

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

October 10, 2013

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-502302, issued to ENERGY CORPORATION OF AMERICA, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalities being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin

Chief

Operator's Well No: ECA/YAWKEY 221H

Farm Name: BOONE EAST DEVELOPMENT

API Well Number: 47-502302 Permit Type: Plugging

Date Issued: 10/10/2013

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. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
- 2. 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.
- 3. Well work activities shall not constitute a hazard to the safety of persons.

1) Dat	e July :	31		,	20 13
2) Ope	rator	's			
Wel	l No.	ECA/Ya	wkey #221		
3) API	Well	No.	47 - 005		- 02302

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

	(If "G			/ Waste disposal/) Deep/ Shallow_X
5)	Location: Ele	vation_795'	Watershed Hewet	t Creek
	Dis	trict Washington	County Boone	Quadrangle Clothier 7.5'
6)	Well Operator		7)Designated Age	ent Rodney A Winters
	Address	501 56th St SE	Addre	ess Same
		Charleston, WV 25304		
8)	Oil and Gas In	spector to be notified	9)Plugging Conti	ractor
	Name Ross Ell	er	Name R&R	Well Services
	Address 121	Brierhill Drive	Address 4	2 Lynch Ridge
	Beck	dey, WV 25801	W	Valton WV 25286

10) Work Order: The work order for the manner of plugging this well is as follows: Please see next page for details.

RECEIVED

Notification must be given to the district oil and gas inspector 2 Offices of Oil and Gas work can commence.

SEP 172013

Work order approved by inspector

WW-4B Rev. 2/01

1) Date July 31	, :	20 13
2) Operator's		
Well No. ECA/Yawkey #221		
3) API Well No. 47-005		- 02302

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

	APPLICATION FOR A PERI	MIT TO PLUG AND ABANDON
4)	Well Type: Oil/ Gas _X / Liquid (If "Gas, Production _X or Und	d injection/ Waste disposal/ derground storage) Deep/ Shallow_X
5)	Location: Elevation 795'	Watershed Hewett Creek
	District Washington	County Boone Quadrangle Clothier 7.5'
6)	Well Operator Energy Corporation of America Address 501 56th St SE Charleston, WV 25304	7) Designated Agent Rodney A Winters Address Same
8)	Oil and Gas Inspector to be notified Name Ross Eller	9) Plugging Contractor Name R&R Well Services
	Address 121 Brierhill Drive	Address 42 Lynch Ridge
	Beckley, WV 25801	Walton WV 25286
(Free point will be ran to fine cut point on 4. 6% gel will be pumped between all plu	(MA)
		FROM 3328 - 3228 BY PERFORNTING
Noti work	fication must be given to the district of can commence.	il and gas inspector 24 hours before permitted Date Date
Work	order approved by inspector	Date
		Outos Suntage

ECA/Yawkey #221H Plugging Plan

Drilling Info:

County: Boone Lat: 37.9658099 Long: -81.840485

Start Date: 08/27/2008

Conductor: Ran 50' of 16" conductor pipe.

Surface: Ran 300' of 9-5/8" 26 ppf casing with 135 sacks of BJ Surflite (14.6 ppg, 1.40 cuft/sx) cement up

to surface.

Intermediate: Ran 1437' of 7" 17 ppf casing with 120 sacks of 15/85 POZ (12.3 ppg, 2.29 cuft/sx)

cement up to surface.

Production: Ran 6470' of 4-1/2" 11.6 ppf casing with casing packers.

Fresh Water: 50', 85', 190'

Gas shows: Odor @ 3,328' and at TD

Oil Shows: None Reported

Salt Sand Top: 700' Coal: 140'-142'

Completion Info:

No Tubing on record

6 stage completion at MD of: 4353'-4355', 4765'-4767', 5223'-5225', 5681'-5683', 6140'-6142', and 6421'-6423'.

Packer set at approximately 1237' inside 7" intermediate casing with cement on top. Kick off point at 3679'

Plugging Plan:

- 1. Notify Inspector Ross Eller @ 304-932-6844 24 hr prior to commencing operations.
- 2. TIH with tubing through the 4-1/2" casing to the kick off point of 3679'. Place a cement plug from 3679'-3479'. Pump at least 6% gel in between all plugs.
- 3. Find TOC in production casing. Cut and pull as much production casing as possible out of hole.
- 4. Place a 100' cement plug at the point of casing cut.
- 5. Place surface plug from 100'-Surface. Top off as needed.
- 6. TOOH. Weld on monument with API number and backfill and reclaim.
- 7. Reclaim location to WV DEP specifications.

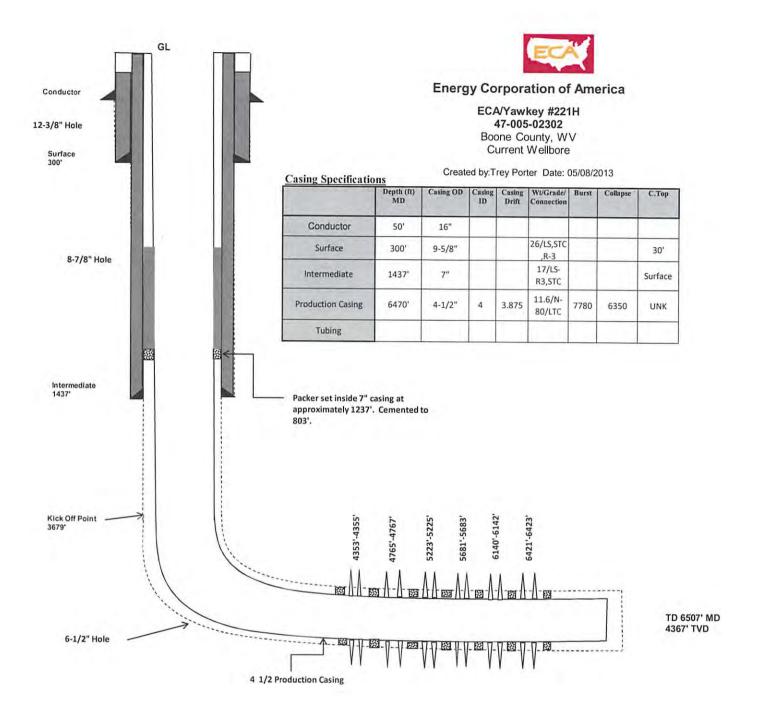
2 a. PERFORATE @ 3328 1 & CEMPUT ANNULUS 9NM UP TO 3728 ACROSS GAS SHOW, LEAVE CEMENT PAUG WEIGH 41/2" FROM 3328-1228.

& SALT WATER PLUG 700'- 600'

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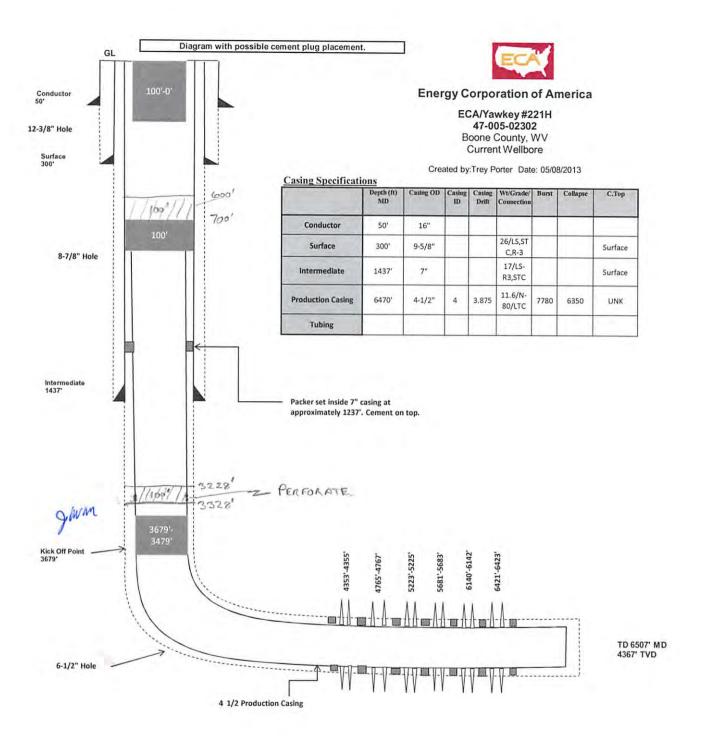
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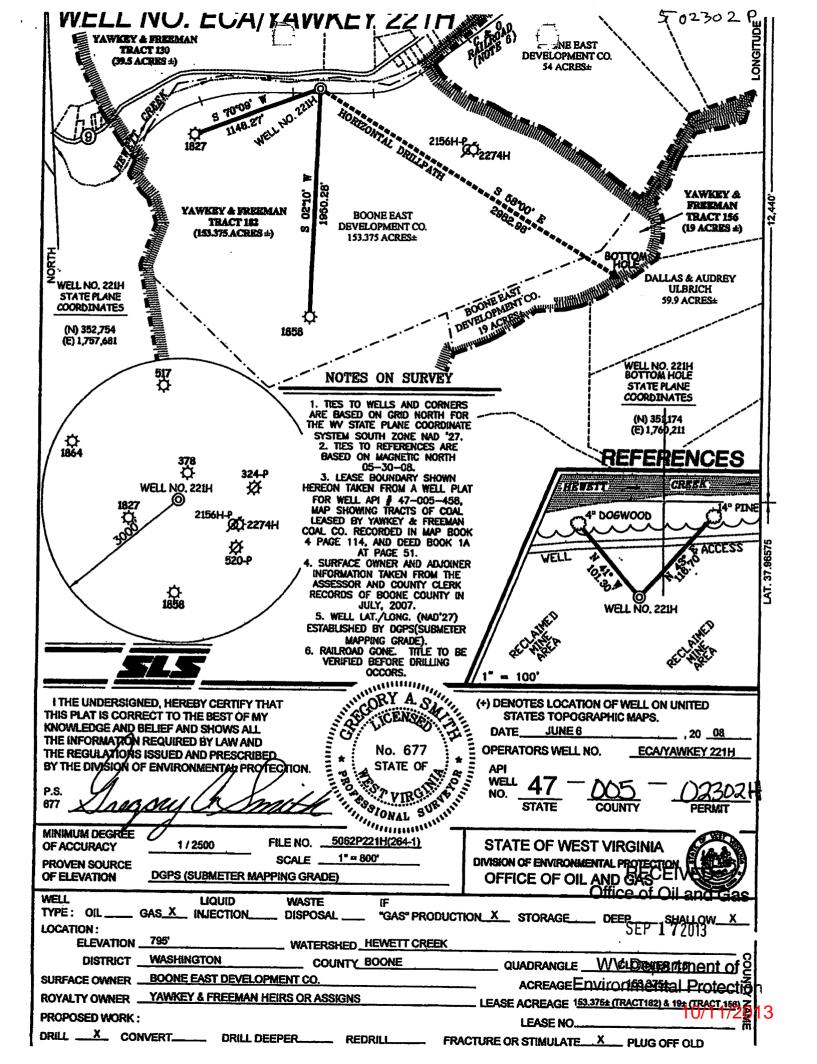
WV Department of Environmental Protection 10/11/2013

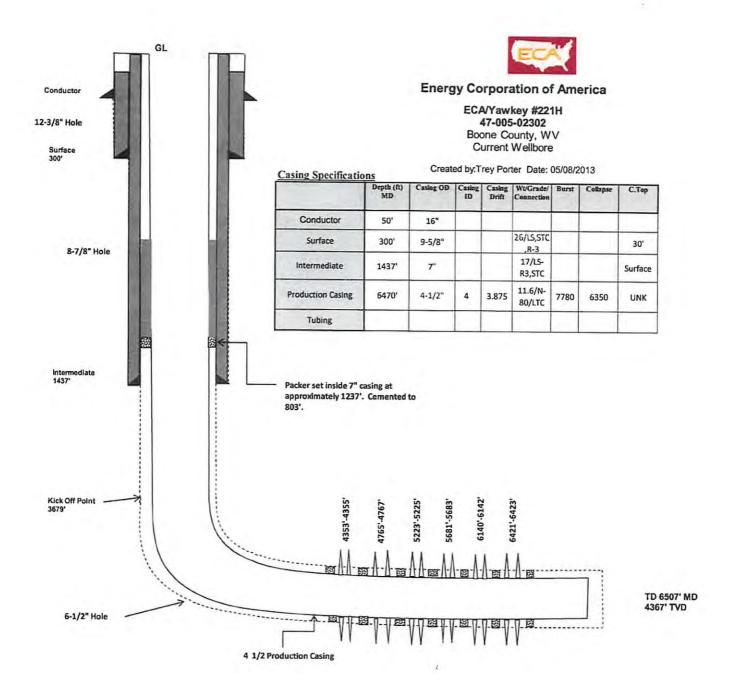


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Received

SEP 1 0 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

30 Jan. 2009

API# 47-4502302

Cement

Fill Up

Cu. Ft.

Driven

191

354

Casing

Packers

State of West Virginia Division of Environmental Protection Section of Oil and Gas Well Operator's Report of Well Work

	Farm	name	
--	------	------	--

Boone East Development

Operator Well No.:

Used

in

Well

50'

305

1447

6470'

Left

in

Well

50'

305'

1447

6470'

ECA/Yawkey 221H

LOCATION:

Elevation: 795'

Quadrangle: Clothier 7.5'

District: Washington

County:Boone

Casing

&

Tubing

16"

9-5/8"

7"

4-1/2"

Latitude: 38° 00'00"
Longitude: 81° 50'00"

Company:

EASTERN AMERICAN ENERGY CORPORATION

501 56th Street

Charleston, WV 25304

Agent: Rodney A. Winters

Inspector: Barry Stallings
Permit Issued: 7/08/2008

Well work commenced: 8/27/2008

Well work completed: 10/28/2008

Verbal plugging

Permission granted on:

Rotary X Cable Rig

Total Depth (feet): 6507' TMD, 4367' TVD

Fresh water depths (ft): 50', 85', 190'

Salt-water depths (ft): 700'

Is coal being mined in area? (Y/N) No

Coal Depths (ft): 140'-142'

Open Flow Data

Gas:	Initial open flow	0	MCF/d	Oil:	Initial op	en flow	0	Bbl/d
	Final open flow	N/A	MCF/d		Final op	en flow	0	Bbl/d
	Time of open flow be	etween initia	al and final	tests	_	N/A	Day	7
	Static rock pressure	N/A	psi (surface p	ressure) afte	a.	N/A H	ours
	ucing Formation	Deve	onian Shale	,	Pay zone de	epth (ft)	4360'-	4367'TVD
	ucing Formation				Pay zone de	orth (ft)		
	ucing Formation				Pay zone de		:	
	ucing Formation				Pay zone de	pth (ft)		
5 th Prod	ucing Formation				Pay zone de	oth (ft)		
					•	• • • •		

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1) DETAILS OF PERFORATED INTERVALS, FRACED RING OR STIMULATING, PHYSICAL CHANGE, ETC. 2) THE WELL LOG WHICH IS A STRUMMENT OF SECOND OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBOKE

Rodney A.Winters

For: EAS

EASTERN AMERICAN ENERGY CORPORATION

WV Department of Environmental/Protection

By: Designated Agent Date: 30 January, 2009

ECA/Yawkey 137H WR35

FORMATION COLOR, HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh & salt water, coal, oil & gas
Surface Rock	0	50	Damp Fresh Water @ 50'
Shale	50	71	1 1/2" Stream Fresh Water @ 85'
Sandy Shale	71	135	<u>-</u>
Shale	135	140	
Coal Shale	140	142	
Sandy Shale	142	330	
Shale	330	470	Damp Brine Water @ 700'
Sand Shale	470	510	
Sand	510	560	
Shale	560	675	
Sand	675	900	
Sand	900	1015	
Shale	1015	1035	Gas Check @ 3328' - Odor
Sandy Shale	1035	1070	Gas Check @ TD - Odor
Red Rock	1070	1085	•
Shale	1085	1230	
Red Rock	1230	1245	
Shale	1245	1370	
Sand	1370	1430	
Little Lime	1430	2410	
Sandy Shale	2410	2650	
Sand	2650	3070	
Shale	3070	3230	
Sand	3230	3690	
Shale	3690	4040	
Sand Shale	4040	4360	
Devonian Shale	4360	•	
TVD	4367		

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SEP 172013

WV Department of Environmental Protection

10/11/2013

ECA/Yawkey

221H **WR35**

STAGE ONE:

Devonian Shale

Sliding Sleeve 6422' TMD

85Q Foam Frac

66,3660 lbs sand

1.95 MMcf N2

STAGE TWO:

Devonian Shale

Sliding Sleeve

6141' TMD 85 Foam Frac

59,729 lbs sand

2.12 MMcf N2

STAGE THREE: Devonian Shale

90Q Foam Frac

Sliding Sleeve 5682' TMD

84,757 Ibs sand

2.222 MMcf N2

STAGE FOUR:

Devonian Shale

Sliding Sleeve 5224' TMD

90Q Foam Frac

95,257 lbs sand

2.022 MMcf N2

STAGE FIVE:

Devonian Shale

90Q Foam Frac

Sliding Sleeve

4766' TMD

102,104 lbs sand

2.101 MMcf N2

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SEP 172013

WV Department of **Environmental Protection**

02302

WW-4A	
Revised	6-07

1)	Date:	06/31/2013	
2)	Operator's	Well Number	
	VYawkey #221		

005

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

3) API Well No.: 47 -

4) Surface Ow (a) Name	ner(s) to be served: Boone East Development Co.		5) (a)	Coal Operator Name	Freal Mize	1/
Address	P.O. Box 271	_		Address	P.O. Box 271	
	Julian, WV 25529		_		Julian WV, 25529	
(b) Name				(b) Coal Own	ner(s) with Declaration	1
Address				Name	Freal Mize	
				Address	P.O. Box 271	
					Julian WV, 25529	
(c) Name				Name		
Address				Address		
			_/			
6) Inspector	Ross Eller		V	(c) Coal Less	see with Declaration	
Address	121 Brierhill Drive			Name		
	Beckley, WV 25801			Address		
Telephone	304-932-6844					
	DOONG NAMED AT					

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

willing.	Well Operator	Energy Corporation of America
OFFICIAL SEAL	By:	Rodney A Winters
Notary Public, State of West Virginia MICHELE LAMBERTUS WEBER	Its:	VP of Land
104 Deming Drive	Address	501 56th St SE
Charleston, WV 25314 My commission expires April 19, 2021		Charleston, WV 25304
My Commission Supression	Telephone	304-925-6100
	40	Annual and
Subscribed and sworn before me thi MICHIEL AMBREAUS WELL My Commission Expires	s_08 da 1002	Notary Public Notary Public Notary Public Office of Oil and Get Public Office of Oil and O

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

WW₂9 Rev. 5/08

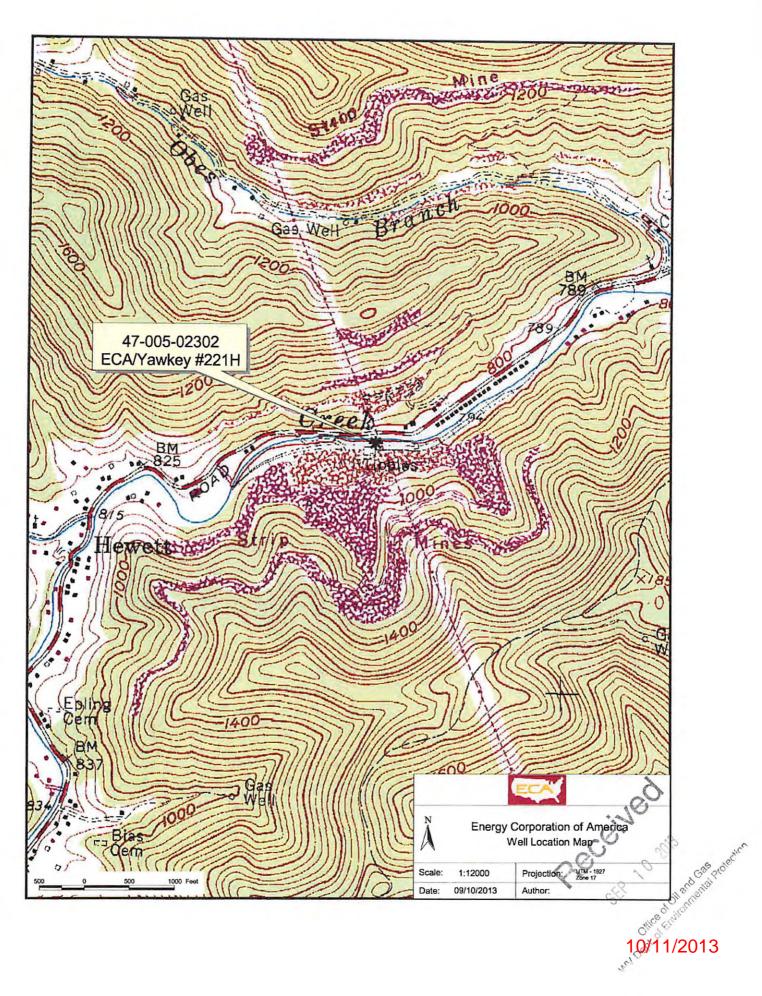
	Page 1		of 4
API Number 47 -	005	-	02302
Operator's Well No	, ECA/Yav	vkey #	#221H

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

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

		igy corporation	of America			OP Code 014980	
Watershed Hewett Creek					ingle _	Clothier 7.5'	
Elevation	795'		County Boone			District_Washington	
Description	on of anticip	pated Pit Waste: Fr	esh Water and	Gel			
Will a syn	nthetic liner	be used in the pit?	Yes	20 m	L		
Proposed	Disposal M	ethod For Treated P	it Wastes:			COPY	
		Land Applicati				001.	
		Underground I	njection (UIC Perm	it Number_)	
		Reuse (at API		133,000)	
		Off Site Disppe	osal (Supply form W	/W-9 for dis	sposal I	ocation)	
	_	Other (Explain					
Proposed	Work For V	Which Pit Will Be Us	sed:				
		Drilling			wabbir		
	J	Workover		XP	luggin	g	
	1.	Other (Explain					
an August						GENERAL WATER POLLUTION PERMIT	
provisions law or reg I application obtaining penalties f Company	t 1, 2005, by s of the per ulation can certify und n form and the inform or submitti Official Sig	the Office of Oil armit are enforceable lead to enforcement der penalty of law to all attachments thation, I believe thating false information, anature Rodr	nd Gas of the West V by law. Violations of action. that I have personally ereto and that, base	rirginia Deport any term y examined and on my is true, accurate true, accurate true.	artmen or con l and a nquiry ate, and	t of Environmental Protection. I understand a dition of the general permit and/or other appum familiar with the information submitted of those individuals immediately responsing complete. I am aware that there are sign	
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		LEGEND				
Property Boundary	**	Diversion William	well to the till till			
Rond = = = = :		Spring				
Existing Fence — 🗴	_ × _ × _	Wet Spot				
Planned Fence /	_/_/_	Drain Pipe with size in inches Waterway Cross Drain Artificial Filter Strip XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX				
Stream /						
Open Ditch	· — · · · · · · — - · · · ·					
Rock & 88888						
North N						
Buildings						
Water wells		Area for Land Application of P	it Waste			
Drill site						
Proposed Revegetation Treat	ment: Acres Disturbed .5	Prevegetation pl	I			
Lime 2	Tons/acre or to correct to p	н 6.5				
Fartilizar (10.20.20	or equivalent) 500	(500 lbs misimum)				
Strow 2	or equivalent)	bs/acre (500 lbs minimum)				
Mulch Straw 2	Tons	s/acre				
	Sc	eed Mixtures				
Seed Type	ea I lbs/acre	Are Seed Type	ea II lbs/acre			
Tall Fescue	40	Tall Fescue	40			
Ladino Clover	5	Ladino Clover	5			
		1				
Attach:	pit and proposed area for land ap	anlication				
		pheation.				
Photocopied section of involve	/ed 7.5' topographic sheet.					
	200					
Non Assumed him	TA SID					
Plan Approved by:						
Comments:			RECEIVED Gas			
			Office of Oil and Gas			
Λ.			SEP 172013			
Citle: ()	astrost.	Date: 9/16/	13 SEP 112010			
	my the		WV Department of			
Field Reviewed? (_) No	WV Department of			





West Virginia Department of Environmental Protection Office of Oil and Gas

WELL LOCATION FORM: GPS

_{API:} 47-005-02302	WELL NO.: 221H
FARM NAME: ECA/Yawkey	
RESPONSIBLE PARTY NAME: Energ	gy Corporation of America
COUNTY: Boone	DISTRICT: Washington
QUADRANGLE: Clothier 7.5'	
SURFACE OWNER: Boone East D	Development
ROYALTY OWNER: Yawkey Four	ndation II
UTM GPS NORTHING: 4,202,366.0	
UTM GPS EASTING: 426,186.61	
preparing a new well location plat for a plugginabove well. The Office of Oil and Gas will not the following requirements: 1. Datum: NAD 1983, Zone: 17 North height above mean sea level (MSL) 2. Accuracy to Datum – 3.05 meters 3. Data Collection Method: Survey grade GPS: Post Processed D	n, Coordinate Units: meters, Altitude:) – meters.
Real-Time Differ	rential
Mapping Grade GPS X : Post Processed	
Real-Time Di	fferential X
prescribed by the Office of Oil and Gas.	y map showing the well location. For each to the best of my knowledge and CEIVED by law and the regulations issued and Office of Oil and Gas Office of Oil and Gas Office of Oil and Gas Office Office of Oil and Gas Office Offi