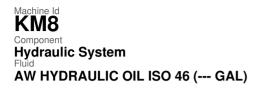


## **OIL ANALYSIS REPORT**

Sample Rating Trend





### DIAGNOSIS

#### Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

#### Wear

All component wear rates are normal.

#### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

#### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

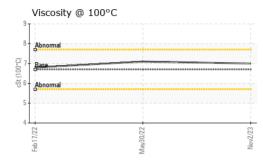
SAMPLE INFORMATION     method     limit/base     current     history1     history1       Sample Number     Client Info     PC0058285     PC40841       Sample Date     Client Info     02 Nov 2023     30 May 2022     17 Feb 20       Machine Age     hrs     Client Info     0     0     0       Oil Age     hrs     Client Info     0     0     0     0       Oil Changed     Client Info     N/A     N/A     N/A     N/A       Sample Status     method     imit/base     current     history1     history1       Iron     ppm     ASTMD5185(m)     >10     0     <1     <1       Nickel     ppm     ASTMD5185(m)     >10     0     0     0       Auminum     ppm     ASTMD5185(m)     >10     0     0     0     0       Auminum     ppm     ASTMD5185(m)     >10     0     0     0     0       Auminum     ppm     ASTMD5185(m)     >10     0     0     0	Feb2022 Mm/2022 Nov2023							
Sample Date     Client Info     02 Nov 2023     30 May 2022     17 Feb 2       Machine Age     hrs     Client Info     0     0     0       Oil Age     hrs     Client Info     0     0     0       Oil Age     hrs     Client Info     N/A     N/A     N/A       Sample Status     Client Info     NORMAL     ABNORMAL     ABNORM       WEAR METALS     method     Imit/base     current     history1     history1       Iron     ppm     ASTM 05185(m)     >20     <1     <1     <1       Chromium     ppm     ASTM 05185(m)     >20     <1     <1     <1       Nickel     ppm     ASTM 05185(m)     >20     <1     <1     0     0       Silver     ppm     ASTM 05185(m)     >10     0     0     0     0     0       Lead     ppm     ASTM 05185(m)     >10     0     0     0     0     0     0     0     0     0     0     0     0	ry2							
Machine Age     hrs     Client Info     0     0     0       Oil Age     hrs     Client Info     0     0     0       Oil Changed     Client Info     N/A     N/A     N/A       Sample Status     Image     Image     current     history1     history1       Iron     ppm     ASTM D5185(m)     >20     <1     <1     <1       Chromium     ppm     ASTM D5185(m)     >20     <1     <1     <1       Nickel     ppm     ASTM D5185(m)     >10     0     <1     0     0       Nickel     ppm     ASTM D5185(m)     >10     0     0     0     0       Silver     ppm     ASTM D5185(m)     >10     0     0     0     0       Aluminum     ppm     ASTM D5185(m)     >10     0     0     0     0     0       Aluminum     ppm     ASTM D5185(m)     >10     0     0     0     0     0     0     0     0     0	2							
Oil Age     hrs     Client Info     0     0     0       Oil Changed     Client Info     N/A     N/A     N/A       Sample Status     Imit/base     current     history1     history1       Iron     ppm     ASTM D5185(m)     >20     <1     <1     <1       Chromium     ppm     ASTM D5185(m)     >10     0     <1     <1       Nickel     ppm     ASTM D5185(m)     >10     <1     0     0       Silver     ppm     ASTM D5185(m)     >10     0     0     0       Aluminum     ppm     ASTM D5185(m)     >10     0     0     0       Lead     ppm     ASTM D5185(m)     >10     0     0     0       Astm D5185(m)     >10     0     0     0     0     0       Cadanium     ppm     ASTM D5185(m)     >10     0     0     0       Astm D5185(m)     0     0     0     0     0     0       Cadanium     ppm	022							
Oil Age     hrs     Client Info     0     0     0     0       Oil Changed     Client Info     N/A     N/A     N/A     N/A       Sample Status     Imit/base     current     history1     ABNORMAL     ABNORMAL       WEAR METALS     method     limit/base     current     history1     history1       Iron     ppm     ASTM D5185(m)     >20     <1     <1     <1       Chronnium     ppm     ASTM D5185(m)     >10     0     <1     <1       Nickel     ppm     ASTM D5185(m)     >10     <1     0     0       Silver     ppm     ASTM D5185(m)     >10     0     0     0       Lead     ppm     ASTM D5185(m)     >10     0     0     0       Antimony     ppm     ASTM D5185(m)     >10     0     0     0       Cadanium     ppm     ASTM D5185(m)     >10     0     0     0       Cadanium     ppm     ASTM D5185(m)     0     0 <td< th=""><th></th></td<>								
Oil Changed     Client Info     N/A     N/A     N/A     N/A       Sample Status     rethod     limit/base     current     ABNORMAL     ABNORMAL     ABNORMAL       WEAR METALS     method     limit/base     current     history1     history1     history1       Iron     ppm     ASTM D5185(m)     >20     <1     <1     <1       Nickel     ppm     ASTM D5185(m)     >10     0     <1     <1       Nickel     ppm     ASTM D5185(m)     >10     0     0     0       Silver     ppm     ASTM D5185(m)     >10     0     0     0       Aluminum     ppm     ASTM D5185(m)     >10     0     0     0       Copper     ppm     ASTM D5185(m)     >10     0     0     0       Antimony     ppm     ASTM D5185(m)     >10     0     0     0       Copper     ppm     ASTM D5185(m)     >10     0     0     0       Copper     ppm     ASTM D5185(m)								
Sample Status     Image: Status     NORMAL     ABNORMAL     ABNORMAL     ABNORMAL     ABNORMAL       WEAR METALS     method     limit/base     current     history1     history1       Iron     ppm     ASTM D5185(m)     >20     <1     <1     <1       Chromium     ppm     ASTM D5185(m)     >10     <1     0     0       Nickel     ppm     ASTM D5185(m)     >10     <1     0     0       Silver     ppm     ASTM D5185(m)     >10     0     0     0       Aluminum     ppm     ASTM D5185(m)     >10     0     0     0       Copper     ppm     ASTM D5185(m)     >10     0     0     0       Aluminum     ppm     ASTM D5185(m)     >10     0     0     0       Cadd     ppm     ASTM D5185(m)     >10     0     0     0       Antimony     ppm     ASTM D5185(m)     >10     0     0     0       Caddium     ppm     ASTM D5185(m)								
Iron     ppm     ASTM D5185(m)     >20     <1	ЛАL							
Chromium     ppm     ASTM D5185(m)     >10     0     <1	ry2							
Nickel     ppm     ASTM D5185(m)     >10     <1								
Titanium     ppm     ASTM D5185(m)     0     0     0       Silver     ppm     ASTM D5185(m)     <1     0     0       Aluminum     ppm     ASTM D5185(m)     >10     0     0     0       Lead     ppm     ASTM D5185(m)     >10     0     0     0       Copper     ppm     ASTM D5185(m)     >75     1     1     5       Tin     ppm     ASTM D5185(m)     >75     1     1     5       Antimony     ppm     ASTM D5185(m)     >10     0     0     0       Vanadium     ppm     ASTM D5185(m)     0     0     0     0       Cadmium     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     <1     0     0       Malganesee     ppm     ASTM D5185(m)     25     6     1     1  C								
Silver     ppm     ASTM D5185(m)     <1								
Aluminum     ppm     ASTM D5185(m)     >10     0     0     0       Lead     ppm     ASTM D5185(m)     >10     0     0     0       Copper     ppm     ASTM D5185(m)     >75     1     1     5       Tin     ppm     ASTM D5185(m)     >10     0     0     0       Antimony     ppm     ASTM D5185(m)     0     0     0     0       Vanadium     ppm     ASTM D5185(m)     0     0     0     0       Vanadium     ppm     ASTM D5185(m)     0     0     0     0       Cadmium     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     <1     0     0       Molybdenum     ppm     ASTM D5185(m)     5     <1     <1     <1       Manganese     ppm     ASTM D5185(m)     25     6     1     1     1       Calcium     ppm     ASTM D5185(m)     370     3								
Lead     ppm     ASTM D5185(m)     >10     0     0     0       Copper     ppm     ASTM D5185(m)     >75     1     1     5       Tin     ppm     ASTM D5185(m)     >10     0     0     0       Antimony     ppm     ASTM D5185(m)     0     0     0     0       Vanadium     ppm     ASTM D5185(m)     0     0     0     0       Beryllium     ppm     ASTM D5185(m)     0     0     0     0       Cadmium     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     -11     0     0       Maganese     ppm     ASTM D5185(m)     5     -11     1     -1       Calcium     ppm     ASTM D5185(m)     25     6     1     1     1       Calcium     ppm     ASTM D5185(m)     370     3333     314     2       Calcium     ppm     ASTM D5185(m)     2500 <t< th=""><th></th></t<>								
Copper     ppm     ASTM D5185(m)     >75     1     1     5       Tin     ppm     ASTM D5185(m)     >10     0     0     0       Antimony     ppm     ASTM D5185(m)     >10     0     0     0       Vanadium     ppm     ASTM D5185(m)     0     0     0     0       Beryllium     ppm     ASTM D5185(m)     0     0     0     0       Cadmium     ppm     ASTM D5185(m)     0     0     0     0       ADDITIVES     method     limit/base     current     history1     histor       Boron     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     <1     0     0       Magnaese     ppm     ASTM D5185(m)     5     <1     1     1       Calcium     ppm     ASTM D5185(m)     200     85     74     93       Phosphorus     ppm     ASTM D5185(m)     300     330 <t< th=""><th></th></t<>								
Copper     ppm     ASTM D5185(m)     >75     1     1     5       Tin     ppm     ASTM D5185(m)     >10     0     0     0       Antimony     ppm     ASTM D5185(m)     >10     0     0     0       Vanadium     ppm     ASTM D5185(m)     0     0     0     0       Beryllium     ppm     ASTM D5185(m)     0     0     0     0       Cadmium     ppm     ASTM D5185(m)     0     0     0     0       ADDITIVES     method     limit/base     current     history1     histor       Boron     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     <1     0     0       Maganese     ppm     ASTM D5185(m)     5     <1     1     1       Calcium     ppm     ASTM D5185(m)     200     85     74     93       Phosphorus     ppm     ASTM D5185(m)     300     330 <t< th=""><th></th></t<>								
Tin     ppm     ASTM D5185(m)     >10     0     0     0       Antimony     ppm     ASTM D5185(m)     0     0     0     0       Vanadium     ppm     ASTM D5185(m)     0     0     0     0       Beryllium     ppm     ASTM D5185(m)     0     0     0     0       Cadmium     ppm     ASTM D5185(m)     0     0     0     0       ADDITIVES     method     limit/base     current     history1     histor       Boron     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     <1     0     0       Maganese     ppm     ASTM D5185(m)     5     <1     1     <1       Calcium     ppm     ASTM D5185(m)     25     6     1     1     1       Calcium     ppm     ASTM D5185(m)     200     85     74     93       Phosphorus     ppm     ASTM D5185(m)     300     3								
Antimony     ppm     ASTM D5185(m)     0     0     0       Vanadium     ppm     ASTM D5185(m)     0     0     0       Beryllium     ppm     ASTM D5185(m)     0     0     0       Cadmium     ppm     ASTM D5185(m)     0     0     0       Cadmium     ppm     ASTM D5185(m)     0     0     0       ADDITIVES     method     limit/base     current     history1     histor       Boron     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     <1     0     0       Molybdenum     ppm     ASTM D5185(m)     5     <1     <1     <1       Manganese     ppm     ASTM D5185(m)     25     6     1     1     1       Calcium     ppm     ASTM D5185(m)     200     85     74     93       Phosphorus     ppm     ASTM D5185(m)     370     412     392     349       Sulfur<								
Vanadium     ppm     ASTM D5185(m)     0     0     0       Beryllium     ppm     ASTM D5185(m)     0     0     0       Cadmium     ppm     ASTM D5185(m)     0     0     0       Cadmium     ppm     ASTM D5185(m)     0     0     0       ADDITIVES     method     limit/base     current     history1     histor       Boron     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     <1     0     0       Molybdenum     ppm     ASTM D5185(m)     5     <1     <1     <1       Manganese     ppm     ASTM D5185(m)     25     6     1     1     <1       Calcium     ppm     ASTM D5185(m)     200     85     74     93       Phosphorus     ppm     ASTM D5185(m)     370     412     392     349       Sulfur     ppm     ASTM D5185(m)     2500     926     908     2490								
Beryllium     ppm     ASTM D5185(m)     0     0     0       Cadmium     ppm     ASTM D5185(m)     0     0     0       ADDITIVES     method     limit/base     current     history1     histor       Boron     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     <1								
Cadmium     ppm     ASTM D5185(m)     0     0     0       ADDITIVES     method     limit/base     current     history1     histor       Boron     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5      1     0     0       Molybdenum     ppm     ASTM D5185(m)     5     <1								
Boron     ppm     ASTM D5185(m)     5     3     1     2       Barium     ppm     ASTM D5185(m)     5     <1     0     0       Molybdenum     ppm     ASTM D5185(m)     5     <1     <1     <1       Manganese     ppm     ASTM D5185(m)     5     <1     <1     <1       Manganese     ppm     ASTM D5185(m)     25     6     1     1       Calcium     ppm     ASTM D5185(m)     200     85     74     93       Phosphorus     ppm     ASTM D5185(m)     300     330     333     314       Zinc     ppm     ASTM D5185(m)     370     412     392     349       Sulfur     ppm     ASTM D5185(m)     2500     926     908     24900       Lithium     ppm     ASTM D5185(m)     >20     1     <1     <1       Solicon     ppm     ASTM D5185(m)     >20     926     908     2490       Silicon     ppm     ASTM D5185(m) <t< th=""><th></th></t<>								
Barium     ppm     ASTM D5185(m)     5     <1	ry2							
Molybdenum     ppm     ASTM D5185(m)     5     <1								
Molybdenum     ppm     ASTM D5185(m)     5     <1								
Manganese     ppm     ASTM D5185(m)     0     0     0       Magnesium     ppm     ASTM D5185(m)     25     6     1     1       Calcium     ppm     ASTM D5185(m)     200     85     74     93       Phosphorus     ppm     ASTM D5185(m)     300     330     333     314       Zinc     ppm     ASTM D5185(m)     370     412     392     349       Sulfur     ppm     ASTM D5185(m)     2500     926     908     2490       Lithium     ppm     ASTM D5185(m)     2500     926     908     2490       Silicon     ppm     ASTM D5185(m)     2500     926     908     2490       Silicon     ppm     ASTM D5185(m)     <     <1     <1     <1       Sodium     ppm     ASTM D5185(m)     >20     1     1     2       Sodium     ppm     ASTM D5185(m)     >20     0     <1     <1								
Calcium     ppm     ASTM D5185(m)     200     85     74     93       Phosphorus     ppm     ASTM D5185(m)     300     330     333     314       Zinc     ppm     ASTM D5185(m)     300     330     333     314       Zinc     ppm     ASTM D5185(m)     370     412     392     349       Sulfur     ppm     ASTM D5185(m)     2500     926     908     2490       Lithium     ppm     ASTM D5185(m)     2500     926     908     2490       Silicon     ppm     ASTM D5185(m)     >20     1     <1								
Calcium     ppm     ASTM D5185(m)     200     85     74     93       Phosphorus     ppm     ASTM D5185(m)     300     330     333     314       Zinc     ppm     ASTM D5185(m)     370     412     392     349       Sulfur     ppm     ASTM D5185(m)     2500     926     908     2490       Lithium     ppm     ASTM D5185(m)     2500     926     908     2490       Sulfur     ppm     ASTM D5185(m)     2500     926     908     2490       Lithium     ppm     ASTM D5185(m)     2500     926     908     2490       Silicon     ppm     ASTM D5185(m)     >20     1     <1     <1       Solium     ppm     ASTM D5185(m)     >20     1     1     2       Sodium     ppm     ASTM D5185(m)     >20     0     <1     <1								
Phosphorus     ppm     ASTM D5185(m)     300     330     333     314       Zinc     ppm     ASTM D5185(m)     370     412     392     349       Sulfur     ppm     ASTM D5185(m)     2500     926     908     2490       Lithium     ppm     ASTM D5185(m)     2500     926     908     2490       CONTAMINANTS     method     limit/base     current     history1     histor       Silicon     ppm     ASTM D5185(m)     >20     1     1     2       Sodium     ppm     ASTM D5185(m)     >20     0     <1     1       Potassium     ppm     ASTM D5185(m)     >20     0     <1     <1								
Zinc     ppm     ASTM D5185(m)     370     412     392     349       Sulfur     ppm     ASTM D5185(m)     2500     926     908     2490       Lithium     ppm     ASTM D5185(m)     2500     926     908     2490       CONTAMINANTS     method     limit/base     current     history1     histor       Silicon     ppm     ASTM D5185(m)     >20     1     1     2       Sodium     ppm     ASTM D5185(m)     >20     0     <1     1       Potassium     ppm     ASTM D5185(m)     >20     0     <1     <1								
Sulfur     ppm     ASTM D5185(m)     2500     926     908     2490       Lithium     ppm     ASTM D5185(m)     <1     <1     <1       CONTAMINANTS     method     limit/base     current     history1     histor       Silicon     ppm     ASTM D5185(m)     >20     1     1     2       Sodium     ppm     ASTM D5185(m)     >20     0     <1       Potassium     ppm     ASTM D5185(m)     >20     0     <1								
Lithium     ppm     ASTM D5185(m)     <1								
Silicon     ppm     ASTM D5185(m)     >20     1     1     2       Sodium     ppm     ASTM D5185(m)     <1								
Sodium     ppm     ASTM D5185(m)     <1	ry2							
Potassium     ppm     ASTM D5185(m)     >20     0     <1								
Potassium     ppm     ASTM D5185(m)     >20     0     <1								
ELUID CLEANLINESS method limit/base current bistory1 bisto								
TEOD GEE/INCINE Motion minimulate Station mitiony mistory	ory2							
Particles >4μm     ASTM D7647     >5000     3100     ▲ 8468     1414								
Particles >6µm ASTM D7647 >1300 1186 ▲ 3983 409								
Particles >14μm     ASTM D7647     >160     115     ▲ 521     48								
Particles >21μm     ASTM D7647     >40     22     37     12								
Particles >38µm     ASTM D7647     >10     2     0     2								
Particles >71µm ASTM D7647 >3 0 0 1								
Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 🔺 20/19/16 18/16/	13							
FLUID DEGRADATION method limit/base current history1 histo	ry2							
Acid Number (AN) mg KOH/g ASTM D974* 0.57 0.34 0.32 0.12								

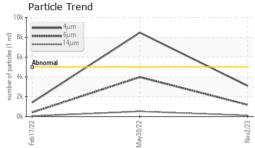
Report Id: VERLEA [WCAMIS] 02594628 (Generated: 11/08/2023 17:37:59) Rev: 1

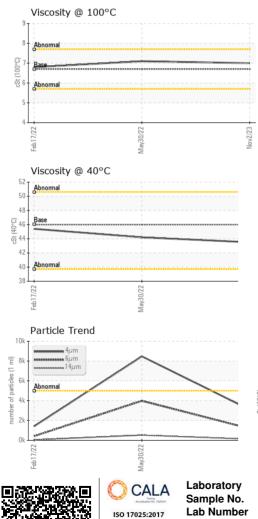
Contact/Location: Dave Fawdry - VERLEA



# **OIL ANALYSIS REPORT**

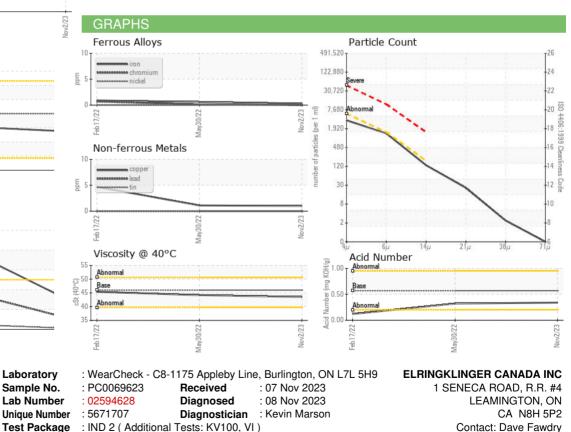






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	VLITE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	.5%
Free Water	scalar	Visual*		NEG	NEG	<b>1</b> %
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46	43.5	44.2	45.4
Visc @ 100°C	cSt	ASTM D7279(m)	6.7	7	7.1	6.8
Viscosity Index (VI)	Scale	ASTM D2270*	97	119	120	103
SAMPLE IMAG	iES	method	limit/base	current	history1	history2
					6	
Color					-	distant in the local distance

Bottom



To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

Report Id: VERLEA [WCAMIS] 02594628 (Generated: 11/08/2023 17:37:59) Rev: 1

Accredited

Laboratory

Contact/Location: Dave Fawdry - VERLEA

david.fawdry@elringklinger.ca

Page 2 of 2

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