

OIL ANALYSIS REPORT

Sample Rating Trend





lachine Id WVTM02BE Component

Biogas Engine

CHEVRON HDAX 6500 LFG G

G GAS ENGINE OIL (GAL)										
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2				
Sample Number		Client Info		WC0785347	WC0785345	WC0785360				
Sample Date		Client Info		26 Jan 2024	24 Jan 2024	19 Jan 2024				
Machine Age	hrs	Client Info		48164	43091	42999				
Oil Age	hrs	Client Info		236	163	71				
Oil Changed		Client Info		N/A	Not Changd	Not Changd				
Sample Status				NORMAL	NORMAL	NORMAL				
CONTAMINATIO	ON	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	20.1	NEG	NEG	NEG				
•										
WEAR METALS		method	limit/base		history1	history2				
Iron	ppm	ASTM D5185m	>15	<1	<1	2				
Chromium	ppm	ASTM D5185m	>4	0	0	<1				
Nickel	ppm	ASTM D5185m	>2	0	0	0				
Titanium	ppm	ASTM D5185m		0	0	<1				
Silver	ppm	ASTM D5185m	>5	0	0	0				
Aluminum	ppm	ASTM D5185m	>6	2	2	1				
_ead	ppm	ASTM D5185m	>9	2	1	<1				
Copper	ppm	ASTM D5185m	>6	1	<1	<1				
Tin	ppm	ASTM D5185m	>4	2	2	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	0	<1				
Barium	ppm	ASTM D5185m		0	0	0				
Molybdenum	ppm	ASTM D5185m		<1	0	1				
Vanganese	ppm	ASTM D5185m		<1	<1	0				
Magnesium	ppm	ASTM D5185m		8	9	6				
Calcium	ppm	ASTM D5185m		1633	1761	1651				
Phosphorus	ppm	ASTM D5185m		266	271	247				
Zinc	ppm	ASTM D5185m		310	331	314				
Sulfur	ppm	ASTM D5185m		3128	2842	2327				
CONTAMINANT	S	method	limit/base	current	history1	history2				
Silicon	ppm	ASTM D5185m	>181	78	69	45				
Sodium	ppm	ASTM D5185m		<1	<1	0				
Potassium	ppm	ASTM D5185m	>20	2	2	2				
INFRA-RED		method	limit/base	current	history1	history2				
Soot %	%	*ASTM D7844		0	0	0				
Nitration	Abs/cm	*ASTM D7624	>20	5.0	5.0	4.9				
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.3	19.5	17.2				
FLUID DEGRAD	ATION	method	limit/base	current	history1	history2				
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.1	9.8	8.6				
Acid Number (AN)	mg KOH/g			1.30	0.941	0.66				
			4.5	0.40	0.01	4.07				

2.49

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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Base Number (BN) mg KOH/g ASTM D2896 4.5

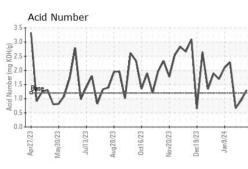
Submitted By: Khelun Roberts

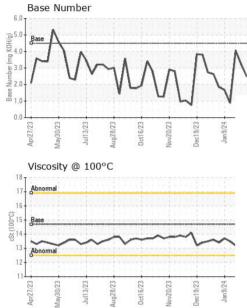
3.23

4.07



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	history1	history2
•1	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
N ACIA	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
MAN MAN	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
VVV VV I	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
· · · · ·	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
/23 /23 /24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Oct16/23 Nov20/23 Dec19/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
- 0222 C - 0	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
	Free Water	scalar	*Visual	>0.1	NEG	NEG	NEG
					NEG		
	FLUID PROPERT	IES	method	limit/base	current	history1	history2
A A A A A	Visc @ 100°C	cSt	ASTM D445	14.7	13.3	13.3	13.2
	GRAPHS						
	Iron (ppm)			15	Lead (ppm)		
	10.0100000000			13	Severe		
an of w2	30		٨	10	Abnormal		
De No	20 - Abnormal		-/	bhu			
	10-		/ 1	5		An 1	~ ^
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	Apr27/23 May30/23 Jul13/23 Aug28/23	0ct16/23	Nov20/23 Dec19/23		Apr27/23 May30/23 Jul13/23	Aug28/23 0ct16/23 Nov20/23	Dec19/23 Jan9/24
	Aluminum (ppm) Chromium (ppm)						
m	¹² Severe		1222002000000000	6	T 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	10-	ccel m		5	Abnormal		
ста (а себест 50 Е	8 6 Abnormal			4 ε.	T u		
0ct15/23 + Nov20/23 + Dec19/23 + Jan9/24 + ppm				4.3 2			
Deci Jar	2	1_	~~~	-	Fillen for fille		
		V~		0		<u> </u>	<u>~~~</u>
	Apr27/23 May30/23 Jul13/23	0ct16/23	Nov20/23 Dec19/23	1	Apr27/23 May30/23 Jul13/23	Aug28/23 0ct16/23 Nov20/23	Dec19/23 Jan9/24
	2	00	Nov Dec	5	Api May	Aug Oct	Dec
	Copper (ppm)			250	Silicon (ppm)		
	Severe			250			1
	15 -		4	200		10 10	4
Ę	10-	ZVIAIV	Λ				
	Abnormal			툍 ¹⁵⁰ 100		V V V	11
	1		A	50			V V
		23	23 C	; 0	23	23 - 23 - 23 -	23 -
	Apr27/23 May30/23 Jul13/23 Aug28/23	0ct16/23	Nov20/23 Dec19/23		Apr27/23 May30/23 Jul13/23	Aug28/23 0ct16/23 Nov20/23	Dec19/23 Jan9/24
	◄ ≤ ³ ³ Viscosity @ 100°C	0	2 0		Sase Number	A C	Q
	18			6.0			
	Abnormal			(B/HO	Base A		
	Base			¥ 4.0	JIN		Δ Δ
C)				- 3.0		MAAA	ININ
st (100-C)	14-				the second	VUIII	
(3-00 L) XS2	Abnormal			2.0 2.10		• - V	LIN
	10			(D)HOX Bull and a constraint of the second s		V - V	V V
	10	6/23	20/23 - 19/23 - 9/24 -	0.0	· · · · · · · · · · · · · · · · · · ·	6/23	19/23 - K
	12-	Oct16/23	Nov20/23 Dec19/23	0.0	Apr27/23	Aug28/23 Oct16/23 Nov20/23	Dec1 9/23
	Apr27/23 May30/23 Jul13/23 Aug28/23		2 1	0.0	Apr27/23 - May30/23 - Jul13/23 -		
Laboratory	EZUGE ^{ke} W : WearCheck USA - 5	01 Madis	son Ave., Ca	ry, NC 27513	Apr27/23 + May30/23 - Jul13/23 +	EDL NA Rec	ips-Watervlie
Laboratory Sample No.	EXPECTION OF CONTRACT OF CONTR	01 Madis Recieve o	son Ave., Ca 1 : 31 .	ry, NC 27513 Jan 2024	Apr27/23 + May30/23 - Jul13/23 +		ips-Watervlie Hennessey Road
Laboratory Sample No. Lab Number	EXECUTE CONTRACT OF CONTRACT.	01 Madis Recieved Diagnos	son Ave., Ca 1 : 31 . ed : 01	ry, NC 27513 Jan 2024 Feb 2024	Apr27/23 + May30/23 - Jul13/23 +	EDL NA Rec	i ps-Watervlie Hennessey Road Watervliet, M
Laboratory Sample No. Lab Number Unique Number	: WearCheck USA - 5 : WC0785347 : 06076012 : 10858103	01 Madis Recieve o	son Ave., Ca 1 : 31 . ed : 01	ry, NC 27513 Jan 2024	Apr27/23 + May30/23 - Jul13/23 +	EDL NA Rec Powerstation, 3563	ips-Watervlie
Laboratory Sample No. Lab Number Unique Number	: WearCheck USA - 5 : WC0785347 F : 06076012 F : 10858103 F : MOB 2	01 Madis Recieved Diagnose Diagnost	son Ave., Ca d : 31 d ed : 01 l iician : Sea	ry, NC 27513 Jan 2024 Feb 2024 an Felton	EZZ/LZ/dY Watervliet	EDL NA Rec Powerstation, 3563	ips-Watervlie Hennessey Road Watervliet, M US 49098 Scott Eastmar

