



PLANT SERVICES

Overview



Valdes offers a wide range of services that provide solutions and support for the engineering and technical demands and challenges encountered at a plant or facility. Our experienced, multi-disciplined team has assisted many clients in a variety of capacities including:

- **Maintenance and Reliability Engineering** (repair plans, upgrades, temporary installations, rerates, root cause analysis, troubleshooting, equipment maintenance plans)
- **Turnaround Engineering and Support** (scope development, engineering, planning, project controls, constructability, field support, QA/QC, procurement, document management, commissioning and start-up)
- **Inspection Services** (inspection plan development, shop inspection and auditing, construction QA/QC, records management)
- **Infrastructure Program Management** (inspection, assessment, prioritization, develop solutions and execution support)
- **Engineering and Technical Studies** (e.g. pressure relief systems, plant optimization and troubleshooting, energy, debottlenecking, environmental compliance)
- **Multi-discipline technical support and staff augmentation**
- **Laser scanning and aerial drone capability**



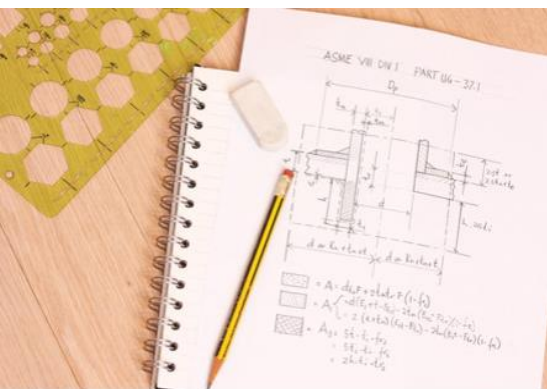
CONTACT INFORMATION:

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PLANT SERVICES

Maintenance and Reliability



Valdes' multi-disciplined technical staff, coupled with our extensive industry and plant experience allows us to successfully provide a wide range of maintenance and reliability services for our clients. These services include:

- **Maintenance Repairs**
 - Assessment and development of repair plans
 - Fixed equipment
 - Rotating equipment
 - Foundations and structures
- **Temporary installations**
- **Pressure vessel Code rerates**
- **Upgrades**
 - Pump seal and driver conversions
 - Tower modifications
 - Compressor controls
 - Metallurgy upgrades
- **Reliability Improvements**
 - Root Cause Analysis
 - Repair versus replace assessments
 - Piping and equipment vibration/stress analysis and mitigation
 - Troubleshooting
 - Develop equipment maintenance recommendations
- **Provide on-site resources to augment client's staff**

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Turnaround Engineering and Support



Valdes has a long history of providing a wide range of turnaround engineering and support services for our clients. We understand the importance planning, quality and timeliness plays in the successful execution of a turnaround. The following are examples of the types of services we have provided:



- **Planning**
 - Scope development
 - Constructability
 - Project controls – scheduling, KPI's
 - Field walkdowns/inspections
 - Chemical cleaning plans
- **Field Execution**
 - Construction Coordination
 - Safety Auditing
 - Productivity Assessments
 - 24 hr. technical support, RFI resolution
- **Engineering**
 - Prepare engineering packages
 - Temporary installations
 - Deliverables tracking
 - Engineering solutions for discovery work
 - Commissioning and start-up support
- **QA/QC**
 - Mechanical completion verification/inspection
 - QC documentation management
- **Document Management**
- **Provide on-site resources to augment client's staff**



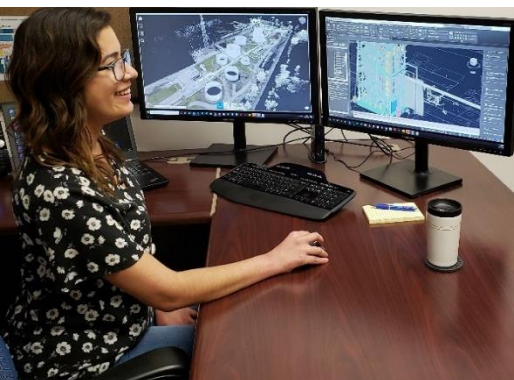
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Inspection Services



Valdes offers a variety of inspection services ranging from building inspection plans to providing assurance that new equipment and installations are ready and fit for operation. The following are examples of the types of services we have provided:

- **Inspection planning**
 - Inspection plan development and validation
 - Corrosion under insulation evaluation and planning
 - Drone scanning and Inspection
 - Visual inspections and recommendations
 - Inspection guidance for location and technique
- **Weld procedure development and review**
- **Metallurgical and corrosion engineering Services**
 - Corrosion troubleshooting
 - Welding engineering
- **Construction QA/QC**
 - On-site QA/QC and tracking
 - Review of equipment RFQ's and RFP's
- **Fabrication shop auditing and inspection**
- **Provide on-site resources to augment client's staff**
- **Document and records management**
 - P&ID drawing updates
 - On-site management of documentation
 - Tracking of MOC's, action items, etc.

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Infrastructure Program Management



Valdes' has helped clients effectively and efficiently manage various types of plant infrastructure. Our team has been engaged in inspecting and assessing conditions, developing and engineering solutions and supporting the execution of repairs in the field. The following are examples of some of the infrastructure programs we have managed :



- **Corrosion under insulation (CUI)**
- **Civil and structural integrity**
- **Pipe alley restoration**
- **Off-site piping systems integrity**
 - Soil to air interface
 - Touch point corrosion
 - Piping replacement
- **Firewater systems**
- **Corrosion protections systems**
- **Tank surveillance and monitoring**
- **Process sewer systems**



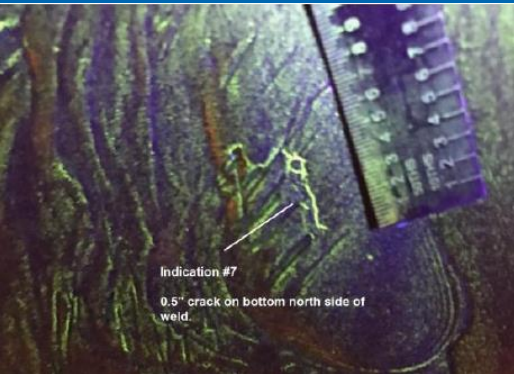
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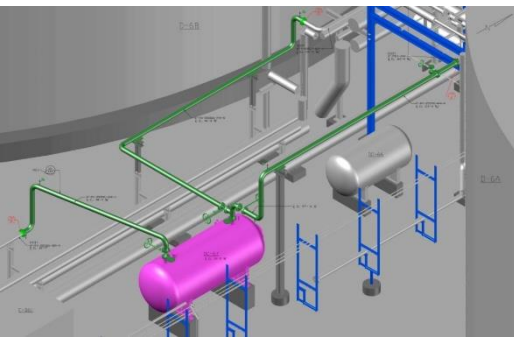


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Engineering and Technical Studies



Valdes' multi-disciplined technical staff coupled with our extensive industry and plant experience have been called upon to lead engineering and technical studies to address a wide range of technical issues and challenges for clients. Some examples include:



- Pressure relief protection systems
- Relief valve revalidation studies
- Energy efficiency evaluations
- Process troubleshooting
- Piping stress analysis
- Flare system assessments
- Vibration analysis
- Process optimization and debottlenecking
- Fixed equipment rerates
- Environmental compliance
- Lift studies
- Constructability



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Technical Support and Staff Augmentation



Valdes has provided on-site resources to augment client's staffs for short-term and long-term assignments. In addition to our current staff, we have access to and/or can resource personnel to meet your specific needs. The following is a list of the various types of roles we have provided on-site personnel:

- Project Management
- Process Engineers
- Project Controls
- Construction Management
- Maintenance/reliability Engineers
- Electrical and Instrument Engineers
- Inspection – plant and fabrication shops
- Quality Control and Assurance
- Commissioning and Start-up
- Operations support (procedures and training)
- Document control
- Administrative support



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Aerial Drone Inspection



Valdes Engineering Company has licensed commercial pilots and a DJI Phantom 4 Pro registered drone. Drones allow for inspection at heights and confined spaces in the safest possible manner. Many times, aerial imagery available online is years out of date. Our drone pilots can get you up to the minute imagery to make real-time decisions on your projects. Drones can also be used to create 3D Images or point clouds of large spaces which help in preliminary planning or engineering. By combining drone imagery with software solutions like Bentley Context Capture, Autodesk Recap, and Autodesk Infraworks, it is possible to create conceptual 3D models in their real-world location.



CAPABILITIES:

- Agricultural Inspection
- Building/Roof Inspection
- Topographic Survey
- Mapping
- Aerial Imagery
- Visual Inspection
- Power Line Inspection
- Pipeline Inspection
- Construction Inspection
- Point Cloud Creation
- Time Lapse Comparisons
- Confined Space Inspection

SOFTWARE:

- DJI Phantom 4 Pro
- Bentley Context Capture
- Autodesk Recap
- Autodesk Infraworks
- Leica Cyclone
- Leica Cloudworx



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