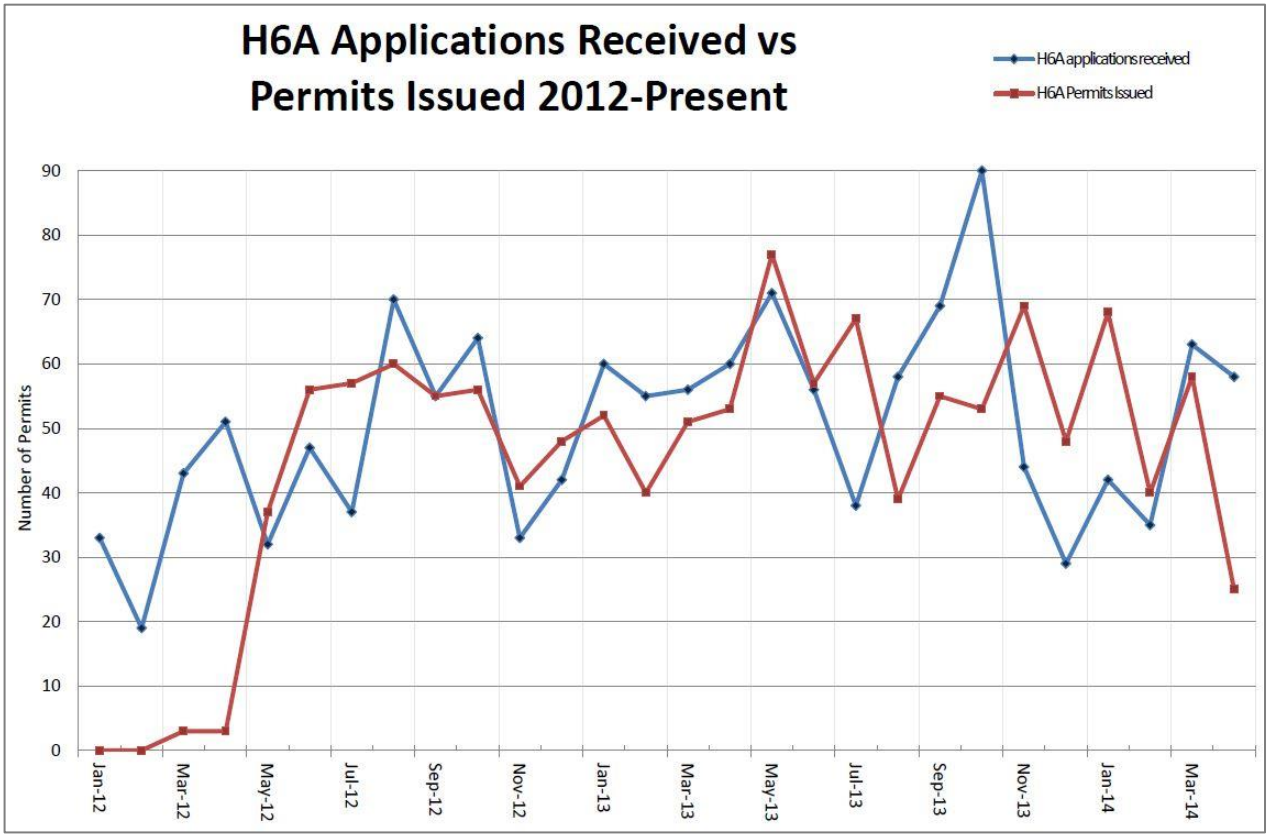
Horizontal Well Permitting & ePermitting Update

west virginia department of environmental protection

Laura Cooper
Environmental Resource Analyst, Permitting

Oil & Gas Workshop, Charleston Civic Center
May 15th, 2014

WV Horizontal 6A Permits Issued 2012 – 2014



Horizontal 6A Permits Issued in 2014				
MONTH	Applications Received	Permits Issued #	OOG Days	Total Days
January	42	**68**	66	95
February	35	**40**	78	86
March	63	**58**	74	85
April	58	**25**	65	80
TOTAL	**198**	**194**		
YTD Avg			**71**	**88**

H6A Permitting Update

What's New?

- 35 CSR 8 update by Legislature has eased MSDS requirements
- NEW Site Safety Plan Structure
- HOW we want to receive water well predrill data
- NEW H6A Permit Condition regarding Spud Date notification
- ESS (ePermitting) Status

What's Old?

- Lease requirements
- Plat requirements
- Need for attention to detail in permit applications
- Need to protect safety of school kids

MSDS requirement change in 35 CSR 8

Changes were made to 35 CSR 8 in the 2014 Legislative Session!

35 CSR 8 *used to say* Site Safety Plan shall:

"encompass all aspects of the operation, including the actual well work for which the permit is sought, the anticipated MSDS Sheets, and completion, production, and work-over activities."

35 CSR 8 *now says* Site Safety Plan shall:

"encompass all aspects of the operation, including the actual well work for which the permit is sought, the anticipated MSDS **for the chemical components added to the hydraulic fracturing fluid**, and completion, production, and work-over activities."

MSDS requirement change in 35 CSR 8

35 CSR 8 *used to say* Operator shall:

"also provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule."

These changes effective on June 1st, 2014

35 CSR 8 *now says* the above, PLUS:

" ***Provided*, That in the event the Well Site Safety Plan previously provided to a surface owner, water purveyor or surface owner, is later amended, in whole or in part, the operator shall provide a copy of the amendments to the surface owner, water purveyor or surface owner."**

Site Safety Plan "shall be made available…"

FYI, 35 CSR 8 *STILL says*:

It shall be made available on the well site during all phases of the operation and provide an emergency point of contact and twenty-four (24)-hour contact information for the well operator. At least seven (7) days before commencement of well work or site preparation work that involves any disturbance of the land, the well operator shall provide a copy of the well site safety plan to the local emergency planning committee (LEPC) for the emergency planning district in which the well work will occur or to the county office of emergency services.

What this means:

- **Have SSP on site at all times**
- **Week before construction begins, give a copy to Emergency folks (LEPC)**

New Site Safety Plan Organization

Operators should already be using this new structure for Site Safety Plans

Site Safety Plan Table of Contents

For H6A Well Work Permits and Deep Well Work Permits

Please prepare a Site Safety Plan to accompany each applicable H6A to the following organizational and informational structure. Plans content entirety including page-number references.

1. Contacts, Schedules, and Meetings

A. Emergency point of contact for the well operator coverin hour contact information (35-8 5.7.b.4)
B. List of telephone numbers for (35-8 5.6.4):
   1. Operator
   2. Contractors
   3. DEP office and oil/gas inspector
   4. Local emergency response units
   5. Local ER personnel
   6. All schools and public facilities within a one mile radiu
C. Method of notification of public of H_2S gas presence and horizontal wells include all residents and emergency resp event. Such events may include the presence of H2S, blo
D. Pre-spud meeting held prior to drilling operations, includ
   1. Attendance log, including personnel to be employed
   2. Notification of County oil and gas inspector or other representative
E. Describe schedule for conducting regular well site safety also initiate check in check out during drilling, completion

2. Maps and Diagrams

A. Plan view map of location, access road, pit(s), flare lines, and the prevailing wind direction (35-8 5.7.b.1)
B. Topographic map of well location, including
   1. 1 mile radius of well location
   2. UTM NAD 83 coordinates of well site entrance (35-8
   3. UTM NAD 83 coordinates of the point the access roa
   4. Identify public route number and/or route name (35-
C. Evacuation plan for the removal of personnel from the dr surrounding area who have the potential to be affected b

3. Well Work

A. Detailed written descriptions of well work and procedure and production phases, including schematic plan views of
B. Statement detailing how a copy of the plan will be provid committee or county emergency services office within at work (35-8 5.7.a)

4. Chemical Inventory & MSDS

A. Material Safety Data Sheets for all chemicals anticipated to be used in all aspects of the operation (can be provided on CD or USB drive) (35-8 5.7.a)
B. Statement that all MSDS are to be readily available at the well site and their location indicated in the site safety plan including contact information for person(s) responsible maintaining them on site. (35-8 5.7.g)
C. Inventory of all materials on site for mixing o mud amount and weight, amount of weightin 5.7.d.2)

5. BOP and Well Control

A. BOP equipment and casing heads with types, drilling for both intermediate and lateral drill
B. Procedure and schedule for testing the BOP initial set up and the annular tested to 70% o testing % for bottom and horizontal phase ex and after each bit trip (35-8 5.7.c.2)
C. BOP equipment and assembly installation sch
D. List and names of all personnel with well con
E. Description of system of maintaining detailed inspector for all significant drilling issues, incl
   1. Lost circulation
   2. Hydrogen sulfide gas
   3. Fluid entry
   4. Abnormal pressures
F. Notification of the oil and gas inspector or de unusual drilling events, hydrogen sulfide gas* *(Mandatory immediate notification is requi >10ppm H2S Gasses!) (35-8 5.7.c.5)
G. Schematic and detailed written description o completion (35-8 5.7.c.6)
H. Method and type of kill procedures as recogr 5.7.d.3)

6. Hydrogen Sulfide (H_2S)

A. Detection, monitoring and warning equipme equipment on the site (35-8 5.7.e.1)
B. Statement of H_2S personnel training provided
C. Method to notify the OOG of H_2S presence
D. Establish and maintain Protection Zones. Des drilling phases. (application horizontal wells phases) (35-8 5.7.f.2)
E. List of personal protective equipment (PPE) and the amount of each piece of PPE that will be maintained and available on site. (35-8 5.7.e.3)

7. Flaring

A. Proposed written description and plan including schematic of installation for duration of flaring activities (35-8 5.7.f.1)

8. Collision Avoidance

A. Protocol and established safeguard designed to prevent underground collisions during any drilling on multi-well pads(35-8 5.7)

9. Deep Well Additional Requirements

A. List of anticipated freshwater, saltwater, oil and gas, hydrogen sulfide, thief zones, high pressure and volume zones and their expected depths
B. Detailed casing and cementing program that employs a minimum of three strings of casing which are sufficient weight and quality for the anticipated conditions
C. Flaring activities: Size, construction and length of flare line-anchor method and choke assembly description, Flare lighting system and back up igniters, Notify local fire department (if possible) prior to igniting flares, Minimum clearing distance beyond end of flare.
D. List of names, addresses, and telephone numbers of all residents, businesses, churches, schools and emergency facilities within 1 mile radius that may be affected by specific events during the drilling process. Such events may include presence of hydrogen sulfide, and flaring, etc.

10. Deep Vertical Well Requirements per Policy Statement (Deep Well Drilling Procedures and Site Safety Plan Requirements)

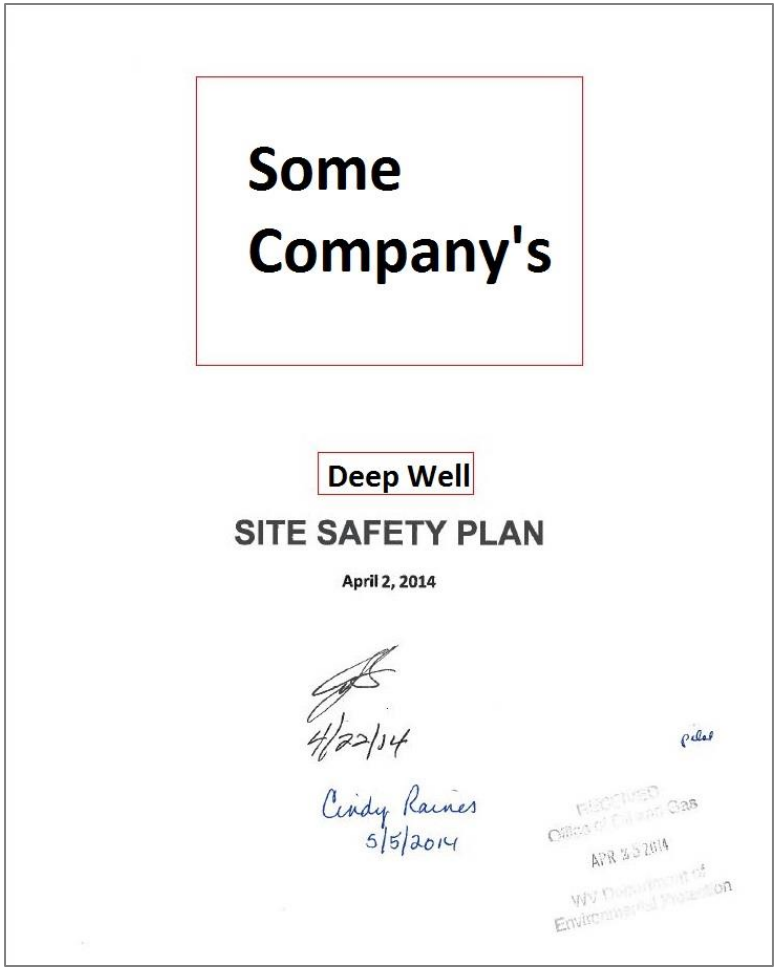
The following selections are needed from the above contents:

1. A - E (E. drilling phase only)
2. A - C
3. A (drilling phase only)
4. B - C
5. A - H
6. A - E
9. A - D.

Good Example of SSP with New Structure

Good adherence to new SSP structure got this Deep Well SSP approved by Cindy super quick!

Adobe Acrobat Document



Some Company's

Deep Well

SITE SAFETY PLAN

April 2, 2014

4/22/14

Cindy Raines
5/5/2014

RECEIVED
Office of Oil and Gas
APR 23 2014
WV Department of
Environmental Protection

Water Well Predrill Analytical Data

What to test for?

all parameters stated in 35 CSR 8 15.3.b

Where to sample?

wells within 1500' or 2000' if none are found within 1500'

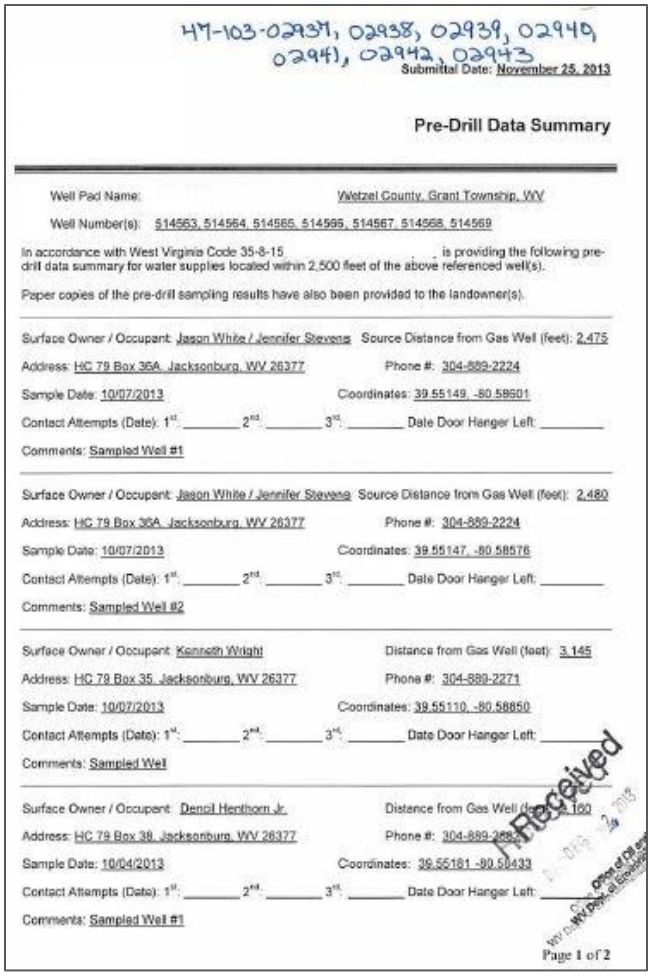
Why is it important?

to provide rebuttable presumption that drilling was not the cause of contamination

Next: **How** we want to receive them…

Water Well Predrill Analytical Data

How we have been receiving the data:



47-103-02937, 02938, 02939, 02940, 02941, 02942, 02943

Submittal Date: November 25, 2013

Pre-Drill Data Summary

Well Pad Name: Wetzel County, Grant Township, WV

Well Number(s): 514563, 514564, 514565, 514566, 514567, 514568, 514569

In accordance with West Virginia Code 35-8-15 , is providing the following pre-drill data summary for water supplies located within 2,500 feet of the above referenced well(s).

Paper copies of the pre-drill sampling results have also been provided to the landowner(s).

Surface Owner / Occupant: Jason White / Jennifer Stevens Source Distance from Gas Well (feet): 2,475
Address: HC 79 Box 36A, Jacksonburg, WV 26377 Phone #: 304-889-2224
Sample Date: 10/07/2013 Coordinates: 39.55149, -80.58601
Contact Attempts (Date): 1st: _____ 2nd: _____ 3rd: _____ Date Door Hanger Left: _____
Comments: Sampled Well #1

Surface Owner / Occupant: Jason White / Jennifer Stevens Source Distance from Gas Well (feet): 2,480
Address: HC 79 Box 36A, Jacksonburg, WV 26377 Phone #: 304-889-2224
Sample Date: 10/07/2013 Coordinates: 39.55147, -80.58576
Contact Attempts (Date): 1st: _____ 2nd: _____ 3rd: _____ Date Door Hanger Left: _____
Comments: Sampled Well #2

Surface Owner / Occupant: Kenneth Wright Distance from Gas Well (feet): 3,145
Address: HC 79 Box 35, Jacksonburg, WV 26377 Phone #: 304-889-2271
Sample Date: 10/07/2013 Coordinates: 39.55110, -80.58850
Contact Attempts (Date): 1st: _____ 2nd: _____ 3rd: _____ Date Door Hanger Left: _____
Comments: Sampled Well

Surface Owner / Occupant: Denzil Henthorn Jr. Distance from Gas Well (feet): 3,160
Address: HC 79 Box 38, Jacksonburg, WV 26377 Phone #: 304-889-2883
Sample Date: 10/04/2013 Coordinates: 39.55181, -80.58433
Contact Attempts (Date): 1st: _____ 2nd: _____ 3rd: _____ Date Door Hanger Left: _____
Comments: Sampled Well #1

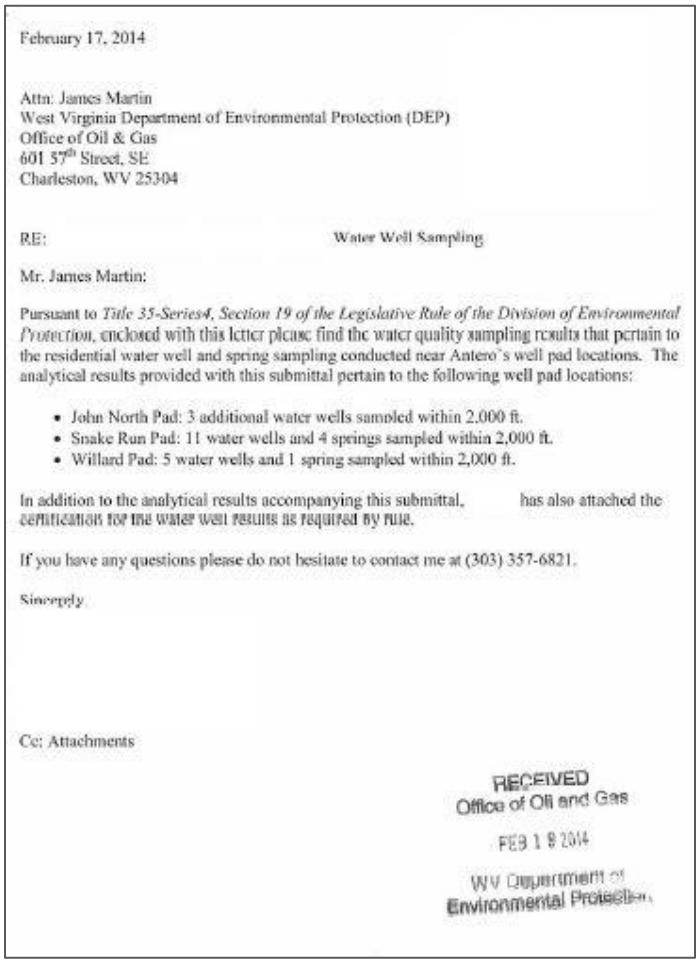
Received

Page 1 of 2

All are currently received on paper…

Sometimes with well numbers or API numbers…

Sometimes without.



February 17, 2014

Attn: James Martin
West Virginia Department of Environmental Protection (DEP)
Office of Oil & Gas
601 57th Street, SE
Charleston, WV 25304

RE: Water Well Sampling

Mr. James Martin:

Pursuant to *Title 35-Series4, Section 19 of the Legislative Rule of the Division of Environmental Protection*, enclosed with this letter please find the water quality sampling results that pertain to the residential water well and spring sampling conducted near Antero's well pad locations. The analytical results provided with this submittal pertain to the following well pad locations:

- John North Pad: 3 additional water wells sampled within 2,000 ft.
- Snake Run Pad: 11 water wells and 4 springs sampled within 2,000 ft.
- Willard Pad: 5 water wells and 1 spring sampled within 2,000 ft.

In addition to the analytical results accompanying this submittal, has also attached the certification for the water well results as required by rule.

If you have any questions please do not hesitate to contact me at (303) 357-6821.

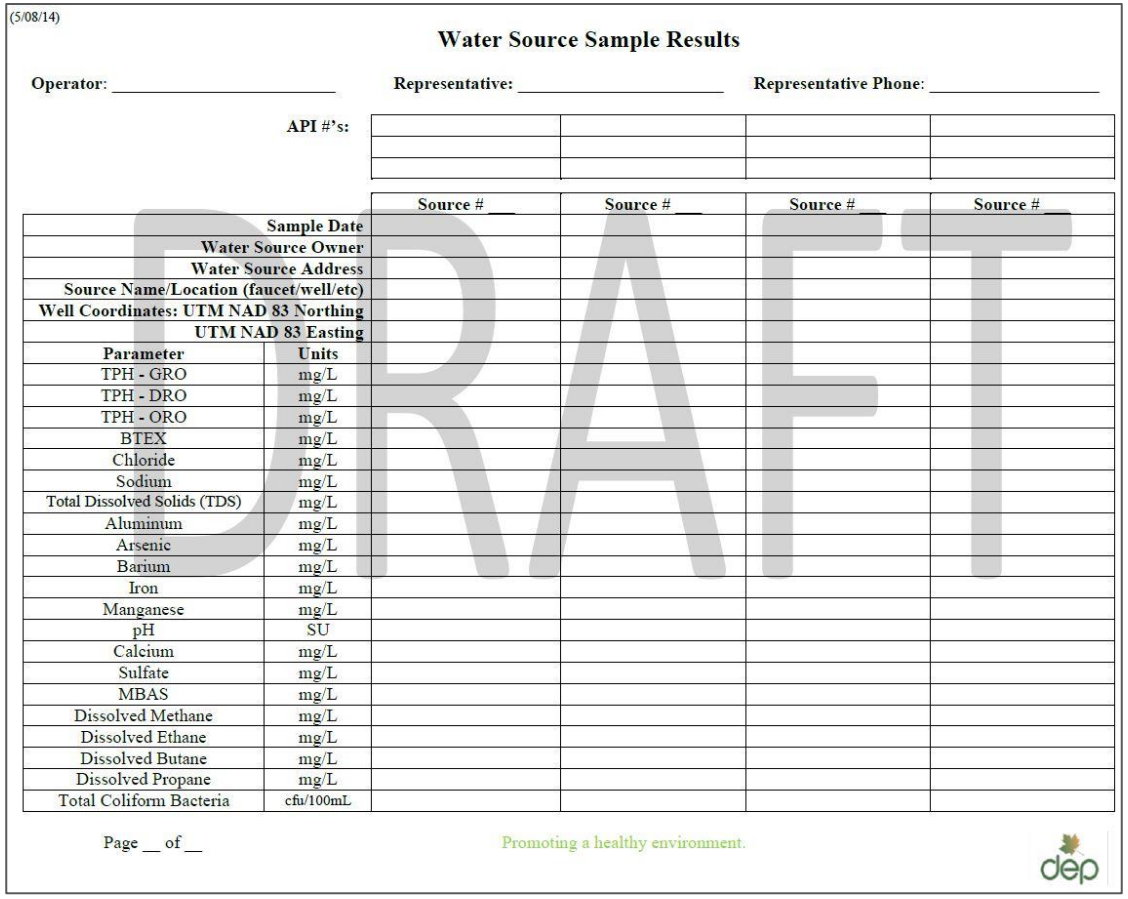
Sincerely,

Cc: Attachments

RECEIVED
Office of Oil and Gas
FEB 19 2014
WV Department of
Environmental Protection

Water Well Predrill Analytical Data

How we would like to receive the data:



(5/08/14)

Water Source Sample Results

Operator: _____ **Representative:** _____ **Representative Phone:** _____

API #'s:					
		Source # ___	**Source #** ___	**Source #** ___	**Source #** ___
Sample Date					
Water Source Owner					
Water Source Address					
Source Name/Location (faucet/well/etc)					
Well Coordinates: UTM NAD 83 Northing					
UTM NAD 83 Easting					
Parameter	**Units**				
TPH - GRO	mg/L				
TPH - DRO	mg/L				
TPH - ORO	mg/L				
BTEX	mg/L				
Chloride	mg/L				
Sodium	mg/L				
Total Dissolved Solids (TDS)	mg/L				
Aluminum	mg/L				
Arsenic	mg/L				
Barium	mg/L				
Iron	mg/L				
Manganese	mg/L				
pH	SU				
Calcium	mg/L				
Sulfate	mg/L				
MBAS	mg/L				
Dissolved Methane	mg/L				
Dissolved Ethane	mg/L				
Dissolved Butane	mg/L				
Dissolved Propane	mg/L				
Total Coliform Bacteria	cfu/100mL				

Page __ of __

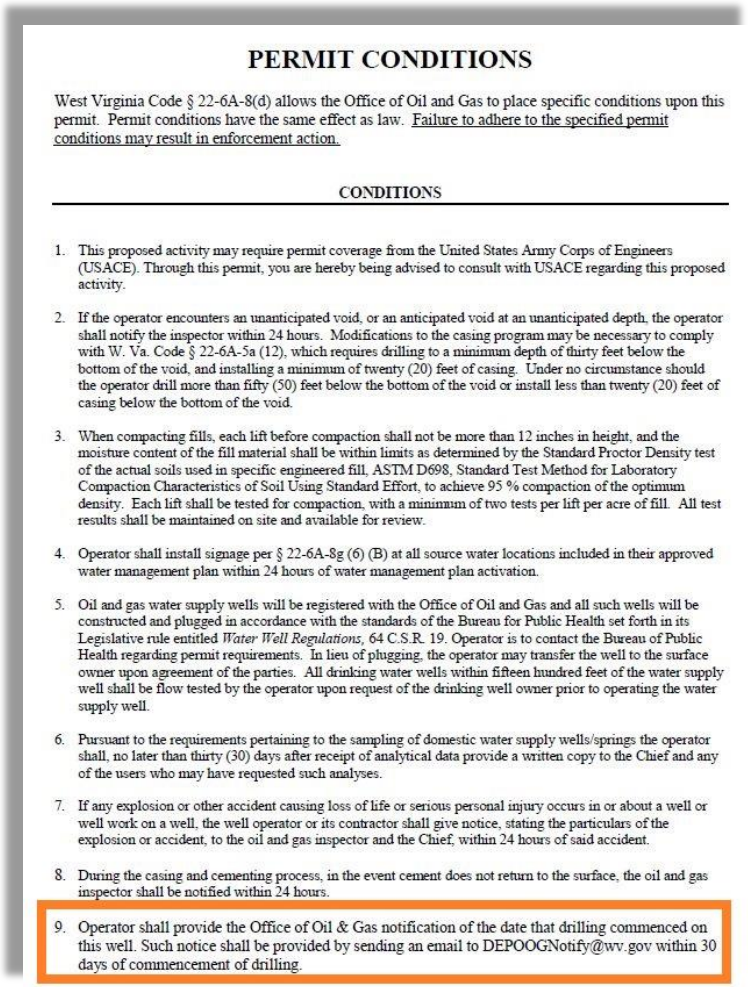
Promoting a healthy environment.

dep

This form is still being ironed out, and will be available on our website soon

Ultimately, the goal is to receive the data digitally, either as a spreadsheet or fillable form

New Permit Condition on H6A Permits



PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

"Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well.

Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling."

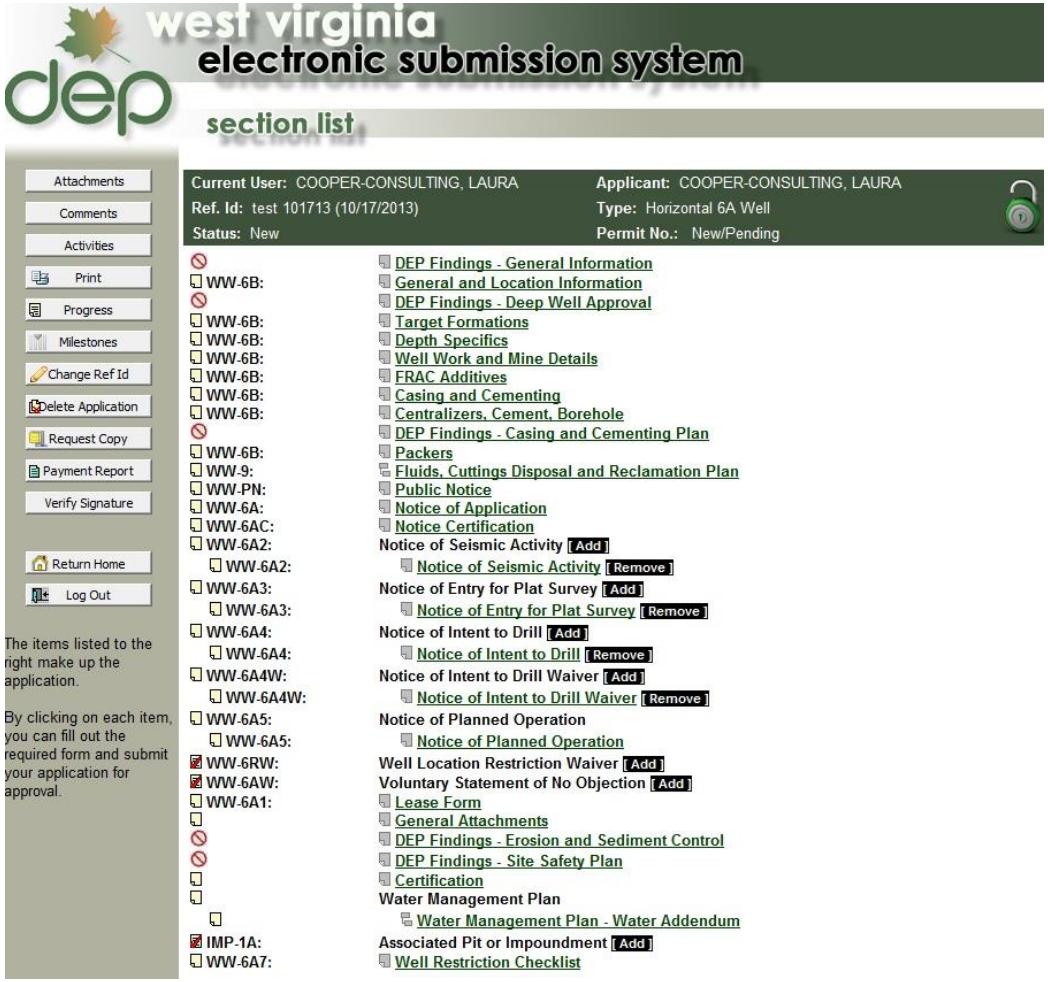
Electronic Submission System (ESS/ePermitting)

Big thanks to our Beta Testers for helping us develop ESS for OOG!

- H6A and Plugging Apps have been tested & tweaked
- Duplication of permits has been developed
- A few H6A permits have actually been issued with ESS

ESS Further Development

- DEP is currently re-assessing the Department-wide Electronic Submission System
- Feedback is being gathered from DEP users as well as current and future Permittees
- DEP Ombudsman Terry Polen is putting this information together
- You may be hearing from Terry soon for your input



Lease Requirements

§22-6A-5 states:

"To the extent that horizontal wells governed by this article are similar to conventional oil and gas wells regulated under article six of this chapter, the following sections of article six of this chapter are hereby incorporated by reference in this article: "

What this means:

This is nothin' new. These are the same old rules that have always applied to all the well permits we've ever issued.

Question begged:

Which "following section," and what does it say?

"Following Section"
(otherwise known as §22-6A-5 (5))

§22-6A-5 (5)

"The provisions of section eight, article six of this chapter relating to the prohibition of permits for wells on flat well royalty leases and requirements for permits"

What this means:

Harken back to 22-6 on this one, and it'll tell you what has always been required to get a permit, lease-wise

Question begged:

Alrighty, so what does 22-6-8 *say*?

What §22-6-8 *Says*

§22-6-8(c)

"no such permit shall be hereafter issued unless the lease or leases or other continuing contract or contracts by which the right to extract, produce or market the oil or gas is filed with the application for such permit"

Question begged:

Is there anything we can provide instead of—or *in lieu of*—a lease or other continuing contract? Anything at all…?

In Lieu of Lease or Other Continuing Contract

§22-6-8(c) (continued)

"In lieu of filing the lease or leases or other continuing contract or contracts, the applicant for a permit described herein may file the following:

(1) **A brief description of the tract of land** including the district and county wherein the tract is located;

(2) **The identification of all parties** to all leases or other continuing contractual agreements by which the right to extract, produce or market the oil or gas is claimed;

(3) **The book and page number wherein** each **such lease** or contract by which the right to extract, produce or market the oil or gas **is recorded**; and

(4) **A brief description of the royalty provisions of each such lease or contract."**

What this means:

Either show us the lease or contract, or give us a WW6A1, complete with recordation info

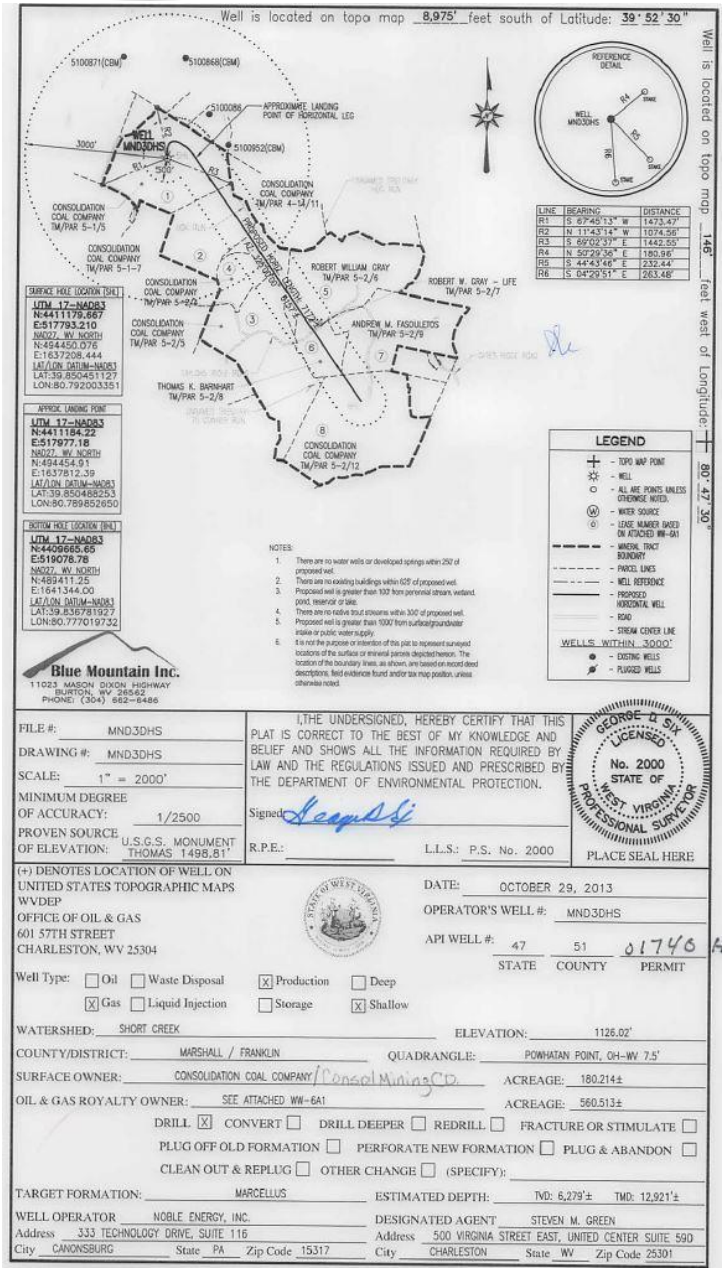
Plat Requirements

Read 35 CSR 8 section 6.2 Forms and Contents of Plats

Example of a Good Plat →

- Has 500' buffer around lateral
- Clearly shows UTM Nad 83 coords
- Has correct Well Number & other info
- Shows Total Vertical Depth (not just TMD)
- Spots correctly on Quad map
- Has references for lease info (labeled 1-7)

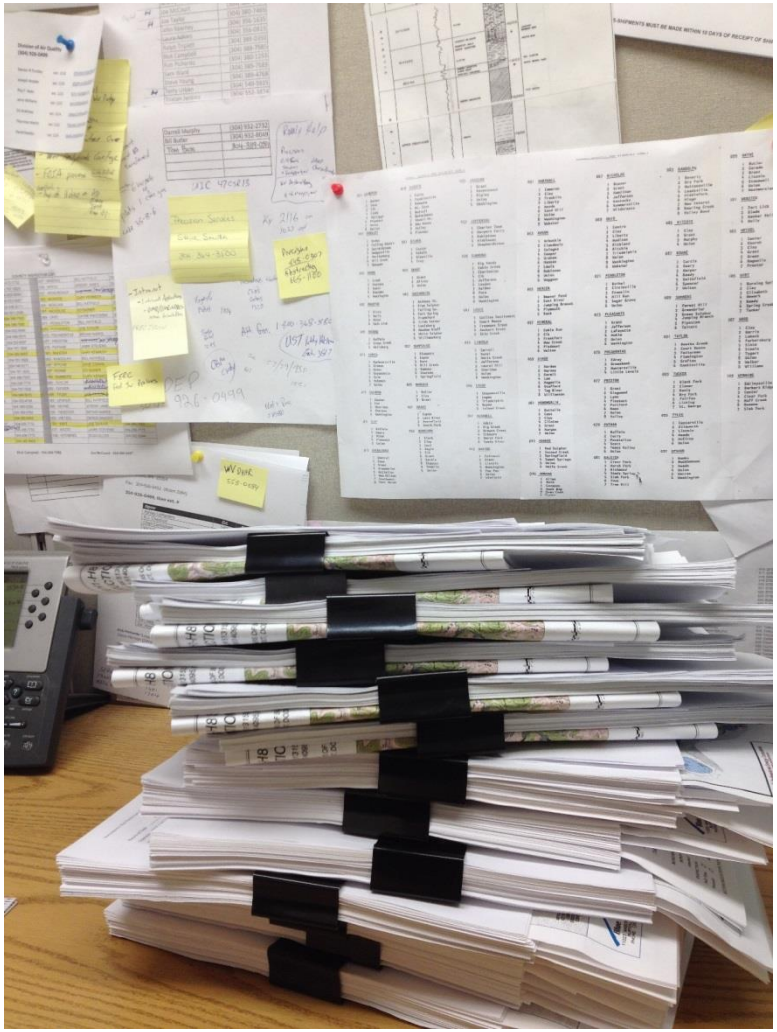
A good plat saves Operators Time & Money



Application Paperwork: Please Do It Right

We get a lot of paperwork.

This picture represents what we sometimes receive in one day.



What you can do to help:

- **Double check *everything*:**
  - **well & pad names**
  - **mail receipts**
  - **UTM coordinates**
  - **newspaper ad**
  - **Plat info**
- **If you're not sure, ASK before sending**
- **Be NEAT and CONSISTENT**
- **Be responsive and courteous when we contact you**

Accurate application paperwork saves Operators Time & Money

Public Buildings Near Proposed Pads

We can all agree:

Protecting school children from truck traffic and other potential hazards is extremely important

Whenever a well site or well road entrance is near a school, do the following:

1. Consider re-routing truck traffic to avoid the school
2. Provide protective measures for the school in Site Safety Plan
3. Show the school on Construction E&S Plan
4. Show the school on all topographic and other maps

Questions?

What questions do you have?

Laura K. Cooper

DEP Office of Oil and Gas
Permitting

304-926-0450 x1547
Laura.K.Cooper@wv.gov

west virginia department of environmental protection