

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Pinconning CAT 1 PINM01BE

Biogas Engine

CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAL)

CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAI

Recommendation

DIAGNOSIS

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

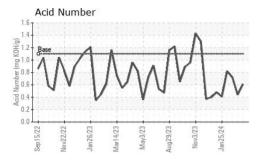
Fluid Condition

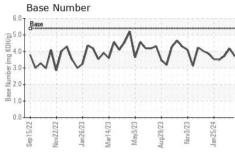
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

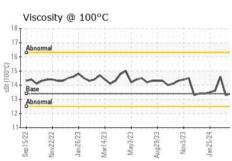
S ENGINE OIL 40 (GAL)							
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		WC0840774	WC0840767	WC0840748	
Sample Date		Client Info		18 Mar 2024	27 Feb 2024	07 Feb 2024	
Machine Age	hrs	Client Info		65630	65442	65177	
Oil Age	hrs	Client Info		397	209	894	
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd	
Sample Status				NORMAL	NORMAL	NORMAL	
CONTAMINATION	J	method	limit/base	current	history1	history2	
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0	
Water		WC Method	>0.1	NEG	NEG	NEG	
Glycol		WC Method		NEG	NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>15	2	1	0	
Chromium	ppm	ASTM D5185m	>4	<1	0	0	
Nickel	ppm	ASTM D5185m	>2	0	<1	0	
Titanium	ppm	ASTM D5185m		<1	0	0	
Silver	ppm	ASTM D5185m	>5	0	0	0	
Aluminum	ppm	ASTM D5185m	>6	3	1	2	
Lead	ppm	ASTM D5185m	>9	1	1	1	
Copper	ppm	ASTM D5185m	>6	2	<1	0	
Tin	ppm	ASTM D5185m	>4	2	1	0	
Vanadium	ppm	ASTM D5185m		<1	<1	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
ADDITIVES		method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		1	2	82	
Barium	ppm	ASTM D5185m		2	0	0	
Molybdenum	ppm	ASTM D5185m		2	<1	59	
Manganese	ppm	ASTM D5185m		0	0	<1	
Magnesium	ppm			-			
Calcium	- - · · ·	ASTM D5185m		11	5	586	
Calcium	ppm	ASTM D5185m ASTM D5185m				586 817	
				11	5		
Phosphorus Zinc	ppm	ASTM D5185m		11 1626	5 1753	817	
Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m		11 1626 268	5 1753 284	817 501	
Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	11 1626 268 348	5 1753 284 366	817 501 639 1794	
Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >181	11 1626 268 348 2487	5 1753 284 366 2182	817 501 639 1794	
Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method		11 1626 268 348 2487 current	5 1753 284 366 2182 history1	817 501 639 1794 history2	
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	>181	11 1626 268 348 2487 current	5 1753 284 366 2182 history1	817 501 639 1794 history2	
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	>181	11 1626 268 348 2487 current 95	5 1753 284 366 2182 history1 63	817 501 639 1794 history2 0 0	
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	>181	11 1626 268 348 2487 current 95 0	5 1753 284 366 2182 history1 63 0 <1	817 501 639 1794 history2 0 0	
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>181 >20 limit/base	11 1626 268 348 2487 current 95 0 3	5 1753 284 366 2182 history1 63 0 <1	817 501 639 1794 history2 0 0 3	
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m	>181 >20 limit/base	11 1626 268 348 2487 current 95 0 3	5 1753 284 366 2182 history1 63 0 <1 history1	817 501 639 1794 history2 0 0 3 history2	
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624	>181 >20 limit/base >20	11 1626 268 348 2487 current 95 0 3 current 0 4.6	5 1753 284 366 2182 history1 63 0 <1 history1	817 501 639 1794 history2 0 0 3 history2 0 4.0 16.6	
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	>181 >20 limit/base >20 >30	11 1626 268 348 2487 current 95 0 3 current 0 4.6 16.5	5 1753 284 366 2182 history1 63 0 <1 history1 0 4.4 15.3	817 501 639 1794 history2 0 0 3 history2 0 4.0 16.6	
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TION	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method *ASTM D7414	>181 >20 limit/base >20 >20 >30 limit/base	11 1626 268 348 2487 current 95 0 3 current 0 4.6 16.5	5 1753 284 366 2182 history1 63 0 <1 history1 0 4.4 15.3 history1	817 501 639 1794 history2 0 0 3 history2 0 4.0 16.6	



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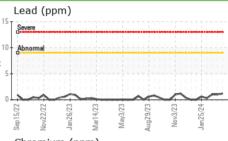


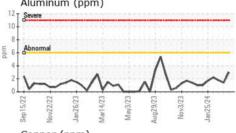
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

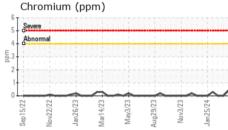
FLUID PROPER	THES	method	ilmit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	13.4	13.4	13.3	14.6

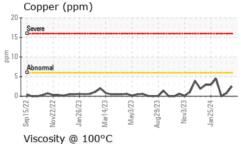
25 Seve	n (pp re	m)	117717					77-
20 - Abno	ormal							111
10			1				h	
Sep15/22	Nov22/22	Jan26/23	Mar14/23	May3/23	Aug29/23	Nov3/23	Jan25/24	
Alu	minu	m (pp	m)					

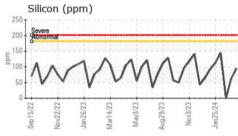
GRAPHS

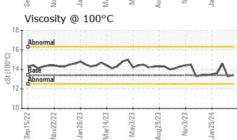


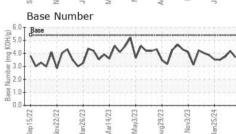
















Laboratory Sample No.

: WC0840774 Lab Number : 06125125 Unique Number: 10939276

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested**

Diagnosed

: 21 Mar 2024 : 25 Mar 2024

: 25 Mar 2024 - Sean Felton

EDL NA Recips-Pinconning Pinconning Powerstation, 2403 E. Whitefeather Road

Pinconning, MI US 48650 Contact: DOUG HINE

Test Package : MOB 2 Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - 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)

doug.hine@edlenergy.com T:

Report Id: EDLPIN [WUSCAR] 06125125 (Generated: 03/25/2024 12:18:22) Rev: 1

Submitted By: Kevin Ackerman

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