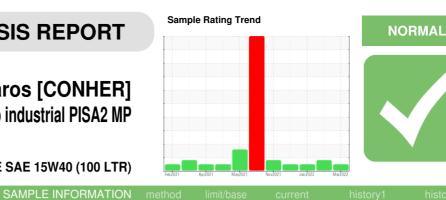


OIL ANALYSIS REPORT

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

Diesel Engine

CHEVRON DELO 400 SDE SAE 15W40 (100 LTR)



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.

Comula Number		Oliant Infa		KI 0000005		
Sample Number		Client Info		KL0009095	KL0009065	KL0009056
Sample Date		Client Info		10 Mar 2022	09 Feb 2022	08 Jan 2022
Machine Age	hrs	Client Info		34960	33900	33600
Oil Age	hrs	Client Info		236	1120 Not Observed	820
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINATION	١	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	35	52	25
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	5	4	<1
Lead	ppm	ASTM D5185m	>40	<1	3	<1
Copper	ppm	ASTM D5185m	>330	9	27	28
Tin	ppm	ASTM D5185m	>15	<1	1	<1
Antimony	ppm	ASTM D5185m			<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 230	history1 62	history2 213
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	230	62	213
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	230 0	62 0	213 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	230 0 131	62 0 109	213 0 118
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	230 0 131 <1	62 0 109 1	213 0 118 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	230 0 131 <1 693	62 0 109 1 710	213 0 118 <1 725
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		230 0 131 <1 693 1585	62 0 109 1 710 1508	213 0 118 <1 725 1651
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 ASTM D5185m	760	230 0 131 <1 693 1585 764	62 0 109 1 710 1508 652	213 0 118 <1 725 1651 758
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800	230 0 131 <1 693 1585 764 933	62 0 109 1 710 1508 652 817	213 0 118 <1 725 1651 758 864
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 800 3000 limit/base	230 0 131 <1 693 1585 764 933 2395	62 0 109 1 710 1508 652 817 2042	213 0 118 <1 725 1651 758 864 2452
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	230 0 131 <1 693 1585 764 933 2395 current	62 0 109 1 710 1508 652 817 2042 history1	213 0 118 <1 725 1651 758 864 2452 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	760 800 3000 limit/base >25	230 0 131 <1 693 1585 764 933 2395 current 5	62 0 109 1 710 1508 652 817 2042 history1 6	213 0 118 <1 725 1651 758 864 2452 history2 6
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 method ASTM D5185m	760 800 3000 limit/base >25	230 0 131 <1 693 1585 764 933 2395 current 5 <	62 0 109 1 710 1508 652 817 2042 history1 6 1	213 0 118 <1 725 1651 758 864 2452 history2 6 0
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	230 0 131 <1 693 1585 764 933 2395 current 5 <1 1	62 0 109 1 710 1508 652 817 2042 history1 6 1 0	213 0 118 <1 725 1651 758 864 2452 history2 6 0 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 800 3000 limit/base >25 >20 limit/base	230 0 131 <1 693 1585 764 933 2395 current 5 <1 1 x	62 0 109 1 710 1508 652 817 2042 history1 6 1 0 0	213 0 118 <1 725 1651 758 864 2452 history2 6 0 <1 kistory2
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	230 0 131 <1 693 1585 764 933 2395 current 5 <1 1 1 current	62 0 109 1 710 1508 652 817 2042 history1 6 1 0 0 history1 ∧ 3.5	213 0 118 <1 725 1651 758 864 2452 history2 6 0 <1 history2 0.1
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	230 0 131 <1 693 1585 764 933 2395 current 5 <1 1 1 current 1.8 8.5	62 0 109 1 710 508 652 817 2042 history1 6 1 0 0 history1 0 3.5 12.3	213 0 118 <1 725 1651 758 864 2452 history2 6 0 <1 history2 0.1 9.7
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	230 0 131 <1 693 1585 764 933 2395 current 5 <1 1 1 current 1.8 8.5 27.6	62 0 109 1 710 508 652 817 2042 history1 6 1 0 bistory1 ∧ 3.5 12.3 31.9	213 0 118 <1 725 1651 758 864 2452 history2 6 0 <1 history2 0.1 9.7 20.8
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 D7414	760 800 3000 225 >22 20 imit/base >3 >20 >30 >30 >30	230 0 131 <1 693 1585 764 933 2395 Current 5 <1 1 1 Current 1.8 8.5 27.6 Current	62 0 109 1 710 552 817 2042 history1 6 1 0 history1 ▲ 3.5 12.3 31.9	213 0 118 <1 725 1651 758 864 2452 history2 6 0 4 1 history2 0.1 9.7 20.8 history2

Submitted By: EDUARDO GARCIA



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Apr26/21.

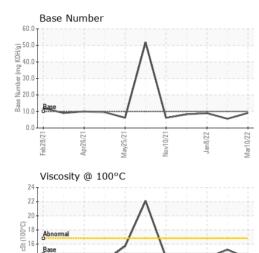
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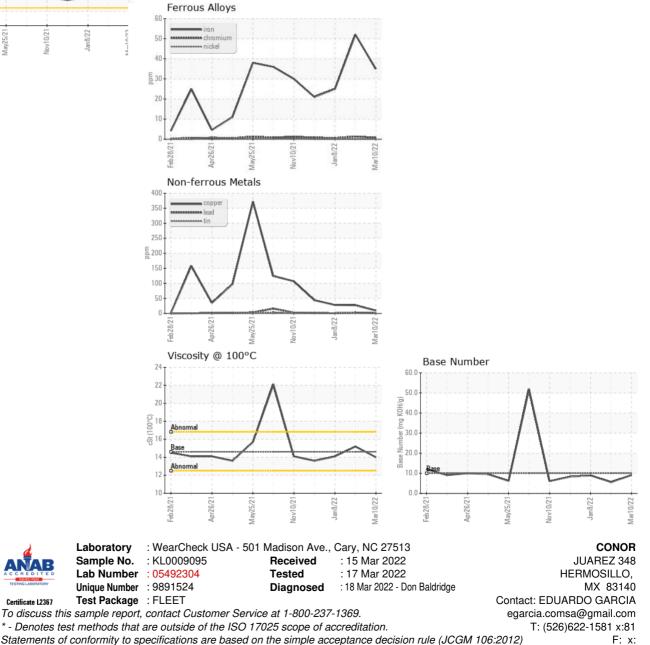
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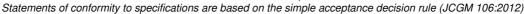
Feb28/21

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	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	14.0	15.2	14.1
GRAPHS						





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