

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id HBKM01BE Component

Component Biogas Engine

SHELL MYSELLA S5 S (--- GAL)

Diricilite ele

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Top Up Amount: 40 GAL)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

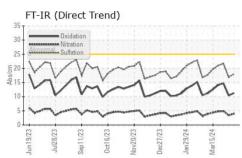
Fluid Condition

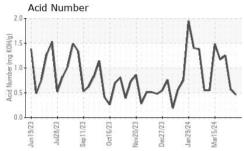
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

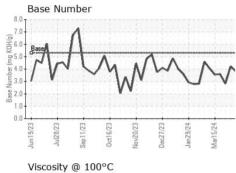
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0775175	WC0775183	WC0775502
Sample Date		Client Info		16 Apr 2024	11 Apr 2024	02 Apr 2024
Machine Age	hrs	Client Info		109552	109431	109229
Oil Age	hrs	Client Info		162	41	803
Oil Changed		Client Info		Oil Added	Changed	Oil Added
Sample Status				NORMAL	NORMAL	SEVERE
CONTAMINATION	۷	method	limit/base	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	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>14	<1	1	5
Chromium	ppm	ASTM D5185m	>3	0	0	<1
Nickel	ppm	ASTM D5185m		0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>5	3	2	4
Lead	ppm	ASTM D5185m	>8	<1	0	0
Copper	ppm	ASTM D5185m	>5	<1	0	2
Tin	ppm	ASTM D5185m	>3	<1	0	4
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	7	6
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m		0 0	7 0	6 0
					0 7	
Barium	ppm	ASTM D5185m		0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m		0 7	0 7	0 4
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		0 7 0	0 7 0 22 1526	0 4 0 18 1591
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	300	0 7 0 25 1597 343	0 7 0 22 1526 322	0 4 0 18 1591 303
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	300	0 7 0 25 1597 343 409	0 7 0 22 1526 322 392	0 4 0 18 1591 303 430
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	300	0 7 0 25 1597 343	0 7 0 22 1526 322 392 3166	0 4 0 18 1591 303 430 3446
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 7 0 25 1597 343 409 3565 current	0 7 0 22 1526 322 392 3166 history1	0 4 0 18 1591 303 430 3446 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 7 0 25 1597 343 409 3565 current 66	0 7 0 22 1526 322 392 3166 history1 35	0 4 0 18 1591 303 430 3446 history2 ▲ 230
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base >180 >20	0 7 0 25 1597 343 409 3565 current 66 1	0 7 0 22 1526 322 392 3166 history1 35 1	0 4 0 18 1591 303 430 3446 history2 ▲ 230 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >180 >20	0 7 0 25 1597 343 409 3565 current 66	0 7 0 22 1526 322 392 3166 history1 35	0 4 0 18 1591 303 430 3446 history2 ▲ 230
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 method ASTM D5185m ASTM D5185m	limit/base >180 >20	0 7 0 25 1597 343 409 3565 current 66 1	0 7 0 22 1526 322 392 3166 history1 35 1	0 4 0 18 1591 303 430 3446 history2 ▲ 230 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >180 >20 >20	0 7 0 25 1597 343 409 3565 <u>current</u> 66 1 2	0 7 0 22 1526 322 392 3166 history1 35 1 0 0 history1 0	0 4 0 18 1591 303 430 3446 history2 230 5 0 2 bistory2 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >180 >20 >20	0 7 0 25 1597 343 409 3565 current 66 1 2 2	0 7 0 22 1526 322 392 3166 history1 35 1 0 vhistory1	0 4 0 18 1591 303 430 3446 history2 230 5 0 230 5 0 history2 0 4.9
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >180 >20 >20	0 7 0 25 1597 343 409 3565 <u>current</u> 66 1 2 2 <u>current</u> 0	0 7 0 22 1526 322 392 3166 history1 35 1 0 0 history1 0	0 4 0 18 1591 303 430 3446 history2 230 5 0 2 bistory2 0
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	limit/base >180 >20 >20	0 7 0 25 1597 343 409 3565 <u>current</u> 66 1 2 2 <u>current</u> 0 4.0	0 7 0 22 1526 322 392 3166 history1 35 1 0 <i>history1</i> 0 3.4	0 4 0 18 1591 303 430 3446 history2 ▲ 230 5 0 230 5 0 history2
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	limit/base >180 >20 >20 limit/base	0 7 0 25 1597 343 409 3565 <u>current</u> 66 1 2 <u>current</u> 0 4.0 18.0	0 7 0 22 1526 322 392 3166 history1 35 1 0 history1 0 3.4 16.9	0 4 0 18 1591 303 430 3446 history2 230 5 0 5 0 history2 0 4.9 21.7
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >180 >20 >20 limit/base	0 7 0 25 1597 343 409 3565 current 66 1 2 2 current 0 4.0 18.0	0 7 0 22 1526 322 392 3166 history1 35 1 0 0 history1 0 3.4 16.9 history1	0 4 0 18 1591 303 430 3446 history2 ▲ 230 5 0 0 history2 0 4.9 21.7
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >180 >20 >20 limit/base	0 7 0 25 1597 343 409 3565 current 66 1 2 current 0 4.0 18.0 2 current 11.3	0 7 0 22 1526 322 392 3166 history1 35 1 0 history1 0 3.4 16.9 history1 10.4	0 4 0 18 1591 303 430 3446 bistory2 230 5 0 230 5 0 history2 0 4.9 21.7 history2 14.7

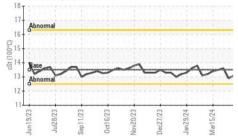


OIL ANALYSIS REPORT









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		NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT			limit/bass			
		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.5	13.1	12.9	13.6
GRAPHS						
Iron (ppm)			15	Lead (ppm)		
20 - Severe	111 111	de contra const		Severe		
	100010000		_ 10	Abnormal		
E 15 - Abnormal			E E E E E E E E E E E E E E E E E E E			
5 AAAF	1 1	- 1	5			
		- V-	0		~	~~~~
Jun 19/23 Jula 19/23 Sep 11/23 Oct 16/23	Nov20/23	Dec27/23 Jan29/24 Mar15/24	J Ž	Jun 19/23 Jul 28/23 Sep 11/23	0ct16/23 Nov20/23 Dec27/23	Jan 29/24 Mar 1 5/24
	Nov	Jan				Jan Mai
Aluminum (ppm)				Chromium (pr	om)	
10 Severe				Severe		
8-			_ 3	Abnormal		
Abnormal			E 2			
	2	m	1			
0			0		\sim	$\sim\sim\sim$
Jun 19/23 Jul 28/23 Sep 11/23 Oct 16/23	Nov20/23	Dec27/23 Jan29/24 Mar15/24	- 	Jun19/23 Jul28/23 Sep11/23	0ct16/23 Nov20/23 Dec27/23	Jan 29/24 Mar 1 5/24
Jun Sep	Nov	Jan Mar	5	Jun Sep	Oct Nov Dec	Jan Mar
Copper (ppm)			200	Silicon (ppm)		
20			300			4
15 - Severe			200	Severe	- A	-A-A-
툴 톱 10-		·	튭 150	1/1/1/	1 N I	/1/1
5- Abnormal			100	VVV	VIA	IVL
m	21	~~~	~ 0		VV	
Jun 19/23 Jul 28/23 Sep 11/23 Oct16/23	Nov20/23	Dec27/23 Jan29/24 Mar15/24	1	Jun 19/23 Jul 28/23 Sep 11/23	0ct16/23 Nov20/23 Dec27/23	Jan 29/24 Mar 15/24
Jun1 Jul2 Sep1	Nov2	Dec2 Jan2 Mar1	5	Jun1 Jul2 Sep1	Oct1 Nov2 Dec2	Jan2 Mar1
Viscosity @ 100°C				Base Number		
Abnormal			8.0 (B/F	Δ	oparta p	00000000000000000
			Q 6.0	Base		
(5-001) 14 + Base 25 - 12 25 - 12	-		E 3 4.0	MML	MNW	1 Nr
Abnorma		~~~~	(D)HOX 6.0 Buy Jack 4.0 2.0 Buy 2.0		W.	
			Base			
10 23	1/23	1/23 - 1/24 -	0.0	******	5/23 - 1/23 -	3/24
Jun 19/23 Jul 28/23 Sep 1 1/23 Oct 16/23	Nov20/23	Dec27/23 Jan29/24 Mar15/24	3	Jun 19/23 Jul 28/23 Sep 11/23	0ct16/23 Nov20/23 Dec27/23	Jan 29/24 Mar 15/24
6.50 B) 6.55 CBA			599	850 DP 1055		

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 **EDL NA Recips-Honeybrook** Received : 18 Apr 2024 Honey Brook Powerstation, 481 S. Churchtown Road Tested : 19 Apr 2024 Narvon, PA US 17555-9574 Diagnosed : 22 Apr 2024 - Sean Felton **Contact: Christian Adames** Christian.Adames@edlenergy.com

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)

Report Id: EDLNAR [WUSCAR] 06153273 (Generated: 04/22/2024 17:59:22) Rev: 1

Certificate 12367

Laboratory

Sample No. : WC0775175

Lab Number : 06153273

Unique Number : 10983351

Test Package : MOB 2

Submitted By: Samantha Gauger

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