

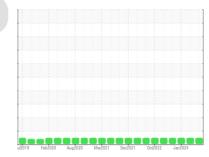
# **OIL ANALYSIS REPORT**



KEMP QUARRIES / HULBERT WL131

Component
Front Left Final Drive
Fluid

MOBIL MOBILTRANS HD 50 (--- GAL)



Sample Rating Trend



## DIAGNOSIS

### 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.

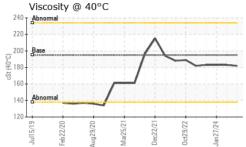
## **Fluid Condition**

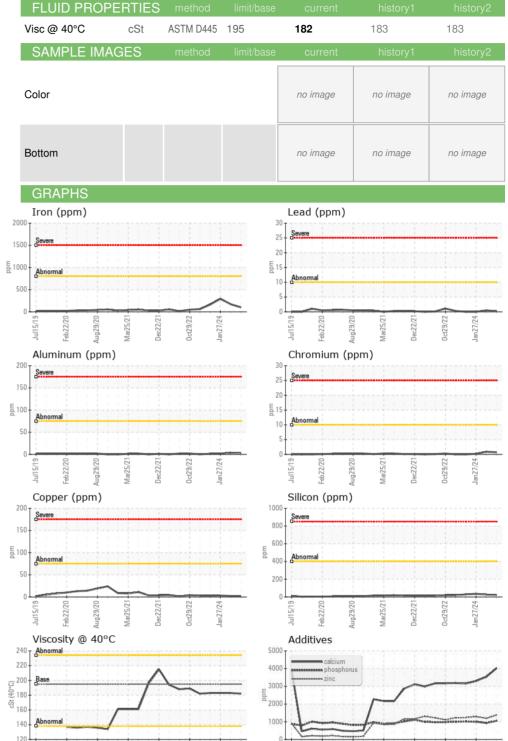
The condition of the oil is acceptable for the time in service.

Water         WC Method         >0.2         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185m         >800         101         172         294           Chromium         ppm         ASTM D5185m         >10         <1	CAMPLE INCOR	AATION	mothed	limit/less	O	biotomit	biote	
Client Info		MATION		ilmit/base				
Machine Age   hrs   Client Info   11670   11256   10805   10805   10806   10								
Oil Changed								
Not Changed   Client Info   Not Changed   NORMAL   NORM								
NORMAL   NORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history2   history3   history3   NEG   NE	•	hrs				-	-	
CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.2         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Ion         ppm         ASTM D5185m         >800         101         172         294           Chromium         ppm         ASTM D5185m         >10         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         0           <1         <1         <1         <1         <0          <1         <1         <1         <1         <1         <0          <1         <1         <1         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0         <0	-		Client Info			Ü	_	
Water         WC Method         >0.2         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185m         >800         101         172         294           Chromium         ppm         ASTM D5185m         >10         <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 <th< td=""><td>Sample Status</td><td></td><td></td><td></td><th>NORMAL</th><td>NORMAL</td><td>NORMAL</td></th<>	Sample Status				NORMAL	NORMAL	NORMAL	
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >800         101         172         294           Chromium         ppm         ASTM D5185m         >10         <1	CONTAMINATI	ON	method	limit/base	current	history1	history2	
Chromium	Water		WC Method	>0.2	NEG	NEG	NEG	
Chromium         ppm         ASTM D5185m         >10         -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>WEAR METALS</td> <td>S</td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	WEAR METALS	S	method	limit/base	current	history1	history2	
Nicke    ppm	Iron	ppm	ASTM D5185m	>800	101	172	294	
Titanium	Chromium	ppm	ASTM D5185m	>10	<1	<1	<1	
Silver	Nickel	ppm	ASTM D5185m	>5	<1	<1	0	
Aluminum	Titanium	ppm	ASTM D5185m	>15	<1	<1	0	
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0	
Copper         ppm         ASTM D5185m         >75         1         2         3           Tin         ppm         ASTM D5185m         >8         <1	Aluminum	ppm	ASTM D5185m	>75	2	4	2	
Tin	Lead	ppm	ASTM D5185m	>10	<1	<1	0	
Vanadium         ppm         ASTM D5185m         <1         <1         0           Cadmium         ppm         ASTM D5185m         <1         <1         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         1         2         4         4           Barium         ppm         ASTM D5185m         0         <1         5         5         4         <1         5           Molybdenum         ppm         ASTM D5185m         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         1         2         1         2         1         2         1         1         2         3         3         29         9         4         2         33         3         2	Copper	ppm	ASTM D5185m	>75	1	2	3	
Vanadium         ppm         ASTM D5185m         <1         <1         <1         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         11         2         4           Barium         ppm         ASTM D5185m         0         <1	Tin	ppm	ASTM D5185m	>8	<1	<1	0	
ADDITIVES	Vanadium		ASTM D5185m		<1	<1	0	
Boron	Cadmium		ASTM D5185m		<1	<1	0	
Barium	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum         ppm         ASTM D5185m         5         4         <1           Manganese         ppm         ASTM D5185m         1         2         1           Magnesium         ppm         ASTM D5185m         49         42         33           Calcium         ppm         ASTM D5185m         4016         3535         3299           Phosphorus         ppm         ASTM D5185m         1051         930         1006           Zinc         ppm         ASTM D5185m         1376         1197         1292           Sulfur         ppm         ASTM D5185m         6489         4309         4621           CONTAMINANTS         method         limit/base         current         history1         history2           Sulfur         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >20         1         2         2           VISUAL         method         limit/base         current         history1         history2 <th co<="" td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>11</th><td>2</td><td>4</td></th>	<td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>11</th> <td>2</td> <td>4</td>	Boron	ppm	ASTM D5185m		11	2	4
Manganese         ppm         ASTM D5185m         1         2         1           Magnesium         ppm         ASTM D5185m         49         42         33           Calcium         ppm         ASTM D5185m         4016         3535         3299           Phosphorus         ppm         ASTM D5185m         1051         930         1006           Zinc         ppm         ASTM D5185m         1376         1197         1292           Sulfur         ppm         ASTM D5185m         6489         4309         4621           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >20         1         2         2           VISUAL         method         limit/base         current         history1         history2           VISUAL         method         limit/base         current         history1         history2	Barium	ppm	ASTM D5185m		0	<1	5	
Magnesium         ppm         ASTM D5185m         49         42         33           Calcium         ppm         ASTM D5185m         4016         3535         3299           Phosphorus         ppm         ASTM D5185m         1051         930         1006           Zinc         ppm         ASTM D5185m         1376         1197         1292           Sulfur         ppm         ASTM D5185m         6489         4309         4621           CONTAMINANTS         method         limit/base         current         history1         history2           CONTAMINANTS         method         limit/base         current         history1         history3           Silicon         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         1         3         0           Potassium         ppm         ASTM D5185m         >20         1         2         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE	Molybdenum	ppm	ASTM D5185m		5	4	<1	
Calcium         ppm         ASTM D5185m         4016         3535         3299           Phosphorus         ppm         ASTM D5185m         1051         930         1006           Zinc         ppm         ASTM D5185m         1376         1197         1292           Sulfur         ppm         ASTM D5185m         6489         4309         4621           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >20         1         2         2           VISUAL         method         limit/base         current         history1         history2           VISUAL         method         limit/base         current         history1         history2           VISUAL         method         limit/base         current         history1         history2           VISUAL         NONE         NONE         NONE         NONE         <	Manganese	ppm	ASTM D5185m		1	2	1	
Phosphorus         ppm         ASTM D5185m         1051         930         1006           Zinc         ppm         ASTM D5185m         1376         1197         1292           Sulfur         ppm         ASTM D5185m         6489         4309         4621           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >20         1         3         0           Potassium         ppm         ASTM D5185m         >20         1         2         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE	Magnesium	ppm	ASTM D5185m		49	42	33	
Zinc         ppm         ASTM D5185m         1376         1197         1292           Sulfur         ppm         ASTM D5185m         6489         4309         4621           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >20         1         3         0           Potassium         ppm         ASTM D5185m         >20         1         2         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Debris         scalar         *Visual	Calcium	ppm	ASTM D5185m		4016	3535	3299	
Zinc         ppm         ASTM D5185m         1376         1197         1292           Sulfur         ppm         ASTM D5185m         6489         4309         4621           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         >20         1         3         0           Potassium         ppm         ASTM D5185m         >20         1         2         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Debris         scalar         *Visual	Phosphorus	ppm	ASTM D5185m		1051	930	1006	
Sulfur         ppm         ASTM D5185m         6489         4309         4621           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         1         3         0           Potassium         ppm         ASTM D5185m         >20         1         2         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE	Zinc		ASTM D5185m		1376	1197	1292	
Silicon         ppm         ASTM D5185m         >400         22         26         35           Sodium         ppm         ASTM D5185m         1         3         0           Potassium         ppm         ASTM D5185m         >20         1         2         2           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<	Sulfur		ASTM D5185m		6489	4309	4621	
Sodium	CONTAMINAN <sup>*</sup>	TS	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 1 2 2  VISUAL method limit/base current history1 history2  White Metal scalar *Visual NONE NONE NONE NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE NONE NONE  Debris scalar *Visual NONE 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 >0.2 NEG NEG NEG  Free Water scalar *Visual NEG NEG NEG	Silicon	ppm	ASTM D5185m	>400	22	26	35	
PotassiumppmASTM D5185m>20122VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNOENEGNEG	Sodium	ppm	ASTM D5185m		1	3	0	
White Metal scalar *Visual NONE 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 NONE Debris scalar *Visual NONE 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 >0.2 NEG NEG NEG NEG	Potassium	ppm	ASTM D5185m	>20	1	2	2	
Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	VISUAL		method	limit/base	current	history1	history2	
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 >0.2 NEG NEG Free Water Scalar *Visual NEG NEG NEG	White Metal	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 NORML Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NEG NEG NEG	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
Debris scalar *Visual NONE 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 NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	Debris	scalar	*Visual	NONE	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	Sand/Dirt	scalar	*Visual	NONE	NONE		NONE	
Odorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEG	Appearance	scalar						
Emulsified Water     scalar     *Visual     >0.2     NEG     NEG     NEG       Free Water     scalar     *Visual     NEG     NEG     NEG	Odor		*Visual			NORML	NORML	
Free Water scalar *Visual NEG NEG NEG	Emulsified Water							
	Free Water							
	05:11) Rev: 1						Submitted By	



# **OIL ANALYSIS REPORT**









Certificate 12367

Laboratory Sample No. Lab Number : 06212123

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0085942

Unique Number : 11084987 Test Package : MOB 1

Received : 17 Jun 2024 **Tested** 

: 18 Jun 2024 Diagnosed : 19 Jun 2024 - Don Baldridge

Kemp Quarries - Kemp Stone - Hulbert

17801 Hwy 80 Hulbert, OK US 74441

Contact: hulbert@kempstone.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)

T:

F: