

# **Condition Assessment Manual**

## *Lubrication System Inspection Form and Check List*



Revision 1.0, 12/20/2011

## Lubrication System - Inspection Form

### General Information:

Date of Site Visit: \_\_\_\_\_ Unit No. \_\_\_\_\_

Plant Name: \_\_\_\_\_

Source/s of data: \_\_\_\_\_

Console/ Skid Manufacturer: \_\_\_\_\_ Age: \_\_\_\_\_

System Flow rated (GPM): \_\_\_\_\_

System Pressure (PSI): \_\_\_\_\_

Motor Nominal HP: \_\_\_\_\_ Redundant Pump \_\_\_\_\_

Lubrication System Description: \_\_\_\_\_

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Maintenance History / Major Repairs Description:

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### Lubricant/Oil:

Oil Manufacturer/Model: \_\_\_\_\_

Viscosity Specification: \_\_\_\_\_

Conventional mineral-based oil:

Hydroprocessed synthetic oil:

Addition specification data:

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**Filter Sub-System:**

Make: \_\_\_\_\_ Model: \_\_\_\_\_

Type-surface depth: \_\_\_\_\_ Cartridge material: \_\_\_\_\_

Normal flow (GPM): \_\_\_\_\_ Max. flow (GPM): \_\_\_\_\_

Number of cartridges: \_\_\_\_\_ Collapse P (PSI): \_\_\_\_\_

Clear filter  $\Delta P$  max (PSI): \_\_\_\_\_  $\Delta P$  at max viscosity (PSI): \_\_\_\_\_

Addition specification data:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Cooling Sub-System:**

Shell and tube:

Air (fin & fan):

Make: \_\_\_\_\_ Model: \_\_\_\_\_

Twin or Single: \_\_\_\_\_ Size (Diameter): \_\_\_\_\_

Heat load (BTU/HR): \_\_\_\_\_ Oil side  $\Delta P$  clean (PSI): \_\_\_\_\_

Fouling factor (total): \_\_\_\_\_ Oil flow (GPM): \_\_\_\_\_

Water quantity (GPM): \_\_\_\_\_

Addition specification data:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Oil Pumps:**

Positive Displacement:

Centrifugal:

Make: \_\_\_\_\_ Model: \_\_\_\_\_

Main

Aux

Disch. Press @10 centistroke (60 SSU\*): \_\_\_\_\_

Disch. Press @ max centistroke (SSU\*): \_\_\_\_\_

Rated flow @10 centistroke (60 SSU\*): \_\_\_\_\_

Flow @ max. SSU: \_\_\_\_\_

Flow @ Relief valve press.: \_\_\_\_\_

(pos. displace. pumps only)

Operating power (BHP): \_\_\_\_\_

End of Curve Power (BHP): \_\_\_\_\_

NPSH available (ft): \_\_\_\_\_

NPSH required (ft): \_\_\_\_\_

RPM: \_\_\_\_\_ Impeller Dia.: \_\_\_\_\_ Volt/Freq./Ø/AMP: \_\_\_\_\_

Addition specification data:  
\_\_\_\_\_

**Vessel and Piping:**

Capacity (Gal): \_\_\_\_\_ Construction: \_\_\_\_\_

Addition specification data:  
\_\_\_\_\_  
\_\_\_\_\_

**Instrumentation/Alarms**

Type: \_\_\_\_\_ Range: \_\_\_\_\_ Material: \_\_\_\_\_

Addition specification data:  
\_\_\_\_\_  
\_\_\_\_\_

\*SSU = Saybolt Universal Second (measurement of viscosity)

Lubrication System Check List				
Topic	Yes	No	N/A	Comments/Details
<b>Maintenance &amp; Major Repair History</b>				
Are there plant preventive maintenance procedures (TPM) for the lubrication system? Are they routinely carried out?				
Have there been any piping and/or vessel/reservoir repair?				
Have the pumps been rebuilt?				
Have filter bodies been repaired?				
Have cooler/heat exchanger bodies and/or tube leaks been repaired?				
Have pumps been replaced with the new design or similar to original design?				
Are there procedures and maintenance logs for system flushing?				

<b>Lubrication System Check List - Continued</b>				
<b>Topic</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comments/Details</b>
<b>Maintenance &amp; Major Repair History - Continued</b>				
Is there a formalized oil filter change interval?				
Has the Pressure Control Valve been rebuilt or replaced?				
Has the Filtering Transfer Valve been rebuilt or replaced?				
Are instruments connected and operational?				
Are alarm transmitters (differential pressure) operational?				
Have all plant records regarding lubrication system, repairs, operating conditions, temperature records etc. been requested/gathered?				

<b>Lubrication System Check List - Continued</b>				
<b>Topic</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comments/Details</b>
<b>Equipment Condition Assessment</b>				
Can the condition of the oil be assessed?				
Is there formalized oil sampling and/or laboratory examination?				
Is there a utilization of the high pressure lubrication system for lift on the thrust bearing for starts and shut downs?				
Can the position of the control valves be determine?				
Are system pipe lines labeled and colored?				
Are sight glasses thought the system functional?				
Is the non-operating filter vented?				

Lubrication System Check List - Continued				
Topic	Yes	No	N/A	Comments/Details
<b>Equipment Condition Assessment - Continued</b>				
Is the non-operating filter vented?				
Are Triple Modular Redundant transmitters used for control of the system?				
Is a supplementary filtration (kidney loop) in use?				

