

THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

Before Commissionssioners: Shari Feist Albrecht, Chair
Jay Scott Emler
Dwight D. Keen

In the Matter of the Application
of Unit Petroleum to authorize
injection of saltwater into the
Mississippi formation at the Royce
A #1 EOR, located in Section 16,
Township 25S, Range 9W, Reno
County, Kansas

Docket No. 19-CONS-3097-CUIC

OIL AND GAS CONSERVATION
DIVISION

License No. 33596

PLEADING OF JUDITH L. WELLS

Kansas Annotated Statute 55-152 (a) requires “The commission shall adopt such rules and regulations necessary for the implementation of this act including provisions for the construction, operation and abandonment of any well and the protection of the usable water of this state from any actual or potential pollution from any well.”

The public notice in the Hutchinson News refers to a permit “authorizing the disposal of produced water into the Mississippi formation” in the first paragraph but in the second paragraph describes the application as for the issuance of an enhanced oil recovery permit. The notice continues that the permit “will be granted” without a hearing

unless written protest is received.

The application itself is for waterflood enhanced recovery, but the volume requested is in line with disposal volumes for SWD wells. Further, the Royce A 1 well is an old well , spudded in 1978 for gas and converted to oil producing. It is the only producing well on the Royce lease. Once this well is converted to injection, no producing well exists on the lease to enhance production for. Royce A 2 was plugged and abandoned June 9, 2008, and Royce A 3 was plugged and abandoned September 5, 2008.

KAR 82-3-101 (29) “Enhanced recovery” means any process involving the injection of fluids into a pool to increase the recovery of oil or gas. KAR 82-3-101 (81)(C) “Disposal well” means a well into which those fluids brought to the surface in connection with oil and natural gas production are injected for purposes other than enhanced recovery.” Without a producing well on the lease, no argument can be made for enhancing recovery. The first paragraph of the public notice appears to be correct: Royce A 1 is intended as a disposal well, not an enhanced recovery well.

The application map shows another new Unit Petroleum EOR

well on Section 16. Maxwell A 5 was spudded April 7, 2017. Unit Petroleum also has a SWD well on Section 16, Maxwell 1-SWD.

Maxwell 1-SWD is authorized to inject 15,000 barrels per day at a maximum injection pressure of 100 psi into the Arbuckle formation. Maxwell 1-SWD has been operating since 1991. In 2016 injections totaled 1,238,903 barrels and 2,114,235 barrels in 2015.

Maxwell A 5 is authorized to inject 5000 barrels per day at 300 psi into the producing Mississippian formation.

Analyzing injection volumes side by side for Maxwell 1-SWD and the new EOR Maxwell A 5 after Maxwell A 5 began injecting indicates produced wastewater that went to the SWD could have been diverted to the new EOR.

2017	Max 1 SWD	Max 5 EOR
Jan	103,207 bbls	0 bbls
Feb	74,358	0
Mar	213,560	0
Apr	151,558	0
May	62,399	0
Jun	70,108	32,977
Jul	1,115	60,988
Aug	1,072	94,242
Sep	1,069	96,342
Oct	544	102,397
Nov	3,187	111,128
Dec	8,205	103,872

Total	689,562	601,946
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injection days dropped in tandem between the SWD and the EOR after the EOR began injecting in 2017. The overlap month, June, has 27 days of injections for the SWD and 16 for the EOR. Beginning in July, the SWD went from injecting every day of the month to 2-16 days of the month, and the EOR picked up injections every day of the month. The two wells are immediately adjacent to each other.

Reducing injections into the Arbuckle formation seems to have the unintended consequence of redirecting them to the producing Mississippian formation. The Oil and Gas Conservation Division has not studied the consequences of this shift and has indicated no intention to do so. Highly corrosive produced wastewater is currently being injected into the Mississippian formation already in close proximity, and approval without question (“will be granted” per the published notice) of an additional EOR in close proximity will compound this volume.

KSA 55-152 (a) requires the commission to adopt rules and regulations including provisions for the operation of any well and the protection of the usable water of this state from any actual or potential pollution from any well. The KCC needs to address the effect

of high volumes of produced wastewater that do not justify a claim to enhance production to protect the usable water of this state.

The proposed injection authorized rate for Royce 1 is 10,000 barrels a day, twice that of the EOR Unit Petroleum began injecting into in 2017, and two thirds of the volume approved for a SWD in 1991. To compound the discrepancy, Royce 1 is requesting 500 psi injection pressure, vs the 300 psi on the Maxwell 5 U3C report. Some question exists, despite Maxwell 5 initiation of injections in June, that all paperwork was completed to to grant an injection permit before injections began, given that the ACO-1 well completion was not filed with the Oil and Gas Conservation Division in Wichita until December 6, 2017 for this well that was originally completed in 1996.

The 601,946 barrels of wastewater injected into Maxwell 5 in 2017 did not appear to enhance production of oil for the Maxwell lease. KGS production records for the 2 producing wells on the Maxwell lease shows 5 barrels for 2014, zero for 2015 and 2016, and 175 for 2017, all delivered to the refiner in September 2017. Allowing for an additional 175 barrels that are not shown for the balance of 2017, Maxwell 5 injected 601,046 barrels of highly corrosive

produced wastewater into the Mississippian formation to extract perhaps as much as 350 barrels of oil, or 1720 barrels of wastewater to each barrel of oil produced. This is disposal, not enhanced oil recovery. It is time to determine the effects of this major shift of large disposals into producing formations.

KGS Field Oil and Gas Production records for the Langdon field indicate a thickness of 38' thickness for the Mississippian formation in this field but list the Royce A 1 well as the Lansing producing zone. The application indicates 68' top to bottom of the Mississippi formation for the Royce A 1 as an injection well. These are significant discrepancies and should be publicly resolved by the OGCD before a hearing.

The EPA has connected seismic risks to fresh water contamination to protect underground sources of drinking water (USDW) by reducing seismic risks. Seismic risks have been linked to deep formation disposal wells, but researchers at UC Santa Cruz have studied data worldwide and found, in general, injecting fluids into sedimentary rock can cause larger, more distant earthquakes than injecting into the underlying basement rock. Disposal well volumes into wells claiming to be EOR wells was surely not the intent of the EPA in ordering reductions

into the Arbuckle formation in some locations.

Adding another 10,000 barrels of produced wastewater into an oil producing formation less than a mile from an operating EOR that is injecting up to 5,000 barrels a day on Section 16 should not be a rubber stamp approval. Not on the KCC requirements, but the Fairfield #310 consolidated school district occupies the NW corner of Section 16, and seismic risks should be a consideration for the physical health and well being of the community in the school.

Dated: October 10, 2018

/s/Judith L. Wells

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VERIFICATION

STATE OF KANSAS

COUNTY OF JOHNSON

I, Judith L. Wells, do solemnly, sincerely and truly declare that the foregoing pleading accurately represents my research and analysis and I do this under the pains and penalties pursuant to the laws of Kansas.

Judith L. Wells

Notarized copy follows by US Mail

CERTIFICATE OF SERVICE

I certify that on October 10, 2018 I caused a true and correct copy of the foregoing pleading to be filed via the KCC Electronic Filing System (EFS) and that I emailed a copy to the following parties:

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