



west virginia department of environmental protection

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

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

September 28, 2017

EQT Production
1 Hillcrest Drive, East, Suite 201
Charleston, WV 25311

Re: Mechanical Integrity Test Approval and Authorization for Injection

Dear Mr. Carmichael:

The mechanical integrity test performed September 22, 2017 on well API 47-047-01511 has been approved. Authorization is granted to resume injection. The maximum permitted injection pressure for this well is set at 847 psig. If you have any questions then please feel free to contact Justin Nottingham via email at Justin.E.Nottingham@wv.gov or by phone at (304) 926-0499 ext. 1650.

Respectfully,

Melanie Hankins
Environmental Resources Specialist
WVDEP Office of Oil & Gas

Date: 9/27/17

Operator's Well Number **506168**

	State	County	Permit
API Well No.:	47-	047	- 01511

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENT-OFFICE OF OIL AND GAS
PRE-OPERATION CERTIFICATE
FOR LIQUID INJECTION OR WASTE DISPOSAL WELL**

WELL OPERATOR EQT Production

DESIGNATED AGENT

Address 1 Hillcrest Drive, East, Suite 201
Charleston, WV 25311

Address

GEOLOGICAL TARGET FORMATION Berea **Depth** 3400 **feet(top) to** 3450 **feet(bottom)**

Virgin reservoir pressure in target formation **859** _____ psig

Source of information on virgin reservoir pressure: **Offset Well: 47-047-00944**

Perforation intervals 3412'-3468'

Open-hole intervals N/A

MAXIMUM PERMITTED INJECTION OPERATIONS

Well head injection pressure: 847 _____ psig

Bottom hole pressure: 1550 _____ psig

Volume per hour: 47.7

DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED

Liquids to be injected for oil recovery: Oil is gravity separated prior to injection. Injection fluid is filtered for oil as well.

Wastes to be disposed of: The fluid to be injected is brine

Additives (Slurry mediums, inhibitors, solvents, oxidizers, deoxidizers, etc.)

Corrosion and Scale Inhibitors such as x-cide 370 and OSW5200.

SDS were included with permit renewal package

SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

Injection tubing is PVC lined. Fluid in casing annulus is treated with a corrosion inhibitor.

Injection fluid will be treated with corrosion inhibitor as well.

ADDITIONAL DRILLING AS PART OF THE CONVERSION (Complete form WR-35)

DETAILS ON NEW CASING AND TUBING PROGRAM AS PART OF THE CONVERSION (To be completed below unless the new casing and tubing program is described on a form WR-35, submitted in connection with the permit to which this form WR-37 relates.)

[illegible]

WR37

MECHANICAL INTEGRITY TEST

Test Method: _____

1. Barton Meter was installed on 5.5" csg _____

2. 1335 psi _____

3. Pressure was monitored and recorded on attached chart _____

The undersigned certifies that the test was performed on September 22, 2017 and demonstrated mechanical integrity of the well. The test was witnessed by Brian Ferguson representing the Office of Oil and Gas.

EQT Production

Well Operator

9/27/17

Date

THIS WELL IS AUTHORIZED FOR INJECTION.

Signed [Signature]

UIC PROGRAM

Date 9/28/17

[NOTE: That the mechanical integrity of this well must be demonstrated again within ninety (90) days of five years from this date in order for injection to continue. Please notify the state inspector 24 hours in advance of the test].

EQT Production

Well Operator

By: [Signature] Assist. Sup. 9/27/2017
Its _____

