



Dual-Treat Bridge Ties Using The

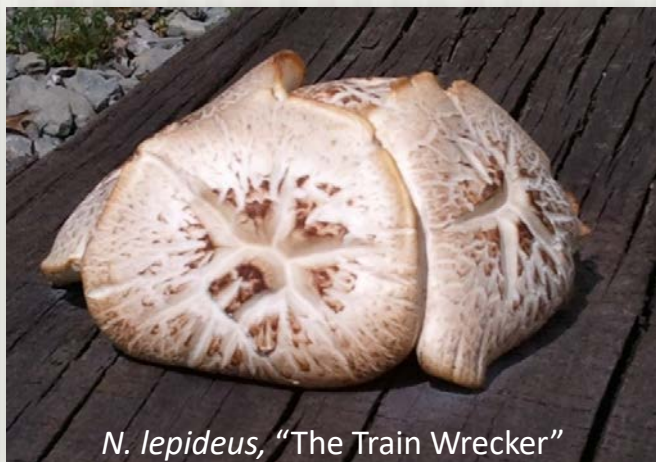
BTX[®]

Bridge Tie Extender



Problems with Treating Green Bridge Ties

Moisture remains at the center of the green bridge tie and the tie decays from the inside out.



N. lepideus, "The Train Wrecker"
(on a bridge tie)



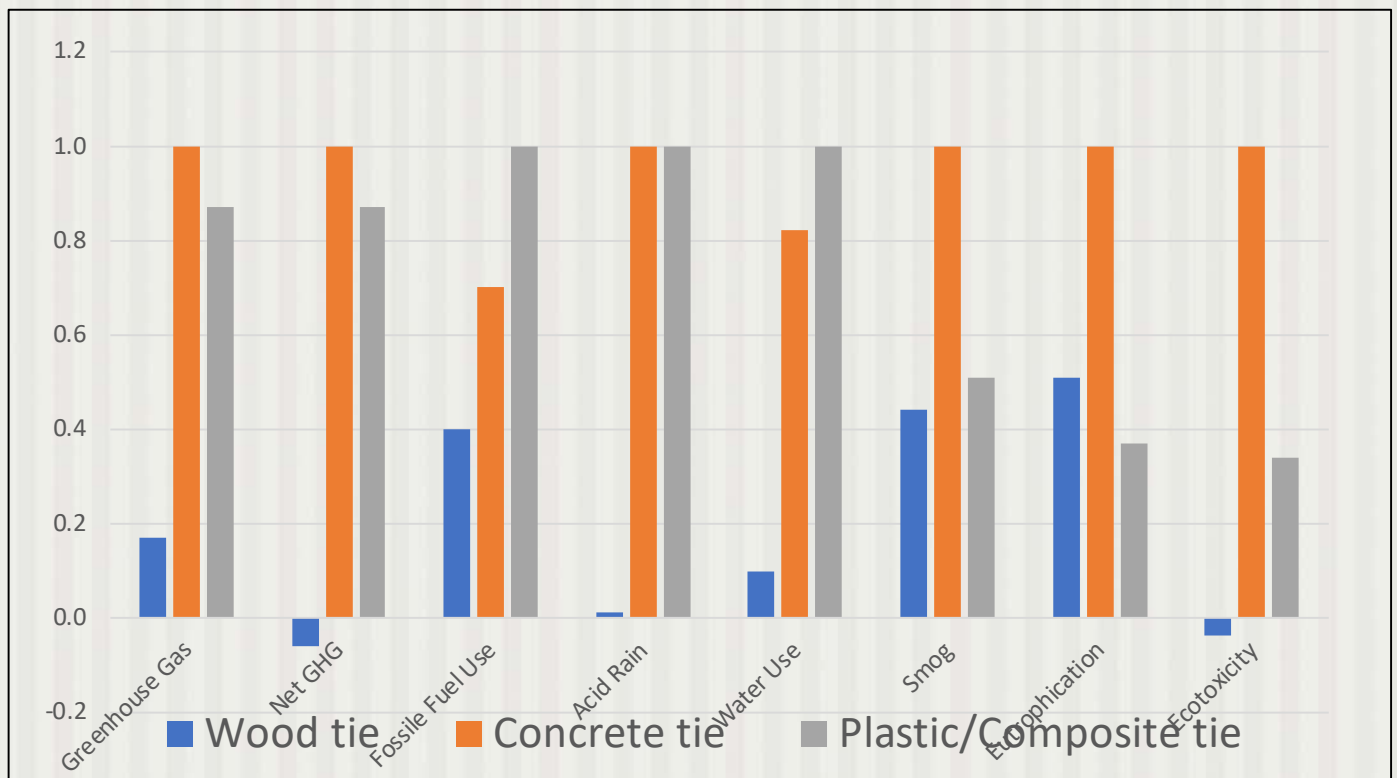
**-now we
can fix this**

Increasing preservative retention causes it's own set of problems



and now we can
fix this too...

Wood is the Sustainable Choice



Drill



Fill



Plug

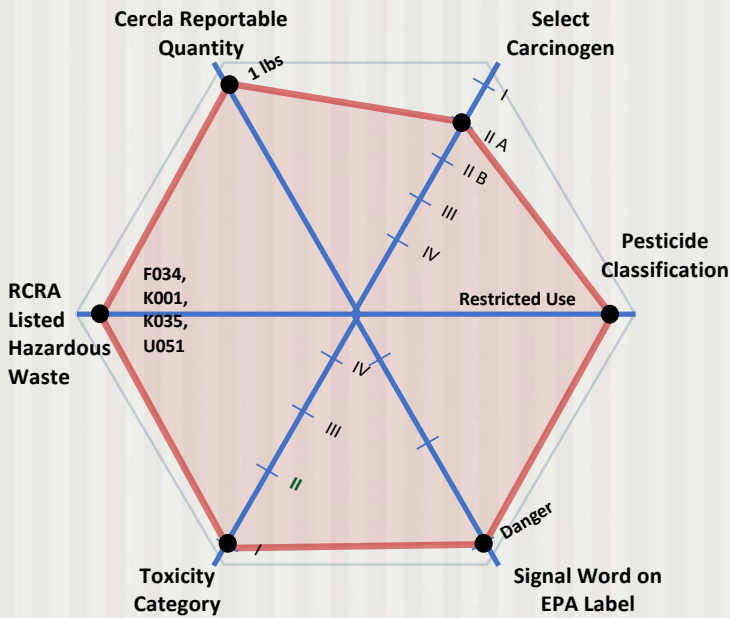


Pressure Treat with QNAP

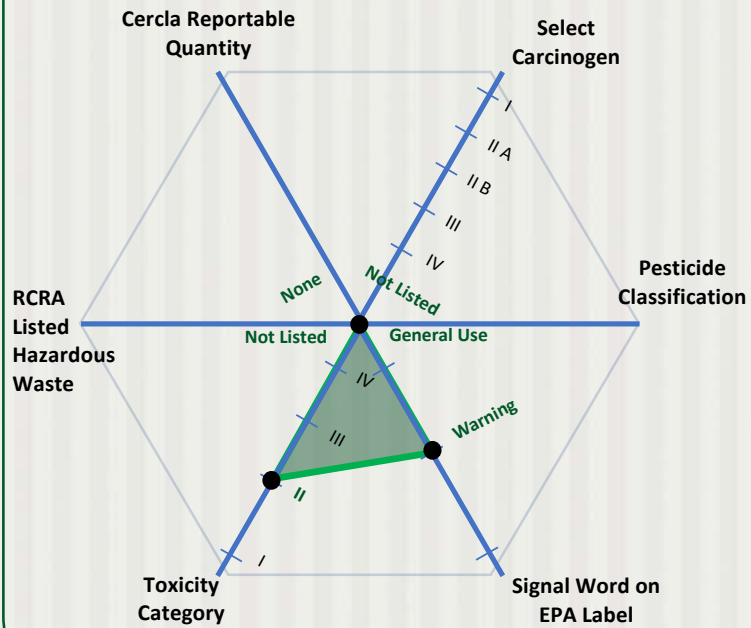


Environmental, Health, and Safety Footprint

Creosote (93.3%)



QNAP (6.3%)



Years of Service Based on Current Data





What Railroads Can Expect Based on Current Data

Current Longevity

Bridge tie installed cost ≈\$700

Bridge life of: 16 years in high hazard zones &
26 years in low hazard zones

1. Switch to Copper Naphthenate
increases tie life 30 %
2. Increased copper retention
increases tie life by 10 years
3. Borate heartwood treatment
increases tie life 20 years

Calculating the Savings (capital recovery)

Tie Treatment	Initial Cost	South			North		
		Service Life	Capital Recovery	Annual Savings	Service Life	Capital Recovery	Annual Savings
	[\$]	[years]	[\$]	[\$]	[years]	[\$]	[\$]
Stand-alone treatment							
Creosote at pcf. (baseline)	700	16	64.59	--	26	48.7	--
1. Copper naphthenate at 0.06 pcf.	698	21	54.44	10.15	34	43.11	5.59
2. Copper naphthenate at .15 pcf.	703	31	45.08	19.5	44	39.8	8.89
Dual treatment							
3. Creosote and borate	720	36	43.51	21.08	46	40.27	8.43
4. Copper naphthenate and borate	718	41	41.52	23.07	54	38.67	10.02

Which would you want?



That

or

This





Summary

- Wood is the most sustainable material to use for ties.
- Improvements in longevity with borate have reduced overall cost in use.
- Copper naphthenate significantly improves EH & S profile and sustainability.
- The ultimate combination for bridge is QNAP + BTX with Cellutreat.
- Creates significant savings on bridge programs

QNAP[®] **BTX**[®]
COPPER NAPHTHENATE Bridge Tie Extender

CELLUTREAT[®]
LIQUID DOT BORATE PRESERVATIVE



Founded in 1990, Nisus is located in Rockford, TN and Supplies Products to the Professional Pest Control Industry and Wood Preservatives for the Railroad and Utility Markets.



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