



**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

May 08, 2014

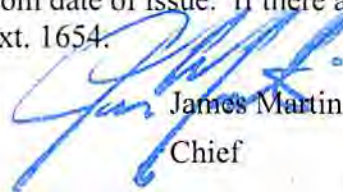
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-1501596, issued to TRIAD HUNTER, LLC, 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 penalties 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: J.B. CASTO #111  
Farm Name: TRIAD HUNTER, LLC  
**API Well Number: 47-1501596**  
**Permit Type: Plugging**  
Date Issued: 05/08/2014

## 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

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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) Date January 30, 2014  
2) Operator's  
Well No. J.B. Casto #111  
3) API Well No. 47-015 - 01596

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil \_\_\_ / Gas \_\_\_ / Liquid injection X / Waste disposal \_\_\_ /  
(If "Gas, Production X or Underground storage \_\_\_) Deep \_\_\_ / Shallow X

5) Location: Elevation 1203' GPS Watershed Grannys Creek  
District Henry County Clay 15 Quadrangle Newton 512

6) Well Operator Triad Hunter, LLC 7) Designated Agent Kim Arnold  
Address 125 Putnam Street Address P.O. Box 154  
Marietta, Ohio 45750 Waverly, W.V. 26184

8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name Ed Gainer Name N/A  
Address P.O.Box 821 Address \_\_\_\_\_  
Spencer, W.V. 25276

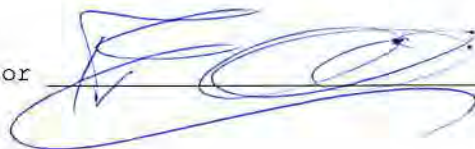
10) Work Order: The work order for the manner of plugging this well is as follows:

(SEE ATTACHED SHEET) *See changes.*

*6% gell between all plugs.*

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector



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**05/09/2014**



( 2014 )

Plugging Procedure Attachment ( Wells with 8 5/8" Casing )

Well Name : J.B. Casto # 111

Permit Number: 47-015-01596

District: Henry

County: Clay

MIIRU service rig and flowback tank; blow well down.

1. Pull tubing and rods OOH.
2. Check total depth with sandpump; clean out hole below bottom perforation.
3. Run 2 3/8" tubing below bottom perforation.
4. ( Bottom Hole Plug ) Mix/Pump 20 sacks Class A cement,( 23.6 cu. ft.), ¼ lb.flocele/sk., no CaCl.
5. Displace cement through tubing with gel water. *BHP (2114' - 1864')*
6. Pull 2 3/8" tubing OOH.
7. RIH with casing cutter tool, check depth of 1<sup>st</sup> plug and find 4 ½" cement top ( free pipe ).
8. Cut-off 4 ½" casing just above the cement top, break circulation, and pull one jt. of casing OOH.
9. ( Cut Plug ) Mix/Pump 30 sacks Class A cement, (35.4 cu. ft.), ¼ lb. flocele/sk.,no CaCl.
10. Displace cement through casing with gel water.
11. Pull 4 ½" casing up to the subsea elevation depth.
12. ( Elevation Plug ) Mix/Pump 30 sacks of Class A cement,( 35.4 cu. ft.), ¼ lb. flocele/sk., no CaCl. *ELEV. PLUG (1253' - 1153')*
13. Displace cement through casing with gel water. *set 100 ft*
14. Pull 4 ½" casing to 100 feet below surface. *surface pipe - 415 to 315*
15. ( Surface Plug ) Mix/Pump 30 sacks of Class A cement,( 35.4 cu. ft.), ¼ lb. flocele/sk., no CaCl.
16. Circulate cement to surface.
17. Pull remaining joints of 4 ½" casing OOH. Top load annulus with Class A cement to surface.
18. Weld a three foot monument pipe on to the existing casing. Fill monument pipe with cement and attach identification plate to monument pipe.
19. RDMO service rig and supporting equipment.
20. Reclaim well site and lease road.

*ELEV. 1203'*

*PERFORATION  
2062' - 2066'  
2076' - 2082'*

Plug Summary

( Plug Name )	( Thickness )	( Cement Type )	( Sacks )	( Cubic Feet )
1. Bottom Hole	250 ft.	Class A	20	23.6
2. Cut Plug	100 ft.	Class A	30	35.4
3. Elevation Plug	100 ft.	Class A	30	35.4
4. Surface Plug	100 ft.	Class A	30	35.4
5. Totals:			110 sacks	129.8 cu. ft.

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STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES, OIL AND GAS DIVISION

License 2-4-80, 19

FORM IV-35  
(Obverse)

Operator's  
Well No. J. B. Casto 111

[08-78]

WELL OPERATOR'S REPORT  
OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

API Well No. 47 -015-1596-W  
State County Peri

WELL TYPE: Oil \_\_\_ / Gas \_\_\_ / Liquid Injection X / Waste Disposal \_\_\_  
(If "Gas", Production \_\_\_ / Underground storage \_\_\_ / Deep \_\_\_ / Shallow \_\_\_ /)

LOCATION: Elevation: 1169.69' Watershed: Grannys Creek  
District: Henry County: Clay Quadrangle: Newton 7.5'

WELL OPERATOR Pennzoil Company DESIGNATED AGENT James A. Crews  
Address P. O. Box 1588 Address P. O. Box 1588  
Parkersburg, WV 26101 Parkersburg, WV 26101

PERMITTED WORK: Drill X / Convert \_\_\_ / Drill deeper \_\_\_ / Redrill: \_\_\_ / Fracture or stimulate \_\_\_  
Plug off old formation \_\_\_ / Perforate new formation \_\_\_ /  
Other physical change in well (specify) \_\_\_\_\_

PERMIT ISSUED ON 3-20, 19 79

OIL & GAS INSPECTOR FOR THIS WORK:

(IF APPLICABLE: PLUGGING OF DRY HOLE ON  
CONTINUOUS PROGRESSION FROM DRILLING OR  
REWORKING. VERBAL PERMISSION OBTAINED

Name Martin Nichols  
Address Clendenin, WV

GEOLOGICAL TARGET FORMATION: Big Injun Depth 2119 feet

Depth of completed well, 2114 feet Rotary X / Cable Tools \_\_\_

Water strata depth: Fresh, \_\_\_ feet; salt, \_\_\_ feet.

Coal seam depths: \_\_\_ Is coal being mined in the area? No

Work was commenced 5-19, 19 79, and completed 5-23-, 19 79

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling		
Conductor								Kinds
Fresh water								
Coal	<u>8-5/8</u>					<u>365</u>	<u>365</u>	<u>215 sks.</u>
Intermediate								Sizes
Production	<u>4-1/2</u>					<u>2124</u>	<u>2124</u>	<u>50 sks.</u>
Tubing								Depths set
Liners								Perforations:
								Top Bottom

OPEN FLOW DATA

Producing formation Squaw Water Injection Well Pay zone depth \_\_\_\_\_ feet

Gas: Initial open flow, \_\_\_\_\_ Mcf/d Oil: Initial open flow, \_\_\_\_\_ Bbl/d

Final open flow, \_\_\_\_\_ Mcf/d Final open flow, \_\_\_\_\_ Bbl/d

Time of open flow between initial and final tests, \_\_\_\_\_ hours

Static rock pressure, \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ hours

[If applicable due to multiple completion--]

Second producing formation \_\_\_\_\_ Pay zone depth \_\_\_\_\_ feet

Gas: Initial open flow, \_\_\_\_\_ Mcf/d Oil: Initial open flow, \_\_\_\_\_ Bbl/d

Final open flow, \_\_\_\_\_ Mcf/d Final open flow, \_\_\_\_\_ Bbl/d

Time of open flow between initial and final tests, \_\_\_\_\_ hours

Static rock pressure, \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ hours shut in

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DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Fractured w/250 gals. 15% HCL, 150 BW, 1000# 20/40 sd.

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fresh and salt water, coal, oil and gas
Shale & Sand			0	230	
Sand			230	268	
Shale			268	324	
Sand			324	476	
Shale			476	554	
Sand			554	714	
Shale			714	726	
Sand			726	732	
Shale			732	754	
Sand			754	790	
Shale			790	800	
Sand			800	866	
Shale			866	876	
Sand			876	926	
Shale			926	932	
Sand			932	940	
Shale			940	956	
Sand			956	990	
Shale			990	1008	
Sand			1008	1038	
Shale			1038	1096	
Sand			1096	1102	
Shale			1102	1154	
Sand			1154	1166	
Shale			1166	1278	
Sand			1278	1358	
Shale			1358	1420	
Sand			1420	1444	
Shale			1444	1452	
Sand			1452	1546	
Shale			1546	1552	
Sand			1552	1612	
Shale			1612	1620	
Sand			1620	1654	
Shale			1654	1668	
Sand			1668	1782	
Shale			1782	1842	

(Attach separate sheets to complete as necessary)

Well Operator \_\_\_\_\_

By \_\_\_\_\_ 05/09/2014

Its \_\_\_\_\_

**NOTE:** Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic, detailed geological record of all formations, including coal, encountered in the drilling of a well."

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DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fresh and salt water, coal, oil and gas
Sand			1842	1860	
Little Lime			1860	1916	
Pencil Cave			1916	1934	
Big Lime			1934	1980	
Loyalhanna			1980	2042	
Keener			2042	2058	
Big Injun			2058	2086	
Shale			2086	2118	
Squaw			2118	2140	
Total Depth				2140	
PBD				2114	

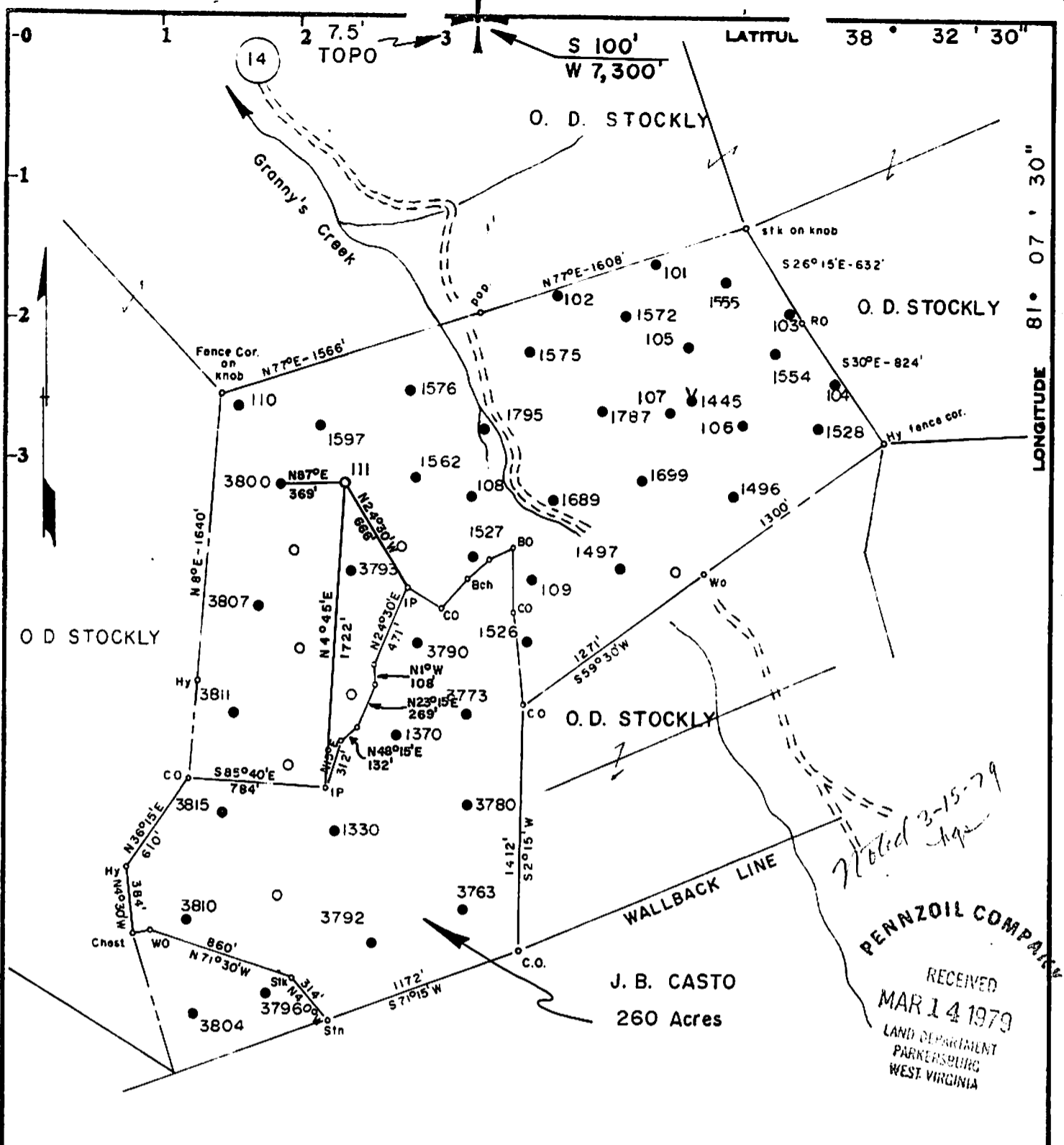
(Attach separate sheets to complete as necessary)

Pennzoil Company  
Well Operator

By Curtis A. Ruan 05/09/2014  
Civil Engineering Dept.

**NOTE:** Regulation 2.02(i) provides as follows:  
  
"The term 'log' or 'well log' shall mean a systematic, detailed geological record of all formations, including coal, encountered in the drilling of a well."

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*Noted 3-15-79*  
**PENNZOIL COMPANY**  
 RECEIVED  
 MAR 14 1979  
 LAND DEPARTMENT  
 PARKERSBURG  
 WEST VIRGINIA

SURFACE- Charles Tucker  
 Ovapa, WV

Minimum Error of Closure 1 in 200

Source of Elevation O. D. STOCKLY #22, elev. 1238.35

- Fracture.....
- New Location.....  Water Injection
- Drill Deeper.....
- Abandonment.....

I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia.

Signed: *Curtis A. Lucas*  
 Map No. 83      Squares:    N    S 62    E    W 31, 32

Company	PENNZOIL COMPANY		
Address	P. O. Box 1588, Parkersburg, W. Va. 26101		
Farm	J. B. CASTO		
Tract	Acres	260	Lease No. 46485-up
Well (Farm) No.	III	Serial No.	
Elevation (Spirit Level)	1169.69		
Quadrangle	NEWTON 7.5		
County	CLAY	District	HENRY
Surveyor	CURTIS A. LUCAS		
Surveyor's Registration No.	275		
File No.	1626	Drawing No.	
Date	3/13/79	Scale	1" = 800'

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON

**WELL LOCATION MAP**

FILE NO. 05/09/2014

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.



1501596 P

# N McCullough

BOND CEMENT AND/OR SONIC SEISMOGRAM LOG

GAMMA RAY

FILING NO.

HBC-GR-SS-98920

COMPANY PENNZOIL COMPANY

WELL J.B. CASTO #111

FIELD HENRY DISTRICT

COUNTY CLAY STATE WEST VIRGINIA

LOCATION

GRANNY'S CREEK  
NEWTON 7.5' QUAD.

OTHER SERVICES:

PENNZOIL CO.  
PETROLEUM ENGR. DEPT.  
FILE COPY

SEC. TWP. RGE.

PERMANENT DATUM GL ELEV. 1169.69'

LOG MEASURED FROM KB

DRILLING MEASURED FROM KB

ELEVATIONS:  
KB. 1177.69'  
DF. 1176.69'  
GL. 1169.69'

DATE 8-14-79

RUN NO. ONE

TYPE LOG BOND CEMENT-GAMMA RAY-SONIC SEISMOGRAM

DEPTH-DRILLER 2140'

DEPTH-LOGGER 2107'

BOTTOM LOGGED INTERVAL 2103'

TOP LOGGED INTERVAL 1520'

TYPE FLUID IN HOLE WATER

SALINITY PPM CL.

DENSITY LB./GAL.

LEVEL FULL

MAX. REC. TEMP. DEG. F.

OPR. RIG TIME 1 HOUR

RECORDED BY MAYFIELD

WITNESSED BY MR. HELDMAN

RUN NO.	BORE HOLE RECORD			CASING RECORD			
	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	6-3/4"	365'	TD	8-5/8"		0	365'
				4-1/2"		0	TD

THIS HEADING AND LOG CONFORMS TO API RECOMMENDED STANDARD PRACTICE RP 33 (37)

FOLD HERE

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1501596A

2000

2050

2100

4 HOLES

6 HOLES

42 84

API UNITS

200 MICROSECONDS 1200

90	70	50	30	10
100	80	60	40	20
% BOND				

LOG BOTTOM - 2103'

PENNZOIL COMPANY  
 J. B. CASTO #111  
 HENRY DISTRICT FIELD  
 CLAY COUNTY, WEST VIRGINIA

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REPEAT SECTION

CASING LOG



1501596P

WW-4A  
Revised 6-07

1) Date: January 30, 2014  
2) Operator's Well Number  
J.B. Casto # 111

3) API Well No.: 47 - 015 - 01596

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

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Triad Hunter, LLC</u>	Name <u>N/A</u>
Address <u>125 Putnam Street</u>	Address _____
<u>Marietta, Ohio 45750</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>N/A</u>
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Ed Gainer</u>	(c) Coal Lessee with Declaration
Address <u>P.O. Box 821</u>	Name <u>N/A</u>
<u>Spencer, W.V. 25276</u>	Address _____
Telephone <u>(304) 389-7582</u>	_____

**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.

Well Operator Triad Hunter, LLC

By: Rocky Roberts *Rocky Roberts*

Its: Senior V.P. Appalachian Operations

Address 125 Putnam Street

Marietta, Ohio 45750

Telephone (740) 374-2940

Subscribed and sworn before me this 30<sup>th</sup> day of January, 2014

Elizabeth R. Tebay Notary Public

My Commission Expires 2-29-14



**Oil and Gas Privacy Notice**

The Office of Oil and Gas processes your personal information, such as name, address and phone number, for 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 [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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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

Operator Name Triad Hunter, LLC OP Code \_\_\_\_\_

Watershed Grannys Creek Quadrangle Newton

Elevation 1203' GPS County Clay District Henry

Description of anticipated Pit Waste: No Pit; fluids will be separated at Ovapa Facility; oil stored and salt water re-injected.

Will a synthetic liner be used in the pit? " No Pit "

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- Reuse (at API Number \_\_\_\_\_ )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Proposed Work For Which Pit Will Be Used:

- Drilling  Swabbing
- Workover  Plugging
- Other (Explain \_\_\_\_\_)

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.

Company Official Signature Rocky Roberts

Company Official (Typed Name) Rocky Roberts

Company Official Title Senior V.P. Appalachian Operations

Subscribed and sworn before me this 30th day of January, 2014

Elizabeth R. Seby



My commission expires 2-29-14

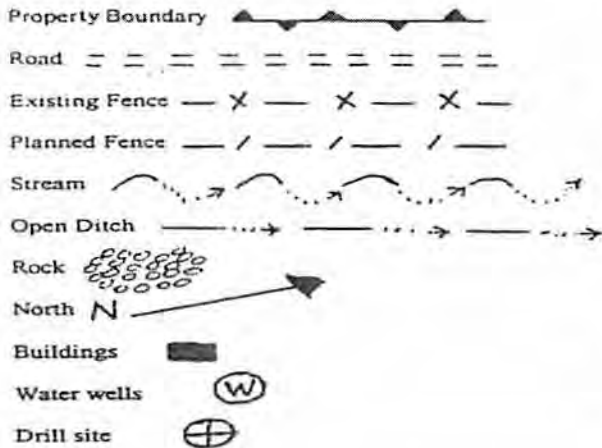
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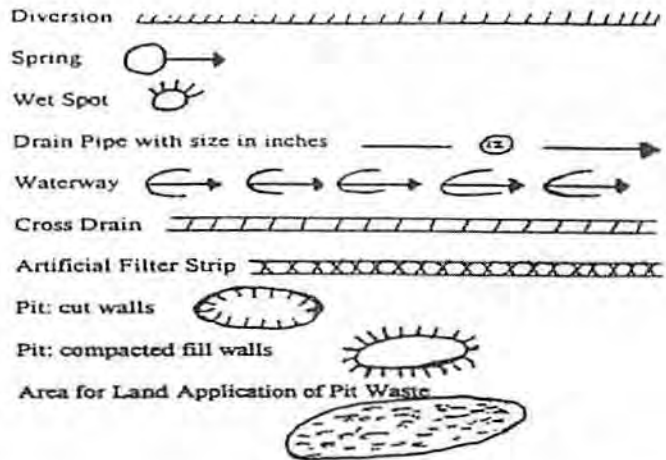
WV Department of  
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LEGEND



Proposed Revegetation Treatment: Acres Disturbed One (1) Prevegetation pH 5.5

Lime Two (2) Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 600 lbs/acre (500 lbs minimum)

Mulch 90 - 100 bales/acre Tons/acre

Seed Mixtures

Seed Type	Area I	lbs/acre	Seed Type	Area II	lbs/acre
Orchard Grass		30%			
Rye ( Annual & BT )		35%			
Timothy ( Climax )		25%			
Clover Med. Red )		10%			

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: \_\_\_\_\_

Title: Inspector Date: 2/4/14

Field Reviewed? ( ) Yes (X) No

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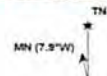
1501596P



Data use subject to license.

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www.delorme.com



Scale 1:173,333  
 Department of Environmental Protection  
 1" = 1,733.3 ft  
 FEB 2 2014  
 05/09/2014



WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
**WELL LOCATION FORM: GPS**

API: 47-015-01596 WELL NO.: 111

FARM NAME: J.B. Casto

RESPONSIBLE PARTY NAME: Triad Hunter, LLC

COUNTY: Clay DISTRICT: Henry

QUADRANGLE: Newton

SURFACE OWNER: Triad Hunter, LLC

ROYALTY OWNER: Kanawha Banking and Trust Co. et al

UTM GPS NORTHING: 4265920

UTM GPS EASTING: 0486575 GPS ELEVATION: 1203'

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS  : Post Processed Differential   
Real-Time Differential

Mapping Grade GPS  : Post Processed Differential   
Real-Time Differential

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Ben Smethers  
Signature

Geologist  
Title

1/16/14  
Date

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West Virginia Department of Environmental Protection  
05/09/2014



# Chuck Taylor Toolbox

## Geographic/UTM Coordinate Converter

You can convert between geographic coordinates and Universal Transverse Mercator (UTM) coordinates using this form.

**Note:** This is a JavaScript-powered form. If you have difficulties using this form, check your browser's settings to make sure you have enabled JavaScript.

Programmers: The JavaScript source code in this document may be copied and reused without restriction.

If you have a Java 1.1-compliant browser, and especially if you need to use an ellipsoid model other than WGS84, you may want to try the [Coordinate and Datum Transformations tool](#).

Geographic (degrees decimal)	To/From	UTM
lon -81.154048765206 [ >> ]	x (easting)	0486575
lat 38.541593790507 [ << ]	y (northing)	4265920
	zone	17
	hemisphere	<input checked="" type="radio"/> N <input type="radio"/> S

J.B. CASTO #111

*Geographic coordinates are entered and displayed in decimal degrees. Negative numbers indicate West longitudes and South latitudes. UTM coordinates are entered and displayed in meters. The ellipsoid model used for computations is WGS84.*

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