



ASSET RETIREMENT

HISTORICAL DATA

Proactive analysis for preemptive planning and execution

REMOTE SENSING

Increases efficiency and reduces expenditures

EXECUTION

Using GPS enabled equipment for extreme accuracy

INTRODUCTION

ProDelta was founded from a passion and desire to make a progressive difference in an industry stuck on tradition.

Finding data and the expenses related to it continues to be a major setback for companies needing to invest in Asset Retirement.

From this, we've developed a new way of supporting the Asset Retirement Obligation process.



THE P.I.P.E. PROCESS

We've streamlined, systemized and automated the typical ARO process that:

- is fully transparent
- is easy to use
- makes field crews more efficient

- enables the ability to do more with less money
- puts the client first
- gets more sites to closure
- reduces the environmental footprint
- enabled better decision making with more data

By leveraging remote sensing, data automation, and GPS, we've reduced the time and cost for Asset Retirement

P - PROACTIVE

The traditional industry is compiled of numerous consultants who collect their own data and do not collaborate or share it with one another. Through experience, most sites have enough historical data that a closure plan can be developed.

We are looking for solutions before we leave the office through internal systems and a 360-degree view to anticipate and mitigate any potential problems or challenges that may arise on a project-by-project basis. This includes:

- Geospatial historical data
- Unlocking data from data jail
- Visualizing data
- Receptor Classification
- Summarizing data
- Getting the right people to look at the "what ifs"
- Optimizing planning
- Areas of environmental concern

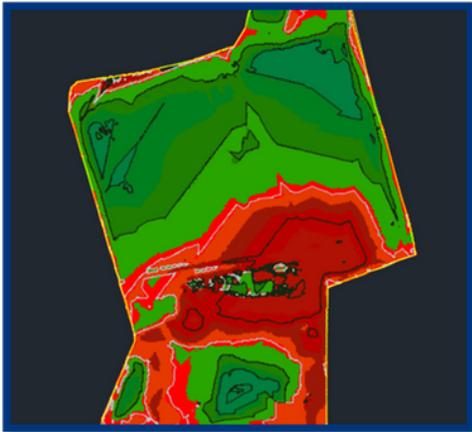


I - IDENTIFY

With remote sensing, specifically photogrammetry, we can do so much in a single flight and keep it transparent.

Additionally, because the data is fully transparent, all different parties (owners, regulators, consultants, stakeholders etc) can view the data for the purposes of their own needs. From the data we collect, the following can be generated:

- High-Resolution Ortho
- 3D Mesh/Classified Point Cloud
- Digital Surface Model



Digital Surface Model



Orthomosaic Image



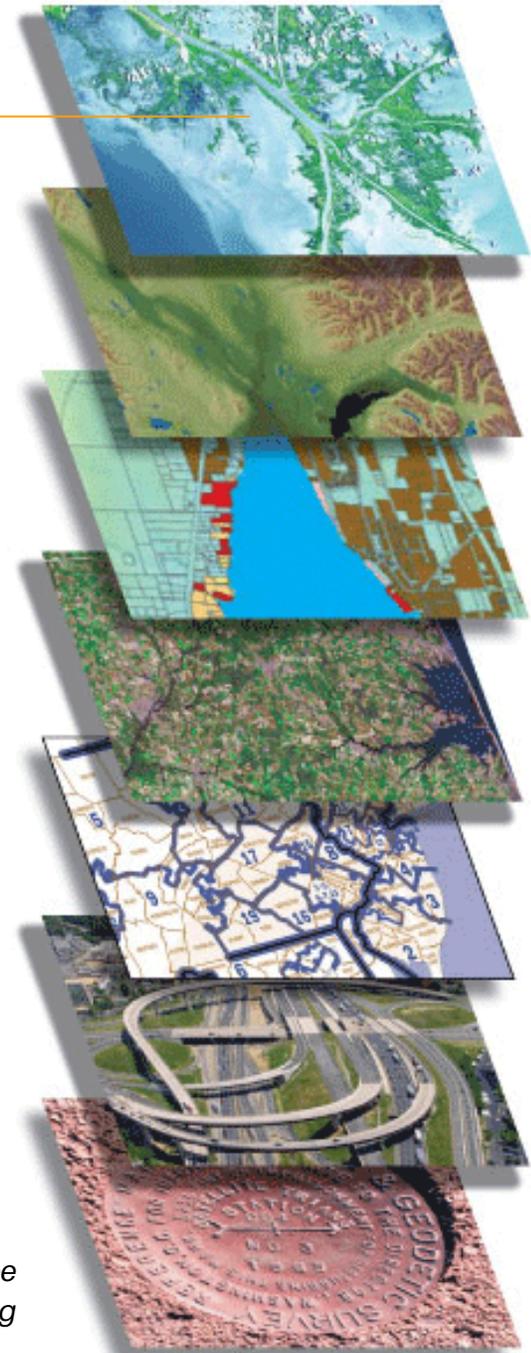
3D Mesh

MULTIPLE DATASETS FROM THE SAME SCANNED AREA

With this data, we can obtain the following:

- Phase 1 Walkover (Area Potential Environmental Concern)
- Phase 2 Background Imagery
- Borehole Placement
- Surface Water Drainage
- Reclamation Planning (Volume Take-Offs)
- Vegetation Health
- Carbon Sequestrain Potential

An example of the multitude of information that can be gathered from remote sensing



P - PLANNING

A common area of inefficiency is lack of thorough planning and a disconnect between office staff, field supervisors and equipment operators.

With ProDelta's systems, we can plan both investigation drilling and remediation/reclamation meaning there is less overlap in services and a holistic understanding of the project in its entirety. The planning is a progression through our tools, wherein a live database is created for our clients to access and view in real-time.

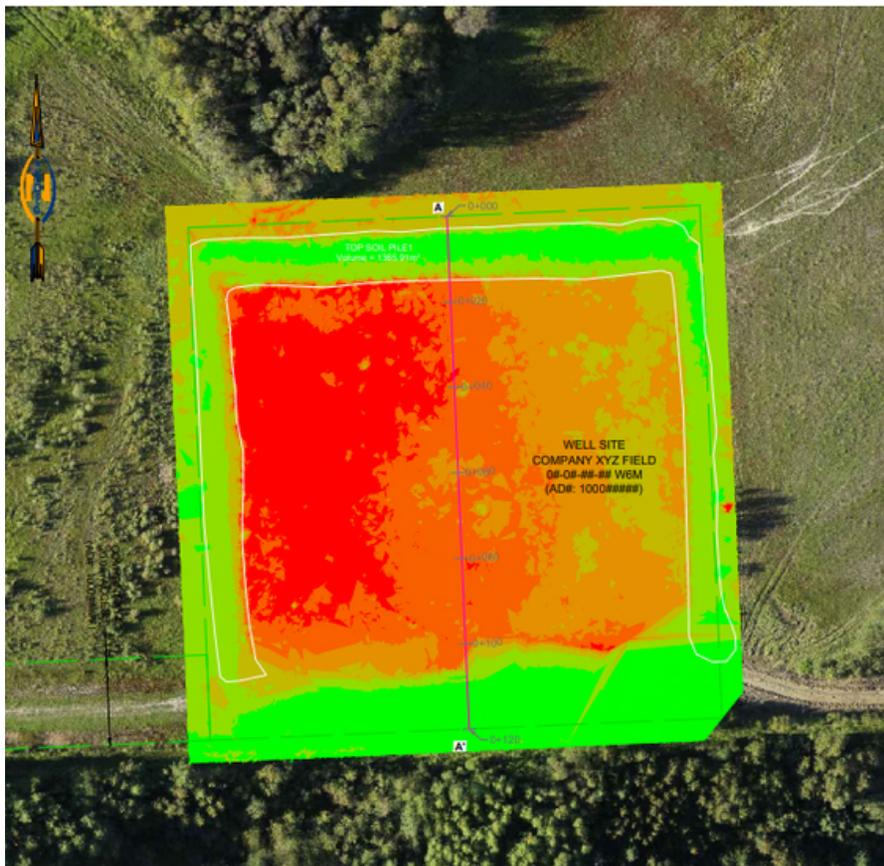
ProDelta also does 3D Environmental Information Model (EIM) which can be viewed online or through an interactived 3D pdf.

With analytics from remote sensing combined with 3D Modelling, we can develop a detailed schedule and optimize equipment size/loading. This does include running multiple crews in conjunction. Additionally, during the planning stage, we start to identify the potential cost implications which can include:

- Historical weather trends
- Sequence of events
- Potential unknowns
- Strategies for “what if”



An example of ProDelta's 3D modelling



An example of ProDelta's cut and fill analysis

VOLUME CALCULATIONS

Volume calculations during remediation planning are traditionally based upon the most extreme levels of contamination, even though the cases where that is needed are exceedingly rare.

ProDelta instead uses a Risk-Based approach, where liability is based on the average actual cost to retire an asset in a certain risk class. We compare to risk-based guidelines developed for an asset class and rely on real-world cost for statistically significant groups of sites. This drastically reduces the work per site, the cost per site, and gets more sites to closure.

PLANNING/SCHEDULING

Within our planning/scheduling services, ProDelta can optimize the closure of a site and a field. Through our pre-planning, analytics, and collaboration with stakeholders. ProDelta generates a schedule with a high level of cost certainty to get sites to closure.

E - EXECUTION

ProDelta has integrated our SmartDig™ technology and ProDelta MST along with ProDelta DMD Mobile for the following processes:

- Typical Workflow
- Drill Site
- Review Data and Prepare Report
- Complete Supplemental Drilling
- Develop Remediation Plan
- Execute Remediation
- Execute Reclamation
- Vegetation Monitoring

Typically a site closure is 5-12 years. At ProDelta, we are working towards a completion of a single ground disturbance (14 days) with a 2-year vegetation monitoring (Regulatory Required).



PRODELTA MST

ProDelta Multi Solution Tool (MST) is a system that can complete the following scopes in a single mobilization:

- Well Centre Cut/Cap
- Small Decommissioning
- Snow Removal (limited)
- Access Repair
- Small Remediation (Well Centre)
- Environmental Drilling
- Initial Spill Response and Classification

We also have the ability to reach:

- Tank Farms
- Flare Pits
- Sump Areas
- Difficult Background Areas

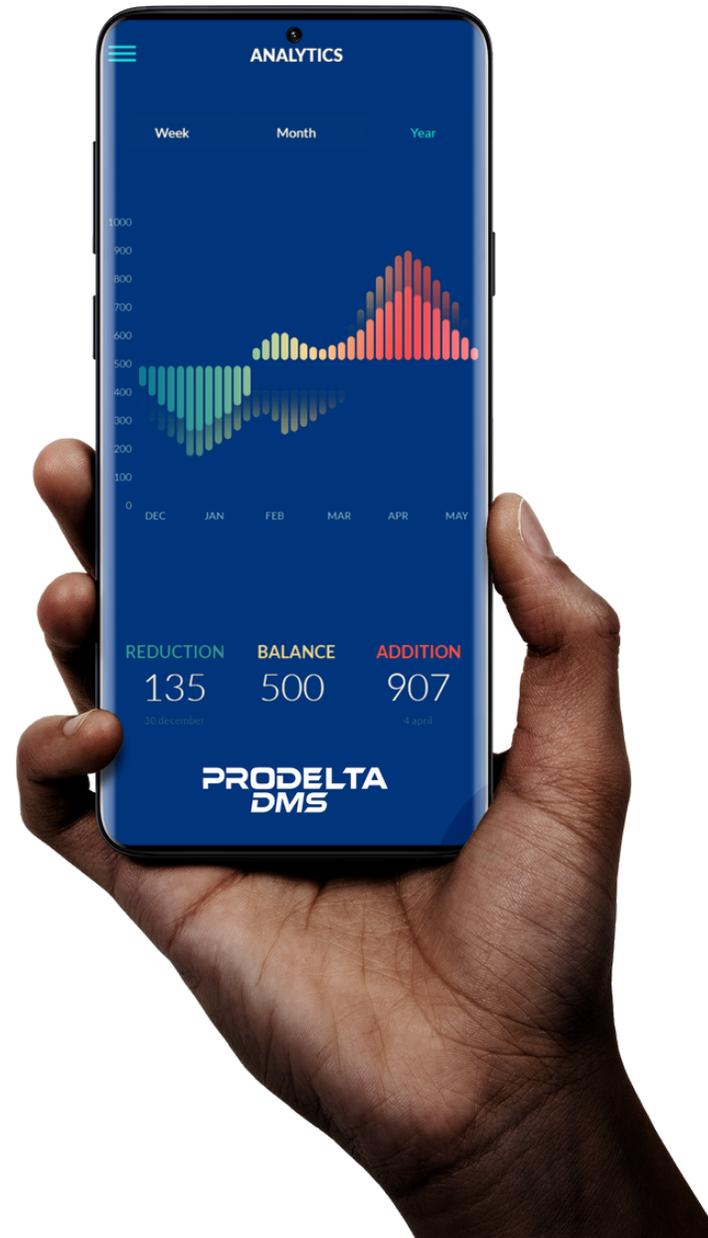


DMS MOBILE

ProDelta DMS Mobile lets us automate the data flow to make faster decisions. With historical reporting taking up to 90 days to get results, we are achieving 24 hrs after receiving lab data.

This data automation allows us to make faster decisions and go through the process in an efficient manner. This is a key tool; as data is entered in once, we can derive:

- Borehole Logs
- Drawings
- Real-time Updates
- Complete Chain of Custodies
- Analytical Tables
(external Software Stavis



SMART DIG

SmartDig™ Technology allows us to implement all planning and program it into the excavator bucket and/or dozer blade. This gives our operators a real-time view of what the “knowns” are on-site. SmartDig™ advantages us to execute the following:

- Risk-based remediation,
- Excavate overburden,
- Identify underground hazards,
- Minimize the amount of material going to landfill and/or being treated,
- Design drainage into existing surface watersheds, and
- Reduce the amount of material being moved





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