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There is no doubt that the strength and durability of Ductile iron pipe is incomparable among water system pipe materials. Its walls are impermeable to the contaminants that can affect plastic materials, its strength is not affected by temperature or exposure to sunlight, cyclic pressures do not shorten its service life, it does not require the extreme installation procedures that plastic pipes need to avoid premature failures, and, perhaps best of all, iron pipe is amazingly resilient. It has a record of performing under unforeseen demands that pipelines have experienced over service lives often exceeding 100 years. When we control the effects of corrosion on Ductile iron pipe, we establish a benchmark of service to which all other materials can only aspire.

The investigations in Lafourche Parish are definitive. The soils in that region of southern Louisiana are as aggressive as can be found in nature. They have very low soil resistivities, test positive for chlorides, exhibit conditions conducive to the activity of...
anaerobic bacteria and are consistently saturated with groundwaters ionizing the salts and minerals within the soils that contribute to the extremely low resistivities.

Proper Installation Is Key to Success

Such results do not occur by accident. Polyethylene encasement was a new system of corrosion control in 1958 and the people involved in that installation made the effort to do it right. This was necessary in order to find out how well the system would work. And, it worked very well. The polyethylene was installed snugly against the pipe around its full circumference and along its entire length, isolating the pipe from the soil and impeding the intrusion of groundwaters beneath the encasement. Proper installation is the key to any engineering endeavor and we believe that the efforts made to ensure proper installation provides a return on investment that is difficult to overstate.

What this means to utilities is that they can, with reasonable care and effort, realize the advantages that Ductile iron pipe offers due to its strength and resilience – advantages that no other pipe material can offer. Economy in installation, economy in operation, and value in extended service lives.

Ductile offers advantages in economy in installation, in operation, and in value for extended service lives.

Two Dimensions of Pipe Protection

In 2018, DIPRA and Corrpro® announced a revision to the Design Decision Model (DDM®), a two dimensional risk-based corrosion control matrix developed for Ductile iron pipe. In the DDM® matrix, the likelihood of corrosion is balanced against the consequences of a corrosion-related problem and appropriate recommendations are made. The matrix is published and available. Click here to access the results of the significant research and practical engineering that went into its development.

Learning from the value of the cooperative effort we undertook with LPWD, DIPRA has additional cooperative studies into the efficacy of the V-Bio® film with several utilities in Colorado, Illinois, Alabama, Tennessee and New England. We learn from these interactions. The 2018 revision to AWWA C105 for polyethylene encasement includes Modified Method A® for installation, an inventive method we learned of in our work with several utilities.

Impressive Return on Investment

This installation in Lafourche Parish exemplifies the value all utilities can realize when properly installed polyethylene encasement becomes a part of their systems. The return on investment that assures proper installation is an asset of management that cannot be minimized for assets that bring potable water to your customers. 60-years of service in the bayou country soils of Louisiana demonstrates the impressive return on an investment in installation.

When you specify Ductile iron pipe for tomorrow’s infrastructure, you can do so with the confidence that your pipeline will be your legacy to the future. And with the confidence that the Ductile iron pipe industry will continue working to improve the performance of Ductile iron pipe. This aspirational goal to make the best pipe even better is a commitment from our industry to you.

It is a future you can believe in.

2. Corrpro® an Aegion company

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**Polyethylene Encasement Dig Up Lafourche Parish, Louisiana**

**4 -Inch Cast Iron**

**Installed 1958 – Inspected 2018**

**SOIL CONDITIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistivity</td>
<td>320 ohm-cm</td>
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<tr>
<td>Chlorides</td>
<td>Positive</td>
</tr>
<tr>
<td>Moisture Content</td>
<td>Saturated</td>
</tr>
<tr>
<td>Groundwater Influence</td>
<td>Positive</td>
</tr>
<tr>
<td>pH</td>
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</tr>
<tr>
<td>Sulfide Ions</td>
<td>Positive</td>
</tr>
<tr>
<td>Redox Potential</td>
<td>-40 mV</td>
</tr>
<tr>
<td>Total Points</td>
<td>58</td>
</tr>
</tbody>
</table>

---

**Polyethylene Encasement prior to removal.**

**Polyethylene Encasement has been removed.**

**Note the superficial surface oxidation which is typical of most polyethylene encasement installations.**

**Polyethylene Encasement removed.**

**Pipe cleaned and inspected with no pitting or graphitization.**

**Pipe rewrapped with Polyethylene Encasement**

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We are always learning, always improving, so we can continue to provide state of the art recommendations to our industry’s customers. In 2013, DIPRA introduced V-Bio® enhanced polyethylene, a film infused with a corrosion inhibitor and an anti-microbial component. This innovative improvement to polyethylene encasement was an investment in your future. V-Bio® offers advantages in economy in installation, in operation, and in value for extended service lives.

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**Polyethylene Encasement Dig Up Lafourche Parish, Louisiana**

**4 -Inch Cast Iron**

**Installed 1958 – Inspected 2018**

**SOIL CONDITIONS**

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<tbody>
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