

## **OIL ANALYSIS REPORT**







# Machine Id Byron Center CAT 1 BYCM01BE

**Biogas Engine** 

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

## **DIAGNOSIS**

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

Elemental level of silicon (Si) above normal.

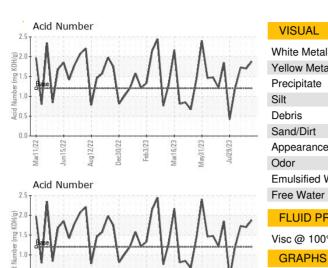
### **Fluid Condition**

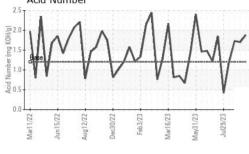
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

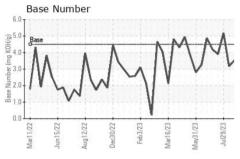
Sample Number         Client Info         WC0615052         WC0615049         WC0615046           Sample Date         Client Info         23 Aug 2023         15 Aug 2023         10 Aug 2023           Machine Age         hrs         Client Info         648         480         336           Oil Changed         Client Info         N/A         Not Changd         N/A           Oil Changed         Client Info         MAR         ABNORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >4.0         <1.0							
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   648   480   336   36   336	Sample Number		Client Info		WC0615052	WC0615049	WC0615046
Oil Age         hrs         Client Info         648         480         336           Oil Changed Sample Status         Client Info         N/A         NA         Not Changd         N/A           Sample Status         Mode         ABNORMAL         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >4.0         <1.0         <1.0         <1.0         <1.0           Glycol         WC Method         NEG         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >15         12         11         3           Chromium         ppm         ASTM D5185m         >4         <1         <1         <1           Chromium         ppm         ASTM D5185m         >5         0         0         0           Chromium         ppm         ASTM D5185m         >5         0         0         0           Itanium         ppm         ASTM D5185m         >9         <1	Sample Date		Client Info		23 Aug 2023	15 Aug 2023	10 Aug 2023
Oil Changed   Client Info   N/A   Not Changed   N/A   NORMAL   NORMAL	Machine Age	hrs	Client Info		81874	81661	81517
ABNORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history2   history2	Oil Age	hrs	Client Info		648	480	336
Fuel	Oil Changed		Client Info		N/A	Not Changd	N/A
Fuel	Sample Status				ABNORMAL	NORMAL	NORMAL
Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >15         12         11         3           Chromium         ppm         ASTM D5185m         >4         <1	CONTAMINATION	N	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >15         12         11         3           Chromium         ppm         ASTM D5185m         >4         <1	Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Iron	Glycol		WC Method		NEG	NEG	NEG
Iron	WEAR METALS		method	limit/base	current	historv1	history2
Chromium         ppm         ASTM D5185m         >4         <1         <1         <1           Nickel         ppm         ASTM D5185m         >2         3         3         <1		nnm					
Nickel	-						
Titanium         ppm         ASTM D5185m         0         0         0           Silver         ppm         ASTM D5185m         >5         0         0         0           Aluminum         ppm         ASTM D5185m         >6         2         <1							
Silver				>2			
Aluminum         ppm         ASTM D5185m         >6         2         <1         3           Lead         ppm         ASTM D5185m         >9         <1         0         <1           Copper         ppm         ASTM D5185m         >9         <1         0         <1           Tin         ppm         ASTM D5185m         >4         4         3         3           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         0         0         0         0           Barium         ppm         ASTM D5185m         2         0         2         0         2           Manganesium         ppm         ASTM D5185m         2         0         2         2         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12				_	-		
Lead         ppm         ASTM D5185m         >9         <1         0         <1           Copper         ppm         ASTM D5185m         >6         3         2         <1           Tin         ppm         ASTM D5185m         >4         4         3         3           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         0         0         0         0           Barium         ppm         ASTM D5185m         2         0         2         0         2           Magnesium         ppm         ASTM D5185m         9         12         12         12         12         12         12         12         12         12         12         12         21         2         269         274         286         274         286         274         286         274         286         274         286         274         286         3348							
Copper         ppm         ASTM D5185m         >6         3         2         <1           Tin         ppm         ASTM D5185m         >4         4         3         3           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         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         2         0         2         2           Manganese         ppm         ASTM D5185m         21         <1							
Tin							
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         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         2         0         2           Manganese         ppm         ASTM D5185m         <1         <1         <1           Magnesium         ppm         ASTM D5185m         9         12         12         12           Calcium         ppm         ASTM D5185m         1864         1852         1870         1870         1864         1852         1870         1870         1870         1880         334         328         334         334         328         334         348         328         334         348         328         334         3752         3430         3721         177         177         177         177         177         177<							
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         2         0         2           Manganese         ppm         ASTM D5185m         9         12         12           Calcium         ppm         ASTM D5185m         9         12         12           Calcium         ppm         ASTM D5185m         1864         1852         1870           Phosphorus         ppm         ASTM D5185m         269         274         286           Zinc         ppm         ASTM D5185m         3752         3430         3721           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         0         3         2           Potassium         ppm         ASTM D5185m         0         3         2 <td></td> <td></td> <td></td> <td>&gt;4</td> <th></th> <td></td> <td></td>				>4			
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         2         0         2           Manganese         ppm         ASTM D5185m         21         <1							
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         2         0         2           Manganese         ppm         ASTM D5185m         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         2         0         2           Manganese         ppm         ASTM D5185m         <1         <1         <1           Magnesium         ppm         ASTM D5185m         9         12         12           Calcium         ppm         ASTM D5185m         1864         1852         1870           Phosphorus         ppm         ASTM D5185m         269         274         286           Zinc         ppm         ASTM D5185m         348         328         334           Sulfur         ppm         ASTM D5185m         3752         3430         3721           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         489         147         117           Sodium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/:1mm         *ASTM D7415         >30 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Boron	ppm	ASTM D5185m		0	0	0
Manganese         ppm         ASTM D5185m         <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         <1 <td>Barium</td> <td>nnm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Barium	nnm	ASTM D5185m		0	0	0
Magnesium         ppm         ASTM D5185m         9         12         12           Calcium         ppm         ASTM D5185m         1864         1852         1870           Phosphorus         ppm         ASTM D5185m         269         274         286           Zinc         ppm         ASTM D5185m         348         328         334           Sulfur         ppm         ASTM D5185m         3752         3430         3721           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         189         147         117           Sodium         ppm         ASTM D5185m         0         3         2           Potassium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/.1mm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation		ppiii					
Calcium         ppm         ASTM D5185m         1864         1852         1870           Phosphorus         ppm         ASTM D5185m         269         274         286           Zinc         ppm         ASTM D5185m         348         328         334           Sulfur         ppm         ASTM D5185m         3752         3430         3721           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         189         147         117           Sodium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2 <td< td=""><td>Molybdenum</td><td></td><td></td><td></td><th>2</th><td>0</td><td>2</td></td<>	Molybdenum				2	0	2
Phosphorus         ppm         ASTM D5185m         269         274         286           Zinc         ppm         ASTM D5185m         348         328         334           Sulfur         ppm         ASTM D5185m         3752         3430         3721           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         ▲ 189         147         117           Sodium         ppm         ASTM D5185m         >0         3         2           Potassium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2		ppm	ASTM D5185m				
Zinc         ppm         ASTM D5185m         348         328         334           Sulfur         ppm         ASTM D5185m         3752         3430         3721           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         189         147         117           Sodium         ppm         ASTM D5185m         0         3         2           Potassium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1	Molybdenum	ppm	ASTM D5185m ASTM D5185m		<1	<1	<1
Sulfur         ppm         ASTM D5185m         3752         3430         3721           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         189         147         117           Sodium         ppm         ASTM D5185m         0         3         2           Potassium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88	Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		<1 9	<1 12	<1 12
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         ▲ 189         147         117           Sodium         ppm         ASTM D5185m         0         3         2           Potassium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 9 1864	<1 12 1852	<1 12 1870
Silicon         ppm         ASTM D5185m         >181         ▲ 189         147         117           Sodium         ppm         ASTM D5185m         0         3         2           Potassium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 9 1864 269	<1 12 1852 274	<1 12 1870 286
Sodium         ppm         ASTM D5185m         0         3         2           Potassium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 9 1864 269 348	<1 12 1852 274 328	<1 12 1870 286 334
Potassium         ppm         ASTM D5185m         >20         2         0         1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	<1 9 1864 269 348 3752	<1 12 1852 274 328 3430	<1 12 1870 286 334
INFRA-RED	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 9 1864 269 348 3752 current	<1 12 1852 274 328 3430 history1	<1 12 1870 286 334 3721 history2
Soot %         %         *ASTM D7844         0.1         0.1         0           Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm	ASTM D5185m MSTM D5185m		<1 9 1864 269 348 3752 current  189	<1 12 1852 274 328 3430 history1	<1 12 1870 286 334 3721 history2
Nitration         Abs/cm         *ASTM D7624         >20         6.0         5.8         5.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>181	<1 9 1864 269 348 3752 current  189 0	<1 12 1852 274 328 3430 history1 147 3	<1 12 1870 286 334 3721 history2 117
Sulfation         Abs/.1mm         *ASTM D7415         >30         25.2         23.7         23.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m	>181 >20	<1 9 1864 269 348 3752 current  189 0 2	<1 12 1852 274 328 3430 history1 147 3	<1 12 1870 286 334 3721 history2 117 2
FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>181 >20	<1 9 1864 269 348 3752 current  189 0 2 current	<1 12 1852 274 328 3430 history1 147 3 0 history1	<1 12 1870 286 334 3721 history2 117 2 1 history2
Oxidation         Abs/.1mm         *ASTM D7414         >25         15.0         13.1         14.0           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m	>181 >20 limit/base	<1 9 1864 269 348 3752 current  ▲ 189 0 2 current 0.1	<1 12 1852 274 328 3430 history1 147 3 0 history1 0.1	<1   12   1870   286   334   3721   history2   117   2   1   history2   0
Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m	>181 >20 limit/base >20	<1 9 1864 269 348 3752  current  ▲ 189 0 2  current  0.1 6.0	<1 12 1852 274 328 3430 history1 147 3 0 history1 0.1 5.8	<1 12 1870 286 334 3721 history2 117 2 1 history2 0 5.8
Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         1.88         1.70         1.73	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  method ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  *ASTM D5185m  *ASTM D5185m  *ASTM D5185m  *ASTM D7844  *ASTM D7624  *ASTM D76145	>181 >20 limit/base >20 >30	<1 9 1864 269 348 3752 current  ▲ 189 0 2 current 0.1 6.0 25.2	<1 12 1852 274 328 3430 history1 147 3 0 history1 0.1 5.8 23.7	<1 12 1870 286 334 3721 history2 117 2 1 history2 0 5.8
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D7415  Method	>181 >20 limit/base >20 >30 limit/base	<1 9 1864 269 348 3752 current  ▲ 189 0 2 current  0.1 6.0 25.2 current	<1 12 1852 274 328 3430 history1 147 3 0 history1 0.1 5.8 23.7 history1	<1 12 1870 286 334 3721 history2 117 2 1 history2 0 5.8 23.2 history2
	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  *ASTM D5185m  method *ASTM D7844 *ASTM D7624 *ASTM D76145  method *ASTM D7415	>181 >20 limit/base >20 >30 limit/base >25	<1 9 1864 269 348 3752 current  ▲ 189 0 2 current 0.1 6.0 25.2 current 15.0	<1 12 1852 274 328 3430 history1 147 3 0 history1 0.1 5.8 23.7 history1 13.1	<1 12 1870 286 334 3721 history2 117 2 1 history2 0 5.8 23.2 history2 14.0

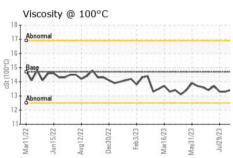


## **OIL ANALYSIS REPORT**





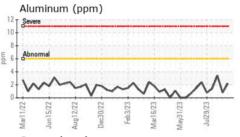


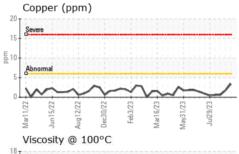


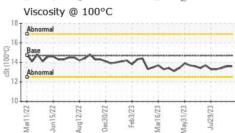
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

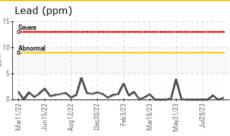
FLUID PROPER	HES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.7	13.6	13.6	13.4

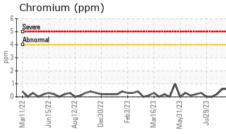
Seve	ere						
Abn	ormal						
		4		1		۸.	
V	~	V	~	~	h	~	7
Mar11/22	Jun15/22	Aug12/22	Jec30/22	Feb3/23 -	Mar16/23	May31/23 - X	Jul29/23

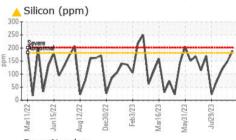


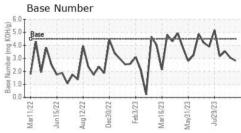
















Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0615052 : 05934952

: 10620223

Received : 25 Aug 2023 : 28 Aug 2023 Diagnosed Diagnostician : Don Baldridge **EDL NA Recips-Byron Center** 

Byron Center Powerstation, 10310 South Kent Road Byron Center, MI US 49315

Contact: Jake Ripke

Jake.Ripke@edlenergy.com T:

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)

F: