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## Deducting Residual (Excess) Soil Fertility – Does the Concept Apply to Pasture/Rangeland?

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### Overview

When farmland is purchased, depreciation can be claimed on depreciable assets associated with the farmland starting with the first tax year in which possession of the land is taken. The amount claimed is tied to the portion of the total cost of the farmland that can be allocated to any depreciable asset, such as fencing, field drainage tile, grain storage facilities, farm buildings, and irrigation equipment, just to name a few of the more common depreciable items.

In certain parts of the Midwest, above average soil fertility is also eligible for expense deductions. The concept is known as "residual soil fertility" and it can be available to farmland buyers that didn't farm the acquired property within the immediately prior crop year.

Deductions associated with residual soil fertility, that's the topic of today's post.

### The Deduction

[IRC §180](#) allows a taxpayer engaged in the trade or business of farming to annually elect (by deducting the expense on the return) the cost of fertilizer, lime, potash, or other materials which enrich, neutralize or condition land used in farming. If these fertilization costs are not expensed, they are required to be capitalized with expense deductions being amortized over a presumed useful life (similar to field drainage tile and/or fencing). This means that residual soil fertility is a capital asset in the hands of an operating farmer, crop-share landlord or cash rent landlord when farmland is acquired, with the cost amortized over the useful life of the asset. That useful life is typically three to four years. The general 15-year amortization rules don't apply. Instead, the IRS position is that fertilizer costs should be amortized based on the percentage of use or benefit each year. That likely means that straight-line amortization probably does not apply. An agronomist or other soil scientist may be able to provide sufficient information so that the property annual expense allocation can be determined.

**Note:** Usually about 60 percent is deducted in the first year, 30 percent in the second year and the last 10 percent in the third year.

For farmland inherited from a decedent, the date of the decedent's death is the measurement date for determining whether residual soil fertility exists. If it does, the cost can be amortized by the decedent's estate and/or the beneficiaries of the estate that receive the farmland.

In 1995, the IRS published a Market Segment Specialization Program (MSSP) addressing residual soil fertility. In the MSSP, the IRS notes that a deduction for residual fertilizer supply will be denied unless the taxpayer can establish (1) beneficial ownership of the residual fertilizer supply; (2) the presence and extent of the residual fertilizer; and (3) that the residual fertilizer supply is actually being exhausted. In addition, the MSSP instructs IRS examining agents to make sure that the values assigned to depreciable farm assets is reasonable.

## Allocation

The actual deduction might be less than the agronomist's value of the excess amount. If the land's value combined with the value of the excess fertility exceed the purchase price of the land, an allocation must be done for each one based on their respective fair market values. For example, assume that farmland is purchased for \$8,000/acre. An agronomist pegs the excess fertility at \$4,000/acre. Comparable land in the area without excess fertility sells for \$7,000/acre. When the \$4,000/acre for excess fertility is added to the land value without excess fertility, the total is \$11,000. Thus, the land is 63.6 percent of the total value, and the excess fertility is 36.4 percent. The purchase price was \$8,000/acre. 36.4 percent of that amount is \$2,912/acre. That will be the amount that IRS will accept as the deduction for excess fertilizer supply – not the \$4,000/acre that the agronomist determined.

## Procedure

So, how can a taxpayer establish the presence and extent of residual fertilizer supply and that it is actually being exhausted? For starters, if farmland has an actual excess soil fertility base it will normally bring a price premium upon sale. That's the same rationale that applies when farmland with good fences, field drainage tile and grain storage facilities is purchased – a price premium applies to factor in the existence of those assets. As for residual fertilizer supply, the excess amount can be measured by grid sampling. A buyer can anticipate that grid sampling will cost of approximately \$4-\$8 per acre. Agronomists and agricultural soil testing labs follow certain guidelines and procedures that they use to determine average (base) soil fertility for various soil types. Once grid soil samples are obtained, the fertility levels of those samples are compared to the base fertility guideline levels for particular soil types to establish the amount of "excess" fertility on a tract of acquired farm real estate.

The key is to obtain data for the established base soil fertility for the type of soil on the purchased farmland from comparable tracts and comparable soil types. By establishing the base soil fertility, the actual sampling on the purchased property will reveal whether excess residual fertilizer is present. That soil sampling should occur on or before the buyer takes possession of the farmland. For farmland that is inherited, the sampling should occur before the buyer applies any new fertilization.

## Documentation

While the IRS does not require it, perhaps the best way to document the deduction for excess soil fertility is to provide for the allocation of value to the amount of above average soil fertility in the purchase contract for the farmland. In addition, a written summary of how the computation was made and the time period over which it would deplete due to crop production should be obtained from the agronomist or other expert involved. This will be beneficial for establishing the proper amortization period for the excess soil fertility and will provide substantiation of the deduction upon any subsequent IRS (or state) audit. Depending on the soil type involved, the deduction could range from \$50 per acre to over \$700 per acre – perhaps exceeding 10 percent of the land's value.

## Recapture

If a deduction for excess fertilizer supply is claimed and the land is later sold, the amount of the selling price attributable to the excess fertility will be recaptured as ordinary income. It does not qualify for capital gain treatment. Any remaining gain will be taxed at capital gain rates. Of course, if the taxpayer continues to own the land until death recapture is avoided.

## Application to Pasture/Rangeland?

In recent months, I have been asked by numerous tax professionals about the assertion in certain marketing materials of private agronomic firms asserting that the IRC §180 deduction can provide a substantial tax deduction for residual fertilizer supply on pasture and/or rangeland. In the meantime, I have conducted further research and discussed the matter with soil scientists and rangeland management specialists. The following is what I have gleaned from those conversations.

The starting point on this particular question is to note that the IRS has not specifically addressed the application of IRC §180 to pasture or rangeland. Indeed, the only IRS guidance on the excess soil fertility issue is the 1991 TAM and the MSSP referred to above. But, IRC §180 does indicate that "land used in farming" for purposes of the provision includes "land used...for the sustenance of livestock." So, in theory, the same concepts that apply to cropland apply to land used for grazing. However, the makeup and value of the minerals differs. With pasture and rangeland the value of potassium and phosphorous contained in the soil is much less than the value of the same minerals in soil used to raise row crops. The value per unit is simply not the same such that the owner of the grazing land would simply not apply fertilizer (especially at the current high prices) to enhance the land's value – the economics disincentivize such activity.

**Native pasture.** The nutrient balance on a native pasture is very tight and there is no "excess" nutrient in a native pasture system. These systems are rarely if ever fertilized with commercial fertilizer or external manure applications, with the exception being (perhaps) for a native field that is hayed. Nitrogen can increase production and allow increased stocking rates, but is simply not profitable to do so. Native hay meadows are sometimes fertilized with 30-40# nitrogen and 10# phosphorous. Fertilizing native grass usually increases any cool-season grasses in the stand (e.g., Kentucky bluegrass and annual bromes) and increases broadleaves. Prescribed burning in the late spring is then recommended to set those unwanted species back the next year.

Native rangeland is very efficient as using N and gets nitrogen from lightning/rainfall and non-symbiotic fixation (e.g. Clostridium and Azotobacter). There may be some symbiotic N fixation by native legumes. The year after a drought, biomass on rangeland may increase because of unused N in the soil, if rainfall is normal or above. This increase in production not only relies on moisture, but on how the pasture was managed during the year of drought.

**Marketing material.** The marketing material of the agronomic firms that I have seen that are in the business of measuring soil fertility makes a broad statement that IRC §180 applies to grazing land. While true on its face, pasture grass is not the same as cropland when it comes to nutrients. While the concept applies equally, the application does not. Given that rangeland has a lower per acre fair market value than does cropland and the excess soil fertility (even if it is present and can be measured) would be less than what is present on cropland, any associated IRC §180 deduction would likely be insufficient to justify the work to claim the deduction – and it is a deduction and not as valuable to the taxpayer as a credit.

The marketing material also states in numerous places that the firm asserting the deduction can apply to grazing land is not making any "recommendations, representations, or guarantees regarding the income tax implications" and that it is "...NOT intending to provide the Client with legal, tax or accounting advice." The marketing material also states that the company makes "no express or implied warranties of any kind...regarding...[the] business deduction that can be claimed by Client...". Clearly these firms are not standing behind their analysis

when it comes to claiming a deduction based on their reports. Thus, a buyer of land that does so thinking that a substantial tax deduction may be forthcoming may have no recourse against these firms if the IRS disagrees. But, the buyer would know the nutrient content of the soil. That is worth something to the buyer, but not likely much (if any) of a tax deduction.

## Conclusion

When farmland is acquired, an allocation of value can be made to depreciable items. In certain parts of the country, a depreciable item might be residual fertilizer supply. If it can be established with appropriate data, a tax benefit is available. It's important, however, to follow the IRS guidelines. As applied to grazing land, however, the deduction is quite likely to be so small as to not justify the cost of the soil sampling and the associated tax work to claim the deduction.

Also, in some states, following the IRS guidance on deducting excess soil fertility may not be good enough.

## Sources

[IRS Pub. 225](#)  Chapter 4

*Tech. Adv. Memo. 9211007 (Dec. 3, 1991)*

*IRS MSSP, Guideline on Grain Farmers (Training 3149-133, Jul. 1995)*

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