

The Lease Pumper's Handbook

Chapter 2 Transportation, Communications, and Lease Maintenance

Section C

GENERAL LEASE MAINTENANCE

Previous sections have discussed the relationship between the lease pumper and the lease owner, as well as the influence of regulatory agencies. Another important player in lease operations is the owner of the land on which the wells are situated. This section focuses on maintaining a good relationship with the landowner and the role of good lease maintenance in that relationship.

C-1. Landowner and Lease Operator Rights.

Under United States laws, **surface rights** and **mineral rights** are recognized as separate property and can both be owned by the same individual, owned by different individuals, or owned jointly by many individuals or companies. During the early years of our country's history, mineral rights were generally sold with the land. As minerals of value were discovered, the government began retaining mineral rights and withdrawing them from future sales. Now it is quite common for the surface rights to have one owner while the mineral rights belong to other individuals, state governments, the federal government, foundations, Indian nations, counties, cities, banks, land grant universities, or some other owner. They may even be owned by an entity in another country.

The surface rights may also be owned by the state, the federal government, an Indian

nation, others, or a combination of these. The owner of the surface rights or the **landowner** has the right to use the surface of the land. The landowner also has the right to fence the land, control the use of the surface, and control access to the property. In some cases, the persons residing on the land may not own it but may be lease tenants. The surface rights of some government-owned land are leased under long-term agreements. Often families have lived on land under this type of lease agreement for several generations and have much of their wealth invested in land improvements. When the mineral rights are leased, the landowner or lessee will receive payment for any damages caused by exploration for minerals.

The mineral rights owner or lessee has the right to search for minerals under most of the land. Before the first well is drilled, the owner or lessee of the mineral rights must reach an agreement with the surface rights owner, generally involving payment of a sum of money to compensate for the use of a part of the land. This includes not only the areas on which wells and equipment are located but also land for access roads. This agreement is usually in force for as long as the wells are being produced. As additional wells are drilled, additional fees will be paid for damage to the land and for the loss of income from land involved. When the hydrocarbons have been depleted and the last well has been plugged and abandoned,

the lease to enter the property and the right to use the existing roads and locations usually expires. The land reverts back to the land surface owner, and the lease operator must withdraw from using these facilities in compliance with the original and subsequent land use agreements.

A landowner who does not own any of the mineral rights and who will not receive any further compensation for the loss of the land may not feel too friendly toward the lease operator. The landowner may prefer to maintain privacy and may feel invaded. For this reason, the lease pumper, as the lease operator's representative, must try to maintain good relations with the landowner.

C-2. Off-Road Travel.

Mineral lease agreements specify the type and location of road construction, the widths of the roads, and locations of wells, tank batteries, and pits. If a mud hole develops in a low area of the access road, the lease pumper may be tempted to drive around it. As this bypass grows muddy, the pumper and other lease visitors drive even farther off the road to avoid the water and mud, making the roadway even wider. Instead of trying to solve the problem by bringing in a load of small rock and fill to repair the road damage, the lease pumper has exceeded the width of the leased road width by many feet and is driving on private property. Other damage that can occur as a result of such right-of-way violations include dead grass, soil erosion, and collisions with equipment or livestock. Often the first indication that the surface rights owner does not approve of the lease pumper's practices is a bill to the lease operator for damages.

The landowner may go directly to the lease operator or hire a lawyer to seek compensation for damages. Some

landowners take direct action by changing the lock on the gate or forbidding the lease pumper entry to the property. In some cases, the damage may have been caused by a third party, such as a well service crew, but the landowner will still generally consider the problem to be the lease operator's fault.

Regardless of the property damage, real or imaginary, caused or not caused by the pumper, serious problems can begin when the lease pumper or anyone working for the oil operator drives off the leased roads or locations. The lease pumper is a representative of the lease operator, and the landowner will hold the lease operator accountable for damages. The pumper should always try to get along with the landowner, take pride in maintaining the vista of the land adjacent to the leased roads, and not drive off the agreed-to routes. When it is necessary to get off the roadway to examine nearby installations, the lease pumper should use common sense and walk if damage or problems may result from driving, or if the landowner might object. Any trash or other objects that have blown off lease-related vehicles should be picked up the first time that it is noticed and not allowed to accumulate. Trash barrels should be available at convenient locations and emptied on a regular schedule.

When possible, the landowner should be cultivated as a friend. Some landowners and lease pumpers become such close friends that the operator is allowed a lot of latitude. Then if a situation arises that the landowner considers to be a problem, the chances are greater that the landowner will talk to the lease pumper rather than get angry.

C-3. Livestock Injuries.

Many leases are located in ranching and farming country where livestock roams

freely across the leases and access roads. As the lease pumpers drive around performing their daily duties, livestock is encountered regularly. Livestock may develop the habit of seeking shade close to lease equipment if the area is not fenced (Figure 1). The lease operator must install adequate fencing to keep these animals from accidentally damaging delicate and automatic equipment. Calves, goats, or sheep may lie down in the shade cast by the counterweights of a pumping unit next to the counterweight guards. While lying down, the animals are only a few inches high and low enough to work themselves under some fences. Then, when they stand up, they are inside the fence next to the counterweights. If the pumping unit starts automatically, the young animal may panic and injure itself on the fence or equipment. This is a problem for the animal, the lease pumper, and the rancher that could have been avoided with proper fencing.



Figure 1. Cattle like to stand in the shade of oil field equipment.

Guards are added to equipment to protect against injury to people, not animals. A 1200-pound bull may decide to scratch his itching hide against a small valve sticking out on a header. Doing so, the bull can turn valves on or off, break delicate lines and valves, disconnect electrical grounding lines,

turn a pumping unit on or off, change a variable choke setting, and create a host of other odd and unexpected surprises. The lease pumper may need to add close meshed wire around some units to protect animals and to protect the equipment (Figure 2).



Figure 2. Fences may have to be installed around equipment to keep livestock out.

The lease pumper must recognize the landowner's right to run livestock on the property and willingly accept responsibility for protecting them from being injured by the actions of oilfield equipment or fluids that they may eat, lick, or drink.

Care must be taken when driving through livestock herds. When a herd of cattle who are used to being fed supplement feed are first placed on the lease, they may pursue the lease pumper diligently for a few days expecting food. At every stop that first day, the lease pumper will be surrounded by cattle that expect to be fed.

The responsibility of the lease operator for injuring cattle will vary depending upon the type of other vehicle traffic on the lease. If the road is an unfenced public roadway, the lease operator cannot be held accountable for animals injured by other drivers. If, however, the lease is on private land behind locked gates with an absence of traffic, the killing of a domestic animal by the lease

pumper or a servicing company vehicle is more obvious. Landowners usually recognize that animals are sometimes injured or die from other causes, but the operator needs to acknowledge and pay damages when the accident occurs as a result of the lease pumper's activities or equipment movement. At the same time, when the lease pumper notices a sick or injured animal, the owner will usually appreciate being notified. This will help to promote good relations with the landowner.

C-4. Plants and Animals.

The lease pumper will come into contact almost daily with plants, birds, and animals that are on the lease. The plants may be native or planted by the landowner as a cash crop or to improve the vista and appearance of the land. Wild birds and animals are regulated and protected by the state fish and game department and, in some cases, by federal regulation. The landowner may also consider wildlife to be part of the property and exercise some degree of care for them.

It is not possible to pump a lease without coming into contact with wildlife. Birds are going to nest on the oilfield equipment, and wild animals will seek shelter under the equipment. The lease pumper and the lease operator do not have the absolute right to try to control wild animals on the lease. Some truckers have a policy that if a threatened or endangered species of wild bird is nesting on the equipment, they will wait until the young birds have hatched and left the nest before the equipment will be hauled.

The lease pumper should talk to the landowner when experiencing problems that are caused by plants or domestic or wild animals and, if necessary, to the fish and game department before taking actions that may compound the problems.

C-5. Lease Maintenance.

General lease maintenance is the least liked part of the job for many lease pumpers, who may feel that they were hired to produce oil wells. But a lease can occupy a lot of country. While some steam recovery wells in tar sand areas may be drilled with one-per-acre spacing and shallow wells may, with permits, be drilled on each 10 acres of land, the more common spacing for shallow wells is one per 20 acres and for medium depth wells one per 40 acres. This means that 16 wells can be drilled on each square mile, placing wells about 1,320 feet or a quarter of a mile apart and about 660 feet from the nearest property line for their closest spacing. Most fields do not exhibit this density. Thus, most wells are going to be more than a quarter of a mile apart. So a lease pumper who takes care of several wells is likely to be working a large area of land.

The lease pumper and the lease company will generally have responsibility for maintaining several aspects of the large area covered by the lease, including:

- Roads.
- Cattle guards and gates.
- Fences.
- Vista of the lease.
- Weed control.
- Trash removal
- Open pits and vents.
- Lease offices and stored equipment.
- Soil contamination caused by spills.

Road maintenance. Roads are expensive to build and maintain. As a result, unless the wells are high producers, little money is available for road repairs. Pot holes develop, rainy seasons may cause water and mud on the roadway, and rocks seem to grow larger daily and work to the surface.

A good lease pumper will spend a small amount of time periodically performing miscellaneous road services, such as moving larger rocks to the edge of the roadway. An occasional small load of gravel in mud holes will usually help to keep them from growing larger. Sections of road where these types of problems develop are generally short, so effort is required to prevent small problems from becoming big ones.

Cattle guards and gates. Once a producing well has been established on a site, the need for daily access by the lease pumper begins. To allow vehicles to pass through the fences that are likely to surround the lease, the company will probably install a fence or a cattle guard and will be responsible for maintaining them. Sometimes a cattle guard is preferable so that the lease pumper will not have to stop and get out of the vehicle twice just to open and close gates.

When the cattle guard or gate is installed, the first safety consideration is the distance from the highway to the cattle guard. This distance must be great enough to permit a well servicing unit or the longest truck and trailer transport to stop completely off the public road or highway before crossing the cattle guard or opening a gate. If the truck cannot get completely off the road before the driver gets out to open a gate or security bar, an accident may be caused by the truck blocking the road.

Access roads are often built at the lease operator's expense and maintained by the lease operator, unless a joint responsibility agreement has been reached. Although the landowner may find it convenient to occasionally use the road, it may be the lease operator's complete responsibility to maintain the cattle guard or gate. Cattle guards must periodically be cleaned out and sometimes re-leveled if they become hazards

to drive across. If the well is closed and abandoned, the lease operator will usually remove the cattle guard and replace the section of fence, or install a gate if the roads are to remain.

Figure 3 illustrates a poor cattle guard installation. Note that the guard has become filled with dirt, allowing animals to walk across it, and that the ends do not have expanded wire across them from the center post to the outside. Small animals and calves can enter at the ends.



Figure 3. A poorly maintained cattle guard.

Fences. The perimeter fences on a lease are usually owned by the landowner and are of little or no concern to the lease operator. As the lease operator drills wells and produces oil, there will be many occasions where fences need to be constructed. The maintenance of these fences is usually the responsibility of the lease pumper.

Some of these fences are to protect oilfield workers, plants, domestic animals, and wildlife. In populated or heavily traveled areas, these fences are to protect children and to keep people away from automatic

equipment and other facilities. Gates into the protective enclosures should be padlocked.

The quality of the fence that is built will depend greatly on what type of service it is supposed to provide, and if it is to remain for only a few days or for a long term. The types and sizes of animals to be excluded will govern the fence design, including the type of fencing material (such as square mesh wire, chicken fencing, or barbed wire), the height of the fence or number of strands of wire fencing, the spacing of the fence from the ground, and the type and placement of fence posts.

Some fences are only temporary and may be in use for just a few weeks. The fence in Figure 4 fits this category. The posts are not set very deep, the wire is stretched loosely, and it was probably built by one person. As the three strands were attached (starting with the lower strand and working upward), each strand wrapped around the post as the strand was completed so that the remainder of that coil of wire was not cut but just hung over the post.



Figure 4. Temporary fence.

When the wire is removed, each coil is returned to its original loop, and the roll remains in one piece. Since this wire is reserved for temporary fences, the company

does not end up with a bundle of many short sections of wire. This is an excellent procedure to follow in temporary situations. If the fence must keep out sheep, goats, or calves, more strands can be added to the lower section of the fence.

When wells, tank batteries, or other facilities must be installed in towns or along well-traveled highways, the fencing must be much more secure, and cyclone fencing is generally used. The height of the fence and the trim or barbed wire requirements are adjusted according to need. In the photograph in Figure 5, the fence would be too low for in-town installations where children may be playing and no barbed wire would be installed on the top.



Figure 5. A security fence has been installed around this pumping unit because the well is near a busy highway.

Vista of lease. The vista of the lease refers to the general appearance of the equipment and everything on the lease including pipe racks, idle equipment, junk, and scrap materials. As a regular habit, everything should be arranged neatly. Pipe racks should be arranged in order. Every joint of pipe should be aligned straight on the rack with similar amounts of overhang on each end and be collared and racked neatly. Available stripping materials to separate

layers of pipe should be in neat stacks aligned with the racks. Stored equipment should be in aligned rows and chemical barrels organized in rows. Permanent lines should be in 90-degree grid line arrangements when entering the tank battery and should look neat.

Operating along organized patterns becomes a way of life and should always be followed in every instance possible. Materials are moved on a regular basis on the lease, and every contractor performing specialized services on the lease will follow company procedures. If the lease pumper keeps everything neat and aligned, other workers will keep materials neat and aligned. If the site becomes unorganized and jumbled, that is the way other will place supplies and equipment from the time they unload it. Well organized stored equipment is never an unexpected benefit. It is the result of operating with well organized policies and procedures.

Weeds. Weeds and vegetation should be kept clear of equipment and stored materials. Excessive vegetation is not only unsightly, but it can be a fire hazard, accumulate trash, increase rust and corrosion of metal, provide a haven for snakes and other animals, and cover up holes and other hazards. The lease pumper should ensure that excessive vegetation is cleared or trimmed back.

Trash removal. Trash should not accumulate on the lease. No lease agreement with a landowner gives the lease pumper or anyone entering the lease to service the wells the right to scatter trash, bottles, and cans along the right-of-way. With private lease roads, the lease operator's responsibility is to remove trash immediately and keep the roadway clean. The best procedure is to stop and pick up

any trash instantly, every time that it is seen. In this way, trash never begins to accumulate. The lease pumper should be able to drive over the lease and never see a can, piece of plastic, or other trash lying on or beside the roads.

Open pits and vents. Open pits are commonly used in the oil fields. Open pits invite local and migratory birds to land on or beside the ponds and get a drink. Because of dams and the lowering of water tables by pumps, water is no longer as widely available across the bird migratory flyways. The number of deaths of animals and birds due to oil and non-potable water is staggering.

Similarly, open vents present attractive nesting and roosting spots for birds, bats, squirrels, and other animals.

The petroleum industry and the lease pumper must comply with open pit and vent regulations. The petroleum industry is doing an outstanding job in meeting these necessary regulations and has done much to protect wildlife.

Pits at the well must be fenced to protect against the possibility of people or animals falling into them. If the pit contains any fluids, the lease pumper may also be required to put protective netting over the top.

Pits at the tank battery are considered permanent installations. The fences are put in with more care. The pit lining is of high quality; the cover netting is carefully planned.

The number of species that have been thoughtlessly wiped out of existence since the industrial revolution is startling. Within our children's lifetime hundreds of major animals and birds will be lost forever. Careful maintenance practices can help stem the tide of this tragedy.

Lease Offices. Lease offices are generally referred to as *dog houses*. Lease offices are usually small—such as 8 feet wide and 12 feet long—one-room buildings that provide a little room for desk work and storage. For some large leases, the building may be much larger or smaller and house several daytime pumpers, each with individual desks. These facilities may have an attached materials storage room with a truck unloading door at the back. The office may even stock a few often-used fittings.

A common practice is to run a gas line from the battery to heat the building. Natural gas in pure form is colorless and odorless. Thus, a leak in the gas line can present a danger, as can carbon monoxide. If the heater is not properly vented.

Thus, lease buildings must be maintained for good appearance and safety.

Soil contamination. The chemicals, petroleum production, salt water, and other substances that the lease pumper handles on the site can cause damage to the environment. Spills of these materials may present hazards to people, livestock, and wildlife and, as runoff from rain, to fish. Such substances can kill grass and other vegetation and may keep anything from growing in the spot for many years.

If the lease pumper spills such materials or finds a leak involving such materials, every effort must be made to clean it up. Sometimes this can be accomplished by the lease pumper by following product label instructions, which may indicate that soil should be mixed with the spill, that water should be used to dilute it, that a chemical neutralizer should be applied, or that other action should be taken. In some instances, a special cleanup crew will have to be called in.

Further, depending on the substance and the amount involved as well as what becomes contaminated (such as soil versus a waterway), the spill may have to be reported to a regulatory agency.

Obviously, there are many areas of responsibility in maintaining a lease. Of extreme importance is building a good relationship with the landowner and others who may be affected by lease operations. In this way, the work of maintaining the lease is more likely to be a shared responsibility and any problems that develop may be worked out agreeably.