



## LAKE SUPERIOR CONSULTING, LLC

LAKE SUPERIOR CONSULTING, LLC

Lake Superior Consulting, LLC, established in 2002, is a team consisting of engineers, technicians and support specialists committed to the cost effective servicing of our customers needs. The employees of LSC believe that in today's fast-paced world customer service is a valuable but often overlooked amenity. Lake Superior Consulting's portfolio of services includes;

- Pipeline "Integrity Management" Program
- Coating Applications
- Cathodic Protection
- Construction Services / Project Management
- Complete In Line Inspection Project Management Services
- Pipeline Engineering Services
- Database Management
- Welding
- Quality Control
- Storage Tanks
- Laboratory Services



Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)



# PIPELINE INTEGRITY MANAGEMENT PROGRAM

**LAKE SUPERIOR CONSULTING, LLC**

Lake Superior Consulting, LLC was established for Pipeline Integrity Management. Our focus since inception has been risk-based integrity solutions.

## Integrity Management Plans

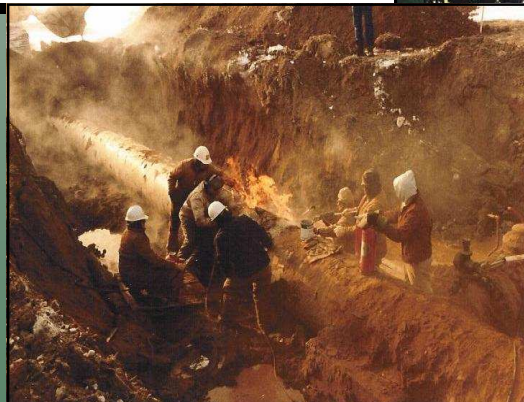
- CFR Title 49 Part 195
- CFR Title 49 Part 192

## Direct Assessment

- ECDA
- ICDA
- SCCDA

## In Line Inspection Project Management

## Pressure Testing Management



Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)



## COATING APPLICATIONS

**LAKE SUPERIOR CONSULTING, LLC**

### **Coating Inspection and Quality Control Services:**

**Application Procedures**

**Spray Applications**

**Field Applied Coatings**

- Surface Preparation Requirements and Adherence
- Surface Profiling
- Relative Humidity Requirements
- Wet Film Thickness Tests
- Dry Film Thickness Tests

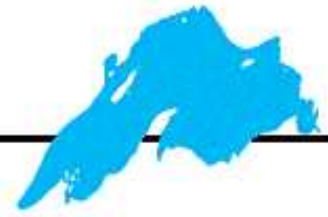
**Specialization in Two-Part Epoxy**

- Line Travel
- In Service



Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)



# CATHODIC PROTECTION

**LAKE SUPERIOR CONSULTING, LLC**

## Test Point Survey

- Provide DOT 192 and 195 required annual surveys and provide timely recommendations
- Provide engineering design, troubleshooting and installation verification test point surveys

## Interference Testing

### Design

- Detailed Cathodic protection engineering design
- Engineering standards
- Materials selection
- Field incorporated standards applications

### Close Interval Survey

- Quality Assurance Inspection
- Data review and acceptance
- Recommendations
- Detailed Cathodic protection engineering design

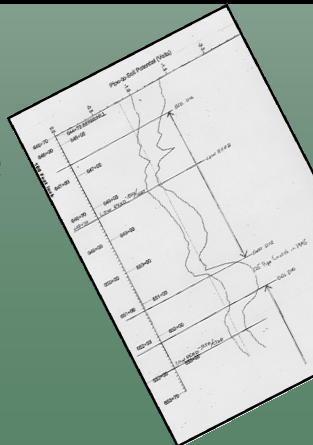
### Construction Services and Project Management

- Inspection for integrity on new construction and rehabilitation
- Budget projection and forecasts
- Cost-tracking for winter construction

### Experience in gas handling and loaded pipelines

Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)





## IN LINE INSPECTION

**LAKE SUPERIOR CONSULTING, LLC**

### Complete Services for In-Line Inspection Rehabilitation

#### Project Management:

- Cleaning
- Caliper
- Geographical
- Metal loss
- Crack Tool

#### Remediation Project Management

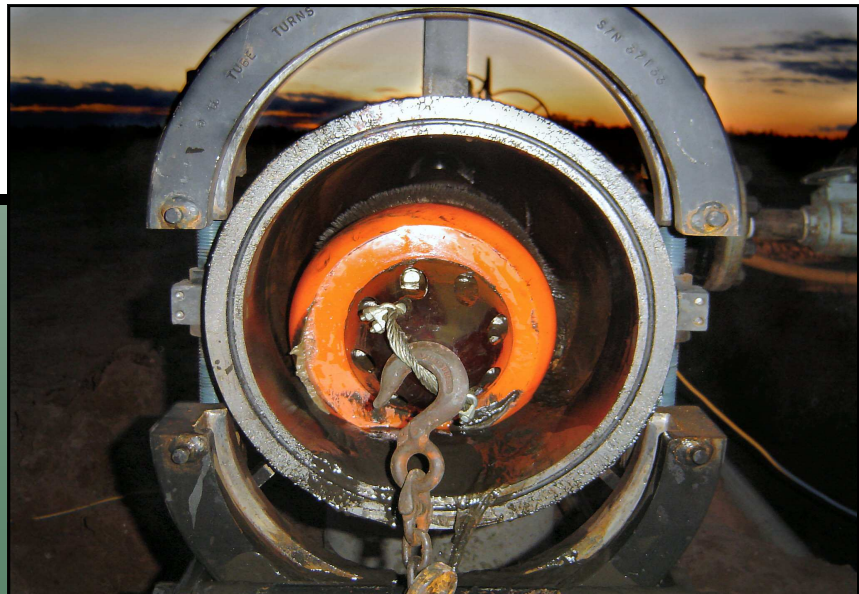
- Compliance/integrity management program rule
- Procedural development

#### Data Review/Quality Acceptance

#### Above Ground Marking

#### Data Correlation—Input into Risk Assessment Programs

#### Defect Evaluation and Categorization



Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)



## PIPELINE ENGINEERING SERVICES

**LAKE SUPERIOR CONSULTING, LLC**

- Capital Construction Project Management**
- Maintenance & Repair**
- Flow Modeling & Evaluation of Drag Reducing Agents**
- Hydrostatic Testing**
- Emergency Response/ Incident Command**
- OPS Audits**
- Cost Tracking/Estimates**
- Regulatory Compliance**



Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)



# WELDING

LAKE SUPERIOR CONSULTING, LLC

## Welding Procedures

- Research
- Qualification
- Mechanical and Metallurgical testing
- Compliance and qualification logs

## Welders

- Qualification
- Testing / Certification
- Continuity and compliance logs

## Inspection

- Destructive / Non Destructive
- Metallurgical
- On site project surveillance

## Codes

- American Petroleum Institute (API)
- American Welding Society (AWS)
- American Society of Mechanical Engineers (ASME)



Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)



## QUALITY CONTROL SERVICES

**LAKE SUPERIOR CONSULTING, LLC**

### Inspection

- AWS Certified Welding Inspector
- Vendor surveillance / compliance
- Non- Destructive Testing
- Radiographic interpretation

### Welding

- Welding procedure development (AWS, ASME, API)
- Welder qualifications (AWS, ASME, API)
- Welding program continuity systems

### Quality Program Enhancement

- Sensitive item calibration / continuity logs
- Expediting
- Material compliance
- Pre- Audit assistance
- Technical Metallurgical Service
- Technical Metallurgical Assistance

Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)



## STORAGE TANKS

**LAKE SUPERIOR CONSULTING, LLC**

- New Construction
- Project Management
- Repairs
- Modifications
- Internal Floating Roofs
- External Floating Roofs
- Floor Replacements
- Coatings (Internal & External)
- Tank Cleaning: Techniques & Management
- Fitness for Service Evaluations
- Tank Farm Operations



Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)



# LABORATORY SERVICES

Lake Superior Consulting, LLC

## Failure Investigation

- On Site Investigation
- Laboratory Analysis
- Technical Reporting
- Emergency Response Services Available

## Mechanical & Metallurgical Testing

- Hardness & Microhardness
- Tensile & Fracture Toughness Testing
- Metallography
- SEM/EDS

## Internal Corrosion Monitoring– Extended Analysis Coupons

- Laboratory Analysis
- Program Management
- Data Review & Training

## Chemical Testing

- GC, ICP, FTIR, GCMS, HPLC, Wet Chemistry
- Sludge, Brines, Glycols, Hydrocarbon, Pigs

## Coating Consultation/Testing

- Salt Fog, Accelerated Weather, Humidity
- Chemical & Thermal Exposure



Lake Superior Consulting, LLC  
130 W. Superior Street  
Suite 614  
Duluth, MN 55803

Phone: (218) 727-3141  
Fax: (218) 727-9151  
[www.lsconsulting.com](http://www.lsconsulting.com)