August 19, 2011

Michael E. Hopkins, P.E.
Assistant Chief, Permitting
Ohio EPA, DAPC
50 W. Town Street, Suite 700
Columbus, Ohio 43215
Mike.hopkins@epa.state.oh.us

Re: Comments of Ohio Environmental Council; Group Against Smog and Pollution; Buckeye Forest Council; and Center for Health, Environment, and Justice Regarding the Ohio EPA Air Program's Proposed Natural Gas Well Site General Permit

Dear Mr. Hopkins,

Enclosed please find comments regarding the Ohio EPA Air Program's proposed natural gas well site general permit on behalf of the Ohio Environmental Council, the Group Against Smog and Pollution, Buckeye Forest Council, and Center for Health, Environment, and Justice. These comments are intended to supplement, not replace comments submitted by several of the undersigned organizations on August 12.

We appreciate this opportunity to provide input on the proposed general permit.

Sincerely,

Joe Osborne
Group Against Smog & Pollution

David R. Celebrezze
Ohio Environmental Council

Nathan Johnson
Buckeye Forest Council

Teresa Mills
Center for Health, Environment, and Justice

COMMENTS OF OHIO ENVIRONMENTAL COUNCIL; GROUP AGAINST SMOG AND POLLUTION; BUCKEYE FOREST COUNCIL; AND CENTER FOR HEALTH, ENVIRONMENT, AND JUSTICE REGARDING OHIO EPA'S PROPOSED NATURAL GAS WELL SITE GENERAL PERMIT

The Energy Information Administration projects that by 2035, shale gas production will increase fourfold from 2009 levels.[1] Much of that increase will occur in the large and relatively untapped Marcellus Shale and Utica formations. While natural gas produces far less air pollution than coal when combusted, the compressor stations, condensate tanks, dehydrators and flares necessary to extract, process, and transmit natural gas emit significant quantities of nitrogen oxides (NOx) and volatile organic compounds (VOCs), among other pollutants.

When any one of these emissions units is considered in isolation, its emissions may seem relatively small. In fact, these sources are often permitted as minor sources or are entirely exempted from permit requirements as de minimis or permit exempt sources.[2] However, when all of these emission units are considered together, the combined NOx and VOC emissions from the oil and gas production sector are enormous. For instance:

- A 2009 Southern Methodist University study found emissions of NOx and VOCs from the oil and gas sector in the Dallas-Fort Worth area likely exceed emissions from motor vehicles.[3]
- A 2008 analysis by the Colorado Department of Public Health and Environment concluded that NOx and VOC emissions from Colorado's oil and gas operations exceed vehicle emissions for the entire state.[4]
- In 2009, for the first time in the state's history, Wyoming failed to meet the National Ambient Air Quality Standard (NAAQS) for ozone. The Wyoming Department of Environmental Quality determined emissions from the state's growing oil and gas sector were to blame.[5]

If air emissions from Marcellus and Utica activity are not subjected to more rigorous control, the Northeastern U.S. will experience NOx and VOC emissions increases of a similar magnitude, and the human health consequences will be significant. NOx and VOCs are ozone precursors, and much of Ohio and downwind states already struggle to meet federal health-based standards for ozone and $PM_{2.5}$. The geographic boundaries of the Marcellus and Utica

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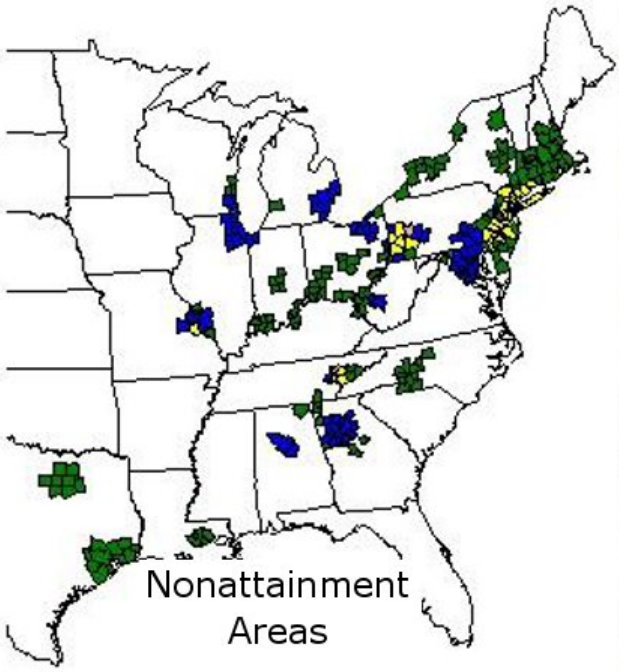
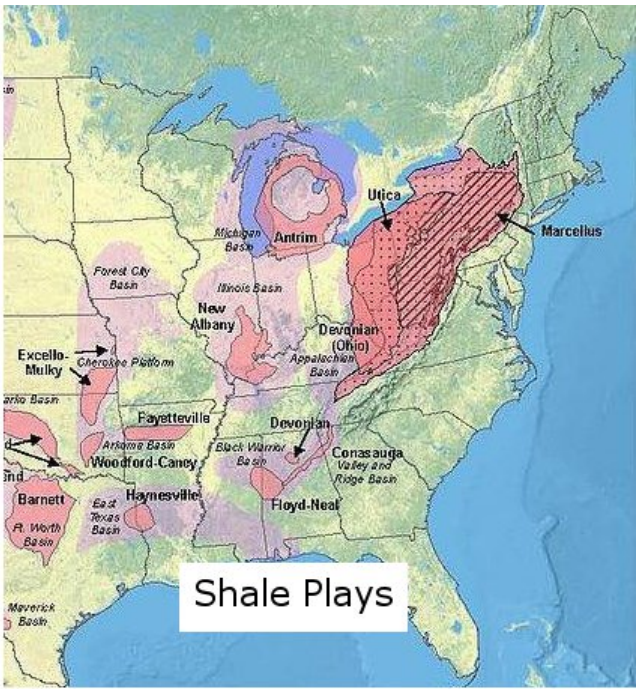
[1] Presentation by Richard G. Newell, Administrator, Energy Information Administration, *The Long-term Outlook for Natural Gas* (Feb. 2, 2011), *available at:* http://www.eia.doe.gov/neic/speeches/newell_aeo_ng.pdf.
[2] OAC Rule 3745-15-05, OAC Rule 3745-31-03.
[3] Al Armendariz, *Emissions from Natural Gas Production in the Barnett Shale Area and Opportunities for Cost-Effective Improvements* (Jan. 26, 2009), *available at:* http://www.edf.org/documents/9235_Barnett_Shale_Report.pdf.
[4] Attachment 1 - Colorado Dept. of Public Health & Environment, Air Pollution Control Division, Oil and Gas Emission Sources Presentation for the Air Quality Control Commission Retreat (May 15, 2008) at pages 3-4.
[5] WYDEQ, Technical Support Document I for Recommended 8-Hour Ozone Designation For the Upper Green River Basin, WY, p. viii (Mar. 26, 2009), *available at:* http://deq.state.wy.us/out/downloads/Ozone%20TSD_final_rev%203-30-09_jl.pdf.

formations overlap with, or are just upwind of, a number of existing ozone and $PM_{2.5}$ nonattainment areas.





Given the nature of the pollutants at issue and the geographic area where the emission units must be located, Utica and Marcellus Shale gas extraction is ideally suited to make our existing air pollution problems worse. Thus it is crucial that air permitting authorities in the Utica and Marcellus areas act without delay to develop and implement policies to control air emissions from this fast-growing industry.

Ohio EPA's natural gas well site general permit is a step in the right direction. We support the agency's decision to develop it and offer the following comments in the hopes they will prove useful to the agency as the well site general permit is finalized.

I. Pending litigation does not affect Ohio EPA's duty to perform case-by-case well site source determinations.

Ohio EPA's well site general permit letter states that "at this time, Ohio EPA believes it is not appropriate to group multiple well sites together to determine applicability of these rules."[6] While it is true that there is litigation currently pending that relates to source aggregation in the oil and gas context, this does not suspend Ohio EPA's obligation to perform source determination analyses. Source determinations must be performed on a case-by-case basis, and as such it is improper to broadly state that Ohio will not aggregate oil and gas well sites in any situation.

[6] Letter at 5.

The federal PSD regulation defines "stationary source" as "any building, structure, facility, or installation which emits or may emit a regulated NSR pollutant."[7] A "building, structure, facility, or installation" is defined as:

> All of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same "Major Group" (i.e., which have the same first two digit code).[8]

While federal Title V rules do not define "building, structure, facility, or installation," the definition of "stationary source" is to be interpreted consistent with the definition in the PSD program.[9] Ohio has SIP-approved PSD and Title V permitting programs.[10] In order to maintain this approval, the state programs must be at least as stringent as the federal PSD and Title V programs.[11]

If pollutant emitting activities are part of the same "building, structure, facility, or installation," their emissions must be aggregated and treated as a single source for permitting purposes.[12] In September 2009, EPA issued a memo (the McCarthy Memo) clarifying the method for making source determinations for oil and gas operations.[13] While the McCarthy Memo acknowledged the complexity of source determinations for the oil and gas industry, it reaffirmed that the three factors from EPA's "building, structure, facility, or installation" definition – whether facilities have the same SIC code, are under common control, and are contiguous or adjacent – must be considered on a case-by-case basis in making such determinations. In addition to applying these three criteria, the explanation in the preamble to the 1980 revisions to the PSD/NNSR rules[14] and past determinations made by Regional Office should be considered in making these determinations.[15]

Pursuant to the McCarthy Memo, Ohio EPA cannot simply state that aggregation is not appropriate for oil and gas wells and choose not to consider whether aggregation is required in these cases. Admittedly, the fact that there is ongoing litigation related to aggregation does nothing to resolve the contentious issue of the proper definition of source in the oil and gas context; however it does not relieve Ohio EPA of its duty to consider whether aggregation is appropriate on a case-by-case basis.

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[7] 40 C.F.R. §§ 51.165(a)(1)(i); 52.21(b)(5).
[8] 40 C.F.R. §§ 51.165(a)(1)(ii); 52.21(b)(6).
[9] 61 Fed. Reg. 34202, 34210 (July 1, 1996).
[10] 60 Fed. Reg. 42045, Aug. 15, 1995; 68 Fed. Reg. 1366, Jan 10, 2003; OAC Chapter 3745-77; OAC Chapter 3745-31.
[11] 40 C.F.R. 70.1(c); 42 U.S.C. § 7471; 40 C.F.R. § 51.166.
[12] 40 C.F.R. §§ 51.165(a)(1)(iv)(A); 52.21(b)(1)(i).
[13] Memo from U.S. EPA Assistant Administrator Gina McCarthy to Regional Administrators, "Withdrawal of Source Determination for Oil and Gas Industries" (September 22, 2009), R. at 638-39 [hereinafter *McCarthy Memo*]
[14] 45 Fed. Reg. 52676, 52694-95 (Aug. 7, 1980).
[15] McCarthy Memo, *supra* note 13.

II. The general permit should prohibit open pit wastewater storage.

The well site general permit letter states:

> "It is Ohio EPA's understanding that most well site operators plan to recover hydraulic fracturing fluids for reuse at other well sites. When these fluids are recovered from the well, they will be placed in holding tanks until they are trucked to other sites. This means that open storage fracturing fluid pits will not be used. As such, this GP does not include any permit requirements for open pits. If a company wishes to use an open pit, then a case-by-case permit may be needed."[16]

Open pit storage of flowback water results in emissions of methane and volatile organic compounds (VOCs).[17] Other risks associated with produced water evaporation ponds include wildlife and livestock mortality, and ground or surface water contamination resulting from liner failure, berm failure, or overtopping.[18] Given the clear environmental risks of open pit flowback water storage and the ready availability of safer, closed system alternatives, open pit storage should be prohibited. The New York Department of Environmental Conservation recommends prohibition of open pit storage as well.[19]

III. Ohio EPA should explore more effective methods to ensure compliance with the vehicle miles traveled limit.

The Draft General Permit requires unpaved roadway vehicle miles traveled not to exceed 10,000 miles per year.[20] Compliance with the 10,000 VMT annual limit appears to be left to the site owner or operator who must be "willing to keep the total vehicles miles traveled . . . to less than or equal to 10,000 miles?"[21] However, it is unclear how a site owner or operator would track VMT or how Ohio EPA would verify compliance. Significant truck traffic is associated with well drilling and fracturing operations (see photos below), and initial VMT estimates are subject to change depending on such variables as the volume of cement required during casing and volume of flowback water. Finally, well cementing and fracturing and associated trucking operations are often performed by contractors; it may be challenging for the site owner or operator to estimate VMT from contractor activities.

Ohio EPA should explore more effective ways to quantify VMT, such as developing a general "truck count per wellhead" figure which, in combination with access road distance information would provide a more accurate estimate of VMT.

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[16] Letter at 5-6.
[17] U.S. EPA, *Measurement of Emissions from Produced Water Ponds: Upstream Oil and Gas Study #1 – Final Report*, Oct. 2009, at 58, *available at* http://www.epa.gov/nrmrl/pubs/600r09132/600r09132.pdf.
[18] Bureau of Land Management, Onshore Oil and Gas Order No. 7; Disposal of Produced Water, Section III.E. Design requirements for pits, *available at:* http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/docs/onshore_order_7.html.
[19] NYDEC, *Preliminary Revised Draft SGEIS on the Oil, Gas and Solution Mining Regulatory Program* (July 2011) Ch. 7, Section 7.1.3.4 Flowback Water, page 7-42.
[20] Qualifying Criteria Document at 2.
[21] *Id.*

A fracking operation in West Virginia.

IV. The general permit documents should consistently include diesel internal combustion engines of model year 2007 and later.

The General Permit documents are somewhat unclear on what model year of diesel internal combustion engines are regulated under the permit. The qualifying document includes "model year 2007 or later," in this category;[22] however, the model general permit only includes "2007 to 2010 model year" engines.[23] These documents should be made consistent, and should cover diesel engines of model year 2007 or later, as stated in the qualifying document.

V. The spark ignition internal combustion engine emission limits must be updated to reflect the current NSPS requirements.

The draft general permit lists gram per horsepower hour (g/HP-hr) emission limits for nitrogen oxide (NOx), carbon monoxide (CO), and volatile organic compound (VOC) emissions from spark ignition (SI) internal combustion engines (ICE).[24] These limits appear to be based on the SI ICE NSPS;[25] however they are not up to date. Lower emission limits than those listed in the draft general permit apply to several applicable engine categories.[26] These lower limits should be incorporated into the final general permit and the hourly and yearly emission limits in section e, page 14 of the draft general permit should be altered to reflect these lower emission limits as well.

VI. The OAC rule 3745-31-05(A)(3)(a)(ii) best available technology exemption does not apply.

The Draft General Permit also states that the hourly and yearly emission limits listed on page 14, section e will not apply "once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 [because] the uncontrolled potential to emit for PE, NOx, CO, VOC, and SO2 are less than ten tons per year [TPY]."[27] Commenters disagree. Draft general permit section e, page 14 lists the following maximum combined annual emissions from all Spark Ignition Internal Combustion Engines located at a well site: NOx 30.0 TPY, CO 60 TPY, VOC15 TPY.[28] Even after accounting for the new, lower NSPS limits, maximum annual emissions for each these pollutants would still exceed the 10 TPY BAT threshold.[29] Ohio EPA must either require BAT for SI ICE emission units or reduce the maximum total SI ICE HP qualifying for the general permit from the current 1,555 HP figure.

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[22] Qualifying Criteria Document at 3.
[23] Model General Permit at 20.
[24] Model General Permit at 13.
[25] 40 C.F.R. Part 60, Subpart JJJJ.
[26] 40 C.F.R. Part 60, Subpart JJJJ, Table 1. Lower emission limits apply to: non-emergency SI lean burn natural gas engines 500 HP or greater and less than 1350 HP, non-emergency SI natural gas engines 500HP or greater, non-emergency SI natural gas engines 100 HP or greater and less than 500 HP.
[27] Model General Permit at 15.
[28] Model General Permit at 14.
[29] NOx 15 TPY, CO 30 TPY, VOC 10.5 TPY.

VII. Production water storage tanks are not exempt from permitting requirements, and should be included in the general permit.

In the general permit letter, Ohio EPA noted that it included production water storage tank requirements in the draft general permit, but was unsure whether this would remain in the permit due to uncertainty as to whether these tanks are exempt from permitting requirements.[30] Produced water storage tanks generally do not qualify for an exemption under OAC 3745-31-03(A)(1)(l), and as such these tanks should be included in the general permit.

Produced water storage tanks are sources of VOC emissions, and "working, breathing, and flash losses are all considerations" when calculating emissions from these tanks.[31] While the exact composition of produced water varies depending on location,[32] produced water does not meet the OAC 3745-31-03(A)(1)(l)(i) exemption for "inorganic liquids including water" because it also contains a variety of other materials, including oil, grease and organic compounds.[33]

The capacity of typical produced water storage tanks range from 400-800 barrels (16,800 to 33,600 gallons), potentially exceeding both the OAC 3745-31-03(A)(1)(l)(iii) & (iv) capacity-based exemptions. Further, it is common industry practice to group multiple small condensate or produced water tanks together.[34] Individually, these tanks are often small enough to meet capacity-based exemptions, but provide total storage capacity (and VOC emissions) equivalent to a large, non-exempt tank. Ohio EPA appears to be encouraging the use of multiple small exempt tanks by allowing a site to install up to 8 (or 10, according to the transmittal letter) tanks with a capacity no greater than 16,800 gallons each.

Colorado takes a sensible approach to regulating multiple-tank sites, its produced water tank general permit that applies to "produced water storage tank batteries comprised of a single storage tank or a group of storage tanks used for the storage of produced water,"[35] and focuses on cumulative emissions rather than emissions from individual tanks.[36] Like Colorado, Ohio EPA should look at cumulative characteristics when regulating multiple-tank projects. Cumulative storage capacity must be used to determine applicability of capacity-based exemptions; otherwise sources can circumvent permitting and pollution control requirements by simply using two small, permit exempt tanks in place of a larger tank that would be subject to regulation.

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[30] Letter at 6.
[31] Texas Commission on Environmental Quality, *Determining Emissions from Produced Water Storage Tanks*, at 1, *available at* http://www.tceq.texas.gov/assets/public/implementation/air/ie/pseiforms/producedwaterstoragetank.pdf (describing various methods for calculating produced water storage tank emissions).
[32] Argonne National Laboratory, U.S. Dept. of Energy, *Produced Water Volumes and Management Practices in the United States*, Sept. 2009, at 14, *available at* http://www.netl.doe.gov/technologies/coalpower/ewr/water/pdfs/anl%20produced%20water%20volumes%20sep09.pdf.
[33] *Id*.
[34] *See* Attachment 2: Allegheny Health Dept. Air Quality Program, Inspection Report – Fawn Well Site (Sept. 14, 2010) at 2 (well site has a battery of six 210-bbl produced water storage tanks).
[35] Colorado Department of Public Health and Environment, *General Construction Permit: Oil and Gas Industry, Produced Water Storage Tank Batteries*, at 1, *available at* http://www.cdphe.state.co.us/ap/down/generalpermGP05.pdf.
[36] *Id*. at 2.

Thus, the capacity-based exemption should not apply unless cumulative storage capacity remains under the exemption threshold.

A production field tank battery made up of seven produced water tanks and seven condensate tanks. Tanks are ~400 bbl

The vapor pressure of produced water varies considerably depending on such factors as the geographic location, process, and amount of condensate remaining in the fluid. Produced water material safety data sheets list vapor pressures ranging from 20 mmHg to 830-14000 mmHg.[37] Even at sites where produced water vapor pressure is relatively low, concentrations of methanol (a VOC added at the wellhead to inhibit hydrate formation) occasionally increase to 5% or more of total produced water volume.

Colorado has established a 95% VOC control requirement for produced water storage tanks;[38] Wyoming requires 98% control.[39] Ohio EPA should take a conservative approach and establish similar VOC control requirements for produced water storage tanks in the draft general permit. The well site owner or operator could avoid this control requirement by providing representative produced water composition data demonstrating that produced water vapor pressure is below a threshold vapor pressure (such as the 3.5 kilopascals exemption threshold in

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[37] EnCana Corporation, *Material Safety Data Sheet: Produced Water – Sweet,* at 1, *available at* http://www.encana.com/contractor/msds/pdfs/produced-water-sweet-crude-deep-gas.pdf; CountryMark, *Produced Water, Sour, Material Safety Data Sheet,* at 2, *available at* http://www.countrymark.com/userfiles/File/Produced_Water_Sour(1).pdf;.EnCana Corporation, *Material Safety Data Sheet, Produced Water (Sour),* at 1, *available at* http://www.encana.com/contractor/msds/pdfs/produced-water-sour.pdf.

[38] CDPHE, *General Permit - Produced Water Storage Tanks, supra* note 35 at 1

[39] Wyoming DEQ, Oil and Gas Production Facilities Chapter 6, Section 2 Permitting Guidance (Mar. 2010) at 11, 16, & 20, *available at:* http://deq.state.wy.us/aqd/Oil%20and%20Gas/March%202010%20FINAL%20O&G%20GUIDANCE.pdf.

OAC 3745-31-03(A)(1)(l)(iv)).[40] Colorado has developed county-specific produced water emission factors.[41] Ohio may be able to develop similar geographic emission factors for use in future produced water tank permitting decisions on the basis of these produced water composition data submissions, eliminating the need for site owners or operators to submit produced water composition data in the future.

VIII. The general permit should include more stringent control requirements for VOC emissions from storage tanks.

The draft general permit limits cumulative VOC emissions from all tanks to 26.4 TPY,[42] and states that, "[o]nce U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05" this emission limit would be replaced with a requirement to use "vapor recovery and/or flare or equivalent control device unless the uncontrolled potential to emit per tank is less than 9.9 tons/year and the total uncontrolled potential to emit for all tanks is less than 26.4 tons/year VOC."[43] Vapor recovery units (VRUs) are effective control devices, capable of capturing 95% of VOC emissions,[44] and because they reduce emissions by reducing evaporative loss of otherwise marketable hydrocarbons, they are remarkably cost-effective in high VOC capture situations, often paying for themselves in less than a year.[45]

The proposed Oil and Gas NSPS recommends 95% control of VOC emissions via use of a VRU or a flare for all storage tanks or storage tank batteries with combined throughput rates of 1 barrel per day of condensate, which is "equivalent to [combined] VOC emissions of approximately 6 tpy."[46] Commenters urge Ohio EPA to reexamine the cost effectiveness of condensate tank emission controls and consider adopting a combined tank VOC emissions threshold limit equivalent to or lower than EPA's proposed 6 TPY figure.

IX. The general permit should require reduced emission well completions.

After hydraulic fracturing is completed, drill cuttings, sand, flowback water, and other contaminants initially return to the surface, along with significant quantities of natural gas. Standard gas collection equipment is not designed to separate out drill cuttings and sand, so gas is vented or flared for several days after completion, resulting in significant NOx and VOC emissions and lost natural gas. Reduced emission completions employ additional separator equipment capable of the handling high flowback volumes, sand, and other solids produced after

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[40] In order to capture flash emissions, composition data must be derived from a sample that has remained at wellhead pressure. *See,* TCEQ *Determining Emissions from Produced Water Storage Tanks*, *supra* note 31 at 1-2
[41] *Id.* at 7
[42] Model general permit at 36.
[43] *Id*. at 37.
[44] US EPA, Proposed Oil and Natural Gas NSPS and NESHAP (Jul. 28, 2011) at 151, *available at:* http://www.epa.gov/airquality/oilandgas/pdfs/20110728proposal.pdf (prepublication version)
[45] David Brymer, Director, TCEQ Air Quality Division, North Texas Air Quality Update Presentation (May 25, 2011) at 19-20, *available at:* http://www.nctcog.org/trans/committees/ntcasc/OGTF/052511/Item4.pdf.
[46] US EPA Proposed Oil and GAS NSPS and NESHAP, *supra* note 44 at 154

initial well completion while capturing natural gas.[47] The value of the natural gas captured during a reduced emission completion typically greatly exceeds the increased costs associated with performing a reduced emission completion[48] EPA's proposed Oil and Gas NSPS would require use of reduced emission completions for newly fractured or refractured wells with access to a gathering line.[49] Commenters support the use of reduced emission completions. Given the uncertainty regarding the final form and effective date of the EPA's proposed oil and gas rule, we urge Ohio EPA to require well operators to perform reduced emission completions in all cases where the necessary gas gathering infrastructure is in place.

[47] Lessons Learned from Natural Gas STAR Partners, Reduced Emissions Completions at 1-4 *available at:* http://www.epa.gov/gasstar/documents/reduced_emissions_completions.pdf.
[48] *Id.* at 1 & 9.
[49] US EPA Proposed Oil and GAS NSPS and NESHAP, *supra* note 44 at 45-46.

Attachment 1

Oil and Gas Exploration and Production Emission Sources

Presentation for the

Air Quality Control Commission Retreat

May 15, 2008

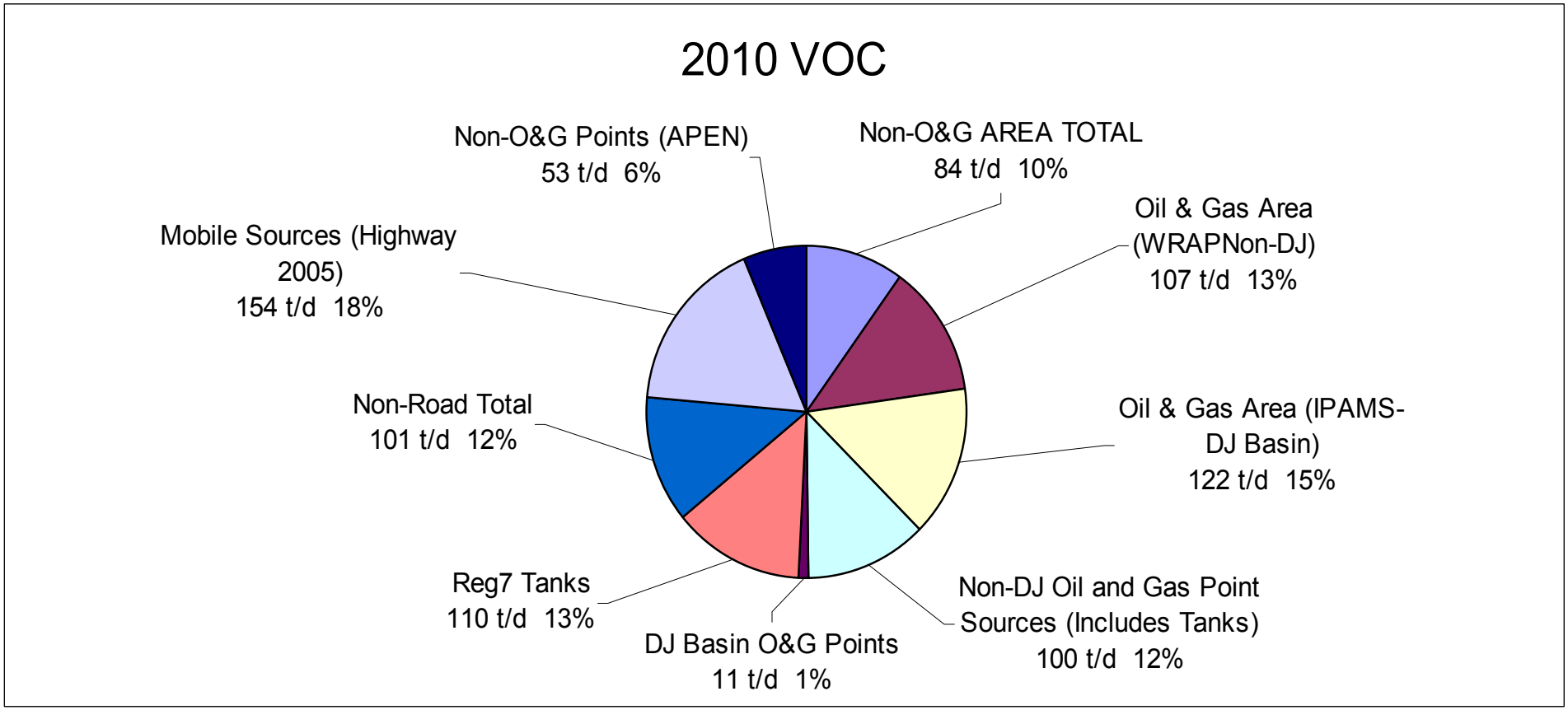
Air Pollution Control Division

Approach to Statewide Oil and Gas Control Strategy Development

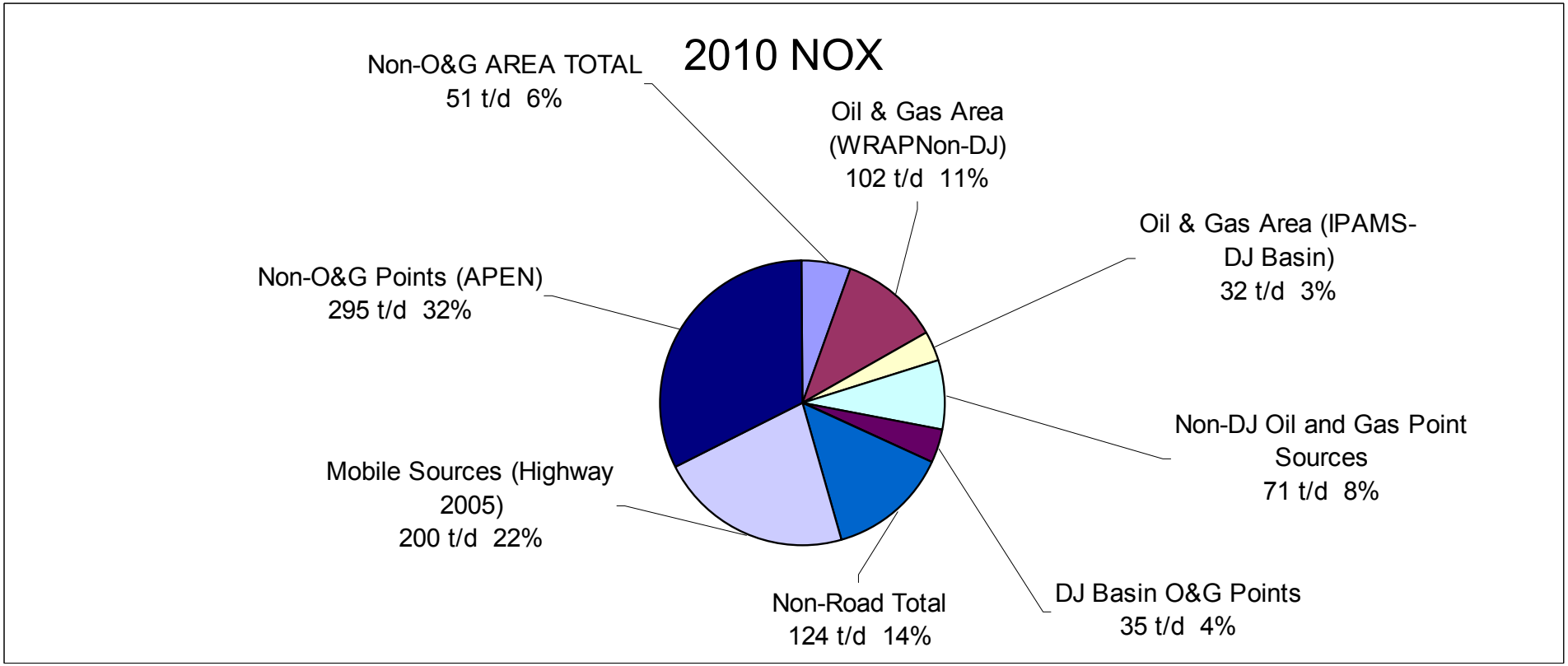
- Oil and gas is the largest VOC source category on the State
- Oil and gas development is rapid and projected to significantly expand – especially in western Colorado
- Strategies are being developed to control the growth in VOC and NOx emissions from O&G
  - Pre-emptive – “keep clean areas clean”
  - Help prevent ozone nonattainment
  - Improve visibility

Statewide VOC Emissions – 2010

(4% increase since 2006)



Statewide
NOx Emissions – 2010
(8% increase since 2006)



Approach to Statewide Oil and Gas Control Strategy Development

- All current regulatory programs remain in place
- Categorical Exemptions - Eliminate for Significant Oil and Gas Categories - New Sources (VOCs)
- Pneumatics – New, Modified (VOCs)
- Condensate Tanks – New, Modified (VOCs)
- Drill Rigs – New and Existing (NOx, PM)
- Existing Engines – Retrofit (VOCs, CO, NOx

Elimination of Categorical Exemptions for Oil and Gas Sources

- Crude oil truck loading equipment
- Oil/gas production wastewater tanks
- Stationary Internal Combustion Engines meeting horsepower and hours of operation restrictions
- Condensate tanks with production 730 BBL/year or less
- Fuel burning equipment (includes heater treaters, separators, and dehydrator reboilers)
- Petroleum industry flares less than 5 tons per year (tpy) emissions
- Storage of butane, propane, LPG
- Crude oil storage tanks
- Surface water storage impoundment
- Internal combustion engines on drill rigs
- Venting of natural gas lines for safety purposes (for APEN purposes only)
- Oil and gas production activities including: well drilling, workovers and completions (for APEN purposes only)

Attachment 2

5930

ALLEGHENY COUNTY HEALTH DEPT
AIR QUALITY PROGRAM

INSPECTION REPORT

SECTION A: SITE DATA	NEDS No.	Permit No. none presently
Date of Inspection: 9/14/10	Announced?: Yes	Date of Next Inspection: To be determined
Name of Site: Phillips Companies Fawn Developers Well site	Source Type: Major [ ] Syn. Minor [ ] Minor [ ] No Permit [X]	Site Address: Rt. 908 @ Cedar Hollow BP Store Fawn Twp., PA 15065
Name, Address of Responsible Official: Casey Moore (724)772 - 8702		Title: Production Superintendent

SECTION B: (Check all that apply)

COMPLIANCE STATUS: In Compliance Yes No Not Determined **EPA CMS Code:** 30

POLLUTANTS: PM/PM10 SOx NOx VOC CO HAPs Pb VEs Odors

SECTION C: AREAS EVALUATED DURING INSPECTION

[ ]Compliance Monitoring Check	[ ]Complaint Investigation	[ ]Records / Reports
[ ]Compliance Progress Check	[ ]Sample Taken	[X]Operation / Maintenance
[ ]Self Monitoring Check	[ ]Installation Permit	[X]Information Gathering
[ ]Source Test	[ ]Operating Permit	[ ]Other, Specify

SECTION D: SUMMARY OF FINDINGS – DEFICIENCIES, RECOMMENDATIONS, COMMENTS

Cat 1 Inspection : Facility Operations Identification and Permit Applicability Inspection

The purpose of the inspection was to assess existing facility operations with respect to air quality permit applicability. The assessment was prompted by an August 18, 2010 information request from the Group Against Smog and Pollution. The inspection was conducted at the facility on September 14, 2010. During the inspection, the facility representatives participating in assessing operations included Casey Moore (Production Superintendent) and Jay Newell (Production Associate); Air Quality Program Representatives present at the inspection included S. Etzel, J. Humes, and A. Conner. All facility operations were assessed and inspected.

Please see attached report.

Person Interviewed Name: Casey Moore	Title: Production Superintendent	Signature:	Date:
Inspector Name: Humes	Title: EPT	Signature: J. Humes	Date: 9/21/10

This document is official notification that a representative of the Allegheny County Health Department, Air Quality Program, inspected the above site. The findings of this inspection are shown above and on any attached pages. Any violations which were uncovered during the inspection are indicated. Violations may also be discovered upon examination of the results of the laboratory analysis and subsequent review of Department records. Notification will be forthcoming if such violations are noted.

Reviewed by MVB
9-21-2010

INSPECTION REPORT

Facility Description : Phillips Companies Fawn Developers' Wells, located on Rt. 908, Fawn Tonwship, PA, produces well gas from two (2) horizontal Marcellus Shale wells located at the Fawn Township site. The operations present at the well site include Wellhead, Ground Process Unit (GPU) Station, and Meter Station Operations.

Wellhead Operations **:** There are two (2) "horizontally drilled" wells (known as Fawn Developer's 3 & 4 HOG wells) located at Phillips' Rt. 908 Fawn Township gas well. The two wellheads are depicted in **Attachments 1 & 2**. The gas produced from the wellheads has an exit pressure of approximately 3000 psi. In addition, there are two (2) empty, lined, fifty (50) yards by fifty (50) yards reservoirs present at the site; the reservoirs are depicted in **Attachments 3 & 4**. The reservoirs' purpose was to temporarily (30-day time period) store "frac" water during the wellhead's development, which is the only time that well fracturing operations will occur at this site. The two (2) idled site reservoirs will soon be dismantled because they have no further site purpose.

Ground Process Unit (GPU) Operations: The GPU Operations are depicted in **Attachments 5 & 6**. The purpose of the GPU Operations is to reduce the well gas pressure from 3000 psi to 500 psi, condense and remove moisture from the well gas product, and reheat the well gas product to prevent freezing after well gas pressure reduction processing. The reheating of the well gas occurs from indirect contact with a heated ethylene glycol bath. The ethylene glycol baths are heated by two (2) 750,000 BTU/hr burners fired by well gas (which is essentially natural gas); note that the middle GPU system depicted in **Attachment 5** is seldom used because of non-performance issues.

All waste liquid condensate generated by the GPU operation is piped to a group of six (6) 210 barrel capacity tanks depicted in **Attachment 7**. The waste condensate is stored in the tanks temporarily and is subsequently removed from site via trucks for remediation processing.

Meter Station Operations: The meter station operations are depicted in **Attachment 8**. The purpose of the Meter Station Operations is to reduce the gas pressure from 500 psi to 150 psi, odorize the gas product, remove any trace particulate/liquid hydrocarbon from the gas stream, remove the remaining moisture from the gas stream, and slightly heat the gas stream to eliminate any gas product freezing concerns.

As depicted in **Attachment 8**, the odorant mercaptan is stored in a small tank located to the far right in **Attachment 8**. A small cartridge filter, located in the center of **Attachment 8**, removes trace particulate/liquid hydrocarbon from the gas steam. A spray tower, depicted in the center of **Attachment 8**, removes the remaining moisture from the gas stream. The spray tower is designed with trays and heated ethyl glycol is sprayed in direct contact with the gas stream. The ethyl glycol spray tower reagent is heated (to prevent gas product "freeze-up) by a 500 BTU/hr burner system depicted in **Attachment 8** to the left of the spray tower. The cumulative operations of the Meter Station reduce the pressure of the final gas product to 150 psi which is acceptable for gas pipeline specifications. Waste products are stored in a tank (see **Attachment 9**) for site removal and remediation processing.

Reviewed by _____

Attachment 1:
Wellhead Operations

Attachment 2:
Wellhead Operations

Attachment 3:
Reservoir @ Site

Attachment 4:
Reservoir @ Site

Attachment 5:
GPU Operations

Attachment 6:
GPU Operations

Attachment 7:
GPU Operations

Attachment 8:
Meter Station

Attachment 9:
Meter Station