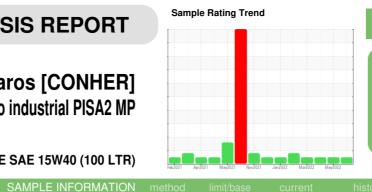


OIL ANALYSIS REPORT

GUAY SON/Yavaros [CONHER] CATERPILLAR Pacifico industrial PISA2 MP Component

Diesel Engine Fluid

CHEVRON DELO 400 SDE SAE 15W40 (100 LTR)





NORMAL

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

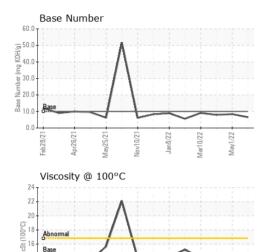
SAMPLE INFORM		method	limit/base	current	nistory i	nistory2
Sample Number		Client Info		KL0010185	KL0009245	KL0009227
Sample Date		Client Info		13 Jun 2022	01 May 2022	08 Apr 2022
Machine Age	hrs	Client Info		0	35660	35310
Oil Age	hrs	Client Info		0	350	586
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	53	19	56
Chromium	ppm	ASTM D5185m	>20	2	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		<1	<1	0
Aluminum	ppm	ASTM D5185m	>25	3	3	4
Lead	ppm	ASTM D5185m	>40	3	<1	2
Copper	ppm	ASTM D5185m	>330	7	4	14
Tin	ppm	ASTM D5185m	>15	<1	<1	2
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 53	history1 205	history2 133
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	53	205	133
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	53 0	205 0	133 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	53 0 71	205 0 88	133 0 121
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	53 0 71 <1	205 0 88 <1	133 0 121 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	53 0 71 <1 421	205 0 88 <1 594	133 0 121 1 773
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		53 0 71 <1 421 1405	205 0 88 <1 594 1553	133 0 121 1 773 1708
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	53 0 71 <1 421 1405 552	205 0 88 <1 594 1553 693	133 0 121 1 773 1708 779
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800	53 0 71 <1 421 1405 552 681	205 0 88 <1 594 1553 693 745	133 0 121 1 773 1708 779 888
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800 3000 limit/base	53 0 71 <1 421 1405 552 681 2154 current	205 0 88 <1 594 1553 693 745 2201 history1	133 0 121 1 773 1708 779 888 2354 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	760 800 3000 limit/base	53 0 71 <1 421 1405 552 681 2154 current 8	205 0 88 <1 594 1553 693 745 2201 history1 7	133 0 121 1 773 1708 779 888 2354 kistory2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25	53 0 71 <1 421 1405 552 681 2154 current 8 <	205 0 88 <1 594 1553 693 745 2201 history1 7 <1	133 0 121 1 773 1708 779 888 2354 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20	53 0 71 <1 421 1405 552 681 2154 current 8 <1 2	205 0 88 <1 594 1553 693 745 2201 history1 7 <1 0	133 0 121 1 773 1708 779 888 2354 history2 7 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25	53 0 71 <1 421 1405 552 681 2154 current 8 <1 2	205 0 88 <1 594 1553 693 745 2201 history1 7 <1	133 0 121 1 773 1708 779 888 2354 history2 7 2 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base >3	53 0 71 <1 421 1405 552 681 2154 <i>current</i> 8 <1 2 <i>current</i> 1.8	205 0 88 <1 594 1553 693 745 2201 history1 7 <1 0 history1 0.8	133 0 121 1 773 1708 779 888 2354 history2 7 2 0 0 history2 2.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base >3	53 0 71 <1 421 1405 552 681 2154 current 8 <1 2	205 0 88 <1 594 1553 693 745 2201 history1 7 <1 0	133 0 121 1 773 1708 779 888 2354 history2 7 2 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base >3	53 0 71 <1 421 1405 552 681 2154 <i>current</i> 8 <1 2 <i>current</i> 1.8	205 0 88 <1 594 1553 693 745 2201 history1 7 <1 0 history1 0.8	133 0 121 1 773 1708 779 888 2354 history2 7 2 0 history2 2.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base >3 >20	53 0 71 <1 421 1405 552 681 2154 <i>current</i> 8 <1 2 <i>current</i> 1.8 10.4	205 0 88 <1 594 1553 693 745 2201 history1 7 <1 0 history1 0.8 6.5	133 0 121 1 773 1708 779 888 2354 history2 7 2 2 0 history2 2.3 11.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	760 800 3000 225 >22 >20 imit/base >3 >20 >30 >30 >30	53 0 71 <1 421 1405 552 681 2154 <i>current</i> 8 <1 2 <i>current</i> 1.8 10.4 25.6 <i>current</i>	205 0 88 <1 594 1553 693 745 2201 history1 7 <100 history1 0.8 6.5 22.5 history1	133 0 121 1 773 1708 779 888 2354 history2 7 2 2 0 history2 2.3 11.3 29.8 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 imit/base >25 >20 imit/base >3 >20 >3 >20	53 0 71 <1 421 1405 552 681 2154 current 8 <1 2 current 1.8 10.4 25.6	205 0 88 <1 594 1553 693 745 2201 history1 7 <1 0 history1 0.8 6.5 22.5	133 0 121 1 773 1708 779 888 2354 history2 7 2 2 0 history2 2.3 11.3 29.8



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10 Feb28/21

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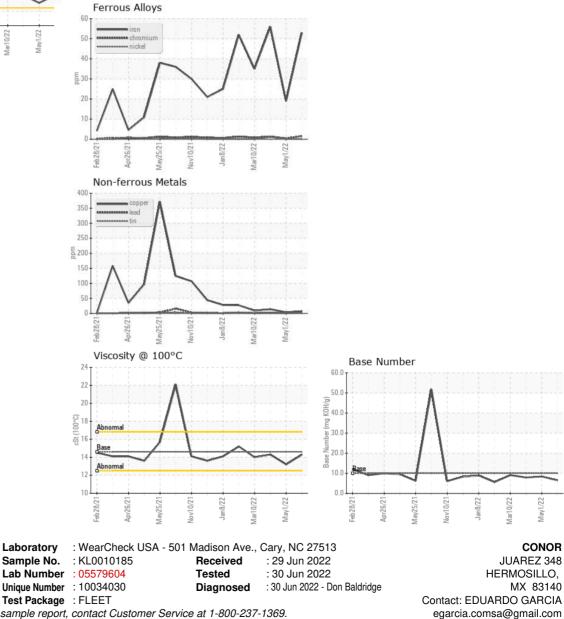


Mav25/21

VDr76/7

Mar10/27

VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	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	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.6	14.3	13.2	14.3
GRAPHS						



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Submitted By: EDUARDO GARCIA

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