

LANGAN

OIL & GAS INDUSTRY



STATEMENT OF QUALIFICATIONS



NEW JERSEY | NEW YORK | CONNECTICUT | PENNSYLVANIA | VIRGINIA | WEST VIRGINIA | OHIO | FLORIDA | TEXAS
ARIZONA | CALIFORNIA | ABU DHABI | ATHENS | DOHA | DUBAI | ISTANBUL | LONDON | PANAMA



SUSTAINABLE DESIGN

Langan professionals design solutions that maintain the inherent connections between structures and their natural surroundings. The result – sustainable communities for future generations to live, work and play.

HEALTH & SAFETY

Langan is committed to providing a healthy and safe working environment. Langan’s goal is to be SAFE (Stay Accident Free Everyday).



HEALTH & SAFETY VISION STATEMENT



PRESIDENT / CEO – DAVID T. GOCKEL

Langan is committed to fostering a generative health and safety (H&S) culture that cares for and benefits our employees, clients, contractors, families, and communities. We strive to be industry leaders in the advancement of incident and injury prevention and to achieve our number one goal: to be SAFE (Stay Accident Free Everyday).

The Langan H&S Policy:

- Delivers services in a manner that goes beyond compliance
- Communicates Langan’s corporate policies and standards proactively
- Identifies and controls risks through focused H&S planning and ongoing hazard recognition
- Intervenes and communicates at-risk conditions and behaviors
- Sets and reviews individual H&S performance and participation goals
- Recognizes employees who exemplify caring behaviors, positive attitude, and H&S leadership
- Provides effective H&S training and commits the resources required to support a world-class H&S culture
- Reports, investigates, and shares incident and near-miss root causes and lessons learned
- Engages all staff through regular H&S discussions, corrective actions, and awareness campaigns
- Analyzes and shares H&S performance weekly during firm-wide operations meetings
- Actively reviews and updates our H&S Management System as part of the plan-do-check-act cycle
- Assesses and selects subcontractors based on H&S performance, commitment, and collaboration
- Incorporates the H&S requirements of our clients and responds promptly to reduce risk tolerance

We convey our commitment to creating a healthy and safe work environment through our corporate health and safety message:

Langan’s goal is to be SAFE (Stay Accident Free Everyday)

CORPORATE SUMMARY

INTEGRATED SOLUTIONS. MEASURABLE VALUE.

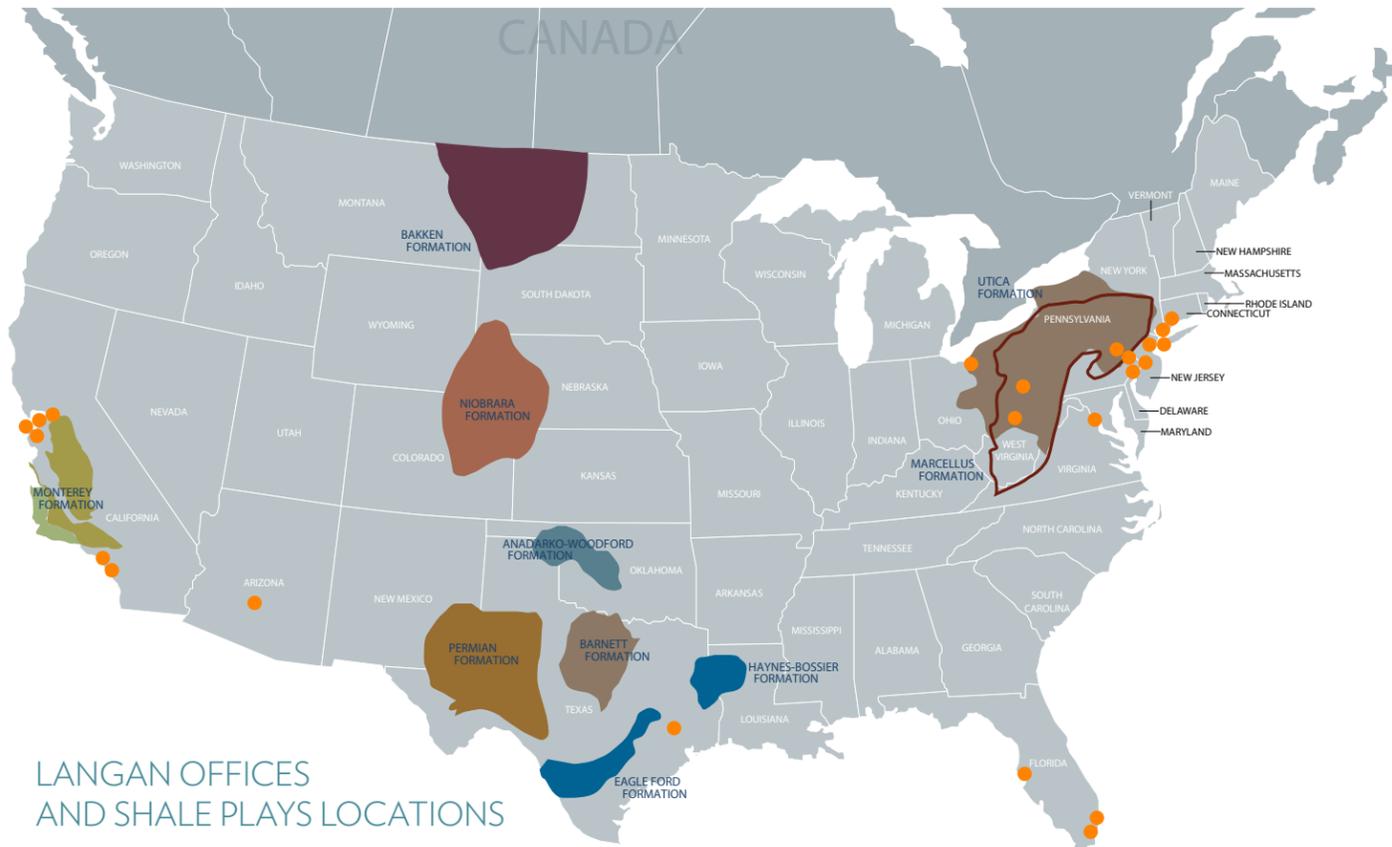
Langan provides an integrated mix of engineering and environmental consulting services in support of pipelines, well pads, compressor stations, and related facilities for the energy industry and land development. Our clients include energy companies, developers, property owners, public agencies, corporations, and institutions.

Founded in 1970, Langan employs more than 1,000 professionals in its Parsippany, NJ headquarters and among regional offices in:

- Pittsburgh, PA
- Cleveland, OH
- Bridgeport, WV
- New York City, NY
- White Plains, NY
- Trenton, NJ
- Houston, TX
- New Haven, CT
- Philadelphia, PA
- Bethlehem, PA
- Doylestown, PA
- Arlington, VA
- Miami, FL
- Fort Lauderdale, FL
- Tampa, FL
- Phoenix, AZ
- Sacramento, CA
- San Francisco, CA
- Oakland, CA
- San Jose, CA
- Irvine, CA
- Los Angeles, CA

Langan International, the firm's wholly owned subsidiary headquartered in New York City, provides all firm services for projects in the Middle East, Eastern Europe, Latin America, and the Caribbean. Langan International regional locations are in:

- Abu Dhabi
- Athens
- Doha
- Dubai
- Istanbul
- London
- Panama



LANGAN OFFICES AND SHALE PLAYS LOCATIONS

● Langan Office Locations

WHY LANGAN?

TECHNICAL EXCELLENCE
PRACTICAL EXPERIENCE
CLIENT RESPONSIVENESS



- We react to time-critical project demands, but we never sacrifice the quality of our work.
- We serve as client advocates and alert our clients to the proposed regulations that may affect their operations.
- We are proud members of local oil and gas associations and we add to the pulse of the industry through our active involvement on technical committees.
We appreciate the importance of landowner relationships and our field personnel behave as “one of your own” to preserve your performance reputation.
- We provide value-added solutions through the application of new technology and integrated engineering.
- We strive to integrate elements of sustainability into all of our projects.

REPRESENTATIVE OIL & GAS CLIENTS

- Antero Resources
- Antero Midstream
- BP
- Buckeye Partners
- California Resources Corporation
- Chevron
- Chief Oil & Gas
- Colonial Pipeline
- ConocoPhillips
- CONSOL Energy
- Crestwood Equity Partners
- EQT
- Evergreen Environmental
- EXCO Resources
- FirstEnergy
- Hess Corporation
- Kelchner
- Kinder Morgan
- MarkWest
- Mountaineer Keystone
- NextEra Energy
- NuStar Energy
- PBF Energy
- Phillips 66
- Rice Energy
- Royal Dutch Shell
- Seneca Resources
- Southern Company Gas
- Spectra Energy
- Sunoco Logistics
- Tesoro
- UGI Energy Services
- Williams Companies
- Valero Energy
- Velocity Midstream Partners



UPSTREAM SERVICES

STRONG FOUNDATIONS FOR NEW EXPLORATION

Upstream projects are your company's biggest investment. Protecting that investment calls for more than just construction knowledge. You also need a consultant who can handle all the unique challenges of your project, from complex subsurface geology to permitting hurdles to creating access points for remote sites.

Langan has played a major role in the development of dozens of successful upstream facilities. What sets us apart is our integrated team of experts, all working together to make sure projects start — and stay — on the right track.

TURNKEY SITE ACQUISITION AND PERMITTING

Choosing the right site can be the difference between a profitable project and one that is delayed or derailed altogether due to environmental or regulatory problems. Langan's site acquisition support team has substantial experience in due diligence and site selection, ensuring proper site selection by uncovering challenges that can prevent projects from moving forward. Once site selection is complete, our regulatory experts coordinate the entire permitting process to expedite project start-up.

DECADES OF MULTIDISCIPLINARY EXPERTISE

Installing production facilities requires input from professionals in engineering design, environmental impact mitigation, and construction management. Having all these capabilities in-house means Langan clients enjoy a streamlined process with lower costs and fewer oversights, as well as a safer, more efficient design.

OUR EXPERIENCE:

- Well Pads
- Freshwater Impoundments
- Temporary and Permanent Water Lines
- Gathering Pipelines

OUR SERVICES:

- Erosion and Sediment Control, Design, and Permitting
- Wetland and Waterway Surveying and Permitting
- Threatened and Endangered Species Conflict Resolution
- Pre-Drill Water Testing
- Well Plat Surveying
- Geotechnical Design
- As-Built Surveys
- GIS Site Selection
- Compliance Inspection
- Spill Cleanup

UPSTREAM PROJECT SPOTLIGHT: NATURAL GAS PRODUCTION WELL SITE

Location: Washington County, Pennsylvania **Client:** Confidential

Langan designed and permitted this natural gas production facility consisting of a permanent access road, production well pad, aboveground storage tank pad, and a freshwater impoundment. The site posed several challenges, including difficult access due to thick vegetative cover and the need to identify and delineate wetlands within the project footprint. In addition, terrain surrounding the site is steep, which made the design and feasibility of PADEP-compliant stormwater controls extremely difficult.





MIDSTREAM SERVICES

THE ROUTE TO NEW CONNECTIONS

Langan's midstream projects include nearly 200 miles of pipeline and dozens of compressor stations, valve yards, and meter stations for US oil and gas companies. Our team provides the comprehensive engineering, environmental, and regulatory expertise needed to complete large projects faster.

NATIONWIDE FOOTPRINT, LOCAL KNOWLEDGE

Our experience in diverse locations across the country has afforded us a reputation for managing complex site conditions like steep terrain, wetlands, and waterfronts. We also have experience navigating regulations in many cities and states, which helps expedite permitting and project start-up even in difficult regulatory environments.

KEEPING PROJECTS MOVING FORWARD

Linear midstream projects are notoriously complex, from routing pipelines across existing infrastructure to Federal Energy Regulatory Commission filing requirements to addressing local air quality. Keeping your project moving efficiently requires a consultant that can provide multidisciplinary support.

OUR EXPERIENCE:

- Gathering and Transmission Pipelines
- Pipeline Crossings
- Compressor Stations
- Meter Stations
- Valve Yards

OUR SERVICES:

- FERC Filings
- Horizontal Directional Drilling (HDD) Design and Installation
- Design, Permitting, and Construction of Access Roads
- Survey for Pipeline Right-of-Way
- GIS Pipeline Route Development
- Stormwater Management
- Erosion and Sediment Control
- Air Quality
- Scanning and UAV Survey
- Wetland and Waterway Survey and Permitting

MIDSTREAM PROJECT SPOTLIGHT: MARINER WEST PIPELINE CONSTRUCTION

Location: Beaver County, Pennsylvania **Client:** Sunoco Logistics

Langan provided site/civil and geotechnical engineering design and construction services for a 4.4-mile section of ethane pipeline extending from the NOVA chemical plant on the southern bank of the Ohio River to Sunoco's Vanport station. The project included Horizontal Directional Drilling (HDD) design and conventional installation, as well as pipeline construction and construction of several access roads. The Ohio River HDD bore was nearly one mile long and the HDD crossing of Interstate 376 was approximately 1,000 feet long. Our services included final design of the trenchless crossing of an interstate highway, directional drill crossing, preparation of bid documents, bidding coordination, construction monitoring and inspection, construction administration, and project management.



DOWNSTREAM SERVICES

YOUR TEAM THROUGH PRODUCTION

Langan has decades of complex facility experience supporting petrochemical manufacturers, utilities, and industrial developers looking for cost-effective approaches to energy development, facility expansion, and site remediation projects.

COMPREHENSIVE PLANNING AND REGULATORY STRATEGY

Refinery expansion and brownfield redevelopment are complicated projects that demand thorough planning and analysis. Langan has conducted hundreds of site feasibility studies and due diligence investigations where we identify critical permitting and construction-related issues to mitigate costs and ensure project success.

RISK-BASED REMEDIATION DESIGN

Remediating properties affected by legacy contamination involves specialized expertise in site characterization, environmental engineering, and regulations such as RCRA and CERCLA. Our environmental experts take a risk-based approach that focuses on cost-effective remediation programs built around compliance.

Langan is also closely involved with innovative regulatory programs aimed at expediting cleanup projects and streamlining compliance. Our integrated team coordinates the process with regulatory agencies and provides a single point of contact that eliminates the need to manage multiple consultants.

OUR EXPERIENCE:

- Refineries and Tank Farms
- Petrochemical Plants
- Terminals and Ports
- Fossil Fuel Generation
- Nuclear Energy
- Waste-to-Energy and Biofuel Projects
- Electrical Transmission

OUR SERVICES:

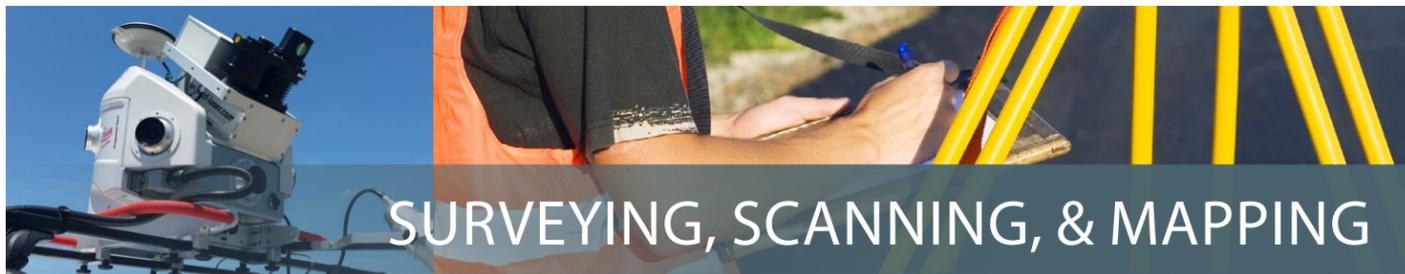
- Site/Civil Design
- Geotechnical Design
- Due Diligence Support
- Brownfield Remediation
- Environmental Compliance
- Survey, Laser Scanning, and Modeling
- Mobile Mapping

DOWNSTREAM PROJECT SPOTLIGHT: MARCUS HOOK REFINERY

Location: Delaware County, Pennsylvania **Client:** Sunoco

Langan developed and helped implement cleanup strategies for the former petroleum facility now known as the Marcus Hook Industrial Complex. Langan developed a comprehensive remedial plan for the facility, including a site-wide plan allowing RCRA corrective action requirements to be completed concurrently with site characterization and remediation under the PA One Cleanup Program. Langan is also supporting development of the new Mariner East natural gas liquids terminal.





SURVEYING, SCANNING, & MAPPING

CUTTING-EDGE TECHNOLOGY & EFFICIENCY

Our field crews utilize state-of-the-art surveying equipment including a new Pegasus mobile mapping system, 3D laser scanning, global positioning systems (GPS), robotic and prismless total stations, single and multi-beam echo sounders, drones, and side-scan sonar. Langan's mobile mapping and 3D scanning programs are integral for asset management, as-built information, and preliminary development for all aspects of the oil and gas industry. Use of the most recent technology in the field allows our crews to be more productive and achieve greater accuracy. Field crews have mobile internet capabilities through field laptops and our advanced equipment to accommodate data analysis and design changes in real time, which is crucial in oil and gas field operations.

SURVEYING SERVICES:

- Well Plat Surveys
- Topographic Surveys
- Boundary, Right-of-Way, & Corridor Surveys
- ALTA/ACSM Land Title Surveys
- Utility Surveys
- Wetlands Location Surveys
- GPS Surveys
- Hydrographic/Bathymetric Surveys
- Environmental Surveys
- Riparian Surveys
- Highway/Route Surveys
- Construction Stake-Out
- As-Built Surveys
- Photogrammetric Control
- GIS/LIS Data Acquisition
- Geographical Information Systems
- Deformation/Monitoring Surveys
- Utility/Thermal Scanning



GEOTECHNICAL ENGINEERING

SUBSURFACE SOLUTIONS

Langan was founded as a geotechnical consulting company in 1970, and geotechnical engineering remains a core discipline at Langan today. We work closely with our clients and the permitting, design, and construction teams to engineer cost-effective geotechnical solutions appropriate for proposed oil and gas infrastructure by considering permitting constraints and site conditions.

GEOTECHNICAL SERVICES:

- Subsurface Investigations
- Slope Stability Analysis
- Crossing Design Using Trenchless Techniques
- Subsurface Utility Engineering
- Earthquake/Seismic
- Materials Analysis
- Foundation Design
- Retaining Structures
- Soil Improvement/Ground Modification
- Dewatering Design & Permitting
- Excavation Support & Underpinning Design
- Geological Mapping of Rock Slopes
- Mine Investigations
- Earth & Rock Fill Dams
- Tunnels/Microtunneling
- Seawalls, Piers, & Bulkheads
- Pre-Construction Conditions Surveys
- Construction Observation
- Forensic Engineering/Expert Testimony



SITE/CIVIL ENGINEERING

RESPONSIVENESS THAT DELIVERS RESULTS

Langan's site/civil engineers work closely with the design team to develop final designs that minimize disturbances, permitting requirements, and cost. Our quality submittals lead to rapid permit approvals. Langan staff observes construction to ensure adherence to our design criteria and simplify the permit termination process.

SITE/CIVIL SERVICES:

- Site Feasibility Studies & Conceptual Plans
- Grading & Drainage Design
- Erosion & Sediment Control Plans/Permits/Inspection
- Post-Construction Stormwater Earthwork Analysis
- Site Restoration Plans & Analysis
- Construction Observation
- Utility Infrastructure Designs
- Landscape Plans
- Hydrologic & Hydraulic Studies
- Waterfront Systems Designs
- Property Acquisition Support
- Regulatory Coordination/Compliance
- CADD/GIS/Computer Animations



NATURAL RESOURCES

NAVIGATING POLICY AND NATURE

Oil and gas facilities have the potential to impact natural resources. Improper management and planning can lead to project delays or shutdowns. Through our experience with over 1,000 wetland and natural resource permitting projects throughout the US, Langan has developed strong relationships with federal, state, and local regulators. Our experienced staff includes permitting specialists who work closely with our engineers to design a "permissible" project while providing the most economic return to our clients.

NATURAL RESOURCE SERVICES:

- Wetland and Waterway Surveys & Impact Permitting (Federal, State, & Local)
- Land Use Permitting
- Stormwater & Industrial Discharge Permitting
- Coastal/Waterfront Development
- Permitting & Planning
- FERC/NEPA Compliance
- Environmental Assessments/Environmental Impact Statements
- Alternatives Analysis
- Wetland Delineations & Functional Assessments
- Wetland Mitigation Design, Banking, & Monitoring
- Stream Restoration
- Floodplain Analysis
- Habitat Assessment
- Wildlife & Ecological Surveys
- Threatened & Endangered Species Surveys
- Historic Structures Surveys & Recordation
- Baseline Ecological Evaluations
- Ecological Risk Assessment
- GIS Land-Use Mapping



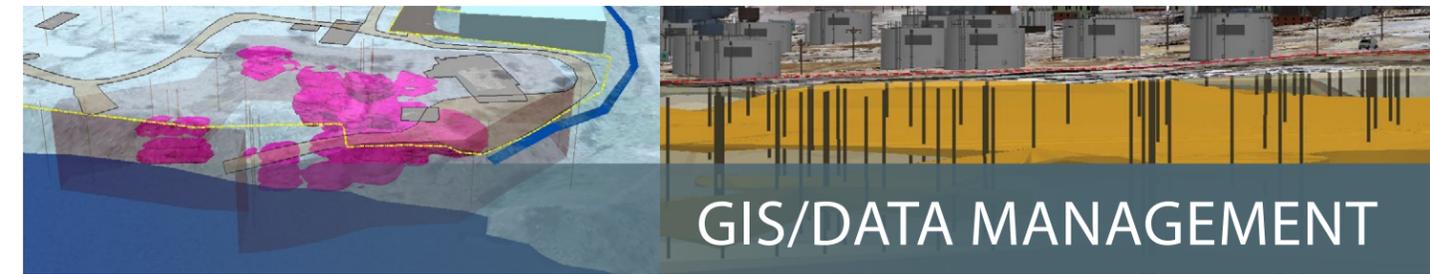
ENVIRONMENTAL

TECHNICAL AND REGULATORY ADVOCACY

Langan's environmental personnel have served the oil and gas industry for decades. We are providing our services in support of oil and gas exploration, production, gathering, and transmission projects.

ENVIRONMENTAL SERVICES:

- FERC Compliance and Filing
- Pre-Drill Program Management Water Sourcing
- Groundwater Quality Monitoring & Reporting
- Aquatic and Ecological Investigations
- Water Management Plans
- Electronic Management of Data Using Databases
- Investigation Support for Complaint Claims
- Due Diligence Support
- Environmental Compliance Inspections
- Spill Response & Remediation
- Risk-Based Corrective Action
- Remediation Design & Oversight
- Remediation by Natural Attenuation
- Human Health Risk Assessments
- Ecological Risk Assessment
- Forensic Investigation/Expert Testimony
- Multimedia Compliance Auditing
- Groundwater Modeling & Data Visualization



GIS/DATA MANAGEMENT

CUTTING-EDGE DATA VISUALIZATION

Langan relies upon Geographic Information Systems (GIS) for all aspects of our oil and gas services. Langan utilizes publicly available information from federal, state, and local agencies, along with privately owned data sources, to develop comprehensive GIS data layers that are used to make informed decisions. To assist our pipeline clients in the routing of new lines, Langan utilizes high resolution LiDAR elevation data for cost-path terrain analysis of pipeline construction. We couple our terrain analysis with GPS data collection of regulated features such as streams, wetlands, floodplains, and threatened and endangered species on parcel data as a means of identifying optimal routes that save money and simplify the permitting processes.

GIS/DATA MANAGEMENT SERVICES INFORM DECISION-MAKING FOR:

- Pipeline Corridor Routing
- Geo-Hazard Analysis
- Well Pad Installments
- Permitting
- Land Acquisition
- Environmental Monitoring
- Transportation Logistics
- Field Data Collection



ENVIRONMENTAL COMPLIANCE

STREAMLINED COMPLIANCE MANAGEMENT

Langan's environmental compliance team has significant experience providing the oil and gas industry with a full scale of services to streamline compliance, data management, and reporting to keep pace with evolving regulations. As active participants on industry technical environmental committees, we are among the first to learn about regulatory developments and potential changes that may impact our clients' operations. As strong industry advocates, our team helps clients achieve compliance with current regulations, prepare for what is to come, and make important business decisions accordingly.

COMPLIANCE SERVICES:

- Multimedia Regulatory Compliance Audits
- Air Quality General Permitting
- Title V Facility Permitting
- NPDES Evaluations & Permitting Including Hydrostatic Testing of Tanks & Pipelines
- Storage Tank Management & Compliance
- Contingency Plan Preparation & Compliance Evaluations (SPCC, FRP, PPC, SPR, SWPPP)
- EPCRA TRI & Tier II Reporting
- Waste Analysis & Characterization
- EHS Management Systems
- Compliance Training & Regulatory Guidance
- Applicability Determinations
- POTW Discharge Permitting
- Hazardous & Residual Waste Management & Reporting



TRANSPORTATION

SAFE. EFFICIENT. INNOVATIVE.

Langan has been instrumental in obtaining the necessary permits, approvals, and clearances from various agencies regarding well pad drilling and pipeline activities within the shale plays. Langan has provided its clients with numerous state, county, and township permits and agreements in an efficient manner for required road maintenance, utility crossings, and temporary/permanent driveways.

TRANSPORTATION SERVICES:

- Highway Occupancy Permits for Crossings & Driveways
- Truck Routing/Video Logs
- Vehicular Traffic Studies
- Road Use & Maintenance Agreements
- Traffic Modeling & Simulation
- Station Planning
- Site Access/Site Engineering
- Site Feasibility Studies
- Driveway Design



Langan Engineering & Environmental Services

Surveying, 3D Laser Scanning,
& Mobile Mapping/UAS
Environmental Engineering
EHS Management & Compliance
Site/Civil Engineering
Geotechnical Engineering
Natural Resources
Assessments & Permitting
GIS/Data Management Services
Transportation/Traffic Engineering

As a premier provider of integrated land development engineering and environmental consulting services, Langan brings more than four decades of expertise and experience to challenging projects around the world.

Technical Excellence
Practical Experience
Client Responsiveness

www.langan.com