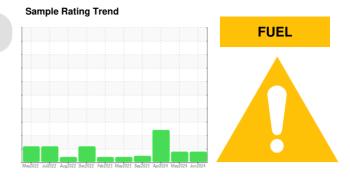


# **OIL ANALYSIS REPORT**

Area KANSAS/44/HY - SKID STEER 53.157L [KANSAS^44^HY - SKID STEER] **Diesel Engine** 

Fluid MOBIL DELVAC 1300 SUPER15W40 (2 GAL)



D	A	G١	NO	S	IS
_		····	•••	~	· •

### Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

### Wear

All component wear rates are normal.

## Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

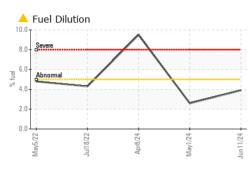
#### Fluid Condition

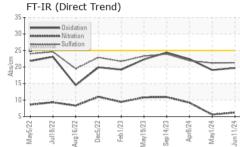
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

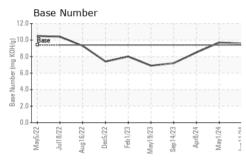
Sample NumberClient InfoWC0918270WC0918270WC0918270WC0918270WC0918270WC0918270WC0918270W08472024Sample DatehrsClient InfoIIIMarceWarceWarceValueVal	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age     hrs     Client Info     1937     1918     1836       Oil Age     hrs     Client Info     1     1836     467       Oil Changed     Client Info     Changed     N/A     Changed       Sample Status     Client Info     Current     history1     history2       Water     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     >0.2     NEG     NEG     NEG       Water     WC Method     >0.2     NEG     NEG     NEG       Mickel     ppm     ASTM D5185m     >100     1     2     7       Chromium     ppm     ASTM D5185m     >2     0     0     0       Nickel     ppm     ASTM D5185m     >2     0     0     0       Auminum     ppm     ASTM D5185m     >2     0     0     0       Auminum     ppm     ASTM D5185m     >2     0     0     0       Vanadium     ppm     ASTM D5185m     0 </td <td>Sample Number</td> <td></td> <td>Client Info</td> <td></td> <th>WC0918270</th> <td>WC0918221</td> <td>WC0918157</td>	Sample Number		Client Info		WC0918270	WC0918221	WC0918157
Oil Age Ins Client Info Instance Changed AFA   Oil Changed Client Info Changed N/A Changed   Sample Status Image Cuint Info Changed N/A SevErse   CONTAMINATION method Imit/base current history1 history2   Water WC Method >0.2 NEG NEG NEG   Glycol WC Method >0.2 NEG NEG NEG   WEAR METALS method Imit/base current history1 history2   Iron ppm ASTM D5185m >20 0 0 <1	Sample Date		Client Info		11 Jun 2024	01 May 2024	08 Apr 2024
Oli Changed Client Info Changed N/A Changed   Sample Status Image Image Current Nistory1 SEVERE   CONTAMINATION Wet Method 0.2 NEG NEG NEG   Water WC Method 0.2 NEG NEG NEG   Giyool Image Current History1 History2   WEAR METALS method Imil/base current History1 History2   Iron ppm ASTM D518m >20 0 0 0   Nickel ppm ASTM D518m >2 0 0 0   Nickel ppm ASTM D518m >2 0 0 0   Aluminum ppm ASTM D518m >2 0 0 0   Aluminum ppm ASTM D518m >2 0 0 0   Adaminum ppm ASTM D518m >2 0 0 0   Vanadium ppm ASTM D518m >330 0 1 0   Vanadium ppm ASTM D518m 0 S3 S9 38   Baron ppm ASTM D518m 0 S3 S9 38	Machine Age	hrs	Client Info		1937	1918	1836
Sample Statusimate initial mit/baseMARGINALMARGINALSEVERECONTAMINATIONmethodimit/basecurrenthistory1history2WaterWC Method>0.2NEGNEGNEGGlycolImit/basecurrenthistory1history1WEAR METALSmethodimit/basecurrenthistory1history1IronppmASTM D5185>100127ChromiumppmASTM D5185>2000NickelppmASTM D5185>2000SilverppmASTM D5185>2000AuminumppmASTM D5185>25112LeadppmASTM D5185>40000CopperppmASTM D5185>40000VanadiumppmASTM D5185>15000VanadiumppmASTM D51850000ADDITIVESmethodImit/basecurrenthistory1history2BoronppmASTM D5185033333333BariumppmASTM D51850333333ManganeseppmASTM D51850353839ManganeseppmASTM D51850441485488CalciumppmASTM D518511181630163Phosphorus <td>Oil Age</td> <td>hrs</td> <td>Client Info</td> <td></td> <th>1</th> <td>1836</td> <td>467</td>	Oil Age	hrs	Client Info		1	1836	467
CONTAMINATION   method   limit/base   current   history1   history2     Water   WC Method   >0.2   NEG   NEG   NEG     Glycol   WC Method   >0.2   NEG   NEG   NEG     WEAR METALS   method   limit/base   current   history1   history2     Iron   ppm   ASTM D5185m   >20   0   0   <1	Oil Changed		Client Info		Changed	N/A	Changed
Water     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     Imit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >20     0     0     <1       Nickel     ppm     ASTM D5185m     >20     0     0     <1       Silver     ppm     ASTM D5185m     >2     0     0     0       Silver     ppm     ASTM D5185m     >2     0     0     0       Auminum     ppm     ASTM D5185m     >2     0     0     0       Silver     ppm     ASTM D5185m     >40     0     0     0       Copper     ppm     ASTM D5185m     >40     0     0     0       Cadmium     ppm     ASTM D5185m     >15     0     0     0       Adminum     ppm     ASTM D5185m     0     53     59     38       Barum     ppm     ASTM D5185m     0     35     38     39	Sample Status				MARGINAL	MARGINAL	SEVERE
GlycolWC MethodNEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>2000<	CONTAMINATION	N	method	limit/base	current	history1	history2
WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >20     0     0     <1       Chromium     ppm     ASTM D5185m     >20     0     0     <1       Nickel     ppm     ASTM D5185m     >2     0     0     0       Silver     ppm     ASTM D5185m     >2     0     <1     0       Aluminum     ppm     ASTM D5185m     >2     0     <1     0       Aluminum     ppm     ASTM D5185m     >2     0     <1     0       Cadadium     ppm     ASTM D5185m     >40     0     0     0       Cadadium     ppm     ASTM D5185m     >40     0     0     0       Cadadium     ppm     ASTM D5185m     >15     0     0     0       Cadadium     ppm     ASTM D5185m     0     53     59     38       Barium     ppm     ASTM D5185m     0     38     39	Water		WC Method	>0.2	NEG	NEG	NEG
Inn     ppm     ASTM D5185m     >100     1     2     7       Chromium     ppm     ASTM D5185m     >20     0     0     <1	Glycol		WC Method		NEG	NEG	NEG
Chromium     ppm     ASTM D5185m     >20     0     0     <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel     ppm     ASTM D5185m     >2     0     0     0       Titanium     ppm     ASTM D5185m     >2     0     0     0       Silver     ppm     ASTM D5185m     >2     0     <1	Iron	ppm	ASTM D5185m	>100	1	2	7
Titanium     ppm     ASTM D5185m     >2     0     0     0       Silver     ppm     ASTM D5185m     >2     0     <1	Chromium	ppm	ASTM D5185m	>20	0	0	<1
SilverppmASTM D5185m>20<10AluminumppmASTM D5185m>25112LeadppmASTM D5185m>40000CopperppmASTM D5185m>330016TinppmASTM D5185m>15000VanadiumppmASTM D5185m>15000CadmiumppmASTM D5185m0000ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m0533839ManganeseppmASTM D5185m0353839ManganeseppmASTM D5185m0481485488CalciumppmASTM D5185m0481485488CalciumppmASTM D5185m0481485488CalciumppmASTM D5185m0481485488CalciumppmASTM D5185m7497322788SulfurppmASTM D5185m20284328482365SulfurppmASTM D5185m>20244SodiumppmASTM D5185m>20222PotassiumppmASTM D5185m>202244SodiumppmASTM D5185m>202222NFRA-	Nickel		ASTM D5185m	>2	0	0	0
AluminumppmASTM D5185m>25112LeadppmASTM D5185m>40000CopperppmASTM D5185m>330016TinppmASTM D5185m>15000VanadiumppmASTM D5185m>15000CadmiumppmASTM D5185m00<1	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead     ppm     ASTM D5185m     >40     0     0     0       Copper     ppm     ASTM D5185m     >330     0     1     6       Tin     ppm     ASTM D5185m     >15     0     0     0       Vanadium     ppm     ASTM D5185m     >15     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     <10     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     53     59     38       Barium     ppm     ASTM D5185m     0     35     38     39       Maganese     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     749     732     788       Zinc     ppm     ASTM D5185m     749     32     2643     2365       CONTAMINANTS     method     limit/base     current     history1     history	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper     ppm     ASTM D5185m     >330     0     1     6       Tin     ppm     ASTM D5185m     >15     0     0     0       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     53     59     38       Barium     ppm     ASTM D5185m     0     35     38     39       Marganese     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     749     732     788       Zinc     ppm     ASTM D5185m     26     5     4     4       Solium     ppm     ASTM D5185m     22     2     2     2 <	Aluminum	ppm	ASTM D5185m	>25	1	1	2
Tin     ppm     ASTM D5185m     >15     0     0     0       Vanadium     ppm     ASTM D5185m     Imit/base     current     history1     0       Cadmium     ppm     ASTM D5185m     0     53     59     38       Boron     ppm     ASTM D5185m     0     53     59     38       Barium     ppm     ASTM D5185m     0     35     38     39       Malganese     ppm     ASTM D5185m     0     35     38     39       Manganese     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     4865     879     913       Sulfur     ppm     ASTM D5185m     2843     2848     2365       CONTAMINANTS     method     limit/base     current     history1     history2       Sulfur     ppm     ASTM D5185m     20     2	Lead	ppm	ASTM D5185m	>40	0	0	0
Vanadium     ppm     ASTM D5185m     0     <1     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     53     59     38       Barium     ppm     ASTM D5185m     0     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     35     38     39       Manganese     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     1589     1618     1630       Sulfur     ppm     ASTM D5185m     2643     2848     2365 </td <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;330</td> <th>0</th> <td>1</td> <td>6</td>	Copper	ppm	ASTM D5185m	>330	0	1	6
Cadmium     ppm     ASTM D5185m     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     53     59     38       Barium     ppm     ASTM D5185m     0     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     35     38     39       Manganese     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Salifur     ppm     ASTM D5185m     0     481     485     2365       ContrAdMINANTS     ppm     ASTM D5185m     225     5     4     4       Sodium     ppm     ASTM D5185m     220     2 <td>Tin</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;15</td> <th>0</th> <td>0</td> <td>0</td>	Tin	ppm	ASTM D5185m	>15	0	0	0
ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     53     59     38       Barium     ppm     ASTM D5185m     0     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     35     38     39       Manganese     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     4865     879     913       Sulfur     ppm     ASTM D5185m     749     732     788       Sulfur     ppm     ASTM D5185m     2843     2843     2365       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     5     4     4       Sodium     ppm     ASTM D5185m     >20     2.6	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron     ppm     ASTM D5185m     0     53     59     38       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     35     38     39       Manganese     ppm     ASTM D5185m     0     35     38     39       Magnesium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     749     732     788       Zinc     ppm     ASTM D5185m     2843     2848     2365       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     2     <1     2       Potassium     ppm     ASTM D5185m     >20     2.6     9.5	Cadmium	ppm	ASTM D5185m		0	0	0
Barium     ppm     ASTM D5185m     0     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     35     38     39       Manganese     ppm     ASTM D5185m      <1     0     0       Magnesium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     749     732     788       Zinc     ppm     ASTM D5185m     2843     2848     2365       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     5     4     4       Sodium     ppm     ASTM D5185m     >20     2     <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum     ppm     ASTM D5185m     0     35     38     39       Manganese     ppm     ASTM D5185m      <1							
Maganese     ppm     ASTM D5185m     <1     0     0       Magnesium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     0     481     485     488       Phosphorus     ppm     ASTM D5185m     749     732     788       Zinc     ppm     ASTM D5185m     749     732     788       Sulfur     ppm     ASTM D5185m     2843     2848     2365       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     2     <1	Boron	ppm	ASTM D5185m	0	53		38
Magnesium     ppm     ASTM D5185m     0     481     485     488       Calcium     ppm     ASTM D5185m     1589     1618     1630       Phosphorus     ppm     ASTM D5185m     749     732     788       Zinc     ppm     ASTM D5185m     865     879     913       Sulfur     ppm     ASTM D5185m     2843     2848     2365       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     5     4     4       Sodium     ppm     ASTM D5185m     >25     5     4     4       Sodium     ppm     ASTM D5185m     >20     2     <1						59	
Calcium     ppm     ASTM D5185m     1589     1618     1630       Phosphorus     ppm     ASTM D5185m     749     732     788       Zinc     ppm     ASTM D5185m     865     879     913       Sulfur     ppm     ASTM D5185m     2843     2848     2365       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     5     4     4       Sodium     ppm     ASTM D5185m     >20     2     <1	Barium	ppm	ASTM D5185m	0	0 35	59 0	0 39
PhosphorusppmASTM D5185m749732788ZincppmASTM D5185m865879913SulfurppmASTM D5185m284328482365CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25544SodiumppmASTM D5185m>202<1	Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	0 35 <1	59 0 38 0	0 39 0
Zinc     ppm     ASTM D5185m     865     879     913       Sulfur     ppm     ASTM D5185m     2843     2848     2365       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     5     4     4       Sodium     ppm     ASTM D5185m     >20     2     <1	Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	0 35 <1	59 0 38 0 485	0 39 0 488
SulfurppmASTM D5185m284328482365CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25544SodiumppmASTM D5185m>202<1	Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0	0 35 <1 481 1589	59 0 38 0 485 1618	0 39 0 488 1630
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25544SodiumppmASTM D5185m>202<1	Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0	0 35 <1 481 1589 749	59 0 38 0 485 1618 732	0 39 0 488 1630 788
Silicon   ppm   ASTM D5185m   >25   5   4   4     Sodium   ppm   ASTM D5185m   >20   3   2   2     Potassium   ppm   ASTM D5185m   >20   2   <1   2     Fuel   %   ASTM D3524   >5   ▲ 3.9   ▲ 2.6   ▲ 9.5     INFRA-RED   method   limit/base   current   history1   history2     Soot %   %   *ASTM D7844   >3   0.1   0.1   0.1     Nitration   Abs/cm   *ASTM D7624   >20   6.2   5.6   9.2     Sulfation   Abs/.1mm   *ASTM D7415   >30   21.3   21.2   21.9     FLUID DEGRADATION   method   limit/base   current   history1   history2     Oxidation   Abs/.1mm   *ASTM D7414   >25   19.7   19.1   22.4	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	0	0 35 <1 481 1589 749 865	59 0 38 0 485 1618 732 879	0 39 0 488 1630 788 913
Sodium     ppm     ASTM D5185m     3     2     2       Potassium     ppm     ASTM D5185m     >20     2     <1     2       Fuel     %     ASTM D5185m     >20     2     <1	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	0	0 35 <1 481 1589 749 865	59 0 38 0 485 1618 732 879	0 39 0 488 1630 788 913
Potassium     ppm     ASTM D5185m     >20     2     <1	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0	0 35 <1 481 1589 749 865 2843	59 0 38 0 485 1618 732 879 2848	0 39 0 488 1630 788 913 2365
Fuel     %     ASTM D3524     >5     ▲ 3.9     ▲ 2.6     ▲ 9.5       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.1     0.1     0.1       Nitration     Abs/cm     *ASTM D7624     >20     6.2     5.6     9.2       Sulfation     Abs/.1mm     *ASTM D7415     >30     21.3     21.2     21.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     19.7     19.1     22.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 Imit/base	0 35 <1 481 1589 749 865 2843 current	59 0 38 0 485 1618 732 879 2848 history1	0 39 0 488 1630 788 913 2365 history2
INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.1     0.1     0.1       Nitration     Abs/cm     *ASTM D7624     >20     6.2     5.6     9.2       Sulfation     Abs/.1mm     *ASTM D7415     >30     21.3     21.2     21.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     19.7     19.1     22.4	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 <b>method</b> ASTM D5185m	0 0 0 Imit/base	0 35 <1 481 1589 749 865 2843 current 5	59 0 38 0 485 1618 732 879 2848 history1 4 2	0 39 0 488 1630 788 913 2365 history2 4 2
Soot %     %     *ASTM D7844     >3     0.1     0.1     0.1       Nitration     Abs/cm     *ASTM D7624     >20     6.2     5.6     9.2       Sulfation     Abs/.1mm     *ASTM D7415     >30     21.3     21.2     21.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     19.7     19.1     22.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 limit/base >25 >20	0 35 <1 481 1589 749 865 2843 <u>current</u> 5 3 2	59 0 38 0 485 1618 732 879 2848 history1 4 2 2 <1	0 39 0 488 1630 788 913 2365 history2 4 2 2
Nitration     Abs/cm     *ASTM D7624     >20     6.2     5.6     9.2       Sulfation     Abs/.1mm     *ASTM D7415     >30     21.3     21.2     21.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     19.7     19.1     22.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 limit/base >25 >20	0 35 <1 481 1589 749 865 2843 <u>current</u> 5 3 2	59 0 38 0 485 1618 732 879 2848 history1 4 2 2 <1	0 39 0 488 1630 788 913 2365 history2 4 2 2
Sulfation     Abs/.1mm     *ASTM D7415     >30     21.3     21.2     21.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     19.7     19.1     22.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1 1 1 1 1 1 1 1 1 1 2 1 1 1 1 2 1	0 35 <1 481 1589 749 865 2843 <u>current</u> 5 3 2 2 3 3 2 2 3.9	59 0 38 0 485 1618 732 879 2848 history1 4 2 2 4 2 2 <1 ▲ 2.6	0 39 0 488 1630 788 913 2365 history2 4 2 2 2 2 9.5
FLUID DEGRADATION method limit/base current history1 history2   Oxidation Abs/.1mm *ASTM D7414 >25 19.7 19.1 22.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 35 <1 481 1589 749 865 2843 <i>current</i> 5 3 2 2 3 2 3.9 <i>current</i>	59 0 38 0 485 1618 732 879 2848 history1 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 6 <b>history1</b> 0.1	0 39 0 488 1630 788 913 2365 history2 4 2 2 2 2 1 4 2 2 9.5
Oxidation     Abs/.1mm     *ASTM D7414     >25     19.7     19.1     22.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 35 <1 481 1589 749 865 2843 <u>current</u> 5 3 2 3 2 3.9 <u>current</u> 0.1	59 0 38 0 485 1618 732 879 2848 history1 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 6 <b>history1</b> 0.1	0 39 0 488 1630 788 913 2365 history2 4 2 2 2 3 4 2 2 9.5 history2 0.1
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5244 *ASTM D7844 *ASTM D7844	0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 35 <1 481 1589 749 865 2843 <u>current</u> 5 3 2 3 2 ▲ 3.9 <u>current</u> 0.1 6.2	59 0 38 0 485 1618 732 879 2848 history1 4 2 2 <1 2 .6 × 1 2.6 ×	0 39 0 488 1630 788 913 2365 history2 4 2 2 2 2 9.5 history2 0.1 9.2
Base Number (BN)     mg KOH/g     ASTM D2896     9.4     9.6     9.7     8.5	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D51854 *ASTM D7844 *ASTM D7824	0 0 0 1 0 2 5 2 5 1 1 1 1 1 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2	0 35 <1 481 1589 749 865 2843 <u>current</u> 5 3 2 3.9 <u>current</u> 0.1 6.2 21.3	59 0 38 0 485 1618 732 879 2848 history1 4 2 2 4 2 2 4 2 2 4 2 2 6 <b>history1</b> 0.1 5.6 21.2	0 39 0 488 1630 788 913 2365 history2 4 2 2 9.5 history2 0.1 9.2 21.9
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 <b>method</b> *ASTM D7844 *ASTM D7844 *ASTM D7615	0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	0 35 <1 481 1589 749 865 2843 current 5 3 2 3 2 3.9 current 0.1 6.2 21.3 current	59 0 38 0 485 1618 732 879 2848 history1 4 2 2 4 2 2 4 2 2 4 2 2 4 2 6 history1 0.1 5.6 21.2 history1	0 39 0 488 1630 788 913 2365 history2 4 2 2 9.5 history2 0.1 9.2 21.9

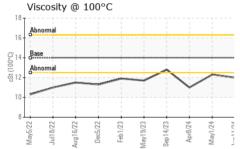


# **OIL ANALYSIS REPORT**



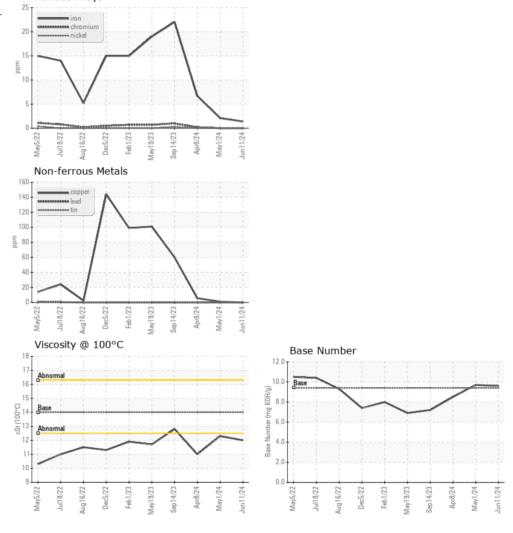


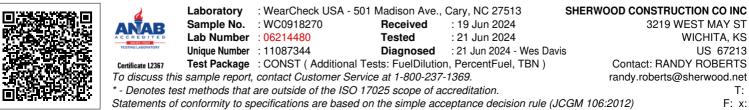




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14	12.0	12.3	▲ 11.0
GRAPHS						

Ferrous Alloys





Report Id: SHEWIC [WUSCAR] 06214480 (Generated: 06/21/2024 16:50:12) Rev: 1

Submitted By: JAMES MOORE

Page 2 of 2