



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

Subject: Guidance on the Extraction of Oil
and Gas at Federally Obligated Airports

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1 **Purpose.**

1. This Advisory Circular (AC) discusses oil and gas development on federally obligated airport land, including any drilling that penetrates the subsurface of the airport owned land. This AC does not create new requirements for on-airport or nearby off-airport land use or development. It describes how existing FAA policy, guidance, standards and obligations, as well as other applicable laws and regulations apply to proposed oil and gas extraction from obligated airports (both use of surface land and extraction of subsurface minerals/oil/gas).
2. An airport sponsor may propose to develop its oil and gas mineral resources and/or convey its mineral rights pursuant to an oil and gas lease for extraction. However, oil and gas well site construction and/or operation from airport surface land requires FAA approval of any proposed changes to the approved airport layout plan (ALP) prior to allowing development at an obligated airport. FAA approval of ALP changes is a major Federal action that requires FAA environmental review of and approvals under the National Environmental Policy Act (NEPA).
3. In contrast, an oil and gas lease that does not allow use or access to the obligated airport surface land, but only provides extraction from well sites and infrastructure located off airport is not a use of obligated airport property. Without any access or use of the surface obligated airport land the oil and gas lease may not require any amendments, revisions, or modifications to the FAA-approved ALP. Further, such leases are not considered a release, and/or conversion, of airport dedicated property from aeronautical to non-aeronautical use. Therefore, sponsor requirements related to FAA ALP approval for on-airport construction and operation, as described in this AC, may not apply to such leases that do not involve surface disturbance, access or occupancy. However, the airport revenue use, preservation of adequate land title, and compatible land use controls are applicable, as described in Chapter 2.

4. This AC does not specifically discuss on-airport extraction of other resources, such as water; or coal, ore, sand, gravel or other solid minerals. However, the same on-airport construction, airspace and ALP change approvals apply, including the noted grant assurances, lease provisions and planning, environmental and safety considerations discussed in this AC.
5. Any on-airport construction or non-aeronautical land use must be subordinate to and compatible with public airport use at the obligated airport.

2 **Application.**

This AC applies to federally obligated airports that are considering on-airport oil and gas extraction. In addition, this AC addresses NEPA issues for FAA ALP approval that may be specific to hydraulic fracturing process, requirements and impacts involved with shale oil and gas extraction from airport surface land.

3 **Feedback on this AC.**

If you have suggestions for improving this AC, you may use the Advisory Circular Feedback form at the end of this AC.



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CHAPTER 1. INTRODUCTION

1.1 **Related FAA Guidance and Requirements.**

This AC does not create new requirements but is a compilation of existing FAA guidance and requirements applicable to oil and gas extraction on or beneath airport surface land, including the most recent versions of the following:

- FAA Order 1050.1, *Environmental Impacts: Policies and Procedures*
- FAA Order 5050.4, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*
- FAA Order 5190.6, *FAA Airport Compliance Manual*
- FAA Order 5200.11, *FAA Airports (ARP) Safety Management System (SMS)*
- FAA Order JO 7400.2, *Procedures for Handling Airspace Matters*
- FAA AC 70/7460-1K, *Obstruction Marking and Lighting*
- FAA AC 150/5070-6, *Airport Master Plans*
- FAA AC 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program (AIP) Assisted Projects*
- FAA AC 150/5190-4, *A Model Zoning Ordinance to Limit Height of Objects Around Airports (Airport Compatible Land Use Planning)*
- FAA AC 150/5200-33, *Hazardous Wildlife Attractants On or Near Airports*
- FAA AC 150/5200-36, *Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessment and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports*
- FAA AC 150/5370-2, *Operational Safety on Airports During Construction*
- FAA's Policy and Procedures Concerning the Use of Airport Revenue (Revenue Use Policy) (64 FR 7696 February 16, 1999)
- FAA Compliance Guidance Letter (CGL) 2003-2, *Procedures for Public Notice for a Change in Use of Aeronautical Property*

1.2 **Organization of this Advisory Circular.**

1. Chapter 1, Introduction.
2. Chapter 2, Sponsor Oil and Gas Development, identifies grant assurances and other existing FAA requirements that apply to on-airport oil and gas development. This chapter provides a recommended process an airport sponsor can follow when drafting and negotiating an acceptable lease/agreement for oil and gas development. Needed sponsor submittals and documentation are described for FAA acceptance of oil and gas development at obligated airports.

3. Chapter 3, FAA Review, provides an overview of the requirements for the FAA review of sponsor submittals. This chapter identifies existing compliance, safety, construction, planning and environmental review requirements applicable to oil and gas development at federally obligated airports.
4. Appendix A, Sponsor Re-certification of Good Title / Recommended Airport Oil and Gas Lease Provisions for On-Airport Development, provides an overview of sample oil and gas lease provisions needed to ensure obligated airport compliance with grant assurances and FAA requirements.
5. Appendix B, References, provides additional resources considered in the preparation of this AC.

CHAPTER 2. SPONSOR OIL AND GAS DEVELOPMENT

2.1 Subordination of Oil/gas Extraction to Federal-aid Obligations.

On airport drilling operations, related construction, production agreements and leases (including leases limited to extraction of oil and gas from surface well sites outside of the airport boundary) must be subordinate to and in compliance with the airport sponsor's federal aid grant assurance obligations¹ and surplus property deed restrictions placed on the use of airport land. Airport sponsors should review their land title, noting in particular any surplus property deeds conveyed by the United States [e.g. U.S. military, General Services Administration (GSA), Bureau of Land Management (BLM) transfers] that reserved the mineral rights and deposits and are not owned by the airport.

2.1.1 Airport sponsors must comply with their federal aid obligations and the restrictions placed on the use of airport land under federal laws when considering proposals for oil and gas development and any subsequent operations. In particular, airport sponsors must ensure the following:

1. any on-airport oil and gas development or surface access does not conflict with current or planned aviation uses of the airport land;
2. wells and related infrastructure meet airport design standards and are not obstructions to air navigation as defined in 14 Code of Federal Regulations (CFR) Part 77;
3. wells and related infrastructure are compatible development that do not create hazardous wildlife attractants, do not create light or radio signal interference, do not impair visibility or flight conditions and are constructed to ensure safe and continuous public airport operations;
4. any on-airport allowable well development and related infrastructure (e.g. permanent access roads, fencing, pipelines) must be shown on the approved ALP;
5. the well installation, development and use conform to environmental standards as applicable; and
6. the revenue generated from leases/agreements is collected and spent in accordance with the FAA's Revenue Use Policy and in compliance with grant assurances #24, "Fee and Rental Structure", and #25, "Airport Revenue", and applicable law. An acceptable lease must provide the airport at least fair market value for the conveyed mineral rights.
7. the airport sponsor must maintain good title to the obligated airport land parcels included in the Airport Land Inventory Map (Exhibit A).

¹ Title 49 U.S.C. § 47107(a) sets forth the statutory sponsorship requirements to which an airport sponsor receiving Federal financial assistance must agree. http://www.faa.gov/airports/aip/grant_assurances/

2.1.2 An airport sponsor may propose to lease or develop mineral rights and permit the on airport development of oil or gas under the condition that the lease or production agreement will be subordinate to grant assurances and not result in any use or development incompatible with airport operations or planned aeronautical development and use. See Appendix A for recommended procedures and lease provisions for sponsor re-certification of good title.

2.2 **On-Airport Oil and Gas Development Requirements.**

2.2.1 As is the case for any proposed on-airport development or use of obligated airport land, the construction of well sites and extraction of oil and gas on obligated airport land is subject to the FAA review and approvals. Locations critical for airport use are not available for oil and gas development, and the oil and gas lease (or production agreement) must be legally subordinated to the airport sponsor's federal grant assurances and compatible with the public airport use of airport land.

2.2.2 The airport sponsor must apply adequate engineering analysis and standards to ensure that any subsurface drilling, well boring and oil and gas extraction/production operations will not cause subsidence or adverse effects on the airport facilities or use.

2.2.3 Given potential damage to airport facilities and public airport use, the use of explosive charges for geophysical exploration for shale oil and gas development² is not generally allowable on airport land. With justification for extraordinary situations and subject to protective provisions, limited use of explosives may be permitted under an acceptable on-airport lease but only for areas that are far from any aeronautical or public-access facilities.

2.2.4 A change in the FAA-approved airport land use for allowable oil and gas development and extraction requires an airport sponsor to submit a proposed Airport Layout Plan (ALP) change (revision, modification or amendment of the FAA approved ALP) for environmental evaluation under the National Environmental Policy Act (NEPA).

2.2.5 Before the oil and gas developer may occupy, construct or operate on airport land, the sponsor must provide FAA an adequate submittal and request to revise or modify the approved ALP for the proposed development in compliance with FAA requirements and standards. Failure to provide required submittals to secure compliance with applicable FAA standards and requirements may, at minimum, delay approvals for development. Proceeding without advance approval may also compel the airport

² Geophysical exploration for shale oil and gas development involves seismic survey of underlying shale formations by use of acoustic energy generated from surface land using vibrators mounted on trucks (thumper trucks) or low-impact explosives placed in shot-holes across the surface land.

sponsor to incur the costs associated with rectifying any violation (in accordance with assurance #29, paragraph b, concerning removal of unapproved changes to the ALP).

2.2.5.1 Compliant ALP change and on-airport construction procedures apply where the proposed oil and gas lease allows well site or related infrastructure (roads, pipelines, etc.) to be constructed and operated on airport surface land. If the lease (a) prohibits any access and (b) surface development of airport land and extraction is limited to the subterranean lateral wellbores from off-airport well sites, the development process and corresponding lease is far less complex. Oil and gas leases that only convey extraction rights to underlying oil and gas, but do not allow any on-airport access or construction or use of airport surface land (i.e. no on-airport well sites or infrastructure allowed on airport), do not involve changes to the ALP and/or a release, or conversion, of airport dedicated property from aeronautical to non-aeronautical use. Therefore, such leases do not involve Sections 2.4, Development Planning, and Sections 2.7 through 2.10, concerning FAA approvals for on-airport access and/or development.

2.3 **Identify Federal, State and Local Laws and Requirements for Airport Oil and Gas Development.**³

This section summarizes the range of current laws, regulations and policies that apply to on-airport oil and gas development, but is not necessarily exhaustive.

2.3.1 Federal Laws.

2.3.1.1 On-airport oil and gas drilling and production activities are treated the same as other non-aeronautical development and are subject to all applicable federal laws and regulations. The airport sponsor must ensure that any non-aeronautical development, including oil and gas development, complies with all applicable FAA airport design and construction standards, in particular those that address storm water management and spill prevention requirements to protect against soil and groundwater contamination. In addition, airport sponsors must ensure

³ In response to the recent increase of shale oil and gas production throughout the United States, all levels of government are studying aspects of hydraulic fracturing and have proposed or are considering new legislation and regulations. For example, the US Department of Interior issued a final rule (“*Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, Final Rule*” 80 Federal Register 58 (26 March 2015 pp. 16128)) that updated well drilling requirements on Federal and Tribal land concerning well integrity, ground water protection and public disclosure of chemicals used in hydraulic fracturing. Given the dynamic nature of the legislative and regulatory landscape concerning hydraulic fracturing, the current legal environment should be carefully examined.

compliance with FAA operational safety and design criteria for airport operations.

2.3.1.2 FAA approval of proposed amendments, revisions or modifications to ALPs as a result of proposed oil and gas development activities would be considered major federal actions subject to NEPA review.

2.3.1.3 The airport sponsor and/or oil/gas developer must undertake adequate due diligence to ensure they identify and ensure their compliance with all applicable statutory and regulatory requirements for their proposed development and operations. Other federal environmental laws cover certain aspects of oil and gas production activities; however, there are statutory exemptions. For example, the Clean Water Act (CWA) (33 U.S.C. §§ 1251 to 1387) requires the treatment of flowback water that returns to the surface from hydraulic fracturing, if such water would violate water quality standards. Oil and gas production and well site operations, however, are exempted from other parts of the CWA that regulate storm water discharge. As another example, the Clean Air Act (42 U.S.C. §§ 7401 to 7671q) contains an exemption for aggregation of emissions from oil and gas exploration and production operations. Each well, with its associated equipment, is considered a separate source of emissions. In yet another example, hydraulic fracturing was specifically exempted from the Safe Drinking Water Act (42 U.S.C. §§ 300f to 300j-26) pursuant to the Energy Policy Act of 2005 (Public Law 109-58), unless the fracturing fluids contain diesel fuel.

2.3.2 State and Local Laws.

2.3.2.1 State law controls the permitting of oil and gas exploration and production, while local laws and regulations typically control land use, zoning, environmental for site development and set back requirements. Airport sponsors and oil/gas developers should identify applicable state and local laws, ordinances, and regulations concerning oil and gas permitting, development and operations as early in the process as possible.

2.3.3 Airport Federal Financial Assistance Obligations.

2.3.3.1 As a condition precedent to providing airport development assistance under the Airport Improvement Program, 49 U.S.C. § 47107, et seq., the Secretary of Transportation and, by extension, the FAA must receive certain assurances from the airport sponsor (see http://www.faa.gov/airports/aip/grant_assurances/).

2.3.3.2 An airport sponsor's federal financial assistance obligations apply whether they have originated under the Federal Aid to Airports Program (FAAP), the Airport Development Aid Program (ADAP) or under the current Airport Improvement Program (AIP). Additionally, an airport may be

federally obligated by surplus and non-surplus property (deed) conveyances.

- 2.3.3.3 Among other requirements, the sponsor's grant assurances provide that:
- 2.3.3.3.1 The sponsor maintains adequate right, title and interest to airport land for the use, maintenance and development of airport property in compliance to FAA requirements.
- 2.3.3.3.2 The sponsor may not sell, lease, encumber or otherwise transfer or dispose of any part of its title or other real property interests in obligated land parcels shown on the Airport Property Inventory Map (Exhibit A) without FAA approval.
- 2.3.3.3.3 The sponsor must continually ensure that it will not cause or permit any activity or action thereon which would interfere with its use of airport land for airport purposes. An acceptable oil and gas lease must be legally subordinated to the sponsors grant assurances.
- 2.3.3.3.4 The design, construction and operation of the gas/oil development project and related improvements shall not create a hazard.
1. In particular, the use of ponds (on and off airport) and waste water management due to hydraulic fracking of wells will not create a hazardous wildlife attractant to the airport.
 2. Hazardous wildlife and criteria for hazardous wildlife attractants are defined in FAA Advisory Circular (AC) 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports*. All design, construction and operation of the facility and all facility components will comply with FAA AC 150/5200-33.
 3. FAA AC 150/5200-33 advises a 5,000 or 10,000 foot separation distance between the airport's air operations area and a hazardous wildlife attractant. Additionally, it is recommended that a 5-mile separation distance be considered when the attractant could cause wildlife movement into or across the approach or departure airspace.⁴
 4. In cases where a wildlife biologist is consulting on wildlife management and hazard elimination, the wildlife biologist must meet the qualifications identified in FAA AC 150/5200-36, *Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculum for Airport Personnel Involved in Controlling Wildlife Hazards on Airports*.

⁴ Note that some states have regulations for controlling wildlife and attractants at airports.

- 2.3.3.3.5 The fair market value (FMV) of mineral rights and any surface land use conveyed shall be paid to the airport. An acceptable oil and gas lease must secure FMV payments to the airport of the “paid-up”⁵ lease signing bonus, oil and gas royalties, any production delay payments and rents, and the rent of any surface lands for non-aeronautical purposes (e.g. FMV rent paid for well site and supporting infrastructure i.e. access roads, pipeline and utilities lines serving well sites).
- 2.3.3.3.6 The sponsor must ensure the revenues generated from oil and gas extraction will be retained for airport, airport system, and/or aviation system uses in accordance with applicable statute and the revenue use policy.⁶
- 2.3.3.3.7 The sponsor must submit proposed amendments, revisions, or modifications to the ALP to FAA for approval, prior to altering the use of airport land designated for an aeronautical use to a non-aeronautical use or constructing above grade structures, such as well sites and supporting infrastructure. Please note when an airport sponsor wishes to change on airport land use from aeronautical to non-aeronautical, the airport sponsor is required to comply with applicable public notice requirements. (See FAA Order 5190.6.)

2.4 **Development Planning.**

- 2.4.1 To ensure acceptable on-airport oil and gas extraction development and operations, sponsors should coordinate with their local FAA Airports District or Regional offices early in the planning stages.
- 2.4.2 Most importantly, oil and gas lease legal descriptions and development plans must prevent access or development from areas on the airport that would interfere with current or future aeronautical development or operations. Prior to drafting or negotiating a lease, airport sponsors must determine where oil and gas drilling and related activities may and may not occur on airport land. There are areas of the airport that cannot be drilled on due to height restrictions, current operations or current or future airport development. Airport sponsors must maintain the airfield operations area,

⁵ A “paid-up” lease is a common term in oil and gas leases, in which the lump sum delay rentals for the primary lease period is paid at the commencement of the lease. See Appendix A, section A.2, for a description of a common “paid-up” oil and gas lease conveyance.

⁶ Note that the FAA Modernization and Reform Act of 2012 (PL. 112-95, Section 813) required the FAA to develop procedures to permit certain general aviation airports to use revenue generated by mineral extraction, production or lease subject to certain conditions. These procedures were published May 16, 2012, and the toolkit including this guidance is available on the FAA’s Airport Compliance website at http://www.faa.gov/airports/airport_compliance/mineral_revenue/.

runway and taxiway safety areas and object free areas, runway protection zones and obstacle free zones defined in AC 150/5300-13 (current edition) free of oil and gas development.

- 2.4.3 The sponsor's approval of a developer's Construction Safety Phasing Plan (CSPP) for proposed exploration (see section 2.7.1.1) must assess any clearing and grading work to access and occupy airport land.
- 2.4.4 As applicable, airport sponsors must notify the FAA Airports Regional or District Office early in the planning process to determine the need or requirements for Safety Risk Management (SRM). Safety Management System (SMS) and SRM principles apply to any oil and gas extraction proposals that could affect safe airport operations. FAA SRM procedures are described by Order 5200.11, *FAA Airports (ARP) SMS*. In accordance with this Order, SRM may be required prior to FAA review and approval of any proposed amendment of an ALP that includes oil and gas extraction facilities.

2.5 **Draft Acceptable Oil and Gas Lease.**

The airport sponsor must develop and draft its proposed oil and gas lease to incorporate the airport safety and design standards, environmental controls and all other necessary terms and conditions necessary to adequately protect and ensure continued compliant aeronautical use. Lease provisions must subordinate the lease and mineral rights conveyed to the sponsors existing and future grant assurances. Because it permits unrestricted access, a standard oil and gas lease that may be offered by an oil and gas company would not be acceptable. An acceptable airport oil and gas lease must restrict airport access and well site placement to protect airport operations and ensure compliance with the airport's federal aid obligations.

2.5.1 Recommended Oil and Gas Lease Terms and Conditions.

The airport sponsor must maintain adequate control over the surface use of airport land for aeronautical use at all times. As described below, the required lease terms and conditions depend on whether the oil and gas lease proposes on-airport development or only proposes the sale of the minerals without any on-airport construction or permanent development (e.g. an under-the-Fence Lease). Appendix A provides a general discussion of lease requirements and sample recommended lease terms (section A-4) and conditions for an acceptable oil and gas lease to ensure compatible surface use of airport land. Airport sponsors should engage legal counsel to develop and negotiate oil and gas leases and proposals compliant with the sponsor's grant assurances.

2.5.1.1 **Lease Allows On-Airport Development.**

If on-airport development is part of a proposed oil and gas lease, the oil and gas lease must be expressly subordinated to the airport use of the obligated land. Construction, occupancy and/or use of airport surface land for oil and gas development and operations requires an ALP change, which in turn requires an evaluation of environmental impacts of the proposed oil and gas development under NEPA. Lease terms must

provide for compliance to FAA requirements, and lease execution must be conditional on FAA ALP approval and applicable NEPA compliance (see sections 2.7 and 2.9 below for FAA ALP approval requirements).

2.5.1.2 Under-the-Fence-Only Lease (i.e., no on-airport access or development).

An “under-the-fence” lease explicitly precludes any access, occupancy or use of the airport surface land for oil/gas well sites or any supporting infrastructure or development (e.g. gathering pipelines, roads, ponds). Given that there is no development on the surface of airport land or impact to current or planned aeronautical use, there are no changes to the ALP that require FAA approval.

2.5.1.2.1 If exploration activities are to be allowed on airport surface land, adequate lease terms are required to restrict access and ensure no conflict with airport operations (see paragraph 2.7.1 for restrictions on geophysical exploration activity on airport surface land).

2.5.1.2.2 Under-the-fence leases still require FMV payments to the airport in compliance with the Revenue Use Policy, and height restrictions and hazard prevention compliance with applicable statute and off-airport airspace clearance (14 CFR Part 77).

2.5.2 Draft Lease Submittal to FAA.

FAA review of an oil and gas lease prior to entering into it can help the sponsor ensure it will continue to meet applicable grant assurances. The sponsor should submit the items described below to the FAA prior to lease solicitation to ensure the proposed lease, if executed, conforms to FAA grant assurances.

2.5.2.1 Sponsor Re-certification of Good Title (Grant Assurance 4).

2.5.2.1.1 An oil and gas lease conveys the mineral rights and encumbers an airport sponsor’s title to airport land. Prior to solicitation of an oil and gas lease, an airport sponsor’s attorney must re-certify to FAA that the airport retains good title in all airport land for public use airport purposes (landing area, etc.).

2.5.2.1.2 The re-certification requires the airport sponsor’s attorney to review the proposed lease documents, the proposed construction of oil and gas wells and facilities and changes to the ALP to ensure the airport sponsor has the right to enforce lease restrictions and meet FAA requirements. The airport attorney’s certification must be explicit that the lease restrictions are enforceable under state law and that the airport maintains good title for public airport purposes.

2.5.2.1.3 Appendix A, Section A.3, provides guidance for the sponsor’s attorney to review oil and gas lease terms to ensure the airport maintains acceptable

title to surface land in compliance with its federal assurances as an obligated airport.

2.5.2.2 Fair Market Value (FMV) Documentation.

Fair Market documentation is either an acceptable competitive bid or an acceptable mineral appraisal report, as described below.

2.5.2.2.1 Competitive Bid / Request for Proposal.

The solicitation and bid items must reflect at least FMV payment levels and terms for the proposed oil and gas lease or development agreement. The solicitation and bid will also need to include at least FMV ground rents for any use of surface lands (e.g. well sites, roads, pipelines, other infrastructure or facilities allowable for occupancy on airport land). The proposed solicitation should be submitted to FAA for review.

2.5.2.2.2 Mineral Appraisal Report .

Leases must be shown to require at least FMV lease and royalty payments to the airport as well as surface land rents. Where the airport has not sought or had not received adequate competitive bids, a mineral appraisal report and determination of the FMV lease payments and royalty rates is required. Appraisal report documentation must meet American Petroleum Institute and the Securities and Exchange Commission requirements for description and valuation of oil and gas reserves, as well as other applicable appraisal standards. See the Airport Appraisal Compliance Guidance Letter (CGL) for sample appraisal scope of work.

2.5.2.3 Payment Terms and Revenue Use.

The oil and gas lease must provide at least FMV payment terms. As noted in the Interim Guidance on Mineral Extraction and Request for Data Update, dated August 24, 2012, the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 813) requires the FAA to permit certain general aviation airports to use revenue generated by mineral leases, production or lease for eligible transportation infrastructure projects, subject to certain conditions.⁷

2.6 Lease Solicitation.

2.6.1 Solicitations for oil and gas leases must meet all applicable federal, state and local procurement laws and requirements. Leases may be offered for competitive bid with disclosure of all lease terms and conditions required by the FAA and the airport. Where

⁷ See toolkit available at http://www.faa.gov/airports/airport_compliance/mineral_revenue/.

lease and royalty payments are negotiated with the developer, adequate mineral appraisal valuation documentation must be secured to support that payments are at FMV, as described above in section 2.5.2.2.2.

- 2.6.2 Notice in the Request for Proposals (RFP) must state that FAA ALP and airspace approvals are required prior to construction of well sites or supporting infrastructure on the airport.
- 2.6.3 The airport sponsor would have to remove or modify any unapproved oil and gas development on airport land in order to secure compliance with grant assurances and applicable FAA requirements.

2.7 **ALP Change Submittal for FAA Approval of Proposed On-Airport Oil and Gas Development.**

Allowable geophysical exploration, well sites and supporting infrastructure development for on-airport oil and gas production require an ALP change with requisite FAA approvals. The sponsor must develop the well site plan with future airport development in mind to ensure appropriate aeronautical uses take precedence over non-aeronautical uses such as oil and gas extraction activities. To avoid segmentation under NEPA, the NEPA review of proposed ALP changes needs to evaluate as much of the foreseeable oil and gas development as possible for the ALP decision required prior to project implementation.

2.7.1 On-Airport Oil and Gas Geophysical Exploration.

2.7.1.1 The sponsor must escort all exploration crews at all times while on airport property to ensure safe airport operating conditions are maintained. If this is not possible, then the exploration contractor / developer must prepare a Construction Safety Phasing Plan (CSPP) for submittal to FAA. Approval of the CSPP for a developer to proceed with work is the airport sponsor's responsibility (see section 2.7.2 below).

2.7.1.2 If there is significant disturbance of on or off airport environmental resources (e.g. wetlands, habitat, historical or cultural resources, etc.) for exploration to locate on airport well sites, the exploration work may be considered a connected action for the NEPA evaluation described below in section 2.7.3.3.

2.7.2 Well Site Construction Safety Phasing Plan (CSPP) Submittal.

2.7.2.1 All construction proposed for well drilling, site development and associated infrastructure must be submitted in the form of a CSPP to FAA for review and airspace determination. The CSPP should be prepared by the proposed lessee/developer in accordance with AC 150/5370-2, *Operational Safety on Airports during Construction* (current edition), for review and approval by the airport sponsor and submitted to the FAA for

airspace determination. The sponsor may submit the CSPP to the FAA on line at oiaa.faa.gov. The completed CSPP must include but not be limited to the following:

- Emergency/Fire/Medical response
- Blowout response
- Stormwater runoff management
- Spill Prevention Control and Countermeasure Plan (SPCC)
- Disposal and containment of hazardous materials
- Compliance with federal, state and local airport rules and regulations
- Wildlife and uncovered ponds and waterway management
- Airport areas and operations affected by the construction activity
- Personnel and vehicle access
- Foreign Object Debris (FOD) management
- Haul routes, roads and excavation material storage and management
- Notification of construction activities (Form 7460-1) per 14 CFR Part 77, *Safe, Efficient use and Preservation of Navigable Airspace*.
- Site monitoring, inspection and enforcement responsibilities.
- AC 150/5370-2, Appendix 3, Safety and Phasing Plan Checklist. (Consult this checklist to include the appropriate provision relevant to the location of the oil and gas extraction project at the airport.)

2.7.3 Proposed ALP Change.

2.7.3.1 For FAA approval at (or before) lease execution, the ALP must show the proposed location of all well sites, related above-ground structures and related access and support right of way. A separate drawing sheet depicting subsurface horizontal lines and/or reference to well permits (when issued) should be maintained by the lessee and the airport sponsor, but is not a required part of the ALP drawing set. Subsurface structures do not normally have to be depicted on the ALP, as long as they do not impact the development, operation, maintenance, utility or security of the airport. Conditional approvals of such proposed ALP changes may be performed, at (or before) lease execution, prior to the FAA undertaking its review of potential environmental impacts under NEPA and final ALP approval.

2.7.3.2 The proposed ALP change must identify the current location and elevation of any facilities affected by the proposed gas or oil production plan (e.g. aeronautical or non-aeronautical). The submittal must indicate how the land occupied by well site and supporting infrastructure was acquired and

any federal funding invested in airport buildings or site improvements affected by the oil and gas development (e.g. if federally funded fencing will be relocated or gate and access road installed). The ALP should identify any impacts to current and future planned uses and how such the airport will accommodate and mitigate impacts. Additional modification to the ALP may be required when specific well sites are to be constructed (see section 2.9).

2.7.3.3 **Environmental Evaluation.**

2.7.3.3.1 NEPA review must be completed in accordance with the Council on Environmental Quality's (CEQ) NEPA regulations and FAA Orders 1050.1 and 5050.4 at the time of FAA's decision on a major federal action, such as an ALP change (see FAA Order 5050.4, Chapter 1, sub-section on federal action and Chapter 2, sub-section on airport layout plans). The FAA will determine the appropriate level of environmental review and NEPA documentation based on the facts and circumstances of each proposed oil and gas operation. If an Environmental Assessment is the level of NEPA required, the airport sponsor will take the lead in preparing the NEPA documentation. If an Environmental Impact Statement is required, the FAA will take the lead in preparing the NEPA documentation.

2.7.3.3.2 When the well site locations and supporting infrastructure are known and designed, the airport can clearly define the changes to the ALP for FAA review and prepare a NEPA document for an unconditional ALP approval.

2.7.3.3.3 However, final designs and construction dates of individual well sites on airport property may not be known at lease execution to allow for unconditional approval, so conditional approval can be provided at or prior to lease execution. Conditional ALP approval should be based on as much information about the proposed oil and gas development as possible, with the anticipation that supplemental details for final well site design and location will be included in the NEPA review prior to unconditional ALP approval.

Note: Conditional approval "signals that... The proposed ALP depicts features that are safe and efficient for airport operations and airport use." (FAA Order 5050.4b 202(c) (1) (a)). When a conditional ALP approval is given, the approving FAA official has not authorized the airport sponsor or project proponent to begin building the facilities shown on the conditionally approved ALP. The sponsor or proponent may start building those facilities after lease execution only after the FAA completes its environmental analysis of those facilities and the approving FAA official issues an unconditional approval of the ALP depicting those facilities (see section 2.9).

2.7.3.4 **Content of NEPA Documents for On-airport Oil/Gas Development.**

2.7.3.4.1 NEPA documents must, as applicable, describe the entire lifecycle of proposed oil and gas operations, including exploration activities, construction schedule and methods, facilities for development and production and plans for well closure. It should also state that on-airport development of oil and gas production is subordinated to the airport use of the obligated land, including restricted access and adherence to FAA requirements for on-airport construction and non-aeronautical operations.

2.7.3.4.2 Adequate description of the proposed development and facilities includes, but is not limited to:

- Access roads;
- Well site and site preparation design proposed;
- Drilling and extraction methodologies to be employed;
- Water and fracturing fluid source, preparation and storage;
- Hydraulic fracturing details including geologic strata and drilling depths;
- Collection, handling and proper disposal of flow-back and waste water;
- Pipeline infrastructure for collection of oil and gas;
- Provision for storage, compression, transport and delivery of oil/gas to market; and
- Disclosure of other relevant processes and facilities that may have impacts to the airport or environmental resources.

2.7.3.4.3 In addition to the standard components of an FAA NEPA evaluation stipulated in Order 5050.4, it may be necessary to cross reference or include as appendices components of the sponsor's approved CSPP, such as the spill prevention, containment and counter measures plans. The NEPA document should explain the need for compliance monitoring or maintenance procedures, along with anticipated well closure and site reclamation. Proposed oil and gas projects are likely to involve collector pipelines, which must take into account distinct construction and maintenance issues, such as clearing, trenching, stringing of pipe, grading and right-of-way maintenance.

2.7.3.4.4 FAA policies for evaluating noise recognize there are settings where the 65 DNL standards for noise measurement may not apply. Noise analysis and impact evaluation for mineral extraction is one of these potential circumstances.

1. For mineral extraction projects, the responsible FAA official will determine the appropriate noise assessment criteria based on specific uses in that area. Noise impacts may result from (1) construction activities at the well pad, impoundment, pipeline and access road sites, including drilling and hydraulic fracturing, and (2) from operation of the well pad sites, including compressor stations and truck traffic traveling to and from the sites. Noise from drilling rigs should be treated as stationary construction noise, and the guidance on construction noise from non-aviation sources in Order 5050.4 and its companion Environmental Desk Reference for Airport Projects applies. Additionally, there may be state or municipal construction noise ordinances that apply. In general, noise analysis should compare ambient noise levels to estimated construction noise levels at various distances from the source of the noise.
2. For hydraulic fracturing projects, drill rigs are generally in operation around the clock and 7 days a week. The estimated time to drill a single well is 15 to 20 days, with another 7 to 10 days for the hydraulic fracturing process after the drilling is complete. NEPA documents will address this as construction noise.
3. If mitigation such as sound barriers cannot bring estimated noise to a less than significant level, or if finer resolution assessment of noise levels is needed, the project may require noise modeling or an Environmental Impact Statement (EIS).
4. If the NEPA review establishes environmental mitigation commitments to reduce potential impacts below a threshold of significance, such as the use of sound barriers, these measures will be reiterated in the FAA Finding of No Significant Impact (FONSI), FAA FONSI with a Record of Decision (FONSI/ROD) and/or ROD and must be stipulated in the subsequent lease terms.

2.7.3.4.5 The public involvement requirements of FAA Order 5050.4 will apply to Environmental Assessments (EAs) and EISs for gas and oil extraction, and the NEPA document must clearly demonstrate actions to meet applicable public involvement requirements.

2.8 **Sponsor Executes Lease.**

The sponsor may execute an oil and gas lease or development agreement in conformance with the applicable FAA requirements and upon conditional ALP approval, as described above. For actual on-airport construction and development the lease must be contingent on sponsor authorizations to proceed, which may only be given subsequent to unconditional FAA ALP approval as described below in section 2.9.

2.9 **Well Site Construction Approvals.**

As provided under an acceptable oil and gas lease, the airport sponsor must retain approval authority for each individual well prior to drilling, regardless of whether the state, county or municipality issues individual well permits for drilling. The airport sponsor's approval is contingent on FAA's ALP approval following an environmental determination for the proposed on-airport well site.

2.9.1 Well Site Form 7460 / ALP Approval.

2.9.1.1 The sponsor must approve each individual well prior to well site construction and drilling. Per acceptable lease provisions (see Appendix A, section A.4), the airport sponsor's construction inspection and controls are required to permit the on-airport well site construction, drilling, hydraulic fracturing and operations. Approved well sites must be shown on the ALP and/or the revised ALP approved by FAA prior to construction.

2.9.1.2 For the FAA ALP approval, the following submittals are required prior to on-airport well site construction and operation. The FAA approval process will consider all individual well site activities including on-airport construction, drilling of the well(s), hydraulic fracturing, oil and gas production and reclamation/restoration/well closure.

2.9.1.2.1 **Supplemental NEPA Environmental Analysis.**

Subsequent to the issuance of a FONSI, FONSI/ROD or ROD approving of a mineral extraction project, if the proponent of such project seeks to alter the plans for conducting such project, as presented in the pertinent NEPA document, a subsequent NEPA environmental analysis must be undertaken. Subsequent review and approvals will be treated as a written supplement or re-evaluations as applicable in accordance with Order 5050.4. In this event, the airport sponsor should notify the FAA as soon as possible about any changes. The FAA will determine the appropriate level of environmental review and NEPA documentation required based on the facts and circumstances of each proposed change and the extent of previous review.

2.9.1.2.2 **Form 7460-1 Airspace/Construction Notifications.**

Owners/operators must submit Form 7460-1 to the FAA for any proposed facilities on airport owned property that will be above grade. The FAA must receive Form 7460-1 at least 45 days prior to oil and gas developers erecting drilling rigs or other towering structures. The sponsor and owner/operator of any identified FAA system or facility should agree to the advance notification time of construction activities and delineate it in the CSPP in order to address or mitigate any impact caused by drilling activity. The oil and gas developer/driller must complete a Safety Plan Compliance Document (SPCD) for all construction on airport property

and submit the plan to the sponsor. The airport sponsor must approve the CSPP and the SPCD prior to issuance of a notice-to-proceed/construction. Form 7460-1 and other airspace notification requirements may be submitted to the FAA online at oeaaa.faa.gov.

2.10 **Interim Well Site Reclamation.**

Once the well has been drilled, the sponsor may want the oil and gas company to conduct interim reclamation to minimize the disturbance by the well site. The portions of the cleared well pad site that are not needed for operational and safety purposes can be re-contoured to blend with the surrounding area. This area can then be re-vegetated within a few feet of production facilities.

2.11 **Well Closure and Reclamation.**

2.11.1 The well closure and site restoration must be done in accordance with the regulatory requirements of the state and local agency with jurisdiction over oil and gas production. Upon well closure, the airport should secure a “clean closure” or “no further action” letter from the state regulatory agency.

2.11.2 The reclamation process will involve a certain amount of reconstruction effort to restore property to previous operational standard. The airport sponsor will once again approve a CSPP as part of the well closure and reclamation process. AC 150/5370-2F, *Operational Safety on Airports During Construction* (current version), provides details on the CSPP.

2.11.3 Once a well site has been closed and abandoned, the airport sponsor must submit the corresponding changes to the ALP and must reference reclamation requirements.

2.11.4 Well closure and reclamation activities should be anticipated and addressed in any environmental/NEPA documentation completed during the development of the oil and gas production planning process. If conditions have changed substantially, or there is significant new information relevant to environmental concerns, additional review of closure activities and/or ALP changes may be required.

2.12 **Best Management Practices.**

2.12.1 Best management practices in oil and gas development can improve technical and operational efficiency while ensuring safety and environmental protection. Best management practices most efficiently, practically and cost-effectively accomplish the task of oil and gas development with the least amount of associated impacts. With respect to oil and gas operations, best management practices can vary based on differences in geology, land use, water resources and regulations. Since the unconventional development of oil and natural gas resources are a rapidly growing and evolving set of practices and the environmental impacts are not fully understood, best management practices are still being developed. The FAA encourages airport sponsors

to identify those best management practices that can be effectively implemented with respect to the proposed oil and gas operations. Applicable best management practices may also be used as mitigation measures contained within the NEPA documentation.

- 2.12.2 For more information on best management practices in the context of shale gas production, see Department of Energy, Secretary of Energy Advisory Board, Shale Gas Production Subcommittee 90-Day Report, August 18, 2011; Second Ninety Day Report, November 18, 2011.

CHAPTER 3. FAA REVIEW

3.1 **FAA Review Standards.**

The FAA Airport District Office or Region will review the sponsor submittals described in Chapter 2 for compliance with FAA requirements. Existing standard operating procedures for needed FAA approvals/acceptances/rejections (compliance, airspace and on airport construction, planning) may be applied, with adequate coordination and assistance for acceptable submittals as described in this AC.

3.2 **Oil and Gas Lease / Agreement Compliance Reviews.**

3.2.1 The FAA will review the sponsor attorney's re-certification of title (see section 2.5.2.1 and Appendix A, section A.3) to ensure the proposed gas/oil lease and/or proposed oil and gas production agreement and plan incorporate sufficient restrictions for the sponsor to maintain compliance with its federal aid obligations and assurances.

3.2.2 A Federal Register Notice is required when there is a change from aeronautical use to non-aeronautical use of (1) federal surplus property (47151(d)), (2) non-surplus property (47125) or (3) property purchased with federal assistance (47107(h)). In addition, environmental notices must be filed in the Federal Register. Notice is not required for a release of aeronautical property that is part of a major environmental action in which public notice and comment is an integral part of the environmental review.

3.2.3 An under-the-fence lease with no surface access or development or impact to airport/aeronautical use is a concurrent use and not a release or change in use.

3.3 **Airspace, Safety and Construction Reviews.**

3.3.1 The FAA will process proposed on-airport construction and operations like any other proposed development on airport. Form 7460-1 and other airspace notification requirements may be submitted online at oaaaa.faa.gov.

3.3.2 The Construction Safety Phasing Plan (CSPP) must be prepared by the lessee/developer in accordance with AC 150/5370-2, Appendix 3 (current edition), for review and approval by the airport and submitted to the FAA for the airspace determination. The CSPP may be submitted online at oaaaa.faa.gov.

3.3.3 As applicable, the FAA will review the Safety Risk Management program amendments to accommodate the proposed gas and oil development (see section 2.4.3).

3.4 **Airport Layout Plan (ALP) Change.**

3.4.1 If any component of an oil and gas well site or related facility will be located on airport property (see AC 150/5070-6, paragraph 1002), sponsors should show all components of the gas/oil production process on the ALP even if only one component is actually on airport property and the remainders are off airport property. Accurate representation of the facilities on the ALP will eliminate confusion about the planned location for the various components of the system.

3.4.2 The following oil/gas well site and supporting facilities should be included on the ALP:

1. Well site
2. Well heads, including injection wells
3. Tanks (storage, compression, wastewater, etc.)
4. Fracturing fluid storage pits and ponds and/or impoundments
5. Dehydrator and compressor stations
6. Buildings or facilities
7. Collector oil and gas pipelines
8. Fracturing fluid pipelines
9. Utility lines/right of way serving the well site
10. Gas transmission lines
11. Workspaces
12. Other structures affiliated with the project as applicable

3.4.3 Proposed or planned on-airport oil/gas extraction operations often cannot specify the exact location of facilities until the exploration phase is complete. In these cases, the sponsor must show the proposed areas for oil/gas extraction on the land use drawings and label the known components that would be located in each area. Note that this may result in a “conditional” ALP approval until additional details of the production plans are better known and an “unconditional” ALP can be approved (see section 3.5 below).

3.4.4 ALP change considerations for well site closure are described in section 2.11.

3.5 **FAA NEPA Evaluations for ALP Change Approval.**

3.5.1 The FAA ALP change approval for oil/gas well sites and supporting construction on airport land is a major federal action and requires environmental review to meet requirements of NEPA as described in FAA Orders 1050.1 and 5050.4.

3.5.2 If the locations of the well sites are known and changes to the ALP can be clearly defined to show all development infrastructures, a NEPA document should be prepared for an unconditional ALP approval.

3.5.3 If significant impacts are anticipated from proposed oil or gas development projects, or an EA finds there may be significant impacts that cannot be mitigated to reduce such impacts below applicable significance thresholds, an EIS will be necessary to satisfy NEPA requirements. While sponsors may prepare EAs, the FAA must direct preparation of an EIS. In these circumstances, airport sponsors should coordinate with FAA staff on how best to proceed with environmental review.

3.5.4 If an EA finds no significant impacts, the FAA may conclude its NEPA review for the proposed project with a Finding of No Significant Impact (FONSI) or a FONSI and a Record of Decision (FONSI/ROD). For some EAs and all EISs, the FAA concludes its NEPA review with a ROD.

3.6 **Non-compliance and Corrective Action.**

3.6.1 A sponsor's failure to adhere to FAA requirements described in this AC, the airport sponsor's grant assurances or the instruments of surplus and non-surplus property conveyances may cause the airport sponsor to violate its federal obligations. If the FAA finds an airport sponsor violated its federal obligations, the FAA may require corrective action to bring the sponsor back into compliance.

3.6.2 If the airport sponsor chooses not to initiate voluntary corrective action—which may include terminating or amending the oil and gas lease to ensure the sponsor holds sufficient rights, title and interest in the land to operate and maintain the airport in compliance with FAA requirements—the FAA may take formal procedural action under 14 CFR Part 16. If the FAA finds the sponsor in formal noncompliance, the FAA may issue an order terminating eligibility for grants pursuant to 49 U.S.C. §§ 47106(d) and 47111(d) and order a suspension of the payment of grant funds. Additionally, costs to restore or replace facilities damaged or to restore adequate title to airport land are not eligible for funding under the Airport Improvement Program. Corrective actions would be funded by oil and gas revenues secured and other non-airport funds. Site remediation may not be supported with AIP funds or airport revenue.

**APPENDIX A. AIRPORT SPONSOR RE-CERTIFICATION OF GOOD TITLE /
RECOMMENDED AIRPORT OIL AND GAS LEASE PROVISIONS FOR ON-AIRPORT
DEVELOPMENT**

A.1 General.

The airport sponsor should secure qualified and experienced legal counsel for their solicitation and/or negotiation for an oil and gas lease. In addition, the sponsor must ensure it retains adequate rights, title and interest in the land required for continued public airport use and compliance to all grant assurances. The FAA may request the sponsor have its attorney re-certify “good title” for continued public use airport purposes.

A.1.1 Any extraction and development rights of a lessee under an oil and gas lease of airport owned minerals will be adequately subordinated to the public airport use of the property and must be compatible and in compliance with all applicable FAA requirements for use and development of obligated airport land.

A.1.2 Therefore, an acceptable oil and gas lease that involves surface use of airport land must contain adequate restrictions on the surface use of the land and ensure that any use of airport surface land is subject to applicable FAA requirements for the exploration, construction of well sites and related infrastructure, drilling, production of oil and gas, closure and remediation of allowable well sites.

A.1.3 Non-surface occupancy leases (under the fence lease) must be explicit that the lessor has no right of access or use to airport surface land for development of wells sites or production. Any temporary access and occupancy of surface land for exploration must be restricted and controlled to not interfere with safe airport operations or result in significant changes or damages to surface land or facilities.

A.1.4 All rental and royalty payments under an acceptable oil and gas lease must be shown to be at fair market value (FMV) rates. Land rents for well sites and infrastructure should reflect at least market ground rents for non-aeronautical development of airport land.

A.2 Description of Common “Paid-up” Oil and Gas Lease.

The “paid-up” Oil and Gas Lease, which is the most common conveyance document offered to airport sponsors, provides the lessee (oil and gas company) the right to explore and develop well sites for the extraction of oil and gas. Initial payment is made in advance of production (signing bonus). Drilling and production must commence within the “Primary Term” of the lease or the lease terminates.

A.2.1 Primary Term.

The primary term is the number of years stated in the lease during which drilling operations must begin. The time frame is determined by the local market. To say a lease is at market, the primary period must be set at the typical time frame of competing gas and oil leases. Typically, the primary term is between 2 and 5 years.

A.2.2 Secondary Term.

If production has been established in the primary term, the lease will continue into the secondary term and last as long as substances covered by the lease continue to be produced.

A.2.3 Lease Payment Provisions.

All leases must provide at least fair market rent, royalty and rental payment provisions to the airport owner. Land rents for well site, access roads, utilities and pipelines must reflect at least market rate ground rent.

A.2.3.1 **Royalty.**

The lease will state the airport's royalty or share of production revenue. Royalties must be at, or exceed, market rates and comparable to leases in the market area of equal extraction and development potential (e.g. quantity and quality of oil/gas known resource, site and acreage, access and proximity for market delivery (transmission pipeline, oil depot), and other competitive characteristics of the airport land). All production costs and expenses are paid by the lessee (developer). The royalty is the percentage share of the market price of the gas sold at the pipeline. Typically, in active markets, royalty rates on airport leases have been between 18 percent and 30 percent.

A.2.3.2 **Shut In Royalty.**

A shut in royalty is payment due when a well is not producing due to low prices.

A.2.3.3 **Surface Rentals and Damages.**

These are FMV ground lease rents for the well site, pipelines, roads, ponds, etc. FMV rent must reflect the highest and best use of the land.

A.3 **Sponsor Re-Certification of Good Title.**

- A.3.1 The sponsor will ensure its proposed oil and gas lease incorporates sufficient restrictions for the sponsor to maintain compliance with its federal aid obligations and assurances (see sections 2.5 and 2.6).
- A.3.2 The FAA may request the airport sponsor provide its attorney's re-certification of good title. The attorney recertification must be explicit that the lease restrictions are enforceable under state law and that the airport maintains good title for public airport purposes (grant assurance 4). The certification should identify the specific lease provisions and describe the sponsor's ability to ensure adequate protections, including but not limited to the following:
- A.3.2.1 **Limited/ No Access.**
The lease must describe those areas of the airport that the developer/lessee has no surface access to (e.g. the AOA and other areas where there is risk of conflict with safe airport uses and operations). (grant assurances 5, 19 and 20)
- A.3.2.2 **Subordination of Mineral Estate.**
Acknowledge the airport use of the property and that the developer/lessee use of the surface is subordinate to the airport use of the property. The lease includes a clause requiring all oil and gas activities and operations be considered subordinate to the airport sponsor's federal obligations. (grant assurances 5, 19 and 20)
- A.3.2.3 **Compliance with Laws.**
The lessee must construct all facilities and conduct all operations in strict compliance with all applicable federal (including FAA), state and local laws, codes, rules, regulations, ordinances and permits as well as the airport's design criteria and the airport's rules and regulations for oil and gas operations. This includes the instrument(s) entered into between the sponsor and the United States creating and/or perpetuating the sponsor's federal obligations. (grant assurances 5, 19 and 20)
- A.3.2.4 **Compliance with Airport Revenue Requirements.**
All use of airport property for non-aeronautical purposes must be at or exceed FMV and in accordance with the FAA's Revenue Use Policy.
- A.3.2.5 **Permitting.**
All construction and use of airport property is subject to approval by the airport owner and must comply with airport rules and regulations (incorporated by reference). FAA Form 7460-1, CFR Title 14 section 77.9

and CSPP determinations are required prior to commencing any construction. (grant assurance 20)

A.3.2.6 Airport Rules and Regulations.

This clause incorporates by reference the airport's rules and regulations governing on-airport construction that apply to oil and gas operations. (grant assurances 5, 19 and 20)

A.3.2.7 Insurance.

The developer/lessee must maintain adequate insurance for general liability and environmental remediation for the proposed development production and ultimate closing of wells. (grant assurances 20 and 21)

A.3.2.8 Bond/Irrevocable Letter of Credit.

The lessee should maintain adequate bonding to cover its liabilities and obligations incurred under this lease.

A.3.2.9 Indemnity and Hold Harmless Clause.

The lease must have an adequate indemnification and hold harmless provision to protect the airport from any liability associated with the lease and any operations or actions by lessee, assigns, agents, contractors, etc.

A.3.2.10 No Warranty of Title.

The airport sponsor should provide no **warranty** or assurance of title for the lessee. The lessee (gas/oil developer) will have to ensure adequate title for its gas/oil production.

A.3.2.11 Assignment and Subletting.

The lessee must not assign the lease or sublet the land (leased premises) without the prior written approval of the airport.

A.3.2.12 Construction and Surface Restoration.

Lessee agrees to restore property to condition acceptable to the airport upon termination of lease or abandonment of site or facility.

A.3.2.13 Environmental Representations, Warranties.

These provisions concern representations and warranties each party to the lease makes about the environmental condition of the leased property prior to, during and after oil and gas drilling operations. These provisions also apportion liability between the parties to the lease in the event of environmental contamination resulting from oil and gas drilling operations.

A.4 **Sample Lease Provisions.**

Table A-1 below lists recommended sample provisions for drafting an oil and gas lease for compliant on-airport development.

Table A-1. Recommended Lease Terms for On-Airport Oil and Gas Lease

Term/Condition	Description/Sample Language
A. Subordination of Mineral Estate; Limited Access. (Required)	<ol style="list-style-type: none"> <li data-bbox="600 367 1474 808">1. Lessee acknowledges that Lessor operates a public use airport on the Land, and that Lessor has or may have plans to construct new structures and improvements on the Land, or to expand the structures and improvements currently existing on the Land. As such, Lessee's leasehold interest as described herein, including, without limitation, its use of and access to the Land for the purpose of exploring, drilling, and producing oil and gas, laying pipelines, and buildings roads, tanks, and other facilities thereon to produce, store, treat, and process oil and gas, are hereby expressly subordinated in all respects to the use of the Land as a public use airport, and subordinate to the sponsor's federal obligations. <li data-bbox="600 840 1474 1239">2. Drill site operations and all related operations shall be limited to designated portions of the Land that are currently undeveloped and not planned to be developed as detailed in the airport's most recent master plan. Such locations are identified on Exhibit __ to this Lease. Lessee agrees to conduct its operations so as not to interfere with Lessor's use of the Land as is consistent with the operations of a public use airport. Lessee shall not make, allow, or permit any operations that involve a use of the Land's surface that would or might interfere with any actual or contemplated use of the surface of the Land by Lessor, without the prior written consent of Lessor. <li data-bbox="600 1270 1474 1564">3. Lessee's right of ingress and egress to and across the Land shall not be permitted without the prior written consent of Lessor. Such consent shall not be unreasonably withheld, as long as such ingress and egress does not interfere with the use of the Land a public use airport and the sponsor's federal obligations. Moreover, all access to the Land shall occur so as not to violate security procedures in place at the time the access is sought and so as not to contravene any FAA regulations, rules or orders. <li data-bbox="600 1596 1474 1743">4. Lessee shall construct all facilities, including roads, in strict compliance with all applicable federal, state, and local laws, codes, rules, regulations, ordinances, permits, and [the Airport's design criteria and rules]. <li data-bbox="600 1774 1474 1879">5. Lessee shall take no action that could compromise the safe and efficient use of the Land as a public use airport with concurrent commercial development. No signage, other than that required

Term/Condition	Description/Sample Language
<i>Continue Subordination of Mineral Estate; Limited Access.</i>	<p>by law and posted so as not to conflict with or distract from required airport signage, shall be allowed without the prior written approval of Lessor.</p> <p>6. Lessee agrees that in the event the location of any well drilled on the Land pursuant to this Lease interferes with Lessor's future use or development of the Land, then Lessee shall, upon Lessor's request, plug and abandon such well and associated facilities, within one hundred twenty (120) days of such request. (Establish amortization of cost terms and purchase and valuation methods).</p>
B. Compliance with laws (Required).	<p>Lessee shall conduct all operations hereunder in strict compliance with the laws, codes, rules, regulations, ordinances, and permits, as applicable, of [the applicable state regulatory agencies] and the FAA, and in accordance with all other federal, state, and local laws, codes, rules, regulations, ordinances, permits, and [the Airport's design criteria and rules] and the sponsor's federal obligations.</p>
C. Compliance with Airport Revenue Requirements (Required).	<p>The terms of the lease must comply with the airport sponsor's federal obligations. This also includes abiding by FAA's Policy and Procedures Concerning the Use of Airport Revenue (Revenue Use Policy, 64 FR7696). This policy sets forth the permitted and prohibited uses of airport revenue, set forth in statute, in accordance with grant assurance 25.</p>
D. Permitting. (Required)	<p>All construction and use of airport property under this Lease shall be subject to the prior approval by Lessor, and must comply with the Airport rules and regulations, which are incorporated herein by reference. Further, all construction and use of airport property as contemplated by this Lease shall comply with all FAA rules, regulations and orders, including, without limitation, FAA's AC 150/5370-2, <i>Operational Safety on Airports during Construction</i>. Any activities done on airport property must meet FAA requirements for notification and approvals including but not limited to Notice of Proposed Construction or Alteration (FAA Form 7460-1) prior to commencing any construction. Finally, all construction and use of airport property as contemplated by this Lease shall be consistent with all the findings and mitigation measures, if any, set forth in the environmental documentation prepared in compliance with the National Environmental Protection Act.</p>

Term/Condition	Description/Sample Language
E. Airport Rules and Regulations.	The [Airport's rules and regulations], including, without limitation, all rules and regulations concerning oil and gas exploration, development, transportation, or any other related operations or activities, are hereby incorporated into this Lease by reference and made a part hereof.
F. Insurance	Lessee shall acquire and, at all times while this Lease is in effect, maintain insurance covering all of its operations on the Land, including, without limitation, all work performed by it or on its behalf by contractors, subcontractors, and others, naming Lessor and related individuals and entities designated by Lessor as additional insureds. The policies shall include coverage for comprehensive general liability for bodily injury and property damage, environmental pollution liability, control of well or blowout coverage for the cost of cleanup and surface remediation, workers' compensation, and any other coverages and insurance reasonably required by Lessor. Any insurance policy obtained and maintained as required in this Lease shall not be subject to limitations, conditions, or restrictions deemed inconsistent with the intent of the insurance requirements to be fulfilled by Lessee. The bankruptcy, insolvency, or denial of liability by any insurance company providing coverage hereunder shall not exonerate or in any way relieve Lessee from liability.
G. Bond, Irrevocable Letter of Credit	Prior to the commencement of any construction or drilling operations under this Lease, Lessee shall provide to Lessor a security instrument in the form of a bond or letter of credit in the form and amount reasonably acceptable to the Lessor; provided, however, that such security instrument shall, at a minimum, adequately cover Lessee's obligations and liabilities for the construction, drilling or other activity under this Lease for which the security instrument was obtained. Any such security instrument shall remain in full force and effect throughout the period of performance, and for a reasonable period thereafter, of the construction, drilling or other activity under this Lease for which the security instrument was obtained.
H. Indemnity and hold harmless clause.	Lessee agrees to indemnify, defend and hold harmless Lessor, and Lessor's representatives, board members, council members, agents, employees, contractors, and any other person or entity acting by, through or under Lessor's direction or control, Lessor's independent contractors, and Lessor's successors and assigns, against all expenses, claims, demands, liabilities, and causes of action of any nature for injury to or death of persons and loss or damage to property, including, without limitation, attorneys' fees,

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	<p>experts' fees, and court costs, caused by Lessee's operations on the [Land] or Lessee's marketing of production from the [Land] or any violation of any environmental requirements by Lessee. As used in this paragraph, the term "Lessee" shall include Lessee, its agents, employers, contractors, and any other person acting under its direction or control, and its independent contractors. This indemnity shall be as great as the law allows, and Lessee shall indemnify and hold harmless for all loss, cost, damage, or expense of every kind and nature, whether the result of the sole negligence, concurrent or comparative negligence, or strict liability of Lessee. To the extent, and only to the extent, the foregoing indemnities are, by law, only enforceable if supported by available liability insurance, Lessee agrees that the insurance provided for in this Lease is intended to satisfy any coverages and dollar limits of liability provided by applicable statutes. To the extent, and only to the extent, the foregoing indemnities are, by law, either inapplicable or not enforceable, Lessee and Lessor shall each be responsible for the results of its own actions and for the action of those persons and entities over which it exercises direction and control. Lessee's indemnities set forth herein shall survive the termination or expiration of this Lease.</p>
I. No Warranty of Title	<p>Lessor makes no warranty or assurance of any kind with respect to title to the Land. By acceptance of this Lease, Lessee acknowledges that it has been given full opportunity to investigate and has conducted sufficient investigation to satisfy itself as to the title to the Land, and Lessee assumes all risk of title failures.</p>
J. Assignment and subletting	<p>Lessee shall not assign this Lease or sublet the [Land] without the prior written consent of Lessor. In the event Lessor consents in writing to any assignment or sublease, the assignee or sublessee shall assume all of Lessee's liabilities, obligations, and duties under this Lease. Further, Lessee shall remain liable for its obligations regardless of any assignment or sublease and any assignee or sublessee shall be jointly and severally liable with Lessee, unless Lessor expressly releases the original Lessee in writing from such liabilities, obligations, and duties.</p>
K. Construction and Surface Restoration.	<p>All construction and surface restoration work performed by Lessee shall be undertaken so as to restore the Land to as near its original condition as is reasonably practicable and in strict compliance with all applicable laws, codes, regulations, ordinances, permits and the [Airport's design criteria and rules] and the airport sponsor's federal obligations. Throughout the term of this Lease, including, without limitation, during all drilling activities, Lessee shall keep</p>

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	the Land in as clean a condition as practicable and free from foreign object debris (FOD) and other hazards that may impair the safety of airport operations.
<p>L. Environmental Matters, Environmental Representations and Warranties. (AS APPLICABLE TO ON-AIRPORT CONSTRUCTION AND OPERATION)</p>	<p>(1) The lessee/developer represents, warrants, and covenants the following:</p> <p>(a). Lessee has obtained and throughout the term of this Lease shall obtain and maintain all licenses, permits, exemptions, registrations, and other authorizations required under Environmental Laws (as defined below) and shall provide any notices required under Environmental Laws for conducting its operations on the Land. Lessee shall require its sublessees, if any, and contractors to obtain and maintain all licenses, permits, exemptions, registrations and other authorizations required under Environmental Laws for conducting operations on the Land.</p> <p>(b). Lessee shall comply and shall cause all of its employees to comply, and shall exercise best efforts to cause its agents, contractors, sublessees or other parties under Lessee's direction and control to comply, and shall include in all subleases a provision requiring the sublessee to comply and all employees, contractors, sublessees or other parties under sublessee's control to comply with all Environmental Laws pertaining to Lessee's (and including third parties under Lessee's direction and control) use of and operations on the Land.</p> <p>(c). Lessee shall not cause, contribute to, or permit any Release (as defined below) of any Hazardous Substances (as defined below) or Solid Waste (as defined below) by Lessee or its employees, agents, contractors, sublessees or other parties under sublessee's direction and control, on, at, or from the Land, except in compliance with Environmental Laws.</p> <p>(d). Lessee, prior to vacating or surrendering any portion of the Land or as sooner required by Environmental Laws or this Lease, shall remove and dispose of and shall require its employees to exercise its best efforts to require its agents, contractors, sublessees, or any other party under Lessee's direction and control at the Land to remove and dispose of, any materials, debris, tanks, equipment, ponds, vessels, and containers placed by Lessee or its agents, contractors, sublessees, or any other party under Lessee's</p>

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	<p>direction and control at the Land that are composed of or contain Solid Waste or Hazardous Substances (as distinct from actual Releases which have resulted in contamination of the environment and are subject to the provisions herein pertaining to response and compliance actions), at no cost to Lessor and in compliance with Environmental Laws.</p>
	<p>(e). Lessee shall conduct and shall require its employees to conduct, and shall exercise best efforts to cause its agents, contractors, sublessees or other third parties under Lessee's direction and control to conduct its/their activities and operations in a manner consistent with Lessor's duties and obligations under Environmental Laws, including, without limitation, environmental permits issued to Lessor and Lessor's commitments under the State Implementation Plan and the National Environmental Policy Act.</p>
	<p>(f). Lessee acknowledges that Lessor is or may be subject to the [State Discharge Elimination System Program], the National Pollution Discharge Elimination Program (NPDES), and state and federal regulations relating to stormwater discharges, including, without limitation, 40 CFR Part 122, for operations that occur at the Airport. Lessee further acknowledges that it will conduct operations and activities (and shall require its employees to conduct operations and activities, and shall exercise its best efforts to cause its agents, contractors, sublessees or other third parties under Lessee's direction and control to conduct operations and activities) on or related to the Land in compliance with applicable regulations, including 40 CFR Part 122, and any applicable [State Discharge Elimination System Program] and NPDES permits, as these may be amended from time to time. Lessee acknowledges that its cooperation is necessary to ensure compliance with any [State Discharge Elimination System Program] and NPDES permits. Lessee acknowledges that it may be necessary to use best efforts to minimize the exposure of stormwater to materials generated, stored, handled, or otherwise used by Lessee (including third parties under its direction and control), by implementing and maintaining effective "Best Management Practices" as defined in 40 CFR section 122.2, depending upon the applicability to Lessee's operations or any activities conducted by Lessee at the Land and as required by any applicable [State Discharge Elimination System Program] or NPDES permit, as these may be amended from time to time.</p>

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	<p>Lessee further acknowledges that any existing [State Discharge Elimination System Program] or NPDES permit issued to Lessor, and any subsequent permit(s), amendments, extensions or renewals thereto, is incorporated by reference in this Lease to the extent affecting Lessee's operations at or related to its use of the Land. Lessor agrees to notify Lessee of any changes to any portions of such permits applicable to, or that affects Lessee's operations at or use of, the Land.</p>
	<p>(g). Lessee shall not create or maintain any wildlife attractants without appropriate coverings or other effective mitigation measures. Further, Lessee shall locate all water storage facilities (pits or ponds) in accordance with applicable FAA airport design standards to ensure compatibility with airport operations.</p>
	<p>(h). <u>Right of Entry and Inspection.</u></p> <ul style="list-style-type: none"> <li data-bbox="889 867 1455 1444">i. Lessor shall have the full right at all reasonable times, and in Lessor's sole discretion, to enter the sites where Lessee's operation are located for the purpose of conducting an inspection, assessment, investigation, and regulatory compliance audit. Lessor or its authorized agents may perform testing of the Land as needed, including test borings of the ground and chemical analyses of air, soil, water, and waste discharges. Lessor will provide advance written notice of such entry and inspections, except in case of emergencies, when notice shall not be required. <li data-bbox="889 1476 1455 1864">ii. Lessee shall cooperate (and shall require its employees and shall exercise its best efforts to require its agents, contractors, sublessees, or any other third party under Lessee' direction and control to cooperate) in allowing prompt reasonable access to Lessor to conduct such inspection, assessment, audit, or testing. Lessee remains solely responsible for its environmental compliance,

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	notwithstanding any inspection, assessment, audit, or testing.
	(i). <u>Information to be Provided.</u>
	<p>i. If Lessee receives any notice, correspondence, citation, order, warning, complaint, inquiry, claim or demand that is not legally privileged, made confidential by applicable law, or protected as trade secrets (a) concerning any alleged Release of Hazardous Substances or Solid Waste at, on, or from the Land, or into the environment from the Land, or (b) alleging that Lessee or any employee, agent, contractor, sublessee, or any other party under either of the party's direction and control has violated or is about to violate any Environmental Law(s) pertaining to Lessee or third party operations at or use of the Land, or (c) asserting that Lessee or any party under Lessee's direction and control is liable for the cost of remediation or investigation of a Release of Hazardous Substances or Solid Waste on, at, or from the Land, Lessee shall immediately provide written notice to Lessor of the same, including a copy of any related documents.</p>
	<p>ii. Lessee shall provide to Lessor simultaneously with any submittal to any governmental agency, a complete copy (including exhibits and attachments) of any reports or notices required by Environmental Laws, and which are not legally privileged, made confidential by applicable law, or protected as trade secrets, regarding (a) alleged to comply with any Environmental Laws or (b) the Release of any</p>

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	Hazardous Substance or Solid Waste in, on, or into the environment, arising out of the past or present operations at or use of the Land by Lessee or any party under Lessee's direction and control.
iii.	Each party shall provide the other with reasonable advance notice of any scheduled meeting with any governmental agency regarding, in whole or in part, compliance or alleged non-compliance with Environmental Laws or use of or operations at the Land.
iv.	Lessor reserves the right to notify or consult any appropriate governmental authority or agency regarding conditions on the Land or concerns relating to Lessee's operations at or use of the Land, including operations of Lessee's employees, agents, contractors, sublessees, or any other third party under Lessee's control, if Lessor believes those conditions or operations do or may violate applicable Environmental Laws, may pollute or contaminate the environment, or may adversely affect the health, welfare, or safety of persons.
(j).	<u>Response and Compliance Actions.</u>
i.	If the Land or other property is or becomes contaminated or otherwise damaged or injured as a result of a Release of Solid Waste or Hazardous Substances on, at, or from the Land by Lessee or by its employees, agents, contractors, sublessees, or any other party under Lessee's direction and control, Lessee shall (a) orally notify Lessor immediately

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	<p>of such contamination or damage upon Lessee's discovery of such contamination or damage, (b) promptly take reasonable actions to control any such Release or contamination, (c) immediately take all reasonable actions necessary or required under Environmental Laws to mitigate any immediate threat to human health or the environment. Lessee shall then undertake any further repairs or corrective actions, in a timely manner and in full compliance with Environmental Laws, as are necessary to remove or remediate contamination to, at a minimum, return the Land to its prior condition.</p> <p>ii. If Lessee does not take immediate action or other timely action as necessary to mitigate or prevent any imminent actual or potential threat to human health or the environment caused by Lessee or its agents, contractors, sublessees, or any other party under Lessee's direction or control, then Lessor, in addition to its rights and remedies described elsewhere in this Lease, at its election, may enter the Land and take whatever reasonable action to eliminate the threat or return of the Land to at least its prior condition, as applicable. All Costs (as defined below) associated with any action by Lessor in connection with this section shall be subject to the reimbursement and indemnification requirements of this Article.</p>
	<p>(k). <u>Corrective Action Process</u>. Before commencing any remedial or corrective action under this Article, and except for immediate preventative action required hereunder, Lessee shall obtain prior written approval of the</p>

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	<p>Lessor. The work shall be performed at Lessee's expense, and Lessor shall have the right to review and inspect all such work at any time using consultants and representatives of Lessor's choice. Lessee shall remove or remediate the Land to, at a minimum, its prior condition. Lessee shall, at Lessee's sole cost and expense, make all tests, reports, and studies and shall provide all information to any appropriate governmental agency as may be required pursuant to the Environmental Laws pertaining to Lessee's response actions. This obligation includes but is not limited to any requirements for a site characterization, site assessment and remediation plan that may be necessary.</p>
	<p>In the event Lessor undertakes any action or incurs any costs in the exercise of its rights hereunder, Lessee shall promptly reimburse Lessor in the manner determined by Lessor in its reasonable discretion at the time such reimbursement is sought, for all reasonable and documented costs associated with such response, repairs, corrective action or remediation, including, but not limited to, consultants' fees, contractors' fees, attorneys' fees, penalties, costs of investigation or other costs incurred hereunder by it or its agents.</p>
	<p>(1). <u>Environmental Indemnification.</u> Notwithstanding any other provision in this Lease to the contrary, Lessee agrees to indemnify, defend and hold harmless Lessor from and against any and all claims, demands, penalties, fines, suits, actions, administrative proceedings, settlements reached, government orders, judgments, losses, damages, liabilities, costs, and expenses (including, but not limited to, reasonable attorneys' and consultants' fees, litigation costs, expert witness fees, and expenses of investigation, removal, remediation, or other required plan or response action) to the extent resulting from (a) the breach of an representation or warranty set forth herein by Lessee or any employees, agents, contractors, sublessees, or any other party under Lessee's direction and control, (b) the failure of Lessee to meet its obligations hereunder, (c) the violation of any Environmental Law by Lessee or its agents, contractors, sublessees, or any other party under Lessee's direction and control, and (d) documented loss by Lessor to a third party or governmental entity from any Environmental Impact Claim (as defined below), to the extent resulting from the operations, activities, actions or inaction of Lessee or its employees, agents, contractors, sublessees, or any other party</p>

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	<p>under Lessee's direction and control at or related to the Land.</p> <p>In the event that Lessee fails or refuses to defend Lessor as provided herein, Lessor shall have full right to undertake its own defense and to settle any such claims or lawsuits. In such event, Lessee shall be liable to Lessor, and shall promptly pay any resulting judgment against, or settlement by Lessor, and shall reimburse Lessor for all reasonable attorneys' fees and costs in undertaking such defense or settlements.</p>
	<p>(m). <u>Reimbursement</u>. In the event Lessor undertakes any action, including, but not limited to, response or corrective action, repairs, or remediation, in the exercise of its rights hereunder, Lessee shall reimburse Lessor, upon written notice, for all costs Lessor incurs in association with such action.</p>
	<p>(n). <u>Survival of Environmental Provisions</u>. Unless specifically stated elsewhere herein, the provisions of this Lease concerning environmental matters, including the representations, warranties, covenants and indemnities of Lessor and Lessee, are intended to and shall survive the termination of this Lease.</p>
	<p>(o). <u>Defined Terms</u>. The following defined terms used herein shall have the following meanings:</p>
	<p>i. <u>Costs</u> means all costs and expenses, including, but not limited to, attorneys' and consultants' fees, litigation costs, expert witness fees, and expenses of investigation, removal, remediation, or other required environmental plan or response or remedial action.</p>
	<p>ii. <u>Environmental Impact Claim</u> means any claim, suit, judgment, penalty, fine, loss, administrative proceeding, request for information, citation, notice, cost, or expense (including, but not limited to, any costs of investigation, study, cleanup, removal, response, mitigation, remediation, transportation, disposal, restoration, monitoring, consultants' fees, contractors' fees, and attorneys' fees) which arises out of, is related</p>

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	to, alleges, or is based on the presence, handling, treatment, storage, or actual or threatened Release, dispersal, disposal, escape, or migration of any Hazardous Substance or Solid Waste at or from the Land, or any effect on wildlife.
	iii. <u>Environmental Laws</u> means all federal, state and local laws, court or administrative decisions, statutes, rules, regulations, ordinances, FAA ACs and orders, court orders and decrees, administrative orders and any administrative policies, guidelines or guidance documents now or hereafter in effect relating to the environment, wildlife, public health, occupational safety, industrial hygiene, and Hazardous Substance or Solid Waste (including, without limitation, the disposal, generation, manufacture, presence, processing, production, release, storage, treatment or use thereof at the Land), or the environmental conditions on, under or about the Land, as amended and as in effect from time to time.
	iv. <u>Hazardous Substances</u> means (i) all chemicals, materials and substances defined as or included in the definition of “hazardous substances,” “hazardous wastes,” “hazardous materials,” “extremely hazardous wastes,” “restricted hazardous wastes,” “toxic substances,” “toxic pollutants,” “contaminants,” “pollutants,” “regulated substances,” or words of similar import, under any applicable Environmental Law and (ii) all other chemicals, materials and substances that are prohibited, limited or regulated by any

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	<p>governmental authority, including, without limitation, asbestos, radioactive materials (including naturally occurring radioactive materials), petroleum, petroleum products, and substances and compounds containing polychlorinated biphenyls.</p> <p>v. <u>Release</u> means any depositing, spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, or threat of release such that a release may enter the environment.</p> <p>vi. <u>Solid Waste</u> shall have the same meaning as in the Resource Conservation and Recovery Act.</p>

APPENDIX B. REFERENCES

There are a multitude of studies, commentary and articles on oil and gas production and particularly on hydraulic fracturing. The following sources have been consulted in the preparation of this AC and may be useful sources of further information in the analysis and documentation of environmental considerations.

- Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory, Modern Shale Gas Development in the United States: A Primer, April 2009
- Department of Energy, Secretary of Energy Advisory Board, Shale Gas Production Subcommittee 90-Day Report, August 18, 2011; Second Ninety Day Report, November 18, 2011;
http://www.shalegas.energy.gov/resources/111811_final_report.pdf
- Department of the Interior, Bureau of Land Management, The Gold Book, Surface Operating Standards for Oil and Gas Exploration and Development, Fourth Ed., revised 2007.
http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/gold_book.html
- Environmental Protection Agency, Hydraulic Fracturing Website,
<http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm>
- Federal Aviation Administration Memorandum, August 24, 2012, *Interim Guidance on Mineral Extraction and Request for Data Update*.
http://www.faa.gov/airports/planning_capacity/
- The National Petroleum Council, An Oil and Gas Advisory Committee to the Secretary of Energy, Website, www.npc.org
- U.S. Energy Information Administration, Website, www.eia.gov
- FracFocus, Chemical Disclosure Registry, Website, www.fracfocus.org

Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by emailing this form to the attention of the Manager of the Airport Planning and Environmental Division (APP-400) via the division [website](#).

Subject: AC 150/5100-20, Guidance on the Extraction of Oil and Gas at Federally Obligated Airports **Date:** _____

Please check all appropriate line items:

An error (procedural or typographical) has been noted in paragraph _____ on page _____.

Recommend paragraph _____ on page _____ be changed as follows:

In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

Other comments:

I would like to discuss the above. Please contact me at (phone number, email address).

Submitted by: _____ Date: _____