

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

In the Matter of the Application of)
TDR Construction, Inc. to Authorize) Docket No. 19-CONS-3168-CUIC
Injection of Saltwater into the)
Squirrel Formation at the Superior) CONSERVATION DIVISION
#I-1 Well, Located)
in Section 10, Township 16 South,) License No. 32218
Range 21 East, Franklin ,)
Kansas.)

PRE-FILE TESTIMONY OF POLLY SHTEAMER

Q. Please state your name and business address.

A. My name is Polly Shteamer and I live at 2263 Nevada Road Ottawa,
Kansas 66067.

Q. Who is your employer and what is your educational background?

A. I am a retired middle school teacher. I received a BA in Art History from
Newcomb College of Tulane University. After having my children, I
continued my education by taking undergraduate courses in the biological
sciences and completing 3 semesters at Rockhurst College in their
graduate Occupational Therapy Program. I took a leave of absence from
that program due to my divorce to take care of the needs of my children.

1 Later I completed one year of a Masters in Education program at Avila
2 College and became certified to teach art in Missouri.

3 **Q. Do you own any interest in oil and gas lease?**

4 A. I am part of an LLC that owns interest in a large family farm in Louisiana.
5 In the past this property was subject to an oil and gas lease which has
6 expired. In the 1990s I owned an interest in an LLC that produced oil on
7 leases in Texas, that LLC has since ceased to exist.

8 **Q. Do you own property in Franklin County?**

9 A. My husband and I own the home and land on which we live. We also
10 own two 10 acre lots that are adjoin our property. On one of the lots we
11 built a house which we lease and which is currently occupied.

12 **Q. Have you previously testified before the Commission?**

13 A. No.

14 **Q. What are your concerns related to the operation of oil and gas in
15 Eastern Franklin County?**

16 A. My concern is that this community has safe, drinkable water now and in
17 the future. After moving to the Ottawa area about 15 years ago, I slowly
18 became aware of the long history of drilling in eastern Franklin County,
19 beginning in the late 1800s and continuing today. There are a lot of holes

1 in the ground, many of which are unplugged or inadequately plugged.

2 While individuals rarely wish to behave in ways that create harm, we are all

3 creatures of our culture. Prior to the Clean Water Act streams and rivers

4 were seen as ways to dispose of wastes, the idea being that toxins would

5 be diluted. A powerpoint by the **University of Wyoming called Flood Design**

6 **for Oil Reserves** ([file:///home/chronos/u-](file:///home/chronos/u-393146d2f4c1d310aec47ae306f725727d929470/Downloads/waterflooding%20presentation.pdf)

7 [393146d2f4c1d310aec47ae306f725727d929470/Downloads/waterfloodi](file:///home/chronos/u-393146d2f4c1d310aec47ae306f725727d929470/Downloads/waterflooding%20presentation.pdf)

8 [ng%20presentation.pdf](file:///home/chronos/u-393146d2f4c1d310aec47ae306f725727d929470/Downloads/waterflooding%20presentation.pdf)) states, "Produced water in the early days was

9 discharged by dumping it into streams and rivers." Today most people are

10 aware that some toxins can affect their health even at concentrations in

11 the parts per billion." **The Kansas Geological Society in Public Information**

12 **Circular 34 March 2013, Guidelines for Voluntary Baseline Groundwater**

13 **Quality Sampling in the Vicinity of Hydraulic Fracturing Operations**

14 presents a list in Table 3 - Baseline water-quality sampling tiers. While this

15 is by no means an exhaustive list of potential toxins related to produced

16 water that might be in the water. Most but not all of the chemicals in the

17 publication's Tier Three are tested for by public water suppliers and appear

18 in detectable amounts in the source water of Rural Water 6.

Oil and gas are commodities. Our locally produced oil is transported to refineries and now may be sold anywhere in the world. Our water is local. What we once saw as unlimited, we now realize is a natural resource that must not be wasted but be used with an eye to future needs. In 2068 the demands for water supply made by residences and industry is predicted to reach the capacity of the Marais des Cygnes and its reservoir lakes to supply our needs (**State of the Resource & Regional Goal Action Plan Implementation Report, August 2018 Marais des Cygnes Regional Planning Area by the Kansas Water Office**). We should make sure that there is enough quality water available. Rural Water 6 and their rate payers do not want to be burdened with the expense of trucking in bottled water to drink or large water infrastructure projects because the source water to Rural Water 6 of Franklin County is compromised.

Q. Have you found evidence of water pollution?

A. Yes. Of the chemicals identified in Tier 3 of KGS Circular 34 several were detected in the water of Rural Water 6 of Franklin County in a 2017 report Sample Number: 761438 Other Chemical Sample Results (only Manganese in 2017 was above MCL): arsenic, barium, chloride, conductivity, manganese, sodium, and TDS (total dissolved solids). Sample: 966619 in

2018 also detected these analytes. Low level radioactive elements in the water are tested for separately on a once every 6 year schedule. Sample: 526262PD for the period 1-01-2008 to 12-31-2013 detected Combined Radium (-226 & -228) and Radium-228 (not over MCL). The testing performed at Rural Water 6 is not a sufficient baseline water measure. Without baseline water quality testing program designed to detect the specific chemical profile of produced water in eastern Franklin County and run by the KCC, the KCC will not know if their regulatory program provides protection from threat of pollution to the fresh and usable water of Kansas. This baseline testing should include the testing of stream sediments and other soils

Q. Is the water the Upper Marais des Cygnes River particularly at risk?

A. Yes. The Squirrel Sands formation from which most oil in this area is produced is relatively shallow, the producing zone in this area is about 740 ft. Most literature about injection well safety says that a large vertical distance separating the injection depth and the bottom of usable water is one of the greatest safety assurances. **In Table II (Revised Aug. 1,1987) Established Minimum Depths for Disposal Wells ordered by Docket No. 156,397-C** the allowed minimum depth of an injection well east of Highway

1 U.S. 59 for Franklin County is 500 feet. In some of this same area the
2 bottom of usable water might be 200 feet deep.

3 **Q. Have you seen evidence that injection into the Squirrel Formation may**
4 **endanger fresh and usable water?**

5 A. Yes. The KCC has expressed concerns about how older drilling,
6 completing, plugging and abandonment practices in have damaged the
7 ability of the formations surrounding the Squirrel Sands. In **United States**
8 **of America Before the Federal Energy Regulatory Commission Southern**
9 **Star Pipeline, Inc., in Docket No. CP06-49-000, the KCC placed a Notice of**
10 **Intervention, Protest And Request for Technical Conference Of The**
11 **Kansas Corporation Commission**, expressing concerns about a gas
12 storage field used by Southern Star. Southern Star, a gas storage company,
13 wants “to safeguard against a future recurrence of losses form the Colony
14 Storage Field due to migration of gas (horizontally) beyond the boundaries
15 of the storage field and (vertically) into other reservoirs (Squirrel).” The
16 KCC is concerned that the Southern Star proposal will “redefine” the
17 caprock in its Anderson County Colony Storage Field “upward to the top of
18 the Pawnee Limestone layer” which would thereby “include the parts of the
19 Squirrel formation within the certificated storage zone.” The issue is gas

1 “that has migrated (leaked) from the structurally lower Colony formation.”

2 The KCC’s concern about practices that fractured the lower confining
3 formation and allowed gas migration into the Squirrel formation and hence
4 out through producing and abandoned wells completed into the Squirrel
5 formation. This same concern for commercially valuable escaping gas
6 should be shown for the potential these historical practices for allowing
7 injected fluids to reach the usable waters of Kansas.

8 “In its application, Southern Star states that **such**
9 **migration may be caused by fracturing of the**
10 **Squirrel formation by oil producers, where the**
11 **fractures extend downward from Squirrel formation**
12 **, through the intervening non-productive layers of**
13 **rock,** to the top of the Colony formation. However,
14 this is not the only way in which gas may migrate
15 out of the Colony formation and into the Squirrel
16 There are several other mechanisms by which this
17 may occur, ...

18 ...gas may migrate through the annulus surrounding
19 the wellbore and casing. This is particularly a

1 problem for older wells ... where the cement
2 surrounding the production annulus may have
3 cracked or the original cementing of the production
4 casing was inadequate. Third, gas may migrate due
5 to incomplete or improper plugging of abandoned
6 wells, particularly where the wells abandoned before
7 gas began to migrate into the Squirrel formation
8 and the plugging techniques employed were
9 adequate for oil production but not for natural gas."

10 It is well known that gas can pollute water just as liquids can. As stated in
11 our protests, we have maps that show wells in the area of the lease already
12 in production in the 1920s and 1940s. Concerns about cracking or
13 incomplete cementing and old corroding well casing is the subject of much
14 in oil and gas research. The old completion practices of oil well drillers
15 seeking to produce from the Squirrel formation also fractured the confining
16 formation - here Southern Star is concerned with the formation underlying
17 the Squirrel formation. However the Squirrel is generally not very thick and
18 this fracturing has probably happened in the overlying formation also.

19 **Q. What is the purpose of your testimony?**

1 A. I do not believe that the KCC should approve the request of "TDR
2 Construction, Inc. Application for a permit to authorize the enhanced
3 *recovery of saltwater* into the Superior Lease/ Well No. I-1 located in
4 Franklin County, Kansas." As published October 6, 2018 in the Legal
5 Notices of the Ottawa Herald.

6 **Q. Based on your review of the Application for Permit Legal Notice**
7 **published Oct. 6, 2018 do you notice any deficiencies.**

8 A. Yes. In the published notice, the notice states it is "RE: TDR
9 Construction, Inc. Application for a permit to authorize the *enhanced*
10 *recovery of saltwater* into the Superior Lease....". Later in the notice this
11 changes to "TDR Construction, Inc. has filed an application to commence
12 the *injection of saltwater* into the... ". The public notice needs to clearly
13 state whether TDR Construction intends to "recover saltwater" or to "inject
14 saltwater". Only after filing a protest and the establishment of a docket,
15 was I able to review the Area Permit Notice of Enhanced Recovery Project
16 and the attached the Application For Injection Permit for Well, for well# I-1
17 1W (Form U-1). Applications should be conveniently available on the KCC
18 website as soon as the notice is published.

Q. Do you have other concerns about the Application For Injection Well in Docket 19-CONS-3168-CUIC?

A. Yes. For Well # I-1, on the area of form U-1 to be called "Deepest Usable Water" under formation Mr. Town put "unknown". On the line under that, "Depth of Bottom of Formation:", is typed "200' ". (In his answer to question 13 of our initial discovery questions, Mr. Town states that he is relying on the KCC for this information.) As an experienced driller in the area, I would expect Mr. Town to be aware of the proximity Osage Aquifer, the proximity of Hickory Creek and the depth of "unconsolidated material". On page 2 of the form U-1 the setting depth of the surface casing is 21'. All things he needs to know to judge the safe depth for the primary surface casing for Well # I-1. The extent of the Osage Aquifer can be found at **Kansas Geological Survey interactive map of Kansas Water Wells found at <https://maps.kgs.ku.edu/wwc5>. The Public Information Circular 34 April 2013 published by the Kansas Geological Survey** gives the approximate depth to water of the Osage Aquifer as 10-200 ft. and the greatest depth to base of the Osage Aquifer as 350 ft. (These depths are generalized over the extent of the entire aquifer and do not reflect local depths.) This is important because best practices to protect fresh and usable water require

1 the primary surface casing to be set and cemented to many feet below the
2 base of usable water and if not actually through an aquifer then below all
3 unconsolidated material. The water table fluctuates At wet times of the
4 year water flows underground in ways it does not during dry periods.

5 These areas where the well contacts water need to be protected. The
6 production casing (or secondary surface casing) would be surrounded by
7 the primary surface casing, the multiple layers providing greater safety.

8 The casing requirement for the wells in this application is K.S.A 82-3-
9 106(b)(2) which refers us to The **Eastern Kansas Order Docket No.**

10 **133,891-C (C-20,079) signed in 1994, Appendix "B" Area 2** (in Franklin
11 County this is the area east of Highway 59: says;

12 "Oil gas or injection Wells drilled in Area 2 shall be
13 completed under Alternate II rules only. The
14 following rules shall apply:

15 1. Set a minimum of 20 feet of steel surface pipe or
16 to the depth of the first solid formation capable of
17 supporting the surface pipe, whichever is greater.

18 Aso, set through all unconsolidated alluvial and
19 glacial drift sediments and a minimum of 5 feet into

1 the top of the underlying formation capable of
2 supporting the surface pipe.

3 2.Special casing and cementing requirements
4 **may be imposed** in those areas producing fresh
5 and usable water.

6 3. If a well is completed, the production or long
7 string casing nearest the formation wall shall be
8 cemented from top to bottom.”

9 On my reading, this does not quite match the Alternative II cementing
10 required by K.A.R 82-3-106(c)(2). Which says;

“Alternative II cementing, which includes a **primary
surface casing string and additional surface
casing**, shall be performed as Follows; (A) The
primary surface casing string shall be set to a depth
at least 20 feet below all unconsolidated material.”

In this case the KCC should require in addition to
the above that in all cases the outermost surface
casing “to be set at least 25 feet below the depth of
the base of usable quality water”. This would be

equal to the casing requirement set by the Railroad Commission of Texas.” (file:///home/chronos/u-393146d2f4c1d310aec47ae306f725727d929470/Downloads/how_Texas%20rrc_protects_groundwater.pdf).

1 Appendix “B” - Eastern Surface Casing Order was adopted in 1994 (and
2 although that sounds like yesterday to me sometimes) this order should be
3 rewritten so that the protection to water **is** imposed not “may be imposed”.

4 **Q. Do other states have particular practices that the KCC should adopt**
5 **that would help protect fresh and usable water from pollution?**

6 A. I find in the **American Geosciences Institute publication, Petroleum and**
7 **the Environment Part 6, Groundwater Protection In Oil and Gas**
8 **Production**, several ideas;

- 9 1. “Most states now require (and many companies
10 choose to conduct) pre-drilling testing of domestic
11 and public water supplies so that the source of any
12 future contamination can be more reliably identified.”
- 13 2. Oil and gas wells are constructed with multiple
14 steel pipes (casings) and cement barriers to prevent

1 leaks of oil, water, or gas into aquifers. Some oil
2 and gas-producing states, such as Pennsylvania,
3 have updated their well casing and cementing
4 regulations since 2008 to reduce the risk of leaks
5 into aquifers.”

6 3. “.... states typically impose restrictions on
7 additives that can be used when drilling through
8 freshwater aquifers.”

9 **Q. Is there other evidence supporting the KCC requiring baseline testing of**
10 **the quality of water before drilling?**

11 A. Yes. The **Kansas Geological Survey Public Information Circular 34**
12 **March 2013, Guidelines for voluntary Baseline Groundwater Quality**
13 **Sampling in the Vicinity of Hydraulic Fracturing Operations** “Baseline
14 water-quality sampling, before and after drilling, is not mandated by state
15 or federal law. However, baseline sampling is recommended by the
16 American Petroleum Institute (API, 2009) to establish the pre-existing
17 quality of the groundwater.” The **Congressional Research Service’s July**
18 **13, 2015 report titled Hydraulic Fracturing and Safe Drinking Water Act**
19 **Regulatory Issues** states that;

1 “ Section 1425 (of the Safe Drinking Water Act)
2 authorizes EPA to approve the portion of a state’s
3 UIC program that relates to “any underground
4 injection for the secondary or tertiary recovery of oil
5 or natural gas” if the state program meets certain
6 requirements of Section 1421 **and** represents an
7 effective program to prevent underground injection
8 that endangers drinking water sources.” “Section
9 1421(b)(2) (of the SDWA) specifies that EPA may
10 not prescribe requirements for state UIC programs
11 which interfere with or impede - (B) and
12 underground injection of the secondary or tertiary
13 recovery of oil or natural gas, **unless such**
14 **requirements are essential to assure that**
15 **underground sources of drinking water will not be**
16 **endangered by such**

17 **Q. Are you concerned about the high injection pressure used?**

18 A. Yes. An EOR well increases the pressures in an oil and gas bearing
19 formation and by design causes the oil and gas with associated fluids to

1 move to producing wells completed into the formation and may move out
2 of any penetration (as in a old well) into that same formation. The operator
3 wishes the oil, gas and associated fluids (of which there is significant
4 volume) to flow to and out of his producing wells but the actual movement
5 of these fluids is governed not by the operator's wishes but by the local
6 geology, how previous completions and pressurings have affected the
7 formation, the extent the new EOR well increases the underground
8 pressure, and the ability of the the formation to withstand the new stresses
9 and the existence of old, impaired or unplugged abandoned wells in the
10 area. Mr. Town has not offered expert opinion that the pressures he has
11 applied for on his injection well (650 psi) is justified. He says he consulted
12 an expert but did not offer a name or a report (as requested in discovery)
13 as of the date of this per-file testimony.

14 **Q. These leases are not very close to the water intake of Rural Water 6 of**
15 **Franklin County. Why are you concerned?**

16 A. The Source Water Protection Plan of Rural Water 6 identifies oil and gas
17 production as having the potential to compromise the intake water of
18 Franklin County Rural Water 6. According to a paper titled "**Source Water**
19 **Protection: Is your water system vaccinated?** *by Scott Roberson, Source*

1 **Water Tech** found on the Kansas Rural Water Association website at
2 <https://krwa.net/portals/krwa/lifeline/archives/9911vaccination.html>, “For
3 surface water systems, the drainage area (watershed) upstream of a
4 surface water intake is considered the source area.” In the executive
5 summary of the **Report of Kansas Source Water Assessments prepared**
6 **for the KDHE by Burns & McDonnell Inc. Engineers-Architects-Consultants**
7 **Kansas City, MO, in March 2004 numbered 29587**, the public water supply
8 of Franklin CO RWD 6 assessment area: 336 had High Susceptibility
9 Likelihood Scores in all areas reviewed ranging from 97 to 93, a troubling
10 score. “On a statewide level, ... Only 1% of (public water systems) received
11 a high (81-100) score.” That abandoned wells are a threat is established
12 by to **K.S.A. 55-179(d)**,

13 “For the purposes of this section, any well which
14 has been abandoned, in fact, and has not been
15 plugged pursuant to the rules and regulations in
16 effect at the time of plugging such well **shall be and**
17 **is hereby deemed likely to cause pollution of any**
18 **usable water strata or supply.”**

1 It is evident in the facts of **Claiborne v. Galemore, No.103,163, 2010 WL**
2 **5490736 (Kan. Ct. App. Dec 23, 2010) (unpublished opinion)** that even
3 when the KCC looks for abandoned wells on a property, it often can not find
4 those that exist. The facts state that “newly discovered abandoned wells
5 that had “erupted” on the lease.” In case **No. 110,861 In The Court of**
6 **Appeals of The State of Kansas, Denman v KCC (judicial review of Docket**
7 **11-CONS-155-CSHO Denman et al)** part of the factual and procedural
8 Background states;

9 “The trail leading to this appeal begins in August
10 2007, when the KCC received a complaint about
11 abandoned oil wells, spills, and debris on the 160
12 acre M.A. Alexander oil-and-gas lease in
13 Chautauqua County. When the KCC inspected the
14 leased ground in April 200, it found 32 abandoned
15 wells. The KCC found another 12 abandoned wells
16 in November 2010; those wells had been covered by
17 tall native grasses and missed on the first
18 inspection. “

1 **Q. Does the KCC have an obligation to protect the source water of Rural**
2 **Water 6?**

3 A. The KCC website, in the “Answers to Commonly Asked
4 Questions” section states, “The Commission has three statutory duties: to
5 protect correlative rights, to prevent waste, **and to protect fresh and usable**
6 **water. With injection wells, the primary concern is to protect fresh and**
7 **usable water.”** I expect the KCC to stand by its statement that its primary
8 concern is the protection of water. These are three distinct responsibilities
9 and should have distinct and different standards for standing. “Protection
10 from threat” is a proactive measure (in policing terms this would be a
11 protective restraining order), not a measure of extant injury (in the police
12 analogy, the murder has not yet happened). The measure is to proactively
13 prevent. The harm to be prevented is waste of an essential natural
14 resource, unpolluted water.

15 **According to David Pierce in THE ESSENCE OF KANSAS OIL & GAS LAW**
16 **IN 100 MINUTES March 2, 2012 :**

17 “2. Ownership of the surface of land defines
18 ownership above and below the land. 3. Applies to
19 ownership of oil, gas, and all other minerals. 4.

1 Important exception: it does not apply to surface or
2 groundwater.

3 a. **K.S.A. 82a-702.** "All water within the state of
4 Kansas is hereby dedicated to the use of the people
5 of the state, subject to the control and regulation of
6 the state in the manner herein prescribed."

7 **Q. What causes the pollutions threats.**

8 A. New wells over time become old wells, cement cracks and steel
9 corrodes. Oil and gas prices fluctuate putting operators go out of business
10 who then abandon wells and leave unremediated well sites. Toxic
11 chemicals are sometimes spilled at drill sites, pipelines (especially old ones
12 like the ones detailed on our 1940s era map) grow old and sometimes leak.
13 Abandoned wells, boreholes, cathodic holes etc. sometimes leak or were
14 never plugged. Millions of gallons of produced water is brought to the
15 surface in the quest for every last drop of oil. All this infrastructure is a
16 package. No piece of the package operates in isolation. However, if you
17 stop drilling and injecting into the damaged Squirrel formation many of the
18 other problems stop also. Every year the KCC sends to the legislature the
19 **The Oil & Gas Remediation Site Status Annual Report** detailing some of

1 the damage done to our state and the cost. The majority of the costs are
2 borne by taxpayers. How much value does the relatively small production
3 from eastern Franklin County contribute to our economy compared to the
4 economic costs and risks to people and agriculture from lack of usable
5 water and soils ruined by the salts (and their low levels of radioactivity) in
6 produced water.

7 **Q. How are abandoned wells found?**

8 A. It is especially difficult when funding is low. Upwellings are often how
9 abandoned wells are found. These might be called "Priority 1 wells ."

10 These wells "actively discharging oil or brine into surface waters with
11 significant ongoing impacts" or "intermittently to actively discharging oil or
12 brine" . (KCC's **Abandoned Oil & Gas Well Status, Annual Report 2017**) In
13 the same report, the KCC also states that while they try to plug the worst of
14 these wells first, "they work within the limits of the program revenues."

15 Looking at the number of wells on the Priority 1 and Priority 2 list of wells
16 requiring action, only a small fraction are plugged in any one year. The
17 report goes on to say;

18 "Revenues to the Abandoned Well Plugging
19 Program after FY2009 have decreased

1 substantially. The statutory transfer from the State
2 General Fund has not been made since FY2003.
3 Supplemental compensating transfers for the
4 Conservation Fee Fund to the Plugging Fund above
5 the normal \$400,000/year did not occur after
6 FY2009.”

7 In 2018, only 10% on the wells requiring action list were plugged. What is
8 not included on the wells requiring action list are the Priority 3 and Priority
9 4 abandoned wells. Kansas reported 20,000 - 40,000 undocumented
10 /unidentified orphan wells for the period 7/2007 through 6/2008 to the **The**
11 **Interstate Oil & Gas Compact Commission, IOGCC 2008 Sales &**
12 **Production Survey Data Revised 02/19/2010**. The general picture is that
13 the Abandoned Well Plugging Fund has been underfunded for years.
14 Bonding requirements and financial assurance required by operator
15 licenses are too low to cover the costs of the cleaning up abandoned wells
16 and oil and produced water spills.

17 **Q. In what way can practices change so that these wells would present**
18 **less of a threat of pollution to the water.**

1 A. Most of the areas where drillers are producing in eastern Franklin County
2 have been heavily drilled in the past. We have a 1920s era map and a
3 1940s era map, both of showing the approximate locations of many old oil
4 and gas wells. At some point in the 1950s the legislature made an effort to
5 clean up an already confusing situation by voiding unregistered leases. At
6 that time drilling had been going on in the area for around 70 years. This
7 hardly scratches the surface in describing how hard it is to find all the old
8 wells and plug them in a manner that provides protection for our water. It
9 would be appropriate to stop the permitting of low producing wells on old
10 and extensively worked leases in certain cases. I suspect many of oil and
11 gas leases in eastern Franklin County are not producing in “paying
12 quantities” as is required by the **Haberman Clause**. The test for paying
13 quantities was extended in **Claiborne v. Galemore, No.103,163, 2010 WL**
14 **5490736 (Kan. Ct. App. Dec 23, 2010) (unpublished opinion)**. This test
15 includes “expenses that should have been incurred if the lessee were
16 acting as a prudent operator.” which would include plugging abandoned
17 wells on the lease. The “paying quantities” test should be applied by the
18 KCC to any application for an EOR well in this area. I suffer the risks to my
19 health from the threats to water (and in some cases public safety risks due

to the explosive nature of gas) and as a taxpayer I incur the monetary risk of cleaning up spill sites and plugging abandoned oil and gas wells. Wells continue to be abandoned or sit on leases which have an operator who is not being forced to plug unused or abandoned wells before he begins producing or injecting. The KCC allows wells to be “temporarily abandoned” for 10 or more years in the hope I guess that better days will come to a tired, old oil and gas field.

Q. Do you have any closing remarks?

A. Please read two **short** publications that speak of the issues better than I am able:

1. Salting the Earth, The Environmental Impact of Oil and Gas Wastewater

Spills by Lindsey Konkel which includes extensive references

(file:///home/chronos/u-

393146d2f4c1d310aec47ae306f725727d929470/Downloads/salting%20th

e%20earth%20ehp.124-A230.pdf)

2. Abandoned Wells, What happens to Oil and Gas Wells When They Are

No Longer Productive?, Critical Issues Program, Petroleum and the

Environment Part 7, American Geosciences Institute.

(file:///home/chronos/u-

393146d2f4c1d310aec47ae306f725727d929470/Downloads/AGI_PE_Aba
ndonedWells_web_final.pdf)

Respectfully Submitted,

/s/ Polly Shteamer

Polly Shteamer
2263 Nevada Road
Ottawa, Kansas 66067

CERTIFICATE OF SERVICE

I, Polly Shteamer, do certify that a true copy of the attached Petition has
been served to the following parties by means of first class mail and/or by
means of electronic service on March 11, 2019.

Roxanne Mettenburg

Jonathan R. Myers

citizenmett@gmail.com

j.myers@kcc.ks.gov

Scott Yeargain

Lauren Wright

j201942@yahoo.com

l.wright@kcc.ks.gov

Paul Jewell

Jake Estes

1 pauljewell@msn.com

j.estes@kcc.ks.gov

2

3 Lisa Jewell

Rene Stucky

4 edjewell59@hotmail.com

r.stucky@kcc.ks.gov

5

6 Polly Shteamer

Keith Brock

7 pshteamer@gmail.com

kbrock@andersonbyrd.com

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1
2 VERIFICATION
3

I, Polly Shteamer, state that I am the witness identified in the foregoing Pre-filed
Testimony of Polly Shteamer; that I have read the above and foregoing; and that the
statements therein contained are true according to my knowledge, information, and belief.

Polly Shteamer
Signature

Subscribed and sworn to before me this 10th of March 2019

Elizabeth Jewell
Notary Public Signature



