Ohio Department of Natural Resources
Division of Oil and Gas Resources Management
Orphan Well Program Survey Section

Ohio’s Drone Based Approach to Orphan Well Location

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Welcome & Overview

• UAS Workflow, Challenges, “cost”
• UAS and Ground survey examples
• Discussion
UAS site Overview
Ohio’s Workflow for a non-emergency UAS survey

- Project needs – To find Buried well Casings, Casings in inaccessible areas?
- Create a map of the extents of the project area – KMZ, Lat long
- Mission planning – terrain, site hazards, Air Space restrictions, flight plans
- Mission date scheduled – Predicted weather, space weather
- Mission Day – Visibility, Wind, Rain, Air Space restrictions, space weather, local magnetic anomalies.
- Data quickly checked in field for major problems – data downloaded while batteries being changed.
- Data processing and base map creation – used to get target Latitude Longitude
- Survey Crews schedule a day to expose targets.
- Exposed casings are assessed by technical team.
• Different processing software's have different levels of display quality and capabilities.
• Benefit of covering lots of area in a short amount of time.
Ground Unit Collected Map

- Covers less area
- We utilize to ground truth targets and to provide base station (diurnal correction)
- Less Liability compared to UAS
Thoughts on Cost

- Magnetometer for UAS ~ mid 30k and up
- Ground Magnetometer/base ~ 7-20k
- UAS capable of carrying sensor ~7-10k+
- Staff – minimum Pilot in command, visual observer and someone capable of processing mag data.
- Software – Supplied with sensor – 20k+ per year for third party.
- Training – companies are now offering training specifically tailored to this type of survey.
Magnetic survey conclusion

- Questions?