10:10A-Department update (Dan Devlin – DCNR, Bureau of Forestry)

Statistics

Approved well locations

Year, wells permitted, wells for which COP receiving royalty, wells draining severed lands

- 2008, 21, 10, 11
- 2009, 179, 136, 43
- 2010, 303, 244, 59
- 2011, 315, 264, 51
- 2012, 76, 64, 12
- 2013, 79, 59, 20
- 2014, 47, 37, 10
- 2015, 6, 6, 0
- 2016, 0, 0, 0
- 2017, 0, 0, 0

Total Number of DEP Marcellus Well Permits issued to date on SFL: 1,074

Total Number of Marcellus wells Drilled on SFL: 653

Total number approved well pads from 2008 to present: 238

Total number Marcellus wells reporting royalties: 616

Comment: We’d like statistics on compressor stations during each update.

Revenue projection: $80 million

- Anadarko and Mitsui leaving the basin – divesting to Alta
- Companies divesting themselves in shallow assets
- Many companies splitting off midstream
- Several pipeline projects involving SFL – Atlantic Sunrise (Williams), Sunoco (Mariner East), Tennessee Gas (Susquehanna West) and Penn East
- 78,000 clicks on Conservation Explorer; 16,000 reports; 21,000 different users
- Habitat Conservation Plan – For IBat and long eared bat; probably not other bats – do we include massasauga and bumble bee?
- What industry is doing with Habitat Conservation Plans – future meeting topic?

Question: When is comment on HCP? Will be part of EIS process.

Cindy Dunn (DCNR, Secretary):

- Welcome Susan Legros, Center for Responsible Shale Development. Recruited by Cindy and wants to get this perspective to the table.
- Encourage companies to present at these meetings, get more involved and share information you have and things you have been learning.
- PA is emerging in all three realms of gas development: Science, conservation and industry.
- Introduced high level individuals in the department: Topo Geo, deputy directors, attorney, etc.
- Budget: DCNR remains whole, other states during poor budgets see parks get closed etc. We did not see that. We are asked to find efficiencies.
- We are losing 64 positions. We have 179 unique work locations. May not seem like a lot of positions, but it is significant.
- Conservation explorer is an efficiency we have found.
- We are a revenue producing agency. We are close in estimated projections to the fiscal office: $80-82 million.
- PA fortunate to have an experienced person in the budget office to help guide the state through these tough budgetary times.
- We are involved with riparian forest buffer initiative: 2-3 Million
- We have a revenue producing timber program - $17 million
- Parks contribute a couple billion to state economy.
- Tourism economy is significant
- Want to keep advancing the youth initiative.
- Even in tight budget times, we are moving forward with many initiatives.
Question: 1-2 billion dollars from parks? Is that revenue contribution to state or contribution to economy? It is contribution to state economy, not direct revenue to state. Study by PSU on park contributions to state economy – 40 million visitors. Forest Products industry is $19 billion contribution. $80 million from gas revenue is direct infusion to budget.

Question: Is $80 million in gas revenue all for DCNR? Portion goes to HASCA and the rest goes to DCNR for the 3 buckets: parks, forestry, other administration.

Question: Is the $80 million higher or lower than previous years? Last year we estimated $49 million, coming in higher.

Question: $80 million goes to general fund and a portion goes to DCNR? Proposed to come to us.

Question: What proportion in the past went to DCNR? It differs from year to year.

Comment: I want to see the breakdown of revenue that goes back to DCNR.

11A-Committee Member updates

Scott Perry (DEP)

- Oct. 8, 78A regulations finalized.
- Volume of permits has gone up since that date. Enough to fund program under this change.
- We are at a record low number of wells drilled in PA for this year.
- Have record high gas production: 4.5 billion cu feet/month?
- Created unconventional well work group.
- Leaking oil well on Tionesta River – was dealt with proactively by the company. Legacy issue dealt with without fear of retribution from DEP of being responsible for it once they touch it.
- Range Resources found leaking conventional and worked to take care of it in a trailer park.
- Reuse of liners for new products or additional sites – work group formed to deal with used liners that were subject to spills or releases.
- Re working erosion permit, high light “superior” BMPs.
- Expedited permitting process, being reviewed because many of these permits should not have gone through. Expedited process, not necessarily bad, just needs revised.
- Disposal wells and fracking activities that could induce seismic events. Work group to address this. Creating a guidelines document to monitor for small magnitude events (2.5-3.0 on Richter scale). Want to prevent low magnitude earthquakes.
Susan Legros (Center for Responsible Shale Development)

- CRSD is a group of environmental and industry groups.
- How can the diverse groups with differing perceptions work together to assure highest standards are adhered to?
- Knowing DEP regulations take time.
- 15 performance standards that are agreed upon by all to ensure continued improvement.
- Voluntary standards with buy-in from all in the group.

  Cindy – particularly of interest to DCNR because of Green Initiative to improve efficiencies

  Question: – How many companies have been certified? 4

Stephen Barondeau (Anadarko)

- Alta has conveyed that they will operate the way Anadarko has.
- Alta has made job offers to all those in Anadarko that want to continue working in PA.
- Company change, people may be same.

Lance Ridall (Repsol [formerly Talisman])

- Drilling 29 wells this year.
- Completed a Utica well in Bradford county
- 15 miles of pipeline going in, portions across SFL
- Bringing 5 DCNR wells on line this year
- Not focusing on Utica.

Richard Stafford (Carnegie Mellon University)

- Projects with different companies.
- Methane issues, how to measure leakage.
- Promised Jerry Cohen to invite everyone to Energy Week (conference on range of issues, not just gas)

Susan Stout (U.S. Forest Service)

- Health Effects center developed a research agenda on effects of Marcellus Shale development. Also, another document on shale gas development for regional, back to 2010 executive order, involved USGS, USFS.

  Question: What happens to information if never published? Not available.
Patrick Drohan (Penn State University)

- E&S workshops for hydrologic models. DCNR mock pad site. Developing base peer review paper on the mock pad site.

  Comment: Would be helpful to better understand slip prone areas in the south west.

Jim Weaver (PA Wilds Planning Committee)

- Endless mountains WINGS project, wildlife habitat on pipelines.
- Feathered edges verses hard edges.
- Expand riparian buffers where streams cross pipelines.
- PA Wilds planning team has been reorganized – establishing 3 standing committees for the group.
- Oil and gas supplement will be in revised design guide.
- Pine Creek watershed council working on monitoring with Trout Unlimited across northern tier – pipeline corridors being added – citizen sciences.
- A documentary forthcoming on citizen scientists.
- How to foster culture of stewardship verses culture of compliance.
- Happy with support and cooperation received from BOF district staff.

11:20A-WPC shale gas monitoring (Ephraim Zimmerman, Western Pennsylvania Conservancy)

[Powerpoint provided on website.]

2013 WPC did ecological assessment of high values lands associated with shale gas development.

Goal is to establish baseline, assess impacts, if any, to inform policy.

Some rare species found in Marcellus and Utica shale region

Nearly 90% of wilderness trout streams found in shale gas region.

Purpose:

- Conduct baseline assessment
- Aquatic and terrestrial indicators of quality
- Monitor the species and quality of ecosystem over time
- Collaborate with other monitoring efforts

Ecological value assessment

Long-term monitoring sites allocated to the northwest due to concern about Utica, but that didn’t happen, but the sites are there.
Monitoring targets:

- Water
- Forests
- Rare and important species

Water, a total of 51 sites

- EPA rapid visual assessment
- Field and lab chemistry
- Macroinvertebrates
- Riparian veg assessments
- Continuous monitoring

Results – habitat rankings fairly high, these are headwater streams.

Biological indicators of stream health – excellent.

Water chemistry results – lower TD in forests, correlation of barium and strontium with presence of shale gas wells (elevated, but not so high to exceed levels of concern)

Forests

- 25 sites focusing on birds
- Habitat measures
- Disturbance assessments
- Landscape assessments

Results – base levels of disturbance are prevalent, impacts of herbivory.

Bird community abundance

Site in NH forest and Oak forest, low disturbance – more dissimilarity of spp., High disturbance – more similarity of bird species.

As more development occurs, more generalist bird species move in.

Next steps:

- 2017-2018 Revisits
- Focus activities on areas with active shale development
- Focus on forest and water monitoring

Looking at just 15 sites where activity is occurring, rather than all 31.

BOF sites – Kettle creek, Lick Run and Hyner Run.
Question/Comment: Strontium/Barium numbers elevated above average? Have to have some values above and below the average. Snow Shoe area barium levels were high, but reason was no buffering capacity and acid rain is likely the reason.

Question– Are you looking at historical records to see where stuff was in the past so as not to blame current infrastructure unduly?

Comment– In PA, Fish and Boat has been adding Wilderness Trout Streams. Seems to be a macro indicator that conditions are sustained or even improving. Follow-up comment that that there have been tremendous efforts to improve streams. Follow-up comment that there have been some added due to just having new data and the stream getting identified.

1P-EDWIN (Gale Blackmer, DCNR – Bureau of Topographic and Geologic Survey)

Gale Blackmer (State Geologist)

[PowerPoint Handout provided at meeting, and Powerpoint slides provided on website.]

Exploration and Development Well Information Network (EDWIN)

Short discussion of landslides per Secretaries request:

- Risk maps
- Pilot study based on DEMs and GIS data
- More than just where have landslides occurred – predictive modeling

EDWIN

- Named after Edwin Drake
- Started in September 2016 by BTGS
- Replaces PA*IRS/WIS

Comment – Referenced for use by DEP, but guidance says to ‘be used when available,’ but launched in September 2016. DEP needs to update and better communicate that this is ready to use.

- Access to 178,000+ wells of record
- Also, several thousand legacy wells
- Well documents
- Data from the well documents in database form
- Subscription services available ($5,000 set up fee, then $500 annually)
- Public walk-in access available at Pittsburgh and Middletown offices
- 100,000+ transactions/services per year

Question/Comment: Concern about cost of subscription. Likely someone at PSU would have a subscription and by working with Kristin Carter (according to other member) you could likely get a waiver for academic and research pursuits.
Question: What about landowner looking for information on existence of well on property? Likely best to call in and get the information without having to pay.

1:30P-LWCF and other grant funded protected lands (Ashley Rebert, DCNR – Bureau of Recreation and Conservation)

[Powerpoint handout provided at meeting, and Powerpoint slides available on website.]

Question: How much money came to LWCF? $165 million since 1965.

Question: Was there a lot of discussion on what is considered allowable use? Yes there was and this is dealt with on a case-by-case basis.

Question: Any state lands leased for gas drilling where LWCF $ was used to purchase them and has that changed things? With regards to pipelines, Department is working with NPS to reach a determination. Many of the pipelines on state lands follow existing, pre-LWCF rights-of-way. When it comes to underground pipeline infrastructure, it traditionally did not constitute a change of use if there was no surface disturbance. However, NPS is working on additional guidance for the states regarding underground utilities. All proposals regarding utility development need to be submitted to NPS for review.

Gas development is considered separately. Previous NPS manuals suggest that gas development is OK if recreation is not impacted and surface structures are within previously existing rights-of-way. That is the present position of DCNR. From an LWCF standpoint the NPS is mostly concerned with impacts to recreation, not ecological impacts. It is a site-by-site determination.

Question: Are lands with LWCF $ available to view? Information is on web page.

Question: Did Project 70 money fund mostly surface rights only? Yes, but caveats in Project 70 rules allow for development and leasing as long as consistent with primary use.

Question: Who trumps who with the programs, FERC or NPS? FERC gave ruling that companies work with DCNR on conversion determinations.

Question: What if they have documentation or authorization for condemnation? This is still being worked through at the Federal level.

2P-DCNR shale gas monitoring report update (Shawn Lehman, DCNR – Bureau of Forestry)

[Powerpoint slides available on website.]
2014 Report

- High level of interest and anticipation
- Comprehensive
- Focused on 15 Monitoring Values
- Included data through 2012

“Next” Report

- Interest and desire for another report, but not at same level as in 2014
- Timeline 2017-2018 release
- 4 new years of data, through end of 2016
- Will report on change and adaptive management.
- Redesigned to make better and emphasize adaptive management and overlap of values.

Question: Any preliminary results we should be concerned with? Invasive plants.

Question: Are we considering broader trends in invasive plants, say as also occurring on ag land? We are involved with the Invasive Species Council, which looks at invasive on all lands and is led by the Dept of Ag. We do Continuous Forest Inventory, which looks at invasives on all of state forest land. Interior forest conditions, as far as invasives, is much different than ag land.

“Bean Counting”

Described how improvements in mapping will change the calculation of disturbance, such as number of pads, limit of clearance, and conversion.

Comment: Make sure we are clear about differences between limit of clearance and conversion acreage. We plan to lay it out clearly, but we think it is important to report on both.

Air Quality

Consulted with Restek.

Learned of canisters and thermal desorption units and their application to air monitoring.

Air sampling is feasible – well within our scope of expertise.

However sampling design is complex and makes it time and cost prohibitive.

Best if we work with experts in DEP Bureau of Air Quality.

Question: Have we been in contact with NETL or EPA? Yes, with NETL. They had planned some air quality work, but lost funding.
Question: Couldn’t we just try some minimal air sampling? Restek is still looking to help us pilot some approaches. Cost is $250/sample, roughly. Cost prohibitive.

Comment: DEP has done the type of sampling described and found little effects to be concerned with. One such study did not find quantifiable hits of benzene. DEP has several short-term studies completed. All information to date for DEP is that living near well pads is safe. Long-term studies are underway. Probably not much value in DCNR taking samples.

Comment: National Academies report that Drohan was involved with found problems. He can share this information with DCNR.

Question: What would be the top 10 analytes of concern? We don’t know. Industry commented that they could help us determine that. Stafford could also recommend some contacts at CMU that could help.

Comment: There are some meters that will measure some analytes, such as PM2.5. PM2.5 would be mostly from diesel engines, and would often show short term spikes from truck traffic.

Question: What happened with the noise monitoring that we discussed several meeting ago? Shawn explained our noise monitoring program – leaf-on and leaf-off each year for all active compressors. Gabrielson from PSU did measurements on sound propagation and quality. Newman from PSU is about to start study on annoyance for humans.

Question: What about effects on wildlife? Brittingham is hoping to do pilot study with speakers and nest boxes for birds, and also another sound propagation analysis with GIS.