

CITY COUNCIL STUDY SESSION MINUTES

April 30, 2013

The City Council of the City of Norman, Cleveland County, State of Oklahoma, met in a study session at 5:35 p.m. in the Municipal Building Conference Room on the 30th day of April, 2013, and notice and agenda of the meeting were posted at the Municipal Building at 201 West Gray, and the Norman Public Library at 225 North Webster 48 hours prior to the beginning of the meeting.

PRESENT: Councilmembers Castleberry, Griffith, Jungman, Kovach, Lockett, Williams, and Mayor Rosenthal

ABSENT: Councilmembers Gallagher and Spaulding

Item 1, being:

DISCUSSION REGARDING AN ORDINANCE TO REQUIRE PERMITS FOR DOMESTIC AND INDUSTRIAL WATER WELLS.

Mr. John Harrington, Director of Water Resources, Association of Central Oklahoma Governments (ACOG), provided background of the legacy of oil and gas well areas in Oklahoma. He said the Corporation Commission has been mapping out particular areas and providing maps to the member cities of ACOG. Mr. Harrington said eventually the Corporation Commission will be mapping out all of the oil and gas well areas throughout the state.

The Corporation Commission has had many complaints of water well pollution, both suburban and rural, from homeowners over the past 20 years. Mr. Harrington said the complaints are in and near oilfields, mostly older oilfields with activity initiated pre-1980, when modern regulations began. He said the complaints vary from petroleum to the most common salinity (salty). The Corporation Commission now understands enough about how these particular problems occur to propose prevention solutions.

Mr. Harrington said the groundwater issue is important and matters to the people of Oklahoma as groundwater supplies almost 40% of all water used in Oklahoma; 295,000 Oklahoma residents are served by privately owned individual wells and 73% of all irrigation for agriculture comes from groundwater. For example, a recent homebuyer in a fairly new gated community in Northwest Oklahoma City complained of salty well water and soon thereafter, her neighbors also complained. This area was a historic oilfield area until 1980; therefore, a Corporation Commission field inspector went to the home community and sampled several water wells. Mr. Harrington said later the Corporation Commission learned that two original (older) domestic water wells had been drilled in residential backyards within the subdivision and when the wells became salty, the homeowners re-drilled the wells in their front yards without plugging the well in the backyard. This worked for a couple a years, but eventually the wells in the front yard also went salty. Mr. Harrington said salt water has a tendency to be real hard on vegetation and highlighted the samples retrieved from the Corporation Commission field inspector that reflected high chloride levels.

The Corporation Commission's conclusion was the gravel packed construction caused contamination to the open surface up to 300 feet below the surface which allowed contaminants into the Garber Wellington Aquifer. In effect, the water wells, by their standard design, polluted themselves and the aquifer, especially the unplugged backyard wells.

Mr. Harrington said the City of Oklahoma City was persuaded to bring a water line into the subdivision so the homeowners could connect to clean drinking water for a fee and the Corporation Commission's Brownfields Program paid to have the now "unused" water wells drilled out and plugged to prevent the spread of more contaminants into the aquifer.

The Corporation Commission is currently mapping old (pre 1980) wells on Oklahoma aquifers, starting with the Central Oklahoma aquifer. The pit design, well plugging oversight, and field inspection was not as rigorous before 1980 as it is currently and the mechanical integrity testing of well casing, lines, and equipment was not required until after 1980.

Item 1, continued:

Unfortunately many of these old oilfields are just open fields today, so pollution risks are often not obvious to developers or well drillers. Mr. Harrington said the Corporation Commission also realized the information gathered could be utilized by the general public and town planners and will load the maps, once made, onto the OWRB's website map viewer.

These Geographical Information System (GIS) maps can be output on any area basis, by aquifer, county, town, or individual 36 square mile townships.

ACOG came up with a plan to protect the aquifers of Oklahoma from similar old oilfield problems in the future as well as protect others and requested OWRB establish rules to assist with the prevention of shallow pollutants from entering the water wells and traveling down the gravel pack into the aquifer. Mr. Harrington said the Corporation Commission requested a new rule requiring future water wells to be cased and cemented from the surface to at least 30 feet deep, with gravel pack only being allowed below 30 feet.

Mr. Harrington provided a Legacy Oil and Gas Fields map depicting Cleveland County 10N 2W oilfield areas and said the information has already been sent to the City of Norman Planning Department. He said the Corporation Commission will be making a proposal to the OWRB in the fall to essentially amend Chapter 35 in the drilling standards to incorporate the Legacy Oil and Gas Field maps and recommend to the drillers to install any future water well inside 30 feet of casing.

Councilmember Williams asked Mr. Harrington if any studies had been done with water wells utilizing a 30 foot casing and Mr. Harrington said no. Mr. Harrington said the Corporation Commission originally discussed the casing as 50 feet but determined 30 feet would be acceptable because that is the depth most oil surface pollution would be present.

Councilmember Griffith asked whether the expense of adding an additional 20 feet of casing would be an extraordinary expense and Mr. Harrington said it would add approximately \$1,000 more to the well.

ORDINANCE REQUIRING PERMITS FOR DOMESTIC AND INDUSTRIAL WATER WELLS.

Ms. Kathryn Walker, Assistant City Attorney, said Staff was made aware of Mr. Harrington's work and presentation relating to the old oilfield water well pollution and case studies and began to look at Norman's ordinance, specifically how the City could incorporate the same or similar kinds of protection measures, as well as update the ordinance to make it more consistent with State law.

Ms. Walker highlighted recent events regarding domestic water wells. She said a property owners association (POA) inquired about the potential for drilling a water well from which water could be drawn and used for irrigation of the neighborhood's common areas. The Oversight Committee met and discussed POAs drilling water wells for irrigation purposes on February 13, 2013, and again on March 6, 2013. Staff examined the City's existing ordinances relating to wells and determined the applicable Code provision needs to be updated, both to reflect the current constraints of State law on water well regulation by cities, as well as to ensure contamination and quality issues with domestic water wells are addressed to protect the public water supply. The Oversight Committee recommended the Ordinance go forward to full Council.

Ms. Walker said the applicable State law is as follows:

- General Authority – Oklahoma Water Resources Board (OWRB) regulates groundwater use and issues permits for most, but not all wells.
 - ❖ OWRB permit required to put groundwater to beneficial use for other than domestic purposes, i.e., municipal, industrial, agricultural, irrigation, recreation, fish and wildlife, etc.;
 - ❖ Cities can regulate and permit the drilling of domestic and industrial water wells, however the extent to which cities can regulate is unclear;
 - ❖ All public wells have to be built to Department of Environmental Quality (DEQ) standards.

Item 1, continued:

Ms. Walker provided an overview of OWRB's definition of industrial and domestic water use.

Industrial Use

The use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value. The quantity is set by the terms of the OWRB permit.

Domestic Use

Use of water by an individual, family, and/or household can include: household purposes, farm and domestic animals (up to normal grazing capacity of land), irrigation of land can not exceed three (3) acres for gardens, orchards, and lawns. For non-household entities the domestic use is as follows: drinking water, restrooms, and watering of lawns up to five (5) acres (approximately 1,630,000 gallons) per year. Domestic use is not subject to well spacing standards; however, the domestic use is subject to sanctions against waste.

OWRB Well Construction Standards

Location:

- At least 10 feet from closed sanitary sewer line, 24 feet from above ground sprinkler spray, and 50 feet from above ground sprinkler head;
- At least 300 feet from outside perimeter of waste lagoon for feedlot; and
- At least 50 feet from other pollution sources.

Well Surface Casing

- Must be sealed off from the groundwater zones containing water not meeting groundwater quality standards; no wells in salt water zones;
- At least 10 inches below minimum seasonal stage of water table; and
- At least 12 inches above the natural ground level; 24 inches above the maximum level if known to flood.

Ms. Walker said there are several reasons to regulate domestic wells. State standards for construction do not always adequately protect the groundwater, widespread proliferation of domestic wells can ultimately deplete the aquifer, i.e., the source of our municipal well supply and regulation can provide a tool to monitor water usage to ensure the character of the use remains "domestic".

The current Code provision requires permits for all water wells and they must comply with Oklahoma Department of Health rules. Domestic wells are limited to "domestic uses" under State law and the Code forbids drilling into the Garber Welling sandstone formation unless the City does not service the location or it is a commercial or industrial well where the City has granted permission.

Proposed Code Amendments

Staff proposed the following code amendments:

- Increase permit fee from \$5.00 to \$50.00;
- Update to ensure we are in compliance with State law (regulate only domestic and industrial wells);
- Update to ensure appropriate State agencies are listed;
- Use of State definitions for domestic and industrial use to ensure consistency in application; and
- Permit requirements to protect water supply and monitor usage.

❖ **Permit Requirements**

- Well must be constructed by OWRB certified well driller;
- OWRB Groundwater Well Completion Report submitted to City;
- 30 feet of well surface casing – reduce risk of contamination; and
- No cross connection to the public water supply.

Item 1, continued

❖ **Character of Use Measures**

- Water meter must be installed;
- Water cannot be drawn in excess of limits set by State law;
- Water used only for stated purposes; and
- Records submitted to the City annually that document amount of water withdrawn.

Private Wells

- Domestic use for household purposes = three (3) acre feet per year (980,000 gallons);
- Domestic use for non-household purposes = five (5) acre feet per year (1,630,000 gallons);
- Cost of private wells in Norman vary with location and depth;
- Domestic well in East Norman = \$6,500 and is 100 feet deep with 15-20 gallons per minute (gpm); and
- Domestic well in West Norman = \$45,000 and is 650 feet deep with 15-20 gpm.

Property Owners Association

A POA would be able to withdraw five (5) acre feet per year that would equal 1.63 million gallons, 60 inches per year per acre, and 60 applications of 1-inch over one acre.

Ms. Walker said every domestic use is somewhat de minimis, but every hole in the aquifer is a potential source of pollution. She said ultimately if there are a lot of domestic water wells drilling deep into the aquifer, the City may be competing for the same water. The City is also pushing to get re-use standards and Ms. Walker felt customers who would like to use non-potable water or the domestic wells for irrigation eventually would be good customers for re-use when that comes to fruition. She said the biggest consideration is balancing the community's water supply versus individual water usage.

Councilmember Griffith asked how deep the Garber Wellington Aquifer is and Mr. Harrington said it varies from 400 feet on the east to 600 to 700 feet on the west.

Mr. Harold Heiple, Attorney representing Oklahoma Electric Co-op (OEC), said the City needs to protect the Garber Wellington Aquifer and he felt the following verbiage should be included in the ordinance "...any property served by City water or required by law to be served by City water is not eligible for a permit to drill into the Garber Wellington..." He said Mr. DiCastro with the Cascade Addition POA met with OEC regarding the POAs request for a water well permit and it was a very productive meeting. Mr. Heiple felt OEC will get on board with the POAs request as long as the POA does not go into the Garber Wellington for irrigation purposes.

Councilmember Kovach said for clarification purposes, the Oversight Committee began discussing this ordinance before the POA came forward with their request. He asked Staff if the City can regulate how deep a person can drill and Ms. Walker said the current ordinance reads that a person can not drill into the Garber Wellington unless you do not get City water or you are an industrial or commercial user and Council approves it. She said the City can not regulate commercial wells, but the City does have some degree of regulatory authority over industrial and domestic wells. Ms. Walker said she is not certain the law is clear, it is a gray area, whether or not the City can regulate how deep a person can drill into the aquifer. She said Staff has chosen not to include this issue in the ordinance at this point, but will continue to research it. She said there is a balance between the fact the property owner has a right to domestic use versus the City's interest in protecting the aquifer and try to determine how the Courts might interpret this issue.

Mr. Jeff Bryant, City Attorney, said his office has had many discussions on this topic and the existing ordinance language has verbiage that prohibits person(s) from drilling into the Garber Wellington if the person(s) already has City water supplied to the property. He said the law is not very clear and the issue is whether or not the law is enforceable. Staff

Item 1, continued:

drafted the proposed ordinance based on prior meeting discussions and Staff felt Council desired to have more regulation on the actual wells, casing, etc., rather than language regulating and not allowing person(s) to drill into the Garber Wellington. Mr. Bryant said if Council desires to keep the current language of not allowing person(s) to drill into the Garber Wellington,

Staff can certainly pursue that. Council discussed and agreed that Sub-Section C Section 21-404, should be put back into the Ordinance prohibiting person(s) from drilling into the Garber Wellington. Councilmember Kovach asked if the language stating "... any property served by City water or required by law to be served by City water is not eligible for a permit to drill into the Garber Wellington..." could be added to the proposed ordinance and Mr. Bryant said that particular language is already in the proposal stating if the City provides water service then you are prohibited from drilling into the Garber Wellington. He said one compromise to that might be focusing on potable and non-potable, which is what Mr. Heiple is suggesting, i.e., if a person can drill a 200 or 250 foot water well and get water that is suitable for irrigation purposes but is not potable then that is not water that the City would be using for the municipal water supply anyway.

Councilmember Williams asked if the regulation would apply to existing wells if the City extended water lines/services and Mr. Bryant felt the City should be consistent stating that if the City was to extend water service, by statute the City would get those water rights as long as the City is providing municipal water supply. He said this is the area that is a little unclear, and Council could certainly discuss a policy that would allow the person(s) to waive the requirement for municipal water.

Mr. Bobby Stevens, P.O. Box 6226, asked how the City would enforce the water laws on tribal land and Mr. Bryant said there has recently been an argument at the U.S. Supreme Court regarding water rights and how far states can pursue the issue. He said if tribal land rights versus municipal water rights came into fruition, the City would be pre-empted if the land is federal Indian land.

Mayor Rosenthal said the City does need to protect the Garber Wellington since it is the City's water supply, but felt allowing non-potable drilling for irrigation purposes is a reasonable compromise. Councilmember Kovach agreed and Councilmember Williams felt if person(s) are within 300 feet of City water they should connect for potable water; however, if they choose to drill and use a private well that is not in the aquifer for non-potable uses they should be allowed to do so. Mr. Chris Mattingly, Utilities Superintendent, said he was concerned about the definition of potable changing in the future due to the changing dynamics and regulations regarding water. Mayor Rosenthal said the ordinance needs to distinguish between (not) drilling into the aquifer and non-potable water.

Councilmember Williams asked if the City were to extend water supply services to an area that already has a water well in the aquifer, would they be "grandfathered in", and therefore the person(s) would not have to connect to City water services unless the person(s) made a change to the existing well. Mr. Bryant said the ordinance can be created however Council desires and he said it is not unusual to have "grandfathering" provisions. He said the current language already has a "grandfathering" provision stating "...domestic or non-industrial uses existing before February 8, 1955..." and can be added to the draft ordinance going forward if Council desires.

Staff drafted the proposed ordinance from the most conservative approach recognizing the domestic use water rights. Regardless when a private well was drilled, if someone connects to City water services they must disconnect the private well so there will not be a risk cross-contamination. Councilmember Castleberry asked if the private well would need to be plugged and Ms. Walker said the proposed draft would not require the well be plugged; however, it could be required under other regulations. She said the requirement to plug the disconnected private water wells can be added to the draft ordinance if Council so desires.

Mr. Harrington said the City may want to consider collecting water quality data as part of the ordinance and Councilmembers Kovach and Castleberry said the City should collect and carry the burden of testing water quality samples. Staff will re-draft the ordinance and bring forward for Council consideration and approval.