AE Order Number Banner

Report Description

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App Number: pLWJ1008848474

1RP - 2457

ENERGEN RESOURCES CORP

7/22/2016

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July 15, 2010

Attn: Mr. Larry Johnson
Environmental Engineer
OCD: Hobbs District Office
1625 N. French Drive
Hobbs, NM 88240

Re: Energen #8-R, West Lovington Strawn Unit
API 30-015-32291
Section 35, T-15-S; R-35-E, Lea County, NM

Dear Larry,

Energen Resources proposes installing four monitor wells around the subject well site to determine if chloride concentrations in a shallow Ogallala aquifer water well located on the north side of the well pad might have been impacted by operations on this lease. No salt or produced water spills are known to have occurred on this lease.

The approximate locations of the proposed monitor wells, in relation to the original drilling pad and mud pits, are shown on the attached diagram. The top right (north) monitor well will be located close to the water well that was utilized during original drilling. The water well is about 95 feet deep and produces fresh water from the unconfined Ogallala aquifer. A surveyed plat will be produced prior to drilling.

Based upon water logs of wells located in Sections 34 and 35 T-15-S and R-35-E on file with the New Mexico Office of the State Engineer (OSE) it is reasonable to estimate the depth to the water table beneath the well site at about 55 feet below ground level. The top of the Ogallala Formation underlies a 16 to 20 foot thick caliche horizon. The upper 30 to 35 feet of Ogallala Formation is locally within the vadose zone. Locally the Ogallala groundwater gradient is to the southeast. The Ogallala is a declining (mined) aquifer.

The first monitor well will be drilled on the northwest corner of the pad area. Soil samples will be taken for analysis from depths of 5, 10, 15, 20, 25 and 30 feet. Thereafter samples will be taken for analysis at 10 foot intervals to an estimated total depth of approximately 75 feet. One sample will be taken at the capillary fringe which is anticipated at approximately 55 feet. One sample will also be taken at total depth. Modification of the total depth depends upon the depth of the water level. This first test will penetrate and screen to 20 feet beneath the water table. Each of the additional three monitor wells are anticipated to be constructed the same as the first. All samples will be submitted to Trace Analysis for appropriate TPH Modified 8015 GRO-DRO analyses plus chloride and TDS in water. Water samples will be collected upon completion and development of each monitor well.

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The Ogallala Formation is known to potentially contain multiple stratigraphically and hydrogeologically separated water bearing zones beneath the uppermost unconfined aquifer being investigated. The depth of the existing water well indicates it is constrained to the unconfined aquifer. It is therefore important that these monitor wells do not penetrate beyond this upper (main) unconfined aquifer in order to prevent contamination of deeper zones should this local area be polluted. The proposed testing will adequately evaluate the water in the unconfined aquifer as related to activities attributable to this lease.

Energen Resources respectfully requests your approval of this overall plan. Please contact me should any questions arise.

Sincerely,

Andrew Cobb

Andrew Cobb
Senior Safety& Environmental Specialist
Energen Resources Corporation

CC: Joe D. Niederhofer
Rusty Cook
Tom Hnasko
Kay Havenor
Paul Callaway

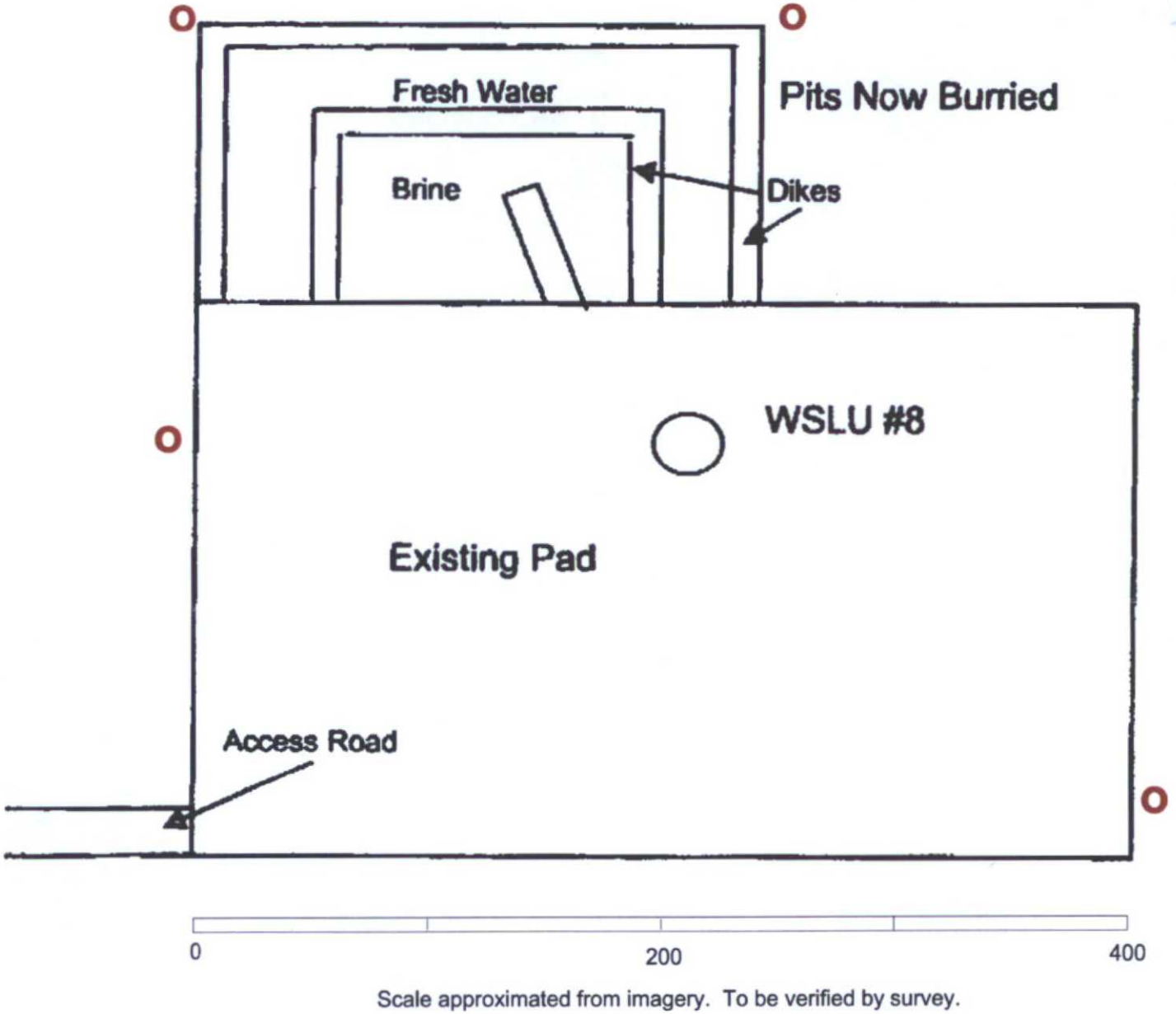
Proposed Locations for Monitor Wells

API 30-015-32291

For Planning Use Only

West Lovington Strawn Unit Well No. 8

Original Location Pad and Reserve Pit Configuration



Scale approximated from imagery. To be verified by survey.

O Monitor well