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Kansas
Department of Health and Environment

PROCEDURE FOR THE PRESSURE MECHANICAL INTEGRITY TEST FOR THE CASING OF AN UNDERGROUND HYDROCARBON STORAGE WELL

Procedure #: UICLPG-17
(6/11)

Narrative:

The casing pressure test evaluates the mechanical integrity of the well casing. The well casing has mechanical integrity if there are no significant leaks in the casing. The mechanical integrity of the well casing is evaluated by conducting a hydraulic pressure test and monitoring for a pressure loss. The permittee shall schedule the test to allow KDHE the opportunity to witness the test.

Routine casing pressure tests, run in accordance with the following procedure, do not require a written plan or advance approval from KDHE. Any proposed test that deviates substantially from this procedure requires advance notice and approval by KDHE.

When feasible, the permittee shall notify KDHE of the test schedule so that KDHE may have the opportunity to witness the test.

Procedure:

1. Calculate casing test pressures. The minimum wellhead casing test pressure shall be the maximum allowable operating injection pressure at the wellhead.

2. Depressurize the well.

3. Remove any tubing strings from the well.

4. Set a retrievable bridge plug or packer immediately above the cavern for the purpose of pressure testing the casing. The test must demonstrate integrity to a depth at least equal to the top of the salt. The packer or plug must be capable of making a tight seal to allow the casing to be hydraulically pressure tested.

5. The well should be in thermal equilibrium before commencing the test.

6. Commence the casing pressure test. Monitor the liquid pressure placed on the casing for the purpose of determining integrity of the casing. Ensure that the casing is liquid filled. The permittee may demonstrate the presence of liquid in the casing at the end of the test.

7. Vent as much air as is feasible from the casing after the casing has been pressurized. Adjust the pressure in the casing, if necessary. Isolate the casing from all external artificial sources capable of introducing pressure to the casing after the casing has been pressurized for the test

8. Pressure gauges to be used to monitor the test pressure must have a scale such that the test pressure is 40%-60% of full scale. The gauge shall measure pressure in increments of no more than 2 pounds per inch (psi) per division. Demonstrate that the gauge is functioning properly by providing documentation showing that the gauge has been tested for accuracy. Documentation shall include a description of the test, the test date, and the amount of error in gauge accuracy. Provide documentation that the gauge has been calibrated within 1 year of the test date.

9. Conduct the test for a minimum one (1) hour.

10. Submit the attached form, Pressure Mechanical Integrity Test Report , documenting that the well casing had mechanical integrity at the time of the test. A pressure loss of equal to or less than 5% of the initial test pressure is a satisfactory test. A pressure increase of greater than 5% of the initial test pressure is not acceptable and may indicate the well has not reached thermal equilibrium.

11. Remove the well from service if a satisfactory test is not obtained. Submit a plan for corrective action to KDHE for review and approval. The well shall remain out of service until corrective action has been taken and a satisfactory mechanical integrity test has been conducted. Determine the location of the casing leak and evaluate any impact to the environment. The permittee may be required to submit an environmental remediation plan, including corrective action and an implementation schedule, to KDHE for review and approval. The permittee shall not commence corrective action until plan approval has been obtained from KDHE.

12. KDHE will witness the casing pressure tests performed by the facilities as time and work load permit. In the event that KDHE is not available to witness a casing pressure test, the permittee may then perform the casing pressure test in accordance with KDHE procedure UICLPG –15.

Failure to follow the KDHE approved casing pressure test plan may result in invalidation of the test and removal of the well from service until the casing pressure test is rescheduled and conducted to the satisfaction of KDHE.

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KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
PRESSURE MECHANICAL INTEGRITY TEST REPORT
FOR UNDERGROUND HYDROCARBON STORAGE WELL

WELL IDENTIFICATION

Test Date:	Well #:	Permit #:
, , , Sec. , T S, R E/W	County:	
Owner/Operator:	Contact Person:	
Address:	Phone:	

MECHANICAL INTEGRITY TEST FIELD DATA

Type of liquid pressurized:				
Method used to pressurize:				
Minimum required surface test pressure (psig):				
Time (24 Hr) Start: Pressures (psig):	Time:	Time:	Time:	Time End:
Amount of Pressure Loss/Gain (psig):		Percentage of Pressure Loss/Gain %:		
Tested: Casing/Injection Tubing Annulus				
The bottom of the tested interval shut-in with			set at	
Depth to top of salt formation:		Depth to top of salt cavity:		

TEST GAUGE DATA

Demonstration test gauge functioning:	Yes	No
Calibration of test gauge provided:	Yes	No
Demonstration total hydraulic test:	Yes	No
Serial number of number of test gauge:		

MECHANICAL INTEGRITY TEST RESULTS

The test results were:	Satisfactory	Not Satisfactory
Witness:	Title:	
Remarks:		