



Proposed Revisions to the Chapter 6, Section 2  
Oil and Gas Production Facilities Permitting Guidance

Technical Support Document

September 2015

## 1.0 Executive Summary

This technical support document summarizes Best Available Control Technology (BACT) analyses completed to determine the technical feasibility and economical reasonableness of proposed revisions to the Presumptive BACT requirements under the Chapter 6, Section 2 Oil and Gas Production Facilities Permitting Guidance for the existing concentrated development area (CDA) and the existing statewide area (SWA). The Wyoming Department of Environmental Quality, Division of Air Quality (Division) examined recent permitting actions, the existing 40 CFR Part 60, Subpart OOOO – *Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution* (NSPS OOOO), the proposed changes to NSPS OOOO published on September 18, 2015, recent legislation, and additional documentation from EPA, industry, and the public in order to determine the appropriate presumptive BACT (P-BACT) thresholds and control requirements. Based on the results of the Division’s analysis the following changes are proposed for the O&G Guidance:

- Guidance effective date of January 1, 2016
- Applicability date for all development areas is based upon first date of production
- Consolidate the existing CDA and SWA into one new SWA
- Establish a control threshold of 6 tons per year (TPY) of VOCs from flashing emissions from new/modified facilities in the new SWA
- Establish a control threshold of 6 TPY of VOCs from dehydration units from new/modified facilities in the new SWA
- Require pneumatic pump emissions to be controlled upon the first date of production at new/modified facilities in the new SWA
- Require pneumatic controllers to be either low- or zero-bleed controllers in the SWA
- Require produced water tank emissions to be controlled at sites that have control for flashing emissions in the new SWA
- Establish a control threshold of 6 TPY of VOCs from truck loading from new/modified facilities in the new SWA
- Require green completions in the new SWA for both natural gas and oil wells
- Require the use of Best Management Practices for blowdown and venting in the new SWA
- For sources located in the SWA without an established P-BACT, require a BACT analysis if VOC emissions are equal to or greater than 6 TPY
- Lower the control removal threshold from flashing emissions to 4 TPY of VOCs for sources in the new SWA area
- Establish a control threshold of 4 TPY of VOCs from truck loading from new/modified facilities in the UGRB and JPAD/NPL
- Update the discussion on permitting to include the implementation of IMPACT, an electronic permitting system
- Remove out dated application forms
- Incorporate the March 9, 2012 Pumping Unit Engine Emissions Policy
- Include additional examples of when a modification can be triggered in the definition of “Modified Facility”
- Establish a definition for “Tank Battery” to differentiate tank batteries from PADs
- Establish a definition for “Zero bleed controller”

## **2.0 Introduction**

The O&G Guidance, introduced in 1997, serves as a supplement to the Wyoming Air Quality Standards and Regulations New Source Review permitting program. It describes a permitting procedure tailored to Wyoming's O&G producers that allows for the construction and startup of new facilities to begin prior to issuance of an Air Quality permit. In order to construct and operate facilities prior to permitting, operators must install specific pollution control equipment and follow certain operational procedures which meet BACT requirements. This is the Presumptive BACT permitting process (P-BACT).

The Guidance has been revised numerous times since 1997 to incorporate updated P-BACT requirements. The proposed 2015 revisions are directed at lowering allowable emissions rates, with stricter emission control requirements for facilities located in a revised statewide area that incorporates the existing concentrated development area (CDA) and the existing statewide area. A few minor revisions were made to the Upper Green River Basin (UGRB) area and the Jonah Pinedale Anticline Development/Normally Pressurized Lance (JPAD/NPL) area consisting of the inclusion of a threshold for truck loading.

Whether or not a piece of equipment, operating procedure or emission control device meets BACT requirements depends on technical feasibility and cost effectiveness. The technical feasibility for most of the proposed P-BACT requirements already have been established since all are currently in use.

## **3.0 Effective Date and First Date of Production (FDOP)**

The effective date of the 2015 Guidance is January 1, 2016. New or modified wells whose FDOP occurs on or after January 1, 2016 will be subject to the requirements of the 2015 Guidance. Past versions of the Guidance used the spud date of the well to determine applicability. The 2013 Guidance retained the applicability date of wells spud after August 1, 2010, from the 2010 Guidance for wells located in the CDA and existing statewide area. In 2015 a bill was passed to modify § W.S. 35-11-801 with the inclusion of §§ W.S. 35-11-801(e) and -801(f), which specifies that applications must be submitted within 90 days of the FDOP. The 2015 Guidance is consistent with the statute and will eliminate any duplicative tracking associated with the applicability date of the Guidance and the deadline for submitting a permit application.

## **4.0 Statewide Area (SWA)**

The 2013 Guidance contained four development areas, JPAD/NPL, UGRB, CDA, and statewide. JPAD/NPL and UGRB are development areas specific to the Upper Green River Basin non-attainment area, which was designated marginal non-attainment for the 2008 8-hour Ozone standard. BACT for these development areas takes into consideration the existing ambient air quality and the Department's strategy for bringing the area back into attainment. The CDA and statewide development areas were not addressed in the 2013 revisions to the Guidance and were carried forward from the 2010 Guidance revision. Wyoming counties that were part of the previous "Statewide" area are now among the leading oil or gas producing counties in Wyoming. For example in 2014, Campbell County was the leading crude oil producing county in the State, and Johnson County ranked behind only Sublette and Sweetwater counties for natural gas production.<sup>1</sup> Additionally, the promulgation of 40 CFR Part 60, subpart OOOO (*Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution*)

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<sup>1</sup> Wyoming Oil and Gas Facts and Figures, 2015 Edition (Petroleum Association of Wyoming)

effectively established minimum performance standards for all development areas within the state. See Flashing Emissions below. In the 2015 Guidance revisions, the existing CDA and existing statewide areas are being combined into a new statewide area that incorporates the P-BACT requirements of the existing CDA.

## 4.1 Flashing Emissions

At a typical natural gas production facility in Wyoming, gas, condensate and water flow from wells into surface separation and dehydration equipment and then into sales lines and atmospheric storage tanks. At a typical oil production facility, well fluids are pumped to the surface through separation equipment and into sales lines and storage tanks by pumping units. At both types of facilities, exposure to lowered pressures in the separation equipment and storage tanks allows hydrocarbon vapors, containing VOCs and HAPs, to volatilize or “flash” from solution. Combustion of flash vapors is the most common method for destroying associated pollutants, and properly engineered smokeless combustion units will destroy 98 percent of the VOC and HAP components in the flash waste gas streams by converting them to CO<sub>2</sub> and H<sub>2</sub>O.

The threshold for flashing emissions that triggers the requirement for emission controls under the 2013 guidance was 10 TPY VOC for facilities located within the former statewide area, and the control threshold for single-well facilities located within the area formerly defined as the CDA was 8 TPY of VOC. For this guidance revision, the Division will establish an emission control threshold of 6 TPY of VOC and HAP for new or modified single-well facilities or tank batteries located in the newly-defined SWA. Removal of flashing emissions controls will be allowed for single-well, tank batteries, or PAD facilities if flashing emissions have declined to 4 TPY of VOC and HAP at least one year after the date of installation of those controls.

The reductions in the threshold for VOC and HAP control are established by the Division for the SWA because of concerns about VOC and HAP emissions as precursors to the formation of ozone, and the anticipated reduction in the allowable ambient levels of ozone that have been proposed by the EPA.

A control threshold of 6 TPY of VOC and HAP emissions and a control removal threshold of 4 TPY of VOC are also consistent with the requirements for storage vessels in 40 CFR Part 60, subpart OOOO (*Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution*).

The Division will allow controls to be removed in the SWA after one (1) year, following the date of installation of the combustion device, provided it can be demonstrated that the uncontrolled VOC emission rate from flashing emissions is less than and will remain less than 4 TPY.

Control removal will give industry the flexibility to move controls to production sites where higher production warrants controls. However, it should be noted that prior to the removal of controls, the Division will evaluate all factors before authorizing the removal of the control device. (*It should be noted that the Division's July 14, 2009 letter, which in part explains the Division's position on control removal, is still in effect for the Upper Green River Basin ozone non-attainment area.*)

#### **4.1.1 Proposed Flashing Emission requirements for SWA**

##### **New Facilities**

###### **PAD Facilities**

Upon First Date of Production (FDOP), VOC and HAP flashing emissions shall be controlled by at least 98%.

###### **Single Well Facilities and Tank Batteries**

Within 60 days of FDOP, flashing emissions containing greater than or equal to 6 TPY VOC and HAPs shall be controlled by at least 98%.

##### **Modified Facilities**

###### **PAD Facilities**

Upon modification, all new and existing VOC and HAP flash emissions shall be controlled by at least 98%.

###### **Single Well Facilities and Tank Batteries**

Within 60 days of modification, all new and existing flashing emissions containing greater than or equal to 6 TPY VOC and HAPs shall be controlled by at least 98%.

##### **New and Modified Facilities**

Condensate and oil tanks that are on site solely for use during emergency or upset conditions, such as spare tanks at facilities connected to liquids gathering systems, are not subject to the 98% control requirements.

The removal of a flashing emissions control device(s) may be allowed upon approval if, after at least one year from the date of installation, VOC and HAP flashing emissions have declined to less than, and are reasonably expected to remain below 4 TPY of VOC and HAPs.

## **4.2 Dehydration Unit Emissions**

The typical gas/condensate production facility in Wyoming includes a dehydration unit owned and operated by a gas gathering company. Tri-ethylene glycol (TEG) is used in the majority of dehydration units to dry produced gas to pipeline specifications. Pure (lean) TEG is pumped through the dehydration unit contact tower where it meets the raw gas and absorbs water and condensate from it. Contaminated (rich) TEG is pumped to a reboiler where heat is used to vaporize water and condensate from it, returning it to the lean state for reuse. The vaporized components, containing VOC and HAP, are released to the atmosphere from the reboiler still vent.

The 2013 guidance included two permitting scenarios for dehydration units that differed in the thresholds for emission control and control removal depending on the presence of a glycol flash separator. The Division has found that the dual scenario framework offered little in value to applicants or in the way of efficiency in the permitting process. Therefore, for this revised guidance, the Division will establish a single scenario for dehydration units.

For the newly defined SWA, all dehydration units shall be equipped with still vent condensers upon FDOP. For Pad facilities, all dehydration unit VOC and HAP emissions shall be controlled by at least 98% upon FDOP. For single well facilities and tank batteries, if total potential uncontrolled VOC and HAP emissions from all units are greater than or equal to 6 TPY, emissions from all units shall be controlled by at least 98% within 60 days of FDOP.

Removal of controls after one year can be requested for any facility type if total potential VOC and HAP emissions are less than 4 TPY and all units are equipped with still vent condensers.

Potential uncontrolled emissions shall consider the projected annual average gas flow rate, gas temperature and pressure, maximum circulation rates for glycol pumps, and maximum dry gas water content. Flash separators and still vent condensers, limited operating hours and limited glycol circulation rates shall not be considered when determining potential uncontrolled emissions.

Potential emissions for determining control device removal after one year shall be calculated based on the past twelve calendar months of normal gas production rates, actual average wet gas temperature and pressure, actual water content of the dried gas or number of absorber stages. Actual operating parameters for glycol flash separators may be used upon approval. Limited operating hours and limited glycol circulation rates shall not be considered for control removal.

The reductions in the threshold for VOC and HAP control are established by the Division for the SWA because of concerns about VOC and HAP emissions as precursors to the formation of ozone, and the anticipated reduction in the allowable ambient levels of ozone that have been proposed by the EPA.

A control threshold of 6 TPY of VOC and HAP and a control removal threshold of 4 TPY of VOC and HAP are consistent with the requirements for flashing emissions.

Control removal will give industry the flexibility to move controls to production sites where higher production warrants controls. However, it should be noted that prior to the removal of controls, the Division will evaluate all factors before authorizing the removal of the control device. *(It should be noted that the Division's July 14, 2009 letter, which in part explains the Division's position on control removal, is still in effect for the Upper Green River Basin ozone non-attainment area.)*

#### **4.2.1 Proposed Dehydration Unit Emission requirements for SWA**

##### **New Facilities**

Upon FDOP, all dehydration units shall be equipped with reboiler still vent condensers. Removal of the condensers will not be allowed.

##### **PAD Facilities**

Upon FDOP, all dehydration unit VOC and HAP emissions shall be controlled by at least 98%. After one year, combustion units used to achieve the 98% control may be removed upon approval if

- Total **potential** VOC and HAP emissions from all units are less than 4 TPY and
- All units are equipped with still vent condensers.

### **Single Well Facilities**

Within 60 days of FDOP, if total **potential uncontrolled** VOC and HAP emissions from all units are greater than or equal to 6 TPY, emissions from all units shall be controlled by at least 98%.

After one year, combustion units used to achieve the 98% control may be removed upon approval if

- Total **potential** VOC and HAP emissions from all units are less than 4 TPY and
- All units are equipped with still vent condensers.

### **Modified Facilities**

Requirements are the same as those for PADs and single well facilities except use the date of modification in place of FDOP. Control requirements apply to all existing and new dehydration units.

### **All Facilities**

When a combustion unit is required at a facility for control of dehydration unit emissions, all non-condensable still vent vapors shall be collected and routed to a combustion unit for at least 98% control of VOC and HAP emissions. All glycol flash separator vapors shall be collected and routed to the combustion unit for at least 98% control of VOC and HAP emissions and/or used as fuel for process equipment burners.

## **4.3 Pneumatic Pump Emissions**

Pneumatic pumps are devices that use gas pressure to drive a fluid by raising or reducing the pressure of the fluid by means of a positive displacement, a piston or set of rotating impellers. Pneumatic pumps are generally used in areas where electrical power is not available. The discharge vapors from natural gas-operated pneumatic equipment contain regulated air pollutants such as VOCs. The requirements for the new statewide area are the same as the previous requirements for the CDA and the existing statewide area.

### **4.3.1 Proposed Pneumatic Pump requirements for SWA**

#### **New Facilities**

##### **PAD Facilities**

Upon FDOP, VOC and HAP emissions associated with the discharge streams of all natural gas-operated pneumatic pumps shall be controlled by at least 98% or the pump discharge streams shall be routed into a closed loop system (e.g., sales line, collection line, fuel supply line).

##### **Single Well Facilities and Tank Batteries**

Within 60 days of FDOP,

At sites with controls installed for flashing or dehydration unit emissions:

VOC and HAP emissions associated with the discharge streams from natural gas-operated pneumatic pumps shall be controlled by at least 98% or the discharge streams shall be routed into a closed loop system.

At sites without controls installed for flashing or dehydration unit emissions:

Pneumatic pumps (other than heat trace/heat medium/hot glycol circulation) shall be solar, electric or air-driven pumps in lieu of natural gas-operated pneumatic pumps or the discharge streams shall be routed into a closed loop system. Wherever possible, heat trace/heat medium/hot glycol circulation pumps shall be solar-operated, electric or air-driven.

#### **Modified Facilities**

Requirements are the same as above except include all new and existing pneumatic pumps and use the date of modification in place of FDOP.

#### **New and Modified Facilities**

At sites where pneumatic pump emissions are controlled by a combustion unit used for the control of flashing or dehydration unit emissions, control of the pneumatic pump emissions will be evaluated upon request for removal of the combustion unit.

## **4.4 Pneumatic Controller Emissions**

Pneumatic controllers are used to control a process condition such as liquid level, pressure, and temperature. Pneumatic controllers addressed in the Guidance use natural gas to actuate. Natural gas is released with every actuation. Natural gas may be released continuously from the valve control pilot or it may be released intermittently when the controller actuates. The discharge vapors from natural gas-operated pneumatic controllers contain regulated air pollutants such as VOCs. The rate at which the continuous release occurs is referred to as the bleed rate. Bleed rates are dependent on the design and operating characteristics of the device. There are three basic designs of natural gas-driven pneumatic controllers: (1) continuous bleed controllers are used to modulate flow, liquid level, or pressure, and gas is vented continuously at a rate that may vary over time; (2) intermittent controllers release gas only when they open or close a valve or as they throttle the gas flow; and (3) zero bleed controllers, which are self-contained devices that do not release natural gas to the atmosphere. For the definition of zero bleed controllers see Section 13.

The requirements for the new statewide area are the same as the previous requirements for the CDA. They are also consistent with the performance standards established in the current version of NSPS OOOO.

### **4.4.1 Proposed Pneumatic Controller requirements for SWA**

#### **New Facilities**

Upon FDOP, natural gas-operated pneumatic controllers shall be low bleed or zero bleed controllers or the controller discharge streams shall be routed into a closed loop system.

#### **Modified Facilities**

Upon modification, new natural gas-operated pneumatic controllers shall be low or zero bleed controllers or the controller discharge streams shall be routed into a closed loop system.

Within 60 days of modification, existing natural gas-operated pneumatic controllers shall be replaced by or converted to low or zero bleed controllers or the discharge streams of existing natural gas-operated pneumatic controllers shall be routed into a closed loop system.

## 4.5 Fugitive Emissions

Fugitive emissions are emissions which result from gas vapors escaping through and around seals, packing, gaskets, threads, and other such pressure sealing connections. The release of fugitive VOC emissions is commonly referred to as leaking. Examples of common equipment known to leak VOC emissions are valves, connectors, flanges, and open-ended pipes. The amount of fugitive VOC emissions from equipment leaks is dependent on the number of components, the type of service of each component, the VOC content of the gas/liquid, and the effectiveness of leak detection and repair programs in use at the site.

The Division is not proposing a P-BACT determination for fugitive emissions from oil and gas production facilities located in the statewide area at this time. During the Division's recent review of information regarding fugitive emissions and potential ways to reduce or control fugitive emissions, EPA proposed revisions to 40 CFR Part 60, Subpart OOOO – *Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution* (NSPS OOOO). The revisions were published in the Federal Register on September 18, 2015. After reviewing EPA's proposed requirements for controlling fugitive emissions, the Division will consider establishing a P-BACT determination for fugitive emissions in the statewide area. Until a P-BACT determination is made for fugitive emissions, the Division will continue to evaluate fugitive emissions on a case-by-case basis through the implementation of BACT, which is required by the oil and gas guidance for sources without P-BACT.

## 4.6 Truck Loading Emissions

Most oil and gas production facilities utilize tanker truck loading to transport oil/condensate from the production facilities. VOC and HAP emissions are generated from truck loading vapors being released during the truck loading process.

In the 2013 Guidance, truck loading emissions were a non-Presumptive BACT source. Companies were required to submit a BACT cost analysis if truck loading emissions were 8 TPY of VOC and HAP or greater.

### 4.6.1 Proposed Truck Loading Emission requirements for the SWA

Under this guidance revision, truck loading emissions are now a Presumptive BACT source. In the SWA, truck loading emissions at new facilities must be controlled within 60 days of FDOP if VOC and HAP emissions are greater than or equal to 6 TPY. Upon modification, all new and existing VOC and HAP loading emissions containing greater than or equal to 6 TPY VOC and HAP emissions must be controlled. Companies are expected to utilize a vapor collection system or equivalent device for the truck loading operation that is assumed, based on AP-42 Section 5.2, to capture a minimum of 70% of the truck loading vapors. The captured vapors are to be routed to a smokeless combustion device with a reported destruction efficiency of 98%, or routed to an equivalent control.

The removal of a control device(s) may be allowed upon approval if after at least one year from the date of installation VOC and HAP loading emissions have declined to less than, and are expected to remain below 4 TPY of VOC and HAPs.

## **4.7 Well Completion Emissions**

Operators currently completing wells in CDA are required to obtain permits, which require the implementation of Best Management Practices (BMP). BMP include, but are not limited to, collecting gas from the initial flowback of the well and routing it to a sales line. To meet the BMP requirement, companies use sand traps in conjunction with three-phase separators on wells to minimize the amount of flaring associated with well completions. This specialized equipment is manufactured to endure highly erosive conditions associated with producing high volume, high pressure completion fluids.

Conditions which must exist in order for the completion gas to be sold are: salable gas, a connection to a gas collection system, ample flowing well pressure which exceeds the pressure of a gas collection line, and in-place facilities. Circumstances and conditions which may require flaring are:

- Safety
- Pressure
- Pipeline Connections
- Mechanical
- N<sub>2</sub> or CO<sub>2</sub> content of flowback gas

With the revision of statewide area to include the existing CDA, the Division is proposing to retain the requirement for green completions and expand them to the remainder of the state. In addition, 40 CFR part 60, subpart OOOO, requires companies to utilize reduced emission completions (RECs) for hydraulically fractured natural gas wells.

## **4.8 Produced Water Tank Emissions**

VOC emissions from produced water tanks depend on the efficiency of surface separation equipment. At higher volume gas/condensate wells; carryover of condensate into water storage tanks does occur more often than at other types of wells. The same emissions associated with flashing losses in condensate tanks occur when this happens.

Produced water tanks within the CDA portions of Sublette, Lincoln, and Sweetwater Counties (under the March 2010 Guidance) are required to be controlled upon startup at PAD facilities and at single well facilities if the flashing emissions are required to be controlled. With the revision of defining the CDA to the SWA, the Division is proposing to retain as BACT the requirement for produced water tanks to be controlled upon startup at PAD facilities and within 60 days at single well facilities if the flashing emissions are required to be controlled.

#### **4.8.1 Proposed Produced Water Tank requirements for SWA**

##### **New Facilities**

###### **PAD Facilities**

Upon FDOP, VOC and HAP emissions from all active produced water tanks shall be controlled by at least 98%.

###### **Single Well Facilities and Tank Batteries**

Within 60 days of FDOP, at sites where flashing emissions must be controlled by at least 98%, VOC and HAP emissions from all active produced water tanks shall be controlled by at least 98%.

##### **Modified Facilities**

###### **PAD Facilities**

Upon modification, VOC and HAP emissions from all new active produced water tanks shall be controlled by at least 98%.

Within 60 days of modification, existing open-top, active, produced water tanks shall be taken out of service for use as active produced water tanks. All active produced water tanks shall be closed top and shall have VOC and HAP emissions controlled by at least 98%.

##### **New and Modified Facilities**

Produced water tanks that are on site solely for use during emergency or upset conditions, such as spare tanks at facilities connected to liquids gathering systems, are not subject to the 98% control requirements.

The removal of a emissions control device(s) may be allowed upon approval if, after at least one year from the date of installation, VOC and HAP flashing emissions have declined to less than, and are reasonably expected to remain below 4 TPY of VOC and HAPs.

#### **4.9 Well Blowdown and Venting Emissions**

As part of the review of the 2013 O&G Guidance, the Division evaluated the reports that the Division has received under the blowdown/venting permits for sources located in the JPAD and CDA. In addition, the Division also examined the 2011 emission inventory for blowdown and venting in the ozone non-attainment area. Based on a review of the blowdown and venting reports, blowdown and venting at well sites averaged between 14 pounds of VOC per facility to a high of 2.3 tons per facility. The Division has considered a 6 TPY VOC threshold to be economically reasonable for control within the new statewide area. Since estimated VOC emissions from blowdown and venting is less than 6 TPY the Division does not consider add-on controls to be warranted. Therefore, the Division will continue to require BMP for blowdown and venting.

The Division has been requiring BMP for blowdown and venting activities within the existing statewide area for several years and currently includes requirements in permits to track and report emissions from blowdown and venting activities. In the 2015 Guidance, the Division is requiring the submission of applications for blow down and venting permits, which will apply to existing and future well sites. The

permit will consolidate existing requirements into one permit and allow future operations to be covered under the existing permit. This process is currently used in the CDA and will streamline requirements for development in the new statewide area.

#### **4.10 Sources without Presumptive BACT**

Under the September 2013 Guidance, if a source does not have an established P-BACT, operators are required to submit a BACT analysis if emissions are equal to or greater than 8 TPY of VOC emissions and/or if HAP emissions are equal to or greater than 5 TPY. Based on the establishment of a lower control threshold for VOCs from flashing emissions and dehydration units located in the SWA, the Division will establish a threshold for a BACT analysis for sources without P-BACT if emissions are equal to or greater than 6 TPY of VOC and HAPs.

### **5.0 Upper Green River Basin (UGRB)**

The UGRB was designated as an ozone non-attainment area with a marginal classification on July 20, 2012. In March of 2013, the Division released the Upper Green River Basin Ozone Strategy, which included items from the UGRB Air Quality Citizens Advisory Task Force (Task Force) as well as other non-attainment planning items that needed to be addressed (i.e., new sources). One of the items to be accomplished in the first (6) months, was the expansion of the JPAD requirements to the entire UGRB. Based on information gathered and reviewed by the Division, it was determined that the expansion of JPAD requirements to the entire UGRB would be problematic as this strategy would potentially require controls on low emitting wells where the overall benefit of control would be negligible. Therefore, the Division conducted analyses for reducing VOC emissions from the emission generating categories that were already defined in the CDA and JPAD for determining appropriate control thresholds for the UGRB.

For the 2015 Guidance, the existing requirements for the UGRB will remain the same except for the addition of a new P-BACT category for truck loading emissions. As explained in Section 5.2, the Division is establishing the new category based on recent permitting experience.

#### **5.1 Fugitive Emissions**

P-BACT for fugitive emissions from oil and gas production sites located in the UGRB remains the same as in the 2013 Guidance. For facilities with 4 TPY or more of VOC and HAP emissions, operators are required to submit an LDAR Protocol for approval by the Division. The air quality permit will require implementation of an LDAR program.

#### **5.2 Truck Loading Emissions**

Most oil and gas production facilities utilize tanker truck loading to transport oil/condensate from the production facilities. VOC and HAP emissions are generated from truck loading vapors being released during the truck loading process.

In the 2013 Guidance, truck loading emissions were a non-Presumptive BACT source. Companies were required to submit a BACT cost analysis if truck loading emissions were 4 TPY VOC or greater.

### **5.2.1 Proposed Truck Loading Emission requirements for the UGRB**

Under this guidance revision, truck loading emissions are now a Presumptive BACT source. In the UGRB, truck loading emissions at new facilities must be controlled within 60 days of FDOP if VOC and HAP emissions are greater than or equal to 4 TPY. Upon modification, all new and existing VOC and HAP loading emissions containing greater than or equal to 4 TPY VOC and HAP emissions must be controlled. Companies are expected to utilize a vapor collection system or equivalent device for the truck loading operation that is assumed, based on AP-42 Section 5.2, to capture a minimum of 70% of the truck loading vapors. The captured vapors are to be routed to a smokeless combustion device with a reported destruction efficiency of 98%, or routed to an equivalent control.

The removal of a control device(s) may be allowed upon approval if after at least one year from the date of installation VOC and HAP loading emissions have declined to less than, and are expected to remain below 4 TPY of VOC and HAPs.

## **6.0 Jonah and Pinedale Anticline Development Area and Normally Pressured Lance (JPAD/NPL)**

On July 28, 2004, the Division issued P-BACT guidance specific to the Jonah and Pinedale Anticline Fields. This guidance was later incorporated into the 2007 Guidance. In the 2013 Guidance revision, the Division identified future oil and gas development projects that could be affected by guidance revisions in the UGRB. The Division identified the La Barge Platform, Bird Canyon, and Normally Pressured Lance based on scoping documents from the Bureau of Land Management (BLM). The NPL area falls primarily within the existing JPAD boundary used in the March 2010 Guidance. Based on the scoping document for the NPL project, the wells in this area are anticipated to be similar in production to those in the Jonah and Pinedale Anticline Fields. Given the projected similarities the Division expanded the JPAD requirements to encompass the NPL project area and created a new, expanded area called JPAD/NPL.

For the 2015 Guidance, the existing requirements for the JPAD/NPL will remain the same except for the addition of a new P-BACT category for truck loading emissions. As explained in Section 6.2, the Division is establishing the new category based on recent permitting experience.

### **6.1 Fugitive Emissions**

P-BACT for fugitive emissions from oil and gas production sites located in the JPAD/NPL remains the same as in the 2013 Guidance. For facilities with 4 TPY or more of VOC and HAP emissions, operators are required to submit an LDAR Protocol for approval by the Division. The air quality permit will require implementation of an LDAR program.

### **6.2 Truck Loading Emissions**

Most oil and gas production facilities utilize tanker truck loading to transport oil/condensate from the production facilities. VOC and HAP emissions are generated from truck loading vapors being released during the truck loading process.

In the 2013 Guidance, truck loading emissions were a non-Presumptive BACT source. Companies were required to submit a BACT cost analysis if truck loading emissions were 4 TPY VOC or greater.

### **6.2.1 Proposed Truck Loading Emission requirements for the JPAD/NPL**

Under this guidance revision, truck loading emissions are now a Presumptive BACT source. In the JPAD/NPL, truck loading emissions at new facilities must be controlled within 60 days of FDOP if VOC and HAP emissions are greater than or equal to 4 TPY. Upon modification, all new and existing VOC and HAP loading emissions containing greater than or equal to 4 TPY VOC and HAP emissions must be controlled. Companies are expected to utilize a vapor collection system or equivalent device for the truck loading operation that is assumed, based on AP-42 Section 5.2, to capture a minimum of 70% of the truck loading vapors. The captured vapors are to be routed to a smokeless combustion device with a reported destruction efficiency of 98%, or routed to an equivalent control.

The removal of a control device(s) may be allowed upon approval if after at least one year from the date of installation VOC and HAP loading emissions have declined to less than, and are expected to remain below 4 TPY of VOC and HAPs.

## **7.0 Implementation of IMPACT**

The Division has developed an electronic Inventory, Monitoring, Permitting, And Compliance Tracking (IMPACT) data system. IMPACT has been designed to enhance the quality, efficiency, and consistency of the Division's management of air quality data. IMPACT also provides an interface for industry to submit air quality-related information to the Division in a secure, controlled environment.

Beginning in September of 2014, the New Source Review (NSR) group began processing air quality permit applications through the IMPACT system, and the Division developed new NSR permit application forms to be used by applicants. While many of the same data elements that were provided to the Division through older application forms are required by the new IMPACT system, IMPACT requires several new data elements that are only captured by the new IMPACT forms. Some of the older forms that are used for specific source types have been retained. Applicants must use the IMPACT forms along with the appropriate source-specific forms for any permit application that will be submitted to the Division.

Application forms for IMPACT are contained in one Microsoft Excel file, which can be downloaded from the Division's website or obtained from the Division by written request.

## **8.0 Elimination of the NOI**

With the implementation of the IMPACT system, the notice of installation (NOI) process is no longer permissible. Operators are required to provide the information necessary to fill out the application forms designed for IMPACT and therefore the abbreviated forms used for NOIs are no longer sufficient to provide the minimum information required in an application submission. Operators with permits that allow the use of an NOI can continue to use the NOI forms, however a complete submission will need to include the relevant IMPACT application forms.

## 9.0 Elimination of the Pinedale-1 Form for New/Modified Facilities

With the implementation of the IMPACT system, the AQD Pinedale-1 form is no longer valid. Therefore, this form is being removed from the Guidance and associated permit conditions will no longer be included in permits.

## 10.0 Pumping Unit Engine Policy

In the past, AQD has allowed the installation of pumping unit engines at oil & gas production facilities prior to permit issuance provided the engine was site rated for less than 50 hp and emitted less than 5 TPY of NO<sub>x</sub>. As demonstrated in the March 9, 2012 Pumping Unit Engine Emissions Policy, Best Available Control Technology (BACT) is a moving target and relying on an emissions threshold of 5 TPY NO<sub>x</sub> was no longer considered BACT for pumping unit engines less than 50 hp. Installation of pumping unit engines site rated for 50 hp or less are still allowed provided the engine meets NO<sub>x</sub> emissions of 2.0 g/hp-hr, and CO emissions of 3.0 g/hp-hr. All other internal combustion engines, including but not limited to, compressor engines, generator engines, vapor recovery engines, and pumping unit engines greater than 50 hp, must be permitted prior to installation at oil & gas production sites.

The Division may ask the applicant to provide a BACT analysis to determine if emissions from the engine are technically feasible and economically reasonable to control, as well as require periodic emissions testing and monitoring as conditions to the permit or permit waiver.

## 11.0 Definition of Modified Facility

The definition of “Modified Facility” was revised to include examples of when a modification can be triggered. The additional examples were taken from examples listed in the 2013 definition of “Grandfathered” for which the production site could lose its grandfathered status. The Division will continue to address modifications on a case-by-case basis.

**Modified Facility** - An existing facility becomes modified once production streams or production equipment associated with another well or wells is added to or tied into it. The date modification occurs to an existing facility is the First Date of Production for the added well or the date the production streams associated with an additional well or wells are tied into equipment at the existing facility.

Examples of facility modifications not involving new wells or added production from other wells are:

- Increasing the production rate by fracturing, acidizing, recompletion of a current production zone, change in artificial lift methods, or a CO<sub>2</sub> flood/water flood response.
- Completing in additional production zones resulting in an increase in production and/or emissions at the facility.
- Existing production equipment is replaced with larger equipment, resulting in increased potential or actual emissions.

## **12.0 Definition of a Tank Battery**

Under the March 2010 Guidance, tank batteries were grouped into PAD facilities which required controls be installed upon startup in certain areas. Tank batteries generally handle heavy crude oil with little to no associated gas and very little flashing emissions. Under this guidance revision, tank batteries are being separated from PAD facilities. The definition of a tank battery is listed below.

**Tank Battery** – An oil production facility with little to no produced gas that is comprised mainly of separators, heaters, and tanks. The facility does not use dehydration units. The API gravity of the produced oil is no higher than 25°.

## **13.0 Definition of a Zero Bleed Controller**

In order to clarify the Division's intent for zero bleed controllers, the Division has included a definition to the Guidance document. The definition included in the 2015 Guidance is consistent with the Existing Source Rule for the UGRB. See WAQSR Chapter 6, Section 13.

**Zero bleed controller** – Electric, air-driven, or solar powered controller that does not rely on natural gas to actuate.