

## INJECTION WELL DATA SHEET

OPERATOR: Delaware Energy, LLCWELL NAME & NUMBER: Giant Panda SWD # 1WELL LOCATION: 1,440' FSL & 560' FWL L 16 SECTION 24S TOWNSHIP 27E RANGEWELLBORE SCHEMATIC see attached wellbore sketchWELL CONSTRUCTION DATASurface Casing

Hole Size: 17.5" Casing Size: 13-3/8", 54.5#

Cemented with: 500 sx. or                      ft<sup>3</sup>

Top of Cement: surface Method Determined: Plan to Circulate

Intermediate Casing

Hole Size: 12-1/4" Casing Size: 9-5/8", 47#, L-80

Cemented with: 3,200' sx. or                      ft<sup>3</sup>

Top of Cement: surface Method Determined: Plan to Circulate

Production Casing

Hole Size: 8-1/2" Casing Size: 7-5/8", 39#, P-110

Cemented with: 580 sx. or                      ft<sup>3</sup>

Top of Cement: Top of Liner Method Determined: Plan to Circulate to liner top

Total Depth: 13,255'Injection Interval

13,255' feet to 14,255'

(OPEN HOLE)

INJECTION WELL DATA SHEET

Tubing Size: 5.5" OD P-110 x 5.5" OD P-110 Liberty FJ tapered string Lining Material: Fiber Glass

Type of Packer: Weatherford Arrow Set 1X

Packer Setting Depth: 13,205'

Other Type of Tubing/Casing Seal (if applicable): none

Additional Data

1. Is this a new well drilled for injection? XXXXXX Yes No  
 If no, for what purpose was the well originally drilled? N/A

2. Name of the Injection Formation: Devonian

3. Name of Field or Pool (if applicable): SWD; Devonian

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. N/A

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: \_\_\_\_\_

Below: none

Next Higher: Delaware 2,165' - 4,130'; Bone Spring 5,605' - 8,955'; Wolfcamp 8,955' - 10,805'; Strawn 10,805' - 10,955'; Atoka 10,955' - 11,655'; Morrow 11,655' - 12,805'.

Additional Questions on C-108

**VII.**

**1. Proposed average and maximum daily rate and volume of fluids to be injected;**

Average 15,000-20,000 BWPD, Max 25,000 BWPD

**2. Whether the system is open or closed;**

Open System, Commercial SWD

**3. Proposed average and maximum injection pressure;**

Average 1,500-1,800 PSI, Max 2,651 PSI

**4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,**

Bone Spring, Delaware, and Wolfcamp produced water. No known incompatibility exists with these produced water types and the Devonian. Devonian formation is used as a disposal interval throughout the Delaware Basin for Wolfcamp, Bone Springs, and Delaware produced water. See attached water analysis from Bone Spring, Wolfcamp, and Delaware produced water.

**5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).**

Disposal zone is barren and does not produce

**\*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.**

The proposed disposal interval is in the Devonian formations 13,255'-14,255'. Devonian is an impermeable organic Shale at the very top (13,155 ft, Woodford Shale) 100ft thick followed by permeable lime, dolomite, and small amount of shale 1000ft thick. There are no fresh water zones underlying the proposed injection zone. Usable water depth is from surface to 120', the water source is older alluvium (Quaternary). All of the fresh water wells in the area have an average depth to water of 120ft.

**IX. Describe the proposed stimulation program, if any.**

60,000 gallons 20% HCL acid job with packer

**X. Attach appropriate logging and test data on the well**

Mud log will be filed after the well has been drilled. All cased hole and open hole Logs will be filed following drilling operations.

**XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.**

Attached is a water sample from 32.188712, -104.22190, approximately .2 miles from the Giant Panda Location.

**XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.**

Delaware Energy, L.L.C. has reviewed and examined available geologic and engineering data in the area of interest for the Giant Panda SWD #1 and have found no evidence of faults or other hydrologic connections between Devonian disposal zone and the underground sources of drinking water. Furthermore, there exist many impermeable intervals between the injection interval and the fresh ground water from the top of the Devonian Carbonate and the base of the ground water.

Jason Goss

Vice President of Drilling

12/12/2018

Title

Date

### III. WELL DATA

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

Giant Panda SWD #1, Sec. 16-T24S-R27E, 1440' FSL & 560' FWL, UL L, Eddy County, New Mexico

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

| Casing Size | Setting Depth  | Sacks of Cement | Hole Size | Top of Cement | Determined |
|-------------|----------------|-----------------|-----------|---------------|------------|
| 13-3/8"     | 500'           | 500             | 17-1/2"   | Surface       | CIRC       |
| 9-5/8"      | 8,955'         | 3,200           | 12-1/4"   | Surface       | CIRC       |
| 7-5/8"      | 8,755'-13,255' | 580             | 8-1/2"    | Liner Top     | CIRC & CBL |

(3) A description of the tubing to be used including its size, lining material, and setting depth.

5-1/2" OD P-110 X 5-1/2" OD P-110 Liberty FJ tapered string, Internally Fiber Glass Coated Tubing set 50 to 100ft above open hole

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Weatherford Arrow Set 1X injection packer, stainless with on/off tool

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

Devonian Formation

Pool Name: SWD (Devonian)

(2) The injection interval and whether it is perforated or open-hole.

13,255' to 14,255' (OH)

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

Well is a planned new drill for SWD

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

None, well is a planned new drill

**(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.**

Next Higher: Delaware 2,165' – 4,130', Bone Spring 5,605'-8,955', Wolfcamp 8,955'- 10,805', Strawn 10,805'-10,955', Atoka 10,955'-11,655', Morrow 11,655'-12,805'.

Next Lower: None

**Giant Panda SWD # 1**

API # PENDING  
1,440' FSL & 560' FWL, Sec. 16, T24S, R27E, UL "L"  
EDDY COUNTY, NEW MEXICO

**ELEVATION:**  
GL: 3,234'

**PROPOSED WELLBORE**

