pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Oil and Gas Management

Transferring Data from Form A/B to Form C

Bureau of Oil and Gas Planning and Program Management

Subsurface Activities Section

Training Outline

Learning Objectives

- To understand what fields on Forms A and B correspond to fields on Form C

Notes Regarding Fluids Survey and H_2S/LEL Screening

- Streamlined Features of Form C

Transferring Data from Form A/B to Form C

- 3-String Gas Well

Transferring Data from Form A/B to Form C

- 2-String Gas Well With Annular Production

Transferring Data from Form A/B to Form C

- Single-String Vented Oil Well

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Notes Regarding Fluids Survey and H_2S/LEL Screening

Key Points for Consideration

- The examples that follow do not represent every possible well construction design in the state
- The first few slides should be reviewed carefully to more fully understand the differences between Form A/B and Form C
- The concepts addressed are the fluids survey, which does not require separate documentation for every annular space in Form C; and the H_2S/LEL Screening, which is not required in Form C

Notes Regarding Fluids Survey and H_2S/LEL Screening

Streamlined Features of Form C

- Instead of having a separate field for annular fluid flows, Form C deals with these occurrences on a hole-section basis. For example, when a multi-string well is inspected, all **gas flows outside a freshwater casing should be added together and recorded once (add S/C, S/C1, and S/C2 together)**. The same is true for all **gas flows outside the intermediate casing (add I, I1, and I2 together)**.
- **Oil/brine (liquids) flows outside of a freshwater casing string or to the surface** from any other component of the well are also all captured in one field in the fluids survey section of the form.

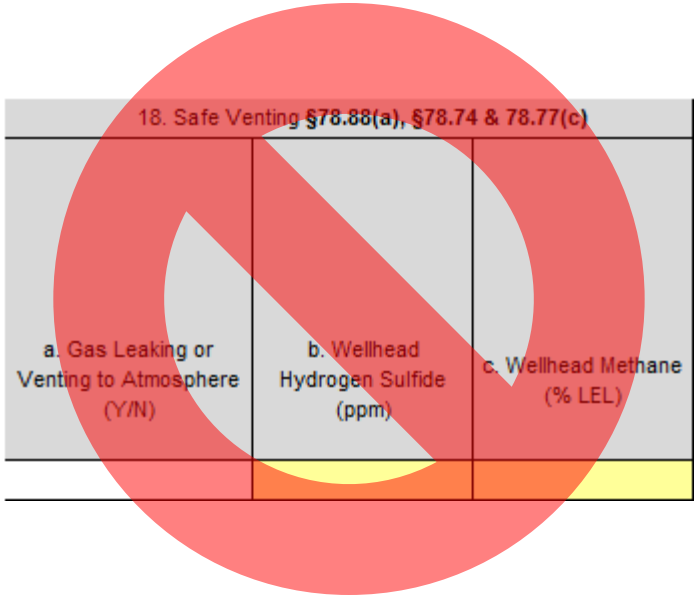
Fluids Survey (Gas, Oil, or Brine)				
Any Fluids Noted (Y/N)	Gas Outside Freshwater Casing (cfpd)	Gas Outside Intermediate Casing (cfpd)	Surface Wellhead Equipment Gas Emissions (cfpd)	Any Liquids (Oil or Brine) to Surface or Outside Freshwater Casing (Y/N)

Other Notes Regarding Fluids Survey and H_2S/LEL Screening

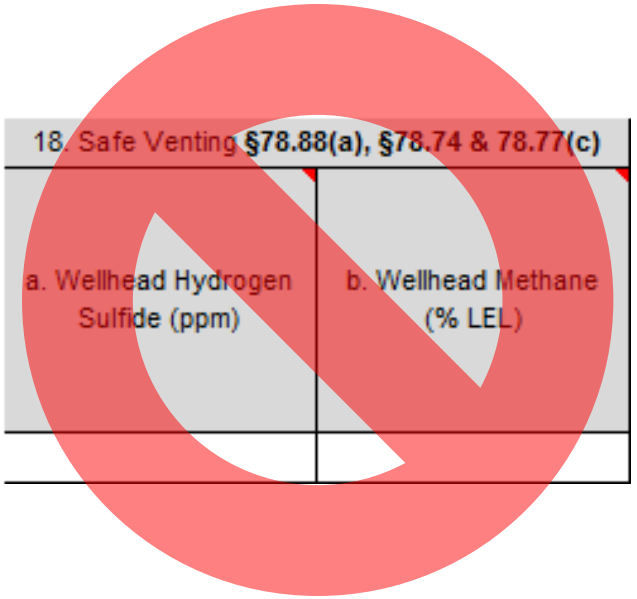
Streamlined Features of Form C

- Note that there is no section in Form C that corresponds to Section 18 (Safe Venting) on Forms A and B
- Documentation of any ambient air screening around the wellhead is not required on Form C

Form A



Form B



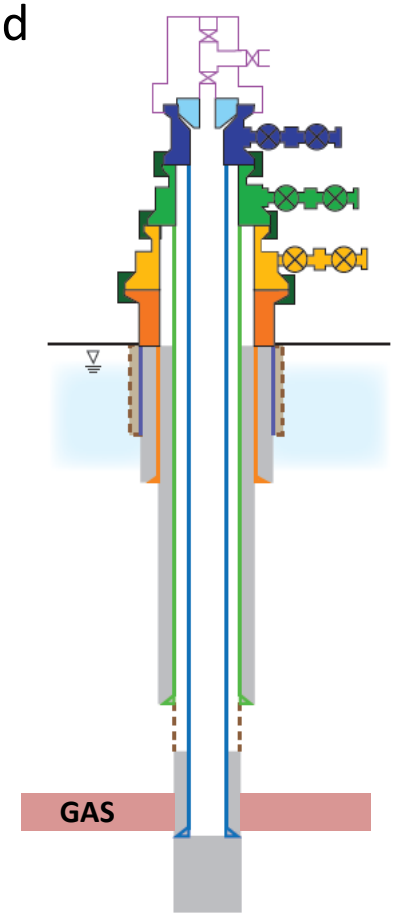
Transferring Data from Form A/B to Form C

3-String Gas Well

- Comparison of set-up of well in Forms A and B to pre-populated fields in Form C (NOTE THAT FORM C REQUIRES NO SET-UP)

1. Well Operator/Owner	4a. Well Type Oil / Gas / Combo Oil (Freshwater Casing Only) Combo (Freshwater Casing Only) 4b. Well Construction Information Not Readily Available Set Up Well for First Inspection	5. Water Level Accessible (Yes/No)	6. Freshwater Casing Only (Yes/No)	7. Annular Production (Yes/No)	8. Annular Production Inside Surface or Coal Casing String (Yes/No)	9. Number of Casing Strings Excluding Conductor Pipe, Tubing, and Liners Customize Data Tables	10. Surface or Coal Casing Set Depth (ft)
Operator A		Yes / No	Yes / No	Yes / No	Yes / No		
2. Operator Assigned ID	Gas		N	N		3	
Catalano 5H							
3. Abridged API #							
063-25654							

Form A



1. Well Operator/Owner
Operator A

Create Dat for A

Issued 4/15/2014

Form B

3. Abridged API #	4. Well Type	10. Surface or Coal Casing Set Depth (ft)
063-25654	Gas	

Form C

Permit #	Farm name	Unconventional
063-25654	Catalano 5H	Y

Transferring Data from Form A/B to Form C

3-String Gas Well

- Date and Wellhead Pressure Sections

Form A

27. Create Template for Next Year			13. Wellhead Pressure or Water Level §78.88(b)(1)						
11. Quarterly Inspection Information		12. All Well MIA Conditions Unchanged from Previous Quarter (Y)						ENTER ONE FROM CHOICES BELOW (IF FIELDS ARE AVAILABLE)	
Date	Quarter	Transfer 4th Qtr From Previous Year / Transfer Previous Quarter's Data	a. Primary Production Gas Pressure (psig)	b. Produced Annular Gas Pressure (psig)	c.Shoe Test Pressure (psig) **(OPTIONAL)**	d. Annulus	e. Water Level (ft)	f.Average Daily Pumping Time (hours) or Average Daily Pumping Volume (bbls) (If no produced water, indicate "NPW")	g. Produced Water Quality - Specific Conductance (µS or µmhos/cm)
1/21/14	Q1	Y	3,500						

Form B

	13. Wellhead Pressure or Water Level §78.88(b)(1)						
11. Quarterly Inspection Date	a. Primary Production Gas Pressure (psig)	b. Produced Annular Gas Pressure (psig)	c. Shoe Test Pressure (psig) **(OPTIONAL)**	d. Annulus	e. Water Level (ft)	f. Average Daily Pumping Time (hours) or Average Daily Pumping Volume (bbls) (If no produced water, indicate "NPW")	g. Produced Water Quality - Specific Conductance (µS or µmhos/cm)
1/21/14	3,500						

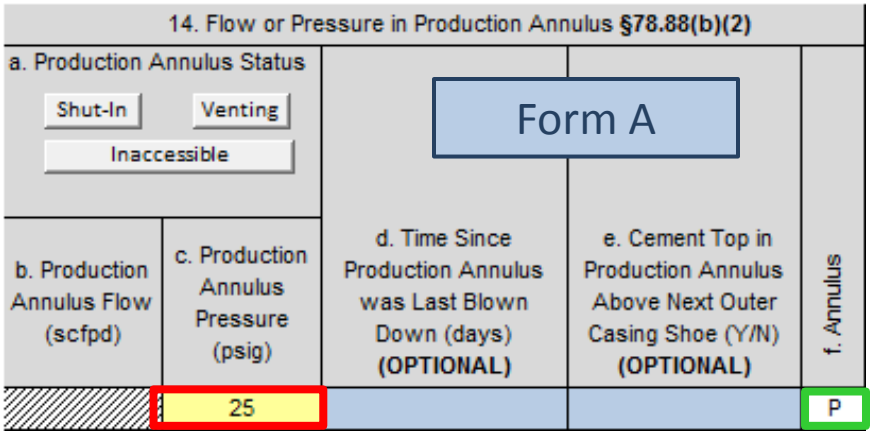
Form C

	Primary Production Pressure (psig)				Water Level or Other	
Inspection Date	Primary Production Pressure (psig)	Primary Production Vent Flow as Required per 78.83(a)(1) or Other (cfpd)	Annular Production Pressure (psig)	Maximum Allowable Pressure Exceeded per 78.73(c) (Y/N/U)	Water Level or Other Measurement	Water Level or Other Unit
1/21/2014	3500					

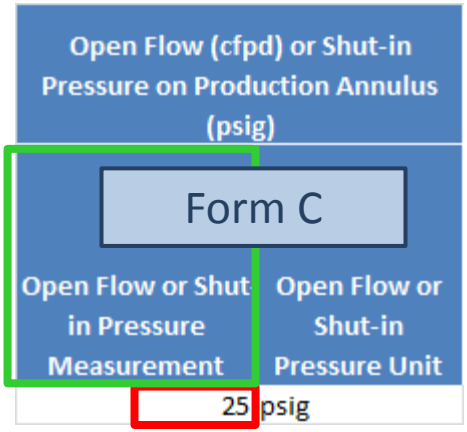
Transferring Data from Form A/B to Form C

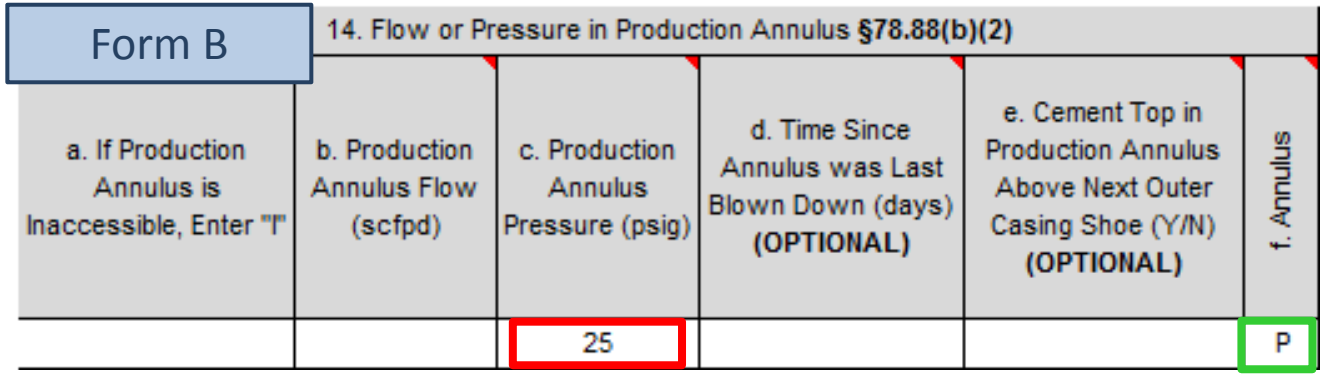
3-String Gas Well

- Production Annulus Section



Note that Production Annulus (P) indicator does not need to be entered in Form C





Transferring Data from Form A/B to Form C

3-String Gas Well

- Fluids Survey Section (escaping gas noted in example)

Form A

15. Measurement or Best Estimate of Leaking/Venting Gas Quantity §78.88(b)(3)

a. Annulus	b. Flow (scfpd)	c. Annulus Shut-in (Y/N/I)	d. Annulus	e. Flow (scfpd)	f. Annulus Shut-in (Y/N/I)	g. Annulus	h. Flow (scfpd)	i. Annulus Shut-in (Y/N/I)	j. Annulus	k. Flow (scfpd)	l. Annulus Shut-in (Y/N/I)	m. Surface /Wellhead Equipment/ Outside Conductor (Y/N)
I	10	N	S/C	2	N							Y

Form B

15. Measurement or Best Estimate of Leaking/Venting Gas Quantity §78.88(b)(3)

a. Annulus	b. Flow (scfpd)	c. Annulus Shut-in (Y/N/I)	d. Annulus	e. Flow (scfpd)	f. Annulus Shut-in (Y/N/I)	g. Annulus	h. Flow (scfpd)	i. Annulus Shut-in (Y/N/I)	j. Annulus	k. Flow (scfpd)	l. Annulus Shut-in (Y/N/I)	m. Surface /Wellhead Equipment/ Outside Conductor (Y/N)
I	10	N	S/C	2	N							Y

Note that Intermediate Annulus (I) and Surface/Coal Annulus (S/C) indicators do not need to be entered in Form C

Form C

Fluids Survey (Gas, Oil, or Brine)

Any Fluids Noted (Y/N)	Gas Outside Freshwater Casing (cfpd)	Gas Outside Intermediate Casing (cfpd)	Surface Wellhead Equipment Gas Emissions (cfpd)	Any Liquids (Oil or Brine) to Surface or Outside Freshwater Casing (Y/N)
Y	2	10	NRM	N

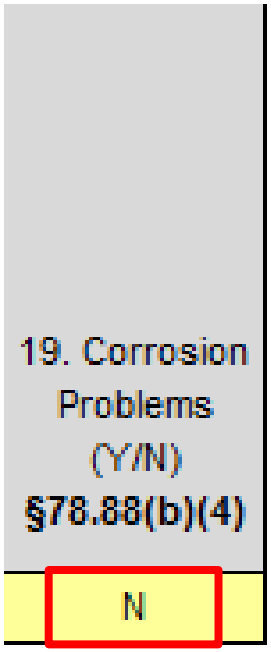
In this case, gas leaks are noted in both the **intermediate annulus (I)** and the **surface casing annulus (S/C)**. The **surface wellhead equipment** is also leaking, but has not been quantified and so "NRM" for *not readily measurable* is used in Form C. No leaking liquids (oil/brine) were observed. Because gas leaks are noted, a "Y" must be placed in the field labeled "Any Fluids Noted" in Form C.

Transferring Data from Form A/B to Form C

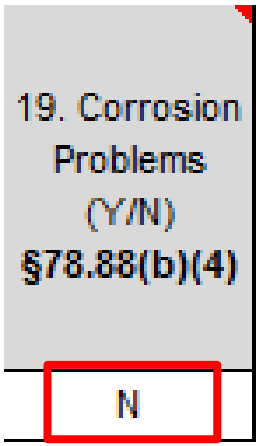
3-String Gas Well

- Corrosion Problems

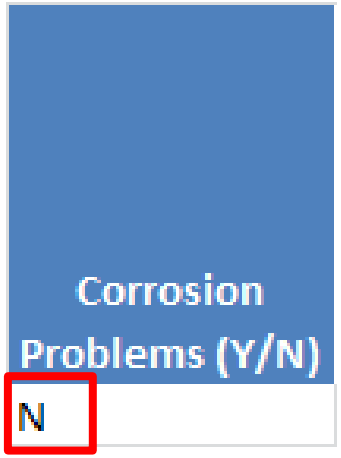
Form A



Form B



Form C



Transferring Data from Form A/B to Form C

3-String Gas Well

- In this example, Sections 16 (Liquid Hydrocarbon Flows) and 17 (Non-Freshwater Flows) of Forms A and B were not reviewed because there were no occurrences of oil/brine leaking to the ground surface or flowing outside a freshwater casing string

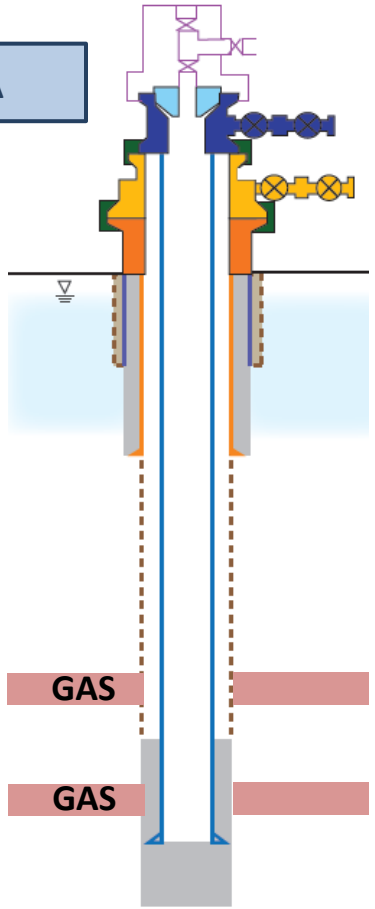
Transferring Data from Form A/B to Form C

2-String Gas Well With Annular Production

- Comparison of set-up of well in Forms A and B to pre-populated fields in Form C (NOTE THAT FORM C REQUIRES NO SET-UP)

Form A

1. Well Operator/Owner	4a. Well Type: Oil / Gas / Combo / Oil (Freshwater Casing Only) / Combo (Freshwater Casing Only) — 4b. Well Construction Information Not Readily Available — Set Up Well for First Inspection	5. Water Level Accessible (Yes/No)	6. Freshwater Casing Only (Yes/No)	7. Annular Production (Yes/No)	8. Annular Production Inside Surface or Coal Casing String (Yes/No)	9. Number of Casing Strings Excluding Conductor Pipe, Tubing, and Liners — Customize Data Tables	10. Surface or Coal Casing Set Depth (ft)
Operator A		Yes / No	Yes / No	Yes / No	Yes / No		
2. Operator Assigned ID	Gas		N	Y	Y	2	650
Swank No. 5							
3. Abridged API #							
063-55787							



1. Well Operator/Owner
Operator A

Create Dat for A

Issued 4/15/2014

Form B

3. Abridged API #	4. Well Type	10. Surface or Coal Casing Set Depth (ft)
063-55787	Gas	650

Form C

Permit #	Farm name	Unconventional
063-55787	Swank No. 5	N

Transferring Data from Form A/B to Form C

2-String Gas Well With Annular Production

- Date and Wellhead Pressure Sections

Form A

11. Quarterly Inspection Information		12. All Well MIA Conditions Unchanged from Previous Quarter (Y)	13. Wellhead Pressure or Water Level §78.88(b)(1)						
							ENTER ONE FROM CHOICES BELOW (IF FIELDS ARE AVAILABLE)		
Date	Quarter	Transfer 4th Qtr From Previous Year / Transfer Previous Quarter's Data	a. Primary Production Gas Pressure (psig)	b. Produced Annular Gas Pressure (psig)	c.Shoe Test Pressure (psig) (OPTIONAL)	d. Annulus	e. Water Level (ft)	f.Average Daily Pumping Time (hours) or Average Daily Pumping Volume (bbls) (If no produced water, indicate "NPW")	g. Produced Water Quality - Specific Conductance (µS or µmhos/cm)
11/7/14	Q1	Y	50	24		P			

Form B

11. Quarterly Inspection Date	a. Primary Production Gas Pressure (psig)	b. Produced Annular Gas Pressure (psig)	13. Wellhead Pressure or Water Level §78.88(b)(1)				
			c. Shoe Test Pressure (psig) (OPTIONAL)	d. Annulus	e. Water Level (ft)	f. Average Daily Pumping Time (hours) or Average Daily Pumping Volume (bbls) (If no produced water, indicate "NPW")	g. Produced Water Quality - Specific Conductance (µS or µmhos/cm)
11/7/14	50	24		P			

Form C

	Primary Production Pressure (psig)				Water Level or Other	
Inspection Date	Primary Production Pressure (psig)	Primary Production Vent Flow as Required per 78.83(a)(1) or Other (cfpd)	Annular Production Pressure (psig)	Maximum Allowable Pressure Exceeded per 78.73(c) (Y/N/U)	Water Level or Other Measurement	Water Level or Other Unit
11/7/2014	50		24	N		

Note that since gas is produced inside of the surface casing in this well design, the flowing pressure (24 psig) must be compared to 80% of the hydrostatic pressure at the surface casing seat (80% x 0.433 psi/ft x 650 ft). Since the maximum allowable pressure is greater than 24, "N" is placed in Form C under the field titled "Maximum Allowable Pressure…" Finally, the Production Annulus (P) indicator does not need to be entered in Form C either.

Transferring Data from Form A/B to Form C

2-String Gas Well With Annular Production

- Fluids Survey Section (escaping gas noted in this example)

Form A

15. Measurement or Best Estimate of Leaking/Venting Gas Quantity §78.88(b)(3)												
a. Annulus	b. Flow (scfpd)	c. Annulus Shut-in (Y/N/I)	d. Annulus	e. Flow (scfpd)	f. Annulus Shut-in (Y/N/I)	g. Annulus	h. Flow (scfpd)	i. Annulus Shut-in (Y/N/I)	j. Annulus	k. Flow (scfpd)	l. Annulus Shut-in (Y/N/I)	m. Surface /Wellhead Equipment/ Outside Conductor (Y/N)
S/C	10	N										N

Form B

15. Measurement or Best Estimate of Leaking/Venting Gas Quantity §78.88(b)(3)												
a. Annulus	b. Flow (scfpd)	c. Annulus Shut-in (Y/N/I)	d. Annulus	e. Flow (scfpd)	f. Annulus Shut-in (Y/N/I)	g. Annulus	h. Flow (scfpd)	i. Annulus Shut-in (Y/N/I)	j. Annulus	k. Flow (scfpd)	l. Annulus Shut-in (Y/N/I)	m. Surface /Wellhead Equipment/ Outside Conductor (Y/N)
S/C	10	N										N

Note that Surface/Coal Annulus (S/C) indicators do not need to be entered in Form C

Form C

Fluids Survey (Gas, Oil, or Brine)				
Any Fluids Noted (Y/N)	Gas Outside Freshwater Casing (cfpd)	Gas Outside Intermediate Casing (cfpd)	Surface Wellhead Equipment Gas Emissions (cfpd)	Any Liquids (Oil or Brine) to Surface or Outside Freshwater Casing (Y/N)
Y	10		0	N

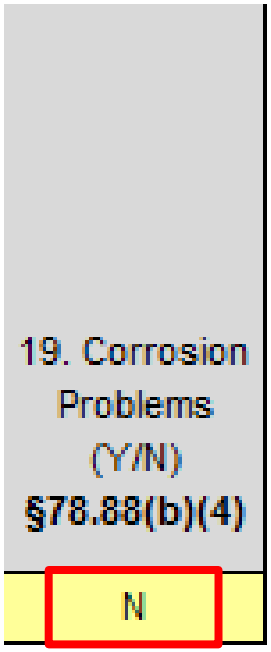
In this case, a gas leaks is noted in the **surface casing annulus (S/C)**. The **surface wellhead equipment** is not leaking, and so "0" is entered in Form C under the field labeled "Surface Wellhead Equipment Gas Emissions." No leaking liquids (oil/brine) were observed. Because gas leaks are noted, a "Y" must be placed in the field labeled "Any Fluids Noted" in Form C.

Transferring Data from Form A/B to Form C

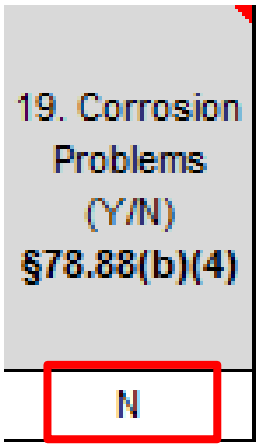
2-String Gas Well With Annular Production

- Corrosion Problems

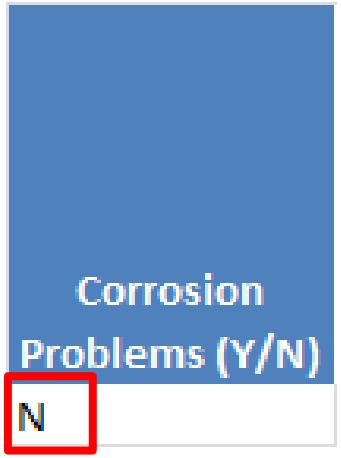
Form A



Form B



Form C



Transferring Data from Form A/B to Form C

2-String Gas Well With Annular Production

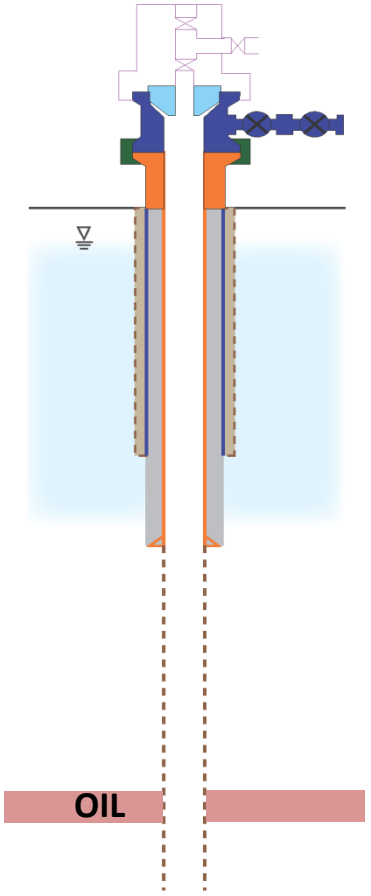
- In this example, Sections 16 (Liquid Hydrocarbon Flows) and 17 (Non-Freshwater Flows) of Forms A and B were not reviewed because there were no occurrences of oil/brine leaking to the ground surface or flowing outside a freshwater casing string

Transferring Data from Form A/B to Form C

Single-String Vented Oil Well

- Comparison of set-up of well in Forms A and B to pre-populated fields in Form C (NOTE THAT FORM C REQUIRES NO SET-UP)

1. Well Operator/Owner	4a. Well Type Oil / Gas / Combo Oil (Freshwater Casing Only) Combo (Freshwater Casing Only) 4b. Well Construction Information Not Readily Available Set Up Well for First Inspection	5. Water Level Accessible (Yes/No)	6. Freshwater Casing Only (Yes/No)	7. Annular Production (Yes/No)	8. Annular Production Inside Surface or Coal Casing String (Yes/No)	9. Number of Casing Strings Excluding Conductor Pipe, Tubing, and Liners Customize Data Tables	10. Surface or Coal Casing Set Depth (ft)
Operator A		Yes No	Yes No	Yes No	Yes No		
2. Operator Assigned ID	Oil (Freshwater Casing Only)	N				1	
Lencer No. 2			Form A				
3. Abridged API #							
059-56987							



1. Well Operator/Owner
Operator A

Create Dat for A

Issued 4/15/2014

Form B

3. Abridged API #	4. Well Type	10. Surface or Coal Casing Set Depth (ft)
059-56987	Oil	

Form C

Permit #	Farm name	Unconventional
059-56987	Lencer No. 2	N

Transferring Data from Form A/B to Form C

Single-String Vented Oil Well

- Date and Wellhead Pressure Sections

Form A

11. Quarterly Inspection Information		12. All Well MIA Conditions Unchanged from Previous Quarter (Y)	13. Wellhead Pressure or Water Level §78.88(b)(1)						
								ENTER ONE FROM CHOICES BELOW (IF FIELDS ARE AVAILABLE)	
Date	Quarter	Transfer 4th Qtr From Previous Year / Transfer Previous Quarter's Data	a. Primary Production Gas Pressure (psig)	b. Produced Annular Gas Pressure (psig)	c.Shoe Test Pressure (psig) (OPTIONAL)	d. Annulus	e. Water Level (ft)	f.Average Daily Pumping Time (hours) or Average Daily Pumping Volume (bbls) (If no produced water, indicate "NPW")	g. Produced Water Quality - Specific Conductance (µS or µmhos/cm)
12/3/14	Q1							0.20	

Form B

11. Quarterly Inspection Date	a. Primary Production Gas Pressure (psig)	b. Produced Annular Gas Pressure (psig)	c. Shoe Test Pressure (psig) (OPTIONAL)	d. Annulus	e. Water Level (ft)	f. Average Daily Pumping Time (hours) or Average Daily Pumping Volume (bbls) (If no produced water, indicate "NPW")	g. Produced Water Quality - Specific Conductance (µS or µmhos/cm)
		13. Wellhead Pressure or Water Level §78.88(b)(1)					
12/3/14						0.20	

Form C

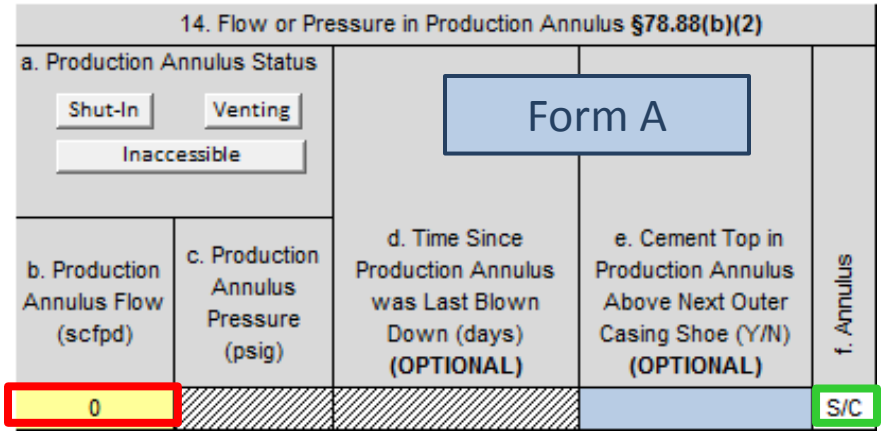
	Primary Production Pressure (psig)				Water Level or Other	
Inspection Date	Primary Production Pressure (psig)	Primary Production Vent Flow as Required per 78.83(a)(1) or Other (cfpd)	Annular Production Pressure (psig)	Maximum Allowable Pressure Exceeded per 78.73(c) (Y/N/U)	Water Level or Other Measurement	Water Level or Other Unit
12/3/2014		0			0.20	bbls/day

Note that units are not available in Forms A and B. In this case, the producer chose to enter the average daily pumping time in barrels per day. That unit is entered in Form C. Note also that the default date of 1/1/14 assigned for conventional wells in Form C has been replaced with the actual inspection date. Since no gas is venting from the wellhead, “0” is entered in Form C in the field titled “Primary Production Vent Flow…”

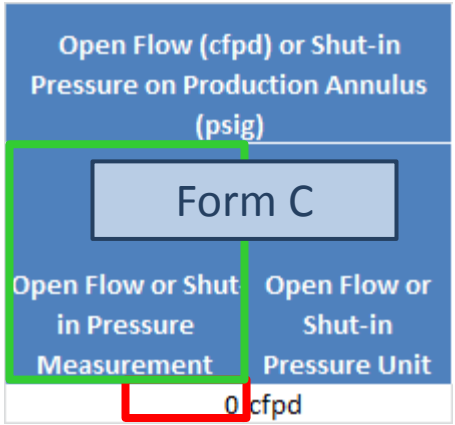
Transferring Data from Form A/B to Form C

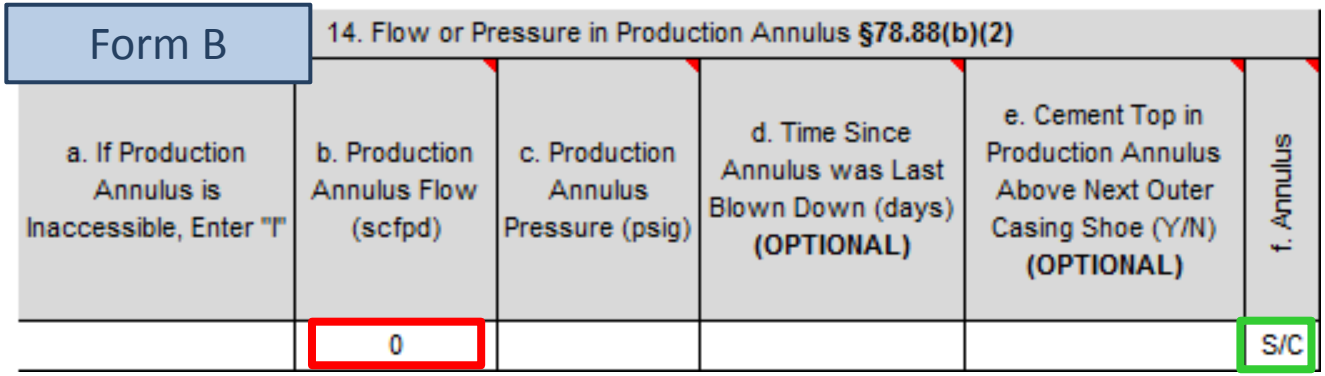
Single-String Vented Oil Well

- Production Annulus Section



Note that Production Annulus indicator, which is the Surface/Coal (S/C) annulus in this case, does not need to be entered in Form C





Transferring Data from Form A/B to Form C

Single-String Vented Oil Well

- Fluids Survey Section (escaping oil noted in this example)

Form A

16. Liquid Hydrocarbon Flows §78.88(a), §78.81(a)(2) & 78.73(b)

	a. Annulus	b.(Y/N/I)	c. Annulus	d.(Y/N/I)	e. Annulus	f.(Y/N/I)	g. Annulus	h.(Y/N/I)	i. Annulus	j.(Y/N/I)	k. Surface /Wellhead Equipment/ Outside Conductor (Y/N)
S/C		N									Y

Form B

16. Liquid Hydrocarbon Flows §78.88(a), §78.81(a)(2) & 78.73(b)

	a. Annulus	b. (Y/N/I)	c. Annulus	d. (Y/N/I)	e. Annulus	f. (Y/N/I)	g. Annulus	h. (Y/N/I)	i. Annulus	j. (Y/N/I)	k. Surface /Wellhead Equipment/ Outside Conductor (Y/N)
S/C		N									Y

Form C

Fluids Survey (Gas, Oil, or Brine)

Any Fluids Noted (Y/N)	Gas Outside Freshwater Casing (cfpd)	Gas Outside Intermediate Casing (cfpd)	Surface Wellhead Equipment Gas Emissions (cfpd)	Any Liquids (Oil or Brine) to Surface or Outside Freshwater Casing (Y/N)
Y	0		0	Y

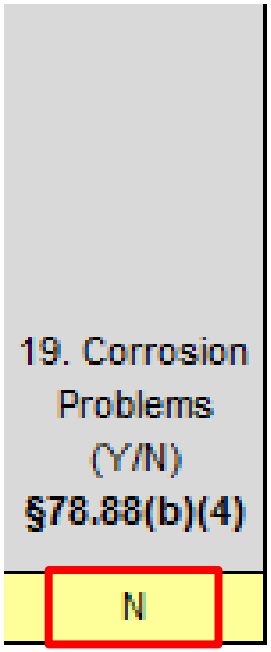
In this case, an oil leak resulting in the release of oil to the ground surface was noted in association with the **surface wellhead equipment**. No leaking brine or gas was noted. Because an oil leak is noted, a “Y” must be placed in the field labeled “Any Fluids Noted” in Form C.

Transferring Data from Form A/B to Form C

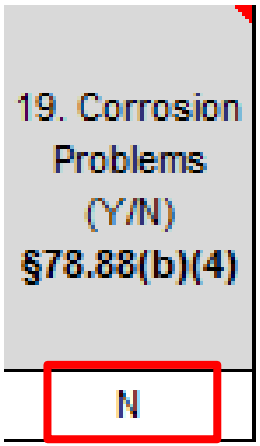
Single-String Venting Oil Well

- Corrosion Problems

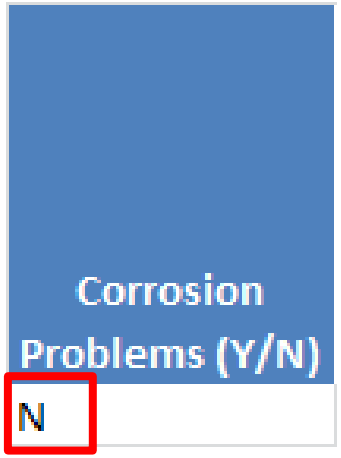
Form A



Form B



Form C



Transferring Data from Form A/B to Form C

Single-String Venting Oil Well

- In this example, Sections 15 (Measurement or Best Estimate of Leaking/Venting Gas Quantity) and 17 (Non-Freshwater Flows) of Forms A and B were not reviewed because there were no occurrences of venting/escaping gas in association with surface wellhead equipment or outside the conductor pipe, or brine leaking to the ground surface or flowing outside a freshwater casing string

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Thanks!
Questions?

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