pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS MANAGEMENT

WELL RECORD INSTRUCTIONS
(Unconventional Operators only)

Pursuant to 58 Pa C.S. §§ 3222(b)(1) and 3222(b)(2), and 25 Pa Code § 78a.122(a), an operator shall maintain a record of each well drilled or altered and file that record with the Department within 30 days of cessation of drilling or altering the well. A Well Record should not be filed with the Department until all drilling or alteration activities conducted pursuant to a particular permit have ceased. Submission of a Well Record indicates that all drilling or alteration activities conducted pursuant to a particular permit have been completed. Alteration activities are operations which change the physical characteristics of a well bore, including stimulation or removing, repairing or changing the casing.

Note: On any attachment to this report, indicate the US Well No. (API No.) (to 14 digits) on the top of the attachment and the title of the section for which the additional information is being provided.

Top Right – DEP Use Only box – operators do not fill anything in.

Well Information Block

Well Operator – name of operator as it appears on the well permit and the bond.

DEP ID # – eFACTS Client Id. Assigned to each client/operator and used by all DEP programs. It can be found on the DEP eFACTS website.

Address – address of the operator's office submitting the Well Record and where follow-up communication can be directed. Include:

City, State, ZIP + 4

Phone, including area code.

Email – address of person responsible for signing Well Record as agent of the operator. Signature authority / power of attorney should have been provided to all applicable DEP oil and gas regional offices.

US Well No. (API No.) – the US Well No.(API No.) number assigned to the well and all approved laterals under a permit. If the permit provides for drilling multiple laterals (XX-XXX-XXXXX-00-00 and 01-00), each lateral (00-00 and 01-00) should have a separate Well Record submitted identifying the information specific to each lateral.

Farm Name – name given to the well by operator.

Well # - alpha/numeric identifier given to the well by operator. Typically ends in "H" when identifying a horizontal lateral.

Latitude – Enter the actual "as drilled" latitude of the surface hole location of the well in decimal degrees. This should be in North American Datum of 1983 (NAD 83) and must meet the current DEP policy regarding locational accuracy.

Longitude – Enter, as a negative value, the actual "as drilled" longitude of the surface hole location of the well in decimal degrees. This should be in North American Datum of 1983 (NAD 83) and must meet the current DEP policy regarding locational accuracy.

Project Number – if the well was identified as part of a "project" as defined in the Oil and Gas Act, it would have been assigned a project number by DEP and identified on the permit.

Serial # – an identifier given to the well by operator as a cross reference for their internal identifier.

Municipality – name of the local governmental unit in which the surface hole location of the well is found.

County – county name in which the surface hole location of the well is found.

Borrow Pit – if a borrow pit was used for well site development, list the borrow pit name(s) and ID(s), once registered by the Department. A borrow pit is an area of earth disturbance activity were rock, stone, gravel, sand, soil or similar material is excavated for construction of well sites, access roads or facilities that are related to oil and gas development.

USGS 7.5 min. Quadrangle Map – name of the quad map on which the well can be located.

Section – enter the section number (1-9). Section numbering begins at the top left corner tic mark of the quad and then within the row proceeding to the next lower row to the lower right section of the quad's 9 sections.

1	2	3
4	5	6
7	8	9

Check the applicable box to indicate if this is the **Original Well Record** (first) or if it is a revision to an earlier Well Record, i.e., an **Amended Well Record**.

Check Well Type:

Gas – producing gas as the marketable product.

Oil – producing oil as the marketable product.

Combination – producing gas and oil/condensate as marketable products.

CBM – producing gas from a coal seam, coal bed, mined-out or gob wells.

Injection – purpose of well is only for injection to enhance production at other related well(s) by secondary or tertiary recovery.

Disposal – well will be used to inject oil and gas related waste into a disposal horizon. Must also obtain UIC permit.

Storage – well will be used to inject/retrieve product from a storage field or as an observation well of the field.

Well Orientation – check **Vertical** if well was not deviated from vertical by more than 3 degrees. Otherwise check **Deviated** and include: As built Top/Plan view diagram indicating Surface and Bottom hole locations and depiction of actual wellbore path between the two; Side view diagram that identifies at a minimum the Surface Elevation above sea level, KOP – Kick Off Point depth, Landing Point/Target Formation depth, Toe depth and deepest point of well if not any of the preceding points, top of the Onondaga Limestone should also be represented on the side view diagram.

Drilling Method(s) – check all that apply, and to what depth that method was utilized by indicating length of the wellbore drilled by that method in the field following the applicable method.

Drilling Started – enter **date drilling started** for the surface hole (Spud Date) (MM/DD/YYYY). Date the first bit hit the dirt.

Drilling Complete – enter **date drilling** of wellbore was finished/**completed**. (MM/DD/YYYY). All laterals drilled under permit authorization have been drilled or decision made to drill no further under this authorization.

Date Well Completed – enter **date** wellbore was finished/**completed with casing and cemented** (MM/DD/YYYY) This is not the well completion date after stimulation, but is the completion date if the well is not stimulated prior to producing.

Surface Elev. – enter **Surface Elevation** as referenced by the ground surface at the well head in feet above mean sea level.

True Vertical Depth – enter the **True Vertical Depth** of the deepest point of the wellbore (feet from Surface elevation) in feet.

Total Measured Depth – enter the **Total Measured Depth** of the wellbore indicating the length in feet of the total drilled distance of the applicable wellbore/lateral from the surface elevation. AKA drillers or loggers depth.

GW Depth – enter the depth in feet from surface to the first water bearing zone that marks the beginning of continuous groundwater saturation. This information provides the basis for estimating the hydrostatic head of the surface casing seat.

Depth of DFGW – **(Deepest Fresh Ground Water)** – enter the depth (TVD) in feet from the surface elevation that was determined to represent the base of the deepest fresh groundwater unit for this well. Indicate if deeper zones are encountered requiring additional casing string(s). For subsequent operations in the well to drill deeper, or for additional lateral(s), indicate "NA" (Not Applicable) if the depth of the surface casing seat does not change for the operations. For additional wells drilled on the same well pad, identify this well as the DFGW depth determination unless drilling provides details that the additional wells have DFGW depths different than this well. Surface casing is

required to be a minimum of 50 ft. but no more than 200 ft. deeper than the DFGW depth unless it is necessary to extend the wellbore to seat the casing in consolidated rock.

DFGW decided by: Enter one or more of the following codes to identify what procedure was used to determine the deepest fresh groundwater for this well.

1 – Log of well while drilling, i.e., water quality meter testing.

2 – Borehole geophysical logging of open hole.

3 – Monitoring well installation and sampling.

4 – Drill stem testing.

5 – Geologist determination.

6 – Other – list method used.

Wellbore Conditioning – detail how wellbore was conditioned for each string prior to cementing and time/volume/rate BPM/material used to condition the wellbore to enhance cement bonding to the wellbore. Attach additional numbered sheets as needed. Identify sheets as Wellbore Conditioning attachment and enter See attached sheet(s).

Cement Block

Cement return on surface casing – indicate "yes" or "no" if cement was returned to the ground surface elevation for the surface casing. If not returned to the ground surface, provide the depth from surface for the top of cement and how top of cement was determined, i.e., tagged or logged and log type.

Cement returned on coal protective casing – indicate "yes" or "no" if cement was returned to the ground surface elevation for the Coal Protective casing. If not returned to ground surface, provide the depth from surface for the top of cement and how top of cement was determined, i.e., tagged or logged and log type. If not a coal well and no protective string required, check N/A box.

Cement returned on intermediate casing – indicate "yes" or "no" if cement was returned to the ground surface elevation for the intermediate casing. If not returned to ground surface, provide the depth from surface for the top of cement and how top of cement was determined, i.e., tagged or logged and log type. If no intermediate string was installed or hung from the prior string, check N/A box.

Casing String

Conductor – indicate material used to seal annular space between inside of wellbore and outside of conductor casing. If conductor pipe is driven, indicate N/A.

Surface – indicate type/class of cement used and any admixtures in blend. If weight and/or admixtures were varied over the course of the cement job, indicate how many sacks of which type in lead and tail volume.

Coal Protective – indicate type/class of cement used and any admixtures in blend. If weight and/or admixtures were varied over the course of the cement job, indicate how many sacks of which type in lead and tail volume.

Intermediate – indicate type/class of cement used and any admixtures in blend. If weight and/or admixtures were varied over the course of the cement job, indicate how many sacks of which type in lead and tail volume.

Production – indicate type/class of cement used and any admixtures in blend. If weight and/or admixtures were varied over the course of the cement job, indicate how many sacks of which type in lead and tail volume.

Indicate any additional casing strings cemented in the wellbore, providing the type/class of cement used and any admixtures in the blend. If varied weight and/or admixtures over course of cement job indicate how many sacks of which type in lead and tail volume.

For each of the above casing strings:

- Enter the **Type or Class of Cement** used and if weight and/or admixtures were varied over the course the of cement job for that particular string, indicate the different type or class used.
- Enter the **Slurry Temperature F°** of the cement as it entered the wellbore. If substantially different for variable type/class or weight of slurry or lead and tail blends, note the different temperatures in degrees fahrenheit.

- Enter the **Amount of Cement** (sacks) placed in the wellbore to cement the applicable casing string. If different lead and tail blends were used over course of the cement job, indicate how many sacks of which type in lead and tail volume. Enter total sacks used. If consistent slurry is used throughout the cementing of a particular string, enter just the total.
- **WOC** (hrs). Enter the elapsed time in hours and decimal parts thereof from the time of emplacement of the cement (latch down of float shoe) until any reentry into the well bore – except for wireline logging to determine top of cement when not returned to surface as detailed in 25 PA Code §78.85(c) or as approved by the DEP under 25 PA Code §78.85(d).
- **Wt PPG.** Enter the weight of the slurry mix in pounds per gallon of the lead and tail blends if varied. At a minimum, the weight of the slurry emplaced in the zone of critical cement (25 PA Code §78.85(b) shall be entered.
- **Yld/ft^3/SK.** Enter the yield in cubic feet per sack achieved by the cement. If different lead and tail blends were used over the course of the cement job, indicate the yield of each. (EX.: 1.53/1.39)

Total Line should total all sacks of all above entries of the wellbore cemented.

Gas Migration Controls Used – free form text box provided to detail any controls used to minimize gas migration in the cement sheath. Any special additives or hardware utilized should be listed along with relevant depth intervals, as necessary.

Casing and Tubing Block

Hole Size – enter the diameter in inches of the drilled wellbore for the various casing strings listed as used in the above block.

Pipe Size – enter the outside diameter in inches of the casing/tubing for the various casing strings listed as used in the above block.

Wt. #/Ft – enter the casing weight per foot.

Grade Casing / Tubing Type – enter the **Grade** of the casing for the various casing strings listed as used in the above block and indicate if casing is new or used.

Thread / Weld – New/Used – enter a "T" if **threaded** and a "W" if **welded** pipe is emplaced and "**N**" if the string is

New or "**U"** if **Used** casing is emplaced.

Amount in well (ft.) – enter the length in feet of the applicable casing string emplaced in the well.

Country of Origin (CO) – provide the two digit country codes defined in ISO 3166 (www.iso.org/iso/country_names_and_code_elements) for the country of origin and manufacture of the steel casing or tubing.

Mill Test Report (R) – is the Mill Test Report (a.k.a. Material Test Report) of the tubular steel used available? Y = yes, N = no.

Hardware – indicate what hardware (Baskets, Packers, Centralizers, Float Shoe, Guide Shoe, Float Collar, Multiple Stage Cementer, Inserts or other casing hardware items) that were used and their position by depth in feet from surface for each type. For centralizers, the total number of centralizers on each string and the depth of the lowest and highest centralizers shall be indicated. Attach additional sheets as necessary.

Date Run – date the casing/tubing was installed in the well. This is the date the cementing is completed for that string or the packer is set for the string.

If Welded Pipe – this field applies to any welded casing or tubing in the well. Enter the name(s) of the certified or grandfathered welders.

Plug-back/Wellbore Alteration Block

Fill Material & Plugs – enter the type of material used to fill each portion of the wellbore being plugged back, placement of material, cement and/or type of mechanical hardware.

Depth – enter the "From" (bottom) and "To" (top) depth of the filled interval for each different plugging material used. For installed hardware simply enter the top depth.

Date – enter the date of completion of each phase of the plugging operation.

Casing & Tubing – enter the size of any casing/tubing in the well at the beginning of the plugging operation and how many feet of each were removed or left in the well during the plugging operation.

Note: The Well Record form is only used for partial plug backs of the wellbore. If the plug back is not in conjunction with the original drilling operation, the amended well record box should be checked. If the wellbore is being completely plugged as a final plug ("plugged and abandoned") the Certificate of Well Plugging form 8000-FM-OOGM0006 should be used.

Log of Formations Block

US Well No. (API No.) – the US Well No.(API No.) assigned to the well. This should be the same as indicated on the first page of the form.

Formation Name or Lithology – starting at the surface, provide the name of each formation and the TVD from the surface to the top and bottom contact of each formation encountered as the wellbore is being drilled. Total measured depths may also be provided for directional legs of the well, but should be clearly distinguished from TVDs, which are most critical for estimating the thickness of each formation. If the formation name is unknown, describe the characteristics of the various rock units (general lithologies – e.g., sandstone, shale, limestone, etc.) drilled through and indicate the distance in feet from the surface to the top and bottom contact for each lithostratigraphic unit described. Enter each show of any gas, oil, or water noted, and the feet below surface at which it is encountered. All gas and water shows should also be reported in terms of TVD. For all Water shows listed, indicate type as either "F" (Fresh) or "B" (Brine).

If there are no shows of fluids, explain why none were observed during drilling of the well.

Well Service Companies Block

Casing Source/Manufacturer – provide the name of the Service Company, the street address of the local company including the City, State, Zip Code, and their phone number.

Cementing Company, Hardware Supplier and Logging Company – provide the requested information for the casing supplier, hardware supplier, cementing company, logging company and stimulation company, as applicable.

Driller – provide the name of the drilling companies that drilled the well. Provide the **Rig** identifier and the street address including the City, State, and Zip Code, as well as the phone number of the drilling company. If more than one drilling company worked on different portions of the well, enter "See Attached" and attach an additional sheet providing the same information requested indicating all drillers that worked on the well and the portion (footage) they drilled and for which they provided formation logs.

Well Operator's Signature – representative of the operator of the well that is authorized to sign on behalf of the operator. Signature authority should have been provided to the applicable regional offices.

Enter the Title of the signatory and the date signed.

Lower Right – DEP Use Only box – operators do not fill anything in.