

**BEFORE**

**THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of )  
Duke Energy Ohio, Inc., for an ) Case No. 12-1685-GA-AIR  
Increase in Gas Rates. )

In the Matter of the Application of )  
Duke Energy Ohio, Inc., for Tariff ) Case No. 12-1686-GA-ATA  
Approval. )

In the Matter of the Application of )  
Duke Energy Ohio, Inc., for Approval ) Case No. 12-1687-GA-ALT  
of an Alternative Rate Plan for Gas )  
Distribution Service. )

In the Matter of the Application of )  
Duke Energy Ohio, Inc., for Approval ) Case No. 12-1688-GA-AAM  
to Change Accounting Methods. )

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**DIRECT TESTIMONY OF**

**SHAWN S. FIORE**

**ON BEHALF OF**

**DUKE ENERGY OHIO, INC.**

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\_\_\_\_\_ Management policies, practices, and organization  
\_\_\_\_\_ Operating income  
\_\_\_\_\_ Rate Base  
\_\_\_\_\_ Allocations  
\_\_\_\_\_ Rate of return  
\_\_\_\_\_ Rates and tariffs  
  X   Other: Manufactured Gas Plant Site Remediation

April 22, 2013

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SSF-1 Curriculum Vitae

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**I. INTRODUCTION AND PURPOSE**

1 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND POSITION.**

2 A. My name is Shawn S. Fiore. My business address is 5755 Granger Road, Suite 320,  
3 in Independence, Ohio. My position is Vice President of Haley & Aldrich, Inc.

4 **Q. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATIONAL AND**  
5 **PROFESSIONAL EXPERIENCE.**

6 A. I earned a Bachelor of Science Degree in Geochemistry from Bowling Green State  
7 University, in Bowling Green, Ohio; in May 1986. I earned a Master of Science  
8 Degree in Geology from Bowling Green State University in August 1993. I am a  
9 licensed Professional Geologist in Indiana and Pennsylvania, and a Voluntary  
10 Action Program (VAP) Certified Professional (CP), in Ohio. I have been a CP since  
11 1996. I have almost 25 years of experience working in the environmental consulting  
12 industry. I began my career as an environmental geologist for Engineering-Science  
13 Inc. (later Parsons Corporation), in 1988, in Chicago, Illinois, and continued to  
14 work with this company until 2002, when I joined Haley & Aldrich. I have worked  
15 predominantly on environmental investigation and remediation projects during my  
16 career, focusing on Manufactured Gas Plant (MGP) projects for the past eight years.  
17 I have completed professional assignments, including investigation and remediation  
18 projects, throughout the United States and in Canada, Mexico and, Turkey,  
19 Thailand, South Korea, UK, and other countries. I have presented at several  
20 professional conferences, seminars and meetings, including those at the invitation of  
21 the Ohio Environmental Protection Agency (Ohio EPA), Fortune 50 Companies and  
22 non-profit groups, as listed in my Curriculum Vitae, provided as Attachment SSF-1.

1 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY OR TESTIFIED**  
2 **BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO?**

3 A. No.

4 **Q. WHAT DOCUMENTS HAVE YOU REVIEWED IN THE PREPARATION**  
5 **OF YOUR TESTIMONY?**

6 A. I generally reviewed the Voluntary Action Program (VAP) rules in the Ohio  
7 Administrative Code Rule (O.A.C.) 3745-300 and related VAP guidance prepared  
8 by the Ohio EPA, as well as the testimony of Ms. Jessica Bednarcik, Mr. Kevin  
9 Margolis, and Dr. Andrew Middleton. I have also reviewed documents prepared  
10 for Duke Energy Ohio on the East End and West End site investigations, as listed  
11 in the supplemental testimony of Ms. Jessica Bednarcik. As the CP now  
12 responsible for the East End site, I am familiar with the details of the work that  
13 has been performed by the Company at that site.

14 **Q. WHAT IS THE PURPOSE OF YOUR PREFILED TESTIMONY?**

15 A. The purpose of my testimony is to describe Ohio's VAP, Duke Energy Ohio's  
16 compliance with VAP requirements to date and the prudence of the plans developed  
17 and actions taken as related to Ohio requirements and practical considerations.

18 **Q. PLEASE SUMMARIZE YOUR PREFILED TESTIMONY.**

19 A. My testimony focuses on a description of the Ohio VAP and regulation of VAP  
20 CPs, and to provide a discussion of VAP applicable standards associated with the  
21 environmental investigation and remediation activities, as relevant to Duke  
22 Energy Ohio's former MGP sites.

23

**II. ENVIRONMENTAL REMEDIATION ACTIVITIES**

1 **Q. PLEASE DESCRIBE YOUR EXPERIENCE IN INVESTIGATING AND**  
2 **REMEDIATING CONTAMINATED PROPERTIES.**

3 A. During my approximately 25-year professional career, as discussed previously, I  
4 have predominantly focused on investigation and remediation of contaminated  
5 sites. I have completed hundreds of professional assignments on contaminated  
6 properties in Ohio and beyond, including more than 20 Comprehensive  
7 Environmental Response, Compensation and Liability Act (CERCLA) and  
8 Superfund Sites (which are some of the most contaminated sites in the country)  
9 more than 50 former industrial properties or “brownfield sites,” more than 200  
10 active industrial facilities, more than 20 former Department of Defense (DOD)  
11 facilities, more than 100 commercial facilities, and on MGP sites in Ohio,  
12 Pennsylvania, Indiana, and Michigan. Specifically in Ohio, I have conducted  
13 investigations and remediations on contaminated sites regulated by the US EPA,  
14 including CERCLA and Superfund Sites, Resource Conservation and Recovery  
15 Act (RCRA) Sites, formerly used defense sites, hazardous waste landfills, and  
16 other sites. I have conducted investigations and remediations on sites regulated  
17 by the Ohio EPA, including Division of Environmental Response and  
18 Remediation (DERR) Sites, active and inactive industrial facilities, landfills,  
19 commercial properties, brownfield sites, residential properties, abandoned /  
20 undeveloped properties, and MGP sites. I have completed investigation and  
21 remediation projects in all five Ohio EPA districts. I have also conducted  
22 investigations and remediations on other contaminated sites in Ohio regulated by

1 the Bureau of Underground Storage Tank Regulations (BUSTR).

2 **Q. PLEASE DESCRIBE YOUR INVOLVEMENT WITH THE OHIO**  
3 **VOLUNTARY ACTION PROGRAM (VAP).**

4 A. I was certified by the Ohio EPA as a Certified Professional in 1996. I have been  
5 re-certified, by the Ohio EPA, every year since. I have participated in the VAP in  
6 a number of ways including practicing as a VAP CP for more than 16 years on  
7 more than 50 properties, obtaining recertification annually through participation  
8 in ongoing professional development training as required by the VAP, providing  
9 comments and input to Ohio EPA on proposed rule changes regarding the VAP,  
10 participating in Ohio EPA led training sessions to enhance my knowledge of the  
11 VAP rules and requirements, working with the Ohio EPA through Technical  
12 Assistance to identify and solve complex project-related issues not directly  
13 included in the rules, participating on multi-disciplinary tasks groups (including  
14 Total Petroleum Hydrocarbons and NAPL (e.g., Free Product) issues and Metals),  
15 participating in and providing feedback as part of a multidisciplinary stakeholder  
16 review process implemented by the Ohio EPA, and presenting at CP training  
17 sessions or other Ohio EPA-led meetings designed to provide additional and  
18 ongoing training for VAP CPs. I have also been contacted by other VAP CPs,  
19 working on MGP sites in Ohio, to provide information on mitigation of MGP-  
20 related wastes under the VAP.

21 **Q. HAVE YOU BEEN INVOLVED IN INVESTIGATING AND**  
22 **REMEDIATING ANY MGP SITES IN OHIO?**

23 A. Yes. I have been involved in investigating and remediating MGP sites in Ohio

1 since 2005. I have investigated more than 20 MGP sites in Ohio and have been  
2 involved in the remediation of three, to date, which, I believe, makes me the CP  
3 with the most experience in investigating and remediating MGPs in Ohio, under  
4 the VAP.

5 **Q. HAVE YOU BEEN INVOLVED IN INVESTIGATING AND**  
6 **REMEDIATING ANY MGP SITES IN OHIO UNDER THE VAP?**

7 A. Yes, all of the sites indicated in my response to the previous question have been  
8 or are being investigated or remediated following VAP rules.

9 **III. THE OHIO VOLUNTARY ACTION PROGRAM**

10 **Q. WHAT IS THE VAP?**

11 A. In general, Ohio's VAP is a set of rules, regulations, guidance, and other  
12 directives from the Ohio EPA, that establish a process by which contaminated  
13 sites may be investigated and remediated to Ohio EPA standards. The VAP is a  
14 program created in 1994 to provide remediating parties with a process to  
15 investigate possible environmental contamination, remediate the contamination, if  
16 necessary, and receive a No Further Action (NFA) determination from a CP and  
17 Covenant Not to Sue (CNS) from the State of Ohio that no more remediation  
18 activities were required.

19 The VAP provides investigation requirements, non-prescriptive  
20 remediation procedures, and well-defined cleanup standards. The goal of the  
21 VAP is to allow the remediation and beneficial re-use of important properties and  
22 real estate assets, which have been dormant due to concerns regarding ongoing  
23 environmental liability and unknown cleanup costs. These concerns formerly

1 dissuaded investors, financial institutions, developers, businesses and private  
2 individuals from purchasing, financing, redeveloping and returning to beneficial  
3 use former industrial or commercial properties. The VAP is Ohio's solution to  
4 remove, control or manage the environmental and legal barriers that inhibit this  
5 redevelopment as a more cost-effective alternative to performing such work under  
6 Ohio EPA orders.

7 The VAP limits and minimizes Ohio EPA direct involvement and  
8 maximizes the environmental remediation expertise in the private sector, through  
9 certification of Certified Professionals, who act on the State of Ohio's behalf in  
10 monitoring and cleaning up contaminated properties. The VAP allows a property  
11 owner or remediating party, working closely with a Certified Professional, to  
12 investigate and remediate a property and, if appropriate, obtain an NFA letter.  
13 This letter indicates that the property meets all VAP standards and allows the  
14 remediating party to request a CNS from the State of Ohio, limiting future  
15 liability for the site. Because CPs act as agents of the State, within the VAP  
16 program, the VAP also contains a comprehensive program regulating CPs, which  
17 includes verification of educational and work experience, certification criteria,  
18 initial and ongoing training requirements, a determination of professional  
19 competence (initially and annually), regulation of conduct, and other items.

20 **Q. PLEASE EXPLAIN THE ROLES OF OHIO EPA AND CERTIFIED**  
21 **PROFESSIONALS UNDER THE VAP.**

22 A. Simply put, CPs are agents of the State, responsible for verifying that properties  
23 are investigated and cleaned up to the levels required by the VAP rules. CPs,



1 because they act as agents of the State, are held to a standard of conduct that  
2 uncertified practitioners are not. CPs are held, by regulation, to the following  
3 standards of conduct which do not apply to uncertified practitioners. A CP must  
4 act with care and diligence and fully apply the CP's knowledge and skills at the  
5 time professional services are performed (as indicated in O.A.C. 3745-300-  
6 05(E)(1)(a)). A CP must hold paramount public health, safety, welfare and the  
7 environment in the performance of professional services (as indicated in O.A.C.  
8 3745-300-05(E)(2)(a)). A CP must follow the requirements and procedures set  
9 forth in the applicable provisions of O.A.C. Rule 3745-300 and Revised Code  
10 Chapter 3746 (as indicated in O.A.C. 3745-300-05(E)(2)(e)(ii)). A CP must make  
11 a good faith and diligent effort to review relevant data and reports and identify  
12 and obtain such additional data and other information as deemed necessary to  
13 provide professional services (as indicated in O.A.C. 3745-300-05(E)(2)(e)(iii)).  
14 A CP must exercise independent professional judgment and be objective in any  
15 professional report, statement or testimony (as indicated in O.A.C. 3745-300-  
16 05(E)(2)(e)(i)). Finally, if a CP does not maintain adherence to these standards,  
17 the CP is subject to disciplinary action including a written warning, suspension of  
18 certification, revocation of certification, and potentially more severe actions.

19 When a CP determines that, after appropriate investigation and, if needed,  
20 remediation, a property meets all applicable VAP standards, the CP may prepare  
21 an NFA letter. This document must be prepared under affidavit attesting to the  
22 truth, accuracy and completeness of the information, follow a prescribed format,  
23 and is quite extensive, often in excess of several thousand pages. If the

1 remediating party desires a CNS from the State of Ohio, the remediating party  
2 must direct the CP to submit the NFA to the Ohio EPA for review, under  
3 affidavit. The Ohio EPA will review the NFA and either provide comments on  
4 the NFA or issue a CNS, from the Director of the Ohio EPA. This is the  
5 methodology set forth by the State of Ohio. If the remediating party opts to  
6 proceed with remedial activities without a CP, they may not obtain an NFA letter  
7 or CNS from the State.

8 In addition to involvement in reviewing NFA letters and issuing CNSs, as  
9 discussed above, the Ohio EPA also administers the VAP. The Ohio EPA  
10 operates initial and ongoing certification programs, including certain training  
11 programs, for CPs, Certified Biocriteria Evaluators, and Certified Laboratories.  
12 The Ohio EPA also provides user-paid technical assistance to assist remediating  
13 parties undertaking work under the VAP with questions regarding the program,  
14 specific rule requirements, or other aspects of the VAP, although such assistance  
15 is not required by the Ohio EPA. In addition, the Ohio EPA administers the  
16 issuance of Urban Setting Designations (USD). Further, the Ohio EPA is required  
17 by law to conduct audits on 25% of the properties taken through the VAP, to  
18 ensure that these sites have been properly addressed and that CPs and  
19 Laboratories have performed the work properly. As I mentioned previously, the  
20 Ohio EPA is also responsible for monitoring the performance of CPs and  
21 disciplining those deemed to have performed poorly, failing to meet the standards  
22 of conduct mentioned previously. Based on internal guidance documents,  
23 portions of which were shared verbally with CPs at certain training sessions, CPs

1 who perform poorly may be warned, have their certification suspended, have their  
2 certification revoked, or, in more egregious instances, face more severe actions.  
3 This information is further discussed in Attachments SSF-2 and SSF-3.

4 **Q. WHAT DOES IT MEAN TO BE A CERTIFIED PROFESSIONAL?**

5 A. A CP, is a person certified by the director of the Ohio EPA to issue NFA letters,  
6 under the VAP. That is, a CP serves as an agent of the State in making a  
7 determination that properties meet all applicable standards and issue NFA letters.  
8 No person, other than a Certified Professional, not even an Ohio EPA employee,  
9 is permitted to issue NFA letters. That is, under VAP rules, the Certified  
10 Professional is responsible for making a determination that a property meets all  
11 applicable standards, under VAP, such that an NFA letter can be issued.  
12 Notwithstanding the standards of conduct discussed previously and the  
13 preparation of NFA letters (where warranted), the Certified Professional has  
14 specific responsibilities, as listed in O.A.C. 3745-300-05 and including  
15 preparation of NFA letters, submittal of NFA letters to the Ohio EPA for issuance  
16 of a CNS, submittal of USD applications to the Ohio EPA, and other  
17 responsibilities. CPs are regulated by the Ohio EPA pursuant O.A.C. 3745-300-  
18 05 and are subject to discipline, including suspension or revocation of their  
19 certification for failing to comply with standards of conduct imposed by the VAP.

20 **Q. WHAT ARE THE REQUIREMENTS TO BECOME A VAP CERTIFIED**  
21 **PROFESSIONAL AND TO MAINTAIN THE CERTIFICATION?**

22 A. A person who wishes to become a VAP Certified Professional must meet several  
23 criteria, including 1) hold a bachelor's degree from an accredited school in an

1 appropriate engineering or science discipline, 2) have 8 years of professional  
2 experience related to cleanup work, including three years as a supervisor or  
3 project manager, 3) possess good moral character, 4) possess the professional  
4 competence and knowledge to perform the tasks required of a Certified  
5 Professional and 5) take the initial training class offered by the Ohio EPA. It is  
6 important to note that this last requirement, initial training class, was added well  
7 after the VAP had been implemented. The requirement to participate in this class,  
8 which provides a great deal of detailed information and nuances about the VAP  
9 not readily available elsewhere, was added by the Ohio EPA based on their  
10 experience that many CPs did not have a working knowledge of the intricacies of  
11 the VAP, which has many differences from most other states' cleanup programs.  
12 That is, the Ohio EPA understands that the VAP is complex, non-intuitive and  
13 nuanced, and requires otherwise qualified individuals to obtain a detailed  
14 education on the VAP rules, prior to certifying them as Certified Professionals.

15 If an applicant meets these criteria, then the applicant must submit a  
16 completed application, provide original transcripts, provide six references,  
17 document participation in the initial training class, and pay the required fee. The  
18 Ohio EPA then requests public comments on applicants, through a public notice  
19 program. Once the public notice requirements are met and the Ohio EPA deems  
20 the applicant as suitable, the Ohio EPA provides the certification. The  
21 certification is valid for one year and must be renewed annually. To maintain  
22 certification, the Certified Professional must record 12 Professional Development  
23 Hour Units (PDHUs) of relevant and Ohio EPA-approved training annually,

1 submit a recertification application annually, and pay the required annual fee.

2 **Q. WHAT IS A NO FURTHER ACTION (NFA) LETTER?**

3 A. An NFA letter is comprehensive report detailing all activities completed in  
4 support of the determination, by the Certified Professional, that all applicable  
5 VAP standards have been met at a property. The NFA letter includes a template  
6 NFA form, provided by the Ohio EPA, and all supporting documentation. The  
7 supporting documentation includes items such as a complete Phase I Property  
8 Assessment Report, (including copies of Ohio EPA and US EPA files, previous  
9 site investigation and remediation reports, and other documentation), any updates  
10 to the Phase I Property Assessment Report, a Phase II Property Assessment  
11 Report (including copies of analytical reports provided by the Certified  
12 Laboratory, boring logs, affidavits, risk assessment documents, operation and  
13 maintenance plans, risk mitigation plans, Protection of Ground Water Meeting  
14 Potable Use (POGWMPUS) demonstrations, background studies, modeling,  
15 leaching testing, remediation completion reports, etc.). NFA documents can  
16 range in size from a few hundred pages, if an NFA is warranted after only a Phase  
17 I Property Assessment is completed, to thousands of pages (which is more  
18 typical) if a Phase II Property Assessment and remediation are required. Once  
19 the NFA is complete, the original copy is provided to the remediating party, by  
20 the Certified Professional. The remediating party must then inform the Certified  
21 Professional whether the NFA is to be submitted to the Ohio EPA for the purpose  
22 of obtaining a CNS. The CP must then submit the original NFA letter, and  
23 specified copies, to the Ohio EPA for CNS review. The CP must also respond to

1 any comments made by the Ohio EPA during this review and must submit any  
2 additional information requested. Once the Ohio EPA's requests are satisfied, the  
3 Ohio EPA will issue a CNS.

4 It should be noted that a CNS may be revoked and an NFA invalidated if  
5 certain conditions occur. For instance, the CNS may be revoked if land usage  
6 changes, if additional contamination not encountered during the Phase II  
7 Investigation is found, if improprieties in preparation of the NFA are later  
8 identified, and if remedial measures (land use restrictions, engineering controls,  
9 operation & maintenance plans, etc.) are not followed. In many of these cases,  
10 the Ohio EPA would review the conduct and work completed by the Certified  
11 Professional. Based on these reviews, disciplinary actions could take place.

12 **Q. WHAT REQUIREMENTS MUST A VAP CERTIFIED PROFESSIONAL**  
13 **FOLLOW TO DETERMINE WHETHER A VAP NO FUTHER ACTION**  
14 **(NFA) LETTER MAY BE ISSUED FOR A PROPERTY?**

15 A. In order to determine whether an NFA letter may be issued for property, the  
16 Certified Professional must follow the VAP rules to confirm that property is  
17 eligible for participation in the VAP, ensure that the property is investigated in  
18 accordance with the VAP rules, identify all applicable VAP standards, determine  
19 whether all applicable VAP standards have been met, and, if not, ensure that  
20 remediation required to meet applicable standards has been completed. All  
21 information obtained under the VAP must be certified to truth, accuracy and  
22 completeness by way of an affidavit. Once applicable standards have been met,  
23 an NFA Letter may be issued for the property by the Certified Professional under

1 affidavit. It is also important to note that the NFA letter applies to the work  
2 conducted and conditions known to exist at that time it is issued. In the event  
3 that, subsequent to the date that a Certified Professional issues an NFA letter, the  
4 Certified Professional learns that relevant facts, data or other information existed  
5 at the time the NFA was issued which indicates that applicable standards were not  
6 met, the Certified Professional must: (i) promptly notify the remediating party or  
7 the owner or operator of the property, if different, that the applicable standards  
8 were not met and of the need to notify the Director of Ohio EPA; and (ii) notify  
9 the Director of Ohio EPA that applicable standards were not met if the  
10 remediating party, or the owner or operator of the property, if different, does not  
11 submit written confirmation to the Certified Professional within thirty days of  
12 learning of the relevant facts, data, or other information, that the Director has been  
13 notified.

14 **Q. PLEASE IDENTIFY THE STANDARDS THAT MUST BE EVALUATED**  
15 **TO DETERMINE WHETHER A PROPERTY COMPLIES WITH ALL**  
16 **APPLICABLE VAP STANDARDS SUCH THAT A NO FURTHER**  
17 **ACTION (NFA) LETTER MAY BE ISSUED UNDER THE VAP.**

18 A. In order to prepare an NFA letter for a property, CPs are required to identify all  
19 applicable standards for that property. Applicable standards must be determined  
20 for all chemicals of concern with respect to all current and reasonably anticipated  
21 exposure pathways determined to be complete for which the remediating party  
22 intends to demonstrate compliance.

23 Applicable standards may include, but are not limited to, standards derived

1 from generic numerical standards, background levels determined following VAP  
2 rules, standards derived through a property-specific risk assessment, or a  
3 combination of these standards. Standards to be considered must include dermal  
4 contact standards and non-dermal contact standards, including potable  
5 groundwater use and vapor intrusion pathways. Standards that must be  
6 considered also include leaching of chemicals to groundwater, POGWMPUS, and  
7 standards related to migration or leaching of chemicals to surface water and  
8 sediment. As indicated previously, once all applicable standards are identified  
9 and once it is determined that a property meets all applicable standards, an NFA  
10 letter may be issued by the Certified Professional under affidavit.

11 **Q. WHAT IS AN URBAN SETTING DESIGNATION (USD) UNDER THE**  
12 **VAP?**

13 A. An Urban Setting Designation (or USD) is a recognition, by the Ohio EPA, that  
14 groundwater in certain urbanized areas (serviced by community water systems) is  
15 not used for potable purposes and that chemicals from past industrial activities  
16 that may be present in such groundwater pose no perceptible risk of consumption  
17 by the community because the groundwater is not being used and will not be used  
18 for drinking water purposes in the foreseeable future. In essence, a USD allows a  
19 remediating party to exclude potable groundwater use as an exposure pathway  
20 from further consideration. Note that a USD only addresses potable groundwater  
21 use and not the other potentially applicable exposure pathways under the VAP.  
22 Risks from all potentially complete pathways must still be considered by the  
23 Certified Professional when making a decision on whether all applicable VAP



1 standards have been met.

2 **Q. WHAT IS REQUIRED TO OBTAIN A USD FOR A PROPERTY IN**  
3 **OHIO?**

4 A. In order for a property to be considered for a USD, it must meet a number of  
5 criteria, as described in O.A.C. 3745-300-10. These criteria include, at a  
6 minimum, the property must be located within the boundaries of a city or  
7 township with a population of at least 20,000; at least 90% of the parcels within  
8 the city or township (or within a minimum of 1-mile from the property) must be  
9 connected to a community water system; the property (or USD area) cannot be  
10 located within certain well-head protection or drinking water source protection  
11 areas; there can be no potable wells within ½ mile of the site; for properties above  
12 a sand and gravel aquifer producing more than 100 gpm or sites above sole source  
13 aquifers, a Certified Professional must demonstrate that there is no reasonable  
14 expectation that any potable water wells will be installed within one-half mile;  
15 and the city or township in which the property is located must have a community  
16 water system that it considers capable of meeting its future water supply needs.  
17 It should be noted that the USD rule provides other mechanisms for achieving a  
18 USD if certain of the above standards cannot be met. It should also be noted that  
19 the Ohio EPA makes the final determination on whether a USD is granted and  
20 that determination is made based on whether all criteria have been met, whether  
21 the USD is likely to have an adverse impact on surrounding communities,  
22 whether the USD is likely to adversely impact regional water resource needs, and  
23 whether the USD is likely to expose people to contaminated groundwater now and

1 in the future. Further, the Ohio EPA also considers comments received through  
2 required public participation (meetings and notifications) and whether the local  
3 governments favor the designation.

4 **Q. IN ADDITION TO THE STRINGENT REGULATORY CRITERIA**  
5 **IDENTIFIED IN THE QUESTION ABOVE, WHAT COMPLICATIONS**  
6 **EXIST TO OBTAINING A USD IN THE AREA OF THE TWO DUKE**  
7 **ENERGY OHIO MGP SITES AND WHAT ARE THE**  
8 **BENEFITS/LIMITATIONS TO A USD AT THESE SITES EVEN IF A USD**  
9 **COULD BE OBTAINED?**

10 A. There would be several complications to obtaining or fully utilizing USDs at these  
11 two sites. First, as discussed above, to achieve a USD there can be no potable  
12 wells within ½ mile of the site and at least 90% of the parcels within the city or  
13 township (or within a minimum of 1-mile from the property) must be connected  
14 to a community water system. With respect to these two sites, the  
15 Commonwealth of Kentucky is located less than ½ mile from each site and  
16 private properties, within the Commonwealth of Kentucky, are located within this  
17 ½ mile radius. The rules are unclear whether and how the Ohio EPA can  
18 authorize out-of-state USD boundaries and how wells present, if any, within these  
19 out-of-state areas would impact the approvability of the USD.

20 With respect to the potential benefits and limitations of USDs at these two  
21 sites, there would be significant expense involved in obtaining the information to  
22 attempt to make the demonstration that a USD is suitable and inclusion of  
23 information from Kentucky, would be a significant complication. The most

1 significant benefit of the USD is that it would allow the remediating party to  
2 exclude risks related to potable use of groundwater at a property at an extended  
3 point of compliance. Importantly, however, that benefit is limited at these sites as  
4 groundwater would still need to meet criteria associated with other non-potable  
5 uses, as well as criteria associated with surface water discharges (O.A.C. 3745-  
6 300-10(E)(2)(a)(ii)). Because the groundwater at these sites may discharge to a  
7 surface water body, water that discharges to the surface water body would need to  
8 meet the surface water criteria and not the UPUS. In addition, as indicated in  
9 O.A.C. 3745-300-10(D), POGWMPUS requirements must still be met, as one of  
10 the applicable standards that must be achieved to obtain an NFA letter.  
11 Therefore, a groundwater use restriction, implemented through an environmental  
12 covenant, at these sites, rather than a USD, would be less costly and provide the  
13 same benefits of addressing the on-site potable use exposures.

14 **Q. WHAT ARE THE VAP REQUIREMENTS FOR ADDRESSING FREE**  
15 **PRODUCT AT A PROPERTY?**

16 A. The Ohio EPA defines “free product” as “a separate liquid hydrocarbon phase  
17 that has a measurable thickness of greater than one one-hundredth of a foot.” In  
18 general, the VAP assumes that properties with free product exceed applicable  
19 standards for unrestricted potable use of ground water (O.A.C. 3745-300-  
20 08(B)(2)(c)). It should be noted that this VAP assumption is, within the rules,  
21 referred to in a section detailing petroleum releases, but the Ohio EPA generally  
22 requires that free product, regardless of source, be removed, or mitigated to the  
23 extent practicable, prior to issuance of an NFA under the VAP.

1 **Q. WAS THERE FREE PRODUCT AT THE EAST END AND WEST END**  
2 **MGP SITES?**

3 A. Yes. There is significant free product present at both sites. Free product at the  
4 Duke Energy Ohio sites was present in the form of liquid mobile coal tar. At the  
5 East End site, this tar was present in and beyond former tar lagoons located in the  
6 West Parcel and within the East Parcel. At the West End site, this tar was present  
7 in and between former gas holders and in former MGP production areas, on both  
8 the north and south sides of Mehring Way.

9 **Q. HAVE ANY NO FURTHER ACTION LETTERS BEEN ISSUED ON MGP**  
10 **SITES IN OHIO WHERE FREE PRODUCT WAS REMAINING ON THE**  
11 **SITE?**

12 A. Not to the best of my knowledge.

13 **Q. HAVE ANY NO FURTHER ACTION LETTERS BEEN ISSUED ON ANY**  
14 **SITES IN OHIO WHERE FREE PRODUCT WAS REMAINING ON THE**  
15 **SITE?**

16 A. Yes. A remediating party may apply to the Director of the Ohio EPA for a  
17 variance from standards otherwise applicable to a property on which a voluntary  
18 action is being conducted, If granted, this variance could allow sites with free  
19 product to achieve NFA status. There are limited instances and conditions in  
20 which NFA letters have been prepared for properties with free product remaining  
21 in place, but those instances are not consistent with conditions at the Duke Energy  
22 Ohio sites, as discussed below. Although I am not privy to investigation and  
23 remediation details, my understanding from discussions with the Certified

1 Professionals involved is that the instances in which NFA letters were issued for  
2 sites with free product, involved sites where the free product did not adversely  
3 impact groundwater quality above applicable standards, did not adversely impact  
4 POGWMPUS requirements, and was stable and immobile. At the two Duke  
5 Energy Ohio MGP sites, free product must be remediated to meet applicable VAP  
6 standards for several reasons. The free product at the Duke Energy Ohio MGP  
7 sites has and will impact groundwater in excess of applicable standards. That is,  
8 the free product is MGP-coal tar, a substance which contains a number of  
9 chemicals including benzene and polyaromatic hydrocarbons, which can dissolve  
10 into the groundwater at concentrations above applicable standards. In addition,  
11 the free product at the Duke Energy Ohio MGP sites is not stable, but rather is  
12 mobile and will likely continue to migrate through time. This migration would  
13 likely cause failures of other applicable standards, thus making issuance of an  
14 NFA letter impossible. Further, there are potential receptors that could be  
15 impacted by the free product. At both Duke Energy Ohio MGP sites, a receiving  
16 surface water body (Ohio River) is located adjacent to the site and the mobile free  
17 product could migrate into the surface water body, thus making issuance of an  
18 NFA letter not possible. Finally, at least some of free product located at the  
19 Duke Energy Ohio MGP sites has migrated upward onto the ground surface,  
20 causing potential exposures to land users. For these reasons, VAP requirements  
21 for mitigation of free product at the Duke Energy Ohio MGP sites included  
22 removal of the free product.

1 **Q. HAS THE WEST END SITE BEEN PROPERLY EVALUATED AND**  
2 **REMEDIED BASED UPON THE OHIO VAP REGULATIONS?**

3 A. The VAP is an iterative process in which several rounds of investigation are often  
4 needed, to fully evaluate a property. If applicable standards are not met,  
5 remediation activities are then planned such that when these activities are  
6 complete, all applicable standards may be achieved.

7 The iterative investigation and remediation work at this site is still  
8 ongoing. That is, all applicable standards have not yet been achieved. However,  
9 based on the documents that I have reviewed, the investigation and remediation  
10 work conducted at the West End MGP appears to have been prudent and  
11 reasonable, and in conformance with VAP regulations.

12 **Q. HAS THE EAST END SITE BEEN PROPERTY EVALUATED AND**  
13 **REMEDIED BASED UPON THE OHIO VAP REGULATIONS?**

14 A. As is the case with the West End MGP Site, the work at this site is still ongoing.  
15 Based on the documents that I have reviewed, the investigation and remediation  
16 work conducted at the East End MGP appears to have been prudent and  
17 reasonable, and in conformance with VAP regulations.

18 **Q. WOULD A CERTIFIED PROFESSIONAL BE ABLE TO ISSUE A NO**  
19 **FURTHER ACTION (NFA) LETTER FOR THE TWO DUKE ENERGY**  
20 **OHIO MGP SITES BASED SOLELY ON IMPLEMENTATION OF**  
21 **ENGINEERING CONTROLS SUCH AS ASPHALT OR CONCRETE**  
22 **CAPPING?**

23 A. No, not as the only remedy implemented. This type of remedy would not meet all

1 applicable standards and, in fact, could potentially exacerbate site risks.  
2 Engineering controls, such as asphalt or concrete capping, may enable a property  
3 to achieve certain standards, such as direct contact standards; however the VAP  
4 requires that all applicable standards be met for a property to be eligible for an  
5 NFA letter. Additional standards that would not be achieved would include  
6 surface water standards, POGWMPUS, leaching to groundwater, vapor intrusion  
7 to indoor air and other standards. Further, because of the presence of liquid and  
8 mobile free product (tar), near surface, in some portions of both sites, placement  
9 of an engineering control, such as pavement or a soil cover, could alter subsurface  
10 conditions and further mobilize the tar.

11 **Q. WOULD A CERTIFIED PROFESSIONAL BE ABLE TO ISSUE A NO**  
12 **FURTHER ACTION LETTER FOR THE TWO DUKE ENERGY MGP**  
13 **SITES BASED SOLELY ON INSTITUTIONAL CONSTROLS SUCH AS**  
14 **LAND USE RESTRICTIONS?**

15 A. No, not as the only remedy implemented. Institutional controls, such as land use  
16 restrictions, would not achieve all applicable standards. Institutional controls,  
17 such as land use restrictions, may enable a site to meet certain direct contact  
18 standards or groundwater potable use standards; however VAP requires that all  
19 applicable standards be achieved prior to issuance of an NFA letter. Land use  
20 restrictions would not allow the property to achieve surface water standards,  
21 POGWMPUS, leaching to groundwater, vapor intrusion to indoor air and other  
22 standards. Institutional controls would not meet these standards.

1 **Q. WHY IS IT DESIRABLE TO FOCUS REMEDIATION EFFORTS ON**  
2 **OBTAINING A NO FURTHER ACTION (NFA) LETTER?**

3 A. Under VAP rules, an NFA letter is a very desirable end point. An NFA letter is  
4 written confirmation that a site has been appropriately investigated and  
5 remediated following the VAP rules and that there are no unacceptable risks to  
6 current and reasonably anticipated future land users. The entire VAP process is  
7 focused on meeting applicable standards and the NFA letter serves as  
8 documentation that such standards have been achieved. In addition, an NFA  
9 letter is required to obtain liability relief, in the form of a CNS from the State of  
10 Ohio. Further, the Ohio EPA offers some enforcement relief for remediating  
11 parties working under VAP rules and working toward meeting all applicable  
12 standards and ultimately achieving an NFA letter. The Ohio EPA generally will  
13 not issue an enforcement order on properties on which work is being undertaken  
14 in conformance with the VAP.

15 **Q. ONCE A SITE IS EVALUATED, HOW ARE OPTIONS FOR**  
16 **REMEDICATION SELECTED?**

17 A. The VAP does not specify or prescribe remedial options. The VAP specifies all  
18 applicable standards that must be achieved. Typically, a number of remedial  
19 options are evaluated in order to select a remedy. These remedial options are  
20 often evaluated with respect to protectiveness of human health and the  
21 environment, the long and short term effectiveness and permanence,  
22 implementability, suitability, compliance (with rules), and costs in meeting these  
23 standards. Often, several remediation techniques are combined to provide a



1 remedial approach that allows a site to achieve all applicable standards.

2 **Q. HOW IS COST CONSIDERED IN DETERMINING COMPLIANCE WITH**  
3 **THE VAP?**

4 A. The VAP establishes applicable standards. It is up to the remediating party to  
5 determine how best to achieve those standards following the VAP regulations.  
6 The VAP provides different approaches to addressing different conditions and  
7 exposure pathways. These different approaches carry with them different costs,  
8 but the objective is to achieve all applicable VAP standards. For the two Duke  
9 Energy Ohio MGP sites, the remedial work included the mitigation of significant  
10 volumes of free product in order to achieve applicable VAP standards. To meet  
11 VAP criteria, including leaching to groundwater, surface water protection and  
12 POGWMPUS, for example, removal or stabilization of the coal tar was necessary.  
13 Utilization of other less expensive activities, such as environmental covenants or  
14 surface capping, would allow the site to meet some standards, but not all  
15 applicable standards and would also not be as protective of human health and the  
16 environment.

17 **Q. DO YOU BELIEVE THAT THE INVESTIGATION AND REMEDIATION**  
18 **ACTIVITIES THAT DUKE ENERGY OHIO HAS ELECTED TO**  
19 **COMPLETE ARE REASONABLE AND PRUDENT IN WORKING**  
20 **TOWARD MEETING APPLICABLE STANDARDS AT THE TWO DUKE**  
21 **MGP SITES?**

22 A. The activities completed by Duke Energy Ohio, to date, have focused on  
23 remediation of MGP-related wastes, including mobile free product. These

1 activities were reasonable and prudent to mitigate site risks and to meet all  
2 applicable standards under the VAP. These activities are also consistent with  
3 approaches taken at other similarly contaminated properties. Not all VAP  
4 standards have been achieved yet and additional activities will be needed before  
5 an NFA letter can be issued.

#### IV. CONCLUSION

6 **Q. WERE THE ATTACHMENTS TO YOUR TESTIMONY PREPARED BY**  
7 **YOU OR UNDER YOUR DIRECTION AND SUPERVISION?**

8 A. SSF-1 is my Curriculum Vitae and I prepared this attachment. SSF-2 and SSF-3  
9 are documents obtained from the Ohio EPA. I did not prepare these documents.

10 **Q. IS THE INFORMATION CONTAINED IN THESE ATTACHMENTS**  
11 **ACCURATE TO THE BEST OF YOUR KNOWLEDGE AND BELIEF?**

12 A. Yes.

13 **Q. DOES THIS CONCLUDE YOUR FILED TESTIMONY?**

14 A. Yes.

**CURRICULUM VITAE**  
**SHAWN S. FIORE., PG., CP**

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**Summary of Professional Expertise**

Mr. Fiore is a Voluntary Action Program (VAP) Certified Professional (CP) in Ohio, as well as a Professional Geologist (PG), in Indiana and Pennsylvania. He is experienced in the management, investigation and remediation phases of legacy environmental projects, including former manufactured gas plant (MGP) sites. Mr. Fiore has completed hundreds of professional assignments on contaminated properties in Ohio and beyond, including more than 20 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Superfund Sites, more than 50 former industrial properties or “brownfield sites,” more than 200 active industrial facilities, more than 20 former Department of Defense (DOD) facilities, more than 100 commercial facilities, and on MGP sites in Ohio, Pennsylvania, Indiana, and Michigan.

Mr. Fiore has conducted investigations and remediations on contaminated sites regulated by the US EPA, including CERCLA and Superfund Sites, Resource Conservation and Recovery Act (RCRA) Sites, formerly used defense sites, hazardous waste landfills, and other sites. He has also conducted investigations and remediations on sites regulated by the Ohio EPA, including Division of Environmental Response and Remediation (DERR) Sites, active and inactive industrial facilities, landfills, commercial properties, brownfield sites, residential properties, abandoned / undeveloped properties, and MGP sites. He has completed investigation and remediation projects in all five Ohio EPA districts. He has also conducted investigations and remediations on other contaminated sites in Ohio regulated by the Bureau of Underground Storage Tank Regulations (BUSTR).

Mr. Fiore has lead and conducted hydrogeological investigations, aquifer and contamination assessments in a variety of technically challenging and complex geological regimes. Mr. Fiore’s expertise includes the evaluation of contaminant migration pathways and characteristics, interaction of contaminant plumes and natural systems and assessment and implementation of low-cost remedial actions.

Mr. Fiore’s work experience includes:

- Manufactured Gas Plant projects in Ohio, Indiana, Michigan and Pennsylvania
- Industrial Environmental, Geotechnical, Plant Engineering, and Compliance Services.

- Brownfields Remediation for Redevelopment Experience
  - More than 20 projects in Cleveland’s poorest neighborhood (Fairfax)
  - Langston Hughes Center for Senior Outreach, Cleveland Clinic Global Center for Cardiovascular Innovation, Cuyahoga County Juvenile Justice Facility, Quincy Place, Church Square, planned Quincy Industrial Park, others.
- In-Country Experience
  - Completed professional assignments in all 50 states, under numerous state regulatory programs and/or federal programs, including RCRA, CERCLA, and others.
- International Experience
  - Completed professional International Assignments in countries including Canada, Mexico, Central America, South America, Caribbean, Europe, Middle East, India, and East Asia.

### **Professional Experience Summary**

#### **Haley & Aldrich (2002 to Date)**

- Vice President and Geologist, (2004 – Date)
- Great Lakes Unit Leadership Team (2004 – 2006)
- Senior Environmental Geologist (2002- Date)

#### **Parsons Corporation (1988 to 2002)**

- Manager, Environmental Studies Department (2000 – 2002)
- Project Manager (1993 – 2002)
- Geologist / Senior Geologist (1988- 1993)

#### **Bowling Green State University, Department of Geology**

- Research and Teaching Assistant (1986-1988)

#### **Bowser-Morner, Inc. (1987)**

- Geotechnical Engineering Technician

### **Education Summary**

Bowling Green State University, B.S., Geochemistry, 1988

- Outstanding Senior Geology Major
- President, Bowling Green State University (BGSU) Geology Club
- Founding President AAPG, BGSU Chapter
- Sigma Gamma Epsilon Geology Honors Fraternity
- Sigma Omicron Gamma Honors Fraternity

Bowling Green State University, M.S., Geology, 1993

- Thesis: Origin of the Cave Branch Bed of the Slade Formation
- Additional Research – Geobotany of Albion Scippio Field

### **Professional Registrations**

- Professional Geologist: Pennsylvania (License PG-001770-G)
- Professional Geologist (by ASBOG Examination): Indiana (License 2382)
- Certified Professional: Ohio EPA Voluntary Action Program (CP #154)

### **Special Studies and Courses (abridged)**

- Haley & Aldrich, Leadership Development Program
- Project Management Training Program
- Financial Management for Engineers and Scientists
- Probability, Statistics and Geostatistics
- OSHA Supervisor Training

- OSHA 40-Hour HAZWOPER Training
- OSHA HAZWOPER Annual Refresher Training
- Asbestos Awareness Training
- VAP Annual Certified Professional Training
- VAP Initial Certified Professional Training

**Publications/Presentations (abridged)**

- “Natural Gas Before Fracking,” presented to the Northern Ohio Geological Society, at the University of Akron, Akron, Ohio 2013.
- “How an Effective Communication Strategy Streamlined an MGP Cleanup,” presented at the 2012 Ohio Brownfields Conference, Newark, Ohio 2012.
- “Leveraging Partnerships to Create Adaptive Reuses of Brownfield Properties” presented at the 2011 Ohio Brownfields Conference, Newark, Ohio 2011.
- “Implementation of a Corporate Due Diligence Program,” presented at the 2008 Global EH&S Conference, San Minneapolis, Minnesota, 2008.
- “Manufactured Gas Plants,” presented at the Annual Voluntary Action Program Certified Professional Training Course, Newark, Ohio, 2007.
- “Case Study: Delaware, Ohio MGP,” presented at the Manufactured Gas Plant Training Course, Columbus, Ohio 2007.
- “Emergency and Contingency Planning,” presented at the 2006 Global EH&S Conference, San Luis Potosi, Mexico, 2006.
- “Due Diligence in Property Transfers,” presented at the 2004 Global EH&S Conference, Columbus, Indiana 2004.
- “Due Diligence and Liability Management,” presented at the 25<sup>th</sup> Annual Inland Spills Conference, Kings Island, Ohio, 2002.
- “Geochemical Evaluation of Groundwater in Support of a Monitored Natural Attenuation Remedy,” Colloquium presentation at Bowling Green State University, 2001.
- “Recovery of Highly Viscous NAPL, using Steam Injection and Vacuum Enhanced Vapor Extraction,” Proceedings at 2<sup>nd</sup> Conference on the Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, 1998.

**Professional and Community Involvement Summary (abridged)**

- Cuyahoga National Park Conservancy – Member
  - Cuyahoga National Park Conservancy, Wetlands Monitor Volunteer
- Dean’s Science Advocate Advisors, Bowling Green State University
- Parents Resource Team – Dennison University
- Northern Ohio Geological Society
- City Club of Cleveland
- Crowne Point Community Sponsored Agriculture – Member & Shareholder
- Cleveland Industrial Land Bank, Brownfield Criteria Evaluation Committee
- Ohio Environmental Protection Agency Voluntary Action Program
  - Multidisciplinary Task Group - Stakeholder Program Review and Feedback Group
  - Multidisciplinary Task Group - Total Petroleum Hydrocarbons and NAPL Committee
  - Multidisciplinary Task Group - Background Committee
- Development Committee Chair, Census Committee Member, Fundraising Committee Member, St. Thomas More Church
- Cuyahoga Valley Princesses and Guides, Chief Information Officer
- Cleveland Foodbank –Presidents Circle
- Head Coach – Brecksville City Baseball League
  - Girls Softball (2003),
  - Boys Baseball (2004 through 2010)