CASE STUDY

New Completion

Southern Oklahoma

Situation:

New wells often have initial production that comes on at high rates and pressures. In this case, an established producer in southern Oklahoma drilled three wells from a pad site. While all of the wells were "keepers," one of the wells was extraordinarily strong.

Issue:

Based on initial test data, EcoVapor recommended the site be piped to accommodate at least two of our largest ERS170 systems. The oil produced from the target formation has an API°in the high 50's, so with the high production rates we were expecting correspondingly high amounts of flash gas off the tanks. The operator plumbed the site to accommodate more, but initially installed only one ERS170 system.

As the wells were brought on line, it was clear that like the scene in the movie Jaws where the captain sees the shark and declares "we're going to need a bigger boat…", this pad site was going to need more vapor recovery capacity, and fast. Tank pressures were running at 15+ oz, indicating venting, and requiring the operator to curtail production.

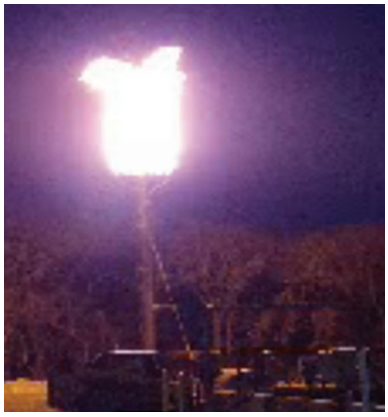

Figure 1: Flare with 1 ERS170 system operating. Tanks at 15+ oz

Solution:

Fortunately, the connections for the second EcoVapor system were installed and ready to go. EcoVapor moved in a second ERS170 system a few days later, together providing over 340 MCFD of vapor recovery capacity. That system was fired up and that additional gas was now moving to the sales line.

However, as shown in Figure 2, the site was still making more flash gas than the installed capacity, and tank pressures continued to exceed 12 oz on a regular basis.

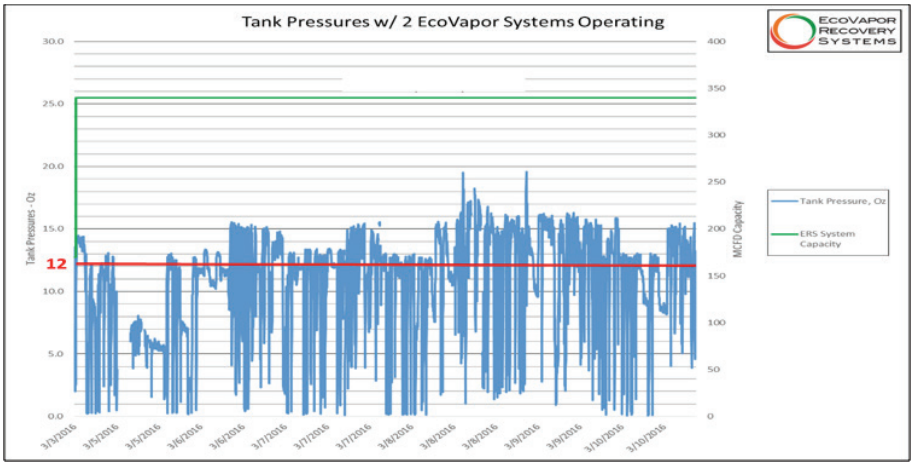

Figure 2: Tank pressures with two ERS170 systems on line

The thermal flow meter on the flare line showed 270 MSCFD was still being burned, indicating that at least one more ERS170 unit would be required. The operator waited a few days to see if the wells would start to pull down, but that was not the case and production continued to climb instead.

This presented a new opportunity. EcoVapor had prior installations on high volume sites where two systems operated in parallel - three systems in parallel offered the next level in production volumes. The operator had enough room for a third system, and the existing piping was modified to tie in the 3rd system. The final system was installed a few days after the second ERS system (see Figure 3) and the customer saw a noticeable impact on the tank pressures (see Figure 4) and flare.

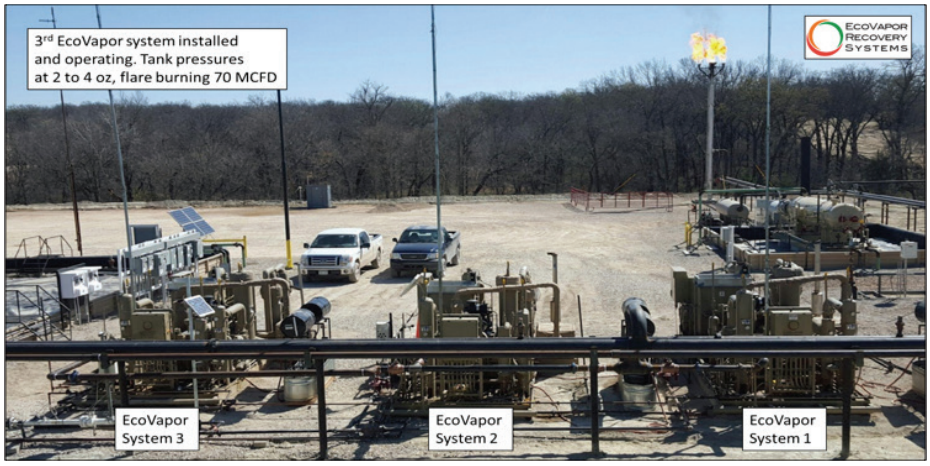

Figure 3: Site with 3 ERS170 systems operating simultaneously

All three systems are running in parallel with no operational issues. Each system was equipped with its own tank pressure sensor which were installed across the tank battery, allowing each unit to operate independently based on the tank pressures it was "seeing." By design, EcoVapor Recovery Systems are able to operate independently but cooperatively in this configuration. Once cumulative EcoVapor capacity was properly matched to the production, tank pressures declined rapidly and have been held in the 3 oz to 6 oz range.

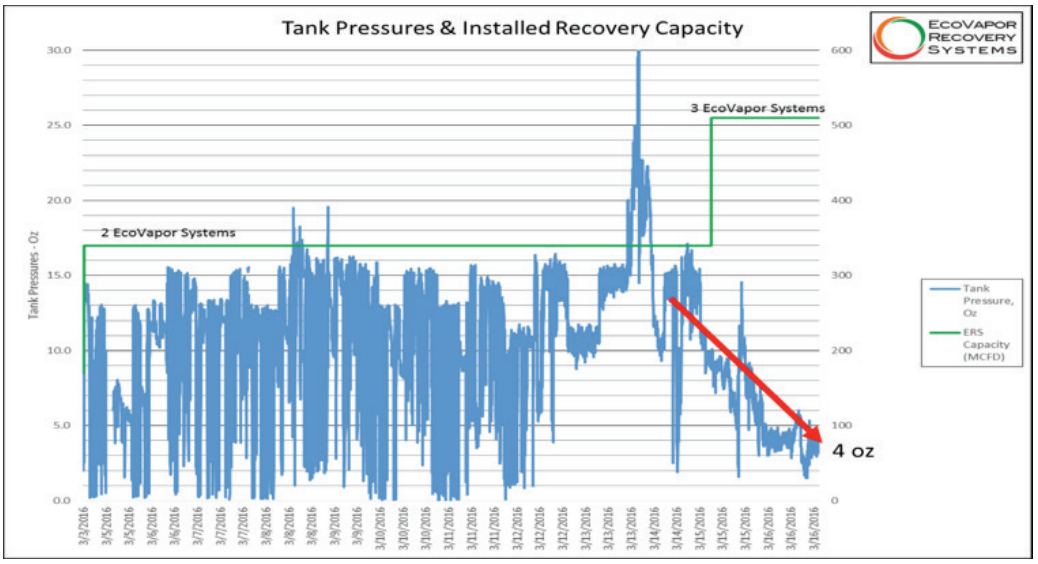

Figure 4: Tank pressure decline with 3 ERS 170 systems operating

While this installation had a timely impact on tank pressures, fugitive emissions, and site safety, it also took a high volume of gas that otherwise would have been wasted and is now being sold. The operator had the choice to install more flare capacity, but wisely chose instead to recover the gas and increase revenues.

Conclusions:

Often pictures tell a story better than words. The flow meter measuring the combined volumes off the three EcoVapor systems indicates 789 MCFD of rich flash gas being sold instead of flared. Even after lease costs, that adds over $100,000 per month to the operator's cash flow while making the site safer.

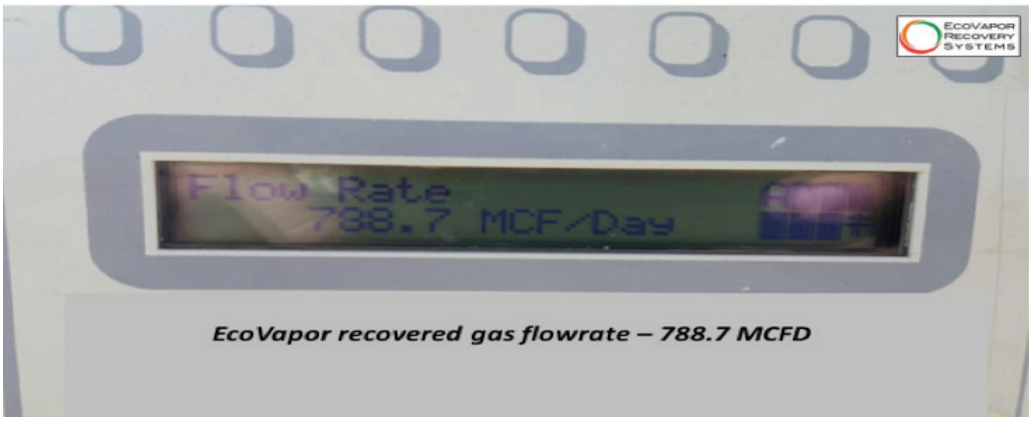

Figure 5: Meter showing recovered gas flowrate

Six weeks after the above reading was taken, the site was still making 742 MCFD in flash gas off the tanks. Unlike competing technologies, the capital investment for EcoVapor was small, limited to the connection piping, with no additional vessels or equipment required. And as the site declines, the operator will have the option to pull off and redeploy the EcoVapor systems to other sites. This combination of operational and financial flexibility make EcoVapor the right choice for your vapor recovery needs.

EcoVapor Recovery Systems

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