

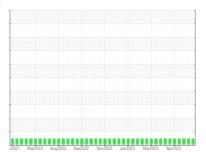
OIL ANALYSIS REPORT



605 Ultra 40 TRIAL Pinconning CAT 2 PINM02BE

Biogas Engine

CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)



Sample Rating Trend



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

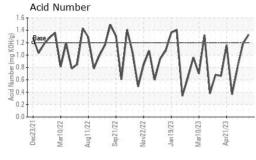
Fluid Condition

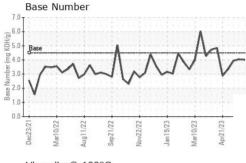
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

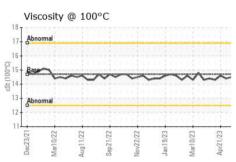
Machine Age hrs Client Info 58965 58681 58514 Oil Age hrs Client Info 876 592 425 Oil Changed Client Info Not Changd Not Changd Not Changd Sample Status method Imilibase current history1 history2 Fuel WC Method >4.0 <1.0 <1.0 <1.0 Water WC Method NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >15 1 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		WC0531420	WC0531436	WC0531431
Machine Age hrs Client Info 58965 58681 58514 Oil Age hrs Client Info 876 592 425 Oil Changed Client Info Not Changd Not Butter 10 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0			Client Info		31 May 2023	19 May 2023	12 May 2023
Oil Changed Sample Status	•	hrs	Client Info		-		58514
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 history2	Oil Age	hrs	Client Info		876	592	425
Fuel	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Fuel WC Method 24.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method WC Method >0.1 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >-15 1 1 <1 Chromium ppm ASTM D5185m >-4 0 0 0 Nickel ppm ASTM D5185m >2 0 0 0 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >66 <1 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	CONTAMINATION	N	method	limit/base	current	history1	history2
NEG NEG NEG NEG NEG NEG	Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.1	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 0 0 0 Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >5 0 0 0 Aluminum ppm ASTM D5185m >6 <1 0 <1 Lead ppm ASTM D5185m >9 0 0 0 Copper ppm ASTM D5185m >6 <1 <1 <1 Tin ppm ASTM D5185m >4 1 1 <1 <1 Vanadium ppm ASTM D5185m 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 Boron ppm ASTM D5185m 5 5 7 7 7 7 8 8 1 1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m <1	Iron	ppm	ASTM D5185m	>15	1	1	<1
Titanium	Chromium	ppm	ASTM D5185m	>4	0	0	0
Silver ppm ASTM D5185m >5 0 0 0 Aluminum ppm ASTM D5185m >6 <1 0 <1 Lead ppm ASTM D5185m >9 0 0 0 Copper ppm ASTM D5185m >6 <1 <1 <1 Tin ppm ASTM D5185m >4 1 1 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 5 7 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Nickel	ppm	ASTM D5185m	>2	0	0	0
Aluminum ppm ASTM D5185m >6 <1	Titanium	ppm	ASTM D5185m		<1	0	0
Lead ppm ASTM D5185m >9 0 0 0 Copper ppm ASTM D5185m >6 <1	Silver	ppm	ASTM D5185m	>5	0	0	0
Copper ppm ASTM D5185m >6 <1	Aluminum	ppm	ASTM D5185m	>6	<1	0	<1
Tin	Lead	ppm	ASTM D5185m	>9	0	0	0
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 5 7 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 2 2 2 2 Manganese ppm ASTM D5185m 15 14 16 16 Calcium ppm ASTM D5185m 1788 1687 1727 Phosphorus ppm ASTM D5185m 299 275 291 Zinc ppm ASTM D5185m 358 360 357 Sulfur ppm ASTM D5185m 381 125 99 82 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m	Copper	ppm	ASTM D5185m	>6	<1	<1	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 5 7 Barium ppm ASTM D5185m 0 0 0 Molydenum ppm ASTM D5185m 2 2 2 2 Manganese ppm ASTM D5185m 15 14 16 16 Calcium ppm ASTM D5185m 158 148 1687 1727 Phosphorus ppm ASTM D5185m 299 275 291 Zinc ppm ASTM D5185m 358 360 357 Sulfur ppm ASTM D5185m 3307 2571 2998 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 125 99 82 Sodium ppm <	Tin	ppm	ASTM D5185m	>4	1	1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 2 2 2 Manganese ppm ASTM D5185m -1 0 0 Magnesium ppm ASTM D5185m 15 14 16 Calcium ppm ASTM D5185m 1788 1687 1727 Phosphorus ppm ASTM D5185m 299 275 291 Zinc ppm ASTM D5185m 358 360 357 Sulfur ppm ASTM D5185m 3307 2571 2998 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >1 1 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 2 2 2 Magnesee ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		5	5	7
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 15 14 16 Calcium ppm ASTM D5185m 1788 1687 1727 Phosphorus ppm ASTM D5185m 299 275 291 Zinc ppm ASTM D5185m 358 360 357 Sulfur ppm ASTM D5185m 3307 2571 2998 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 125 99 82 Sodium ppm ASTM D5185m 1 0 <1 0 Potassium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0 0 Nitration Abs/.1mm *ASTM D7624 >20 6.1 5.2 4.9 Sulfation <th>Molybdenum</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>2</th> <th>2</th> <th>2</th>	Molybdenum	ppm	ASTM D5185m		2	2	2
Calcium ppm ASTM D5185m 1788 1687 1727 Phosphorus ppm ASTM D5185m 299 275 291 Zinc ppm ASTM D5185m 358 360 357 Sulfur ppm ASTM D5185m 3307 2571 2998 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 125 99 82 Sodium ppm ASTM D5185m >1 0 <1 Potassium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0 0 Nitration Abs/.mm *ASTM D7624 >20 6.1 5.2 4.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.4 20.4 19.3 FLUID DEGRA	Manganese	ppm	ASTM D5185m		<1	0	0
Phosphorus ppm ASTM D5185m 299 275 291 Zinc ppm ASTM D5185m 358 360 357 Sulfur ppm ASTM D5185m 3307 2571 2998 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 125 99 82 Sodium ppm ASTM D5185m >20 0 2 <1 Potassium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0 0 Nitration Abs/cm *ASTM D7624 >20 6.1 5.2 4.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.4 20.4 19.3 FLUID DEGRADATION method limit/base current history1 hi	Magnesium	ppm	ASTM D5185m		15	14	16
Zinc ppm ASTM D5185m 358 360 357 Sulfur ppm ASTM D5185m 3307 2571 2998 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 125 99 82 Sodium ppm ASTM D5185m >1 0 <1	Calcium	ppm	ASTM D5185m		1788	1687	1727
Sulfur ppm ASTM D5185m 3307 2571 2998 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 125 99 82 Sodium ppm ASTM D5185m 1 0 <1 Potassium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0 0 Nitration Abs/cm *ASTM D7624 >20 6.1 5.2 4.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.4 20.4 19.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.9 13.7 12.0 Acid Number (AN) mg KOH/g ASTM D8045 1.2 1.33 <th>Phosphorus</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>299</th> <th></th> <th>291</th>	Phosphorus	ppm	ASTM D5185m		299		291
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 125 99 82 Sodium ppm ASTM D5185m 1 0 <1 Potassium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0 0 Nitration Abs/cm *ASTM D7624 >20 6.1 5.2 4.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.4 20.4 19.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.9 13.7 12.0 Acid Number (AN) mg KOH/g ASTM D8045 1.2 1.33 1.19 0.81	Zinc	ppm	ASTM D5185m		358	360	357
Silicon ppm ASTM D5185m >181 125 99 82 Sodium ppm ASTM D5185m 1 0 <1	Sulfur	ppm	ASTM D5185m		3307	2571	2998
Sodium ppm ASTM D5185m 1 0 <1	CONTAMINANTS						
Potassium ppm ASTM D5185m >20 0 2 <1	CONTAMINANTS		method	limit/base	current	history1	history2
INFRA-RED						· ·	
Soot % % *ASTM D7844 0.1 0 0 Nitration Abs/cm *ASTM D7624 >20 6.1 5.2 4.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.4 20.4 19.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.9 13.7 12.0 Acid Number (AN) mg KOH/g ASTM D8045 1.2 1.33 1.19 0.81	Silicon	ppm	ASTM D5185m		125	99	82
Nitration Abs/cm *ASTM D7624 >20 6.1 5.2 4.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.4 20.4 19.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.9 13.7 12.0 Acid Number (AN) mg KOH/g ASTM D8045 1.2 1.33 1.19 0.81	Silicon Sodium	ppm ppm	ASTM D5185m ASTM D5185m	>181	125 1	99	82 <1
Sulfation Abs/.1mm *ASTM D7415 >30 21.4 20.4 19.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.9 13.7 12.0 Acid Number (AN) mg KOH/g ASTM D8045 1.2 1.33 1.19 0.81	Silicon Sodium Potassium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	>181	125 1 0	99 0 2	82 <1 <1
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.9 13.7 12.0 Acid Number (AN) mg KOH/g ASTM D8045 1.2 1.33 1.19 0.81	Silicon Sodium Potassium INFRA-RED	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	>181	125 1 0 current	99 0 2 history1	82 <1 <1 history2
Oxidation Abs/.1mm *ASTM D7414 >25 15.9 13.7 12.0 Acid Number (AN) mg KOH/g ASTM D8045 1.2 1.33 1.19 0.81	Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844	>181 >20 limit/base	125 1 0 current	99 0 2 history1	82 <1 <1 history2
Acid Number (AN) mg KOH/g ASTM D8045 1.2 1.33 1.19 0.81	Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624	>181 >20 limit/base >20	125 1 0 current 0.1 6.1	99 0 2 history1 0 5.2	82 <1 <1 history2 0 4.9
	Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415	>181 >20 limit/base >20 >30	125 1 0 current 0.1 6.1 21.4	99 0 2 history1 0 5.2 20.4	82 <1 <1 history2 0 4.9 19.3
Base Number (BN) mg KOH/g ASTM D2896 4.5 4.00 4.04 3.95	Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415 method	>181 >20 limit/base >20 >30 limit/base	125 1 0 current 0.1 6.1 21.4 current	99 0 2 history1 0 5.2 20.4 history1	82 <1 <1 history2 0 4.9 19.3 history2
	Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415 method *ASTM D7414	>181 >20 limit/base >20 >30 limit/base >25	125 1 0 current 0.1 6.1 21.4 current	99 0 2 history1 0 5.2 20.4 history1 13.7	82 <1 <1 history2 0 4.9 19.3 history2



OIL ANALYSIS REPORT



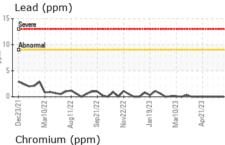


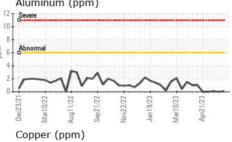


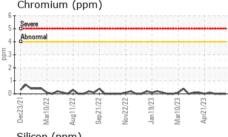
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

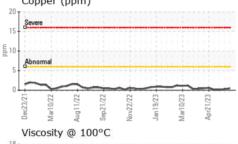
I LOID I NOI LI	TILO	memou			HISTOLAL	HISTOLYZ
Visc @ 100°C	cSt	ASTM D445	14.7	14.8	14.6	14.5

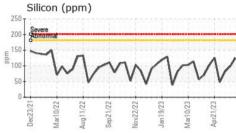
Severe				11111		
Abnormal						11:1111
Lud						
~	1		~~	_		
	2	22	22	23	73	23
3/21	72		0.7	60		
Dec23/21 Mar10/22	Aug11/2	Sep21/2	Nov22/2	Jan19/	Mar10/2	Apr21/23
Uimuly Dec23/21			Nov22/	Jan19/	Mar10,	Apr21,

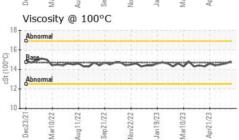


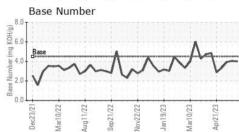
















Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB 2 To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WC0531420 : 05863658 : 10498123

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 02 Jun 2023 Diagnosed : 06 Jun 2023 Diagnostician : Don Baldridge

EDL NA Recips-Pinconning

Pinconning Powerstation, 2403 E. Whitefeather Road Pinconning, MI US 48650

> Contact: DOUG HINE doug.hine@edlenergy.com T:

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: