EDCON-PRJ

# CASE STUDY

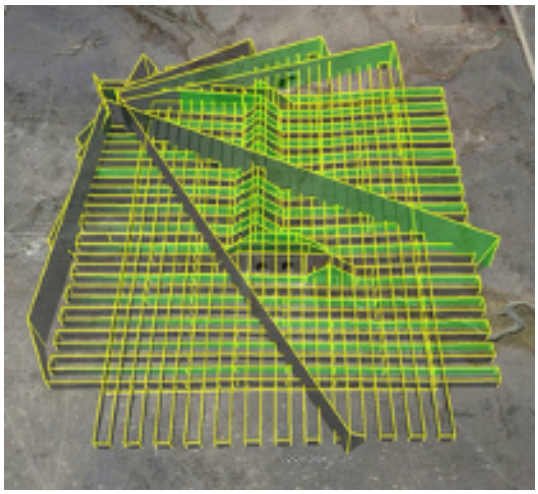
## Well Location Surveys using UAV

## Overview

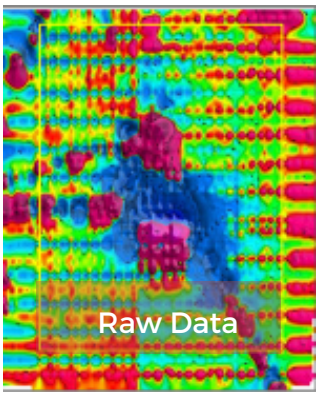
EDCON-PRJ performed a survey for the Colorado Oil and Gas Conservation Commission (COGCC) as a “proof of concept” of survey planning, data acquisition, and processing for specific targets. An area of 70 acres in Logan County Colorado was suggested by COGCC for the study because it was known to contain abandoned wells as well as collector lines associated with storage tanks.

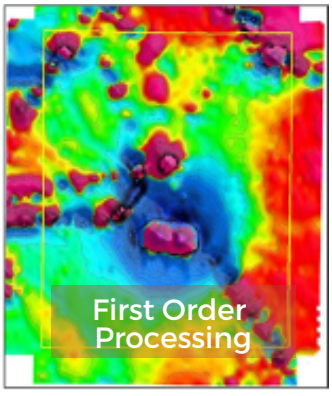
## Solution

A grid of 20-meter flight lines was generated along with a flight plan that incorporated a 10-meter flight height with additional clearances over powerlines and the storage tanks. A grid of 20-meter flight lines was generated along with a flight plan that incorporated a 10-meter flight height with additional clearances over powerlines and the storage tanks.



The standard first-order processing eliminated the heading error along the flight lines and began to define coherent anomalies over the storage tanks and other features. Three abandoned wells were located within the study area along with numerous pipelines, which are thought to be collector lines or flow lines associated with the wells, leading to the two large collection tanks in the center.

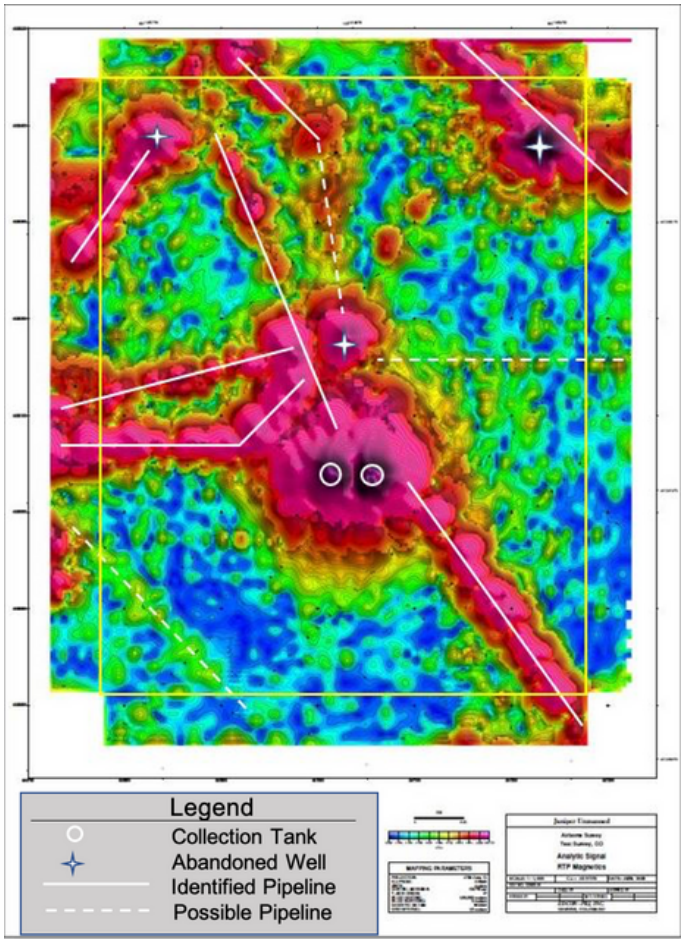



To better image these pipelines and resolve sharper images of the surrounding anomalies, we applied our advanced processing techniques to enhance features that exhibit discrete magnetic signatures. The advanced processing we utilize for these surveys involves a large number of iterative steps, each designed to amplify the discrete signatures of wells and pipelines while maintaining the integrity of the original data.

The result using advanced processing techniques is shown on the left. In addition to the pipeline features positively identified before, the dashed lines indicate areas having subtle magnetic signatures, which indicate ground disturbances where small diameter or non-metallic pipelines may be located.

When the conditions are favorable i.e. low noise and magnetically clean terrain, digging or trenching that has disturbed the soil alters the magnetic field to the extent that these features can be imaged.




## Summary

In summary, the combination of accurate, low-level drone flights and advanced processing techniques allows for precise mapping of abandoned wells and pipelines in areas with difficult surface access. Drone acquisition offers quick surveying over a considerable area given that a 640-acre section can be completed in a day. We believe that this partnership can offer clients a more accurate and cost-effective result than a ground-based survey. For more information or survey design, planning and cost please contact us at edcon-prj.com.