

STATE OF NORTH DAKOTA

IN THE DISTRICT COURT

COUNTY OF MORTON

SOUTH CENTRAL JUDICIAL DISTRICT

State of North Dakota,	)	
	)	CASE NO. 30-2017-CR-00223
Plaintiff,	)	
	)	<b>DECLARATION OF CLARENCE JOHNSON</b>
v.	)	
	)	
Chase Alone Iron Eyes,	)	
	)	
Defendant.	)	

I, CLARENCE JOHNSON, declare the following to be true to the best of my knowledge and belief:

1. I am over the age of 18 and am a resident of the State of California. I have personal knowledge of the facts herein, and, if called as a witness, could testify completely thereto.
2. I suffer no legal disabilities and have personal knowledge of the facts set forth below.
3. The Dakota Access Pipeline (DAPL) is routed from the Bakken oil fields through North Dakota, crossing the Missouri River at Lake Oahe, at the Northern boundary of the Standing Rock Sioux Reservation.
4. To my knowledge, pipeline advocates seek to minimize the risk and consequences of any leak/rupture.
5. It is my understanding that DAPL presents an existential threat to the environment along the proposed route including the water in Lake Oahe and to all those who depend on it.
6. This is so because even a well-designed, well-constructed, and well-tested pipeline has a risk of a leak or rupture on any given segment at any given moment. But, such risks accumulate over the entire length of the pipeline, meaning that the risk of a rupture somewhere, sometime is higher than in any particular segment. The risks also grow over time - which is critical, because the lifetime of a pipeline is decades long. Even for such a pipeline which is designed, built, and tested to accepted practices, the true risk of a rupture of the pipeline unarguably increases over time. As the pipeline ages, the risk of rupture also increases. A rupture that occurs 20 years from now may be every bit as harmful, if not more so, than one that happens in the near term. Factors which can increase the risk of failure include the specific type of material flowing through the pipe, the pressure within the pipe, the pipeline maintenance practices, and the corporate attention to safe pipeline operations.
7. The aforementioned concerns are based on well-designed, constructed, tested, and operated pipelines. Unfortunately, many, if not most pipelines do not achieve this ideal, either from cost-

cutting measures by the pipeline companies during selection of materials, design, construction, or by accidents and human error during the operation of the pipeline.

8. Even though the cumulative effects of such risks may be substantial, those mentioned so far deal only with leaks/ruptures that are focused on flaws that occur in the pipeline due to design, materials, construction, and operation of the pipelines. There also exist non-trivial external risks to pipeline integrity. These include earth movement, flooding, and the affects of freezing on the soil and the pipeline materials. Added risks include the inadvertent damage by construction equipment (like a backhoe or even a shovel). When considered in the full picture (which they should be), the risks of a pipeline ruptures/leaks are substantial.
9. It's not just risks of a leak/rupture that are vastly underestimated - so are the consequences of such a leak/rupture. Statistically, a leak is more likely to be small rather than a large rupture. But in buried pipelines (the norm in today's pipeline construction), such a leak may go undetected for a long time (perhaps years). Even a small leak may seriously contaminate groundwater. Once a water aquifer is polluted, the ground water may be rendered unfit for beneficial uses for decades, including the natural benefit of providing a source of clean water for recharge of streams, lakes, swamps, fens, wildlife, irrigation, and potable water. Remediation of contaminated water to the pre-contamination quality is extremely expensive and takes years, if not decades to achieve.
10. It is my understanding that in the case of the Dakota Access Pipeline, the oil flow volume is planned to be 910,000 gallons per hour. (Keystone XL's higher rate of about 1.5 million gallons per hour, making a release proportionately potentially worse.) State-of-the-art leak detection systems are claimed by vendors and oil industry sources to be able to detect leaks above 1% of the flow. Others say that the threshold is really between 5% and 10%. But even 1% of the DAPL flow amounts to some 9,100 thousand gallons per hour. At 9,000 gallons per hour, which is below the 1% threshold, the release would be 216,000 gallons per day, and 6,480,000 gallons per month.
11. Releases of petroleum from pipelines typically start as a pinhole release and increase over time. The quantity of petroleum released over time from the DAPL could increase from a few gallons per day to the 9,000 gallons per day over a long period of time without being detected. This could result in millions of gallons of petroleum being released into the environment before the DAPL monitoring system would detect a release. This could devastate an ecosystem to the point where any attempts to remediate or reduce the affects of the release would be ineffective for decades.
12. Drinking water contamination is a serious consequence for humans, but there are many other consequences, such as the destruction of wildlife habitats. The resulting loss of game and fish impacts all users of that resource, but most seriously impacts Native Americans which have subsistence, economic, and spiritual ties to the fish and game population. The spiritual ties for Native Americans, as well as all Americans, extend to the spiritual fulfillment of enjoying an uncontaminated environment.
13. The petroleum hydrocarbons transported by the DAPL carry the potential of explosion and fire. The consequences of this in a populated area are obvious. Given the change in environmental conditions associated with global warming, the consequences of an explosion and fire in forested areas are magnified.

14. There are numerous time-delay elements to this equation:

(a) The time it takes to detect a leak which, in the case of electronic monitoring systems, involves human interpretation of the signals. In any such system leak alarm errors may be present. Employees of pipeline companies often have an incentive to assume that leak alarms are system errors. Shutting down a pipeline and testing for leaks is a major expense. Therefore employees could, on their own initiative or by instruction, defer reporting a leak alarm until the system has an opportunity to correct a false alarm. This can lead to increasing the environmental consequences of a release.

(b) Pipeline companies rely on visual inspection to augment the electronic monitoring of pipeline operations. However, because liquids flow down in response to the force of gravity, it may take months or years for the subsurface soils to become sufficiently saturated to force the petroleum to the surface. The delay in detecting a release is obvious.

(c) The time it takes to stop the leak is largely a function the length of time that passes before the leak is detected and the equipment, crews and materials pre-positioned in the area of the leak. Providing and maintaining this pre-positioning is very expensive and companies frequently cut corners.

(d) the time it takes to restore the environmental damage caused by the leak is often the largest cost element and it will usually take the most time.

15. The response time between the onset of a leak and the detection of the leak is directly proportional to the cost and time required to mitigate the environmental damage. While pipeline companies have personnel available to repair the pipe, pipeline companies do not typically have personnel with the training and expertise necessary to take the actions needed to address the environmental consequences of a release. The delay resulting from retaining and mobilizing a company with the expertise to remediate a release can compound the affects of a release. The effectiveness of the remedial effort may also be compromised by the emphasis of the pipeline company on containing costs.

16. Even when the pipe is located above ground (making visual leak detection easier, but creating an unappealing and usually harmful impact on the environment), a leak (or worse, a rupture) can be devastating. A rupture that occurs near or on a water crossing can have catastrophic consequences to anyone and everything downstream. The impact is worse depending on the flow rate of the affected water source. The DAPL crossing under the Oahe portion of the Missouri River is a case in point because it is estimated that 22 million people downstream depend on the flow. Whether the rupture occurs in the portion of the pipe in contact with the water, or on land such that it flows into the water source, the impact on the downstream population can be devastating.

Executed this 19th day of August 2018.

A handwritten signature in black ink, appearing to read "Clarence Johnson", is written below the text.