



Map of Marcellus formation natural gas drilling sites identified during 8/27/09 field trip to Bradford County, PA.



1. Water withdrawal site



2. Completed well



3. Active drilling rig



4. Completed well



5. Drilling pad



6. New pipeline



7. Pipe storage yard



8. Active drilling rig



9. Truck damage to road



10. Unrestored well pad

Note: All photos taken from public rights of way or with permission of property owners.

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Water withdrawal site at Sheshequin, PA. Site consists of a gravel pad approximately 1 acre in area with four hydrants hookups, generator and pump. The actual intake in the river is approximately 1,000 feet to the left of the photo and is connected to the pad by an underground main. These water withdrawal pads are subject to local zoning regulations and some townships and boroughs require site plan approval or special permit review.



New drilling pad being developed in Smithfield Township. The pad is located on abandoned pasture land.

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New drilling pad being developed off Mile Lane, Athens Township, on abandoned farmland.



The Bense Pad, located just west of Troy, PA. The pad covers about one acre and is located on what was actively farmed land, probably hay field. (The neighbors gave me access across their land to photograph.)

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Signs posted at the entrance to the Bense Pad. Sign on left is required by the SRBC and indicates a maximum water usage of 3 MGD; sign on right indicates that four wells are being drilled from the pad.



Natural gas drilling operation off Springfield Road, Springfield Township, located on area of active cropland.

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Completed natural gas well on cropland off Ballantine Road in Smithfield Township. The lighter green vegetation within red dashed lines indicates size of area of disturbance from former drilling pad. Site appears to be restored to former condition.



Ballantine Road well from approximately 0.4 miles away. Lighter area of vegetation to the left of well and tank indicates area of drilling pad disturbance.



Typical area of failure along Fallbrook Road (SR 3032) on Armenia Mountain. It appears that area of sub-base has failed, causing the road sub-base and surface to sink and displace to the right and upward. In numerous places the road exhibits such damage from heavily loaded truck traffic. A ruling road gradient of 10% or more exacerbates the impact of heavy trucks on the pavement due to the additional horizontal forces exerted by the driving wheels of a truck. Fallbrook road is a state owned and maintained road.



Another damaged section of Fallbrook Road. Lighter areas within oval indicate where cars and light trucks have scraped the area of pavement where the road has been displaced upwards 6 inches or by heavy trucks.

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Drilling rig and new wind turbines, Armenia Mountain.



Wind Turbine pad and turbine components, AES Armenia Mountain Wind Farm currently under construction.