Russell Carrier

Region Check Scaler

Boise Cascade

Kettle Falls,

Washington

April 10,2013

Douglas Fir defects and how they relate to veneer recovery

Boise Cascade Corporation

Boise Cascade is the second largest softwood plywood manufacturer in North America. We manufacture structural, appearance, and industrial panels in Western and Southern Pine species. All of our mills are certified by the APA Engineered Wood Association.

Locations

- **Kettle Falls, Washington**
- **Elgin, Oregon**
- **Medford Oregon**
- **Florien, Louisiana**
- **Oakdale, Louisiana**

Boise Cascade

Wood Procurement Policy

Boise Cascade Corporation is an international wood products company that is committed to implementing and achieving sustainable forestry where it procures roundwood, oriented strand board, and veneer from forest landowners, wood suppliers, and manufacturers.

To practice sustainable forestry is to meet the need of the present without compromising the ability of future generations to meet their own needs by practicing a land stewardship ethic that integrates reforestation, and the managing, growing, nurturing, and harvesting of trees for useful products with the conservation of

Boise Cascade

Wood Procurement Policy cont.

soil, air, and water quality, biological diversity, wildlife and aquatic habitat, recreation, and aesthetics.

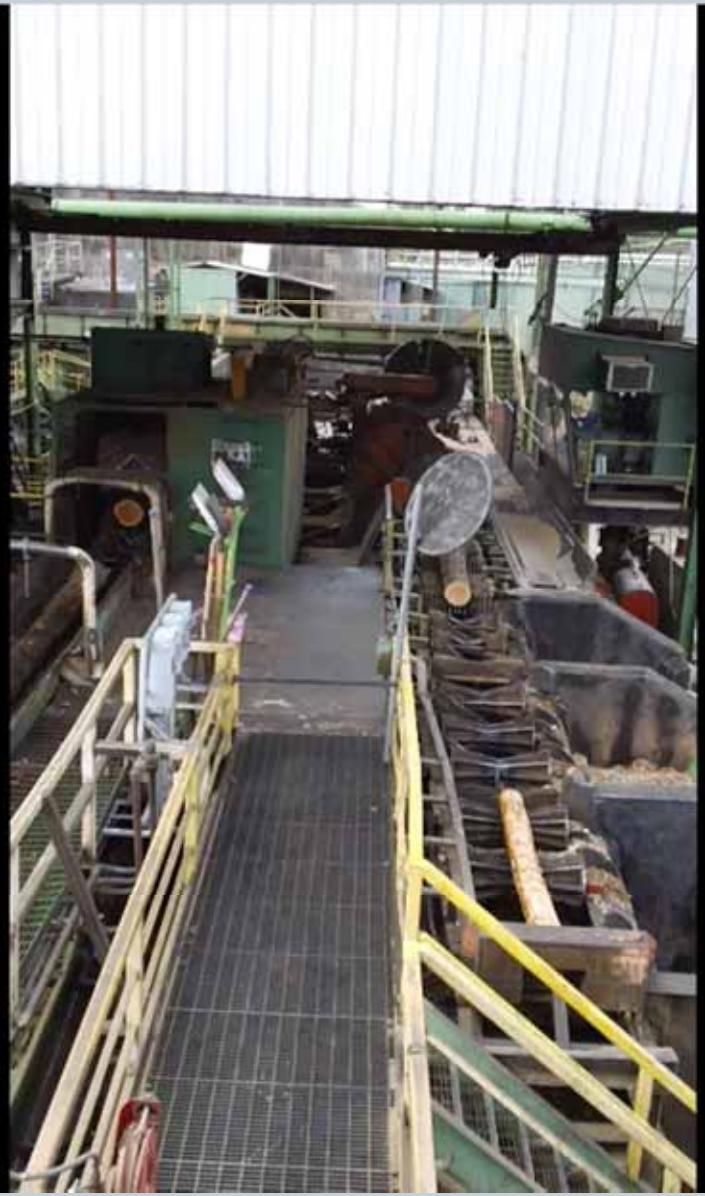
We are committed to implementing internationally recognized forestry certification programs, including the Sustainable Forestry Initiative (SFI), Forest Stewardship Council (FSC), and the Programme for Endorsement of Forest Certification (PEFC).

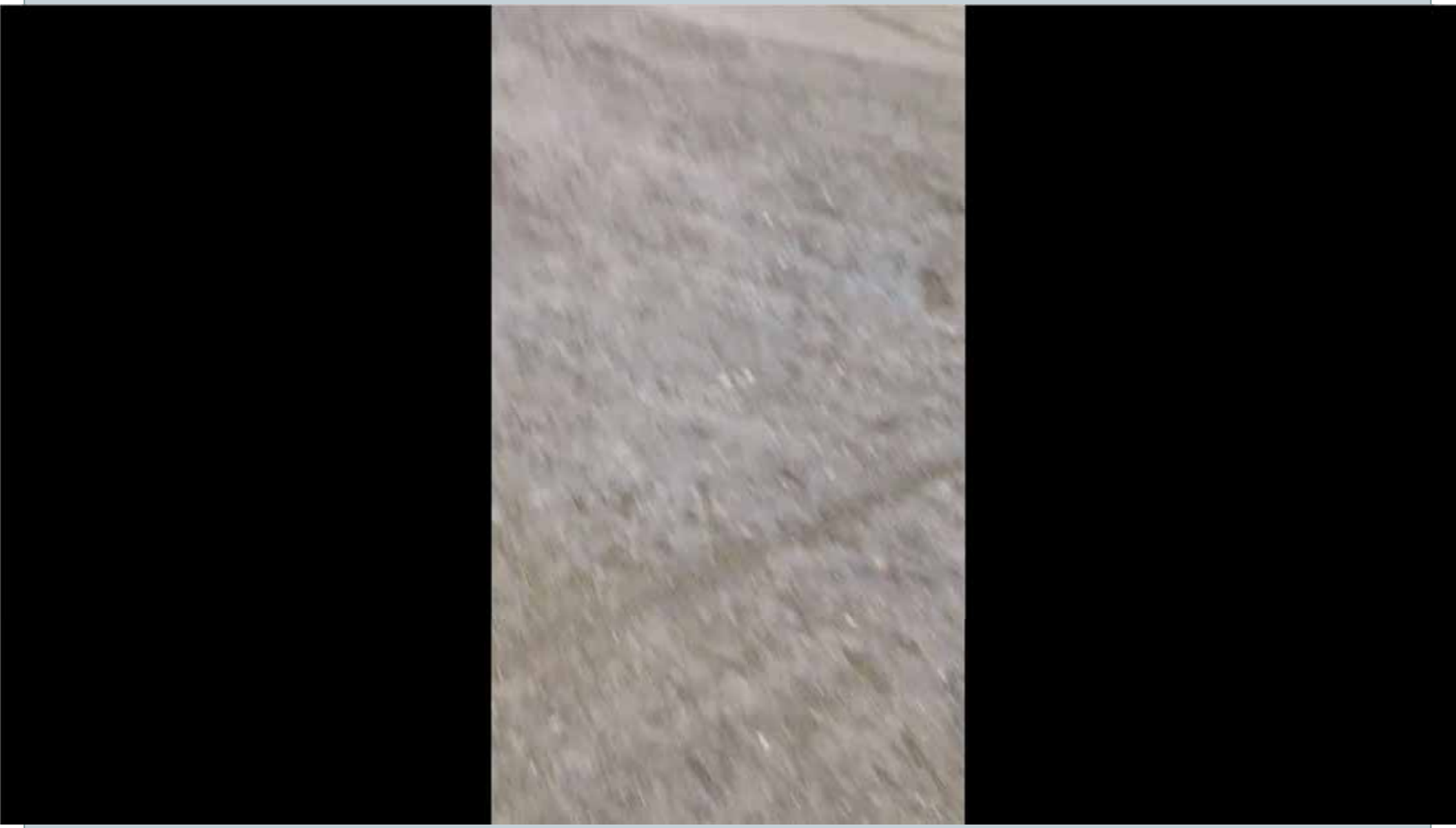
Boise Cascade

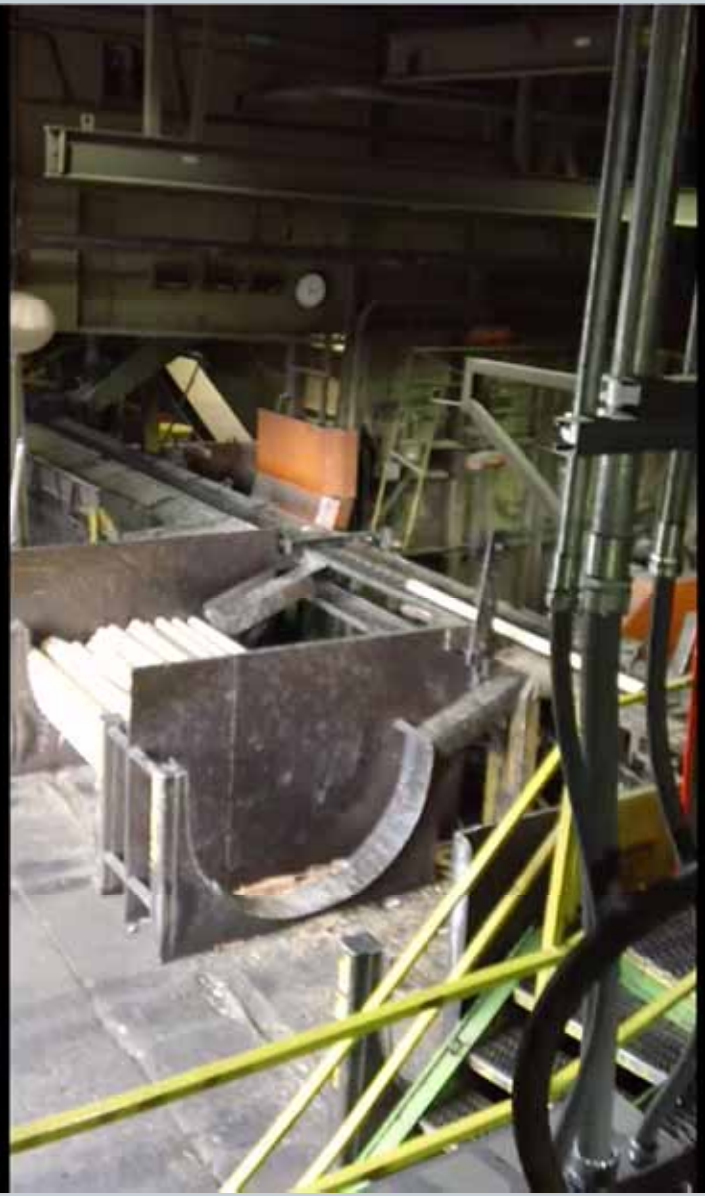
Kettle Falls Plywood

We consume 84,000,000 board feet of logs annually, about 50 percent of which come from private landowners, 20 percent from purchased timber sales, and approximately 30 percent from a log sale agreement with Hancock Forest Management.
We produce 270,000,000 square feet of plywood annually
We peel Douglas Fir and Western Larch logs from 6” to 31” in diameter
Acceptable log lengths are 17’6”, 27’, 35’, and occasionally 43’6”
Logs are cut into 104” blocks, and the blocks are “cooked” at 150 degrees in 8 vats for approximately 12 hours.
They are then peeled down to a 3.25” core.
Veneer thicknesses are .118, .150, and .185

Boise Cascade







Log Defects

- **Non chuckable**
- **Pitch seams**
- **Spangle**
- **Twist**
- **Crook**
- **Ring shake**
- **Rot**

Log Defects

Non-chuckable **is defined as center rot over 1”**

Pitch seam **is defined as an opening or separation across the log heart at right angles to the annual rings.**

Spangle **is defined as more than two pitch seams**

Twist **is defined as spiral orientation of wood grain**

Crook **is defined as an abrupt curve or bend**

Ring Shake **is defined as the separation of one or more annual rings**

Log #1 Pistol butt

34’ scaling length

13” top diameter to a butt

Gross scale 26

The log needs an 8’ length cut for severe crook in the butt (also known as pistol butt)

Net scale is 19

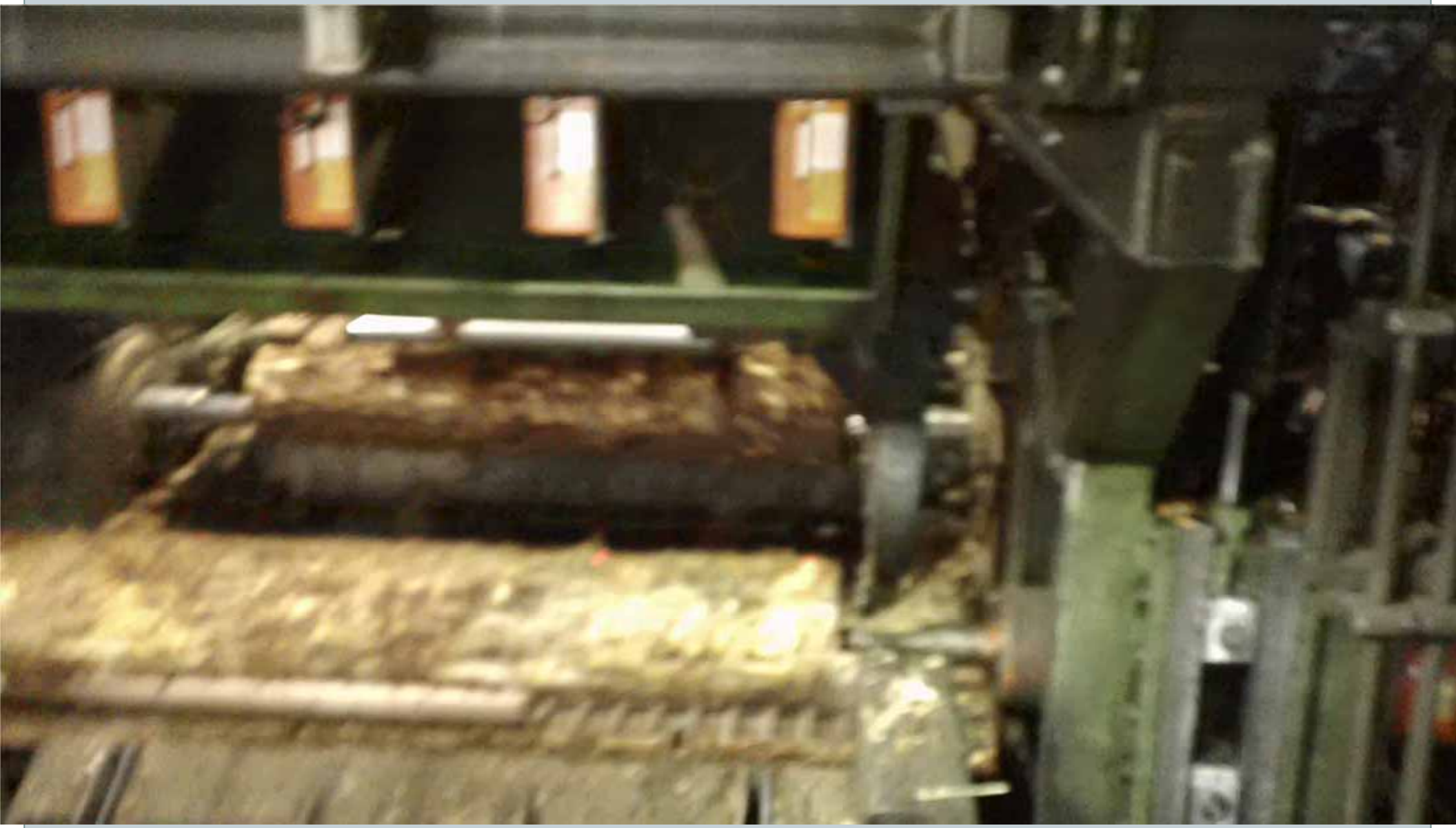
At eight feet measured from the butt the diameter is 17”

Scale for that block is 9

After “round up”, the diameter is 14”

Scale is 6

Boise Cascade



Log #2 Spangle

34’ scaling length

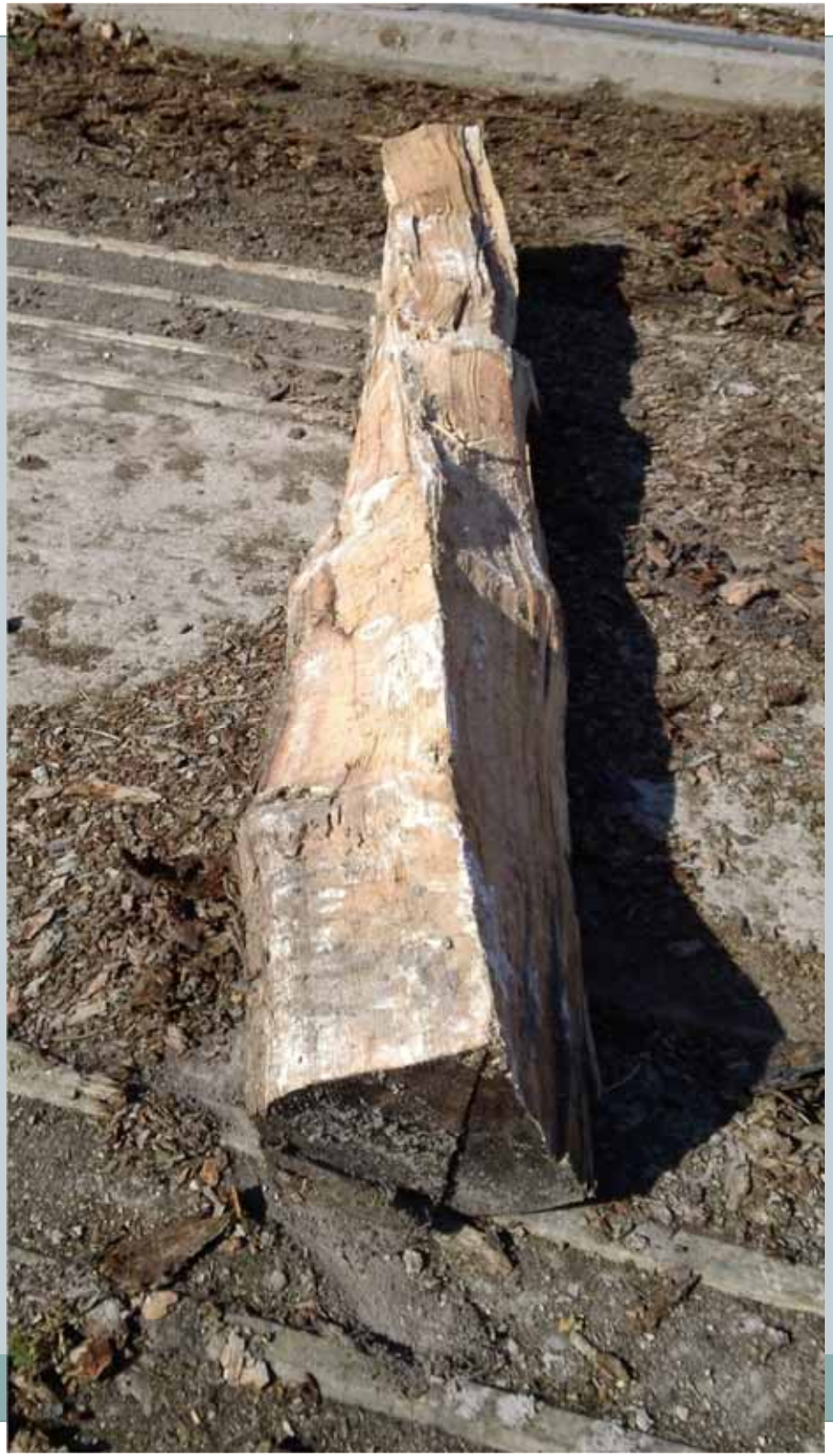
14” top diameter to a butt

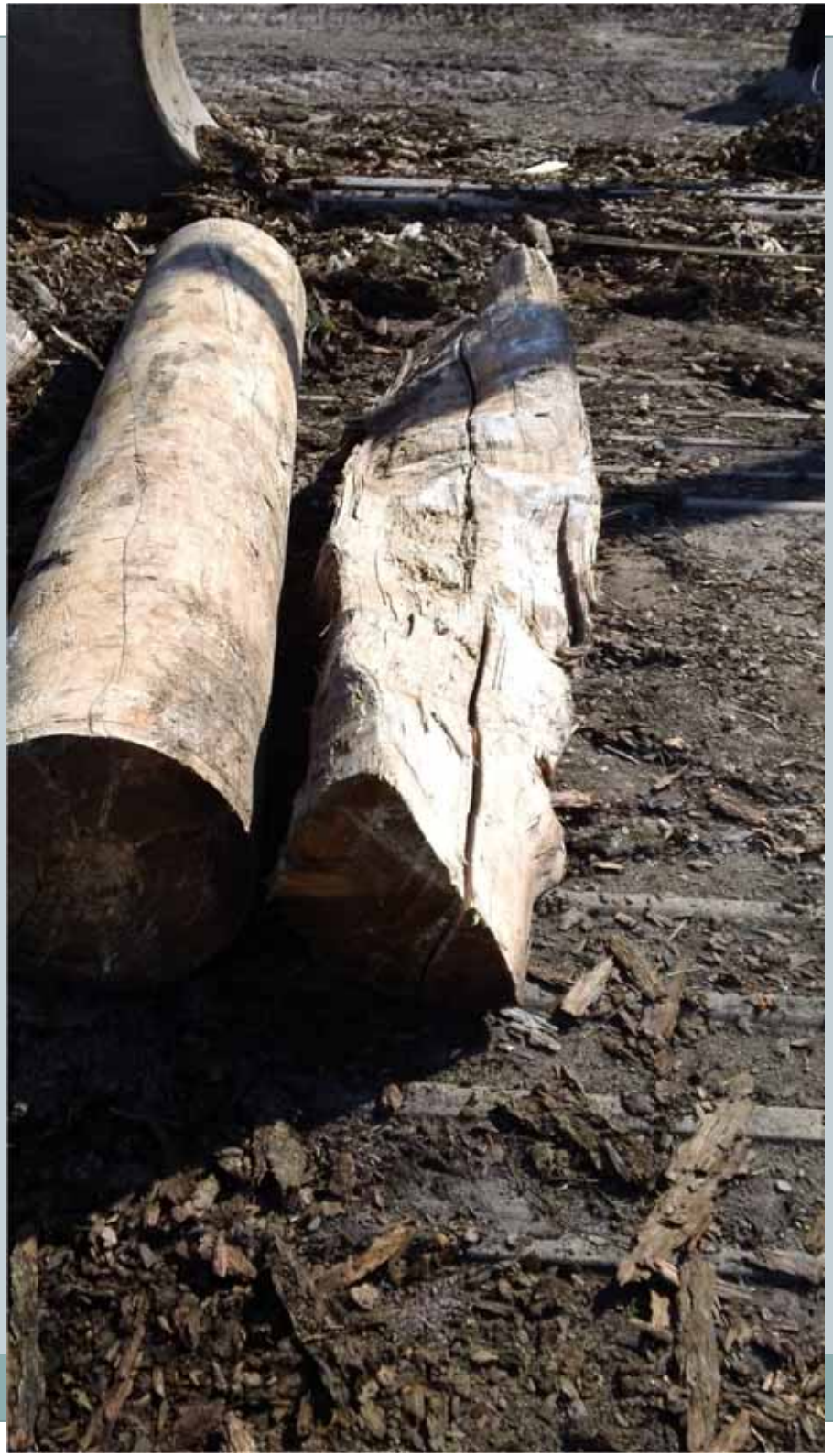
Gross scale 29

Defect for the seam 10

Net scale 19

Boise Cascade





Log #3 Non-chuckable

34’ scaling length

16” to a butt gross scale is 40

The log has 8’ of rot in the top segment resulting from a school marm, which is estimated to travel for 8’

Defect for the rot is 4

Net scale is 36

Boise Cascade

Log #4 Heart check out to the edge of the log

34’ scaling length

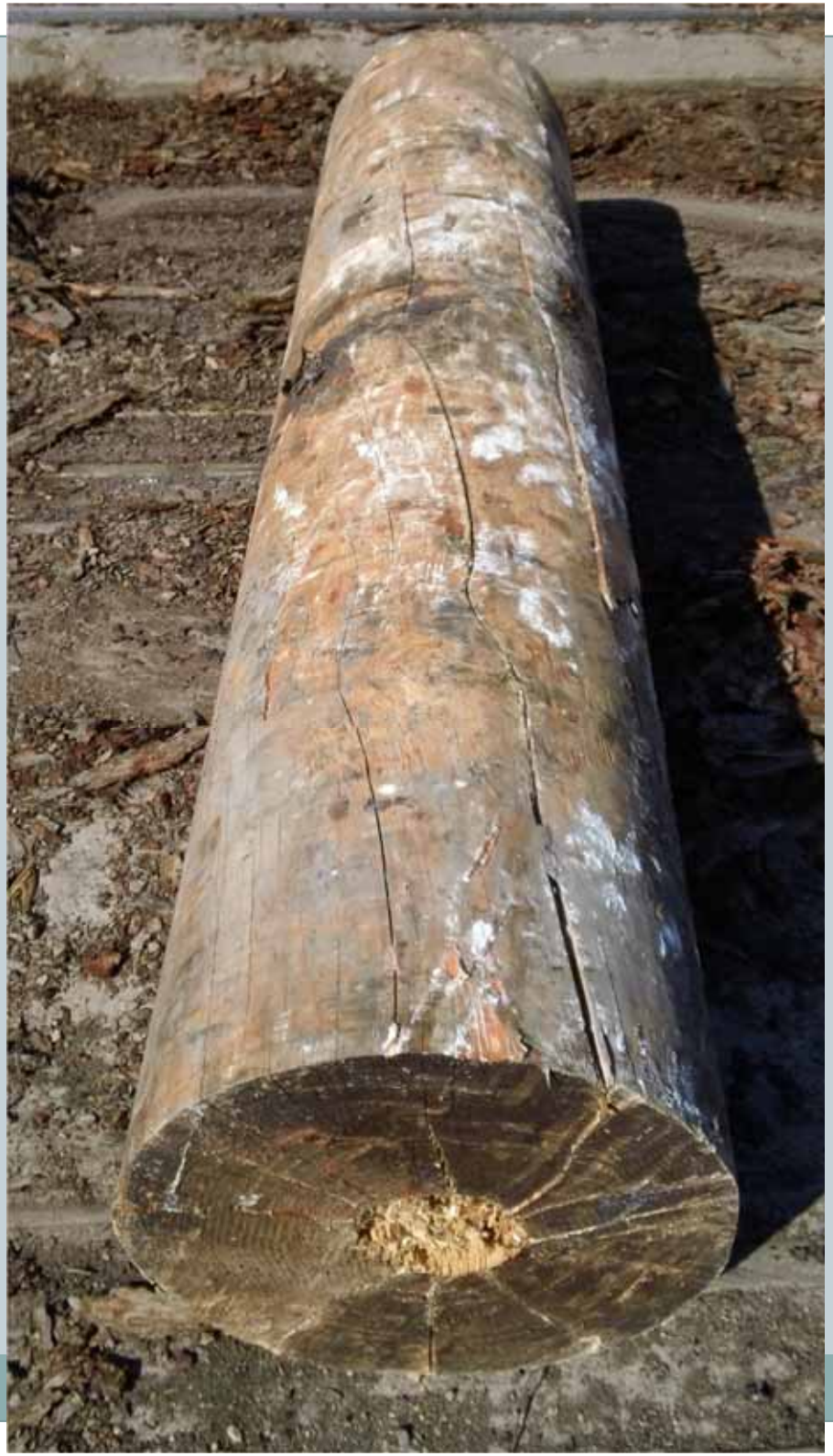
12” top diameter to a butt

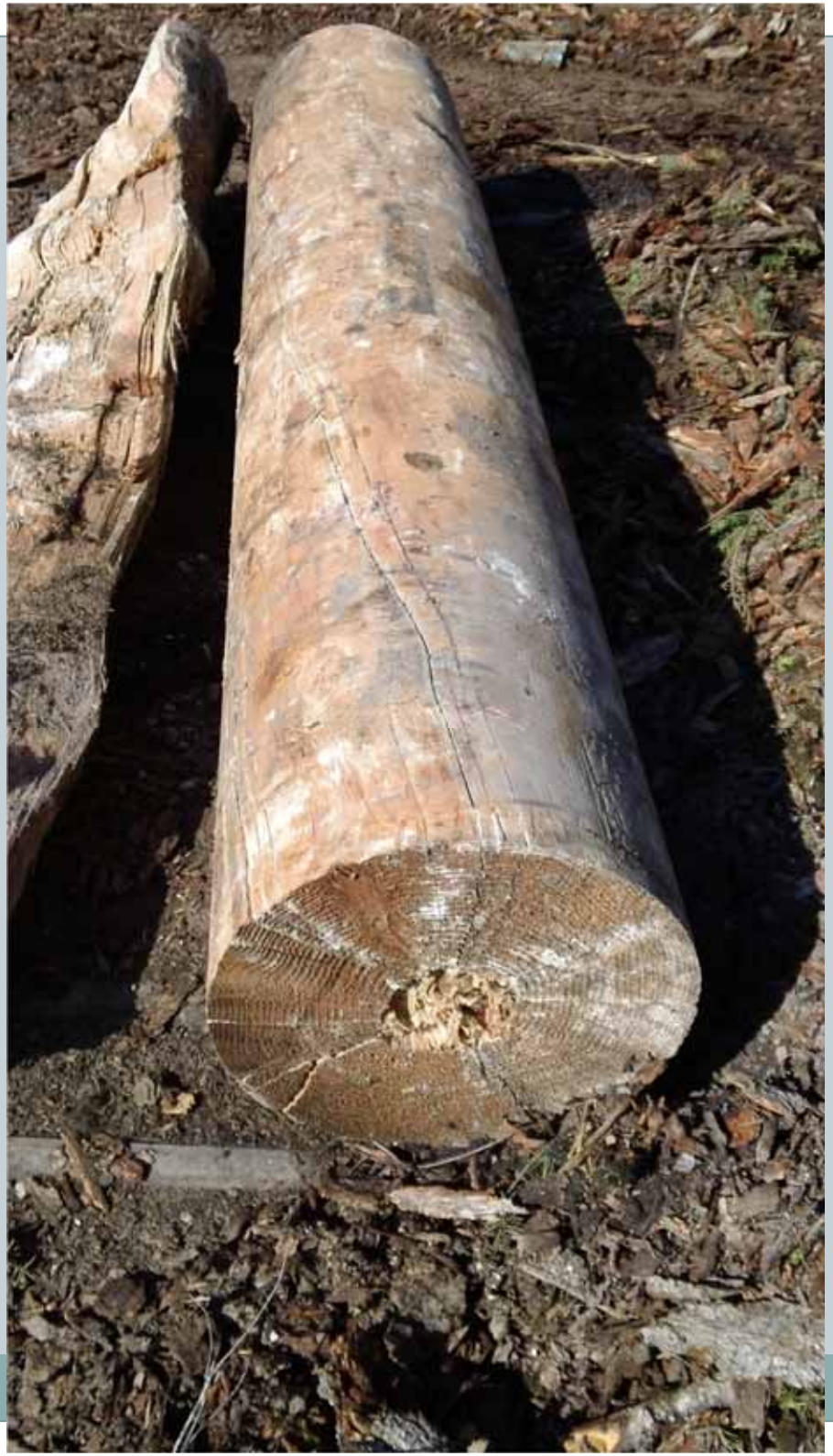
Gross scale is 21

Defect for the heart check is 4

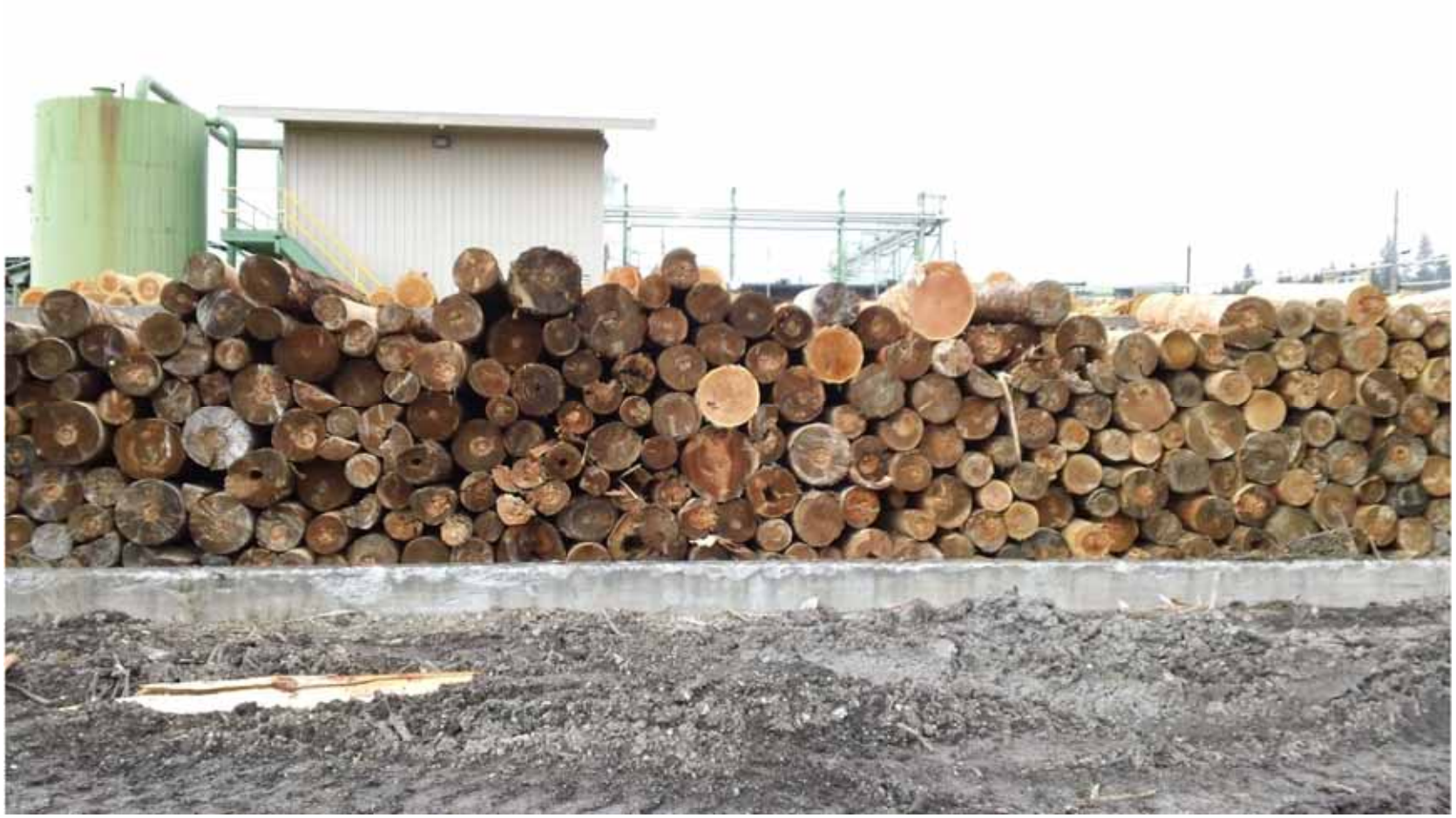
Net scale is 17

Boise Cascade





Spin-outs



Boise Cascade

Boise Cascade

Spin-outs

In 2005, we started selling our spin-outs. That year we created 1,362 tons of spin-outs. Using 5.7 tons /Mbf it equates to 239,000 bd. ft.

Last year (2012) we created 678 tons or about 119,000 bd. ft., a reduction of 50%.

Boise Cascade