Asphalt Tank Conversation

Kent Ernst – Phillips 66 - Asphalt Technical Representative

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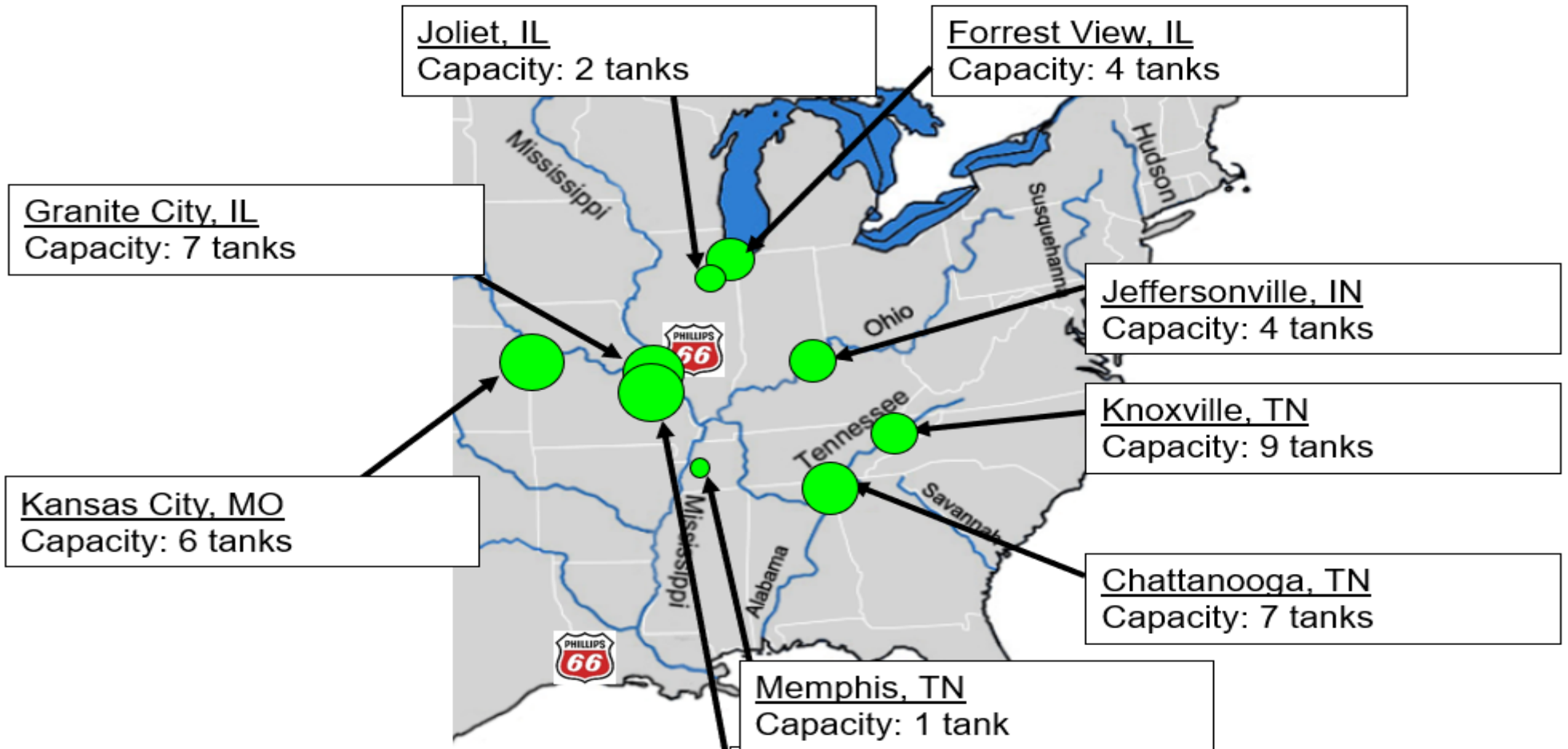
Rodeo Renewable Energy Complex RODEO, CA

Phillips 66 Asphalt

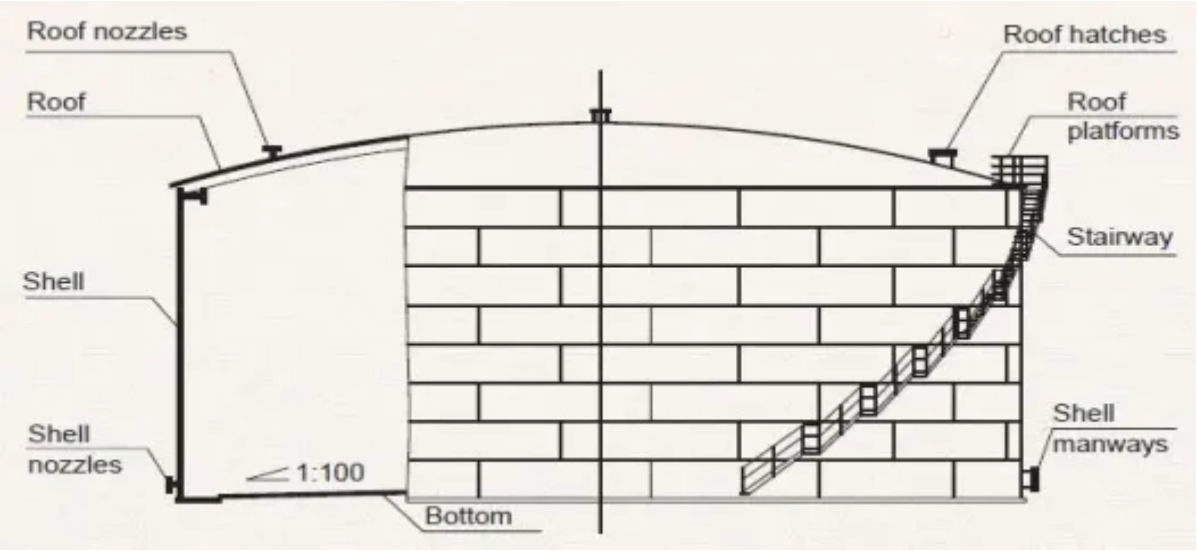


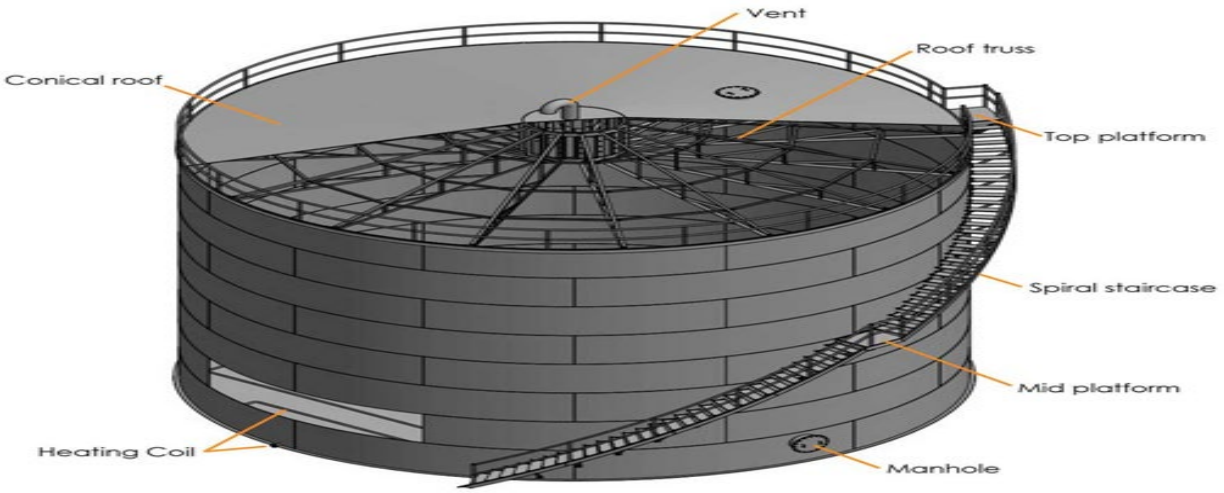
Agenda

- Construction
- Heating / Temperature
  - Oxidation
  - Mass Change
  - Binder Management
- Mixers
- Inspection
- Other

Construction

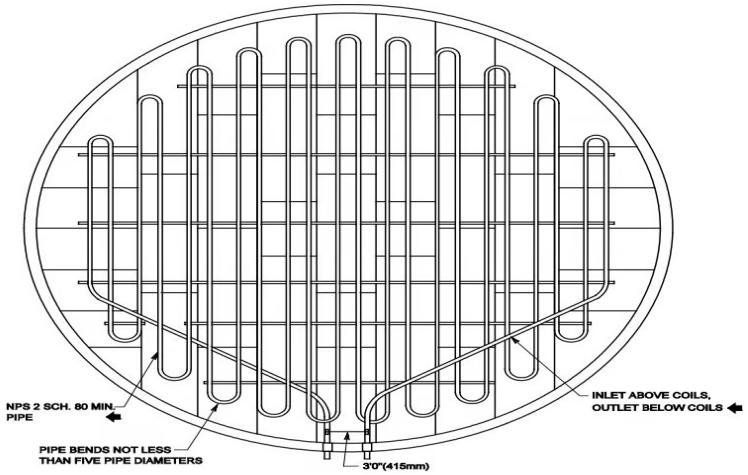
- Welded Steel Tank
- Heating Coils
  - Hot Oil
  - Steam
- Mixers
- Insulation
- Outer Jacket
- Secondary Containment
- PLC Automation / Remote Monitoring





Heating

- Typical storage temperature
- Mass Change
- Oxidation
- Additional considerations for modified binder



Phillips 66

Certificate of Analysis

Wood River Refinery - Roxana, Illinois

1/14/2026 13:42

Ship Date:		Customer:	
Product Name:	PG64-22	Destination:	
Product Code:		Transport ID:	
Lablynx Log ID		Trip Number:	
Report Date:	1/14/2026	PINS NO:	
Date Sampled:	1/6/2026	Carrier:	
Center Point Terminal Company ID	2026007	Rail Car Number:	
Tank :	A-146		
Method	Determinate	Results	Units
T228 Sp. Gravity. @ 15.6 °C	Specific Gravity	1.038	
API @ 15.6 °C	API	4.820	
T48 COC Flash, °C	Flash Point	288	°C
T202 Vacuum Visc. @ 60.0 °C	Absolute Viscosity	259.4	Pa-s
T316 Viscosity @ 135 °C	Rotational Viscosity	0.491	Pa-s
T49 Penetration	Penetration	NA	dmm
T53 Softening Point	Softening Point	NA	°C
T315-DSR @ 64° C	G*	1.69	kPa
T315-Phase Angle @	Phase Angle @ Orig	87.0	Degrees
T315-DSR @ 64° C	G*/sin D	1.69	kPa
T240 RTFO	Mass Loss	-0.175	Wt %
T315-RTFO DSR @ 64° C	G*	4.09	kPa
T315-Phase angle on RTFO	Phase Angle on RTFO	83.5	Degrees
T315-RTFO DSR @ 64° C	G*/sin D RTFO	4.11	kPa
PAV aging temperature		100°C	
T315-PAV DSR @ 25.0° C	G*	5831	
T315-Phase angle on PAV	Phase Angle on PAV	49.0	Degrees
T315-PAV DSR @ 25.0° C	G*(sin D) PAV	4398	kPa
T313-BBR Stiffness @ -12.0° C	S	213	MPa
T313-BBR m-Value @ -12.0° C	m-Value	0.330	

Mixing

- Asphalt is homogenous
- Allows for tank blending
  - Converting tank service
- Accurate temperature reading
- Minimize asphalt “baking” at coils
- Essential for polymer modified asphalt

Inspection

- Routine exterior inspections
  - Shell distortions
  - Tank settlement
  - Corrosion
  - Foundation
  - Paint
  - Ladders / Handrails

- Extensive exterior inspections
  - Roof
  - Vents
  - Ultrasonic thickness

- Internal inspections
  - Tank floor
  - Debris accumulation
  - Pyrophoric material formation

Asphalt Delivery

- Barge - 18,000-20,000 barrels.
  - Hot oil heaters fueled by diesel.
  - Asphalt hot, ready to unload upon arrival.
  - Cost per barrel to transport $.
- Rail – 500-550 barrels.
  - Steam coils, steamed on arrival.
  - Wait hours / days to unload.
  - Cost per barrel to transport $$.
- Note 1 ton of asphalt = 5.6 barrels