is ample time to vacature (ie retirement) we intend to work to transition knowledge to our greatest ability. Some cross-training has already taken place, documentation retention has greatly improved, and both will need to increase in the near future, as a sizeable number of staff is nearing retirement.