west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL

July 28, 2014

CUNNINGHAM ENERGY, LLC
3230 PENNSYLVANIA AVENUE
CHARLESTON, WV 25302

Re: Permit Modification Approval for API Number 1502897 , Well #: J.S. COCHRAN 4H
SEE ATTACHED LETTER IN FILE

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

Gene Smith
gwm

Gene Smith
Assistant Chief of Permitting
Office of Oil and Gas

1502897HM

CUNNINGHAM ENERGY
AGGRESSIVE HYDROCARBON INTELLIGENCE

Mr. Jeffrey McLaughlin
DEP Office of Oil and Gas

Re: J.S. Cochran 4H
API #47-0152897

Mr. McLaughlin:

I would like to request a Modification to the permit issued for the J.S. Cochran 4H based on the following changes/new form submissions:

WW-2B - Which has been changed from using the Packers Plus system to simply cementing the 4 ½" casing back to surface and otherwise using the same frac plan as previously permitted.

WW-9 – This has been changed to reflect that the pit water remaining in the pit was used for land application however during the drilling process water was hauled to a disposal well when needed.

Please also see attached a new plan for the monitoring/plugging of wells within the radius of the new drills so that we might avoid any communication issues. The only changes to this letter are that the King #1 (47-01502894) and will be plugged prior to fracking the new wells and that the King #1 (47-01500704) will be monitored during this process rather than being plugged as previously suggested.

Please let me know if this is acceptable and if you should need anything further.

Thank you,

Danielle N. Boggs
Operations Manager
Cunningham Energy, LLC

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Office of Oil and Gas

MAY 22 2014

WV Department of
Environmental Protection

Cunningham Energy, LLC 3230 Pennsylvania Ave, Charleston, WV 25302 DIRECT: (304) 344.9292 FAX: (304) 344-9290

1502897 H

PERMIT CONDITIONS

West Virginia Code § 22-6-11 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. 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 § 22-6-20, 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.

2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.

3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.

4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.

5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.

6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.

7. Well work activities shall not constitute a hazard to the safety of persons.

8. Hydraulic Fracturing of the Cochran # 4H (API: 47-015-02897) must not exceed 3500 PSI and abide by the terms of the Fracking Plan Addendum attached to this permit.

9. Notification must be given to the local inspector at least five (5) days before fracturing and it must include a copy of the Cochran # 4H Hydraulic Fracturing Plan.

1502897 HM

WW-9
(5/13)

Page _____ of _____

API Number 47 -015 -02897

Operator's Well No. J.S. COCHRAN 4H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name CUNNINGHAM ENERGY, LLC OP Code 494508594

Watershed (HUC 10) TRIBUTARY OF WADE FORK Quadrangle ELKHURST 7.5'

Elevation 1,215' County CLAY District UNION

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes _____ No X

Will a pit be used for drill cuttings? Yes X No _____

If so, please describe anticipated pit waste: DRILL CUTTINGS, FLUIDS FROM DRILLING AND FRACTURING

Will a synthetic liner be used in the pit? Yes X No _____ If so, what ml.? 30 MIL.

Proposed Disposal Method For Treated Pit Wastes:

- ■ Land Application
- ■ Underground Injection (UIC Permit Number 2D0392210 - IF NEEDED)
- _____ Reuse (at API Number _____)
- _____ Off Site Disposal (Supply form WW-9 for disposal location)
- _____ Other (Explain _____

Will closed loop system be used? NO

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. AIR; FRESHWATER

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? SOAP; KCL and/or CLAY STABILIZER

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. LEAVE IN PIT/ HAUL IF NEEDED

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) CEMENT & LIME

-Landfill or offsite name/permit number? CITY OF CHARLESTON LANDFILL

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

RECEIVED
Office of Oil and Gas
MAY 22 2014
WV Department of
Environmental Protection

Company Official Signature _____

Company Official (Typed Name) RYAN E.M. CUNNINGHAM

Company Official Title PRESIDENT

Subscribed and sworn before me this 12th day of MAY, 2014

Danielle N. Bays Notary Public

My commission expires 05/12/2014

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
DANIELLE N. BAYS
Cunningham Energy, LLC
8200 Pennsylvania Avenue, Charleston, WV 25302
My Commission Expires February 10, 2018

1502897HM

WW - 2B
(Rev. 8/10)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: CUNNINGHAM ENERGY, LLC

Operator ID	County	District	Quadrangle
494508594	CLAY - 15	UNION - 5	ELKHURST 7.5

2) Operator's Well Number: J.S.COCHRAN 4H 3) Elevation: 1,215'

4) Well Type: (a) Oil X or Gas X

(b) If Gas: Production X / Underground Storage _____

Deep _____ / Shallow X

5) Proposed Target Formation(s): BIG INJUN Proposed Target Depth: 2100'
6) Proposed Total Depth: 5,143' Feet Formation at Proposed Total Depth: INJUN
7) Approximate fresh water strata depths: 200'
8) Approximate salt water depths: 1475' - 1525'

9) Approximate coal seam depths: NO COAL LISTED ON TITLE

10) Approximate void depths,(coal, Karst, other): NONE

11) Does land contain coal seams tributary to active mine? NONE

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)
DRILL AND STIMULATE A NEW SHALLOW HORIZONTAL WELL
SEE PREVIOUSLY ATTACHED FRACKING PLAN
ADDENDUM

13) **CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS			FOOTAGE	INTERVALS	CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	13"	LS	43.6 LBS	30	30	CTS
Fresh Water	9 5/8"	LS	26 LBS	400'	400'	CTS
Coal						
Intermediate	7"	J-55	20 LBS	1775'	1775'	CTS
Production	4 1/2"	N-80	11.6 LBS	5143'	5143'	CTS
Tubing						
Liners						

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Packers: Kind: _____
Sizes: _____
Depths Set _____

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MAR 17 2014

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1502897 H

CUNNINGHAM ENERGY
AGGRESSIVE HYDROCARBON INTELLIGENCE

Mr. Jeffrey McLaughlin
WV DEP Office of Oil and Gas

FRACKING PLAN ADDENDUM

Re: Plan for Horizontal Wells on the J.S. Cochran Lease

Mr. McLaughlin –

The following wells have been identified for plugging before fracking can commence on our planned shallow horizontal wells in Clay County:

King #1 – 47-01500704
King #4 – 47-01502894

Please see proposed Plugging Permit Applications attached.

The following wells are producing wells at the same elevation that we plan to remove surface equipment from if not rated for the frac pressure we plan to run, we will replace this surface equipment with valves during the planned fracs and monitor these locations:

Harshbarger 1A – 47-01502884
J.S. Cochran #1 – 47-0150684
J.S. Cochran #2 – 47-01502883
J.S. Cochran #3 – 47-01502888
King #5 – 47-01502882
King #6 – 47-01502881
King #14 – 47-01502890

Thank you for your time and attention to this matter.

Allen Pettey
Cunningham Energy, LLC
3230 Pennsylvania Avenue
Charleston, WV 25302
304-344-9291

1502897HM

Mr. Charles W. Young
Charles W. Young Construction Services
29 Apple Valley Drive
Bomont, WV 25030
Certified Mail #: 7012 3460 0002 4924 2523

April 24, 2014

Re: George King #1
API #47-0150704

Dear Mr. Young –

We would ask that this letter serve as notice that Cunningham Energy, LLC plan to fracture 3 new shallow horizontal wells on our J.S. Cochran Lease which falls within 500 ft. of one of your currently operational wells, listed as the George King #1 assigned API #47-0150704. I have attached the original well record as provided by the DEP for your reference.

We are still in the process of drilling these wells and will give you a definitive frac date when that becomes available. However, by order of the WV DEP OOG we ask that during the frac process you monitor your well for any possible communication issues. We will be doing the same in the area at that time on our existing wells to prevent the same.

If you should have any further questions or concerns, please feel free to contact our office. Thank you for your time and attention to this matter.

Sincerely,

Danielle N. Boggs
Operations Manager
Cunningham Energy, LLC

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CUNNINGHAM ENERGY
AGGRESSIVE HYDROCARBON INTELLIGENCE

Mr. Jeffrey McLaughlin
WV DEP Office of Oil and Gas

Re: J.S. Cochran 4H, 5H, 6H, 7H, 8H and 9H Application Requests

Mr. McLaughlin:

The following wells have been identified for plugging before fracking can commence on our planned shallow horizontal wells in Clay County:

King #1 – 47-01502886 – Plugging Permit pending.
King #4 – 47-01502894 – Plugging Permit Issued.

Plugging permit applications have been approved by Inspector Gainer and have been submitted for full approval.

The following wells are producing wells at the same elevation that we plan to remove surface equipment from if not rated for the frac pressure we plan to run, we will replace this surface equipment with valves during the planned fracs and monitor these locations:

Harshbarger 1A – 47-01502884
J.S. Cochran #1 – 47-0150684
J.S. Cochran #2 – 47-01502883
J.S. Cochran #3 – 47-01502888
King #5 – 47-01502882
King #6 – 47-01502881
King #14 – 47-01502890
Young #2 – 47-0150688
King #1 – 47-01500704 – This well was previously identified for plugging however after review of the casing schedule we believe that this well can be monitored. We have sent notice to Charles Young via Certified Mail on 5/12/2014 and will work with him in any way to proceed with this monitoring.

In the opinion of Jim Rose, Petroleum engineer with Producers Service Corp, the treating pressures will be around 3000 psi. They will be using small stages at low rates.

All other third party wells were identified and producers were previously contacted.

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Sincerely,

Danielle Boggs
Cunningham Energy, LLC

Cunningham Energy, LLC 3230 Pennsylvania Ave, Charleston, WV 25302 DIRECT: (304) 344.9292 FAX: (304) 344.9290

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Form WW-9

Operator's Well No. J.S. COCHRAN 4H

CUNNINGHAM ENERGY, LLC

Proposed Revegetation Treatment: Acres Disturbed 2.8 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 1/3 TON lbs/acre (500 lbs minimum)

Mulch HAY - 2 Tons/acre

Seed Mixtures

Area I Seed Type	lbs/acre	Area II Seed Type	lbs/acre
KY 31	40	ORCHID GRASS	15
ALSIKE CLOVER	5	ALSIKE CLOVER	5
ANNUAL RYE	15		

Attach:
Drawing(s) of road, location,pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

Title: _____ Date: _____

Field Reviewed? (_____) Yes (_____) No

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CHARLESTON WV MPO 25301 MAY 2014

K-1 (704)

Sent To **Mr. Charles W. Young**
Charles W. Young Construction
Street, Apt. No.; or PO Box No. **29 Apple Valley Drive**
City, State, ZIP+4 **Bomont, WV 25030**

PS Form 3800, August 2006 See Reverse for Instructions

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