The Folate Cycle—This is the "***Organic Farming Region***" where everything is homegrown. This Region grows "organic" work tags (Methyl groups) and is instrumental in the front-line production of new RNA and DNA. Still, this plantation is a bit old fashioned, employing a *chain gang* (Homocysteine) to help them get the work done. Though rarely considered in everyday life, RNA & DNA are essential to making you unique, as well as directing health and longevity. Despite this, there must be balance between available work tags and crafting new genetic code. However, genetic typos also play a role. For example, The *Dead End* (SHMT) often traps work orders sent on from the *Little Motherflipper* (MTHFR C 677T). This results in lost work tags for the community since those normally passing through to SAM's, by way of the *Long Route* (MTR/MTRR), have been permanently detained. This layover increases the risk of losing control over the chain gang, as they cannot be processed (via AHCY) to work. Normally, The Little Motherflippers (3 & C677T) should convert folate into its' active form to regulate homocysteine (HCY) and allow for sufficient work tags. The SHMT should complete this process so that the chain gang can travel on via *the long Route,* obtaining work passes within the AHCY, and eventually performing jobs throughout the community.

Homocysteine can be likened to a "***chain gang,***" or group of prisoners, which are shackled together and diligently working under the direction of the farm boss (C677T). Much like HCY, the chain gang is beneficial in that it provides necessary, low cost labor yet if not closely supervised, they are both potentially dangerous. You can imagine the trouble a chain gang might instigate if allowed to roam free throughout the community. Likewise, when allowed to run amok, HCY can wreak havoc, triggering extensive inflammation throughout the heart, brain, and blood vessels. And, while there are many areas that impact this region further, the following can cause serious disruptions:

1. Defects within the Little Motherflipper prevent appropriate use of folate and higher HCY levels.
2. SHMT defects trap work tags (methyl groups), depriving the entire population.
3. Toxins & heavy metals such as aluminum, lead, & mercury or defects within the *long way home* (MTR/MTRR), typically lead to low B-12 levels & fewer work tags in SAM's Corp (less methionine).
4. Defects within the long route influence the available B-12 even while an intact VDR consumes more precious resources (methyl B-12).
5. CBS up-regulations drain the cycle of invaluable work tags & provide an escape route for HCY. Nutrients & toxins are then converted to ammonia and sulfites, further taxing the community.
6. AHCY activates the chain gang (HCY) for work so that defects here will actually help offset the Little Motherflipper (C677T) and mask a CBS defect.
7. Problems within the short cut (BHMT) aggravate the CBS/NOS as well as any farming issues, as this is the last exit through which work tags are made. This leads to fewer work tags and higher HCY levels.

Although the VDR is not specifically a part of the Organic Farm, it uses Methyl B-12 supplied by the *Long Route* in order to support the bones, brain, and nerves. For those familiar with Dr. Pfeiffer's work regarding over and under-methylators, aside from the COMT (see BH4 Cycle), the Vitamin D receptor is also instrumental in shaping the need for work tags. This is commonly referred to as "Methyl Donor Status" and refers to the level of methyl donors one can tolerate before detox and/or dopamine swings ensue. Methyl donors include caffeine, Folapro (5-MTHF), MSM, Melatonin, Co Q-10, Carnitine, Theanine, SAMe, Methyl B-12, Curcumin, Quercetin, DMG & TMG. The VDR defect has also been implicated in multiple sclerosis, osteoporosis, high cholesterol, and diabetes.