



**FACTORY BUILT INTEGRITY**

## **INTEGRATED PIPELINE ASSEMBLIES**



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**[RWLyall.com](http://RWLyall.com)**

LIT-PIPELINE-0616



Lyall provides quality pipeline assemblies backed by more than 40 years of manufacturing experience. From engineering documentation and 3D drawings to the delivery of installation-ready products built by a team of highly skilled fabricators, Lyall has the knowledge and capabilities necessary to produce large fabricated, custom solutions of unsurpassed quality to meet your specific needs.

## **Lyall Business System**

### **Purpose**

- Personal, professional and financial growth for all

### **Alignment of Aim**

- One shared goal

### **Body of Knowledge**

- Internal Yellow, Green and Black Belt instruction certification

### **Toyota Production System**

- Continuous improvement through lean manufacturing practices

### **ISO-9001**

- Two registered facilities

### **Quality Management System**

- Product tracking and traceability through documented Material Test Reports (MTR)

### **Demand Generation**

- Targeted sales and marketing processes

### **Openness**

- Integrity, Trust and Collaboration

## Facilities

- 167,000 square foot dedicated manufacturing footprint within two facilities
- 6 overhead cranes with capacity up to 12.5 tons
- 21' x 15' blasting booth
- 40' x 20' paint booth
- 2 in-house quality assurance and testing laboratories
- Indoor truck loading
- 5,000 gallon re-circulatory pump test fluid system



## Safety

- New employee safety orientation
  - Weekly toolbox safety meetings
  - Employee training
    - Work instruction
    - Training operation guidelines
  - Mandatory forklift, crane and material handling certification
  - Safety audits, safety-related KPIs and offsite safety meetings
  - In-house safety teams
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## Manufacturing Support

- 3D modeling and engineering drawings
- Optimization of manufacturing process and costs through design review
- Quality assurance testing documentation

Material Test Data supplied for components and material (i.e. steel)

Non-destructive weld test results (third party available)

Radiographic (RT)

Ultrasonic (UT)

Magnetic Particle (MT)

Dye Penetrant (PT)

Hydrostatic (Glycol/Water) 5,000 PSI max

Pressure (500 PSI max)

- Component selection and sourcing support
- Incoming material inspection
- Supplier qualification and audits
- First article inspection
- In-process audits
- Corrective Action Reports (CAR)



## Welding

- 3 certified welding inspectors on staff
- 2 certified welding instructors on staff
- 20+ certified welders on staff
- Material processing capability
  - Carbon steel
  - Stainless steel
  - Aluminum
- Lyall Qualified Weld Procedures per API-1104 standard
  - X-42 GMAW/GTAW weld process, all positions, unlimited OD and W/T
  - X-60 GMAW/GTAW weld process, all positions, unlimited OD and W/T
  - X-65 GMAW/GTAW weld process, all positions, unlimited OD and W/T
  - X-70 GMAW/GTAW weld process, all positions, unlimited OD and W/T
- Lyall Qualified Weld Procedures per ASME Section IX
  - Stainless steel GMAW/GTAW weld process, 1G and 1F positions, 1" - unlimited OD, .56" max W/T
- American Welding Society AWS D1.1
  - Structural steel GMAW/GTAW & FCAW
- Certify to customer qualified weld procedures as required



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## Coatings

- Two-part epoxy primer
- Two-part urethane top coat (standard 49 Gray, other colors available)
- Hot dip galvanizing
- Zinc plating
- Direct burial epoxy
- Epoxy and polyester powder coating



## Pipeline Fabrication

- Plasma cutting capability; 2" to 30" OD, 2" WT
- Hydraulic torqueing equipment
- MIG and TIG welding capability
- Assembled for field installation
  - Skid mounted
  - Building installation
  - Valves, regulators and closures
  - Control and metering systems
  - Pipe and flange assembly



## Structural Fabrication

- Material processing capability

Carbon steel

Stainless steel

- Skid fabrication

Integrated drip pan, open, enclosed, insulated, integrated lifting system

Angle, I-beam, C-channel, tube (round, rectangular, square)

Coatings; spray liquid paint, hot dipped galvanized

PE design load calculations with stamp available

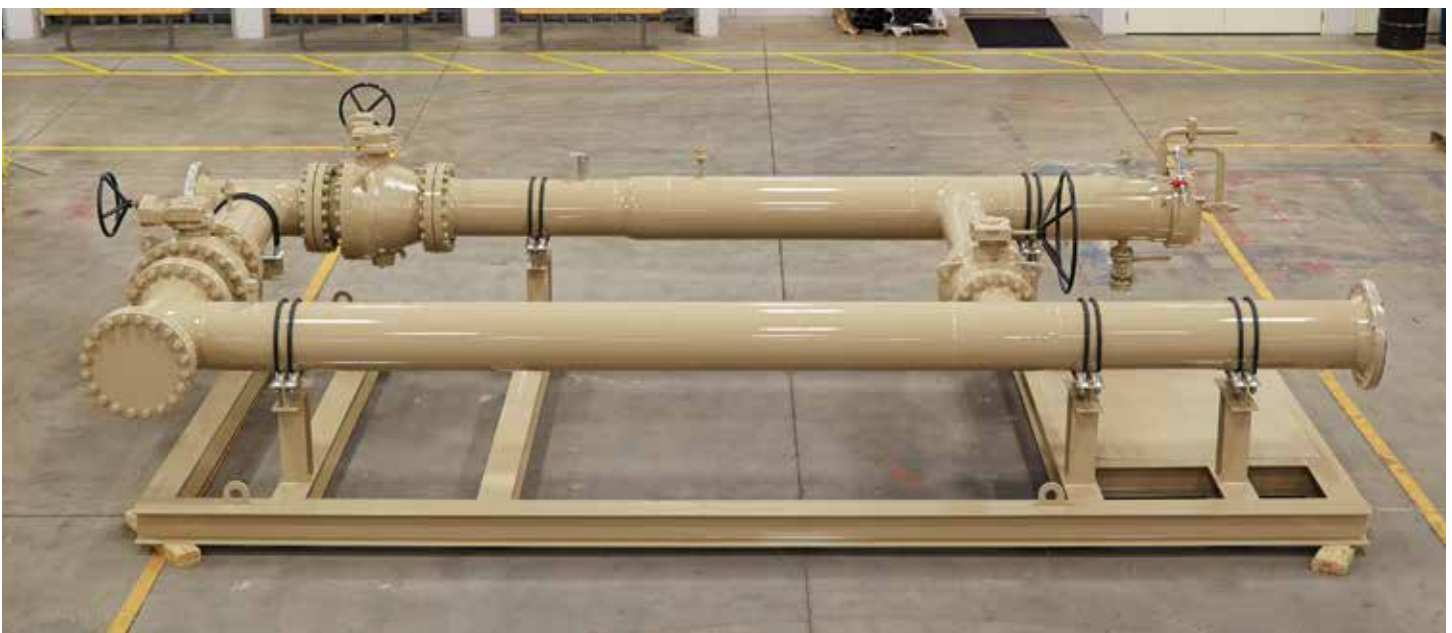
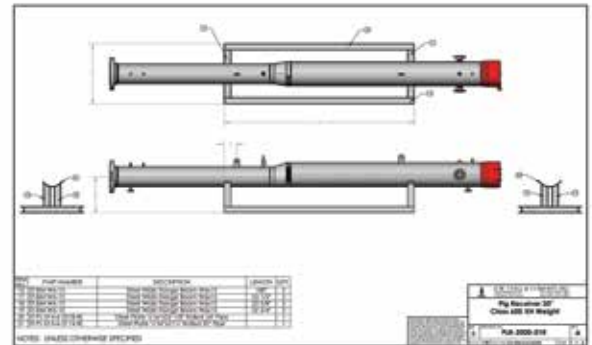
- Underground steel vaults and valve boxes

5' x 5' and 5' x 7' standard sizes on steel vaults

Up to 12' diameter on valve boxes

Available pre-fabricated with pressure control stations

Coatings; spray liquid paint, galvanized



## Pre-Fabricated Metal Buildings



- Building construction options
  - Single, double and overhead doors
  - Fixed and operational windows
  - Openings, hatches, louvers and penetrations
  - Interior walls and ceilings; formed wall liners, drywall, plywood
  - Partition walls available with doors and windows
  - Minimum insulation rating of R13 in walls, ceilings and floors
  - Skid type; angular or tubular open bottom, full skid closed bottom
- Available widths: 32' max
- Available lengths: unlimited
- Optional interior equipment
  - Interior and exterior lighting
  - HVAC
  - Electrical installed by licensed electricians meeting applicable local codes up to Class I Div I
  - Installation of pipe fabrication
  - Control, monitoring, metering and analyzing equipment installation and wiring
- Standard construction features
  - Meets snow, wind and live loads per applicable "International Building Code" published by Code Council
  - Fire hazard rating equal to Class 1 material as defined by Factory Mutual
  - Self-framing, nominal 24 gauge, embossed, factory painted 16" x 3" deep interlocking wall panels
  - Single slope, gable and canopy building styles available
  - Wall panel coating; standard white siliconized polyester with custom colors available
  - Galvanized steel roof panels conforming to ASTM A-792 specifications with galvanized coating conforming to G90 (1.25 oz. commercial) standards
- Engineering documentation and approval drawings with spec sheets are available upon request





## Control Management Systems



- Pressure regulators
  - Spring assisted, pneumatic, diaphragm
- Pressure relief
- Metering
  - Orifice, diaphragm, Coriolis, magnetic, turbine, rotary, ultrasonic
- Fluid analysis
  - Gas chromatograph, oil basic sediment and water (BS&W)
  - Sampling systems
- Process monitoring (indicators or transmitters)
  - Temperature, pressure, flow, position, indicator, level sensors,
- Atmospheric safety equipment
  - Lower explosion limit (LEL)
  - Upper explosion limit (UEL)
  - H2S sensing
- Pumps
  - Centrifugal, gear, progressing cavity, sliding vane
- Process controls
  - Variable frequency drives (VFD), programmable logic controllers with integral touch screens (PLC)
- Electrical
  - Engineering documentation, plumbing and instrumentation design (P&ID)
  - Electrical schematics
  - Sizing calculations
  - Licensed electricians
  - Wiring to Class I Division 1 & 2 specifications









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## CUSTOM PIPELINE SOLUTIONS



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