UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

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OFFICE OF
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Mr. Matthew Todd
Regulatory and Scientific Affairs
American Petroleum Institute
1220 L Street, NW
Washington, D.C. 20005-4070

Dear Mr. Todd:

Thank you for your letter of July 25, 2012, regarding the U. S. Environmental Protection Agency's final rulemaking, "*Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews.*" Your letter identified several issues that the American Petroleum Institute (API) considers to be of immediate concern. You requested the EPA's timely clarification of its intent with regard to these issues. Below are the issues raised in your letter along with our responses. The first issue was presented in the body of your letter; the remaining issues appeared in the attachment. We have retained the numbering from your attachment for clarity. Page numbers used in our responses refer to the final rule published in the Federal Register (77 FR 49490, August 16, 2012).

Issue from the Body of the Letter

API Issue: "I also bring to your attention a separate issue that, we believe, could have *significant and immediate* implications sixty days from publication of the final rule in the Federal Register. In the proposed rule, EPA clearly allowed venting of gas during flowback when the combustion of vapors is infeasible and it's our interpretation that the final rule does not allow this. The same equipment to conduct a 'reduced emission completion' (REC) is needed to separate vapors and route them to a combustion device during the initial periods of hydraulic fracture flowback. As you know, the EPA provided a phase-in period for the REC requirements (until January 1, 2015) to allow adequate time to manufacture this equipment to meet the new demands. **Therefore, we believe it is imperative that the EPA revise the regulatory text, prior to the effective date (60 days after publication in the Federal Register), to both allow venting and only require its minimization during these periods."**

EPA Response: The rule does not prohibit venting of natural gas and vapor during the entire flowback period following hydraulic fracturing, as your letter suggests. Although the regulatory language in section 60.5375 is not specific on this point, the recordkeeping requirements for well completions in section 60.5420(c)(1)(iii) explicitly provide for logging, in hours, the "duration of flowback; duration of recovery to the flow line; duration of combustion; ***duration of venting*** . . ." (emphasis added). This requirement confirms that the EPA anticipated some degree of venting during some portion of the flowback period.

We understand that the composition of the flowback changes over time during the flowback period. Initially, the flowback consists of water, sand and fracturing fluids. Over time, liquid flow decreases and gas and hydrocarbon vapor flow increases. See 76 FR 52738, 52757 (August 23, 2011). At some point, the amount of gas reaches the point that it is approaching flammability and is of sufficient volume to operate a separator, which is then used to separate and recover various components of the flowback. Section 60.5375(a) sets forth the requirements for the handling of the liquid and gas recovered from the separation process. Specifically, 60.5375(a)(1) requires that "recovered liquids" (crude oil, condensate and produced water) be routed to their respective storage vessels or re-injected into the well or another well. It requires that the "recovered gas" (gas and hydrocarbon vapors) be routed to a gas flow line or collection system, re-injected into the well or another well, or used as an onsite fuel source or "for another useful purpose…." Section 60.5375(a)(2) and (3) require that "all salable gas must be routed to a gas flow line as soon as practicable" and, "in cases where flowback emissions cannot be directed to the flow line," the flowback emissions must be captured and directed to a combustion device. Accordingly, the term "flowback emissions," as used in sections 50.5375(a)(2) and (3), refers to the recovered gas and vapor after separation that cannot be directed to the flow line. This is in keeping with our approach of promoting the recovery of gas with intrinsic value. Because the initial gas and vapor are not "flowback emissions," they are not subject to the completion combustion requirement in section 60.5375(a)(2) and (3). Additionally, section 60.5375(a)(4) imposes "a general duty to safely maximize resource recovery and minimize releases to the atmosphere during flowback and subsequent recovery." Accordingly, we expect owners or operators to route the flowback to the separator as soon as practicable to allow the separated gas and recovered liquids to be collected and any flowback emissions to be combusted.

Issues from the Attachment

Gas Well Completions

API Question 1: "The requirement in 60.5375(a)(1) to 'route the recovered liquids into one or more storage vessels' is causing several concerns, including EPA did not define recovered liquids and because storage vessel is defined later in the rule which excludes portable tanks onsite less than 180 days. API believes that the term 'recovered liquids' means saleable hydrocarbon liquids such as condensate or crude oil. That was clearly EPA's intent in the proposed rule and there is no evidence to indicate a change in the final rule."

1a. "Did EPA intend 'recovered liquids' to mean saleable hydrocarbon liquids, such as condensate or crude oil?"

1b. "The term 'storage vessel' as defined in the rule excludes portable tanks on site less than 180 days. Portable tanks are often used during flowback following hydraulic fracturing. **Did EPA intend to require recovered liquids to be placed in permanent storage vessels as defined in the rule or can temporary or portable 'fracture tanks' be used?"**

EPA Response: As explained above, the term "recovered liquids" refers to condensate, crude oil and produced water recovered through the separation process. Although neither the proposed nor the final rules define "recovered liquids," the discussion of the proposed NSPS for storage vessels describes the storage of "crude oil, condensate and produced water." 76 FR 72763. The final rule accurately reflects our intent to require these liquids to be routed to "storage vessels," which may be subject to control in the rule depending on their VOC emissions rate. The initial flowback (prior to recovery through separation) may be routed to temporary "fracture tanks" as long as separation of the water, condensate,

crude oil and gas occurs as soon as practicable, consistent with the general duty to maximize resource recovery and minimize releases to the atmosphere as required in section 60.5375(a)(4).

API Question 2: "Digital Photo Requirements. There are multiple concerns with the addition of digital photograph requirement for record keeping for completions."

2a. "Did EPA intend allow the digital photograph as an alternative to the recordkeeping and reporting requirements?"

2b. "There are only a few camera models that are available with GIS coordinates. Even cameras that have GIS capability do not have the latitude and longitude in this specific format and 5 decimals of a degree of accuracy. **Does the digital photograph have to meet the requirements of 60.5420(a)(1)(i) for 'the latitude and longitude coordinates for each well in decimal degrees to an accuracy and precision of five (5) decimals of a degree using the North American Datum of 1983'?"**

2c. "Because cameras are not intrinsically safe for operation in a potentially explosive atmosphere, there will be some discrepancy between the lat/long coordinate of the camera relative to the REC equipment. **Is it sufficient that the latitude and longitude of the photograph is close to the well latitude and longitude?"**

EPA Response: Yes, submission of digital photographs to document compliance is an alternative to the standard annual reporting requirements. This alternative is explained on pages 49499 and 49527 of the final rule preamble and provided in sections 60.5420(b)(2)(i) and 60.5420(c)(1)(v). Section 60.5420(c)(1)(v) refers to 60.5420(a)(4), which specifies the records of the digital photographs to be reported in lieu of the standard annual reporting requirements. The digital photograph recordkeeping requirements in section 60.5410(a)(4) were meant to apply only in cases where the owner or operator chooses to take advantage of the streamlined alternative annual reporting option.

The requirement for GIS coordinates to be specified to 5 decimal places exists only in the notification provisions at section 60.5420(a)(2)(i) and does not apply to the digital photographs described in section 60.5410(a)(4). With regard to location of the camera, we agree that taking the photograph at a safe distance from the wellhead is prudent. Therefore, since section 60.5410(a)(4) does not require specification to 5 decimal places, taking the digital photograph from a safe location close to the well latitude and longitude is acceptable as long as the recorded longitude and latitude are sufficient to accurately identify the subject well.

API Question 3: "Processes during hydraulic fracturing – There are processes performed during hydraulic fracturing that are not associated with flowback following hydraulic fracturing. API would like confirmation in guidance or the preamble that screenouts and coil tubing clean outs are not subject to the requirements of the Oil and Gas NSPS for gas wells."

3a. "Screenouts – While infrequent, a 'screenout' is the first attempt to clear the proppant (sand) that can plug the wellbore. It involves flowing the well to a fracture tank to achieve maximum velocity to carry the sand out of the well. Although unlikely, small amounts of gas and condensate may be part of the flowback fluids during screenouts. **Are screenouts subject to the requirements of the Oil and Gas NSPS for gas wells?"**

3b. "Coil Tubing Cleanouts – If a screenout is unsuccessful in clearing the packed proppant (sand) from the well-bore, then the well is typically 'jetted' using a coil tubing unit. This involves running a string of coil tubing to the proppant pack and jetting the well, typically with nitrogen gas, to dislodge the sand and provide sufficient lift energy to flow it to surface. Although not likely, it is possible to have small amounts of gas and/or condensate in the flow-back fluids during such an operation. **Are coil tubing cleanouts subject to the requirements of the Oil and Gas NSPS for gas wells?"**

EPA Response: The well completion standards for gas well affected facilities address flowback emissions following hydraulic fracturing. As explained above, the term "flowback emissions," as used in sections 50.5375(a)(2) and (3), refers to the recovered gas and vapor after separation that cannot be directed to the flow line. Accordingly, any releases of gas or vapor during operations that occur prior to separation, such as "screenouts" and "coil tubing cleanouts," are not "flowback emissions" and are not subject to the work practice standards for gas well affected facilities.

API Question 4: "60.5375(a) states 'for each well completion operation with hydraulic fracturing begun prior to January 1, 2015, you must comply with the requirements of paragraphs (a)(3) and (4) of this section . . . ; optionally, you may comply with the requirements of paragraphs (a)(1) through (4) of this section.' API believes this means that compliance with (a)(1) and (2) is not required and that any recovery of natural gas or hydrocarbon liquids is unregulated before January 1, 2015. Others have opined that this interpretation would make the language about 'paragraphs (a)(1) through (4)' unnecessary and its inclusion mandates complying with (a)(1)-(4) if any natural gas or hydrocarbon liquids are recovered. If (a)(1)-(4) can be enforceable, then API has critical issues concerning (a)(1)-(2) that have not yet been defined that must be resolved immediately. **Did EPA intend that hydrocarbon recovery before January 1, 2015 to be unregulated?"**

EPA Response: No, it was not the EPA's intent for hydrocarbon recovery prior to January 1, 2015, to be unregulated. Although compliance with section 60.5375(a)(1) and (2) are not required until January 1, 2015, section 60.5375(a)(4) requires owners and operators "to safely maximize resource recovery and minimize releases to the atmosphere during flowback and subsequent recovery." This general duty applies to all gas well affected facilities beginning on the effective date of the rule, October 15, 2012. As we explained in our responses to API's questions regarding the issues of venting and recovered liquids, we consider hydrocarbon gas and liquids recovered through the separation process to be valuable products. Therefore, routing the recovered gas to the sales line and the recovered liquids to storage vessels after separation would satisfy the general duty required in section 60.5375(a)(4).

API Question 5: "EPA did not respond to our concern that the combustion provisions would conflict with local regulations in the RTC document, even though they did summarize this comment (see p.58). Durango, CO does not allow flaring, but it is not due to fire or explosion hazard per se. **Are areas with local regulations (state, city, county, etc.) precluding flaring exempt from the flaring requirements?"**

EPA Response: Yes, sources located in areas for which flaring is prohibited by state or local regulations due to any condition provided in section 60.5375(a)(3) and (f)(2) would qualify for the exemption provided in those sections. Although federal requirements pre-empt state and local regulations on the same matter, the NSPS exempts affected sources from the flaring requirement for safety and other reasons that we believe to be the basis for prohibiting flaring at the state and/or local level in most instances. Sources located in areas with such prohibition would qualify for the exemption.

Storage Vessels

API Question 6: "API continues to believe that NSPS Subpart OOOO will apply to approximately 28,000 storage vessels/year as currently written. EPA believes that Subpart OOOO will apply to only 304 storage vessels as indicated by the TSD. One possible explanation for the difference between tank count is confusion about the basis of the 6 tpy VOC control threshold. API has based its estimate on uncontrolled emissions as discussed in the Response to Comments. However, the TSD stated that many vessels would be under the 6 tpy VOC threshold as a result of state or local regulations. This appears to support a 'federally enforceable PTE' basis for the 6 tpy threshold. **Did EPA intend the 6 tpy threshold to be based on 'federally enforceable PTE'?"**

EPA Response: Yes, only storage vessels with potential to emit (PTE) of at least 6 tons per year (tpy) of VOC would be regulated under the NSPS. In determining the PTE, the source can take into account emission limits from a legally and practically enforceable state rule, operating permit or other mechanism.

API Question 7: "The provisions of §60.5395(a)(1)&(2) and §60.5410(e)(1)-(4) apply the standards to storage vessels 'at a well site.' Furthermore, §60.5412(a) cites §60.5395(a)(1)&(2), and is thus specific to storage vessels at a well site."

7a. "Did EPA only intend these sections to apply only to storage tanks at well sites?"

7b. "What if any requirements apply to storage vessels at other production facilities, such as at compressor stations and gas plants?"

EPA Response: The EPA did not intend only storage vessels located at well sites to be subject to the NSPS. Section 60.5395 contains standards for "storage vessel affected facilities," which the final rule defines to include not only those at well sites but "each single storage vessel located in the oil and natural gas production segment, natural gas processing segment, or natural gas transmission and storage segment" 60.5365(e). Section 60.5395 requires 95 percent reduction of VOC emissions if the affected facility emits 6 tpy or more of VOC. The provisions at 60.5935(a)(1) and (2) specific to "well sites" prescribe the timing for determining the VOC emission rate and, if applicable, compliance with 95 percent reduction requirement for storage vessel affected facilities at well sites. Specifically, where there are no wells already in production, the final rules provide a 30-day period from startup for determining the VOC emission rate and, if the VOC emission rate is determined to be 6 tpy or more, another 30 days for the control device to be installed and operational. 77 FR 49498. The VOC emission determination and compliance are required upon startup if the affected facility is located where there are one or more wells already in production. As explained in the preamble to the final rule, the 30-day estimation and installation periods are not necessary where one or more wells are in production because VOC emission estimates can be made using information on the liquid production characteristics of the existing wells. 77 FR 49500. See also Response to Comment, pages 140-141.

API Question 8: "A common practice for controlling storage vessel emissions in the oil and natural gas production segment is to route vapors from the storage vessels back to the inlet line of a separator, to a sales gas line, or to some other line carrying hydrocarbon fluids. A compressor is used to boost the recovered vapors into the line, that is often referred to as a 'vapor recovery unit' (VRU), even though it does not involve an end-of-line control device. EPA did not include exclusion for this type of a VRU, but also did not provide any regulatory text regulating this type of VRU. **Did EPA intend to exclude VRUs that recycle gas back to the process similarly to NESHAP, Subpart HH?"**

EPA Response: We do not consider VRUs that route recovered gas and vapor back to the process to be control devices, which is consistent with their treatment under NESHAP subpart HH. As your letter notes, the final amended storage vessel standards in subpart HH include an option for conveying emissions through a closed-vent system to a process natural gas line, as recommended by a commenter. See section 63.766(b)(3) (77 FR 49671); see also RTC page 260. Although this option is not specifically provided in subpart OOOO, storage vessel affected sources are not prohibited from using this option to meet the 95 percent VOC reduction standard in subpart OOOO. We believe that compliance with the NSPS can be demonstrated with this option for a storage vessel equipped with a cover that meets the conditions in §60.5411(b) and connected to a process line through a closed-vent system that meets the conditions in § 60.5411(a).

Performance Testing

API Question 9: "Initial performance testing requirements and the storage vessel compliance date appear to be in conflict. §60.5410(e)(5) specifies that initial performance tests must be conducted with 180 days of initial startup or within 180 days of publication of the rule in the Federal Register. However, storage vessels are not required to be equipped with controls until 1 year after publication in the Federal Register, per §60.5395. **Does EPA intend to reconcile these schedules?"**

EPA Response: This date was corrected and is accurate in the published final rule. Section 60.5410(e)(5) now specifies ". . . within 180 days after initial startup or within 180 days of October 15, 2013, whichever is later . . ."

Compressors

API Question 10: "In §60.5420(a)(1), EPA specifically excluded gas well, pneumatic controller, and storage vessel affected facilities from the notification requirements in §60.7(a)(1), (a)(3) and a(4). However, EPA did not specifically exclude reciprocating and centrifugal compressor affected facilities in the same paragraph. **Did EPA intend for owners or operators to submit notifications required in §60.7(a)(1), (a)(3) and a(4) for centrifugal and reciprocating compressor affected facilities? If so, what is unique about compressors to justify the additional notification requirements?"**

EPA Response: Yes, compressors are subject to the General Provisions notification requirements. However, we believe the impacts will be small, given the simplicity of the notification requirements and relatively small number of affected compressors anticipated.

Equipment Leaks

API Question 11: "Definition of Equipment. As currently defined in §60.5430, '*Equipment means each pump, pressure relief device, open-ended valve or line, valve, and flange or other connector that is in*

VOC service or in wet gas service, and any device or system required by this subpart.' Without a clarification from EPA and a revision to the rule language, this same phrase in Subpart OOOO could be interpreted as to include not only any device or system required by the equipment leaks provisions of the rule, but also those required by provisions for storage vessels, compressors, completions, etc. This would greatly expand the scope of the equipment leaks program under Subpart OOOO when compared with Subpart KKK. API believes this was not EPA's intent. **Did EPA intend the phrase *'any device or system required by this subpart'* in the definition of 'equipment' to be limited to the device or system required by the equipment leak provisions of §§60.5400, 60.5401, and 60.5402?"**

EPA Response: The equipment leak provisions in subpart OOOO apply only at onshore gas processing plants. The phrase "any device or system required by this subpart" means only the equipment (except compressors) within a process unit as presented in the "affected facility" description in section 60.5365(f). These requirements, which refer only to onshore gas processing plants, include only the equipment leak provisions in sections 60.5400, 60.5401, and 60.5402 as API mentioned and the associated recordkeeping and reporting provisions for onshore gas processing plants in sections 60.5421 and 60.5422. The definition of "equipment" in section 60.5430 is not meant to prescribe the scope of coverage under the equipment leak standards. Conversely, the scope of the coverage of the equipment leak standards is dependent on the definition of the affected facility as explained above.

Other

API Question 12: "Prior to rule proposal, EPA had indicated to [API] that provisions in the rule would be made for new, alternative control technologies. Currently, the final rule is prescriptive for storage vessel controls, and there are no provisions in the rule for new or alternative technologies. This would seem to stifle innovation of emissions control. **Was it EPA's intent to explicitly prohibit any new control technologies from ever being used or is it an inadvertent omission to not include language that allows for review and adoption of new technology?"**

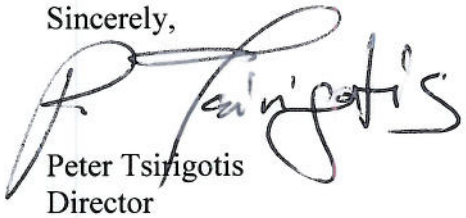
EPA Response: The performance standards for storage vessels in section 60.5395 require 95 percent control of VOC emissions but do not prescribe the means of achieving that reduction. Although section 60.5395(b) presents requirements that must be followed that correspond to various means of emissions control, this section does not limit the operator to the specific controls mentioned. For example, if an operator chooses to use a combustion device to achieve 95 percent control, then the operator must provide a cover for the storage vessel and a closed vent system to route emissions to the combustor. However, the rule does not limit the operator to the technologies listed.

Regarding provisions for review and adoption of new or alternative technologies, we solicited comment in the proposal on approaches to allow temporary field testing of technologies in development. We sought suggestions that may include not only established procedures under the Clean Air Act and its implementing regulations, but also new approaches to apply or interpret these provisions to avoid impeding innovation while remaining environmentally responsible and legal.

We received very few comments and, while all were supportive of allowing testing of innovative technology, none provided substantive suggestions on potential approaches. Thus, we did not include provisions in the final rule.

Again, thank you for your letter. I hope the above responses help clarify the EPA's intent in the final rule.

Sincerely,



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cc: David Cozzie, SPPD
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