



Environmental Regulatory Compliance for Farmers and Ranchers in Oklahoma

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Chapter 1

Water Rights in Oklahoma

Oklahoma's water law separates water into three basic types. Each of these types of water has unique characteristics, and each is handled differently under Oklahoma Law.

1.1. Types of water recognized under Oklahoma law

Virtually all of Oklahoma's water laws can be categorized by their handling of three forms of water: (1) diffused surface water, (2) water in definite streams, and (3) groundwater.

1.1.1. Diffused Surface Water

Diffused surface water is defined as “water standing [on the surface of the property], or flowing over or under its surface but not forming a definite stream.” Diffused surface water may sound like a technical term. Most commonly, we would think of this form of water as “runoff.” Here, we will use the word “runoff” to refer to what Oklahoma's water law would call “diffused surface water.”

Runoff is the only type of water whose use is not regulated by the government, giving the landowner almost complete rights to do anything they wish with the water. In comparison, the use of stream water and groundwater is heavily regulated, but the right to use them may be regarded as a property right that may come with ownership of the land where they are found.

In its natural state, runoff is difficult to use. As a result, many landowners dig ponds and construct dams to collect the runoff into one area so it can be used for livestock watering or aquatic habitat. Strictly speaking, once runoff reaches a ditch or stream – anything with a definite channel that has defined beds and banks – it stops being runoff and becomes “stream water,” which is discussed below. In some circumstances, landowners may use dams across these ditches or streams to contain the runoff.

1.1.2. Definite Streams

Oklahoma law defines “stream water” as “water in a definite stream...” and defines definite stream as “a watercourse in a definite, natural channel, with defined beds and banks, originating from a definite source or sources of supply.” So, stream water is probably what you expect – water running through a channel.

While the image of a stream running through its channel definitely fits the definition of “stream water,” other somewhat surprising forms of water also fit the definition. For example, the definition of “definite stream” includes the following language: “[t]he stream may flow intermittently or at irregular intervals if that is characteristic of the sources of supply in the area.” This means that a stream does not have to flow year-round to be considered a definite stream; once runoff reaches a dry stream bed and starts to flow down its channel, it has become stream water, even if that channel only flows after a rain. Thus, even streams that only run during certain seasons or after major rainfall events (sometimes called “intermittent streams”) are still definite streams. Also, a definite stream that flows into a larger water body such as a lake is still defined as a “definite stream.” So, stream water can include water in ponds, lakes, reservoirs, and playa lakes. However, man-made farm ponds and “gully plugs” not located on definite streams and constructed

under the supervision of Conservation Districts are not considered stream water.

One aspect of defined streams that might come as a surprise is that they do not have to be on the surface of the land. All water under the surface of the land is presumed to be percolating groundwater. However, if an underground stream with defined beds and banks can be shown, the water in the underground channel will be considered stream water.

1.1.3. Groundwater

The last type of water we will discuss is groundwater. As you might suspect by now, “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.” Note two parts of this definition. First, groundwater is defined as “fresh water.” The statute that gives us this definition also defines fresh water as “water which has less than five thousand (5,000) parts per million total dissolved solids” (total dissolved solids is a measure of water quality scientists use to indicate how concentrated salts or other mineral particles are in a given sample of water). In other words, water that contains more than 5,000 parts per million of dissolved solids is defined as “salt water.” There are no provisions for the allocation or use of salt water (though there are numerous regulations dealing with its disposal). If salt water is encountered while looking for other forms of water, care must be taken to prevent it from mixing with fresh water.

Second, the language “standing or moving outside the cut bank of any definite stream” clarifies underground water near or underneath a stream is groundwater. Oklahoma’s water law contemplates imaginary borders formed by the bed and banks of a defined stream. Even if we are not withdrawing water from within the bed and banks of the stream itself, we are still withdrawing water from the defined stream if our withdrawal point is within those imaginary borders. However, if we take water from outside those borders, we are taking “groundwater,” even if the water seeped into the ground from the stream.

1.2. Oklahoma’s diffuse surface water (“runoff”) law and rules

Diffuse surface water (or “runoff” as it will be referred to here) is the only kind of water that can be truly owned without regulation of its use. As a result, a landowner can collect the runoff on his or her property and use it with relatively few restrictions. Most commonly, this collection is accomplished in one of two ways.

First, the landowner may dig a pond (sometimes called a “tank”) in a location that will allow the pond to collect the runoff. If this collection method is used, and the construction was under the supervision and specification of a Conservation District, no approvals or permissions are needed, as long as the dam is not regulated under the Oklahoma Dam Safety Act.

In the second collection method, a dam is placed across an existing streambed to create a pond that is used to collect the runoff. In some cases, the streambed may be dry and in other cases, it may be an active stream.

Once water enters a streambed – even a dry streambed – it is defined as a “definite stream” and is subject to a different set of rules than runoff. Oklahoma law contains a special provision for this circumstance, however. This provision allows a landowner to use an existing streambed to capture runoff in a streambed as long as they allow other forms of water to flow down the stream.

Let’s say you decide to build a dam across an active stream to create a pond that will help capture some of your property’s runoff. This means the pond now contains both runoff, and “definite stream” water. The owner of land crossed by a definite stream has the right to use some of the stream’s water, but they must also allow some water to pass through their property to downstream property owners. This means that the dam must allow the amount of water beyond what you are allowed to use to flow downstream.

Amount of water allowed to pass by dam

equals

The amount of stream flow into the pond

minus

(Landowner's captured runoff + the amount of stream water landowner may use)

1.3. Oklahoma stream water law and rules

Many people ask who “owns” stream water (i.e. water in a “defined stream”) in Oklahoma. The answer is that stream water is actually a public resource, owned by the people of Oklahoma. As a result, you may not own stream water, but you may have the right to use the stream water.

The process for determining who holds rights to stream water is much more complicated than determining who can use runoff water. There are two main ways someone can get the rights to use stream water. The first is by owning the land that surrounds a stream or is bordered by a stream. We refer to these landowners as “riparian” owners (“riparian” simply refers to land that runs along the banks of a stream). The second is to get an “appropriation,” or permit, from the OWRB to use stream water.

1.3.1. Domestic use by riparian landowners

Riparian owners have property rights to use some stream water for “domestic use.” As long as domestic use is the only use made of the stream water, the riparian owner does not need a permit to use it. So what does “domestic use” mean? Under Oklahoma law, domestic use includes the use of water for:

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 (3) acres in area.

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 stream water for sale
Watering of grazing livestock	Watering livestock in feedlot/confinement
Irrigation of garden or orchard (< 3 acres) for personal use	Irrigation of cropland, orchard, garden (> 3 acres) or for commercial use

Agricultural use is one of the most common uses of stream water, but they are often misunderstood. For example, many people think that as long as they own land adjoining a stream, they can use the stream water for irrigation or for watering livestock in a feedlot, but this is incorrect. These uses require an appropriation of stream water from OWRB using the procedure discussed later in this chapter.

Another common misunderstanding is that only households can make “domestic use” of water. Businesses and other non-household entities can use stream water if they own land adjoining a stream. They do not need an appropriation if their uses fit within one of the following categories: (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.” 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 commercial crops (ex.: turf)

No fixed limit exists for how much water a riparian owner can consume for domestic use. Courts have, however, limited the definition of domestic use to an amount that “does not substantially or materially injure those riparian owners downstream who have a corresponding right.” In other words, a riparian owner can use as much water as needed for their domestic uses, so long as that use does not leave other downstream riparian owners without the amount of the water they need for their domestic uses.

1.3.2. Appropriating stream water use rights

If someone wants to use stream water for something that is not a domestic use, or if they do not own land next to a stream, then they must get an “appropriation” from OWRB. The application process can involve a significant amount of homework, but proper preparation can make it go much smoother. Let’s examine this process step-by-step.

1.3.2.1. Step 1: Calculate the amount of water needed.

While this might seem like an obvious step, many people either overlook this (“I just need some water – I don’t know how much”) or don’t know how to estimate the amount of water needed for the activity in question (“How can I possibly know in advance how much water I will need?”). Fortunately, there are a number of resources available to help you estimate the water needed for various activities. For example:

- Irrigation Water Flow 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/>)

Additionally, you may be able to get assistance through your local Oklahoma Cooperative Extension Service office, the USDA Natural Resources Conservation Service office for your county, your rural water district, the OWRB, or other agencies. Once you have calculated the amount of water needed, you will also need to calculate the rate at which the water will be needed (i.e. the flow your use of the water will require, measured in gallons per minute).

You should consider what type of permit is will needed. The OWRB has six different types of appropriations:

Regular: The regular appropriation allows you to get a particular amount of water from a particular source on a year-round basis, and it lasts as long as you continue using the water. This permit basically grants the permit holder a permanent right to the water, subject to the restrictions discussed in this chapter for appropriated water.

Seasonal: Similar to a regular permit, but allows you to divert available water for a specific time period during the year instead of year-round.

Term: This allows you to use a certain amount of water for a term of years. The holder of this permit must cease using the water at the end of the term (compare this to the Regular or Seasonal permit, which can be permanent in some cases).

Temporary: Allows the permit holder to have a certain amount of water from a certain source for a period of time less than three months. The permit holder does not have any permanent right to the use of the water, and after the three months is up, they cannot use the water anymore.

Provisional temporary: This is a permit that is authorized by the Executive Director of the OWRB for a period less than 90 days. No hearings are held, no application notice or data are published and no notice to surface estate owners is required on applications for this type of permit. It is not renewable and does not give any permanent right. This permit uses a special form – “Surface Water Application for 90-Day Provisional Temporary Permit,” Form SW T7010/07-00, which carries a \$150.00 application fee and is most frequently used for oil and gas operations. 24

Limited Quantity: Limited quantity permits are administered by the Executive Director of the OWRB in a very abbreviated application procedure. The Executive Director of OWRB can issue a regular, seasonal, temporary, or term permit to use up to 15 acre-feet of water in the year or term of the permit.

The calculations you complete in Step 1, along with what you know about how and when you will use the water, will help you determine which kind of permit you need.

1.3.2.2. Step 2: Design your water works.

Now that you have determined how much water is needed, you will design your “water works.” Water works is the term used to describe the land and equipment (such as dams, channels, piping, pumps, etc.) that will transport the water from the stream to the place where it will be used.

Once your water works is designed, you will need to prepare a diagram showing the location where the water will be taken from the stream, pond, reservoir, or other water body – this diagram is called a “plat.” This plat should also show the direction of flow for the streams in the area, the area of land that you own, the area where the water will be used, and any other important features in the area. Here is an example of a plat for an OWRB Stream Water Appropriation:

As you plan the layout of your water works, be sure you can draw it on the plat provided with the application discussed in Step 4 below. The application plat will show one section (640 acres) of property, broken into ten-acre blocks.

1.3.2.3. Step 3: Secure access to the stream.

Another important step in the application process is getting permission to access the stream. If you are a riparian landowner, this is not a problem, as you already own land adjoining the stream. However, if applying for an appropriation because you are not a riparian landowner, you will have to negotiate an “easement,” which is an agreement with the owner of the land crossed to access the stream for the water works. Since an easement is an important document that affects the property rights of both the person who owns the land near the stream and the person who will be using the water, get the help of an attorney in drafting the easement.

Once you have negotiated access to the stream, you will also need to document the agreement with a “Right of Access for Stream Water Use” form provided by the OWRB. This form can be obtained at http://www.owrb.ok.gov/supply/watuse/pdf_wat/sw_access.pdf.

1.3.2.4. Step 4: Prepare an “Application for Permit to Use Surface or Stream Water.”

Once you have completed those steps, it’s time to start working on the permit application itself. For a Regular, Seasonal, or Term permit, the form used by OWRB is the “Application for a Permit to Use Surface or Stream Water,” Form 503/5-08. The application is available on-line at http://www.owrb.ok.gov/supply/watuse/pdf_wat/app_sw.pdf, or you can get a copy by calling 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 OWRB that is based on the amount of water you want to appropriate:

Amount of water requested	Fee
0 - 320 acre-feet	\$195.00
321 - 640 acre-feet	\$305.00
641 - 1500 acre-feet	\$380.00
More than 1500 acre-feet	\$380.00 + \$155.00 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 consists of your contact information including your name, address, and phone and fax numbers.

Part 2 of the application will ask for the kind of permit you seek (refer to the discussion of the different kinds of permits in Step 2 above).

Part 3 of the application will ask for the amount of water you are requesting (in acre-feet) and the rate you will be taking the water (in gallons per minute). It will also ask you to list all the uses of the water for which you have applied. For example, if you are asking for a total of 150 acre-feet with 100 acre-feet of that amount to be used for irrigating an alfalfa field and 50 acre-feet to be used for a confined livestock operation, each use needs to be listed separately. For requests of water that will be used to irrigate crops, the specific crops to be irrigated must be listed.

Part 4 of the application will ask for details of your plan to get the water from the point where you are taking it from the stream, pond, reservoir, etc. You will need to provide the location of the “diversion point” (that is, the location where you will be taking water from the stream for your water works) and the name of the water body from which the water will be taken – be sure that this the “official” name of the water body and not just the local name for the water body. If the body has no name, it can be left as an unnamed body, such as “unnamed tributary of Wolf Creek.” Should you need some help with the legal description of the locations involved, consult OSU Fact Sheet AGEC-9407, “Legal Descriptions.” You can also use the OWRB’s Water Map server at <http://www.owrb.ok.gov/maps/index.php> to help you get a better view of your land and the water resources nearby. Part 5 will also ask for details of how the water will be transported from the diversion point to where the water will be used. If you don’t own the land where the diversion point and/or water works will be located, you will need to provide the “Right of Access for Stream Water Use” form discussed above.

Part 5 of the application asks you to detail the legal description of the area of use for the water requested. If the use of the water is for the irrigation of crops, a copy of the deed or lease for the irrigated property must also be provided. It will ask for the completed plat discussed in Step 2 above. On the plat, draw a basic map of the water resources in the area, the land where you will use the water, and the configuration of your water works.

Part 6 will ask for the “justification” of the amount of water requested. If applying for irrigation water, this step is not required, as you will have already provided the information required in Part 4 of the application. If applying for water for another use, you will be required to provide the methods, calculations, and information you relied upon when you were calculating how much water you need.

1.3.2.5. Timing of the application and its effect on priority to the water

It is important to complete the application as soon as you can determine the need for the water. When the OWRB must allocate water due to drought conditions or other shortages, the priority use of water goes first to the riparian owners for domestic use. Next in priority will be the oldest appropriations (with the date of an appropriation being set

as the date a complete and correct application is filed). Thus, filing your application sooner rather than later can help give you a higher priority to the water.

On the other hand, it is important to only apply for water when it is needed, rather than “speculating” in water (i.e., applying for water rights “just in case” you might need it later). If you do not use all the water that has been appropriated, you will forfeit the remaining amount of water in the future. The OWRB examines water use on a seven-year cycle for this purpose. For example, if you appropriate the right to use for 300 acre-feet of water, and during the next seven years, you only use 200 acre-feet, you will only be allowed to use 200 acre-feet for the remainder of your appropriation, and the remaining 100 acre-feet (300 acre-feet appropriated – 200 acre-feet used) will revert back to the state. However, if you can prove the circumstances for not using the water were beyond your control, you may be able to keep your water rights.

1.3.3. The stream water appropriation process

Although it will save time to complete the application correctly the first time, don't get too anxious. If there are any major problems with the application due to problems with the form or feasibility of the plan, the OWRB will return the application with a list of the changes needed. You will then have 60 days to make the corrections. If you don't correct and resubmit it within 60 days, the OWRB will consider your application withdrawn and you lose your original priority date. You can file the application again, but it will be treated as a new application on the new date of filing.

1.3.3.1 Publication of notice

If the OWRB deems your application complete, they will send you instructions on how to publish a notice of the application. The notice describes: (1) the amount of water that will be used, (2) for what purpose, (3) where it will be taken from, (4) the name and address of the applicant, and (5) if there will be a hearing on the application. The notice must be posted for two consecutive weeks in a newspaper distributed in the area that will be 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 to the OWRB that the notice was printed. Many newspapers will provide you with a form used for this proof. For help on preparing the notice and finding the newspaper that serves 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.”

1.3.3.2. Hearings on application

After notice of the application is published, the public is given an opportunity to protest the application. A protest may not be made by just anyone. To protest an application, someone must have an “interest” in the application. This means that the party filing the protest must have some claim to water in the area that will be affected if your appropriation is granted (for example, they may already have a stream water appropriation themselves). 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. The OWRB will consider the information gathered at the hearing in making its decision on whether to grant the requested appropriation.

1.3.3.3. Application decision

To make a decision about whether to grant the appropriation of water rights, the OWRB must evaluate the following four factors:

Factor	Meaning
(1) Unappropriated water is available in the amount applied for	There is enough water available in the water body from which you will be drawing to supply the amount you requested.
(2) The applicant has a present or future need for the water and the use to which the applicant intends to put the water is a beneficial use	“Beneficial use” is a very broad term that includes almost any positive use of the water and prevents the waste or pollution of the water. The OWERB may consider whether there are other sources of water that would be more suitable to the request, including other streams or groundwater.
(3) The proposed use does not interfere with domestic or existing appropriative uses; and	Approving the request will not cause a hardship to other users of the water body.
(4) If the application is for the transportation of water for use outside the stream system where the water originates, the provisions of Okla. Admin. Code. Section 785:20-5-6 are met.	If the water is going to be transported from one watershed to another, additional requirements will have to be met before the appropriation is approved.

If all of these requirements have been satisfied, then the OWRB will issue a permit to appropriate the water. The permit will contain many of the same items that were submitted in your application – the only difference is that those items will now become requirements. For example, the amount of water requested per year now becomes the maximum amount of water that can be used, the uses you requested are now the uses to which you are limited in using the water, and so on.

Once the permit has been issued, the clock begins to run on two items. First, you have two years to start building the water works proposed in your application to get the water from the water body to your land. Additionally, you have seven years to put the full amount of water to use or else you run the risk of your appropriation being reduced to the amount of water you have actually used. If there is a reason the water cannot or should not be used in the full amount before the seven-year period is over, a request for a modification of the “use scheduling” of the water can be made to the OWRB (in other words, the OWRB may modify the amounts of water used under your appropriation and the dates those amounts are used).

1.3.3.4. Water Use Reporting

The use of the water must be provided to the OWRB in the form of an annual use report. The OWRB will mail these annual use report forms to its permit holders, and those reports must be completed within 30 days of being received. If these reports are not completed, the OWRB may assume that you have not used the water under your appropriation and, as a result, may reduce the amount of water you are permitted to use.

1.4. Oklahoma’s 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.” 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. 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.

1.4.1. Domestic use of groundwater 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 stream water. 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.

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.” 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.

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).

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

1.4.2.1. 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 determine how much water you may need for a given purpose:

- Irrigation Water Flow 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/>)

1.4.2.2. 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/index.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:

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 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.

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: 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 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.

Limited Quantity: 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. 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.

1.4.2.3. 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.

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.

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. 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:

Potential pollutant source	Setback distance
Specific sources	
— Closed or tight sanitary sewer line	10 feet
— Spray from aerobic (above ground) septic system sprinkler	15 feet
— Aerobic septic system sprinkler head	50 feet
— Outside perimeter of an existing (or proposed) waste lagoon for a feedlot or confined animal feeding operation	300 feet
All other sources	
— If well is located uphill from the pollution source	50 feet
— 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 feet
— If well is located downhill from the pollution source	100 feet

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 the OWRB website at http://www.owrb.ok.gov/util/rules/pdf_rul/2009adopted/Ch35-2009.pdf.

1.4.2.4. 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.

1.4.2.5. 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
0 - 320 acre-feet	\$195.00
321 - 640 acre-feet	\$305.00
641 - 1500 acre-feet	\$380.00
More than 1500 acre-feet	\$380.00 + \$155.00 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 and the purpose for which it will be used. 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.”

Part 3 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). 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.

(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? Lastly, the application 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.

Part 4 of the application will require you to give several details about the groundwater wells to be used providing the water. 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. Note that unless you are drilling and installing the well yourself, you will need to use a well driller licensed by the OWRB. A list of licensed drillers can be found on the OWRB website at http://www.owrb.ok.gov/supply/wd/wd_forms.php#dpcfirms

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.

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.

1.4.2.6. Publishing Notice / Submitting Proof of Publication

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

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.

1.4.2.7. 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. 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. 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:

Required finding	What it means...
The lands owned or leased by the applicant overlies 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 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 discussed in the next criterion.
“Waste” of the water will not occur.	<p>Waste has a number of definitions. Oklahoma groundwater law and regulations define any of the following items as waste:</p> <ol style="list-style-type: none"> 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 another 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 form 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.

1.4.2.8. 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. 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.

1.5. Conclusions

Oklahoma's water laws and regulations recognize three different types of water: diffuse surface water (or runoff), stream water, and surface water. Each type of water has its own unique rules of allocation and means of securing access. Be sure to examine your own water needs and the surrounding water resources to ensure you select the best source of water for your agricultural operation.

Appendix 1-1: 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.

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.

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.

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.

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.

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."

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

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.

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.

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.⁶⁹

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.

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).

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.

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).

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>.

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

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.

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.

Setback: A minimum distance separating a groundwater well from a potential source of pollution.

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.

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.

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.

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.

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.

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 gallons per minute (gpm)
	=	7.48 gallons per second
	=	0.646 million gallons per day (mgd)
	=	0.992 acre-inch per hour (ac-in/hr)
	=	1.983 (typically rounded to 2) acre-feet per day (ac-ft/d)

Chapter 2

Regulation of Water Quality Issues in Oklahoma

While Chapter 1 of this handbook dealt with the quantity of water a farm or ranch can obtain, this chapter deals with laws protecting the quality of that water. Farmers and ranchers not only care about the quality of the water used for by their families, crops, and livestock; they also care about the quality of water available for all other users in the state. This chapter provides an overview of the laws governing water quality in the state and clarifies a number of laws applying to specific enterprises on the farm and ranch.

2.1. Overview of Oklahoma's water pollution laws

At the federal level, there are two critical laws governing water quality: the Federal Water Pollution Control Act (or Clean Water Act), and the Safe Drinking Water Act. Although both are federal laws, virtually all of the enforcement of their provisions has been delegated to state agencies such as the Oklahoma Department of Environmental Quality (DEQ), the Oklahoma Department of Agriculture, Food, and Forestry (ODAFF), and the Oklahoma Corporation Commission (OCC).

2.1.1. The Federal Water Pollution Control Act (Clean Water Act)

The Federal Water Pollution Control Act (“FWPCA,” most frequently referred to as the “Clean Water Act” or “CWA”) seeks to protect water quality by managing pollution sources. Specifically, the CWA states “except as in compliance with this section... the discharge of any pollutant by any person shall be unlawful.” Thus, to understand how the CWA works, you must unpack a few layers of definitions.

“Discharge” means “any addition of any *pollutant* to *navigable waters* from any *point source*” (emphasis added).

“Pollutant” is defined as

dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. This term does not mean (A) “sewage from vessels” within the meaning of section 1322 of this title; or (B) water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil or gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if such State determines that such injection or disposal will not result in the degradation of ground or surface water resources.

As you can see, this definition was intended to be quite broad. Virtually any material discharged to a navigable water can be considered a pollutant under this definition.

“Navigable water” is the next critical definition in the chain. The only definition provided for the term in the CWA is that “navigable waters” means the waters of the United States, including the territorial seas.” Unsurprisingly, this broad

definition posed a number of challenges for both EPA and the regulated community. In an attempt to resolve the issue, EPA and the U.S. Army Corps of Engineers (USACE) established a regulatory definition of the term:

Waters of the United States means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) All interstate waters, including interstate “wetlands;”
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands,” sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Even this definition posed many interpretation challenges for EPA, state agencies, and the regulated community. EPA and the USACE recently amended the rule in an attempt to provide a clearer definition in what is sometimes called the “Waters of the United States Rule” (WOTUS) or “Clean Water Rule.” However, that rule has been suspended by the Sixth Circuit. In the meantime, the definition set forth above continues in place. A fuller discussion of the

So far, we have seen that the definitions of “discharge,” “pollutant,” and “navigable water” are fairly broad. This leaves the definition of “point source,” which is:

any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

In other words, a point source is a source of pollutants with a definable, specific discharge point. A sewer pipe or a lagoon outfall would be examples of point sources. Importantly, a “concentrated animal feeding operation” (or “CAFO”) is explicitly defined as a point source. Conversely, the runoff from a field (assuming the runoff has not been collected and is discharged by some defined point such as a spillway) would not be considered a point source. In fact, “agricultural stormwater discharges” are specifically exempted from the definition of point source. This is a critical exemption for many agricultural operations, and also highlights an important distinction in the CWA: discharges of pollutants from non-point sources are not covered by the CWA. Thus, runoff from fields (in most circumstances) is not covered by the CWA.

At the federal level, any pollutant discharge that must be covered by a permit is handled through the National Pollutant Discharge Elimination System (NPDES). Generally speaking, NPDES permits are issued for a specific period of time and contain requirements for recordkeeping, discharge requirements (defining the chemical, biological, and physical parameters discharged water must meet and the technology that must be used to treat the water prior to its release), and water-quality based discharge limitations.

Many discharge requirements are based on treatment technology found to be appropriate to specific industries. Notably for agriculture, CAFOs are included as one of the industries for which these technical standards have been

established.

Water quality-based limitations are defined based on the water body that is receiving the discharged water. Almost all water bodies are assigned a “beneficial use” (for example, “public water supply”) and such uses have defined water quality standards (again defined in terms of the chemical, biological, and physical properties of the water) required for the water to be suitable for the beneficial use. If a discharge to such a water body could impair the water’s ability to meet those requirements, the permit limits may be reduced to avoid further impairment. In some cases, water bodies may be assigned a Total Maximum Daily Load (TMDL) that must be met by all of the pollutant sources discharging to it.

One special category of water under the CWA is wetlands. As noted above, wetlands are specifically within the definition of “navigable waters” As a result, pollutant discharges to a wetland would be regulated under NPDES. However, additional restrictions apply to wetlands. If materials are placed into a wetland or if activities take place within the wetland to change its configuration, drain it, or otherwise alter it, it is quite likely those activities fall under the category of “dredge and fill.” If so, a “section 404” permit through the USAC may be required for the activity. While modifications to a wetland likely requires 404 permitting, there are also a number of exceptions for common agricultural activities, such as

- (a) from normal farming, silviculture, and ranching activities such as plowing, seeding, cultivating, minor drainage, harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices;
- (b) for the purpose of maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, and bridge abutments or approaches, and transportation structures;
- (c) for the purpose of construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance of drainage ditches;
- (d) for the purpose of construction of temporary sedimentation basins on a construction site which does not include placement of fill material into the navigable waters;
- (e) for the purpose of construction or maintenance of farm roads or forest roads, or temporary roads for moving mining equipment, where such roads are constructed and maintained, in accordance with best management practices, to assure that flow and circulation patterns and chemical and biological characteristics of the navigable waters are not impaired, that the reach of the navigable waters is not reduced, and that any adverse effect on the aquatic environment will be otherwise minimized...

While these exemptions would cover a number of agricultural activities, courts have also interpreted them narrowly, noting that the exemption does not cover “activities which bring an area into farming use” or operations in areas where “modifications to the hydrological regime are necessary to resume operations.” Critically for farmers and ranchers, a feature of the 1985 Farm Bill which has been incorporated in all subsequent Farm Bills (called “Swampbuster”) requires a farmer or rancher intending to conduct any wetlands operations to receive the proper approvals for activities in wetlands or lose any Farm Bill program benefits.

2.1.2. The CWA at the Oklahoma level

As mentioned above, almost all authority for enforcement of the CWA and NPDES is delegated to ODEQ, OCC, and ODAFF. For the most part, NPDES is administered through a number of state statutes and regulations that compose the Oklahoma Pollutant Discharge Elimination System (OPDES). In most respects, OPDES closely follows the provisions of NPDES, but with some important distinctions.

First, NPDES ultimately bases its jurisdiction on whether a pollutant is discharged to a “water of the United States.” Conversely, jurisdiction under OPDES is based upon whether the water receiving the pollutant discharge is a “water of the state.” “Waters of the state is defined as:

all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, storm sewers and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion thereof, and shall include under all circumstances the waters of the United States which are contained within the boundaries of, flow through or border upon this state or any portion thereof...

As a result, the definition of “waters of the United States” is not as important within Oklahoma as the definition of “waters of the state” which includes virtually every form of water within the state’s borders.

Secondly, whereas EPA handles virtually all NPDES permitting at the federal level, agriculture sees an important division of those responsibilities at the state level, with the Oklahoma Department of Agriculture, Food, and Forestry serving as the lead agency for the state’s Agricultural Pollutant Discharge Elimination System (AgPDES) for CAFOs, pesticide applications, and construction stormwater discharges under the Oklahoma Agricultural Environmental Permitting Act.

Finally, while nonpoint source discharges are not regulated under NPDES, such discharges may be regulated – even if they come from agricultural stormwater discharges – if such discharges occur within the watershed of a river designated under the Oklahoma Scenic Rivers Act. Discharges in these watersheds must follow best management practices (BMPs) to minimize potential damage to these waters.

2.1.3. The Safe Drinking Water Act

The Safe Drinking Water Act (“SDWA”) seeks to protect public drinking water supplies from contamination. That overall goal is sought through two paths: (1) the protection of surface and ground water used for “public water supplies” and (2) setting standards for specific chemicals that can be present in drinking water.

One element of the SDWA that is not often associated with drinking water is the Underground Injection Control (UIC) program. The UIC is aimed at preventing pollution of groundwater drinking water supplies from the underground injection of potential pollutants by requiring injection wells to be constructed to certain standards and for injection to occur at specified depths below treatable groundwater.

Treatment standards are obviously important for municipalities and rural water districts that provide drinking water supplies for large numbers of customers, but the definition of “public water supply” also includes systems such as “transient non-community water systems.” These application of the SDWA to these systems can be important since their definition includes a water supply system “if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year” and “does not regularly serve at least 25 of the same persons over six months per year.” This means that farms using significant amounts of seasonal labor may be required to follow the provisions of the SDWA for the water supplies used to supply seasonal laborer’s drinking water.

2.1.4. Oklahoma regulation of small drinking water supplies

ODEQ has been delegated authority to implement the SDWA in Oklahoma. Standards for the construction and operation of public water supplies is handled largely through regulations found in Title 252, chapters 624 and 626 of the Oklahoma Administrative Code. Under these regulations, permits may be required even for “minor public water supply systems,” which can include water supplies on farms or ranches that supply water to people other than the residents of the farm or ranch.

Protection of groundwater supplies under the UIC program is handled by DEQ for most classes of wells, but is regulated by the OCC in the case of Class II wells associated with the disposal of waste products (especially salt water) from oil and gas production.

2.2. Permitting and regulation of livestock feeding operations

Since late 2012, ODAFF has had EPA-delegated authority over agriculture-related NPDES permitting in Oklahoma through the Agriculture Pollutant Discharge Elimination System (AgPDES). One area within this jurisdiction is permitting of CAFOs.

Any CAFO that discharges is required to obtain an AgPDES permit (or, alternatively, a NPDES permit). “Discharge” is defined in the AgPDES Act as “a discharge of a pollutant or pollutants and means any addition of any pollutant to waters of the state from any point or nonpoint source regulated by [ODAFF] within its areas of environmental jurisdiction.” The “environmental jurisdiction” of ODAFF includes “point source discharges and nonpoint source runoff from agricultural crop production, agricultural services, livestock production, silviculture, feed yards, livestock markets and animal waste.” As mentioned above, “waters of the state” encompasses almost every form of water in the state. Thus, a critical question to ask is whether the animal feeding facility will have any discharge to a waterbody. If not, i.e. there is no “discharge,” then no permit is required.

If the facility will discharge to a water body, the analysis to determine if a permit is needed should continue. If a livestock facility will have a discharge, we must then determine if it is a CAFO. The AgPDES incorporates the federal definition of CAFO. Evaluating the definition of CAFO requires examining several layers of additional definitions. First, CAFO is defined as “an AFO that is defined as a Large CAFO or as a Medium CAFO by the terms of this paragraph, or that is designated as a CAFO in accordance with paragraph (c) of [40 C.F.R. § 122.23].”

First, let’s look at the definition of AFO. AFO is defined as

a lot or facility (other than an aquatic animal production facility) where the following conditions are met:

- (i) Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and
- (ii) Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

If a facility meets the definition of AFO, we next consider whether the number of animals kept in confinement meets the thresholds of a Large or Medium CAFO.

Animal description	Large CAFO	Medium CAFO
Mature dairy cows, whether milked or dry	≥ 700	200 - 699
Veal calves	≥ 1,000	300 - 999
Cattle other than mature dairy cows or veal calves. Includes heifers, steers, bulls, and cow/calf pairs	≥ 1,000	300 – 999
Swine, each weighing 55 pounds or more	≥ 2,500	750 – 2,499
Swine, each weighing less than 55 pounds	≥ 10,000	3,000 – 9,000
Horses	≥ 500	150 - 499
Sheep or lambs	≥ 10,000	3,000 – 9,000
Turkeys	≥ 55,000	16,500 – 54,999
Laying hens or broilers (if liquid manure handling system used)	≥ 30,000	9,000 – 29,999
Chickens (other than laying hens) if AFO uses other than a liquid manure management system	≥ 125,000	37,500 – 124,999
Laying hens, if AFO uses other than a liquid manure handling system	≥ 82,000	25,000 – 81,999
Ducks, if AFO uses a liquid manure handling system	≥ 5,000	1,500 – 4,999
Ducks, if AFO uses other than liquid manure handling system	--	10,000 – 29,999

In addition to these numeric thresholds, there is one more requirement to meet the definition of a Medium CAFO: pollutants must be either discharged into a water of the state through a man-made ditch, flushing system, or other similar man-made device or pollutant are discharged directly to a water of the state that originates outside the facility and passes over, across, or through the facility or that otherwise comes into direct contact with the animals confined at the operation.

If a livestock facility meets the definition of a Large or Medium AFO and will discharge to a water of the state, then the operation must start the AgPDES permitting process. For most operations, this can be accomplished through a general permit. The general permit can save time and money in that it does not involve many of the individualized permitting decisions needed for an individual permit. To obtain coverage under the general permit, the livestock operation must complete an application (form AEMS095) provided in Exhibit 2-2 that will require the following:

Section I contains general information about the facility.

- Part A asks for the type of permit authorization sought (individual permit, general permit, and whether the application is new or a renewal).
- Part B includes information about the applicant.
- Part C asks whether the facility is new or existing.
- Part D includes a description of the facility's name and location

Section II will define the facility's operations.

- Part A sets forth the number of animals to be housed
- Part B describes the amount and type of animal waste to be generated and the amount of land to be used for waste application
- Part C will be a topographical map of the facility, including the following:
 - Production areas
 - Waste storage facilities
 - Land application sites
 - Surface water bodies
 - Drinking water wells
 - Any other water Wells
- Part D includes a description of the waste storage and processing systems for the facility
- Part E simply refers to the facility's nutrient management plan, which should be attached to the application. Nutrient management plan requirements are discussed below.
- Part F describes the best management practices to be used to control runoff and protect water quality.

Section III contains the certification and signature of the application.

A critical part of the application, whether for coverage under the general permit or an individual permit, is the facility's nutrient management plan. Guidelines for how to prepare the plan are found in the Agricultural Waste Management Field Handbook, published by the USDA Natural Resources Conservation Service (NRCS). In general, the nutrient management plan should outline how the facility will apply its waste (if land application is the disposal method to be used) in such a way as to minimize the risk of nutrient runoff into nearby waterbodies and to match the application of nutrients in the animal waste to the amount of nutrients removed by harvesting of crops from the land application areas. This requires sampling of both the waste and the soil, as well as accounting for the nutrient balance between applications and withdrawals through crop harvesting. Adherence to the nutrient management plan is critical, as failure to follow the nutrient management plan has been the basis of finding liability for pollutant discharges from CAFOs.

The permit application will require payment of a permit fee, charged according to the following schedule:

Permit action	Fee
General permits	
New applications for authorizations covered under a general permit	\$350.00
Significant expansions of facilities covered under authorizations of existing general permits	\$350.00
Annual fee for general permit	\$800.00
Renewal or change of permittee or co-permittee (e-permitting)	\$75.00
Renewal or change of permittee or co-permittee (paper permitting)	\$100.00
Construction stormwater authorization	\$316.00
Individual permits	
New applications for individual new proposed facilities	\$350.00
Annual fees for individual permittees	\$1,250
Renewals of individual permits for existing facilities	\$315.00

Notice of the permit application must be published in a newspaper local to the proposed or existing facility. The notice must contain the following:

- Name and address of the applicant;
- Name, address and legal description of the site, facility and activity;
- Purpose of notice;
- Type of permit or permit action being sought;
- Description of activities to be regulated;
- Locations where the application may be reviewed;
- Names, addresses and telephone numbers of contact persons for ODAFF and for the applicant;
- Description of public participation opportunities and time period for comment and requests; and
- Any other information required by ODAFF rules

Once the notice has been published, an affidavit of publication must be submitted to ODAFF within 20 days of the publication date.

If the permit application is reviewed and approved by ODAFF, the terms of the Oklahoma General Permit (NPDES Permit OKG010000) now apply to the operation. The terms of the general permit provide a number of requirements for how the livestock facility must be designed and operated.

- Whenever there is a rainfall event at the facility, manure, litter or other process water can be discharged to waters of the United States (note, not “waters of the state”), so long as the animal production area is properly designed, constructed, operated and maintained to contain all manure, litter, process wastewater plus the runoff and direct precipitation from the 25-year, 24-hour storm event for the location of the CAFO. Additionally, waste storage areas should be designed to contain not only the waste it must typically store but also the direct rainfall and runoff it would receive in such a precipitation event.
- Wastewater retention facilities must be designed in accordance with the NRCS technical standards for such structures.
- Open lots and waste storage areas should be isolated to prevent runoff from coming on to such areas.
- The facility must follow its nutrient management plan (NMP) and use best management practices (BMPs) when applying animal wastes to land (Requirements for developing the NMP are set out in Part III of the General Permit).
- Discharges from the facility or land application areas must be monitored and reported to both EPA and ODAFF.
- Annual reports of animal inventories, wastes generated, discharge events, land applications, and

waste sample analysis results.

- Compliance with the permit can provide important protections in the event there is a discharge of manure, litter, or other materials from the CAFO. Without this protection, penalties for violation of the permit terms can include civil penalties up to \$27,500 per day per violation, and if such violations were intentional, such fines can increase to \$275,000 and imprisonment.

2.3. Pesticide applications affecting water

Animal handling is not the only agricultural activity that can result in the discharge of pollutants to waters of the United States. Applications of pesticides can also result in potential contaminants reaching streams, ponds, and lakes. Oklahoma's AgPDES program may also require permits for application of pesticides. As with CAFOs, the AgPDES program also provides a general permit that can provide coverage for the following types of pesticide applications:

- Mosquito and other flying insect pest control - to control public health/nuisance and other flying insect pests that develop or are present during a portion of their life cycle in or above standing or flowing water. Public health/nuisance and other flying insect pests in this use category include mosquitoes and black flies.
- Weed and Algae Pest Control—to control weeds, algae, and pathogens that are pests in water and at water's edge, including ditches and/or canals.
- Animal Pest Control—to control animal pests in water and at water's edge. Animal pests in this use category include fish, lampreys, insects, mollusks, and pathogens.
- Forest Canopy Pest Control—application of a pesticide to a forest canopy to control the population of a pest species (e.g., insect or pathogen) where, to target the pests effectively, a portion of the pesticide unavoidably will be applied over and deposited to water.
- Any application to a "Tier 3" water (or "Outstanding Resource Water" as defined in Appendix A of the Oklahoma Water Quality Standards).

The notice of intent (NOI) form for coverage under the general permit requires the "operator" to specify the following:

- The operator's name and type (i.e. government unit, pest, irrigation, or weed control district, or other type of operator)
- Contact information for the operator
- A description of the pest management areas to which the pesticides will be applied
- Information about the waters receiving the application
- Information about any Outstanding National Resource Water or Scenic River that may be receiving a discharge of the pesticide, along with any impaired waters subject to a TMDL.

Filing of the NOI must be accompanied by a permit application fee of \$350, but an operator applying pesticides to multiple areas within the state can file a single NOI with information about all the discharges.

2.4. Construction stormwater discharges on agricultural lands

Beyond animal wastes and pesticide applications, general NPDES regulations also define discharges of stormwater from construction areas as point-sources of pollution also subject to regulation. To avoid potential liability from discharges during construction activities on farms and ranches, coverage under the AgPDES General Permit may be acquired.

Generally, discharges from construction sites where more than one acre of soil will be disturbed (even if the acre is not in one contiguous area, but rather is in different areas so long as the total area of soil disturbed is one acre or more) will require permit coverage. If indeed a permit is required, the general permit provides a number of BMPs and requirements, including:

-
- Sediment and erosion controls
 - Buffer zones to prevent sediment from running off of the site and into nearby waters
 - Soil stabilization practices to limit runoff and erosion
 - Site inspections of the construction area
 - Requirements to prepare and implement a Stormwater pollution prevention plan (SWPPP).

The SWPPP is central to coverage under the general permit. The SWPPP includes a number of elements:

- Identifies the “stormwater team” responsible for overseeing the development and implementation of the plan and the general permit
- Defines the construction activities that will take place
- Provides a site map including not only the structures to be constructed but also surrounding waterbodies and pathways for potential runoff
- A list of the pollutants that may be present at the construction site
- A description of the stormwater control measures to be used on the site
- The waste management procedures to be used on site to prevent waste from reaching waters
- The SWPPP must also be kept on-site and made available for viewing on request

The application fee for coverage under the general permit is \$316, and is to be submitted along with the NOI that includes information about the facility owner, the location of the site, and information about the SWPPP prepared for the site and any nearby waterbodies.

2.5. Spill prevention, control, and countermeasure (SPCC)

Farming and ranching operations can frequently use large amounts of fuel, lubricants, and other petroleum products. Additionally, increasing production of oil crops such as soybeans and canola sometime means such oils are stored on-farm as well. There is always the opportunity for a spill of such materials whenever and where ever they are used, and small spills can often be quickly contained and cleaned up. However, the storage of larger quantities of oils and oil products can mean a spill could have more significant consequences. To minimize the risk of such spills and to ensure quick, effective responses when spills happen, EPA has enacted the Spill Prevention, Control, and Countermeasure (SPCC) regulations at 40 C.F.R. part 112. As implied by the title, the regulations define what parties covered by the rule must do to prevent spills from occurring, how to control spills once they occur, and how they can address the impacts of a spill. These requirements are bundled into the requirement for the party to have a SPCC plan.

The SPCC rules contain specific provisions for farms. Under the rules, a “farm” is “a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, \$1,000 or more of agricultural products during a year.” Since most farms will meet this threshold, the next step is to determine how much “oil” is stored on the farm or ranch. Under the applicable statues and rules, “oil” is defined as

oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.

If you store any materials that would fall within this definition of oil, the next step is to determine the amount of storage you have on your farm or ranch. The Water Resources Reform and Development Act (WRRDA) requires EPA to modify the threshold amount of oil storage that triggers the SPCC rule to no more than 6,000 gallons and no less than 2,500 gallons. EPA’s study on the rule under WRRDA recommends that the 6,000 gallon storage threshold (which is an interim threshold under the WRRDA) be reduced to 2,500 gallons; EPA estimates that a 2,500 gallon threshold would only apply to somewhere between 4 to 19 percent of farms.

For now, though, the threshold is defined as follows:

- If the farm has less than 2,500 gallons of aboveground oil storage, no SPCC plan is required.
- If a farm has between 2,500 and 6,000 gallons of aboveground oil storage, AND the farm has had no reportable discharges (defined as one event of 1,000 gallons discharged to a water of the United States, or two or more discharges to waters of the United States of 42 gallons or more within any 12 month period) of oil, no SPCC plan is required.

So, how do we calculate the aboveground oil storage capacity of our farm or ranch? We add the capacities of all oil containers on the facility with a storage capacity of 55 gallons or more. For example, a gasoline container with a capacity of five gallons would not be counted, but a 55 gallon barrel of lubricant would be counted. Additionally, do not forget to count mobile containers. For example, if your tractor or combine fuel tank is 55 gallons or larger, or if you have a tank on a trailer 55 gallons or larger, those containers must be counted toward your total capacity.

Since the operations on farms and ranchers may sometimes be spread out, you should also consider how much storage is at any one location. If you have aboveground storage on a separate parcel of land that has a capacity of 1,000 gallons or less, it does not count toward your threshold amount.

To help you determine if the SPCC rules apply to you, see the decision tree in Exhibit 2-3. If you do meet the threshold for an SPCC plan, how do you create one? Your plan should include the following pieces:

- How you will design areas where oil is stored to prevent runoff of spills to water
- Construction of secondary containment areas (such as dikes, berms, or other barriers) around bulk oil storage areas
- Requirements to only keep oil in appropriate containers
- Procedures for inspecting for leaks from containers or pipes
- Protecting any buried portions of storage containers from corrosion
- A facility response plan describing how you will respond in the event there is a spill of oil, including the materials and equipment that can be used to contain and clean up the spill, how you and your employees will be trained to respond to spills, and the emergency contacts that need to be made in the event of a spill.

Note that if your facility stores more than 10,000 gallons of oil, your plan must also be certified by a licensed professional engineer (P.E.).

2.6. Underground storage of petroleum products

Just as the SPCC regulations deal with the storage of oil aboveground, the Underground Storage Tank (UST) laws deal with the storage of materials in belowground tanks. In Oklahoma, jurisdiction for USTs that store “petroleum” is with the OCC, and USTs storing a number of other substances are under the jurisdiction of ODEQ.

“Petroleum” is defined as “antifreeze, new or used motor oil, gasoline, kerosene, diesel, aviation fuel or blended fuel including, but not limited to, gasoline, diesel, and aviation fuel that is blended with biodiesel, ethanol, Methyl Tertiary Butyl Ether (MTBE) or other additive for purposes of fueling a combustion engine.”

The thresholds for tank capacities subject to the Oklahoma Storage Tank Regulation Act are much smaller than those for SPCC; generally, petroleum storage tanks below ground with a capacity of 110 gallons or more are subject to the Act.

If a UST is subject to the Act, the tank owner is required to register the tank. Form 7530-1 is used to provide the following information to the OCC:

-
- The number of USTs and aboveground storage tanks (ASTs) at the facility
 - The owner of the tank
 - The GPS coordinates of the tanks

Permits are also required for covered tanks, with a permit fee of \$25 per petroleum tank and \$10 per noncommercial agricultural tank.

The owner of the tank must report when an UST has been removed or when there has been a release of any substances (such as oil or fuel) subject to the Act. Further, the owner must make sure the tanks do not corrode, and will likely have to install an active corrosion resistance system and report on its inspections, as well as reporting on the function of any leak detection systems.

2.7. On-farm drinking water and waste water management

Beyond preventing water pollution, farmers and ranchers may also have responsibility for operating a fairly complex facility that includes multiple drinking water systems and wastewater management systems for the people on the farm as well as its livestock and other animals. Managing drinking water and wastewater on the farm or ranch can also trigger environmental regulations.

2.7.1. On-farm drinking water

As mentioned above, ODEQ has been delegated authority to implement the SDWA in Oklahoma. Under the SDWA, “public water supply” systems are regulated to ensure the safety of the water provided to the public through those systems. A “public water supply” means “a system whether publicly or privately owned which supplies water under pressure to the public through pipes or other constructed conveyances whether receiving payment or not.” As a result, if your farm or ranch has a water system that provides water to people who do not reside on the farm (such as seasonal labor facilities or visitors to an agritourism activity on the property), you may need a permitted public water supply.

Unless the farm or ranch supplies water by 15 service connections or provides water to 25 or more people 60 days out of the year, the system can be permitted as a “minor public water system.”

Standards for the construction and operation of public water supplies is handled largely through regulations found in Title 252, chapters 624 and 626 of the Oklahoma Administrative Code.

Minor water systems must submit a permit application to ODEQ via DEQ Form 624-001. The application includes the following:

- Information about the applicant
- Information about the property owner (if the applicant is not the same party that owns the land where the well for the water supply is located)
- The location of the groundwater well that will be used to supply the water
- Information about the type of facility that will be served by the system, the number of people it will serve, and how many days water will be served to the public
- A drawing of the site where the system will be located and the configuration of the system, and a wellhead protection checklist.

The wellhead protection checklist is an important part of the permit application and is important for ensuring the quality of the water provided through the water system. The checklist (DEQ form 624-002) lists a number of potential pollutant sources that could potentially impact the groundwater well used to supply the system. Each potential source must be counted and the distance to the source must be provided. The potential pollutant sources listed include:

-
- Abandoned water well
 - Above ground storage tank
 - Airport
 - Auto repair/body shop
 - Cemetery
 - Chemical/industrial facility
 - Confined Animal Feed Lot
 - Dairy
 - Dump/landfill
 - Fertilizer/pesticide storage
 - Golf Course
 - Grain storage bin
 - Holding pond/lagoon
 - House/outbuildings
 - Injection well
 - Irrigation operation
 - Highway, road or railroad
 - Mining Oil or Gas Wells/Pipeline
 - Plant nursery/greenhouse
 - Road salt storage
 - Septic system
 - Service/Gas station
 - Sewage plant/lines
 - Storm sewer
 - Underground storage tank
 - Any other potential pollutant source.

The application fee for a new minor water system or for a modification to such a system is \$217.32, and an annual operating fee of \$190.15 is also required.

Once a construction permit for the system is approved and the system is built, it must be disinfected (usually through chlorine treatment and flushing) and tested for fecal coliform levels. Operating requirements will also be included such as minimum pressure requirements (25 pounds per square inch), regular sampling (for coliform bacteria on all systems, and for volatile organic compounds or “VOCs” if they are near underground gasoline storage tanks), and requirements for recordkeeping of sampling results.

2.7.2. On-farm wastewater management

Jurisdiction for management of on-farm wastewater comes under the jurisdiction of ODEQ and its Environmental Complaints and Local Services division. Frequently, rural farms and ranches rely on a septic system or other systems that would be defined as “individual on-site sewage treatment systems” for handling sewage wastes. Such systems must be inspected by a certified inspector or by ODEQ staff. ODEQ regulations define requirements for the design, installation, and inspection of these systems, designed to protect the safety of both the user and to prevent such systems from potentially polluting surface or groundwater.

CAFO Permitting Decision Tree

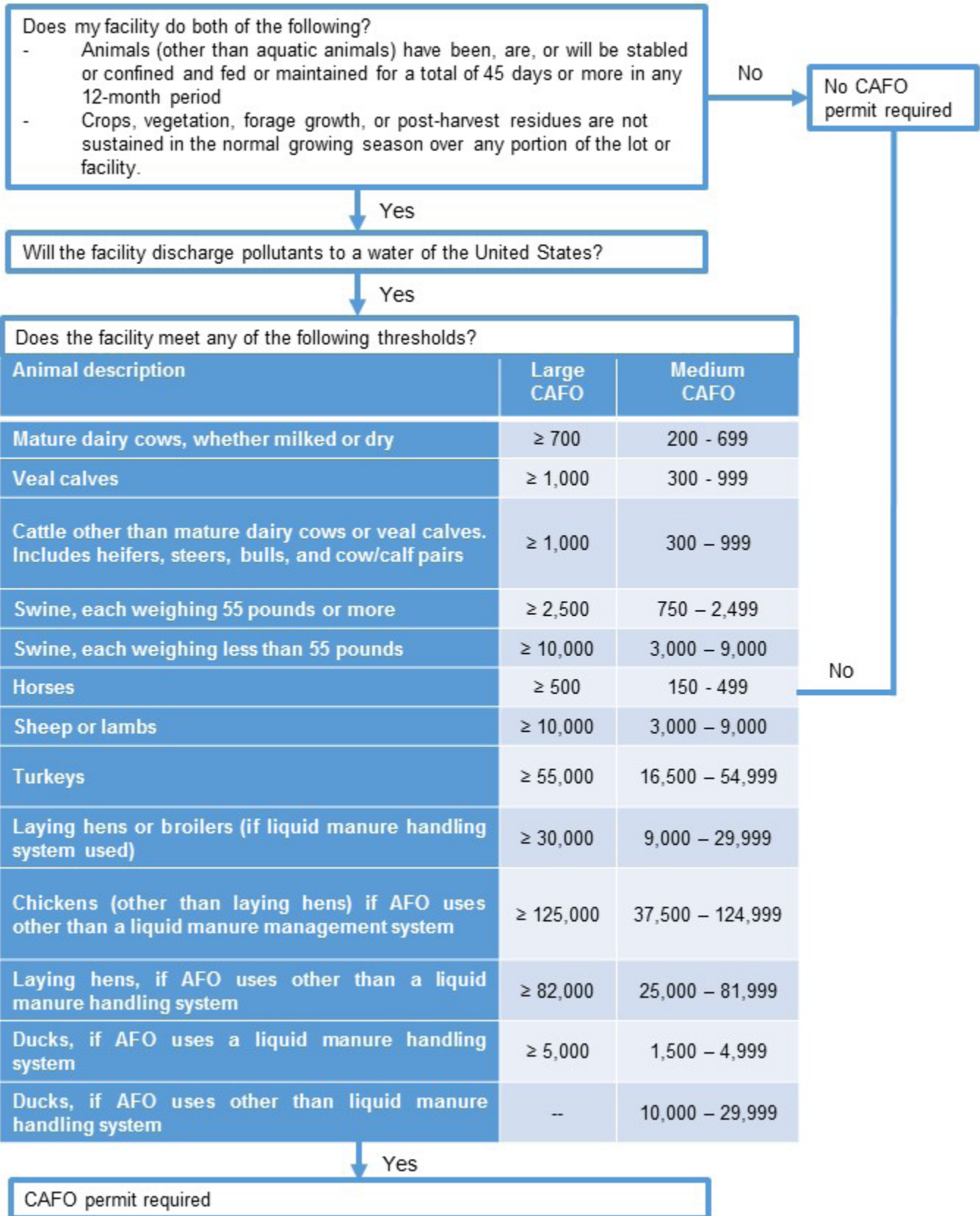



Exhibit 2-2: Oklahoma AgPDES CAFO Permit Application



FORM AEMS095

OKLAHOMA DEPARTMENT OF AGRICULTURE, FOOD, AND FORESTRY
Agricultural Environmental Management Services Division

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER FROM
CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOs)

I. GENERAL INFORMATION

A. TYPE OF AUTHORIZATION REQUESTED

1.	Individual Permit	Coverage Under General Permit	
2.	New Renewal	Modification	

B. APPLICANT INFORMATION	C. FACILITY OPERATION STATUS
Applicant Name: _____ Contact Name: _____ Title: _____ Mailing Address: _____ City: _____ State: _____ Zip: _____ Phone: (____)_____ Facsimile: (____)_____ Email: _____	Existing Facility AgPDES Permit No. OKG01 _____ Proposed Facility

D. FACILITY INFORMATION

Facility Name: _____ Phone: (____)_____ Facsimile: (____)_____

Facility Location (physical address or location description): _____

City: _____ State: _____ Zip: _____ County: _____ Latitude: _____ Longitude: _____

Legal Description (¼, ¼, ¼, Section, Township, Range): _____

Is facility located on Indian land? Yes No If yes, file your application with the EPA using EPA Form 2B.

If contract operation: Name of Integrator: _____

Address of Integrator: _____

II. CONCENTRATED ANIMAL FEEDING OPERATION CHARACTERISTICS

A. SIC CODE, TYPE, AND NUMBER OF ANIMALS			B. MANURE, LITTER AND/OR WASTE PRODUCTION & USE
1. SIC Code and Type	2. Animals		
	No. in Open Confinement	No. Housed Under Roof	
0241 - Mature Dairy Cows			1. How much manure, litter, and wastewater are generated annually by the facility? _____ gallons _____ tons
0241 - Dairy Heifers			2. If land applied, how many acres of land under the control of the applicant are available for applying the CAFO's manure/litter/wastewater? _____ acres
0212 - Veal Calves			
0211 - Cattle (not dairy or veal)			3. How many tons of manure or litter, or gallons of wastewater produced by the CAFO will be transferred annually to other persons? _____ gallons _____ tons
0213 - Swine (55 lbs. or over)			
0213 - Swine (under 55 lbs.)			
0272 - Horses			
0253 - Turkeys			
0251 - Chickens (Broilers)			
0252 - Chickens (Layers)			
Other, specify _____ SIC Code _____			
3. Total Animals			

Exhibit 2-2: Oklahoma AgPDES CAFO Permit Application

C. TOPOGRAPHIC MAP			
Attach a topographic map of the geographic area in which the CAFO is located showing the perimeters of the facility and the outline of the production area including, but not limited to, animal waste storage facilities, land application sites owned or leased by the applicant, surface water bodies, drinking water wells, and other wells known to the applicant.			
D. TYPE OF CONTAINMENT, STORAGE AND CAPACITY			
1. Type of Containment	Total Capacity		Units
Lagoon			
Holding Pond			
Evaporation Pond			
Other: Specify _____			
2. Total number of acres contributing drainage. _____ acres			
3. Type of Storage	Total Number of Storage Days	Total Capacity	Units (gallons, tons, etc.)
Anaerobic Lagoon			
Storage Lagoon			
Evaporation Pond			
Aboveground Storage Tank			
Belowground Storage Tank			
Roofed Storage Shed			
Underfloor Pit			
Concrete Pad			
Impervious Soil Pad			
Other Specify: _____			
E. NUTRIENT MANAGEMENT PLAN			
1. Has a nutrient management plan been included with this permit application? Yes No If no, please explain: _____			
2. Is a nutrient management plan being implemented for the facility? Yes No If no, when will the nutrient management plan be implemented? Date: _____			
3. The date of the last review or revision of the nutrient management plan. Date: _____			
4. If not land applying, describe the alternative use(s) of manure, litter, and/or wastewater. _____			
F. LAND APPLICATION BEST MANAGEMENT PRACTICES			
Please check any of the following best management practices that are being implemented at the facility to control runoff and protect water quality: Buffers Setbacks Conservation tillage Constructed wetlands Infiltration Field Grass filter Terrace			
III. CERTIFICATION			
<i>I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.</i>			
Name and Official Title (print or type)		Phone: (____) _____	
Signature		Date Signed: _____	

INSTRUCTIONS FOR COMPLETING APPLICATION FORM AEMS095 FOR PERMIT TO DISCHARGE WASTEWATER FROM CAFOS

The General Permit OKG010000 for Discharges from CAFOs in Oklahoma is available online at <http://www.oda.state.ok.us/aems/agpdescafopermit.pdf>.

Completing the Form

Type or print, using uppercase letters, in the appropriate areas only. If you have any questions about this form, telephone ODAFF - AEMS Division at 405-522-5493 or 405-522-5495.

Section I. General Information

Indicate if the application is for an individual permit or coverage under a general permit and if it is a new, renewal, or modification application.

Item IA. Applicant Information

Provide the owner/operator contact information.

Item I-B. Facility Operation Status

Check "existing facility" if the facility is currently in operation as a CAFO. Check "proposed facility" if your facility is not now in operation or is expanding to meet the definition of a CAFO.

Item I-C. Facility Information

Enter a complete description of your facility's location including name, physical address or description of facility location, latitude/longitude, and legal description. Indicate whether the facility is located on Indian land. If the facility is located on Indian land, application needs to be filed with the EPA using EPA Form 2B. Also, if a contract operator, provide the name and address of the integrator.

Section II. Concentrated Animal Feeding Operation Characteristics

Item II-A. Type and Number of Animals

Enter the maximum number of each type of animal in open confinement or housed under roof (either partially or totally), which are held at your facility for a total of 45 days or more in any 12 month period. Provide the total number of animals confined at the facility.

Item II-B. Manure, Litter, and/or Wastewater Production and Use

1. Provide the total amount of manure, litter and wastewater generated annually by the facility.
2. If manure, litter, and wastewater generated by the facility is to be land applied, provide the number of acres, under the control of the CAFO operator, suitable for land application.
3. Provide the estimated annual quantity of manure, litter, and wastewater that the applicant plans to transfer off-site to other persons (if any).

Item II-C. Topographic Map

Provide a topographic map of the geographic area in which the CAFO is located showing the perimeters of the facility, the outline of the production area including, but not limited to, animal waste storage facilities, land application sites, surface water bodies, drinking water wells, and other wells known to the applicant.

Item II-D. Type of Containment, Storage and Capacity

1. Provide information on the type of containment and the capacity of the containment structure(s).
2. Report the number of acres that are drained and collected in the containment structure(s).
3. Identify the type of storage for the manure, litter and/or wastewater. Provide storage capacity and the minimum storage period in-days.

Item II-E. Nutrient Management Plan (NMP)

Provide information concerning the status of submitting and implementation of an NMP for the facility. In those cases where the NMP has not been submitted, provide an explanation. If the NMP has not been implemented, provide an estimated date of implementation. If not land applying, describe the alternative uses of the manure, litter and wastewater (e.g., composting, pelletizing, energy generation, etc.).

Item II-F. Land Application Best Management Practices

Check any of the identified conservation practices that are being implemented at the facility to control runoff and protect water quality.

Section III. Certification

The Clean Water Act provides for severe penalties for submitting false information on this application form. Section 309(C)(2) of the Clean Water Act provides that *"Any person who knowingly makes any false statement, representation, or certification in any application...shall upon conviction, be punished by a fine of no more than \$10,000 or by imprisonment for not more than six months, or both."*

Federal regulations require the certification to be signed as follows:

For corporation: by a principal executive officer of at least the level of vice president;
For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
For a municipality, State, Federal, or other public facility: by either a principal executive officer or ranking elected official.

Where to File the Form

ODAFF - AEMS Division
P.O. Box 528804
Oklahoma City, OK 73152

Exhibit 2-3: SPCC Decision Tree

MUNICIPAL SOLID WASTE LANDFILLS

County	Facility Name	Phone	Accepts Dead Livestock
Beckham	Elk City Municipal Landfill	(580) 225-3246	No
Beckham	Sayre Municipal Landfill	(580) 928-3420	No
Canadian	OEMA Landfill	(405) 483-5402	Yes
Carter	Southern Oklahoma Regional Disposal Landfill	(580) 226-1276	Yes
Comanche	City of Lawton Landfill	(580) 581-3468	Yes
Comanche	Ft. Sill Landfill	(580) 442-5241	Yes
Garfield	City of Enid Landfill	(580) 249-4917	Yes
Garvin	Pauls Valley Landfill	(405) 238-2012	Yes
Grady	Southern Plains Landfill	(405) 785-2060	Yes
Grady	Great Plains Landfill	(405) 818-0000	No
Jackson	City of Altus Landfill	(580) 477-0120	Yes ¹
Kay	Ponca City Landfill	(580) 767-0417	Yes ¹
Lincoln	Center Point Landfill	(405) 567-3806	Yes
McClain	Newcastle Landfill (Pinecrest)	(405) 343-2070	No
McCurtain	City of Broken Bow Landfill	(580) 584-9445	No
McCurtain	McCurtain County Landfill	(580) 286-5300	Yes
Major	Red Carpet Landfill	(580) 776-2255	Yes ^{1 2}
Muskogee	Muskogee Comm. Landfill & Rec. Center	(918) 682-7284	Yes
Noble	Northern Oklahoma Regional Disposal, Inc.	(580) 628-2445	Yes
Oklahoma	Oklahoma Landfill	(405) 745-3091	Yes ⁴
Oklahoma	SE Oklahoma City Landfill	(405) 672-7379	Yes
Oklahoma	East Oak Sanitary Landfill	(405) 427-1112	Yes
Okmulgee	Elliott Construction Co. Landfill	(918) 733-4558	Yes
Osage	American Environmental Landfill	(918) 245-7786	Yes
Osage	Osage Landfill	(918) 336-3159	Yes ⁴
Payne	Stillwater Landfill	(405) 343-2070	Yes
Pittsburg	City of McAlester Landfill	(918) 421-4967	No
Pittsburg	Pittsburg County Landfill	(918) 426-0985	Yes ¹
Pontotoc	City of Ada Municipal Landfill	(580) 436-1403	Yes ¹
Pottawatomie	Absolute Waste Solutions, Inc. Landfill	(405) 598-3893	Call to inquire ³
Pushmataha	Clinton Lewis Construction Co. Landfill	(580) 298-3729	No
Seminole	Sooner Land Management Landfill	(405) 257-6108	Yes
Sequoyah	Sallisaw Solid Waste Disposal Facility	(918) 775-4127	Yes
Tulsa	Quarry Landfill	(918) 439-7835	Yes
Woodward	NW Oklahoma Solid Waste Disposal Authority	(580) 256-3975	No

Some landfills require prior notification before delivery of dead livestock. It is recommended that you contact the facility before transporting any carcasses to the landfill.

Some landfills require documentation to be completed and signed concerning livestock's cause of death which could require a 24-hour time period.

¹ prefers low volume, 1 or 2 at a time

² less than 10

³ may accept, call to inquire before coming

⁴ may limit quantity

Landfill list taken from www.deq.state.us/lpdnew/SW/landfill.htm. Landfills contacted by ODAFF AEMS re: acceptance of dead livestock.

Revised 8/1/14

Chapter 3

Regulation of Land Quality and Waste Issues in Oklahoma

Agricultural operations can create a number of waste streams that may be subject to environmental regulations. Many agricultural wastes fall under exemptions from environmental regulations, but there remain a number of waste streams that may trigger the application of state or federal environmental laws.

3.1. Overview of federal and state and pollution laws: RCRA and the Oklahoma Solid Waste Management Act

Most land quality and solid waste rules at the federal level come from the Resource Conservation and Recovery Act (RCRA). Recognizing that more wastes were being created and that there was a need for a more comprehensive approach to managing those wastes, RCRA created a system known as “cradle to the grave” to make sure that solid wastes in general and hazardous wastes in particular were carefully managed to avoid pollution of the environment. At the state level, ODEQ has been delegated authority to enforce RCRA, and most of ODEQ’s authority for solid and hazardous waste regulation comes from the Oklahoma Solid Waste Management Act (OSWMA).

3.2. Managing solid waste on the farm or ranch

Determining what laws and regulations apply to solid waste generated on the farm or ranch requires us to define what “solid waste” means. OSWMA defines solid waste as

all putrescible and nonputrescible refuse in solid, semisolid, or liquid form including, but not limited to, garbage, rubbish, ashes or incinerator residue, street refuse, dead animals, demolition wastes, construction wastes, roofing material, solid or semisolid commercial and industrial wastes including explosives, biomedical wastes, chemical wastes, herbicide and pesticide wastes. The term “solid waste” shall not include:

- a. scrap materials, not including roofing materials, which are source separated for collection and processing as industrial raw materials, except when contained in the waste collected by or in behalf of a solid waste management system, or
- b. used motor oil, which shall not be considered to be a solid waste, but shall be considered a deleterious substance, if the used motor oil is recycled for energy reclamation and is ultimately destroyed when recycled.

A number of materials generated by farms and ranches can be included under this definition. At this point, we should also note that a material must first be defined as a “solid waste” before it can be considered a “hazardous waste” under RCRA, as will be discussed below.

As we continue to “unpack” the definition of solid waste, Oklahoma regulations create several subcategories of solid wastes. One such subcategory important to many rural landowners is “household waste,” defined as “any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple

residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).” Other subcategories of solid waste can also apply to some wastes generated from the farm or ranch, such as “non-hazardous industrial waste” that might be generated by the use of chemicals such as pesticides and outdated products (such as expired veterinary medicines).

3.2.1. Disposal requirements for solid waste

A critical piece of OSWMA are the requirements for disposal of solid wastes:

1. No person shall dispose of solid waste at any site or facility other than a site or facility for which a permit for solid or hazardous waste disposal has been issued by the Department of Environmental Quality;
2. No person shall own or operate a site or facility at which solid waste is disposed other than a site or facility for which a permit for solid or hazardous waste disposal has been issued by the Department;
3. No person shall knowingly transport solid waste to an unpermitted site or facility.

Put another way, any material classified as solid waste must be disposed of at an ODEQ permitted landfill to comply with OSWMA. Notably, though, OSWMA does contain an exception for household wastes:

No provision of the Oklahoma Solid Waste Management Act shall be construed to prevent a person from disposing of solid waste from his or her household upon his or her property provided such disposal does not create a nuisance or a hazard to the public health or environment or does not violate a local government ordinance.

3.2.2. The household waste exemption

Thus, household waste can be disposed of on-site, so long as the Act’s language is satisfied: provided such disposal does not create a nuisance or a hazard to the public health or environment or does not violate a local government ordinance. As a result, farmers and ranchers can dispose of non-hazardous solid wastes materials on their property in the form of landfills or other disposal pits so long as they ensure there is no harm to the environment.

Before assuming that all of the waste generated on your farm or ranch can be disposed of on-site, keep in mind these considerations:

- The exception allowing on-site disposal of household wastes applies only to household wastes; it does not apply to wastes that do not satisfy the “household waste” definition. As mentioned above, there may be a number of materials that are defined as non-hazardous industrial waste on the farm, and such materials cannot be disposed of on-site.
- It should be noted that disposal of solid wastes into creeks, ditches, ravines, or other areas that could cause the wastes to enter a water of the state or a water of the United States could easily be considered the discharge of a pollutant and thus cause the person making the disposal to violate the CWA as discussed in Chapter 2.
- Burning trash as a means of disposal can be quite hazardous, not only because of fire hazard issues, but also because of the air pollutants released; these pollutants can harm people in the area of the fire, and can also trigger violations of air pollution regulations discussed in Chapter 4. For more information on these potential hazards, see OSU Fact Sheet AGEC-1027, “The Dangers of Backyard Trash Burning,” available at <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-7930/AGEC-1027web.pdf/>

There are a number of alternatives for on-farm disposal of household solid wastes, including:

- Self-hauling trash to a local landfill or waste transfer center
- Reducing the volume of trash by selecting products with less packaging or buying in bulk

-
- Recycling
 - Composting organic materials
 - Chipping plant wastes
 - Utilizing the services of a private trash hauler

Carefully consider whether one of these alternatives might be a safer course for you and your family and if they can reduce your chances of violating applicable waste disposal laws.

3.2.3. Disposal of Animal Wastes

As discussed in Chapter 2, CAFOs must have nutrient management plans (NMPs) that guide how animal wastes are disposed for water pollution prevention. NMPs naturally address a number of solid waste concerns. However, some animal wastes are not disposed of on the facility covered by the CAFO permit, or operations that do not fit the definition of CAFO may also need to dispose of animal wastes by methods other than just natural processes (allowing the wastes to simply remain on grazing lands, for example).

While animal wastes of all kinds can sometimes be transported to locations not owned or operated by the owner of the animals for disposal, the most prevalent example in Oklahoma of such transport and disposal is with poultry litter. The Oklahoma Poultry Waste Applicators Certification Act (OPWACA) requires anyone land-applying poultry waste to receive a certificate from ODAFF. To receive a certificate, the applicator must complete an application and also complete an initial nine hours of training (with two hours of continuing education each year).

Applicators must test both the waste to be applied and the soil of the land receiving it to ensure that applications comply with any relevant nutrient management plans or nutrient limitations in the watershed.

Applicators must also file an annual report with the following contents:

- The legal description and county where the poultry waste was produced;
- The legal description and county where the poultry waste was land-applied;
- Date of each application;
- Total and per-acre amount of each application;
- Name, address, and telephone number of the person for whom poultry waste was applied;
- The most recent soil test results obtained; and
- Such other information as may be required by the State Board of Agriculture.

3.2.4 Disposal of dead animals

Death losses are a natural part of any livestock operation, and naturally leads to the question of how animal carcasses should be properly disposed. Further, improper disposal of dead animals can lead to criminal penalties:

It shall be the duty of the owner of any domestic animal in the State of Oklahoma, which may hereafter die of any contagious or infectious disease, either to burn the carcass thereof or bury the same within twenty-four (24) hours after he has notice or knowledge of such fact so that no part of such carcass shall be nearer than two and one-half (2 1/2) feet of the surface of the soil: Provided, That all hogs dying of any disease shall be burned. It shall further be unlawful to bury any such carcass as mentioned in this section in any land along any stream or ravine, where it is liable to become exposed through erosion of the soil, or where such land is any time subject to overflow. "Owner", as used in this section, shall mean and include any person having domestic animals in his possession, either by reason of ownership, rent, hire, loan, or otherwise, and shall be subject to all the pains and penalties of this article.

It shall be unlawful for any person to leave or deposit, or cause to be deposited or left the carcass of any animal, chicken or other fowl, whether the same shall have died from disease or otherwise, in any well, spring, pond or stream of water; or leave or deposit the same within

one-fourth (1/4) mile of any occupied dwelling or of any public highway, without burying the same as provided in the preceding section of this act.

Further, the requirements of the Oklahoma Environmental Quality Act is interpreted to prohibit leaving dead animals to decompose in the environment without proper disposal.

Dead animals fall under the definition of “special waste” meaning that, while they may not be considered “hazardous wastes” (as discussed in section 3.3. below), they are also not treated as household wastes. For example, dead animals cannot be disposed of at a solid waste composting facility

Thus, what are the acceptable options for disposal of dead animals?

- Disposal at an animal rendering facility
- Disposal in an ODEQ-permitted solid waste management landfill. A list of municipal solid waste management landfills that can receive dead animals is included in Exhibit 3-2.
- Burial, with the following restrictions:
 - Burial of dead livestock requires the construction of a pit
 - Do not locate the burial pit closer than one foot (1’) vertically above the flood plain, or within two feet (2’) of the water table or bedrock
 - Do not locate the burial pit within three hundred feet (300’) of wells, waters of the state, neighboring residences, public areas, or property lines
 - After placing the dead animals in the trench, cover the dead animals with a minimum of two and a half feet (2 ½’) of topsoil. Inspect burial sites routinely to ensure that wild animals are not digging and dragging dead animals away
 - In the event of catastrophic death loss at a livestock facility, follow the procedures outlined in “Proper Disposal of Routine and Catastrophic Livestock and Poultry Mortality” OSU Fact Sheet BAE-1748, available at <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-6301/BAE1748web.pdf>.
- Incineration
 - Open-air (ground surface) burning of dead animals is not allowed, nor is open pit burning.
 - An “air curtain incinerator” is strongly encouraged to ensure the complete and proper incineration of the dead animals and the minimization of smoke and particulate matter.
- Composting
 - Composting dead animals may be allowed if permission is secured from the Agricultural Environmental Services division of ODAFF or if composting is included in the animal waste management plan (AWMP) for the CAFO.
 - Animal compost facilities are governed by the Oklahoma Administrative Code, title 35, chapter 17, subchapter 9. Such facilities can receive a permit from ODAFF’s Agricultural Environmental Management Services (AEMS) if they are appropriately sited, designed, and constructed to prevent the release of any pollutants to waters of the state and to avoid air quality impacts to local residences.

It should be noted that there may be periods of emergency such as a disease outbreak on a livestock operation that could require the disposal of very large numbers of carcasses. Be prepared for such emergencies by researching the catastrophic death loss disposal methods appropriate for your operation and having a disposal plan ready to implement should you need it.

3.3. Managing hazardous waste issues

As mentioned above, RCRA and contains rules governing the management not only of solid waste, but “hazardous wastes as well.” Oklahoma regulations incorporate the RCRA definition of hazardous waste by reference.

3.3.1. General hazardous waste management requirements

The definition of hazardous waste includes any solid waste that (1) exhibits a hazardous characteristic (defined below),

(2) if it is specifically listed as hazardous on one of the lists created by the RCRA regulations, or (3) if it is a mixture of a solid waste and a hazardous waste.

Solid wastes can be considered hazardous if they exhibit one or more of the following traits:

- Ignitability, meaning the material can catch fire at temperatures of 60°F or less, can easily catch fire through friction or absorption of moisture, or is an ignitable compressed gas
- Corrosivity, meaning the material has a pH less than 2 or greater than 12.5, or is a liquid that corrodes steel at a defined rate
- Reactivity, meaning the material is normally unstable and readily undergoes violent change without detonating, reacts violently with water, forms potentially explosive mixtures with water, generates toxic gases when mixed with water, or meets one of the other specified reaction traits
- Toxicity, meaning the material can release one of the specified contaminants into the environment.

Beyond wastes with hazardous characteristics, EPA also provides lists of wastes deemed hazardous, known as the F, K, P, and U lists.

Examples of materials on the farm or ranch that could be considered hazardous wastes include some fertilizers, pesticides, paint thinners, solvents, and some other waste chemicals. If your activities on the farm or ranch have led to the generation of hazardous wastes, you may be defined as a “generator” under RCRA. Generators are classified as “conditionally exempt small quantity generators” (CESQGs), “small quantity generators,” (SQGs), and “large quantity generators” (LQGs). Each category of generator is defined by how much hazardous waste they generate. For these purposes, hazardous waste may also be separated into “acute” and “non-acute” wastes. Note, though, if the only hazardous waste generated on the farm or ranch is pesticides, you need only comply with the requirements discussed in section

The following table sets out the thresholds for each of these classifications. If your operation generates less than 100 kilograms (220 lbs.) per month of non-acute waste and less than 1 kilogram (2.2 lbs.) per month of acute wastes, you do not face any generator requirements except that whatever hazardous waste you generate must be properly disposed in a hazardous waste disposal facility.

Table 3-1: Hazardous Waste Requirements

Requirement	CESQG	SQG	LQG
Non-acute Waste Limits	Less than or equal to 100 kg/mo (220 lb/mo).	Between 100-1000 kg/mo (220-2200 lb/mo).	Greater or equal to 1000 kg/mo (2200 lb/mo).
Acute Waste Limits	Less than or equal to 1 kg/mo (2.2 lb/mo)	Less than or equal to 1 kg/mo (2.2 lb/mo)	More than 1 kg/mo (2.2 lb/mo) and more than 100kg/mo. Of contaminated spill cleanup materials
Identify Wastes	Yes	Yes	Yes
EPA ID Number	Not Required	Required	Required
On-site Accumulation Amount Limits	1000 kg. (2200 lbs) or less.	6000 kg. (13,200 lbs) Or less.	No Limit.
Accumulation Time Limits	None	180 days or less. 270 days or less (if transported more than 200 miles).	90 days or less.
Satellite Accumulation Area	Same as on-site accumulation.	55 gallons non-acute or 1 quart acute HW at or near the point of generation.	55 gallons non-acute or 1 quart acute HW at or near the point of generation.
Hazardous Waste Storage Area	None	Basic requirements with technical standards for tanks and containers.	Full requirements for management of tanks and containers.
Manifest	Not Required	Required	Required
Biennial Hazardous Waste Report	Not Required	Not Required	Required
Secondary Containment	None	Storage of greater than 185 gallons of liquid over sole source aquifers.	Storage of greater than 185 gallons of liquid over sole source aquifers.
Closure Plan	Not Required	Not Required	Storage of greater than 185 gallons of liquid over sole source aquifers.
Personnel Training	Not Required	Basic Training Required	Written Training Program Required
Contingency Plan	Not Required	Not Required	Required
Preparedness and Prevention	Not Required	Required	Required
Land Disposal Restriction	Not Required	Required	Required

- Identify wastes: The generator must follow the procedures in 40 C.F.R. § 262.11 to identify hazardous wastes generated at their operation.
- EPA ID number: Generators in the SQG and LQG categories must get an EPA identification number.
- On-site accumulation amount and time limits: Generators can only accumulate the specified amounts on-site for the specified amount of time before the waste must be taken to a disposal facility.
- Satellite accumulation areas: Generators can accumulate waste in smaller areas (such as drums located near where the waste is generated) if they follow specified requirements.
- Hazardous waste storage area: Generators must comply with specifications for the areas and containers in which hazardous waste is stored.
- Manifest: The generator must prepare records describing it and who has handled it before it can

-
- be transported.
 - Biennial report: An annual report describing the wastes generated and their handling must be submitted to EPA.
 - Secondary containment: Generators that may have generated more than the specified amount of hazardous waste in liquid forms may have to have a secondary containment area around the primary waste storage area to prevent runoff of any spills.
 - Closure plans: LQGs must have a plan in place to properly close out material storage areas.
 - Personnel training: Training for personnel handling hazardous wastes may be required.
 - Preparedness and prevention: Generators must have plans for how the facility will be operated to minimize the risk of a hazardous waste release and how the facility will respond if there is a release.
 - Land disposal restriction: certain wastes from the generator cannot be land-disposed.

If you anticipate your farm or ranch might generate enough wastes to meet one of the CESQG, SQG, or LQG requirements, consider consulting with an environmental professional and attorney to create a compliance plan for your operation.

3.3.2. Managing pesticides as a hazardous waste

As mentioned above, if the only waste generated by a farm is waste pesticides, the farm has an exemption from the hazardous waste regulations:

A farmer disposing of waste pesticides from his own use which are hazardous wastes is not required to comply with the standards in this part or other standards in 40 CFR parts 264, 265, 268, or 270 for those wastes provided he triple rinses each emptied pesticide container in accordance with §261.7(b)(3) and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.

The requirements of 40 C.F.R. § 261.7 are included in Exhibit 3-3 to this chapter. A discussion of how pesticides can be disposed of in compliance with label directions is found in Chapter 5.

3.4. Cleanup of hazardous wastes under CERCLA

RCRA and the corresponding Oklahoma laws are aimed at managing solid and hazardous wastes to prevent their release to the environment. However, releases can still occur. To deal with these releases, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In summary, CERCLA requires parties responsible for a release of a hazardous substance to the environment to clean up the release. If a responsible party cannot be found, the federal or state government can clean up the release and seek reimbursement from the party responsible for the release.

Clearly, farm and ranch owners want to avoid the release of any hazardous substance from their facility, as that will place them squarely within the liability provisions of CERCLA, making them liable for the costs of cleanup, environmental remediation, and restoration of any damages caused by the release.

Yet another concern for farmers and ranchers, though, may be acquiring property on which a release of hazardous materials has already occurred. Under CERCLA, the “owner or operator of a... facility” can be held liable for a release of hazardous substance discovered at the facility. This means if a farmer or rancher purchases a piece of property where a hazardous release has occurred – even if the release occurred before they purchased the property – they can be held liable for the costs of cleanup.

This can be a difficult liability burden to bear; fortunately, CERCLA provides two important defenses against this form of liability: the “innocent landowner” defense” and the “bona fide prospective purchaser” defense.

3.4.1. The innocent landowner defense

The “innocent landowner” defense comes from 42 U.S.C. 9601(35)(A)(i) and (iii), which provides:

At the time the defendant acquired the facility the defendant did not know and had no reason to know that any hazardous substance which is the subject of the release or threatened release was disposed of on, in, or at the facility or the defendant acquired the facility by inheritance or bequest

In addition to establishing the foregoing, the defendant must establish that the defendant has satisfied the requirements of section 9607(b)(3)(a) and (b) of this title, provides full cooperation, assistance, and facility access to the persons that are authorized to conduct response actions at the facility (including the cooperation and access necessary for the installation, integrity, operation, and maintenance of any complete or partial response action at the facility), is in compliance with any land use restrictions established or relied on in connection with the response action at a facility, and does not impede the effectiveness or integrity of any institutional control employed at the facility in connection with a response action.

In other words, an innocent landowner must not have known – and had no reason to know- that there had been a release of a hazardous substance on the property. The only way CERCLA provides to prove that the landowner did not know or had reason to know of the release is through “all appropriate inquires” as discussed below. In addition to this requirement, the landowner must allow cleanup operations to take place on the property and must cooperate with the cleanup both while it is ongoing and in the future by agreeing to follow any restrictions on the use of the land imposed as part of the cleanup.

3.4.2. The bona fide prospective purchaser defense

The innocent landowner defense requires that the owner of the property did not know, and had no reason to know, of the release of a hazardous substance. Conversely, the bona fide prospective purchaser can actually allow a party to purchase property with the knowledge of a release of a hazardous substance, so long as the purchaser conducted an “all appropriate inquiry” of the property before the purchase, and cooperates with its cleanup.

Under 42 U.S.C. § 9601(40), a party claiming the bona fide prospective purchaser defense must show the following:

- The property was acquired after January 11, 2002
- All disposal of hazardous substances at the facility occurred before the person acquired the facility.
- The person made all appropriate inquiries into the previous ownership and uses of the facility in accordance with the regulations governing such inquires
- The person provides all legally required notices with respect to the discovery or release of any hazardous substances at the facility.
- The person exercises appropriate care with respect to hazardous substances found at the facility by taking reasonable steps to stop any continuing release; prevent any threatened future release; and prevent or limit human, environmental, or natural resource exposure to any previously released hazardous substance.
- The person provides full cooperation, assistance, and access to persons that are authorized to conduct response actions or natural resource restoration at a vessel or facility (including the cooperation and access necessary for the installation, integrity, operation, and maintenance of any complete or partial response actions or natural resource restoration at the vessel or facility).
- The person is in compliance with any land use restrictions established or relied on in connection with the response action at a vessel or facility; and does not impede the effectiveness or integrity of any institutional control employed at the vessel or facility in connection with a response action.
- The person complies with any request for information or administrative subpoena issued by the President under this chapter.

-
- The person is not potentially liable, or affiliated with any other person that is potentially liable, for response costs at a facility through any direct or indirect familial relationship; or any contractual, corporate, or financial relationship (other than a contractual, corporate, or financial relationship that is created by the instruments by which title to the facility is conveyed or financed or by a contract for the sale of goods or services); or the result of a reorganization of a business entity that was potentially liable.

3.4.3. All appropriate inquiries

With both the innocent landowner and bona fide prospective purchaser defenses, “all appropriate inquiries” must be made to understand whether any releases have taken place before the owner acquired the property. All appropriate inquiries require the following steps:

- On or before the date on which the defendant acquired the facility, the defendant carried out all appropriate inquiries... into the previous ownership and uses of the facility in accordance with generally accepted good commercial and customary standards and practices; and
- The defendant took reasonable steps to stop any continuing release; prevent any threatened future release; and prevent or limit any human, environmental, or natural resource exposure to any previously released hazardous substance.

EPA has created regulations defining what constitutes “all appropriate inquiries” into the history of the facility at 40 C.F.R. Part 312. An all appropriate inquiry investigation must be completed by an environmental professional (either a professional engineer, professional geologist, or a state-licensed professional). The regulations require the following steps:

- Interviews with past and present owners, operators, and occupants of the property
- Reviews of historical sources of information
- Searches for recorded environmental cleanup liens
- Reviews of Federal, State, Tribal, and local government records
- Visual inspections of the facility and of adjoining properties
- Consideration of any special knowledge or experience the owner or prospective purchaser has about the property
- The relationship of the purchase price to the value of the property, if the property was not contaminated
- Commonly known or reasonably ascertainable information about the property
- The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation

Under the rules, the procedures of the American Society for Testing and Materials (ASTM) Standards E1527-05 and E1527-13 are consistent with the regulations.

If you have any reason to suspect a previous release of a hazardous substance on a piece of property you may acquire, if there has been industrial activity on the property in the past, or if there may have been a release or industrial activity on a neighboring property, engaging an environmental professional to conduct all appropriate can help you take advantage of the CERCLA defenses, and can generally help you in your evaluation of the purchase.

Exhibit 3-1: Examples of Non-hazardous industrial waste

Source: Oklahoma Administrative Code, Title 252, Appendix F

- (1) Air pollution control equipment residues
- (2) Arsenically-treated wood that meets the exemption criteria of 40 CFR 261.4(b)(9)
- (3) Auto shredder fluff
- (4) Blasting media and other abrasives used to remove surface coatings
- (5) Coal combustion ash per 40 CFR 261.4(b)(4)
- (6) Combustible materials as defined in 49 CFR 173.120 and 173.124, that are not regulated as hazardous wastes
- (7) Containers which are RCRA empty in accordance with 40 CFR 261.7, or empty containers which have held pesticides (i.e., herbicides, fungicides, or rodenticides)
- (8) Cooling tower waters and other cooling process related wastes
- (9) Incinerator ash
- (10) Industrial sludges and industrial mud trap residues
- (11) Industrial wastewater treatment plant sludge (excluding sludge that is exclusively sanitary sewage)
- (12) Ink wastes
- (13) Lab related wastes, including lab packs
- (14) Lighting fixture ballasts containing non-TSCA regulated PCBs per 40 CFR Part 761
- (15) Miscellaneous chemical spill residue, primarily non-fuel related
- (16) Municipal and non-industrial wastewater treatment plant sludges
- (17) Non-hazardous pesticides (i.e., herbicides, fungicides, & rodenticides)
- (18) Oil filters meeting the requirements of 40 CFR 261.4(b)(13)
- (19) Outdated and off-specification products
- (20) Outdated, off-specification, or mislabeled over-the-counter medicines which are not hazardous in accordance with 40 CFR 261, Subparts C or D
- (21) Paint waste and related solvents
- (22) Petroleum contaminated soil and debris, oily rags and absorbents with > 1000 ppm TPH
- (23) Pharmaceutical waste not identified in (20)
- (24) Refractory & foundry sands and slag, retort, fly ash, cement kiln dust
- (25) Resins, polymers, and adhesives
- (26) Sludges containing materials washed from the interior of bulk materials carriers such as tank trucks or railroad tank cars
- (27) Wastes exempted by the RCRA Bevill waste exclusion in 40 CFR 261.4(b)(7)
- (28) Wastes rendered non-hazardous that were formerly hazardous pursuant to 40 CFR 261, Subpart C
- (29) Unknowns
- (30) Wastes from metal plating processes

Exhibit 3-2: Municipal solid waste landfills that can receive dead animals

MUNICIPAL SOLID WASTE LANDFILLS

County	Facility Name	Phone	Accepts Dead Livestock
Beckham	Elk City Municipal Landfill	(580) 225-3246	No
Beckham	Sayre Municipal Landfill	(580) 928-3420	No
Canadian	OEMA Landfill	(405) 483-5402	Yes
Carter	Southern Oklahoma Regional Disposal Landfill	(580) 226-1276	Yes
Comanche	City of Lawton Landfill	(580) 581-3468	Yes
Comanche	Ft. Sill Landfill	(580) 442-5241	Yes
Garfield	City of Enid Landfill	(580) 249-4917	Yes
Garvin	Pauls Valley Landfill	(405) 238-2012	Yes
Grady	Southern Plains Landfill	(405) 785-2060	Yes
Grady	Great Plains Landfill	(405) 818-0000	No
Jackson	City of Altus Landfill	(580) 477-0120	Yes ¹
Kay	Ponca City Landfill	(580) 767-0417	Yes ¹
Lincoln	Center Point Landfill	(405) 567-3806	Yes
McClain	Newcastle Landfill (Pinecrest)	(405) 343-2070	No
McCurtain	City of Broken Bow Landfill	(580) 584-9445	No
McCurtain	McCurtain County Landfill	(580) 286-5300	Yes
Major	Red Carpet Landfill	(580) 776-2255	Yes ^{1 2}
Muskogee	Muskogee Comm. Landfill & Rec. Center	(918) 682-7284	Yes
Noble	Northern Oklahoma Regional Disposal, Inc.	(580) 628-2445	Yes
Oklahoma	Oklahoma Landfill	(405) 745-3091	Yes ⁴
Oklahoma	SE Oklahoma City Landfill	(405) 672-7379	Yes
Oklahoma	East Oak Sanitary Landfill	(405) 427-1112	Yes
Okmulgee	Elliott Construction Co. Landfill	(918) 733-4558	Yes
Osage	American Environmental Landfill	(918) 245-7786	Yes
Osage	Osage Landfill	(918) 336-3159	Yes ⁴
Payne	Stillwater Landfill	(405) 343-2070	Yes
Pittsburg	City of McAlester Landfill	(918) 421-4967	No
Pittsburg	Pittsburg County Landfill	(918) 426-0985	Yes ¹
Pontotoc	City of Ada Municipal Landfill	(580) 436-1403	Yes ¹
Pottawatomie	Absolute Waste Solutions, Inc. Landfill	(405) 598-3893	Call to inquire ³
Pushmataha	Clinton Lewis Construction Co. Landfill	(580) 298-3729	No
Seminole	Sooner Land Management Landfill	(405) 257-6108	Yes
Sequoyah	Sallisaw Solid Waste Disposal Facility	(918) 775-4127	Yes
Tulsa	Quarry Landfill	(918) 439-7835	Yes
Woodward	NW Oklahoma Solid Waste Disposal Authority	(580) 256-3975	No

Some landfills require prior notification before delivery of dead livestock. It is recommended that you contact the facility before transporting any carcasses to the landfill.

Some landfills require documentation to be completed and signed concerning livestock's cause of death which could require a 24-hour time period.

¹ prefers low volume, 1 or 2 at a time

² less than 10

³ may accept, call to inquire before coming

⁴ may limit quantity

Landfill list taken from www.deq.state.us/lpdnew/SW/landfill.htm. Landfills contacted by ODAFF AEMS re: acceptance of dead livestock.

Revised 8/1/14

Exhibit 3-3: 40 C.F.R. § 261.7 Requirements for Residues of Hazardous Waste in Empty Containers

a)(1) Any hazardous waste remaining in either: an empty container; or an inner liner removed from an empty container, as defined in paragraph (b) of this section, is not subject to regulation under parts 261 through 268, 270, or 124 this chapter or to the notification requirements of section 3010 of RCRA.

(2) Any hazardous waste in either a container that is not empty or an inner liner removed from a container that is not empty, as defined in paragraph (b) of this section, is subject to regulation under parts 261 through 268, 270 and 124 of this chapter and to the notification requirements of section 3010 of RCRA.

(b)(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in §§261.31 or 261.33(e) of this chapter is empty if:

(i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating, and

(ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, or

(iii)(A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gallons in size; or

(B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 119 gallons in size.

(2) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

(3) A container or an inner liner removed from a container that has held an acute hazardous waste listed in §§261.31 or 261.33(e) is empty if:

(i) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(ii) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(iii) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

Chapter 4

Regulation of Air Quality Issues in Oklahoma

“Clean country air” is a phrase you may hear a lot, and to be sure, rural air quality is often far better than that of crowded metropolitan areas. However, even on our farms and ranches, activities take place that can trigger statutes and regulations designed to improve air quality.

4.1. Overview of federal and state air quality laws

Much like the Clean Water Act creates standards to protect the water quality standards associated with certain beneficial uses of waterbodies, the Clean Air Act (CAA) establishes air quality standards and protects those standards through a system of permits and other standards.

The Clean Air Act establishes National Ambient Air Quality Standards (NAAQS) for six “criteria pollutants:” sulfur dioxide, particulate matter, nitrogen oxide, carbon monoxide, ozone, and lead. “Primary NAAQS” are set for each of these pollutants to protect public health, and “secondary NAAQS” are set to protect public health. States are generally responsible for making sure they attain the NAAQS, and establish how they will do so through a State Implementation Plan (SIP).

While some elements of the CAA are necessarily implemented at the national level (for example, enforcement of standards for the design and operation of mobile sources, such as cars, trucks, and tractors), oversight of fixed sources of pollutants generally rests with states. In Oklahoma, the agency with primary authority for ensuring compliance with the CAA and for carrying out the SIP is ODEQ. With respect to farms and ranches, the ODEQ element that probably holds the most direct connection is its air permitting program.

4.2. Air permitting

ODEQ has been delegated the authority to carry out the CAA permitting program for Oklahoma. The ODEQ permitting program generally breaks air pollutant sources into four categories.

4.2.1. “De minimus” sources

The first category is “de minimus” sources – sources of air pollutants so small they do not have a significant impact on air quality. Under ODEQ regulations, the following types of agricultural activities are classified as de minimus:

- Lawn care
- Weed control
- Pest control
- Farming operations, except open burning (see 252:100-13) and volatile organic compound (“VOC”) storage (see Storage)
- Nursery/greenhouse operations
- Portable fertilizer plants with a maximum capacity of 1 ton/hour

4.2.2. Permit exempt sources

The next category is “permit exempt” sources. Permit exempt sources emit less than 40 tons per year (TPY) of any regulated air pollutant. “Regulated air pollutants” are included in Exhibit 4-1. To determine how many tons per year a source may emit, the “potential to emit” must be calculated. Potential to emit means “the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation.” In other words, if the source operated at its maximum capacity, 24 hours per day, 365 days a year (subject to any legally-enforceable operating restrictions), the amount of a given pollutant it would emit is considered its potential to emit.

To qualify as a permit exempt source, the source must meet the following conditions:

1. The facility must have actual emissions of less than 40 TPY of each regulated pollutant. Facilities should not add together emissions of individual pollutants before comparing emissions with the 40 TPY threshold; for example a facility with emissions of 30 TPY of nitrogen oxides and 12 TPY of sulfur dioxide is considered to be a 30 TPY facility, therefore eligible for “Permit Exempt” status;
2. The facility must not have potential emissions above major source thresholds: 100 TPY for criteria pollutants (nitrogen oxides, sulfur dioxide, volatile organic compounds, carbon monoxide, particulate matter, or lead), more than 10 TPY of any federally-defined “Hazardous Air Pollutant,” or a total of 25 TPY of Hazardous Air Pollutants;
3. The facility cannot be operated in conjunction with another source that is subject to having an Air Quality permit; and
4. The facility cannot be subject to an emission standard, equipment standard, or work practice standard of federal New Source Performance Standards (40 CFR Part 60) or National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61 or 63). The facility may be subject to reporting or recordkeeping standards of these regulations without being subject to emissions, equipment, or work practice standards.

As the name implies, permit exempt sources are not required to have construction permits or to pay emissions fees.

4.2.3. Minor sources

Minor sources occupy the gap between permit exempt sources and major sources (discussed below). This means that if a facility’s emissions are below the major source thresholds, but the facility does not fit one of the permit exempt categories, it must have a minor source permit. These permits fall into one of three categories: permit by rule, general permits, and individual permits. Additionally, “if a facility’s PTE exceeds major source thresholds but it is able to limit emissions to below those thresholds it may be eligible for a ‘synthetic minor’ permit.”

Agricultural operations with significant emissions sources such as large irrigation engines, large generators, or with processing operations may fall within the minor source category. If so, minor sources must apply for a construction permit and an operating permit, along with a requirement to pay emissions-based fees of \$25.12 per ton of emitted pollutant.

ODEQ regulations have special provisions for cotton gins, and “grain, feed or seed operations.” The pollutant of concern from such facilities, not surprisingly, is particulate matter – fine dust that may cause respiratory problems, particularly in sensitive individuals.

4.2.3.1. Cotton Gins

Cotton gins are required to have a permit. They are also required to keep records of the daily process weight and hours of operation and air emission control equipment replacement and repair costs. Gins are required to meet specified opacity limits (measuring particulate emissions by the amount of light blocked by the emissions) and to use specified control equipment (such as mesh screens for low pressure exhausts and cyclones for high pressure exhausts) and to maintain other controls for fugitive dust as appropriate given the location of the gin and the weather conditions. The

particulate emissions for a cotton gin must be calculated using approved EPA testing and modeling methods.

4.2.3.2. Grain, feed, or seed operations

The requirements for grain, feed, or seed operations largely mirror those for cotton gins, with minor differences. Permits are also required for these operations, and they must record the bushels of commodity received and loaded out, along with the hours of operations for each. Their visible emissions must be measured using approved EPA methods, but their particulate emissions can be determined from actual emissions data if available, as well as mass balance calculations or by using emission factors (the emissions factor used to calculate the particulate matter emissions for grain elevators is included as Exhibit 4-2). Grain, feed, or seed operations must take measures to control fugitive dust and must also meet opacity restrictions.

4.2.4. Major sources

Major sources are sources of air pollutants that emit more than 100 TPY of any criteria pollutant, and/or that emit 10 TPY of any one hazardous air pollutant (HAP) or 25 TPY of a combination of HAPs. Facilities subject to Prevention of Significant Deterioration requirement are also required to obtain major source permits. Very few agricultural pollutant sources will satisfy the major source thresholds – generally, only large manufacturing facilities processing agricultural commodities would reach the emissions thresholds for major source permitting.

4.3. Emissions from livestock facilities

When people think of air pollution, they usually envision clouds of smoke coming from a stack on a factory. They might even go so far as to think of the dust created by an industrial process, and might connect the types of operations above to that kind of emissions. Rarely, though, do people think of livestock when they think about air pollution, save for the fact that some people may think larger animal operations have a smell to them. Nevertheless, livestock operations can face some air emissions regulation as well.

First, as discussed in section 4.2.3. above, if the livestock operation has a grain, feed, or seed operation (for example, a feed mill or grain handling facility), that operation could be subject to the minor source permitting requirements discussed above.

Second, the status of air emissions from animal waste storage areas is subject to significant debate at this time. Under CERCLA (discussed in Chapter 3), releases of hazardous substances can trigger a requirement to report such emissions to local emergency management services and to the EPA National Response Center. The list of materials for which CERCLA reporting is required includes ammonia and hydrogen sulfide, two materials that can be released to the atmosphere from animal waste storage areas. At the same time, it is difficult to precisely determine the emissions from an open area such as an animal waste lagoon, and thus it was difficult to know if reportable quantities of ammonia, hydrogen sulfide, or any other reportable materials were occurring.

In January of 2005, EPA issued a consent order granting livestock operations immunity from any potential violations of the emissions reporting requirements in exchange for data from the operations that would aid in a National Air Emissions Monitoring Study to evaluate animal feeding operations emissions. In 2008, EPA issues a rule exempting farm from CERCLA emissions reporting, but a case was filed to review the farm exemption. As of this writing, EPA has agreed to a reconsideration of the rule, but no final rule has been issued.

It should also be noted that that animal facilities smaller than the CAFO thresholds are not subject to CERCLA release reporting requirements

4.4. Open burning and land management practices

Often, the process of clearing land of unwanted trees (such as efforts to control invasive tree species such as Eastern red-cedar) results in large brush piles that can provide almost as much of an obstruction as the trees originally did unless something can be done to dispose of the piles. Historically, open burning of these piles was a frequently-used method of eliminating such piles. However, such burning can not only pose potential fire hazards; it can also trigger significant amounts of smoke that can both pose a nuisance and a risk of violating air quality standards.

Open burning operations in Oklahoma are subject to the requirements of title 252, chapter 100, subchapter 13 of the Oklahoma Administrative Code. Generally, open burning is prohibited unless it falls with one of the specific permissible uses set forth in the subchapter. Relevant to agriculture, land management (such as prescribed burns), land clearing fires (burning of brush) are two permissible uses of such fire. Land clearing operations may be required to use an air-curtain incinerator in any area of the state that is in non-attainment of air quality standards, and/or in the Oklahoma City MSA (Canadian, Cleveland, Grady, Lincoln, Logan, McClain, and Oklahoma Counties) or the Tulsa MSA (Creek, Okmulgee, Osage, Pawnee, Rogers, Tulsa, and Wagoner Counties).

Even when open burning is allowed, it must meet the following requirements:

- No public nuisance is or will be created.
- The burning is controlled so that a visibility hazard is not created on any roadway, rail track or air field as a result of the air contaminants being emitted.
- The burning is conducted so that the contaminants do not adversely affect the ambient air quality of a city or town.
- The initial burning shall begin only between three hours after sunrise and three hours before sunset and additional fuel shall not be intentionally added to the fire at times outside these limits.
- An Ozone or PM Watch has not been declared for the day of the burn for the MSA or county in which the burn is to be performed.

APPENDIX P. REGULATED AIR POLLUTANTS (RAP)

REGULATED AIR POLLUTANT	DESCRIPTION
Acid gas expressed as SO ₂ and HCl	As defined in OAC 252:100-17.
Acid mist expressed as H ₂ SO ₄	As defined in 40 CFR 60.81 and OAC 252:100-31.
Arsenic, inorganic	NESHAP
Asbestos	NESHAP
Benzene	NESHAP
Beryllium	NESHAP
Cadmium	NSPS
Carbon Monoxide or CO	Criteria pollutant
Dioxins/furans	NSPS: Tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.
Fluorides	NSPS: Elemental fluorine and all fluoride compounds.
Hazardous Air Pollutants or HAP(s)	Listed in 42 U.S.C. 7412(b)(1) and as modified in 40 CFR Part 63, Subpart C, List of Hazardous Air Pollutants, Petitions Process, Lesser Quantity Designations, Source Category List.
Hydrogen chloride or HCl	NSPS
Hydrogen sulfide or H ₂ S	NSPS
Lead	Criteria pollutant
Mercury	NSPS and NESHAP
Nitrogen dioxide or NO ₂	Criteria pollutant
NonMethane Organic Compounds or NMOC expressed as hexane	As defined in 40 CFR 60.754.
Oxides of nitrogen or NO _x	NSPS: Ozone precursors
Oxides of sulfur or SO _x	NSPS: PM-2.5 precursors
Ozone	Criteria pollutant
Particulate Matter or PM	As defined in OAC 252:100. (criteria pollutant)
Reduced sulfur compounds	As defined in 40 CFR 60.101.
Reduced Sulfur, Total or TRS	As defined in OAC 252:100-31.
Sulfur dioxide or SO ₂	Criteria pollutant

Toxic Air Contaminates or TAC(s)	As listed in OAC 252:100, Appendix O.
Vinyl chloride	NESHAP
Volatile Organic Compounds or VOC(s)	As defined in OAC 252:100. (ozone precursors)

NOTES:

1. The Department does not have authority over Class I and II stratospheric ozone depleting substances or CFCs as listed under 40 CFR, Part 82. These substances are RAP, however, under the Federal Clean Air Act.

2. The Department does not have authority over Section 112(r) substances as listed in 40 CFR 68.130, Tables 1-4. These substances are, however, RAP under the Federal Clean Air Act.

3. The Department does not have the authority over radionuclides as listed in 40 CFR, Part 61. These substances are RAP, however, under the Federal Clean Air Act.

APPENDIX L.

**PM-10 EMISSION FACTORS FOR PERMIT BY RULE
FOR GRAIN ELEVATORS**

$$\left[\frac{R}{45} + \frac{S}{92} \right] \times 40 = \textit{Combined Emissions (TPY)}^*$$

Where, R = Annual Grain Received (millions of bushels)
 S = Annual Grain Shipped (millions of bushels)

*To qualify for Permit by Rule, the total annual combined emissions must be less than 40 TPY.

Chapter 5

Managing Pesticides in Oklahoma

Pesticides are an important tool for many agricultural operations, both for crops and for livestock. However, pesticides often contain potent chemicals that can be pollutants if not handled properly. This chapter covers the basics of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and provisions governing the handling of pesticides in Oklahoma.

5.1. Understanding FIFRA

FIFRA was originally passed in 1996 and most recently amended in 2012. The fundamental requirements of FIFRA are that all pesticides distributed or sold in the United States must be registered with EPA, that all pesticides used in the United States be labeled, and that all pesticides used in the United States are used according to label directions.

5.2. Pesticide labeling

The labelling requirement is meant to ensure that any user of a pesticide will have ready access to all the information needed to use the pesticide effectively while also minimizing the risk of harm to the user him- or herself, harm to others in the vicinity, or to the environment. The label must include the following:

- Name and address of the producer, registrant, or person for whom produced
- Restricted use statement (if required)
- Product name, brand or trademark
- Ingredient statement
- Signal word, including skull & crossbones, if either are required
- “Keep Out Of Reach Of Children” (KOOROC) statement
- Any mandatory statements appropriate to the pesticide. Mandatory statements relate to the actions that are necessary to ensure the proper use of the pesticide and to prevent the occurrence of unreasonable adverse effects on the environment, which is defined by statute.
- Advisory statements appropriate to the pesticide may be included, although they are not mandatory. Advisory statements provide information to the product user on such topics as product characteristics and how to maximize safety and efficacy while using the product.

5.3. Pesticide registration

Pesticide registration is a lengthy and detailed process by which EPA examines the ingredients used in a pesticide, the particular site or crop where it is to be used, the amount, frequency, and timing of its use, and the storage and disposal practices to be used with it. The registration process takes place in five phases:

1. The first phase is the listing of the active ingredients in the pesticide.
2. The second phase shall include the submission to the Administrator under subsection of notices by registrants respecting their intention to seek reregistration, identification by registrants of missing and inadequate data for such pesticides, and commitments by registrants to replace such

-
- missing or inadequate data within the applicable time period.
 3. The third phase shall include submission to the Administrator by registrants of the information required by the act regarding the active ingredients in the pesticide.
 4. The fourth phase shall include an independent, initial review by the Administrator of submissions under phases two and three, identification of outstanding data requirements, and the issuance, as necessary, of requests for additional data.
 5. The fifth phase shall include the review by the Administrator under subsection (g) of data submitted for reregistration and appropriate regulatory action by the Administrator.

5.4. Pesticide use

As mentioned above, one of the overarching requirements of FIFRA is that the pesticide be used according to label directions. Failure to do so by a commercial applicator can result in a civil penalty of up to \$5,000 per violation. Private applicators can be subject to civil penalties of up to \$1,000 per violation. Knowingly violating the Act can result in criminal penalties up to \$25,000 and one year of imprisonment for commercial applicators and \$1,000 and imprisonment up to 30 days for private applicators.

While you may be able to use non-restricted pesticides on your own property without the need for any state-issued approvals, any application of a restricted-use pesticide. Restricted use pesticides are not available for use by the general public but require certification as either a commercial applicator, a service technician, or a private applicator.

In Oklahoma, ODAFF is responsible for licensing commercial applicators, service technicians, and private applicators. Applicators must take a core exam covering all categories of pesticides and general knowledge applicable to pesticide application, and a category exam for the specific categories for which the applicator seeks certification. They must also pay the following license and examination fees:

- Commercial Business License: \$100 per category; not more than \$500 per year
- Noncommercial Business License: \$50 per category; not more than \$250 per year
- Examinations: \$50 (this includes initial certification (core test), categories, service technicians)
- Issuance or Renewal of Service Technician identification: \$20
- Issuance of duplicate licenses, certificates or transfer of a service technician identification: \$10
- Each recertification procedure (recertification by continuing education units or reciprocals: \$50
- Reciprocal certification (new applicants): \$100 per category
- Private Applicator License: \$20

5.5. Pesticide disposal

As mentioned in Chapter 3, unused pesticides may be classified as hazardous waste, but a farmer disposing of such pesticides may be exempt from hazardous waste regulation as follows: .

A farmer disposing of waste pesticides from his own use which are hazardous wastes is not required to comply with the standards in this part or other standards in 40 CFR parts 264, 265, 268, or 270 for those wastes provided he triple rinses each emptied pesticide container in accordance with §261.7(b)(3) and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.

Oklahoma State University also operates an Unwanted Pesticide Disposal Program that allows commercial applicators, non-commercial applicators, farmers, and pesticide dealers to bring unused pesticides for disposal by an approved hazardous waste handler. For more information on the Unwanted Pesticide Disposal Program, to <http://pested.okstate.edu/html/unwanted.html>.

Chapter 6

Environmental Management Systems

Sometimes, we may not think of our farms or ranches as businesses, but they are. Like all well run businesses, management systems may be needed to help us more productively (and hopefully, profitably) manage our farm or ranch enterprise. An environmental management system is one approach to help you effectively manage your operation's environmental issues.

6.1. What is an Environmental Management System?

An environmental management system is a framework used for managing environmental issues in a continuing cycle of “plan, do, check, act.” In other words, it is a process wherein you continuously interact with the environmental elements of your farm or ranch. The International Organization for Standardization has developed a standard – ISO Standard 14001 – for continuous process improvement that can be applied to environmental issues. EPA suggests the following as way to use the ISO standard for environmental management:

1. **Commitment and policy:** you, as the manager, commit to environmental improvement and set an environmental policy for your business.
2. **Planning:** An organization first identifies environmental aspects of its operations. Environmental aspects are those items, such as air pollutants or hazardous waste that can have negative impacts on people and/or the environment. An organization then determines which aspects are significant by choosing criteria considered most important by the organization. For example, an organization may choose worker health and safety, environmental compliance, and cost as its criteria. Once significant environmental aspects are determined, an organization sets objectives and targets. An objective is an overall environmental goal (e.g., minimize use of chemical X). A target is a detailed, quantified requirement that arises from the objectives (e.g., reduce use of chemical X by 25% by Date Y). The final part of the planning stage is devising an action plan for meeting the targets. This includes designating responsibilities, establishing a schedule, and outlining clearly defined steps to meet the targets.
3. **Implementation:** Follow through with your environmental plan, with an emphasis on training your employees on how to do so, and incentivizing them to commit to the plan.
4. **Evaluation:** Look back on how the implementation of the plan did, or didn't, further your environmental goals, and make adjustments accordingly.
5. **Review:** Management reviews the results of the evaluation and see if the EMS is accomplishing its goals. The EMS as a whole is adjusted as needed, and the whole process starts over again.

6.2. Creating your environmental compliance plan

Since it is such a broad framework, EMS can be used on almost any farm operation, and can be an important part of your environmental compliance plan. How can EMS and your environmental compliance plan work together?

6.2.1 Conduct an Environmental Baseline Study

First, conduct an environmental baseline study (EBS) for your farm or ranch. It may sound sophisticated, but it can actually be fairly simple, and can help you establish “where you are” from an environmental standpoint as a means of helping you figure out “where you want to be.”

6.2.1.1. Gathering information already known about the area

You can search the records of several state agencies such as the Oklahoma Corporation Commission (OCC), the Oklahoma Department of Environmental Quality (DEQ), the Oklahoma Water Resources Board (OWRB), and federal agencies such as the Natural Resources Conservation Service (NRCS) and Farm Service Agency (FSA) to get historical records regarding your land such as the history of oil and gas wells or other mining and industrial activities on your property, historical crop yields, water well locations, and surface water resources. Further, your own farm records may be important. Records of land use, crop yields, and other information can also help establish the baseline for your property.

6.2.1.2. Examine neighboring properties for potential impact sources

If mining and industrial activities are taking place on neighboring properties, those pre-existing activities may have an impact on your property. Documenting such impacts will be necessary to differentiate the impacts from those activities relative to the impacts on your own property.

6.2.1.3. Examine current and past aerial images to look at changes in the property

Aerial imagery is available from a number of sources. Historical aerial imagery from your property going back many years may be available from your local FSA office. Google Earth and other online tools also offer the ability to look at imagery of your property at different points in time. Understanding how your property has changed over time is important as it may help you determine what trends have already been taking place on your land, and how those trends might be changed by your environmental management.

6.2.1.4. Inspect the property and collect samples

In addition to all the steps listed above, you need to compile as much information as possible about the current condition of your property. Current aerial imagery (which now can be accomplished by accessing satellite imagery, manned photographic flights, or even unmanned aerial systems [UAS or “drones”]) as well as land-based photography of areas likely to be impacted by changes in your environmental management practices can serve as critical “before” pictures to be contrasted with “after” pictures.

Soil, water, and vegetation sampling in the area may be a good idea. Depending on the parameters to be measured, you may wish to send samples to the Soil, Water, and Forage Analytical Laboratory (SWFAL) or to the DEQ State Environmental Laboratory Services Division.

6.2.1.5. Address any current environmental issues

Your baseline work may reveal environmental issues already present on your property. If so, your baseline work may have already paid off by allowing you to handle the matter quickly!

6.2.2. Inventory applicable environmental programs

Use this Handbook as a starting point to take an environmental inventory of your farm or ranch. Take into account all of the operations you conduct on the farm or ranch, and use the Handbook to help identify environmental programs applicable to your operations.

6.2.3. Develop your environmental policy

Environmental stewardship is more critical than ever in agriculture, and setting an environmental policy communicates your commitment to improved environmental performance not only to your employees, but to your community and customers as well.

When setting your environmental policy, remember to move from the strategic to tactical. Define a vision: if you have

done everything you hope to do, what will your operation look like from an environmental standpoint? Next, define a mission statement: what are the things you will continuously do to eventually achieve the vision? Finally, set specific, clear tactical goals – things you will do today, this week, this month, and this year to achieve the mission.

6.2.4. Implement your EMS and compliance plan.

You now have all the pieces you need to implement your EMS and compliance plan! Don't forget the actual implementation of the plan. Many people devote significant effort to their planning process, but then the plan gathers dust on the shelf. It takes a commitment not only in words, but in deeds, on the part of management to convince other organizational stakeholders to buy into a change as significant as implementing an EMS and compliance plan.

6.3. Conclusions

Environmental compliance is more important than ever in agriculture. Taking a piecemeal approach to environmental issues can create gaps that at best lower the efficiency and productivity of your farm or ranch operation, and at worst can result in costly or, even worse, environmentally harmful breakdowns. On the other hand, a comprehensive approach through EMS and a solid environmental compliance plan can pay dividends for your operation and help you pass a legacy of stewardship and healthy resources to the next generation.

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