

Natural Gas Advisory Committee

October 24, 2016

Meeting Notes

- Welcome – Jim Grace
 - Introductions
 - Goal for people to feel comfortable to ask questions and provide feedback in an open dialogue.
- Updates – Cindy Dunn
 - Budget – lean budget but will be able to meet our mission and carry on with the great work we do.
 - Strategic Initiatives = six of them, touching on several here
 - Youth Initiative – received couple million dollars to do PA Outdoor Corps; will work primarily on state park and forest land, but also on other conserved land; both Youth Crews and Adult Crews; DCNR may reach out to NGAC members to spend some time with the crews
 - Participating in Governor’s meeting tomorrow on Green Ribbon Task Force. Worked on three subjects: Sustainability, Job Skills and Readiness; Marketing for PA Forest Products. Had 8 months of meetings and committee work. Presenting recommendations to Governor tomorrow.
 - Green Initiative – part of it involves greening of our energy use; element will be to tell the story of DCNR BMPs on state forest land as a model for others
 - Water Initiative – Looking at effects on water from our land; Major effort for Riparian Forest Buffer Program (statewide program)
 - Climate Initiative – working with USFS on adaptation plan; will take approximately 1 year to be finished
 - Invited Susan LeGros from Center for Sustainable Shale Gas Development, which works on sustainable practices for gas development (but she was unable to make this meeting)
 - Questions/Comments from NGAC members:
 - Why did the Green Ribbon Task Force not also focus on more jobs from gas industry on state forest land?
 - Report is focused on forest industry. DCED has looked at jobs coming from gas industry and manufacturing.
 - You want to use SFL as model, yet you’ve concluded that no further development is allowed.
 - Moratorium affects future leasing, but existing leases are only 20% development. So there is much more development to come on SFL to demonstrate good practices.
 - One could also argue that the moratorium is a model for others to follow.
- Updates – Dan Devlin
 - Been over a year since NGAC met

- Statistics
 - 99 active leases
 - 34 operators
 - 264,611 leased acres
 - 347,258 severed acres
 - Presented graph of leased acreage over time
 - Presented graph of land status by Forest District
 - Presented graph of released lease acreage since 2008
 - Presented graph of well status: permitted, spud, producing by year
 - Presented graph of number of wells providing royalty
 - Presented graph of Oil and Gas Lease Fund royalty deposits by year
 - Decrease seen is result of decline curves of production as well as decline in price of gas
 - Presented map of stream bed leases - \$15 million of bonuses to date
 - *Request to email PPT to committee
- State Forest Resource Management Plan
 - Took up a lot of time over the past year
 - Still a lot of interest in the state forest system – what we do and how we do it
 - Natural gas is still a concern of public and constituency groups – one of top topics to receive comments
 - Also heard a lot about wild character – retention of wild character on SFL, some about gas and some about other activities
 - Largest interest in SFL is recreational use; one of our greatest conflicts on SFL is conflict between different recreational users, such as motorized versus non-motorized
- Gas Position Paper
 - Governor put moratorium on any future leasing of SFL and state park lands
 - Discussion based on court decisions that the Department is really the entity that has the authority that decides on leasing
 - Position paper mirrors the moratorium with a few nuances
 - Basics
 - Will not allow additional leasing where we own the subsurface rights
 - Will manage and monitor future development on leased and severed acres
 - Protect state parks as much as possible (don't own subsurface for 80% of parks), but public expects us to protect as much as possible
 - Try to purchase subsurface interest when available
 - Continue public input – this committee is part of it
 - Will continuously look at our guidelines
 - Will work on BMPs for privately owned forest land
 - Maintain cooperative relationships (with gas companies, with DEP)
 - Continuously train staff
 - Questions/Comments from NGAC members:

- How successful have you been in getting operators to use BMPs on severed lands?
 - For the most part have been very successful, but we have to be respectful of their rights as well. In most circumstances, work very well together.
- How do we envision the element that we will require definitive proof of ownership of subsurface?
 - We'd like to see that in writing. Such as a title opinion.
 - We feel pretty secure about what we own on SFL. So this will mostly apply to State Park Lands.
- Should we state specifically in policy that this provision applies only to State Park Land?
- How does this policy apply to streambed leasing?
 - This is a separate program – separate sort of lease.
- How would we go forward with BMPs for private land? Is it under DEPs authority?
 - We have authority to give BMPs for forest use in PA, similar to for timber harvesting. Using our Guidelines will be a starting point, but some of them will not apply to private lands.
- Are you suggesting that landowner would consider in writing a lease or that gas companies would use as they develop existing private leases?
 - Both
- DEP Office of Oil and Gas Management would like to partner on that. And Scott Perry would hope that F&BC and PGC would be partners as well. To what extent can we showcase and incentivize some BMPs? Interested in finding impediments to implementing some of these ecosystem management BMPs, and how we can overcome them.
- Only type of BMPs that have regulatory effect are for stormwater management. Many around table have been working on that.
- One challenge will be to get information to landowners.
- We have BMPs from so many different sources. Can we get together and find one set of BMPs that we all agree on? One takeaway from TNC-CMU workshop was the need for one definitive set of BMPs.
- What is driving main reason for moratorium in position paper?
 - Concern over what it will look like under full development.
 - A lot of skepticism in the public about gas activities.
 - Low interest in new leasing due to depressed gas prices.
- A really key unknown is what effect full development will have on multiple use of SFL. Authoritative statement from PA Constitution suggests we need to manage for all users of SFL.
- A future agenda item for NGAC should be to look at the impacts and provide input on future development.
- Monitoring Report
 - We've been periodically adding monitoring information to the website.

- We feel it's time to do a comprehensive monitoring report.
 - We are just starting the process. We plan to use data up through the end of 2016.
 - Report will come out late 2017 or early 2018.
 - Questions/Comments from NGAC members:
 - Important that we coordinate with SRBC, as they are doing a lot of work on monitoring gas development as well.
 - Gas Guidelines
 - We've been constantly changing our guidelines. They should present the best practices we can achieve on SFL.
 - We are always considering comments.
 - From our perspective, they are not set in stone, but are adaptive.
- SFRMP – Ryan Szuch
 - Timeline
 - Sept 2015 – public draft release
 - Oct-Nov 2015 – public meetings
 - Jan 2016 – advisory committee webinars
 - Jan 2016 – end of public comment period
 - Sept 2016 – final version release
 - Comments
 - 330 attendees at public meetings produced 1,200 comments
 - 450 emails and letters produced 3,300 comments
 - 4,000 form letters and petition signatures
 - Major Changes
 - Introductory Chapters
 - Added info on Forest Action Plan, Training, Partnerships, and Budget
 - Reorganized Wild and Natural Area guidelines
 - Introduced Wild Character and Core Forest Focus Areas
 - Exceptional areas for these values
 - Common Guidelines:
 - Underlying zoning still applies
 - Timber harvesting unaffected
 - BOF will work on acquiring OGM and adjacent lands
 - State Forest Environmental Review needed to deviate from guidelines
 - Wild Character Focus Areas mapped by Recreation Opportunity Spectrum – Primitive and Semi-primitive Non-Motorized
 - Wild Character Focus Area Guidelines
 - Emphasize dispersed, low-density recreation
 - No motorized recreation except existing snowmobiles
 - No new roads or motorized trails
 - Limit or restrict commercial and large group activities

- Core Forest Focus Areas will be mapped using new Core Forest Analysis Tool. Polygons not delineated yet.
- Core Forest Focus Area Guidelines
 - No permanent conversion to non-forest, which of interest to NGAC, includes roads, pipelines, and natural gas infrastructure pads
 - Haul roads will be reduced/minimized, attempt to maintain closed canopy, and restored quickly and appropriately.
- Timber and Forest Products
 - Separated mechanized and whole-tree harvesting into two sections
 - Added section on Safety
 - Adopted change from 75 to 125 acres for maximum regeneration cut size
- Water Resources
 - Added section on Water Resource Protection and Enhancement
- Geologic Resources – Comments
 - Most common comments for SFRMP were anti-gas development
 - There were also comments in support of gas development, though fewer of those
 - Most frequent comments:
 - Halt operations for all companies that have violations.
 - But regulatory process is under the jurisdiction of DEP.
 - Support for moratorium or go further to ban future development altogether.
 - This sentiment is one of the reasons for the new position statement.
 - Prohibit drilling impacts at the surface
 - Not a tenable position given executed leases and sub-surface rights. Seems to be a misunderstanding of the public as to what control BOF has to limit surface impacts.
 - Shut down compressors that don't meet BOF noise guideline.
 - Noise guideline is a guideline, not in the leases. We work cooperatively with operators to reduce noise levels when they exceed the guideline.
- Geologic Resources – Changes
 - Added
 - Shale-gas site rehabilitation

- Bonding
 - Revenue
 - Position Statement
 - Forest Health
 - Spotted Lantern Fly
 - Management Activities and treatment efforts for Hemlock Woolly Adelgid, Emerald Ash Borer, and Gypsy Moth
 - Added objective specific to invasive plants
 - Recreation
 - Added section on leased campsites
 - Kept ATV Policy the same, which is to not add to ATV trail system on SFL except for connectors between systems on SFL and connectors from SFL trails to off-site trails
 - SFRMP 2016 Deliverables
 - Full SFRMP PDF with hyperlinks to supporting documents
 - Summary of Key Changes
 - Since 2007 version
 - Since 2015 draft
 - Comment Response Document
 - Questions/Comments from NGAC members:
 - Interest in final mapping of Core Forest Focus Areas. Will it be an iterative process that this committee or others will have input on?
 - Yes. It will be iterative, and there will be opportunities for input.
 - Will the limitation on conversion in Core Forest Areas apply to future development in existing leases?
 - No. We need to make this more clear.
- Guidelines – Craig Chapman
 - Previous versions in 2010, 2011, 2013
 - Provided Objective of Guidelines and Mission Statement of Bureau
 - Need for Revision – interaction between industry, bureau, regulations
 - Always receptive to public comment – comment is considered and incorporated as appropriate in subsequent revisions
 - Most significant component of revision to guidelines is from lessons learned
 - Process = brainstorming, rough draft, vetting process, final draft
 - Goals of revision process = simplify, clarify, improve technical accuracy, integrate lessons learned, reinforce concepts with photos
 - Substantive Changes
 - Eliminated 3 appendices: roads, approved signage
 - Recreation and Public Safety
 - Increased emphasis on approaches that maximize aesthetics and wild character as well as recreational opportunities and experiences
 - New guidance on security, traffic cameras, and lighting
 - PPE (e.g., for tours and staff)

- Roads
 - Planning and siting
 - Avoiding user conflicts
 - Construction
 - Maintenance
 - Rehabilitation
 - Focus on being less prescriptive and focusing on concepts
 - Pipelines
 - New subsections on: Siting (comprehensive and strategic), Materials, Stream Crossings, Vegetation Management, and Reclamation
 - Non-native Invasive Plants
 - New approach split into two buckets: ROWs and Leases/SUAs
 - Prioritized species
 - Focus on long term rehabilitation
 - Site rehabilitation
 - Clarified definitions and concepts: revegetation, reclamation (interim and final), restoration
- Today's meeting is kickoff/release. Should be posted on website today. Will be sending announcement to all SFL operators.
- Questions/Comments from NGAC members:
 - Can we get track changes version?
 - It won't be posted on webpage because it is so messy. But we will provide it if requested individually.
 - New version and summary of changes are posted on website and have been sent out to NGAC.
 - Why is monitoring requirement different between ROWs and pads?
 - Has to do with rehabilitation potential of sites. ROWs are always there as a vector for invasives. ROWs will never be fully restored, but pads potentially could be.
 - Will we rehabilitate smaller transmission lines / gathering lines?
 - Yes. Once their lifespan is over.
 - Will we rehabilitate small lines with lines abandoned in place?
 - Yes. Industry standard practice. Pulling lines would present a new occurrence of disturbance, which is not desired.
 - What monitoring will be do of rehabilitation by abandoned lines in place?
 - Would like to encourage BOF to considering ripping ground (not ripping pipeline out) and planting timber.
 - When does monitoring of pads begin?
 - Year 1 after pad is stabilized.
 - Pad could be used for 30-40 years. Why is monitoring stopping after 12 years?
 - Operator is still subject to control/treatment for lifespan of pad. Monitoring by company will cease after 12 years. Monitoring by staff will continue.

- Water Management – Doug Kepler (Seneca)
 - Typical well requires 11 million gallons
 - Around 22,000 trucks for 8-well pad, 600 trucks per day based on typical timing of operations.
 - Water management doesn't start with the water – minimize surface disturbances.
 - Remove as many trucks from the road as possible
 - Utilize lesser quality water sources
 - Question = What are operational impediments to using mine water?
 - Very few. Most sources can be used without additional treatment and blended with produced water. Very high sulfides would require pre-treatment.
 - Wells continue to produce fluid even as gas production declines.
 - Two basic options for produced water: recycle/reuse or disposal
 - One key to recycle/reuse is adequate storage
 - Reuse/recycle trend is using less and less freshwater every year because of highly available produced water and technology allowing use of higher TDS water
 - Question how high of TDS can you use?
 - Can pump and use up to 250,000 TDS
 - Backup plan is disposal
 - 6-8x concentration of seawater
 - Two types of disposal
 - Underground injection
 - Thermal evaporation
 - Clean water vapor can be released to atmosphere, captured for reuse, or surface discharged
 - Solids are disposed of in a landfill
 - Management Implications
 - Trucks
 - There will always be a need for trucks. But to minimize carbon footprint and interaction with public, they should be minimized as much as possible.
 - Pipelines are the most responsible means of moving produced fluids, not just for development but for the life of the well
 - Produced fluids contain significant concentrations of valuable minerals
 - Could create revenue streams rather than costs
 - Embrace and support stepwise improvements in technology
 - Questions/Comments from NGAC members:
 - How is pollution from water treatment addressed?
 - Treatment systems have NPDES permits. System can treat water to make it dischargeable.
 - Also options for pre-treatment that can make a water appropriate for treatment at a POTW.
 - How do you size pipes?

- Can use large temporary pipes in early phases, and smaller more permanent pipes for later phases.
 - How many trucks have been eliminated?
 - Seneca has eliminated 95% of trucks during development phase. Long-term need some additional solutions.
 - What distance is critical for piping versus trucking?
 - Piping almost always a better option. \$12-14/bbl for trucking versus \$0.50 for piping.
 - What is monitoring for having produced water in pipelines?
 - For aboveground temporary pipelines – walk pipeline twice a day to look for leaks, also have pressure measurements. Pumps manned 24 hrs per day, so could be shut down within minutes.
 - For permanent belowground pipelines – should doublewall, and have leak detection, with continual monitoring and automatic shutoffs.
 - Would they be co-located?
 - 98% of water lines are co-located with gas lines
 - Need to work with regulators and landowners to determine how to do long-term buried produced water lines.
 - What is maximum size of a spill that could come from a pipe leak?
 - Hard to calculate. There are shutoff valves incrementally along lines. Automatic shutoff valves around stream corridors. If you have a leak, you've already lost the money you saved by using the pipe (in remediation costs), so it behooves the operator to have leak-free infrastructure.
 - How do you decide between a buried or aboveground freshwater line?
 - Long-term buried trunk line for a large development plan (20 years). Temporary lines for the life of one or two pads development.
- Closing Discussion – Jim Grace
 - How often to meet?
 - 3 times per year. Roughly Feb, June, Oct.
 - Middle of week is better (Tues-Thurs)
 - We will send next 3 dates a year out with next mailing.
 - Meeting will continue to be in State College
 - What is purpose of NGAC?
 - Advise DCNR. Provide comment on what makes sense, what we should see more of, what we should see less of, what is a dangerous precedent. No regulatory requirements.
 - Also to hear each other's perspectives.
 - Bring experience from other places – as many of the members come from a national or regional organization with experience elsewhere.
 - Future agenda items?

- Things that are on the edge of development. Things that are in process / early in process, so they can provide input on development. Such as the Core Forest Analysis Tool was.
- A workshop on full buildout development. Could use TNC tool as a part of this.
- TNC Recommended Practices
- The above two things could be foundational for talking about best practices for private forest land.
- New Chapter 78 Regs will require EDWIN tool to identify abandoned or orphaned wells. Topo Geo could come present?
- New Chapter 78 Regs and Conservation Explorer Tool. E.g. Timber Rattlesnake was recently removed from the candidate species list. Industry thought it would drop off the PNDI tool, but they are still getting hits on it. Could there be an explanation of why that is and what it means?
- Can we show these tools live from meeting venue?