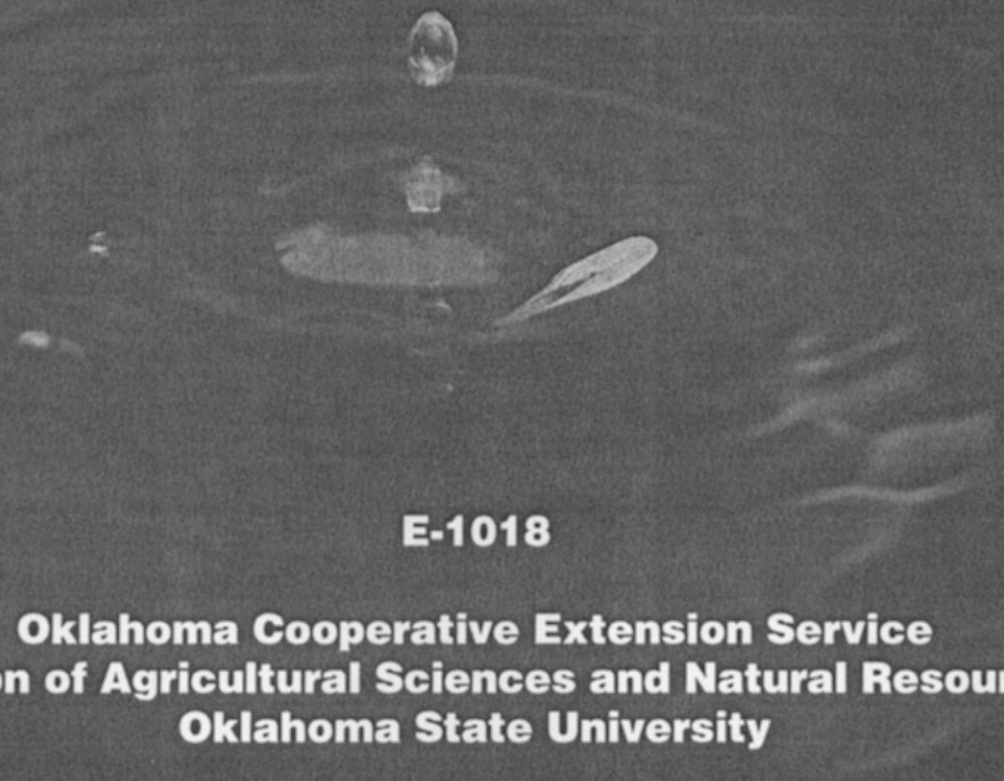
The Oklahoma Groundwater Law Handbook



E-1018

Oklahoma Cooperative Extension Service
Division of Agricultural Sciences and Natural Resources
Oklahoma State University

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Oklahoma Groundwater Law and Rules

In many ways, the process for getting the rights to use groundwater is much like the process for getting the rights to use stream water. The differences between the two processes come mainly from the differences in the nature of the two types of water. While stream water can be found within the streams and the ponds, lakes, and reservoirs they form, groundwater is available almost anywhere in the state. Another important difference between groundwater and stream water is that stream water is basically viewed as a public resource owned by the state and people of Oklahoma, while groundwater is viewed more as a part of the property under which it can be found. Because groundwater is owned, the landowner (i.e. the owner of the property where it is located) is generally regarded as having the best right to use it. As with stream water, groundwater may be used by that property owner, or it may be used by someone who is in some other location away from the water source if that person obtains a lease from the landowner. Also, as with stream water, there are uses for which no permit is needed, and other uses for which a permit is required.

Before we discuss how you can get the rights to use groundwater, we should review what groundwater is (for a more detailed discussion, see "Understanding the Different Kinds of Water Addressed by Oklahoma's Water Law"). Groundwater is defined as "fresh water under the surface of the earth regardless of the geologic structure in which it is standing or moving outside the cut bank of any definite stream."[1] This means that underground water taken from a well within the banks of, or near, a stream is withdrawing groundwater, not stream water. Also, Oklahoma's groundwater laws specifically do not apply to "salt water" which is defined as water with more than five thousand (5,000) parts per million ("PPM") of total dissolved solids.[2] PPM is a measure water scientists use to determine the amount of materials mixed in with a given volume of water – this is one way of determining the quality of the water. No groundwater use permit is necessary to use salt water, but care must be taken to prevent the mixing of salt water with fresh groundwater, as such mixing can be punishable as polluting fresh water.[3]

Domestic Use by the Property Owner

Ownership of real estate carries with it a right to use the groundwater found beneath that real estate for "domestic use" without the need to apply for a permit. For the purposes of groundwater, domestic use is defined just as it is for streamwater. These uses include: (1) household purposes; (2) producing farm and domestic animals (so long as the number of animals using the water is no more than the land could support in a natural grazing system); and (3)irrigation of land for the growing of gardens, orchards and lawns, but only up to three acres in area.[4] Following are some examples of what does and what does not qualify as domestic use for a household:

Domestic use; Permit NOT required	*Non-domestic use; Permit REQUIRED*
Drinking water for household use	Bottling water for sale
Watering of grazing livestock	Watering livestock in a feedlot or other confinement operation
Irrigation of garden, three (3) acres or less in size	Irrigation of cropland, orchard, or grassland greater than three (3) acres in size

One of the most common uses of groundwater in agriculture is for irrigation, and as you can see from the chart, irrigating cropland more than three (3) acres in size will require a groundwater permit from OWRB.

[1] 82 OKLA. STAT. § 1020.1(1), OKLA. ADMIN. CODE § 785:30-1-2.

[2] 82 OKLA. STAT. § 1020.1(7), OKLA. ADMIN. CODE § 785:30-1-2.

[3] 82 OKLA. STAT. § 1020.2.

[4] 82 OKLA. STAT. § 1020.1, OKLA. ADMIN. CODE § 785:30-1-2.

As with stream water, groundwater can also be used by non-household entities like businesses. Such entities do not need a permit for groundwater if it is used for the following purposes: (1) drinking water, (2) restroom use, and (3) the watering of lawns. Businesses using water for these purposes must keep their use to less than five (5) acre-feet per year."[5] An "acre-foot" of water is the amount of water that would cover an area of an acre with one foot of water. An acre-foot of water equals approximately 325,851 gallons. Following are some examples of what does and what does not qualify as "domestic use" for a business:

Domestic use; Permit NOT required	*Non-domestic use; Permit REQUIRED*
Drinking water for employees	Bottling water for sale
Restroom use	Car washing, industrial cleaning
Watering lawns	Irrigation for a turfgrass operation

There is not a fixed limit as to how much groundwater can be used by the owner of the property for domestic use (with the exception of the five [5] acre-feet limit for business entities).

Applying for a Groundwater Use Permit

Just as with stream water, if you want to use groundwater for a use that does not fit the definition of "domestic use," you will need a groundwater use permit from the OWRB; in fact, you will need to have an approved permit before you begin drilling any wells for non-domestic uses.[6]

Let's go through the steps you will need to follow to complete the OWRB groundwater permit application.

Step 1: Calculate the amount of water needed.

Think hard about how you will use the groundwater you want. How much water will you need? How will that water be used? You can use the following resources to help you figure out how much water you may need for a given purpose:

- Irrigation Water Measurement - http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2225/BAE-1502web.pdf.
- Fate of Precipitation Falling on Oklahoma Cropland - http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-6022/PSS-2140web.pdf
- Determination of land use and irrigated crop acres by remote sensing - http://pubs.usgs.gov/wri/wri034155/pdf/section_2.pdf
- Oklahoma Mesonet AgWeather Models - http://agweather.mesonet.org/

Step 2: Understand your groundwater resource.

Groundwater resources may be more difficult to understand for the obvious reason that we can't see it. As a result, we have to rely on other sources of information to tell us about the amount of water that may be available at our location. One tool that can help is the OWRB Water Information Mapping System, available at http://www.owrb.ok.gov/maps/server/wims.php. Using the Map Viewer, you can view the groundwater aquifers (an "aquifer" is a geological formation that may contain water) in your area, and can look for groundwater wells around your property – the records from these wells may help you understand how deep to dig to reach groundwater in your location and how much water may be available from such wells.

Understanding the groundwater resources is important because you will need to determine if a groundwater well (or a system of wells) will be able to provide enough water for your intended use. It also helps determine what kind of groundwater use permit is needed. Let's look at the different types of permits that are available:[7]

Regular: A simple permanent permit that allows you to get a particular amount of groundwater on a year-round basis, and it lasts as long as you follow the terms of your permit. Note: this permit cannot be issued until after the hydrologic survey and the maximum yield of the groundwater basin reached by your well has been determined. For more information on completed

[5] OKLA. ADMIN CODE. 785:30-1-2.

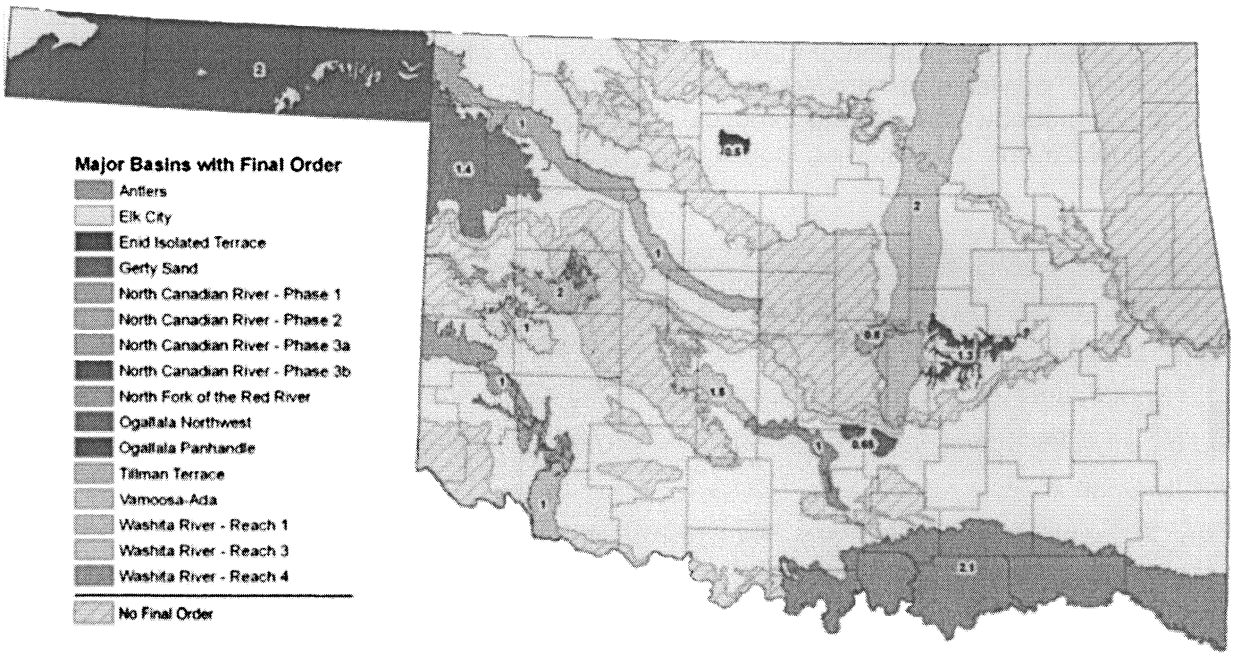
[6] 82 OKLA. STAT. § 1020.7.

[7] Each permit type is set forth at 82 OKLA. STAT. § 1020.11.

maximum annual yield surveys, consult the OWRB Fact Sheet "Determination of Maximum Allowable Yield," available at http://www.owrb.ok.gov/studies/groundwater/arbuckle_simpson/pdf/DetermineMAY.pdf. The following table and map from the Fact Sheet show the groundwater basins for which maximum yields have been determined. The column "EPS" (for "equal proportionate share") indicates how many acre-feet of water may be requested in a permit per acre of dedicated land.

GROUNDWATER BASIN	FINAL ORDER	EPS*	MAY**
Tillman Terrace	12/12/1978	1	189,760
North Fork of the Red River Alluvial and Terrace	09/08/1981	1	343,042
Enid Isolated Terrace	11/09/1982	0.5	26,000
Elk City Sandstone	11/09/1982	1	157,440
North Canadian River Alluvium and Terrace--Phase 1	08/08/1983	1	426,000
Gerty Sand Isolated Terrace	09/12/1989	0.65	28,112
North Canadian River Alluvium and Terrace--Phase 2	04/10/1990	1	211,840
Washita River Alluvium and Terrace--Reach 1	11/13/1990	2	120,320
Washita River Alluvium and Terrace--Reach 3	11/13/1990	1.5	81,840
Washita River Alluvium and Terrace--Reach 4	11/13/1990	1	46,935
Vamoosa-Ada	05/06/1991	2	2,968,000
North Canadian River Alluvium and Terrace-- Phase3A	02/14/1995	0.8	48,128
North Canadian River Alluvium and Terrace--Phase 3B	02/14/1995	1.3	138,944
Antlers Sandstone	02/14/1995	2.1	5,913,600
Ogallala - Panhandle	03/12/2002	2	2,285,212
Ogallala - Northwest Region	03/12/2002	1.4	1,198,512

**EPS=Equal Proportionate Share (denoted in acre-feet); **MAY=Maximum Annual Yield (denoted in acre-feet)*



While the OWRB has been working to complete these hydrologic surveys, there are still several groundwater basins that have not been surveyed. Because many basins do not have hydrologic surveys completed, "regular permits" may not be available for many areas. Thus, a "temporary permit" may be the best option for someone in need of groundwater use rights. For more information on Oklahoma's hydrologic resources, you can visit the following links from the U.S. Geological Survey:

http://ok.water.usgs.gov/infodata/gisdata.html
http://pubs.usgs.gov/of/2003/ofr-03-247/

Temporary: A permit granting the use of water for a temporary period of time. A "temporary" permit is much like a "regular" permit, but "temporary" permits can be issued for groundwater basins even if an OWRB hydrologic survey has not been completed for the basin. Additionally, temporary permits must be revalidated every year for as long as the permit lasts. The total amount of water granted under a temporary permit cannot exceed two (2) acre-feet per acre of land dedicated to the permit, unless special circumstances are recognized by the board. For example, if a landowner wanted to obtain ten (10) acre-feet of groundwater, he or she would have to dedicate five (5) acres of land to the permit (2 acre-feet of water per acre of property dedicated x 5 acres = 10 acre-feet of water). Dedicating land to a permit means obtaining the quantity of groundwater allocated to the land acreage described in the permit as owned by the landowner (or the applicant must have the actual owner's permission to use its groundwater).

Special: A permit that can be applied for in addition to a regular permit or a temporary permit to add more water to total amount allowed under the permit. This permit is issued only under special circumstances as determined by OWRB. The permit can only be used for the specific purpose that is outlined in the permit. After that use is completed, the permit expires, and another permit cannot be issued for the same purpose. Special permits are limited to six months, and can only be renewed three times.

Provisional Temporary:[8] A permit that is authorized by the Executive Director of the OWRB for use of groundwater for a period less than 90 days. No hearings are held, no application notice or data is published and no notice to surface

[8] Provisional Temporary permits are discussed at OKLA. ADMIN. CODE § 785:30-5-4.

estate owners is required on applications for this type of permit. It is not renewable and does not give any permanent rights to groundwater use. The most common use of these permits is for the short-term use of water in drilling oil and gas wells.[9]

Limited Quantity:[10] This permit is administered by the Executive Director of the OWRB without the consent of the entire Board. The Executive Director can issue a regular permit to use fifteen (15) acre-feet of water in the year or term of the permit. The person applying for this permit must notify all the other landowners within 600 feet of the proposed well that an application for a Limited Quantity permit has been made. Neighboring landowners wishing to protest the permit have ten (10) days to protest to the OWRB.

Consider where the groundwater well (or wells) will be located, and where the water will be used. As you complete your application, you will need to diagram both of these locations, as well as discuss your groundwater system. We'll discuss this in more detail in Step 3 below.

What if the water is underneath land that is not yours? Is it possible to acquire groundwater from someone else's property? The answer is yes, as long as you have the appropriate type of agreement with the landowner. Under Oklahoma law, a groundwater use permit can only be issued to someone if they can provide proof that they either "own" or "lease" the land where the well will be located, along with the land where the well is located.[11] If you don't own the land to be used for the groundwater, you must provide a copy of the lease or other agreement giving you permission to extract the water along with your application.

Step 3: Design Your Water Works.

Now you need to design the system used to extract the water and get it to where it will be needed. We call this system the water works. In cases when the groundwater well can be located at the same site where the water will be used, this system may be fairly simple, but if the groundwater well is located at a site far away from where the water will be used, more factors must be considered.

As mentioned above, once you have a design in place, you will need to prepare a diagram of the water works and the dedicated lands – this diagram is called a "plat." A sample plat is following:

[9] See M. Walker and D. Couch, "Oklahoma Environmental Law Handbook," Chapter V, Section B, p. V-B-32 (Oklahoma Bar Association Environmental Law Section, 2009).

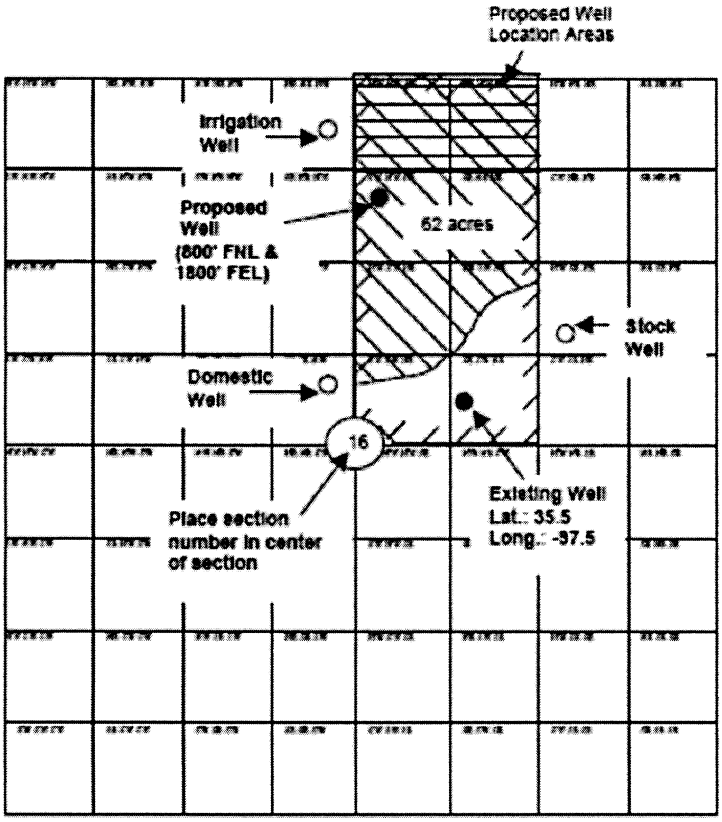
[10] Limited Quantity permits are discussed at Okla. Admin. Code § 785:30-5-4.1.

[11] 82 Okla. Stat. § 1020.9, Okla. Admin. Code § 785:30-3-5.

Application # _____

Oklahoma Water Resources Board
Application Plat Instructions
(Sample)

Applicant Name John Doe



Instructions for Use of Symbols on the Application Plat

● Spot the actual location of each existing well and proposed well with known locations to be authorized and provide distances in feet from section lines or boundaries, or provide lat./long. Coordinates.

○ Show the location of other existing water wells (stock, domestic, irrigation, etc.) within 1/4 mile of dedicated land.

Note: Use additional plats if necessary.

FNL = From the North Line
FEL = From the East Line
Lat. = Latitude
Long. = Longitude

Section 16 – Township 10N – Range 10WIM (Section – Township - Range)

Caddo (County)

Land Dedicated

Area of Use
(example: area to be irrigated, locations of poultry houses, swine houses, or fish farms, mining areas, etc.)

Potential Well Location Area on Dedicated Lands

(if exact proposed well location within the area is not known)

660 ft

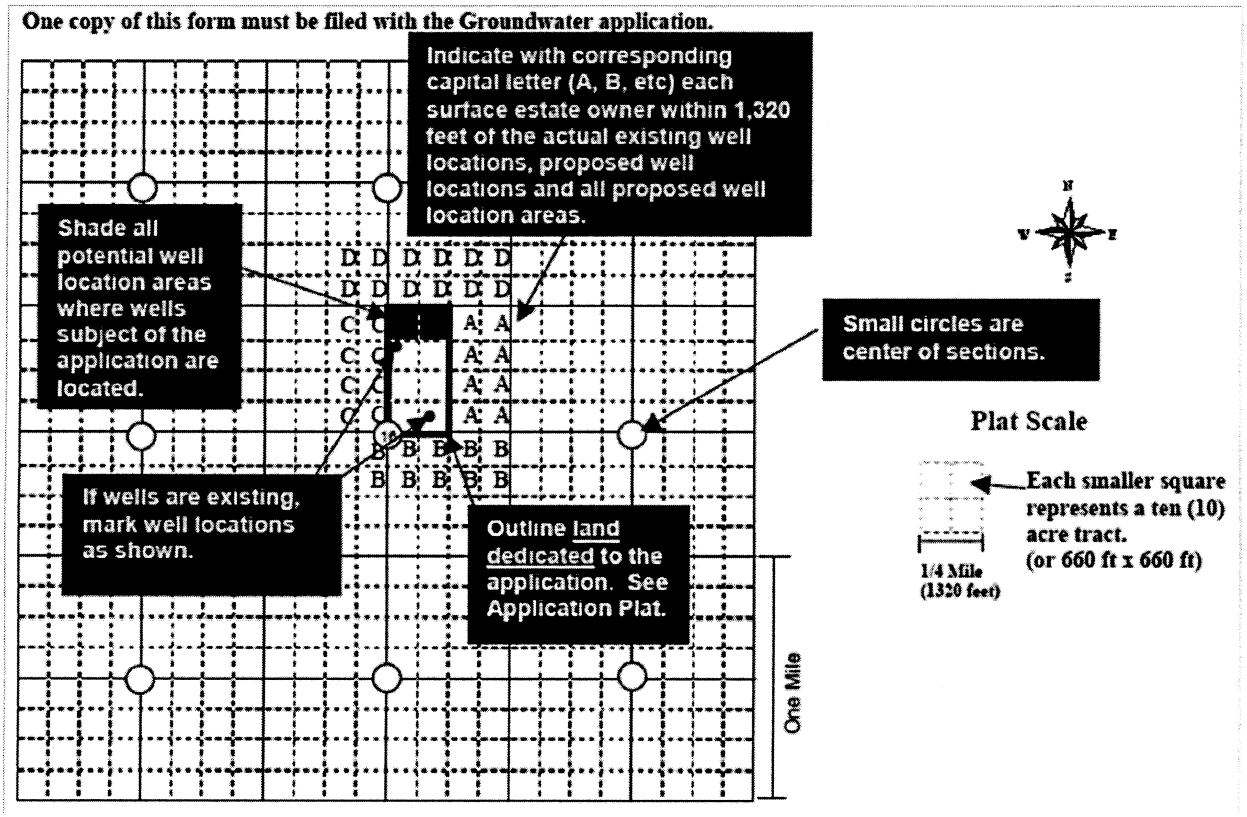
660 ft

Each smaller square represents a ten (10) acre tract (or 660 ft x 660 ft)

The plat will show a section of property (640 acres of property, divided into 10 acre blocks). If more than one section of land must be shown – for example, if land in another section is part of the land dedicated to the application – another plat can be added. If you need some help with the legal description of the locations involved, consult OSU Fact Sheet AGEC-9407, "Legal Descriptions."

The plat will indicate several things about the area where you will be taking and using the groundwater. As shown on the example above, indicate the land that is "dedicated" to your application with short diagonal hash marks going from lower-right to upper-left. The area where the water will be used is indicated with full diagonal marks going from upper-right to lower-left. Areas of land where the proposed groundwater well will be located are indicated with horizontal lines. The location of the proposed groundwater well, as well as any existing groundwater wells inside the dedicated property or the property where the water will be used are indicated with a solid circle, and other existing wells within a quarter-mile of the dedicated or water use property.

While preparing the design of your water works and plat, you will also need to make note of who owns the property near the location of your well(s). As part of the application process, send notice of your application to any surface owners within 1,320 feet of any of the proposed groundwater wells. Your local abstract company will likely have a map of landowners in the county to help identify the parties that need to receive notice of application. When submitting your application, prepare a plat of the land you are dedicating to the application and the landowners within the 1,320 feet discussed above. A sample plat is below:



The plat prepared for the application will also include a listing of the property owners indicated on your plat. Note the "A," "B," "C" and "D" areas on the plat. Those letters are used to show the different landowners, with the corresponding information about the landowners listed below the plat. For example:

Name	Address
A. Jesse Thomas	16200 N. Pennsylvania, Oklahoma City, OK
B. Jim and April Ferguson	13429 W. Memorial, Oklahoma City, OK
C. Steve and Mary Burgess	P.O. Box 156, El Reno, OK
D. Sue Ellen Mayes Estate	P.O. Box 149, El Reno, OK

Oklahoma law includes several restrictions about "setback" distances for groundwater wells. Generally, a groundwater well must not be closer than 1,320 feet to another groundwater well, although exceptions to this spacing can sometimes be approved by the OWRB.[12] Groundwater wells must be set back from the following potential sources of pollution that could contaminate the well or the aquifer from which it draws:[13]

[12] OKLA. ADMIN. CODE § 785:30-3-6.
[13] OKLA. ADMIN. CODE § 785:35-7-1(b).

Potential Pollutant Source	*Setback Distance Specific Sources*
Closed or tight sanitary sewer line	10 ft
Spray from aerobic (above ground) septic system sprinkler	15 ft
Aerobic septic system sprinkler head	50 ft
Outside perimeter of an existing (or proposed) waste lagoon for a feedlot or confined animal feeding operation	300 ft
All Other Sources	
If well is located uphill from the pollution source	50 ft
If well is level with pollution source (NOTE: If well is level or downhill relative to the pollution source and between 50-75 feet from the source, a 20-foot surface seal must be installed around the well)	75 ft
If well is located downhill from the pollution source	100 ft

One more consideration in locating your wells is noting whether there are any abandoned wells in the area. This includes wells of any kind – old water wells, windmills, cisterns, etc. Before you can successfully complete your application, make sure any such wells have been properly plugged and sealed. The standards for plugging old water wells can be found in the Oklahoma Administrative Code at title 785, chapter 35, subchapter 11, which is available from www.oscn.net under the "Legal Research" tab or from the OWRB website at http://www.owrb.ok.gov/util/rules/pdf_rul/2009adopted/Ch35-2009.pdf.

Step 4: Secure access to the lands where wells will be located or lands "dedicated" to the application.

If you own the land where the well or wells will be located, and you own enough land to provide the required volume of water requested, nothing further is needed for this step, and you can proceed to Step 5. If you will need land you do not own for the well or the dedicated lands, however, then you will need to get the permission of the owner to access the property and its groundwater. Permission to use groundwater from someone else's property can take the form of a lease or other agreement that specifies the names of the parties, includes a legal description of the property involved, and includes wording giving the party applying for the groundwater use permit as the party who has permission to use the water. A simple-to-use form for a groundwater lease is available from the OWRB website at http://www.owrb.ok.gov/supply/watuse/pdf_wat/gw_lease.pdf. You will need to include a copy of your agreement with your application.

Step 5: Prepare an "Application for a Permit to Use Groundwater."

Now you are ready to start working on the application. The application form is available at http://www.owrb.ok.gov/supply/watuse/pdf_wat/app_gw.pdf or by contacting OWRB at (405) 530-8800. The application must be filled out completely and accurately, and must be typewritten or in ink.

Along with the application, you will also be required to provide an application fee to the OWRB based on the amount of water you want to appropriate.

Amount of Water Requested	*Fee Fee*
0 to 320 acre-feet	$190.00
321 to 640 acre-feet	$300.00
641 to 1500 acre-feet	$375.00
More than 1500 acre-feet	$375.00 + $150.00 for each 500 acre-feet (or any increment thereof) more than 1500 acre-feet. (maximum fee is $3,000.00)

Part 1 of the application will ask for your name, address, phone number, and fax number. There is also a section to list a contact other than the applicant – this is for applications where an engineer or consultant has been very involved in application process and may want to handle questions on behalf of the applicant.

Part 2 will ask for the total amount of water requested. Remember, this amount needs to be specified in acre-feet, with one acre-foot of water equaling 325,851 gallons.

In Part 3, subpart (a) of the application, specify how the water will be used. In subpart (a) you will show how much water will be used for each purpose proposed (if using the water for more than one purpose, list how much water will be used for each purpose separately). For subpart (a), if using some of the water for irrigation, you may just list "IRRIGATION" – the specific crops you will be irrigating are addressed in subpart (b). Describe how the water will be used and include a brief description of the system you have designed to extract and deliver the water from Step 3. Part 3, subpart (b) must be completed if using any of the water for irrigation. If so, list how many acres will be irrigated and what crops will be irrigated. You must also agree to follow the crop production guidelines recommended for your crop operations by the Natural Resources Conservation Service (NRCS) or other applicable agencies.

Part 4, subpart (a) requires a description of the land that is "dedicated" to the application. In this subpart, indicate how many of the dedicated acres are owned, and how many are leased (or authorized under some other kind of

agreement). Subpart (b) will requires the legal description of all the property that is dedicated to the application. You have already put together the legal descriptions of the property in Step 3, so now put the legal descriptions into the form. Note that the form is designed to accommodate ten (10) acre tracts of land – a "¼ of a ¼ of a ¼" of a section is 10 acres. Let's say you have dedicated 10 acres of land that is in the southwest quarter of the southeast quarter of the northeast quarter of Section 15, Township 19 North, Range 2 East of the Indian Meridian in Payne County. The form would look like this:

10 acres in SW 1/4 of SE 1/4 of NE 1/4 of Sec 15 Twp 19 N ☒ S ☐ Rge 2 ECM ☐ WIM ☐ EIM ☒ in Payne County.

_____ acres in ____ 1/4 of ____ 1/4 of ____ 1/4 of Sec _____ Twp _____ N ☐ S ☐ Rge _____ ECM ☐ WIM ☐ EIM ☐ in _____ County.

_____ acres in ____ 1/4 of ____ 1/4 of ____ 1/4 of Sec _____ Twp _____ N ☐ S ☐ Rge _____ ECM ☐ WIM ☐ EIM ☐ in _____ County.

(Note – if your land is located in the Panhandle of Oklahoma, your legal description will use the Cimarron Meridian, or "ECM." If your land is located elsewhere in the state, your description will use the Indian Meridian, or "WIM" for descriptions west of the Meridian and "EIM" for descriptions east of the Meridian). What if you were using more than 10 acres? For example, let's say we are dedicating 40 acres (or "¼ of a ¼" of a section of property) located in the southeast quarter of the northeast quarter of Section 15, Township 19 North, Range 2 East of the Indian Meridian in Payne County. Then the form would look like this:

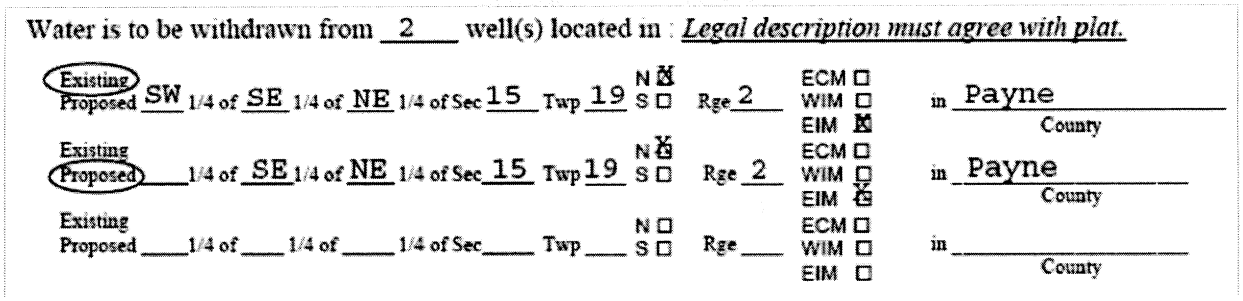
40 acres in SE 1/4 of NE 1/4 of -- 1/4 of Sec 15 Twp 19 N ☒ S ☐ Rge 2 ECM ☐ WIM ☐ EIM ☒ in Payne County.

_____ acres in ____ 1/4 of ____ 1/4 of ____ 1/4 of Sec _____ Twp _____ N ☐ S ☐ Rge _____ ECM ☐ WIM ☐ EIM ☐ in _____ County.

_____ acres in ____ 1/4 of ____ 1/4 of ____ 1/4 of Sec _____ Twp _____ N ☐ S ☐ Rge _____ ECM ☐ WIM ☐ EIM ☐ in _____ County.

Part 4, subpart (c) simply asks for the county where the water will be used, since the location of the water's use may be different from the location where it is drawn from the well. As you complete Part 4 of the application, remember to go back over all the descriptions used and make sure they agree with the plat you will prepare in Part 6 of the application.

Part 5 of the application will require you to give several details about the groundwater wells to be used providing the water. Subpart (a) of Part 5 is much like Part 4 because you will need to give the location of the wells. Note that now, we are using legal descriptions as a kind of "address" for the wells so their locations can be noted on the OWRB's records – we are not using the legal descriptions to describe an area of land. As a result, we will always use all of the 10 acre units provided in the form. As an example, let's say we are converting one well we already use for "domestic" water purposes that is located in the southwest quarter of the southeast quarter of the northeast quarter of Section 15, Township 19 North, Range 2 East of the Indian Meridian in Payne County, and we will be drilling a new well located in the northwest quarter of the southeast quarter of the northeast quarter of Section 15, Township 19 North, Range 2 East of the Indian Meridian in Payne County. Our form would then look like this:


Water is to be withdrawn from 2 well(s) located in : *Legal description must agree with plat.*

(Existing) Proposed SW 1/4 of SE 1/4 of NE 1/4 of Sec 15 Twp 19 N ☒ S ☐ Rge 2 ECM ☐ WIM ☐ EIM ☒ in Payne County

Existing (Proposed) 1/4 of SE 1/4 of NE 1/4 of Sec 15 Twp 19 N ☒ S ☐ Rge 2 ECM ☐ WIM ☐ EIM ☒ in Payne County

Existing Proposed 1/4 of 1/4 of 1/4 of Sec Twp N ☐ S ☐ Rge ECM ☐ WIM ☐ EIM ☐ in County

Subpart (b) of Part 5 asks for information regarding the drilling and construction of the wells. The first few questions will relate to wells already drilled. This section anticipates wells that were once used for domestic purposes may be converted to non-domestic purposes, or non-domestic wells may be used for new purposes. You must have an approved groundwater use permit BEFORE you drill any wells (although test holes CAN be drilled prior to the issuance of the permit). You will be asked to provide the well logs from any existing wells you will be using. These logs should be available from the driller who installed the well. Logs for some wells may also be available from the OWRB's Water Information Mapping System at http://www.owrb.ok.gov/maps/server/wims.php to locate wells and in some cases, obtain the logs for those wells.

For existing wells, you need to answer questions about who constructed the well, whether it meets the appropriate construction requirements, the depth of the well, and the rates of water it is expected to produce (given in gallons per minute). Well construction requirements are found in Title 785, chapter 35, subchapter 7 of the Oklahoma Administrative Code.[14] You can find a copy of these standards by going to the Oklahoma Administrative Code section of the Oklahoma State Court Network's website, www.oscn.net, under the "Legal Research" tab. You can also get a copy of the standards from the OWRB's website at http://www.owrb.ok.gov/util/rules/pdf_rul/2009adopted/Ch35-2009.pdf. You will also need to answer several questions about the "setback" distances required for groundwater wells. Wells need to comply with the setback distances discussed above.

Another question asked in subpart (b) of Part 5 will be about the well driller. Unless drilling and installing the well yourself, you will need to use a well driller licensed by the OWRB.[15] A list of licensed drillers can be fourn on the OWRB website at http://www.owrb.ok.gov/supply/wd/wd_forms.php#dpcfirms. In this subpart, it will also be important to make sure the location information you give in Parts 4 and 5 of the application matches with the plat prepared for Part 6.

Lastly, note whether there are any abandoned or unused wells located anywhere on the property dedicated for the application. They need to be certified that they are plugged or will be plugged prior to the use of water begins.

Part 6 of the application consists of the plat showing where you plan to locate the wells, the lands dedicated to your application, and so on. This work has already been completed in the steps discussed above. Now simply transfer that information to the plat.

The same could be said of Part 7 of the application, which is the Surface Estate Owners Map. This is just a plat of the surface owners.

Part 8 of the application is only for municipalities or rural water districts applying for a groundwater use permit.

Part 9 requires you to detail how you will detect and repair any leaks in your system, and how long those operations might take.

Now, the final part of the application is where you will sign. But first, you must figure out who is responsible for signing:

[14] OKLA. ADMIN. CODE § 785:35-7-1 provides the "minimum standards for construction of raoundwater wells, fresh water observation wells, and water well test holes."

[15] OKLA. STAT. § 1020.16, OKLA. ADMIN CODE § 785:35-3-1.

If the entity applying for the appropriation is...	*...then the party(ies) who need to sign is(are):*
An individual person	The individual
A husband and wife	Either spouse (or both may sign)
A general partnership	All the partners
A limited partnership, corporation, LLC, trust, estate, government agency, or other any type of entity	The entity's "authorized agent" – usually the company's manager or president, the trustee of a trust, executor of the estate, etc.

Once the application is complete, be sure to review it and make sure all the information is complete and accurate, any additional information needed is attached, and you have included the appropriate application fee. Submitting a complete and correct application the first time will make it much easier to get a speedy approval. If the OWRB sees that corrections must be made to your application, they will notify you of the corrections and give you 60 days to make those corrections. If the corrections are not made within those 60 days, the OWRB may consider the application withdrawn.[16]

Publishing Notice / Submitting Proof of Publication.

After filing the application, you must then publish a notice of the application.[17] If the OWRB deems your application complete, they will send you instructions on how to publish this notice.

[16] OKLA. ADMIN CODE § 785:30-1-4.
[17] OKLA. ADMIN CODE § 785:30-3-4.

RE: Groundwater Application No. 2009-503, Leo & Arleta Whitmore, Payne County

Dear Mr. Whitmore:

The above-referenced application to use groundwater has been reviewed by Board staff. In order to obtain a permit, you must provide notice of the essential facts about your intended use by newspaper publication and by notifying certain neighbors.

In accordance with Section 309 of Title 75 and Section 1020.8 of Title 82 of the Oklahoma Statutes, and Section 785:30-3-4 of the Oklahoma Administrative Code (OAC), we have enclosed a Notice of Application to be published at your expense in a newspaper of general circulation in Payne County. The notice must be published once a week for the two consecutive weeks beginning on July 26, 2009, and August 2, 2009. Please send us, or have the publisher forward to us, the certified proofs of publication by August 17, 2009. Because the Board is not responsible for the accuracy of the information contained in the notice, please review the enclosed notice carefully and contact the Board if you note any errors or have any questions regarding notice.

In addition to giving notice by publication of your application to withdraw groundwater, OAC Section 785:30-3-4(a) requires that you notify by certified mail, return receipt requested, all surface estate owners of lands located within 1,320 feet of the outside boundary of each ten acre tract of wells subject of your application. Please notify these landowners on or before the last day of publication. We have enclosed extra copies of the notice for this purpose. You may xerox additional copies if you need more than we have provided. Also enclosed is an affidavit certifying you have notified all of these surface estate owners. The affidavit must be signed, notarized, and returned to the Board by or before August 17, 2009.

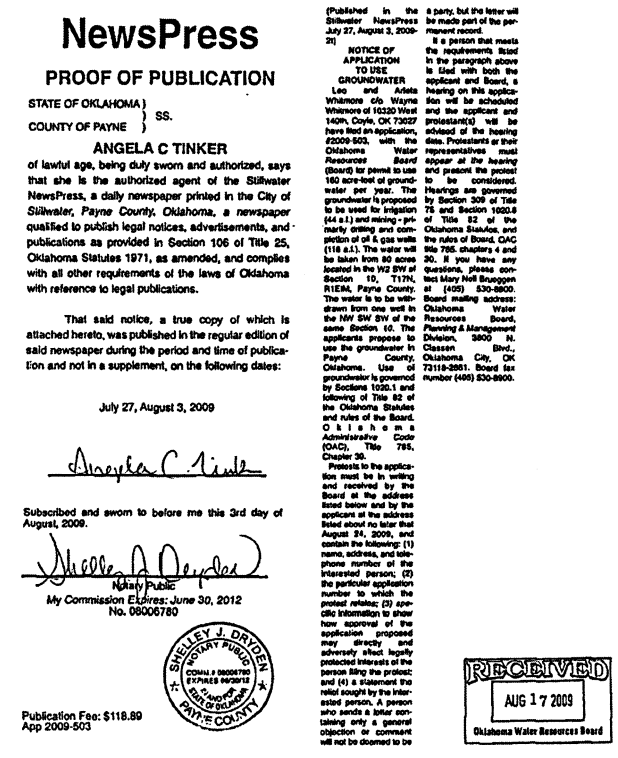
Any protests to your application must be filed with the Board by August 24, 2009. If a protest is filed, a hearing will be scheduled and you will be notified.

If you have any questions concerning this matter, please contact Mary Nell Brueggen at the address below or call (405) 530-8800.

Sincerely,

Julie Cunningham, Chief
Planning & Management Division

The notice must be posted for two consecutive weeks in a newspaper distributed in the area affected by the use of the water (some people refer to this as a county "newspaper of record" or a "legal newspaper"). After the notice has been printed, you must submit proof the notice was printed to the OWRB. Many newspapers will provide you with a form for this proof. For help on preparing your notice and finding the newspaper serving your county, visit the Oklahoma Press Association website at http://www.okpress.com/legal-notice-guide and click on the "Legal Notice Guide" link. Click on the "List of Members" link and then go to the "Business Members" for a list of newspapers that meet the definition of a "legal newspaper." When completed, the proof of publication form will look something like this:



NewsPress

PROOF OF PUBLICATION

STATE OF OKLAHOMA } SS.
COUNTY OF PAYNE }

ANGELA C TINKER

of lawful age, being duly sworn and authorized, says that she is the authorized agent of the Stillwater NewsPress, a daily newspaper printed in the City of *Stillwater, Payne County, Oklahoma, a newspaper* qualified to publish legal notices, advertisements, and publications as provided in Section 106 of Title 25, Oklahoma Statutes 1971, as amended, and complies with all other requirements of the laws of Oklahoma with reference to legal publications.

That said notice, a true copy of which is attached hereto, was published in the regular edition of said newspaper during the period and time of publication and not in a supplement, on the following dates:

July 27, August 3, 2009

Angela C. Tinker

Subscribed and sworn to before me this 3rd day of August, 2009.

Shelley J. Dryden
Notary Public
My Commission Expires: June 30, 2012
No. 08006780

SHELLEY J. DRYDEN NOTARY PUBLIC COMM.# 08006780 EXPIRES 06/30/12 STATE OF OKLAHOMA PAYNE COUNTY

Publication Fee: $118.89
App 2009-503

(Published in the Stillwater NewsPress July 27, August 3, 2009-2t)

NOTICE OF APPLICATION TO USE GROUNDWATER

Lee and Arleta Whitmore c/o Wayne Whitmore of 10330 West 140th, Coyle, OK 73027 have filed an application, #2009-503, with the Oklahoma Water *Resources Board* (Board) for permit to use 160 acre-feet of groundwater per year. The groundwater is proposed to be used for irrigation (44 a.f.) and mining - primarily drilling and completion of oil & gas wells (116 a.f.). The water will be taken from 80 acres located in the W2 SW of Section 10, T17N, R1EM, Payne County. The water is to be withdrawn from one well in the NW SW SW of the same Section 10. The applicants propose to use the groundwater in Payne County, Oklahoma. Use of groundwater is governed by Sections 1020.1 and following of Title 82 of the Oklahoma Statutes and rules of the Board, Oklahoma Administrative Code (OAC), Title 785, Chapter 30.

Protests to the application must be in writing and received by the Board at the address listed below and by the applicant at the address listed about no later that August 24, 2009, and contain the following: (1) name, address, and telephone number of the interested person; (2) the particular application number to which the protest relates; (3) specific information to show how approval of the application proposed may directly and adversely affect legally protected interests of the person filing the protest; and (4) a statement the relief sought by the interested person. A person who sends a letter containing only a general objection or comment will not be deemed to be a party, but the letter will be made part of the permanent record.

If a person that meets the requirements listed in the paragraph above is filed with both the applicant and Board, a hearing on this application will be scheduled and the applicant and protestant(s) will be advised of the hearing date. Protestants or their representatives must *appear at the hearing* and present the protest to be considered. Hearings are governed by Section 309 of Title 75 and Section 1020.8 of Title 82 of the Oklahoma Statutes, and the rules of Board, OAC title 785, chapters 4 and 30. If you have any questions, please contact Mary Nell Bueggen at (405) 530-8800. Board mailing address: Oklahoma Water Resources Board, *Planning & Management* Division, 3800 N. Classen Blvd., Oklahoma City, OK 73118-2881. Board fax number (405) 530-8900.

RECEIVED
AUG 17 2009
Oklahoma Water Resources Board

You will need to provide notice via certified mail to any landowner within 1,320 feet of the ten (10) acre tract in which your proposed well(s) are located. These are the landowners you identified on the plat discussed above.

Hearings on the Application: After notice is published, the public will then have an opportunity to protest the application. A protest may not be made by just anyone. Instead, to protest an application, someone must have an "interest" in the application.[18] This means that the party filing the protest must have some claim to water in the area affected if your application is granted. If the OWRB finds that the protest is valid, it may schedule a hearing where you may present evidence in support of your appropriation request, and the protesting party may present evidence supporting its request for a denial of the appropriation.[19] The OWRB will consider the information gathered at the hearing in making its decision on whether to grant the requested appropriation.

Application Decision: After the application has been submitted, any necessary corrections have been made, and any hearings have been completed, the OWRB will make a decision on whether to grant the application. To grant the application, the OWRB must have enough information to confirm that the following four conditions are true for the application:

[18] 82 OKLA. STAT. § 1020.8.
[19] 82 OKLA. STAT. § 1020.8, OKLA. ADMIN CODE § 785:35-3-4.

Required Finding	*What it means...*
The lands owned or leased by the applicant overlie a fresh groundwater basin or subbasin.	As a practical matter, most land in the state overlies a fresh groundwater basin or subbasin, but to confirm this, you can use the water mapping resources discussed above.
The use to which the applicant intends to put the water is a beneficial use.	"Beneficial use" is a very broad term that is defined as "the use of such quantity of stream or groundwater when reasonable intelligence and reasonable diligence are exercised in its application for a lawful purpose and as is economically necessary for that purpose. Beneficial uses include but are not limited to municipal, industrial, agricultural, irrigation, recreation, fish and wildlife, etc." In other words, the water will be used for some purpose that will not waste or pollute the water, as we will discuss in the next criterion.
"Waste" of the water will not occur.	Waste has a number of definitions. Oklahoma groundwater law and regulations define any of the following items as waste: 1. Drilling a well, taking, or using fresh groundwater without a permit, except for domestic use; 2. Taking more fresh groundwater than is authorized by the permit; 3. Taking or using fresh groundwater in any manner so that the water is lost for beneficial use [in other words, allowing unreasonable amounts of the water to leak, evaporate, or otherwise be lost before it is used]; 4. Transporting fresh groundwater from a well to the place of use in such a manner that there is an excessive loss in transit; 5. Using fresh groundwater in such an inefficient manner that excessive losses occur; 6. Allowing any fresh groundwater to reach a pervious stratum and be lost into cavernous or otherwise pervious materials encountered in a well [in other words, failing to construct the groundwater well properly and thus, causing the water to be lost into another geological formation before it can be pulled up the well]. 7. Permitting or causing the pollution of a fresh water strata or basin through any act which will permit fresh groundwater polluted by minerals or other waste to filter or otherwise intrude into such a basin or subbasin [again, this often occurs when a poorly constructed well allows pollutants from the surface or an other geological formation to mingle with the groundwater being tapped by the well]; 8. Drilling wells and producing fresh groundwater therefrom except in accordance with the well spacing previously determined by the Board [in other words, not following the OWRB's requirements for well spacing is considered "waste."]; 9. Using fresh groundwater for air conditioning or cooling purposes without providing facilities to aerate and reuse such water; 10. Failure to properly plug abandoned fresh water wells in accordance with rules of the Board and file reports thereof.
The proposed use is likely to degrade or interfere with springs or streams emanating in whole or in part from water originating from a "sensitive sole source groundwater basin or subbasin."	"Sensitive sole source groundwater basins" are determined by the U.S. Environmental Protection Agency – at the moment, the only such aquifer in Oklahoma is the Arbuckle-Simpson aquifer located in south-central Oklahoma in Pontotoc, Johnston, Carter, and Murray counties.

If all of these conditions are satisfied, and any applicable requirements regarding the water's use (such as regulations on feedlots or other facilities under the jurisdiction of the Oklahoma Department of Agriculture, Food and Forestry or the Oklahoma Department of Environmental Quality) are satisfied, then OWRB will approve the application.[20]

Annual use reporting requirements: Once the groundwater use permit is approved, you will need to make an annual report of the amount of water used.[21] The OWRB will send water-reporting forms each January, allowing 30 days to complete the report and submit it back to the OWRB. It is important that you complete these reports, as failing to do so can cause loss of your permit.[22]

An Example of a Completed Application

Pistol Pete has some property in Texas County, and wants to start growing a corn, soybean, and sorghum rotation there. To get the level of production he wants from the property, he believes he will need to use an irrigation system. Pete's property is a quarter section of property, which means it is 160 acres in size, and he thinks a center-pivot system will work best for the land. Given a typical quarter section center-pivot irrigation system, this means 125 acres of land will be irrigated; the rest will be "corners" not be irrigated, as the irrigation system will not pass over them.

Reading the Oklahoma Water Law Handbook, Pete knows that irrigating 125 acres of cropland is not "domestic" use of the water. This means Pete must apply for a groundwater use permit. Let's follow along as Pete goes through his application process.

Step 1: Calculate how much water you need.

Pete's first task is to determine how much water he will ask for in his application. To do this, he has to calculate the water needs of his crop. Pete does some research and learns that of his corn, soybean and sorghum rotation, corn will be the most water-intensive crop. As a result, Pete will base his application off of the amount of water needed by the corn crop. Looking at the NRCS Irrigation Guide and its Oklahoma Crop Water Use Supplement (available at http://www.wsi.nrcs.usda.gov/products/w2q/downloads/Irrigation/National%20Irrigation%20Guide.pdf and http://www.ok.nrcs.usda.gov/technical/Manuals/ig.html, respectively), Pete sees that given the annual rainfall and evaporation of the area in a normal year, he will need 18 inches of net irrigation on his crop. Doing some more research on his irrigation system, he sees that it has an expected efficiency of 80 percent - that is, approximately 20 percent of the irrigation water applied will likely be lost to evaporation, with the remaining 80 percent making it into the soil and becoming available to the crop plants. Using this information, Pete does some math:

- 18 net inches of water needed ÷ 80 percent efficiency = 22.5 inches of irrigation needed. Doing some more research, Pete sees that in a dry year, he will need 25 inches of irrigation, so he will base the remainder of his calculations on this number.
- 25 inches of actual irrigation water x 125 irrigated acres = 3,125 acre-inches of water.
- 3,125 acre-inches of water ÷ 12 acre-inches per acre-foot = 260.4 acre-feet of water.
- Since Pete will need almost 261 acre-feet of water per year, he needs to check that he has enough land to dedicate to the permit. He is dedicating the entire 160 acre tract to the permit, and at the standard two acre-feet of water per acre of dedicated land, he would be fine. However, Pete needs to check and see if the maximum annual yield has been determined for his aquifer; this will help him confirm whether he can follow the standard two acre-feet rule or if more land will be required. Pete consults the "Maximum Annual Yield" fact sheet from OWRB (available at http://www.owrb.ok.gov/studies/groundwater/arbuckle_simpson/pdf/DetermineMAY.pdf) and checks the following table:

[20] 82 OKLA. STAT. § 1020.9.
[21] 82 OKLA. STAT. § 1020.12, OKLA. ADMIN CODE § 785:30-5-9..
[22] OKLA. ADMIN CODE § 785:30-5-9.

GROUNDWATER BASIN	FINAL ORDER	EPS*	MAY**
Tillman Terrace	12/12/1978	1	189,760
North Fork of the Red River Alluvial and Terrace	09/08/1981	1	343,042
Enid Isolated Terrace	11/09/1982	0.5	26,000
Elk City Sandstone	11/09/1982	1	157,440
North Canadian River Alluvium and Terrace--Phase 1	08/08/1983	1	426,000
Gerty Sand Isolated Terrace	09/12/1989	0.65	28,112
North Canadian River Alluvium and Terrace--Phase 2	04/10/1990	1	211,840
Washita River Alluvium and Terrace--Reach 1	11/13/1990	2	120,320
Washita River Alluvium and Terrace--Reach 3	11/13/1990	1.5	81,840
Washita River Alluvium and Terrace--Reach 4	11/13/1990	1	46,935
Vamoosa-Ada	05/06/1991	2	2,968,000
North Canadian River Alluvium and Terrace-- Phase3A	02/14/1995	0.8	48,128
North Canadian River Alluvium and Terrace--Phase 3B	02/14/1995	1.3	138,944
Antlers Sandstone	02/14/1995	2.1	5,913,600
Ogallala - Panhandle	03/12/2002	2	2,285,212
Ogallala - Northwest Region	03/12/2002	1.4	1,198,512

*EPS=Equal Proportionate Share (denoted in acre-feet); **MAY=Maximum Annual Yield (denoted in acre-feet)

This table indicates there has been a groundwater survey completed for this aquifer, and based on this study, a limit of two acre-feet of water per each acre of dedicated land is allowed. As a result, Pete can dedicate enough land to get the two acre-feet of water he needs. By comparison, if Pete's land were located in the Ogallala – Northwest Region (in Harper, Ellis, and Woodward Counties), he would only be allowed 1.4 acre-feet of water per acre of dedicated land.

Step 2: Understand your groundwater resource.

As Pete designs his groundwater system, he needs to know a little more about the groundwater resource nearby. One way to learn more about the groundwater in an area is to review the records for groundwater wells nearby. When Pete uses the OWRB Water Map server (available at http://www.owrb.ok.gov/maps/server/wims.php), he is able to find records for a few nearby wells. Here is some of the well data from one of those records:

HYDROLOGIC INFORMATION

Depth to water at time of drilling ___ ft Estimated yield of well 1000 gpm First water zone 150 ft

LITHOLOGY DESCRIPTION

MATERIAL	ENCOUNTERED FROM (ft.)	ENCOUNTERED TO (ft.)	SATURATED
overburden	0	140	N
medium to coarse sand	140	185	N
cemented sand & clay stks	185	200	N
medium to coarse sand	200	230	N
cemented sand & clay stks	230	260	N
medium to coarse sand	260	305	N
red bed tight	305	316	N

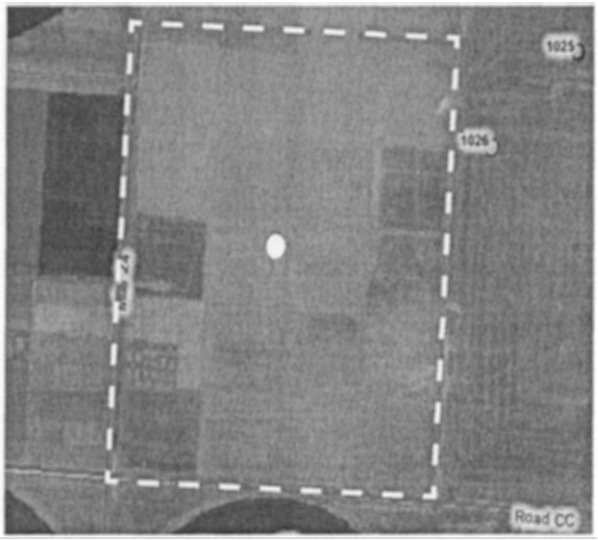
This information, taken from a well close to Pete's property, indicates that water is first encountered approximately 150 feet from the surface, and that the well's overall depth is 316 feet. It also indicates that the well yields approximately 1,000 gallons per minute of water flow. This gives Pete at least some idea of the depth and flow that will be likely if he constructs a similar well.

The OWRB Water Map server is just one tool that can be used for learning about groundwater resources in an area. Other resources for learning about water availability are available from the OWRB website at http://www.owrb.ok.gov/supply/availability/water.php.

Step 3: Design Your Waterworks.

Pete has already determined the volume of water he needs, and has also picked out an irrigation system - a center-pivot system with drop tubes and low-drift nozzles to maximize the amount of water that actually makes it to the ground. However, he still needs to determine what kind of well and pump he needs, and where he will locate the well. The typical irrigation well in the Oklahoma panhandle will be a 16-inch diameter steel casing in a 24-inch diameter borehole with a 4-inch thick gravel envelope surrounding the casing. The irrigation pump will be a vertical turbine pump driven from the ground surface by a natural gas engine.

Using the OWRB Water Map server, Pete gets a copy of an aerial photograph of his parcel to help him plan the layout of his waterworks. In his picture, he outlines his parcel with dashed lines, and uses a dot to indicate the proposed location of his well.



Step 4: Secure Access to the Property.

In our example, Pete owns both the land where the well will be located and the land where the water will be used, thus, there are no access issues. If, on the other hand, Pete had to secure groundwater from someone else's land, he would have to prove that he had some claim to the property. For the purposes of the application, this is done with the Groundwater Lease form, available at: http://www.owrb.ok.gov/supply/watuse/pdf_wat/gw_lease.pdf. An example of this form is below.

GROUNDWATER LEASE
(LANDOWNER PERMISSION)

I, _____, am the surface owner of _____ acres
(name of surface land owner)

of land located in the _____, _____
(legal description) (county)

County, and I hereby authorize _____ or a
(name of applicant for groundwater permit)

duly authorized representative to apply for a permit, locate wells on the land and withdraw groundwater from the land described above. This lease is for: (complete applicable option)

1. a period not to exceed _____ from the date listed below, or
(days, months, or years)

2. _____ an indefinite term.
(√ if applies)

_____ Signature

_____ Street address or P.O.Box

_____ Surface Owner Name (print)

_____ City, State, Zip

_____ Date

_____ Telephone number

State of Oklahoma)
) ss.
County of _____)

Subscribed and sworn to before me this ___day of _____, 20___

_____
Notary Public

My Commission Expires: _____
(Seal)

Step 5: Complete the "Application for a Permit to Use Groundwater" form.

Now that Pete is ready to prepare his application.

Section 1 of the application will ask for the contact information of the applicant. If another party was heavily involved in the preparation of the application, such as an engineer, and that person should be contacted with questions about the application, the contact information for that person should be included as well. Since Pete is preparing this application himself, he will only need to provide his information.

1. NAME AND ADDRESS

a. Print the applicant's full name and mailing address, complete with zip code. If the applicant is a corporation, use the name and business address of the corporation.

Applicant Name Pistol Pete Phone (405) 555 - 0000

FAX# (405) 555-0001

Address 101 Cowboy Way

City Stillwater State OK Zip 74078

b. If the contact during the application process is someone other than the applicant listed above, print the name and mailing address of the contact person.

Contact Name N/A Phone (___) ____ - _____

FAX# (___) ____ - _____

Address _____

City _____ State _____ Zip _____

Section 2 of the application asks for the amount of water requested in the application. Using his calculations from above, Pete will be asking for 261 acre-feet of water.

2. AMOUNT OF WATER REQUESTED

State total amount of water applied for in acre-feet per calendar year. One acre-foot of water will cover one acre of land one foot deep and is equal to 325,851 U. S. gallons.

Application is made to take and use 261 acre-feet of water annually.

Next, Section 3 will ask for the uses of the water. Recall that Pete is going to be using all of this water for irrigation, and the crops irrigated with the water will be a corn, soybean, and sorghum rotation. Pete will need to provide information about how the water will be used (in this example, all of the water will be used for irrigation), give details about the water system, and since the water will be used for irrigation, a listing of the crops that will be irrigated must also be given.

3. PURPOSE(S) FOR WHICH WATER WILL BE USED

a. *List the purpose or purposes for which the water would be used if the permit is granted and list the number of acre-feet for each purpose. Be sure that the sum of the amounts listed below equals the total acre-feet in #2 above. If the water is to be used to irrigate crops, list IRRIGATION as the purpose and list the sum total acre-feet for all crops.*

OFFICE USE ONLY
SIC Codes

261 acre-feet of water will be used for Irrigation

_____ acre-feet of water will be used for _____

_____ acre-feet of water will be used for _____

_____ acre-feet of water will be used for _____

Describe fully how the water will be used, and include a description of the system proposed to be used:

The water will be used for irrigation; the system to be used consists of a vertical turbine pump that will convey the water to a center-pivot irrigation system.

b. If the water requested is for irrigation purposes, state the total number of acres that will be irrigated.

125 acres of land are proposed to be irrigated. The proposed crops are Corn, soybeans and sorghum.

Will you follow applicable requirements, guidelines and best management practices recommended by the Natural Resources Conservation Service or other applicable agencies? X Yes ____ No

Section 4 of the application relates to the amount of land dedicated to the application. Here, Pete will indicate he owns the dedicated land, provide the legal description of the property, and indicate the county where the water will be used.

4. OWNERSHIP AND LEGAL DESCRIPTION OF LAND DEDICATED

a. *No permit of any kind shall be granted without the WRITTEN PERMISSION OF THE SURFACE OWNER OF THE LAND from which the water is to be withdrawn. If the applicant does not own the groundwater underlying the dedicated land, a copy of the lease or agreement giving the applicant the right to withdraw the groundwater must be furnished with the application. Said lease or agreement must specify the number and location of the acres under lease. A municipality may dedicate platted land within its corporate limits under certain conditions.*

160 acres are owned, _____ acres are leased and / or _____ acres are platted (municipal only), and dedicated to this application. Lands must be shown in attached application plat(s). Attach copy of deed, lease or other written authorization from owner, etc., showing right to use groundwater from the land.

b. *The full legal description of all lands dedicated must be given with the number of acres in each legal description stated. The legal descriptions should be checked against the plats to make sure they agree. Please do not use city lot and block numbers, but show the land on the plat and then convert to the nearest legal description. If more space is needed for legal descriptions, list on a separate sheet of paper and attach it to the application, referencing paragraph 4.b.*

160 acres in SW 1/4 of ____1/4 of ____1/4 of Sec 31 Twp 2 N ☒ S ☐ Rge 14 ECM ☒ WIM ☐ EIM ☐ in Texas County.

_____ acres in ____ 1/4 of ____1/4 of ____1/4 of Sec_____ Twp_____ N ☐ S ☐ Rge_____ ECM ☐ WIM ☐ EIM ☐ in _____ County.

_____ acres in ____ 1/4 of ____1/4 of ____1/4 of Sec_____ Twp_____ N ☐ S ☐ Rge_____ ECM ☐ WIM ☐ EIM ☐ in _____ County.

c. The water will be used in Texas County, Oklahoma.

Section 5 of the application requests a number of details regarding the proposed well's location and construction. First, subsection 5.a. will ask for the location of the well. In our example, Pete will be using one well, which he plans to have drilled near the pivot of his irrigation system. In the application, Pete will need to give the location of this proposed well site as closely as he can. Based on his aerial photograph and the legal description of the property, Pete works out the proposed location of the well would be in the southeast quarter of the northwest quarter of the southwest quarter (SE/4 NW/4 SW/4) of section 31, township 2 north (T2N), range 14 (R14) east of the Cimarron Meridian. Using this information, Pete completes subsection 5.a. as follows:

5. WELL INFORMATION

a. *Please specify the number of wells requested to be authorized and describe below to the closest quarter section the location of existing and proposed wells. On the attached plat, show the actual location of existing wells and proposed wells by distances in feet from readily fixed points of reference such as section lines, or provide latitude/longitude coordinates of existing wells requested to be authorized. If the applicant does not have specific information as to locations of existing and any proposed wells, the potential well area or areas within the dedicated lands must be indicated on the application plat. Actual well locations and the potential area information for well locations as indicated on the plat will be used to determine the certified mail notice that the applicant must provide. If the requested permit is issued, it will authorize a maximum number of existing wells and proposed wells to be drilled and completed. Absent information to the contrary, a maximum of three wells will be authorized for each 100 acre-feet of groundwater to be withdrawn per year. Proposed wells which are authorized must be drilled and completed within one year of permit issuance. Please note: The well (s) must be drilled according to minimum construction standards established by the Oklahoma Water Resources Board in Chapter 35 of the Board's rules.*

Water is to be withdrawn from 1 well(s) located in : *Legal description must agree with plat.*

Existing (Proposed)	SE 1/4 of NW 1/4 of SW 1/4 of Sec 31 Twp 2	N ☒ S ☐	Rge 14	ECM ☒ WIM ☐ EIM ☐	in Texas County
Existing Proposed	____1/4 of ____1/4 of ____1/4 of Sec____ Twp ____	N ☐ S ☐	Rge ____	ECM ☐ WIM ☐ EIM ☐	in _____ County
Existing Proposed	____1/4 of ____1/4 of ____1/4 of Sec____ Twp ____	N ☐ S ☐	Rge ____	ECM ☐ WIM ☐ EIM ☐	in _____ County

Subsections 5.b.1. and 5.b.2. of the application asks details about the construction of the well. If the well has already been drilled, information about the well driller and construction procedures for the well must be provided. In either case (whether the well is already existing or will be constructed), information about the depth and pumping rates of the well must be provided. Remember a licensed well driller must complete the well (unless the well is drilled by the owner of the property, in which case the well must still be constructed in compliance with the OWRB regulations).

b. Has the well(s) to be used already been drilled? ____ Yes __X__ No

(1) If yes, please answer the following questions.

(A) Did a licensed water well driller drill and complete the well(s)? ____ Yes _____ No

[Please attach a copy of the well log(s) if available.]

If no, who drilled your well(s)?

_____

Was your well(s) constructed to meet the Oklahoma Water Resources Board's minimum construction standards for water wells? ____ Yes _____ No

(B) List the depth of the well(s) and anticipated pumping rates for each well:

350 feet; 1,000 gallons per minute

_____

_____

(2) If the well(s) has not been drilled, will a licensed water well driller drill and complete the well(s)?

__X__ Yes _____ No

(A)If no, who will drill your well(s)? _____

(B) Will your well(s) be constructed to meet the Oklahoma Water Resources Board's minimum construction standards for water wells? __X__ Yes _____ No

Subsection 5.b.3. asks the applicant to confirm that all of the setback distances specified for water wells in the OWRB regulations discussed above will be met. Pete has examined the area around his property, and none of the setbacks appear to apply, so he can mark "N/A" to each.

(3)Will the well(s) be located at least the following minimum distances away from possible pollution sources:

i. 10 feet from a closed or tight sanitary sewer line; _____Yes ____No __X__N/A

ii. 300 feet from the outside perimeter of an existing or proposed waste lagoon for a feedlot or confined animal feeding operation; _____Yes ____No __X__N/A

iii. For all other pollution sources (including but are not limited to existing or proposed septic tanks, sewer lines, absorption fields or beds, seepage pits, building foundations, oil & gas wells and landfills):

a) 50 feet if the well is upgradient of the pollution source;
b) 50 to 75 feet if the well is level or downgradient of the pollution source and a 20 foot surface seal is installed;
c) 75 feet if the well is on the same ground level with the pollution source;
d) 100 feet if the well is downgradient of the pollution source

_____Yes ____No __X__N/A

Subsection 5.c. of the application will ask about any abandoned or unused wells located on the land dedicated to the application. Pete has inspected the property and found no wells on the property. If he had, they would have to be plugged (if abandoned) or capped (if they are only unused).

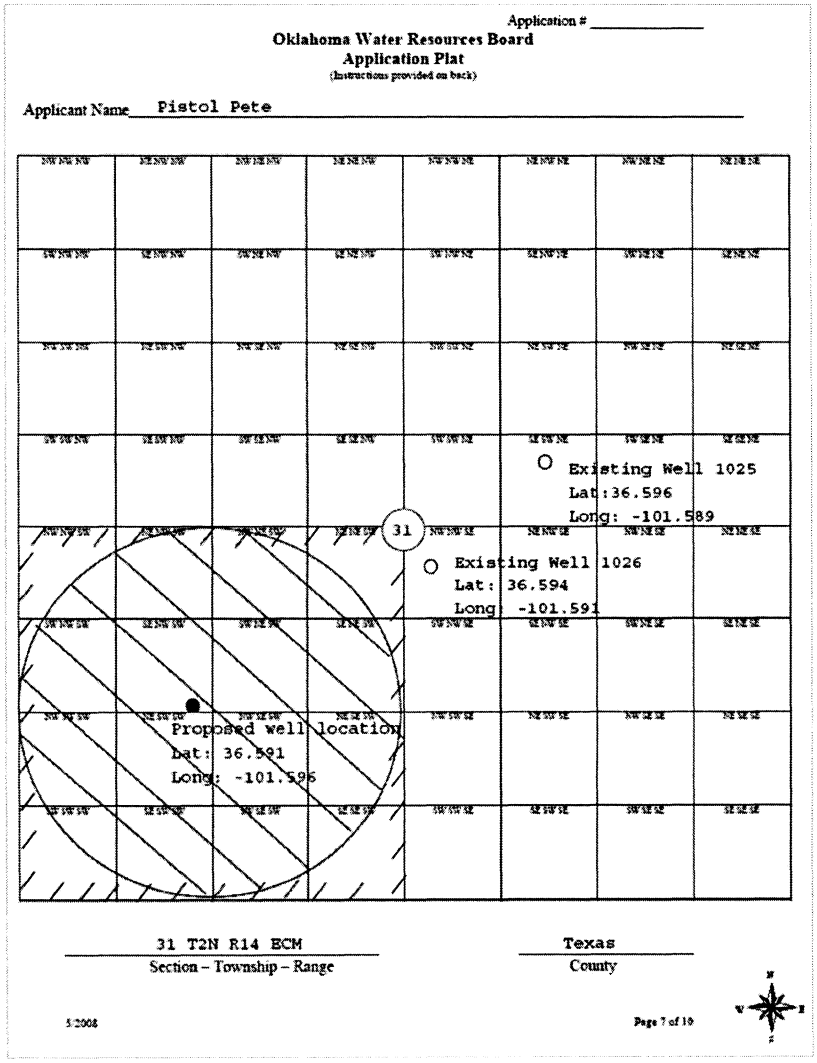
c. ABANDONED WELL PLUGGING. To your knowledge, are there any abandoned or unused water wells, hand dug wells or windmills on the lands dedicated to this application? _____ Yes __X__ No

(1) If yes, have all abandoned wells been, or will they be, properly plugged before your use of the water begins?

_____Yes _____ No ____ N/A

(2) Have all wells, which are temporarily out of service, been or will they be capped before your use of the water begins? _____ Yes _____ No ____ N/A

Section 6 of the application is the "Application Plat." On this plat, Pete will present the information about the land he will dedicate to the application and will also show his proposed well site, as well as the location of other wells in the area (specifically, the location of all wells within ¼ mile of the dedicated land). Based on the information Pete has collected, his plat will look like this:



Section 7 of the application requires Pete to prepare a "Surface Estate Owners Map" for each well he is requesting. This map will show the surface owners within ¼ mile of the proposed well site, and will serve as the basis for the notices Pete will have to mail out regarding his application. To prepare the map, Pete will shade in the square where his proposed well will be located (each square represents a 10 acre tract, or a ¼ of ¼ of ¼ section) and will outline the land dedicated to the application. He also needs to mark where other existing wells in the area are located. Then, Pete needs to identify who owns the surface of the property within ¼ mile of his well. He can assign each of these owners one of the letters (A, B, C, etc.) and list the owner and their address below the map. The land owned by each of these parties can then be represented by these letters on the map. As a result, Pete's map would look like this:

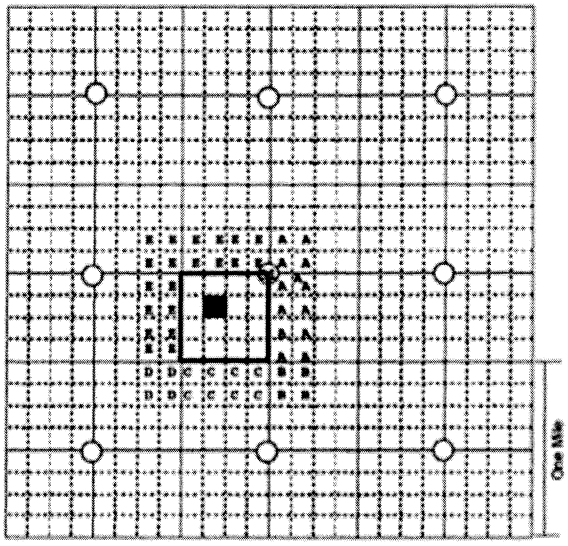
Application # _____

Oklahoma Water Resources Board
Surface Estate Owners Map
(Instructions provided on back)

Applicant Name Pistol Pete

The applicant must furnish names and mailing addresses of all surface estate owners of land located within one-thousand three hundred twenty (1320') from the actual location of existing or proposed wells, and from the outside boundaries of all potential well location areas subject of this application, unless otherwise directed by the Board. Mark the actual location of existing and proposed wells and shade all potential well location areas subject of the application.

One copy of this form must be filed with the Groundwater application.



Plat Scale

Each smaller square represents a ten (10) acre tract. (or 660 ft x 660 ft)

1/4 Mile (1320 ft)

SURFACE ESTATE OWNERS OF LANDS LOCATED WITHIN 1320 FEET OF WELL LOCATIONS OR AREAS

	Name	Address
A	Slim Pickens	111 N. Main, Goodwell, OK 73939
B	Panhandle Farms, LLC	222 W. 2nd St., Goodwell, OK 73939
C	Sandy Loam	333 E. Port, Goodwell, OK 73939
D	Alice Alluvium	444 S. Ogalalla, Goodwell, OK 73939
E	Okla. St. Univ.	101 Whitehurst, Stillwater, OK 74078
F		
G		
H		
I		

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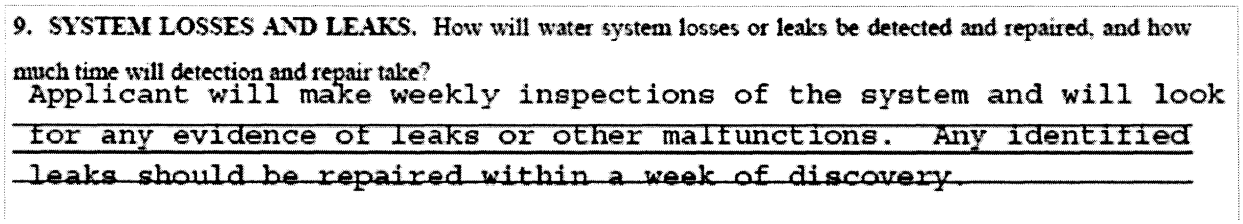
Section 8 of the application applies only to municipalities and rural water districts. Since Pete does not fit in either of those categories, he will proceed on to Section 9.

Section 9 asks how Pete will identify any losses from his system. This question is aimed at showing water will not be wasted if the permit is granted. Here, Pete should detail how he will go about detecting and repairing leaks from his irrigation system.


9. SYSTEM LOSSES AND LEAKS. How will water system losses or leaks be detected and repaired, and how much time will detection and repair take?
Applicant will make weekly inspections of the system and will look for any evidence of leaks or other malfunctions. Any identified leaks should be repaired within a week of discovery.

All that remains now is the signature. Since Pete is applying as an individual, he can sign for himself. Since the form must be notarized, he should sign the form in the presence of the notary and then have the notary document the form. If, on the other hand, another type of entity (such as a trust, LLC, corporation, etc.) was completing the form, someone who was authorized to act on behalf of the entity should sign. In the case of a trust this will most likely be the trustee, and for a corporation or an LLC, the chief officer will likely be the signer.

Once the application is completed, Pete must be sure to attach the appropriate filing fee, the application form along with all the supporting plats and maps, and a copy of the deed granting him title to the property. After the application has been submitted, the OWRB will inform Pete of when and how he should prepare his public notice. Any indicated corrections from the OWRB should be promptly addressed by Pete and returned to the OWRB.

Definitions and Units

Acre-foot: the volume of water that would cover one acre (43,560 square feet) to a depth of one foot. An acre-foot of water is equal to 325,851 gallons.[23]

Aquifer: Permeable layers of underground rock or sand that hold or transmit groundwater below the water table that will yield water to a well in sufficient quantities to produce water for beneficial use.[24]

Dedicated: Surface land area that has been set aside to help produce the amount of groundwater requested in a groundwater permit application. The need for a dedicated piece of property arises from the "equal proportionate share" principle, which refers to the proportion of an aquifer's yield capacity relative to the surface land that overlies it.[25]

Definite stream: a watercourse in a definite, natural channel, with defined beds and cut banks, originating from a definite source or sources of supply. The stream may flow intermittently or at irregular intervals, if that is characteristic of the sources of supply in the area.[26]

Detention pond: A pond used to temporarily store rainwater runoff. Detention ponds are often used to prevent flooding problems by lowering the rate that runoff leaves an area.[27]

Diffused surface water: Water that occurs in its natural state, in places on the surface of the ground other than in a definite stream or lake or pond. This type of water is often thought of as "runoff."[28]

Diversion point: the location on a stream where water is collected by water works for a use outside of the stream.[29]

Domestic use: Use of stream water or groundwater that does not require an OWRB permit for the user. Domestic use includes the use of water by a natural individual or by a family or household for household purposes, for farm and domestic animals up to the normal grazing capacity of the land whether or not the animals are actually owned by such natural individual or family, and for the irrigation of land not exceeding a total of three (3) acres in area for the growing of gardens, orchards, and lawns. Domestic use also includes:(1) the use of water for agriculture purposes by natural individuals, (2) use of water for fire protection, and (3) the use of water by non-household entities for drinking water purposes, restroom use, and the watering of lawns, provided that the amount of groundwater used for any such purposes does not exceed five acre-feet per year.[30]

Easement: An interest in property giving the holder the right to make limited use of someone else's property for some limited purpose. For example, one party might hold an easement that gives them the right to run a water pipeline across someone else's property. The party holding the easement is not allowed on the other party's property except for purposes related to the use of the easement.[31]

Fresh water: water that is not "salt water;" for the purposes of Oklahoma law, fresh water is water that contains less than 5,000 parts per million of total dissolved solids.[32]

Groundwater: fresh water under the surface of the earth regardless of the geologic structure in which it is standing or moving outside the cut bank of any definite stream. In contrast, water that is beneath the surface of the earth, but between the banks of a defined stream, is considered stream water.[33]

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[23] NOAA Glossary of Hdrologic Terms, available at: http://www.nws.noaa.gov/om/hod/SHManual/SHMan014_glossary.htm

[24] NOAA Glossary of Hdrologic Terms, available at: http://www.nws.noaa.gov/om/hod/SHManual/SHMan014_glossary.htm

[25] *See* OKLA. ADMIN CODE § 785:30-5-9. *See also* "Determination of Maximum Annual Yield" OWRB fact sheet, available at: http://www.owrb.ok.gov/studies/groudwater/arbuckle_simpson/pdf/DeterminMAY.pdf.

[26] OKLA. ADMIN. CODE § 785:20-1-2 and 82 OKLA. STAT. § 105.1 (A).

[27] NOAA Glossary of Hdrologic Terms, available at: http://www.nws.noaa.gov/om/hod/SHManual/SHMan014_glossary.htm

[28] OKLA. ADMIN. CODE § 785:20-1-2

[29] *See* OKLA. ADMIN. CODE § 785:20-1-2.

[30] 82 Okla. Stat. §§ 105.1, 1020.1 and Okla. Admin. Code §§ 785:20-1-2, 785:30-1-2.

[31] *See* Black's Legal Dictionary 527, 7th Ed. 1999.

[32] OKLA. ADMIN. CODE § 785:30-1-2.

[33] 82 OKLA. STAT. § 1020.1(1), OKLA. ADMIN. CODE § 785:30-1-2.

Gully plug: A barrier, often made of soil and/or rock, put in place across a gully to slow its erosion; such plugs may often form small ponds. Landowners may also use "gully plugs" as a tool to store small amounts of water (by regulatory definition, gully plugs must store less than five (5) acre-feet of water below their principal spillway and fifty (50) acre-feet below their emergency spillway).[34]

Interested party: A party whose claim to stream water or groundwater may be negatively affected by granting another party's request for water from the same source.[35]

Intermittent stream: A stream that has defined beds and banks but does not flow year-round; it may instead only flow at irregular intervals (such as after rainfall).[36]

Legal newspaper: A newspaper that is authorized to publish legal notices relating to the county in which the newspaper is circulated. A list of such newspapers is available at http://www.okpress.com/business-members.[37]

Plat: a small map of a piece of property, often used to highlight specific features of interest.[38]

Property right: A right given to the owner of a piece of property; a property right generally cannot be taken away from the property owner without legal proceedings.

Reservoir: A man-made facility for the storage, regulation, and controlled release of water.[39]

Riparian: "Riparian" refers to something that lies alongside a stream. In the context of Oklahoma's water law, it is used to refer to the land next to a stream.

Salt water: Water containing 5,000 parts per million or more of total dissolved solids.[40]

Setback: a minimum distance separating a groundwater well from a potential source of pollution.[41]

Speculating: In the context of Oklahoma water law, applying for an appropriation of stream water or groundwater without a specific, present need for the water; "squatting" on water rights in anticipation that they can be sold at a profit to another party at some later date.

Stream water: water in a definite stream, including but not limited to water in ponds, lakes, reservoirs and playa lakes.[42]

Total dissolved solids: a measure of how much dissolved material is in a volume of liquid. This is often expressed as a ratio of the dissolved material to the liquid, such as "parts per million" (with one part per million meaning that there is one unit of dissolved material for every million units of the liquid). Total dissolved solids (sometimes abbreviated TDS) is measured on a sample of water that has passed through a very fine mesh filter to remove suspended solids. The water passing through the filter is evaporated and the residue represents the dissolved solids.[43]

Use scheduling: The establishment by the OWRB of a schedule for the use of a water appropriation. Typically, an OWRB permit provides for the same amount of water to be used each year, but under a "use scheduling" arrangement, different amounts of water use are permitted for each year.[44]

Water works: the land and equipment (such as dams, channels, piping, pumps, etc.) used to collect water and transmit it to where it will be used.[45]

Watershed: the boundaries of a drainage area of a watercourse or series of watercourses which diverge above a designated location or diversion point, as determined by the OWRB. Put another way, a watershed is the area that is drained by a particular stream system.[46]

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[34] 82 OKLA. STAT. § 110.3.

[35] 82 OKLA. STAT. § 105.11.

[36] *See* definition of "definite stream" at OKLA. ADMIN. CODE § 785:20-1-2 and 82 OKLA. STAT. § 105.1(A).

[37] 25 OKLA. STAT. § 106.

[38] *See* Black's Legal Dictionary 1171, 7th Ed. 1999.

[39] NOAA Glossary of Hdrologic Terms, available at: http://www.nws.noaa.gov/om/hod/SHManual/SHMan014_glossary.htm.

[40] Defined at OKLA. ADMIN.CODE § 785:30-1-2.

[41] *See* OKLA. ADMIN. CODE § 785:30-1-2.

[42] OKLA. ADMIN. CODE § 785:20-1-2.

[43] *See* "Drinking Water Glossary: A Dictionary of Technical and Legal Terms Related to Drinking Water," Environmental Protetion Agency.

[44] OKLA. ADMIN. CODE § 785:30-1-2.

[45] 82 OKLA. STAT. § 1020.1(1), OKLA. ADMIN. CODE § 785:30-1-2.

[46] OKLA. ADMIN. CODE § 785:20-1-2.

Volume, weight, and flow units

1 gallon (gal)	= 231 cubic inches (in^3)
	= 0.13368 cubic feet (ft^3)
1 gallon of water weighs	= 8.345 pounds (lb)
1 million gallons (mg)	= 3.0689 acre-feet (ac-ft)
	= 133,700 cubic feet (ft^3)
cubic foot water	= 1,728 cubic inches (in^3)
	= 7.48 gallons
1 cubic foot of water weighs	= 62.4 pounds (lb)
1 acre-foot (ac-ft)	= amount of water to cover 1 acre 1 foot deep
	= 43,560 cubic feet (ft^3)
	= 325,850 gallons
	= 12 acre-inches (ac-in)
1 acre-inch per day (ac-in/da)	= 18.7 gallons per minute (gpm)
1 cubic foot per second	= 448.83 (typically rounded to 450) gallons per minute (gpm)
	= 7.48 gallons per second
	= 0.646 million gallons per day (mgd)
	= 0.992 (typically rounded to 1) acre-inch per hour (ac-in/hr)
	= 1.983 (typically rounded to 2) acre-feet per day (ac-ft/d)
	= 40 miners inches (11.25 gpm) — AZ, CA, MT, NV, OR
	= 50 miners inches (9 bpm) — ID, KA, NE, NM, ND, UT
	= 38.4 miners inches — CO

Table Source: NRCS Irrigation Guide, available at:
http://www.wsi.nrcs.usda.gov/products/w2q/downloads/Irrigation/National%20Irrigation%20Guide.pdf

Forms and Reference Materials for Oklahoma Water Appropriation

Title	Source	Location
"Right of Access for Stream Water Use"	OWRB	http://www.owrb.ok.gov/supply/watuse/pdf_wat/sw_access.pdf
"Application for a Permit to Use Surface or Stream Water," Form 503/5-08	OWRB	http://www.owrb.ok.gov/supply/watuse/pdf_wat/app_sw.pdf or at (405) 530-8800.
"Determination of land use and irrigated crop acres by remote sensing"	USGS	http://pubs.usgs.gov/wri/wri034155/pdf/section_2.pdf
"Fate of Precipitation Falling on Oklahoma Cropland"	OSU	http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-6022/PSS-2140web.pdf
"Irrigation Water Measurement"	OSU	http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2225/BAE-1502web.pdf
"Legal Descriptions"	OSU	...
Water Map Server	OWRB	http://www.owrb.ok.gov/maps/server/wims.php
"Legal Notice Guide"	Oklahoma Press Association	http://www.okpress.com/legal-notice-guide
Standards for Plugging Old Wells (Oklahoma Administrative Code at title 785, chapter 35, subchapter 11)	OWRB	http://www.owrb.ok.gov/util/rules/pdf_rul/2009adopted/Ch35-2009.pdf
Groundwater lease form	OWRB	http://www.owrb.ok.gov/supply/watuse/pdf_wat/gw_lease.pdf

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Notes


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