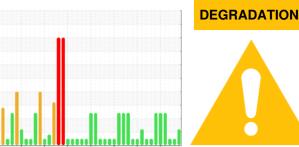


# **OIL ANALYSIS REPORT**

# Sample Rating Trend







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

## DIAGNOSIS

### Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil

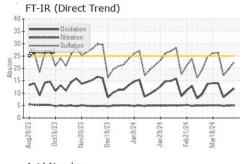
### ▲ Fluid Condition

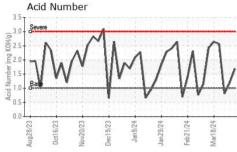
The BN level is low. The AN level is acceptable for this fluid.

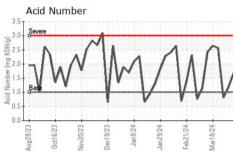
Sample Number   Client Info   WC0895556   WC0895532   WC0895532   Wasample Date   Client Info   29 Mar 2024   25 Mar 2024   22 Mar 2024   22 Mar 2024   44556   44478   44545   44556   44478   44545   44556   44478   44545   44556   44478   44545   4454	S ENGINE OIL 40 (-	GAL)	g2023 Oct20	23 Nov2023 Dec2023	Jan2024 Jan2024 Feb2024	Mar2024	
Sample Date   Client Info   29 Mar 2024   25 Mar 2024   22 Mar 2024   20 Machine Age   hrs   Client Info   44645   44556   44478   44545   44556   44478   44545   44556   44478   44545   44556   44478   44545   44556   44478   44545   44556   44478   44545   44556   44478   44545   44556   44478   44545   44556   44478   44545   44556   44478   44556   44478   44556   44478   44556   44478   44556   44478   44556   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44560   44566   44478   44566   44478   44566   44478   44560   44566   44478   44566   44478   44566   44478   44560   44566   44478   44566   44478   44560   44566   44478   44566   4	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   237   242   164	Sample Number		Client Info		WC0895556	WC0895532	WC0895530
Machine Age   hrs   Client Info   44645   44556   44478   164   1610			Client Info		29 Mar 2024	25 Mar 2024	22 Mar 2024
Dil Age	Machine Age	hrs	Client Info		44645	44556	44478
Oil Changed   Client Info	Oil Age	hrs			237	242	164
ABNORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history2   history2   Fuel   WC Method   A4.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <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		Not Changd	Not Changd	Not Changd
Fuel	Sample Status					NORMAL	NORMAL
Water Glycol         WC Method         NEG NEG         NEG NEG         NEG NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM DS185m         >14         <1         2         2           Chromium         ppm         ASTM DS185m         0         0         0         0           Nickel         ppm         ASTM DS185m         0         0         0         0           Titanium         ppm         ASTM DS185m         0         0         0         0           Silver         ppm         ASTM DS185m         0         0         0         0           Aluminum         ppm         ASTM DS185m         >5         2         1         2         2           Lead         ppm         ASTM DS185m         >8         <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	CONTAMINATION	١	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >14         <1	Water		WC Method		NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>14	<1	2	2
Description	Chromium	ppm	ASTM D5185m	>3	0	0	0
Silver	Nickel	ppm	ASTM D5185m		0	0	0
Aluminum	Titanium	ppm	ASTM D5185m		0	0	0
Lead	Silver	ppm	ASTM D5185m		0	0	0
Copper         ppm         ASTM D5185m         >5         <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         <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         <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	Aluminum	ppm	ASTM D5185m	>5	2	1	2
Tin	_ead	ppm	ASTM D5185m	>8	<1	0	<1
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         1         <1         <1         <1           Barium         ppm         ASTM D5185m         0         0         <1            Manganese         ppm         ASTM D5185m         <1         0         <1            Magnesium         ppm         ASTM D5185m         <1         0         <1            Magnesium         ppm         ASTM D5185m         1729         1664         1645            Phosphorus         ppm         ASTM D5185m         258         262         261            Zinc         ppm         ASTM D5185m         300         308         306            Sulfur         ppm         ASTM D5185m         >180         69         50         26           CONTAMINANTS         method         limit/base         current         history1         history2 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;5</td> <th>&lt;1</th> <td>&lt;1</td> <td>&lt;1</td>	Copper	ppm	ASTM D5185m	>5	<1	<1	<1
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         1         <1	Γin	ppm	ASTM D5185m	>3	2	<1	1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         0         <1           Manganese         ppm         ASTM D5185m         <1         0         <1           Magnesium         ppm         ASTM D5185m         0         5         23           Calcium         ppm         ASTM D5185m         0         5         23           Calcium         ppm         ASTM D5185m         1729         1664         1645           Phosphorus         ppm         ASTM D5185m         258         262         261           Zinc         ppm         ASTM D5185m         300         308         306           Sulfur         ppm         ASTM D5185m         3997         3119         2699           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1         <1         2           Potassium         ppm         ASTM D5185m         >20         <1         <1         2           Potassium         ppm         ASTM D5185m         >20         0         2         2           INFRA-RED         method         limit/base         current	Boron	ppm	ASTM D5185m		1	<1	<1
Manganese         ppm         ASTM D5185m         <1         0         <1           Magnesium         ppm         ASTM D5185m         0         5         23           Calcium         ppm         ASTM D5185m         1729         1664         1645           Phosphorus         ppm         ASTM D5185m         258         262         261           Zinc         ppm         ASTM D5185m         300         308         306           Sulfur         ppm         ASTM D5185m         3997         3119         2699           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium         ppm         ASTM D5185m         0         5         23           Calcium         ppm         ASTM D5185m         1729         1664         1645           Phosphorus         ppm         ASTM D5185m         258         262         261           Zinc         ppm         ASTM D5185m         300         308         306           Sulfur         ppm         ASTM D5185m         3997         3119         2699           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >180         69         50         26           Sodium         ppm         ASTM D5185m         >20         <1	Molybdenum	ppm	ASTM D5185m		0	0	<1
Calcium         ppm         ASTM D5185m         1729         1664         1645           Phosphorus         ppm         ASTM D5185m         258         262         261           Zinc         ppm         ASTM D5185m         300         308         306           Sulfur         ppm         ASTM D5185m         3997         3119         2699           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >180         69         50         26           Sodium         ppm         ASTM D5185m         >20         <1	Manganese	ppm	ASTM D5185m		<1	0	<1
Phosphorus         ppm         ASTM D5185m         258         262         261           Zinc         ppm         ASTM D5185m         300         308         306           Sulfur         ppm         ASTM D5185m         3997         3119         2699           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >180         69         50         26           Sodium         ppm         ASTM D5185m         >20         <1	Magnesium	ppm	ASTM D5185m		0	5	23
Solifur   Soli	Calcium	ppm	ASTM D5185m		1729	1664	1645
Sulfur         ppm         ASTM D5185m         3997         3119         2699           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >180         69         50         26           Sodium         ppm         ASTM D5185m         >20         <1	Phosphorus	ppm	ASTM D5185m		258	262	261
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >180         69         50         26           Sodium         ppm         ASTM D5185m         >20         <1	Zinc	ppm	ASTM D5185m		300	308	306
Silicon         ppm         ASTM D5185m         >180         69         50         26           Sodium         ppm         ASTM D5185m         >20         <1         <1         2           Potassium         ppm         ASTM D5185m         >20         0         2         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0         0         0           Nitration         Abs/cm         *ASTM D7624         5.1         5.0         4.9           Sulfation         Abs/.1mm         *ASTM D7415         22.5         19.7         17.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         11.9         10.1         8.4           Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         1.69         1.20         0.81	Sulfur	ppm	ASTM D5185m		3997	3119	2699
Sodium         ppm         ASTM D5185m         >20         <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         0         2         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0         0         0           Nitration         Abs/cm         *ASTM D7624         5.1         5.0         4.9           Sulfation         Abs/.1mm         *ASTM D7415         22.5         19.7         17.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         11.9         10.1         8.4           Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         1.69         1.20         0.81	Silicon	ppm	ASTM D5185m	>180	69	50	26
INFRA-RED	Sodium	ppm	ASTM D5185m	>20	<1	<1	2
Soot %         *ASTM D7844         0         0         0           Nitration         Abs/cm         *ASTM D7624         5.1         5.0         4.9           Sulfation         Abs/.1mm         *ASTM D7415         22.5         19.7         17.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         11.9         10.1         8.4           Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         1.69         1.20         0.81	Potassium	ppm	ASTM D5185m	>20	0	2	2
Nitration         Abs/cm         *ASTM D7624         5.1         5.0         4.9           Sulfation         Abs/.1mm         *ASTM D7415         22.5         19.7         17.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         11.9         10.1         8.4           Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         1.69         1.20         0.81	INFRA-RED		method	limit/base	current	history1	history2
Nitration         Abs/cm         *ASTM D7624         5.1         5.0         4.9           Sulfation         Abs/.1mm         *ASTM D7415         22.5         19.7         17.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         11.9         10.1         8.4           Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         1.69         1.20         0.81	Soot %	%	*ASTM D7844		0	0	0
Sulfation         Abs/.1mm         *ASTM D7415         22.5         19.7         17.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         11.9         10.1         8.4           Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         1.69         1.20         0.81	Vitration	Abs/cm			5.1	5.0	4.9
Oxidation         Abs/.1mm         *ASTM D7414         11.9         10.1         8.4           Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         1.69         1.20         0.81	Sulfation	Abs/.1mm	*ASTM D7415			19.7	17.2
Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         1.69         1.20         0.81	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         1.69         1.20         0.81	Oxidation	Abs/.1mm	*ASTM D7414		11.9	10.1	8.4
				1.0			
	Base Number (BN)	mg KOH/g	ASTM D2896	5.4	▲ 1.03	3.32	4.15

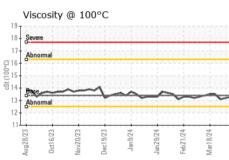


# **OIL ANALYSIS REPORT**







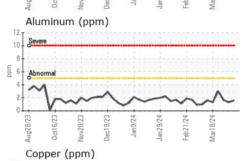


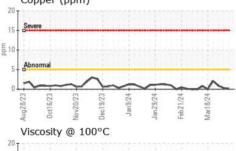
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual		NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
ELLID DDODED	FIFO		11 11 11		1111	111

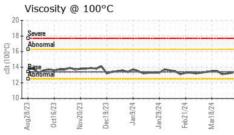
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.4	13.3	13.2	13.1

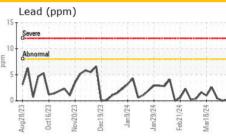
# Iron (ppm)

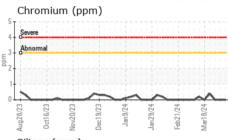
**GRAPHS** 

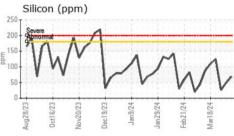


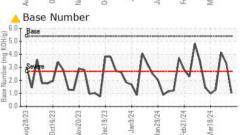
















Certificate 12367

Laboratory Sample No.

: WC0895556 Lab Number : 06136532 Unique Number : 10955997

Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 02 Apr 2024 **Tested** 

: 09 Apr 2024 Diagnosed : 09 Apr 2024 - Jonathan Hester **EDL NA Recips-Watervliet** 

Watervliet Powerstation, 3563 Hennessey Road Watervliet, MI US 49098

> Contact: Scott Eastman scott.eastman@edlenergy.com

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

T:

F: