

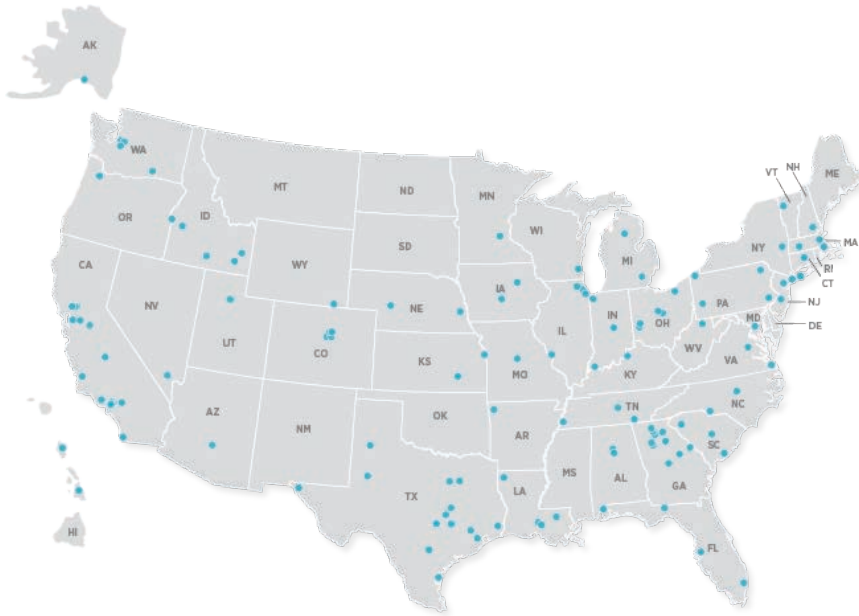


ORPHAN, IDLE, AND  
MARGINAL OIL & GAS  
WELL CLOSURE SERVICES

we're built to be better



## FIRM OVERVIEW



### UNITING PEOPLE, PLACES & POSSIBILITIES

Atlas' deep pool of talented staff—combined with our broad range of services—enables us to provide clients with a superior level of service to successfully deliver large, complex projects. **We're ready to respond when and where you need us!**

**3,600** NATIONWIDE STAFF

100+ offices located throughout 43 states allows us to provide our clients with a superior level of consistent support and resources no matter where their projects may be located.

## SERVICES

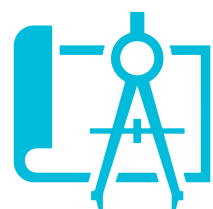
WE PROVIDE NATIONALLY



PROGRAM/  
CONSTRUCTION/  
QUALITY MANAGEMENT



ENVIRONMENTAL  
SOLUTIONS



ENGINEERING  
AND DESIGN



TESTING, INSPECTION,  
AND CERTIFICATION

## WHY ATLAS

Atlas has a 65+ year history of providing professional testing, inspection, engineering, environmental, and consulting services from more than 100 locations nationwide. We deliver solutions to both public and private sector clients in the transportation, commercial, water, government, education, and industrial markets.

## ORPHAN WELL CLOSURE EXPERTS

MANAGING ORPHAN  
WELL PROGRAMS IN

**6** STATES

**42+K**

WELL PLUGGING &  
ABANDONMENT PROJECTS  
IN NORTH AMERICA

MEASURING & MONITORING

**1,600**

DOI-COMPLIANT WELLS IN  
14 STATES

## TEAMING PARTNERS

*The optimal mix of well plugging and abandonment expertise, deep resources, and capacity.*



**Well Done** - Extensive experience conducting Infrastructure Investment and Jobs Act (IIJA)/ Department of Interior (DOI)-compliant measurement and monitoring of 1,600+ wells across 14 states; leading the largest program of this kind in New Mexico. Well Done is at the forefront of carbon credit project development for plugging

and abandonment of oil and gas wells and can offer a carbon credit option for optimizing contract budgets, resulting in the ability to plug more wells. To date, Well Done has supported, overseen, and/or directly managed over 240 oil and gas well closure projects in North America.



**360 Consulting (360)** - Extensive well plugging and abandonment and Asset Retirement Obligation (ARO) assessment experience. To date, 360 has abandoned 5,700+ wells, executed 29,000 environmental site closure activities, and assessed \$20+ billion in ARO totaling 150,000 wells across the US, Canada, and Argentina.



**Weatherford** - Extensive experience in the full range of oil and gas well services internationally and nationally, with a full supply of expertise and specialty well servicing equipment; also offering carbon capture and storage and geothermal energy expertise. To date, Weatherford has supported over 36,000 oil and gas well closure projects in North America.





# ORPHAN, IDLE, AND MARGINAL OIL & GAS WELL CLOSURES

**STATE AND FEDERAL AGENCIES ARE WORKING WITH PRIVATE COMPANIES TO ASSESS ORPHAN, IDLE, AND MARGINAL OIL & GAS WELLS AND DEVELOP PRIORITIZED PLANS FOR PLUGGING AND LAND RESTORATION.**

**THROUGH THE THE INFLATION REDUCTION ACT 14 STATES AND FEDERAL PUBLIC AND NATIVE AMERICAN LANDS ARE RECEIVING GRANTS UNDER THE METHANE EMISSIONS REDUCTION PROGRAM TOTALING UP TO \$350 MILLION.**

**WE NAVIGATE REGULATIONS AT THE STATE AND FEDERAL LEVELS TO ASSURE ALL RELEVANT REQUIREMENTS ARE MET.**

**THROUGH THE INFRASTRUCTURE INVESTMENT AND JOBS ACT, 24 STATES AND FEDERAL PUBLIC LANDS IN NINE STATES ARE RECEIVING \$4.7 BILLION IN FEDERAL GRANT FUNDING. THIS FUNDING IS SET ASIDE FOR ASSESSMENT, PLUGGING AND RESTORATION OF ORPHAN OIL, GAS, GEOTHERMAL, HELIUM, AND OTHER WELL TYPES.**

**ATLAS HAS MULTIDISCIPLINARY TEAMS OF ENGINEERS, GEOLOGISTS, ENVIRONMENTAL SCIENTISTS, AND INDUSTRY EXPERTS.**

**WE PROVIDE THE FULL RANGE OF WELL CLOSURE SERVICES NEEDED TO ASSESS RISKS AND COMPLETE EACH PROJECT ON TIME AND WITHIN BUDGET.**

## PLUGGING & RESTORATION EXPERIENCE & RESOURCES

**OVER 10,000 ORPHAN WELLS HAVE BEEN TARGETED FOR ASSESSMENT, PLUGGING, AND WELL SITE RESTORATION ACROSS THE UNITED STATES.**

**ATLAS HAS RELATIONSHIPS WITH INDUSTRY VENDORS AND IS HIGHLY EXPERIENCED AT NAVIGATING THESE COMPLEX PROCESSES WHILE MEETING AGGRESSIVE DEADLINES.**

# WE HAVE THE EXPERIENCE YOU CAN COUNT ON

**WE KNOW YOU.** Atlas has been in business for more than 65 years. We understand your systems, from our work over the last 15 years on our \$500+ million in state-funded petroleum site cleanups to execution of hundreds of plug and abandon projects over the last four years, resulting in efficient program delivery. Agencies entrust us to execute their state and federal programs, as demonstrated by our current work managing orphan well programs in six states, including Arizona, New Mexico, Texas, Oklahoma, Montana, and Ohio.

**WE KNOW HOW TO DO IT.** We have an unprecedented team of specialists that have collectively performed over 42,000 plugging and abandonment projects in North America. Unique to our team is the heritage of plug design and execution. We recognize orphan wells are different. There is no parent company to design the plug. Since we have successfully completed over 5,900 orphan well closures in the last four years, we know how to do it better than anyone. We have conducted DOI-compliant measurement and monitoring of 1,600+ wells across 14 states, which means we provide turnkey solutions to navigate the myriad of challenges associated with this work.



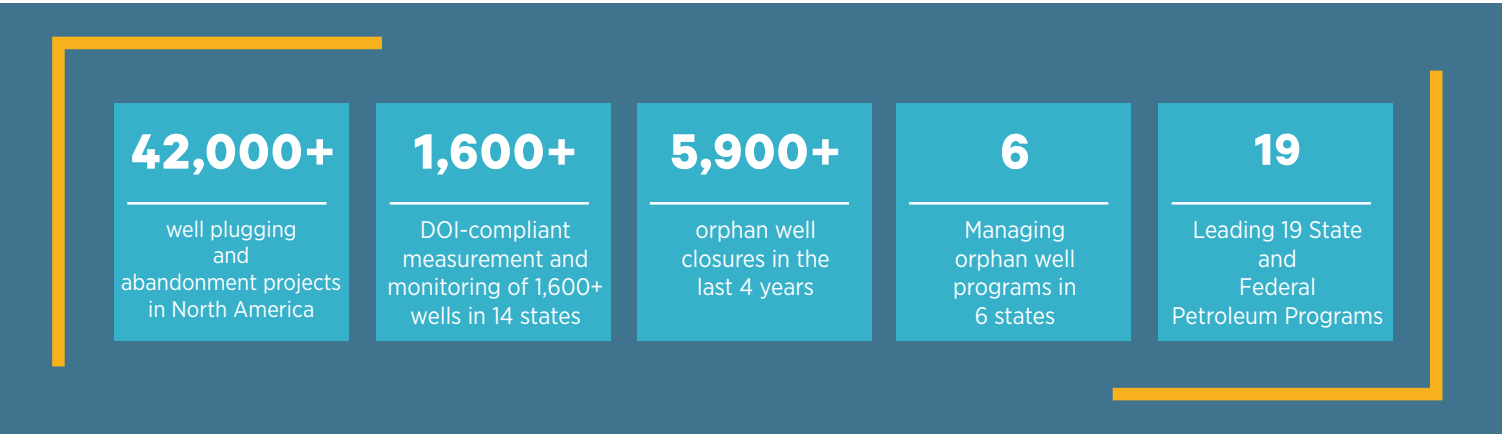
**WE DO IT EFFICIENTLY.** Atlas has assembled a cohesive, best-in-class team with proven experience with complex multi-site orphan well program management; managing and executing the IIJA’s largest methane measurement, quantification, and data management project; developing safe, efficient, and value-added plugging and abandonment results, conducting site decommissioning and surface restorations in the most sensitive of environments; and implementing nationally recognized communications and public engagement campaigns.

With decades of experience successfully executing thousands of plugging and abandonment projects across North America, the Atlas team is the ideal partner to provide sound engineering, environmental science, and program management services to achieve your program and stakeholder goals and maintain regulatory compliance. Our team offers the specialized expertise and technical excellence needed to meet your program goals.

**Orphan well projects are complex and can pose significant environmental, engineering, financial, and social challenges that require a collaborative approach to successful delivery. Our team has proven their capabilities, and more importantly their acumen, on projects across North America.**

**Our extensive experience in well plugging and abandonment projects throughout North America enables us to leverage best practices and innovative solutions that translate to efficient delivery, maximizing the number of wells closed with available funding.**

Our successful delivery of North American state, federal, and provincial programs for petroleum-related work—including orphan, idle, and marginal well programs in multiple states and provinces—means we know how to navigate complex requirements and can anticipate issues before they arise, thus maintaining critical budgets and schedules. Moreover, our over 65-year history of delivering work for local, regional, and state agencies means we understand regional requirements and agency procedures, resulting in streamlined delivery with no learning curve.



## SUPPORTING YOUR MISSION

We understand that the goal is to safely plug, abandon, and remediate as many orphan wells as possible with the given budget per year using sustainable techniques and the most experienced team. The Atlas team is dedicated to your mission at orphan well sites to:

- Eliminate methane and other harmful gases entering the atmosphere.
- Eliminate the leaching of contaminants, gas, and oil into surrounding soils and waters that pose a threat to the public.
- Eliminate safety hazards that pose a threat to the public and prevent lands from being used for recreation or other productive purposes.

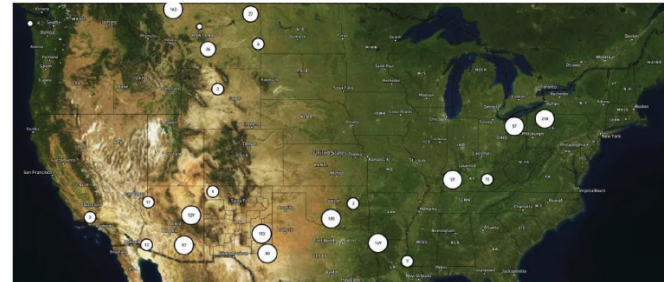




## SUSTAINABLE INNOVATIONS

### CARBON CREDIT OPTIMIZATION STRATEGY

**WELL DONE, AND ITS FOUNDATION, IS A LEADING AUTHORITY AND AT THE FOREFRONT OF CARBON CREDIT PROJECT DEVELOPMENT FOR PLUGGING AND ABANDONMENT OF OIL AND GAS WELLS.**



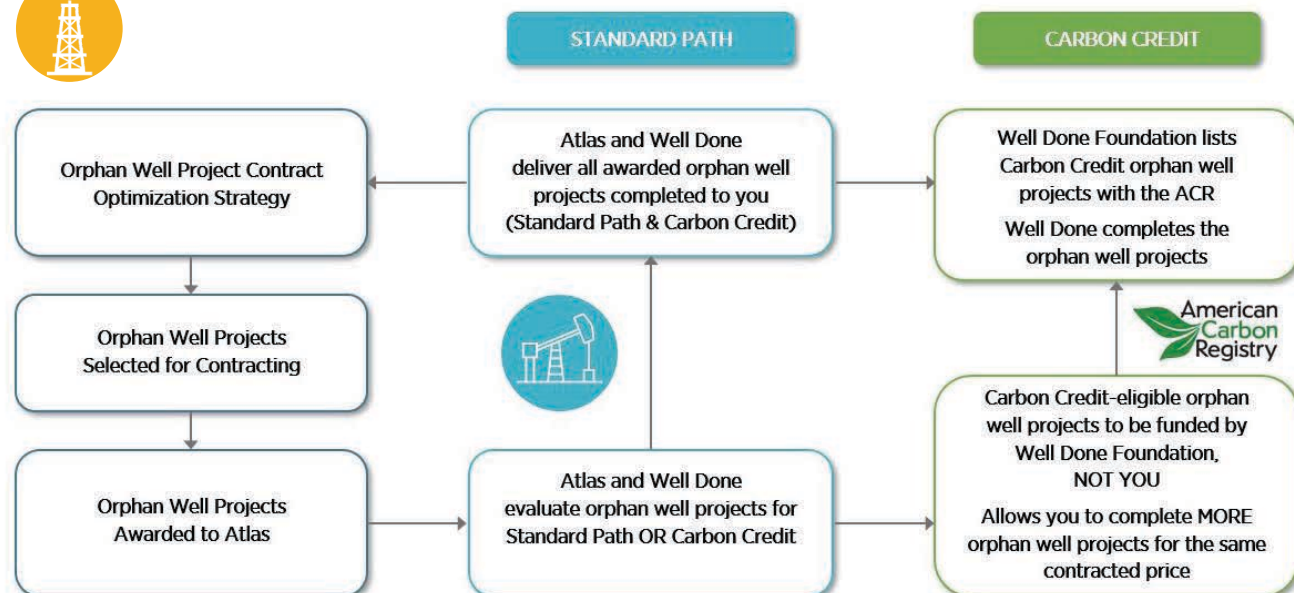
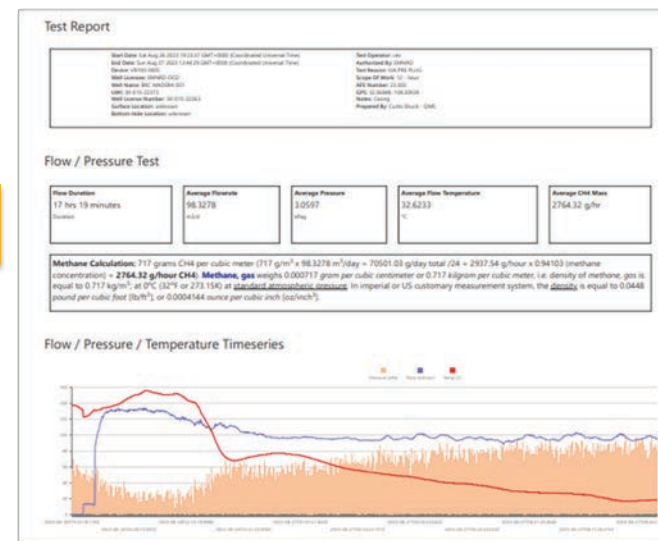
Since its establishment in 2019, Well Done has plugged 40 wells in the U.S. using the **American Carbon Registry (ACR) methodology**. Well Done has conducted IJIA/DOI-compliant measurement and monitoring of 1,600+ wells in 14 states and is leading the largest program of its kind in New Mexico. Well Done provides you with a new avenue to plug more wells without increasing cost. Orphan wells that qualify for the Well Done ACR program transfer from “orphan” status directly to Well Done, which then schedules the work to be completed. The **Well Intel® IoT Platform** offers exclusive access to wells that are scheduled for closure. The data capture capabilities are highly versatile and can handle a wide range of data types, from raw measurements and monitoring data to programs and reports.

#### Methane Quantification and Monitoring System / Data

- Ventbuster instrument provides real-time methane quantification
- Transmits digitally recorded measurements via mobility to the Well Intel IoT platform
- Approved by DOI for IJIA orphan well methane quantification, and ACR for carbon offsets generation

#### Well Intel® IoT Platform - Project Management System

- Real-time, live data viewing
- Project progress activities
- Currently used in IJIA orphan well projects in NM, KY, PA, CO

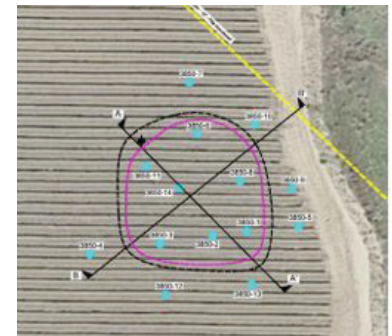
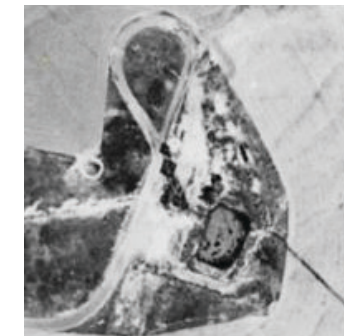


## PROGRAM MANAGEMENT

**ATLAS CAN PROVIDE A FULL PROGRAM MANAGEMENT OR A BREAKOUT OF SELECTIVE SERVICES TO MEET YOUR NEEDS.**

As a leading nationwide provider of environmental and engineering services, Atlas supports a wide range of world-class and high-performing public and private organizations with similar goals. This experience has informed us that the successful execution of multi-disciplinary, environmental engineering contracts requires a flexible, team-based, networked organization. Flexible to adapt to complex environments and satisfy the objectives of multiple stakeholders, team-based to provide the depth and breadth of environmental engineering services and aligned objectives, and networked to capitalize on standardized processes and platforms necessary to provide consistent, comprehensive, and cost-effective services.

A scientifically-based approach to the orphan, idle, and marginal well, and lease restoration, challenge offers the greatest potential risk reduction per dollar spent and maximizes the return on this critical investment. To accomplish this objective, Atlas crafted a team consisting of in-house personnel, seasoned abandonment subcontractors, and specialty service providers necessary to support the program from planning through execution. The Atlas team composition and experience is tailored to facilitate project management, streamline environmental reviews and investigation, customize well-specific plugging and abandonment techniques, and cost-effectively complete decommissioning and site restoration and remediation to ensure the protection of human health and the environment.



### TASK BREAKDOWN

Our team covers the entire process, from the initial phases of work through site restoration, which is summarized on the following pages:

- Initial Phase
- Desktop Preliminary Site Assessment
- Field Reconnaissance
- Sampling Plan and Risk & Ranking
- Work Plan for Well Plugging and Site Restoration



## INITIAL PHASE

The initial phase of work includes development of a comprehensive inventory and database of well locations and baseline conditions. This information will be used to establish the next phase of work. Desktop work is performed for each well. A well location profile is established by accessing and reviewing available paper and digital records.

### PAPER AND DIGITAL RECORDS:

- API NUMBER
- CHAIN-OF-TITLE REPORT INCLUDING LEASES AND ENVIRONMENTAL LIENS
- VERIFY DATA IN THE ELECTRONIC DATABASE
- DETERMINE THE WELL DIAMETER
- DEPTH TO THE BOTTOM OF THE CASING
- DETERMINE THE WATER BEARING ZONES
- CLASS I ARCHAEOLOGICAL SURVEY DATA
- MINERAL RIGHTS
- WATER RIGHTS
- RIGHT-OF-WAY PERMIT INFORMATION



## DESKTOP PRELIMINARY SITE ASSESSMENT

A Desktop Preliminary Site Assessment may be performed to assess the presence or absence of indicators of potential environmental concerns and to make recommendations, if appropriate, for further investigation based on elements of ASTM E 1527-21.

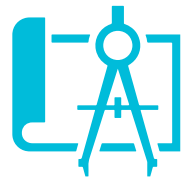
### DESKTOP REVIEW ELEMENTS:

- HISTORICAL RECORDS ASSOCIATED WITH THE WELL LOCATION (AERIAL PHOTOGRAPHS, FIRE DEPARTMENT RECORDS, CITY DIRECTORIES, TOPOGRAPHIC MAPS, SANBORN MAPS, BUILDING PERMITS, CHAIN-OF-TITLE)
- REGULATORY DATABASES TO IDENTIFY POTENTIAL SOURCES OF CONTAMINATION ASSOCIATED WITH THE WELL SITE, OR OFF-SITE SOURCES OF CONTAMINATION THAT HAVE THE POTENTIAL TO IMPACT THE WELL SITE
- NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) REQUIREMENTS REVIEWS MAY INCLUDE:
  - Environmental review
  - Wetlands review (National Wetlands Inventory map)
  - Natural and cultural resource surveys
  - Historical and archaeological review
  - Threatened & endangered species (United State Fish and Wildlife Service information planning and conservation system)
  - 100-Year floodplain map (Federal Emergency Management Agency)
  - EPA environmental justice screening
  - Geology and hydrology of the area
  - Drinking water wells within 1/4 mile

### THE STANDARD

The standard for conducting a Phase I Environmental Site Assessment (ESA) is the approved American Society for Testing and Materials (ASTM) Standard Practice E 1527-21 and All Appropriate Inquiries (AAI) standard per 40 CFR Part 312. Atlas conducts thousands of Phase I ESAs each year for clients.





## FIELD RECONNAISSANCE

After each well location profile is complete, a list of orphan well candidates is established. An initial reconnaissance trip to each well location is planned and conducted.

### THE OBJECTIVES OF THIS PHASE OF WORK:

- **OBTAIN ACCESS AGREEMENTS**
- **PREPARE A WELL SITE HEALTH AND SAFETY PLAN**
- **LOCATE THE WELL USING A HANDHELD METAL DETECTOR IF IT'S NOT VISIBLE AND ESTABLISH WORLD GEODETIC SYSTEM (WGS) COORDINATES WITH A GPS PHONE APPLICATION SUCH AS PRO COMPASS**
- **CONDUCT WELL GAS EMISSIONS READINGS WITH A HANDHELD METER TO DETERMINE PRESENCE/ABSENCE OF HAZARDOUS EMISSIONS SUCH AS HYDROGEN SULFIDE TO FURTHER ESTABLISH BASELINE HEALTH AND SAFETY PROCEDURES AND INVOKE CONTINGENCY SAFETY PROCEDURES IF NECESSARY**
- **DOCUMENT THE WELL CONDITION/INTEGRITY**
- **DOCUMENT THE INVENTORY OF ANCILLARY EQUIPMENT (TANKS, PUMPS, PIPING, ETC.), MATERIALS OF CONSTRUCTION, AND THE EQUIPMENT FLUID CONTENTS**
- **ASSESS SITE CONDITIONS AND ENVIRONMENTAL IMPACTS TO THE SURROUNDINGS IN ORDER TO DEVELOP A SITE SAMPLING PLAN AND SITE MAP SUPPORTED BY REPRESENTATIVE PHOTO-DOCUMENTATION**
- **AT THIS TIME OR IN THE SUBSEQUENT SITE VISIT, SETUP QUANTITATIVE GAS MONITORING EQUIPMENT TO QUANTIFY FLOW, PRESSURE, AND COLLECT A SAMPLE FOR ANALYSIS OF THE VOLATILE ORGANIC COMPOUNDS PRESENT. PROCEDURES WILL BE CONSISTENT WITH FEDERAL PROGRAM AND DEPARTMENT OF INTERIOR FINAL GUIDANCE FOR ASSESSING METHANE EMISSIONS FROM ORPHANED WELLS CONSISTENT WITH THE 2021 IJA, DATED APRIL 11, 2022**
- **IDENTIFY OTHER NEARBY FACILITIES THAT COULD BE CAUSE FOR CONCERN SUCH AS:**
  - Municipalities/communities
  - Neighboring structures
  - Surface waters
  - Flooding concerns
  - Other items identified in the desktop review
- **INFORMATION AND DATA FROM THE INITIAL FIELD RECONNAISSANCE WITH THE STATE PROJECT MANAGER**
- **SAMPLING PLANS AND FURTHER EFFORTS WITH ESTIMATED COSTS AND WITH STATE PROJECT MANAGER APPROVAL, PLANS ARE MADE TO RETURN TO THE SITE**



## GEOPHYSICAL SURVEYS FROM ABOVE

Our highly qualified Professional Geophysicists and Registered Geologists have over 40 years of combined experience providing geophysical consulting and evaluation services. The Atlas team has the standard safety and quality compliance training and the special certifications and training associated with oil refinery activities, railroad activities, transportation authorities, and mine activities.

Using both drones and ground equipment, geophysics produces vital information on geotechnical, geologic, and hydrologic conditions as well as subsurface infrastructure, often **providing innovative and cost-effective solutions to our clients, reducing site exploration costs and minimizing unexpected site conditions**, which reduces project risks.

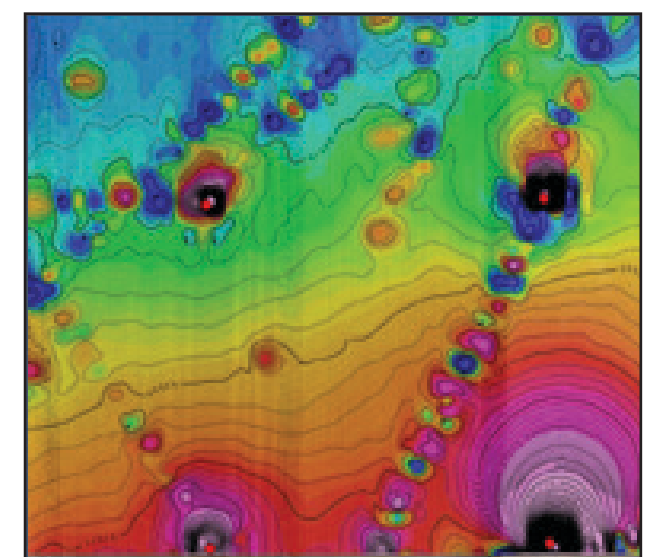
### THE USE OF DRONES IN SURVEYS:

#### ➤ THE GEOPHYSICAL MAGNETOMETER CAN DETECT:

- Steel-cased well detection
- Groundwater surveys
- Site characterizations
- Archeology surveys
- Utility mapping
- UST detection surveys
- Landfill and fill area delineation
- Unexploded Ordinance/Munitions and Explosives of Concern (UXO/MEC) evaluations

#### ➤ THE GEOMETRICS MAG ARROW DRONE:

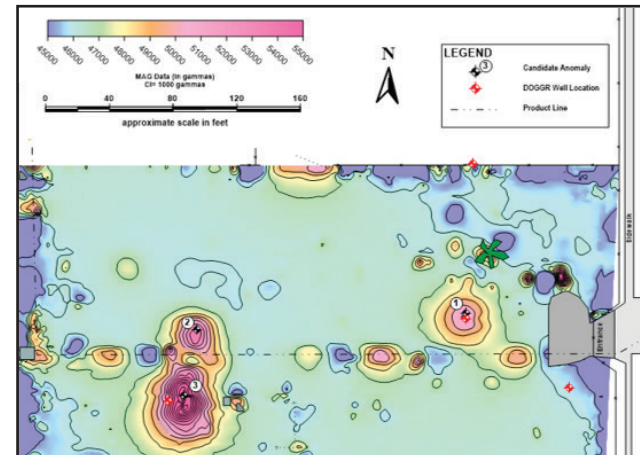
- Lightweight Cesium vapor magnetometer with inertial measurement unit (IMU) and global positioning system (GPS)
- Pipeline and orphan well survey example courtesy of Drone Geosciences



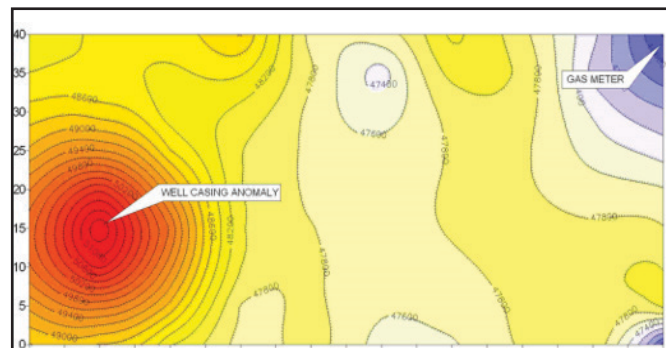


## GEOPHYSICAL SURVEYS ON THE GROUND

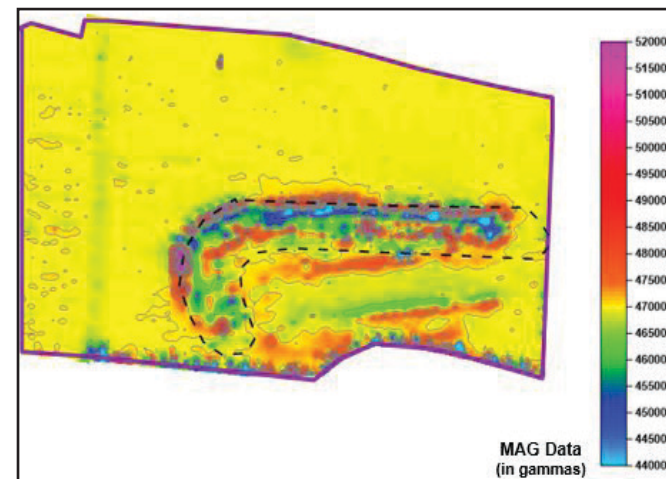
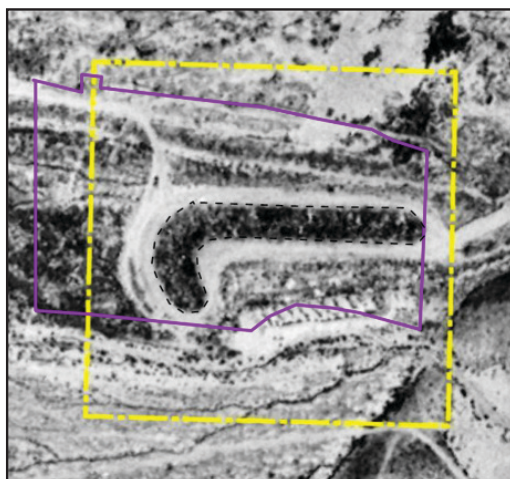
After the drone survey, Atlas will use ground equipment to determine subsurface conditions. Magnetometer surveys are rapid and efficient. Magnetometers detect buried ferrous metal objects (tanks or drums) or bedrock features with contrasting magnetite content. Detection depends on the amount of magnetic material present and its distance from the sensor. A single steel drum can be detected at up to 20 feet of burial depths. Burial depth can be estimated from magnetometer data collected using the gradient method.



### FINDING WELLS IN A RESIDENTIAL AREA:



### LANDFILL AND FILL AREA DELINEATION:



## SAMPLING PLAN AND RISK & RANKING

A return to the site is planned and conducted to implement the sampling plan and further investigate the well.

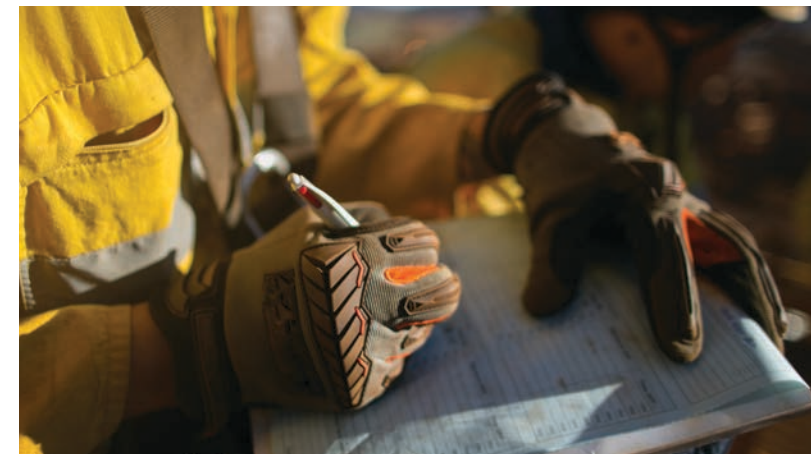
### FURTHER FIELD EFFORTS MAY INCLUDE:

- LOCATION AND EVALUATION OF UNDERGROUND UTILITIES
- DOWNHOLE WELL INTEGRITY/GEOPHYSICAL LOGGING
- INTEGRITY/GEOPHYSICAL LOGGING WILL BE USED TO IDENTIFY POSSIBLE COMPLICATIONS, RISKS, OR PROBLEMS ASSOCIATED WITH EACH SITE IN PREPARATION FOR ABANDONMENT

With all the information and data collected from prior phases of work, the data is entered into a risk assessment and ranking database.

### DATABASE ELEMENTS:

- RISK SCORES FOR EACH WELL ARE GENERATED
- EACH WELL IS THEN RANKED ACCORDING TO ITS RISK SCORE IN THE DATABASE
- WELLS ARE ORGANIZED BY RISK SCORE AND A LISTING CAN BE GENERATED ORGANIZING THE WELLS FROM HIGHEST TO LOWEST PRIORITY FOR ABANDONMENT
- THE PRIORITIZED LIST IS DISCUSSED WITH THE STATE REPRESENTATIVES AND WELLS TO BE PLUGGED ARE DECIDED



### IN COMPLIANCE

With a list of priority well locations, the Atlas team develops plans for plugging and abandonment along with site restoration in compliance with state program requirements.



# WORK PLAN FOR WELL PLUGGING AND SITE RESTORATION

## ATLAS WILL PREPARE A BRIEF WORK PLAN FOR THIS PHASE OF WORK INCLUDING:

- Access logistics
- Permitting requirements
- Stakeholders for potential public outreach and notification
- Key personnel
- Special considerations such as cultural and natural resource implications that may affect the project approach
- Well plugging permit and plugging plan
- Conducting soil sampling activities to define the extent of surface and sub-surface contamination
- Soil sampling methodologies such as manual, direct push, or drill rig methods
- Quality assurance / quality control for sampling methods and analytical data
- Decontamination procedures
- Extents of excavation
- Methods to determine excavation completeness
- Excavation methods
- Waste characterization sampling for soils and abandoned equipment and structures (soils, asbestos, lead based paint, hazardous waste, etc.)
- Waste profiling and manifesting requirements
- Imported material source and placement
- Define clean-up standards for soils, groundwater, and/or surface water, if impacted
- Documentation requirements



## OTHER REMEDIATION AND RESTORATION ACTIVITIES TO BE CONSIDERED OR COMPLETED:

- Sampling structures including building, tanks and piping for polychlorinated biphenyls, asbestos and lead paint to determine the proper management and waste disposal for these substances
- During remediation and demolition activities the Atlas team will stabilize the surface soil at the well site and the surrounding area which may include storm water management best management practices or other measures to minimize accelerated erosion and sedimentation
- Atlas may need to collect and analyze groundwater and/or surface water at the area of the well to assess the potential impacts from the well to these media
- Upon completion of work, Atlas removes access footprints by removing the temporary roads or mats used to access the well location, grade the area of impact and restore the area as agreed with the state agency

ATLAS IS WELL EXPERIENCED IN CONDUCTING THESE EFFORTS AND WILL IDENTIFY POTENTIAL JURISDICTIONAL NEXUS EARLY IN THE PLANNING STAGE TO AVOID DUPLICATIVE EFFORTS AND ENSURE EFFICIENCY.

ATLAS WORKS WITH QUALIFIED CONTRACTORS IN EACH STATE TO PERFORM THE SERVICES NEEDED FOR EACH WELL PROJECT.

### DID YOU KNOW?

The work plan may require development of alternatives to take into account proximity to natural resources, cultural resources, and/or stakeholders and may include public outreach and public notification prior to approval and implementation.





## PRIVATE CLIENT: OIL AND GAS WELL CLOSURE AND RESTORATION PROJECT

OLMSTED TOWNSHIP IN CUYAHOGA COUNTY, OHIO



A Phase I ESA was conducted in accordance with ASTM 1527-13 and identified an abandoned oil and gas well on the property along with 2 domestic water wells. The project consisted of the following main activities:

- Atlas researched historical documents included in the Phase I ESA report along with additional documents on record with the Ohio DNR Division of Oil and Gas prior to performing site reconnaissance
- Atlas facilitated transfer of ownership of the oil and gas well to the new property owners, submitted and obtained a permit with a plugging plan for plugging the oil and gas well
- A specialized drilling contractor was mobilized to the site and performed the well abandonment, which involved advancing drilling equipment to 2673 feet, and sealing the well in accordance with the permit and plugging plan
- Atlas added the use of a cast iron bridge plug set at 100 foot below the top of the well to assure no gas bubble would interfere with the 100 foot thick surface plug
- Product lines leading from the oil and gas well were located, drained and removed
- Impacted soil and contaminated water was properly disposed
- Steel product lines, well head and tubing components were drained and sent off for recycling
- Successful plugging was confirmed by the local Division of Oil and Gas inspector
- Restoration was completed by regrading of the area around the well along with the access route by seeding with a mix of native grasses and mulching



## PRIVATE CLIENT: KITTIE BAILARD OIL WELL ASSESSMENT & REMEDIATION

CARPINTERIA, CALIFORNIA



This project was part of our client's SMVU Assessment and Remediation program. Atlas located and assessed a leaking oil well, supported abandonment activities, and performed remediation within a sensitive nature preserve adjacent to a railroad line and the Pacific Ocean. The project also consisted of the following activities:

- Atlas was tasked with determining whether an oil seep was associated with the oil well
- With a high level of public and media interest, extensive negotiations were required with all interested parties including the city, and numerous permit conditions had to be met before Atlas was able to gain access to the site
- Atlas researched historical documents and aerial photos prior to performing site reconnaissance
- Atlas performed a preliminary site assessment that located the well head and confirmed that leakage from the well was causing the seep
- Atlas submitted and obtained a permit with a plugging plan for plugging the oil well
- A specialized drilling contractor was mobilized to the site and performed the well abandonment, which involved advancing drilling equipment to 1600 feet, perforating the well casing, and sealing the well and annulus with cement
- Atlas performed site remediation, which included excavating and proper disposal of approximately 500 cubic yards of hydrocarbon impacted soil
- The site was then backfilled with clean fill soil, regraded and the area was planted with a seed mix of native grasses and mulched
- Successful plugging was confirmed by the local Division of Oil and Gas Inspector

## KING BULLION FIELD, KING, LEBLANC & BLAND, PLLC: OILFIELD RESTORATION

ATCHAFALAYA RIVER BASIN (NEAR BUTTE LA ROSE), LOUISIANA



As a result of Settlement Agreement in the *Stanley Stockstill vs. Atlantic Richfield* case, we provided a Remediation Plan for Site Restoration of the Stockstill property near Butte La Rose, Louisiana. The primary tasks that were included in the Remediation Plan consisted of the following:

- Plugging and abandonment of three oil wells
- Plugging and abandonment of one salt water disposal well
- Removal of NORM impacted soils adjacent to each well location
- Removal of flow piping from each of these aforementioned wells

Prior to initiation of these tasks, all LDNR-required permitting was completed and approved by LDNR. The well sites were only accessible by barge, so field activities were dependent on the Atchafalaya River stage. Once the river stage was adequate, equipment and supplies were moved to the well sites. A board road and pads (work area) were constructed for ease of access. Naturally-Occurring Radioactive Material (NORM) surveys were completed on all downhole piping, wellheads, and soils. Norm impacted materials were separated so that these materials could be properly disposed of at a permitted waste facility (one that would accept NORM waste). Each well was properly plugged and abandoned according to applicable LDNR regulations and requirements. Once the project was completed, a Closure Report was submitted to LDNR and subsequently approved.



## MOSSBACHER ENERGY: OILFIELD RESTORATION

GRAND LAKE, LOUISIANA



As a result of Settlement Agreement in the *Hebert-Leleux vs. Continental Oil Company* case, we provided a Remediation Plan for Site Restoration of the Stockstill property near Butte La Rose, Louisiana. The primary tasks that were included in the Remediation Plan consisted of the following:

- Closure of two former E&P pits
- Treatment of surficial soils (to a depth of 6" below grade) to encourage regrowth of natural vegetation

Prior to initiation of these tasks, all LDNR-required permitting was completed and approved by LDNR. Soils from within the former pits and surrounding affected soils were excavated, transported, and disposed in a permitted disposal facility. Clean backfill was placed in each excavation and compacted to the existing grade. Surrounding surface soils were treated with liquid fertilizer, gypsum, and hay via introduction by tilling to a depth of 6 inches. After evaluation by LDNR, site closure under Act 312 was approved.

## PRIVATE CLIENT: ENVIRONMENTAL ASSESSMENT AND REMEDIATION

SOUTHERN CALIFORNIA

Atlas provides environmental services to this confidential retail petroleum client that include the assessment and remediation of petroleum-oil impacted soil and groundwater associated with historical oilfield activity in the Santa Maria Valley, California.

Through careful research of historical records, reports, and aerial photographs, Atlas identified historical oilfield features beneath residential neighborhoods, commercial properties, agricultural areas, adjacent to sensitive City (Santa Maria, CA) infrastructure, at an active Caltrans maintenance yard, and within a City (Carpinteria, CA) public park/nature preserve.

The assessment and remediation projects typically include:

- Research and review
- Plans and permitting
- Underground utilities
- Drilling
- Soil sampling
- Groundwater evaluation
- Remedial excavation
- Restoration
- Reporting



During the projects, we typically performs daily monitoring for:

- Site safety
- Air quality
- Dust
- Noise
- Ground vibration
- Slope stability



For over 16 years of work on this national client's portfolio, Atlas has:

- Performed environmental assessments at 85 properties
- Exposed and assessed 7 historical wellheads for hydrocarbon impacts and signs of leakage via bubble testing and PID verification
- Drilled 1,074 soil borings, and collected 3,008 soil samples
- Submitted 86 assessment reports, 52 workplans, and 29 remedial action plans
- Remediated hazardous material at 2 properties and non-hazardous material at 31 properties
- Performed 4 human health risk assessments, and 2 geotechnical studies
- Performed 4 groundwater evaluations, and remediated impacted groundwater
- Evaluated background levels of metals in soil at 15 properties
- Communicated diligently with regulatory agencies and obtained 91 "No Further Action" letters
- Demolished 17 residential structures in populated neighborhoods; utilized shoring at three sites
- Temporarily re-located underground utilities at an active Caltrans maintenance yard



## ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY: ORPHAN WELL PLUG & ABANDON

### ARIZONA

Atlas was awarded a task order contract under an MSA with the Arizona Department of Environmental Quality (ADEQ) for the Arizona Orphaned Well Site Abandonment, Remediation, and Restoration Project. ADEQ plans to ultimately plug and abandon legitimately orphaned oil and gas, geothermal, and/or helium wells in Arizona in coordination and in compliance with requirements of the 2021 IJA, followed by a possible reclamation of the associated facilities.

The project is on going and consists of four tasks:

#### TASK 1 - ASSESSMENT

- Compile ADEQ's digital and hardcopy documentation to verify the well information and submit a summary report for each well.

#### TASK 2 - SITE CHARACTERIZATION

- This task includes obtaining access, locating the wells, conducting methane screening, developing a sample and analysis plan, and soil sampling adjacent to the well to determine if there are soil impacts from the well installation.
- If possible, conduct groundwater sampling in adjacent wells or in the well if it has been converted to a water well.

#### TASK 3 - WELL PLUGGING AND ABANDONMENT

- Develop a plugging and abandonment plan in coordination with a drilling subcontractor that describes all activities for plugging and abandonment for each orphaned well, obtain the appropriate permits and oversee the abandonment/plugging activities, and submit a well abandonment/plugging report for each well.

#### TASK 4 - POST SITE RESTORATION

- Develop a brief Work Plan for each well to describe remediation and/or restoration activities, oversee the restoration activities and install a surface memorial as described by the ADEQ.



## OHIO DEPARTMENT OF NATURAL RESOURCES: OUR LADY OF ANGELS

### CUYAHOGA COUNTY, OHIO

The Our Lady of Angeles #001, a 1920 vintage Legacy Orphan Natural Gas Well in Cleveland, Ohio, was plugged by the Well Done Foundation after extensive methane measurement and monitoring in the spring of 2022. This orphan well was located in the courtyard of former Franciscan Monastery in Cuyahoga County which had been transitioned to a low-income senior citizen housing complex. Working with the Ohio Department of Natural Resources and landowners, Well Done successfully plugged this well while the facility remained fully occupied.





# CANADIAN FEDERALLY FUNDED CONTRACTS: ALBERTA SITE REHABILITATION PROGRAM, BRITISH COLUMBIA DORMANT SITE RECLAMATION PROGRAM & SASKATCHEWAN ACCELERATED SITE CLOSURE PROGRAM

CANADA



In 2020, the Canadian Federal Government announced a 3-year, \$1.4 billion dollar federally funded program to close aging oil & gas infrastructure in Western Canada. The funding was distributed through 3 jurisdictions managed by provincial programs, each with their own criteria and key performance indicators. In all 3 jurisdictions, the funds were granted directly to the consulting and service providers based on allocations of the oil & gas licensee asset lists. Project work included a variety of activities on over 4,000 sites including well abandonment, Phase I environmental site assessment, Phase II environmental site assessment, remediation of contaminated work sites, and reclamation of work sites. During these programs, 360 was successful in receiving funding due to their industry leading expertise in systematic and automated accounting practices, allowing them to provide auditable financial reporting and accountability to shareholders.



## ROLES AND RESPONSIBILITIES OF 360 INCLUDE:

- Preparation and submission of all grant applications for eligible sites.
- Cost estimates, engineering, and environmental reporting.
- Field execution - well plugging, decommissioning, and site restoration.
- Manage invoice processing and payment of all services within the program. Execution activities were either 100% or 50% funded, depending on the criteria.
- Liaise with Indigenous and First Nations groups.
- Manage HSE Program for all subcontractors.
- Provide daily and weekly reporting to Project Managers.
- Report jurisdiction-specific KPI reports per project.
- Prepare and submit all related government project reporting.
- Financial documentation generated to ensure auditor compliance standards (KPMG, PwC, Deloitte, EY).



At Atlas, we are committed to safety and work to strengthen our culture around it. The health of our employees, the prevention of incidents, and the protection of the environment are mandates incorporated into every aspect of our company, surpassing all other considerations. Our clients expect it, and we require it of ourselves.



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