

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **MANITOU 735 FOR422** Component

Rear Right Planetary GEAR OIL SAE 80W90 (--- GAL)

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.

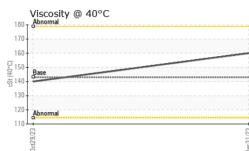
Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info 31 Dec 2023 29 Oct 2023 Machine Age hrs Client Info 10269 0 Oil Age hrs Client Info 0 0 Oil Changed hrs Client Info 0 0 Oil Changed Client Info Changed Changed Sample Status Immit/base current history1 history2 More Water WC Method >0.2 NEG NEG WEAR METALS method Immit/base current history1 Nickel ppm ASTM D5185(m) >500 31 207 Silver ppm ASTM D5185(m) >10 <1 <1 Silver ppm ASTM D5185(m) >25 <1 <1 Silve				0ct2023	Dec2023		
Sample Date Client Info 31 Dec 2023 29 Oct 2023 Machine Age hrs Client Info 10269 0 Oil Age hrs Client Info 0 0 Oil Changed Client Info NORMAL NORMAL Sample Status Imit Mose Current history1 history2 Water WC Method >0.2 NEG NEG VEAR METALS method limit/base current history1 history2 Iron ppm ASTM DS185(m) >10 <1 <1 Nickel ppm ASTM DS185(m) >10 <1 <1 Nickel ppm ASTM DS185(m) >25 <1 <1 Aluminum ppm ASTM DS185(m) >25 <1 <1 Aluminum ppm ASTM DS185(m) >5 0 0 Copper ppm	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 10269 0 Oil Age hrs Client Info 0 0 Sample Status Image Client Info Changed Changed Sample Status Image Image Current history history Water WC Method >0.2 NEG NEG WEAR METALS method imit/base current history WEAR METALS method imit/base current history WEAR METALS method init/base current history WEAR METALS method init/base current history Iron ppm ASTM D5185(m) >10<	Sample Number		Client Info		WC0886084	WC0865518	
Oil Age hrs Client Info 0 0 Oil Changed Client Info Changed Changed Sample Status Image NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185(m) >500 31 207 Chromium ppm ASTM 05185(m) >10 <1	Sample Date		Client Info		31 Dec 2023	29 Oct 2023	
Oil Changed Sample Status Client Info Changed NORMAL Changed NORMAL Sample Status method imit/base current history1 history2 Water WC Method >0.2 NEG NEG WEAR METALS method imit/base current history1 history2 Iron ppm ASTM D5165(m) >500 31 207 Nickel ppm ASTM D5165(m) >10 <1	Machine Age	hrs	Client Info		10269	0	
Sample Status Imate of the status NoRMAL NORMAL	Oil Age	hrs	Client Info		0	0	
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >500 31 207 Nickel ppm ASTM D5185(m) >10 <1	Oil Changed		Client Info		Changed	Changed	
Water WC Method >0.2 NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >500 31 207 Chromium ppm ASTM D5185(m) >10 <1	Sample Status				NORMAL	NORMAL	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5188(m) >500 31 207 Chromium ppm ASTM D5188(m) >10 <1 <1 Nickel ppm ASTM D5188(m) >10 <1 <1 Titanium ppm ASTM D5188(m) 0 0 Aluminum ppm ASTM D5188(m) >25 <1 2 Lead ppm ASTM D5188(m) >25 <1 <1 Copper ppm ASTM D5188(m) >25 <1 <1 Lead ppm ASTM D5188(m) >5 0 0 Copper ppm ASTM D5188(m) >5 0 0 Vanadium ppm ASTM D5188(m) 0 0 Cadmium ppm ASTM D5188(m) 0	CONTAMINATIO	N	method	limit/base	current	history1	history2
Iron ppm ASTM D5185(m) >500 31 207 Chromium ppm ASTM D5185(m) >10 <1 <1 Nickel ppm ASTM D5185(m) >10 <1 <1 Titanium ppm ASTM D5185(m) 0 0 Aluminum ppm ASTM D5185(m) >25 <1 2 Lead ppm ASTM D5185(m) >25 <1 <1 Copper ppm ASTM D5185(m) >25 <1 0 Antimony ppm ASTM D5185(m) >10 0 0 Vanadium ppm ASTM D5185(m) 0 0 Cadmium ppm ASTM D5185(m) 0 0 Boron ppm ASTM D5185(m) 20 0 Magnease ppm ASTM D5185(m) </th <th>Water</th> <th></th> <th>WC Method</th> <th>>0.2</th> <th>NEG</th> <th>NEG</th> <th></th>	Water		WC Method	>0.2	NEG	NEG	
Chromium ppm ASTM D5185(m) >10 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185(m) >10 <1 <1 Titanium ppm ASTM D5185(m) 0 0 Silver ppm ASTM D5185(m) 0 <1	Iron	ppm	ASTM D5185(m)	>500	31	207	
Titanium ppm ASTM D5185(m) O Silver ppm ASTM D5185(m) O <1	Chromium	ppm	ASTM D5185(m)	>10	<1	<1	
Silver ppm ASTM D5185(m) 0 <1 Aluminum ppm ASTM D5185(m) >25 <1	Nickel	ppm	ASTM D5185(m)	>10	<1	<1	
Aluminum ppm ASTM D5185(m) >25 <1 2 Lead ppm ASTM D5185(m) >25 <1	Titanium	ppm	ASTM D5185(m)		0	0	
Lead ppm ASTW D5185(m) >25 <1 <1 Copper ppm ASTW D5185(m) >75 4 10 Tin ppm ASTW D5185(m) >50 0 0 Antimony ppm ASTW D5185(m) >5 0 0 Vanadium ppm ASTW D5185(m) >5 0 0 Beryllium ppm ASTW D5185(m) 0 0 0 Cadmium ppm ASTW D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTW D5185(m) 200 0 Molybdenum ppm ASTW D5185(m) 200 0 Magnesium ppm ASTM D5185(m) 12 1 4 Calcium ppm ASTM D	Silver	ppm	ASTM D5185(m)		0	<1	
Copper ppm ASTM D5185(m) >75 4 10 Tin ppm ASTM D5185(m) >10 0 0 Antimony ppm ASTM D5185(m) >5 0 0 Antimony ppm ASTM D5185(m) >5 0 0 Vanadium ppm ASTM D5185(m) 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 200 0 <1	Aluminum	ppm	ASTM D5185(m)	>25	<1	2	
Tin ppm ASTM D5185(m) >10 0 0 Antimony ppm ASTM D5185(m) >5 0 0 Vanadium ppm ASTM D5185(m) >5 0 0 Beryllium ppm ASTM D5185(m) 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current historyl historyl Boron ppm ASTM D5185(m) 400 153 49 Molybdenum ppm ASTM D5185(m) 200 0 <1	Lead	ppm	ASTM D5185(m)	>25	<1	<1	
Antimony ppm ASTM D5185(m) >5 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 400 153 49 Barium ppm ASTM D5185(m) 200 0 <1	Copper	ppm	ASTM D5185(m)	>75	4	10	
Vanadium ppm ASTM D5185(m) 0 0 Beryllium ppm ASTM D5185(m) 0 0 Cadmium ppm ASTM D5185(m) 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 400 153 49 Barium ppm ASTM D5185(m) 200 0 <1	Tin	ppm	ASTM D5185(m)	>10	0	0	
Beryllium ppm ASTM D5185(m) 0 0 Cadmium ppm ASTM D5185(m) 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 400 153 49 Barium ppm ASTM D5185(m) 200 0 <1 Molybdenum ppm ASTM D5185(m) 200 0 <1 Maganese ppm ASTM D5185(m) 12 0 0 <1 Magnesium ppm ASTM D5185(m) 12 1 4 Calcium ppm ASTM D5185(m) 150 8 37 Magnesium ppm ASTM D5185(m) 1650 947 499 Zinc ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 22500 <td>Antimony</td> <td>ppm</td> <td>ASTM D5185(m)</td> <td>>5</td> <th>0</th> <td>0</td> <td></td>	Antimony	ppm	ASTM D5185(m)	>5	0	0	
Cadmium ppm ASTM D5185(m) 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 400 153 49 Barium ppm ASTM D5185(m) 200 0 <1 Molybdenum ppm ASTM D5185(m) 200 0 <1 Manganese ppm ASTM D5185(m) 12 0 0 Magnesium ppm ASTM D5185(m) 12 1 4 Calcium ppm ASTM D5185(m) 150 8 37 Magnesium ppm ASTM D5185(m) 1650 947 499 Zinc ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) <th< td=""><td>Vanadium</td><td>ppm</td><td>ASTM D5185(m)</td><td></td><th>0</th><td>0</td><td></td></th<>	Vanadium	ppm	ASTM D5185(m)		0	0	
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 400 153 49 Barium ppm ASTM D5185(m) 200 0 <1	Beryllium	ppm	ASTM D5185(m)		0	0	
Boron ppm ASTM D5185(m) 400 153 49 Barium ppm ASTM D5185(m) 200 0 <1	Cadmium	ppm	ASTM D5185(m)		0	0	
Barium ppm ASTM D5185(m) 200 0 <1 Molybdenum ppm ASTM D5185(m) 12 0 0 Manganese ppm ASTM D5185(m) 12 0 0 Magnesium ppm ASTM D5185(m) 12 1 4 Calcium ppm ASTM D5185(m) 12 1 4 Calcium ppm ASTM D5185(m) 150 8 37 Phosphorus ppm ASTM D5185(m) 1650 947 499 Zinc ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) 275 4 12 Solicon ppm ASTM D5185(m) >75 4 12	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185(m) 12 0 0 Manganese ppm ASTM D5185(m) 12 0 0 <1 Magnesium ppm ASTM D5185(m) 12 1 4 Calcium ppm ASTM D5185(m) 12 1 4 Calcium ppm ASTM D5185(m) 150 8 37 Calcium ppm ASTM D5185(m) 1650 947 499 Zinc ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) 22500 19916 16696 Solicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1 1	Boron	ppm	ASTM D5185(m)	400	153	49	
Manganese ppm ASTM D5185(m) 0 <1 Magnesium ppm ASTM D5185(m) 12 1 4 Calcium ppm ASTM D5185(m) 150 8 37 Calcium ppm ASTM D5185(m) 150 8 37 Phosphorus ppm ASTM D5185(m) 1650 947 499 Zinc ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) >75 4 12 Solicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1	Barium	ppm	ASTM D5185(m)	200	0	<1	
Magnesium ppm ASTM D5185(m) 12 1 4 Calcium ppm ASTM D5185(m) 150 8 37 Phosphorus ppm ASTM D5185(m) 1650 947 499 Zinc ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) 22500 19916 16696 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1 1	Molybdenum	ppm	ASTM D5185(m)	12	0	0	
Calcium ppm ASTM D5185(m) 150 8 37 Phosphorus ppm ASTM D5185(m) 1650 947 499 Zinc ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) 22500 19916 16696 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1	Manganese	ppm	ASTM D5185(m)		0	<1	
Phosphorus ppm ASTM D5185(m) 1650 947 499 Zinc ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) 22500 19916 16696 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1	Magnesium	ppm	ASTM D5185(m)	12	1	4	
Zinc ppm ASTM D5185(m) 125 10 47 Sulfur ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) 22500 19916 16696 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1	Calcium	ppm	ASTM D5185(m)	150	8	37	
Sulfur ppm ASTM D5185(m) 22500 19916 16696 Lithium ppm ASTM D5185(m) 22500 19916 16696 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1 1	Phosphorus	ppm	ASTM D5185(m)	1650	947	499	
Lithium ppm ASTM D5185(m) <1 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1 1	Zinc	ppm	ASTM D5185(m)	125	10	47	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1	Sulfur	ppm	ASTM D5185(m)	22500	19916	16696	
Silicon ppm ASTM D5185(m) >75 4 12 Sodium ppm ASTM D5185(m) >170 <1 1	Lithium	ppm	ASTM D5185(m)		<1	<1	
Sodium ppm ASTM D5185(m) >170 <1 1	CONTAMINANTS	\$	method	limit/base	current	history1	history2
	Silicon	ppm	ASTM D5185(m)	>75	4	12	
Potassium ppm ASTM D5185(m) >20 4 0	Sodium	ppm	ASTM D5185(m)	>170	<1	1	
	Potassium	ppm	ASTM D5185(m)	>20	4	0	



OIL ANALYSIS REPORT



	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	Visual*	NONE	NONE	NONE	
	Yellow Metal	scalar	Visual*	NONE	NONE	NONE	
	Precipitate	scalar	Visual*	NONE	NONE	NONE	
	Silt	scalar	Visual*	NONE	NONE	NONE	
	Debris	scalar	Visual*	NONE	NONE	NONE	
	Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
Dec31/23	Appearance	scalar	Visual*	NORML	NORML	NORML	
D	Odor		Visual*	NORML	NORML	NORML	
	Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	
	Free Water	scalar	Visual*		NEG	NEG	
	FLUID PROPERT	TIES	method	limit/base	current	history1	history2
	Visc @ 40°C	cSt	ASTM D7279(m)	143	160	140	
	SAMPLE IMAGES	S	method	limit/base	current	history1	history2
	Color						no image
	Bottom						no image
	GRAPHS						
	Iron (ppm)			150	Lead (ppm)		
	000 Severe			150	Severe		
톱 1	Abnormal			E 100	Abnormal		
	0ct29/23			Dec31/23	0ct29/23		c 1 1 c
	-			De			c
	Aluminum (ppm)			30	Chromium (pp	om)	
	Severe				Severe		
d.	50 - Abnormal			E 20	Abnormal		
	0			- 0-	e.		ç
	0ct29/23			Dec31/23	0ct29/23		c c c
	_			De			6
	Copper (ppm)			300-	Silicon (ppm)		
	Severe				Severe		
đ	100 - Abnormal			E 200	Abnormal		
	0				53		c.
	0ct29/23			Dec31/23	0ct29/23		5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
	∽ Viscosity @ 40°C			Ď	~ Additives		c
	200 Abnormal			1000-	7	1	THE REPORT OF THE PARTY OF THE
(40°0	150 - Base Abnormal			툴 500	calcium phosphorus	- Andre Standard Salar Sala	
S	Abnormal			0	Zinc		
	0ct29/23			1/23	0ct29/23 .		501
	0ct2			Dec31/23	0ct2		C (/ 1 C
Test Package	: <mark>02608260</mark> : 5709346 : MOB 1	Recieved Diagnose Diagnosti	:11. d:11. cian:Wes	Jan 2024 Jan 2024 s Davis	1350 Gov	ernment Rd. W, MAC Kirk	land Lake, Ol CA P2N 3J h Lamontagn
Laboratory	: MOB 1 ontact Customer Serv of accreditation, (m) m	ice at 1-80 nethod mod	00-268-2131 dified, (e) te	sted at extern	al lab.	nacassaoilsampleresult T:	h Lamontag

Contact/Location: Mitch Lamontagne - KIR370KIR