

#### WEAR NORMAL CONTAMINATION **ABNORMAL** NORMAL FLUID CONDITION

# [127367] **JOHN DEERE 437E 1T0437EDTPL439975 Hydraulic System** JOHN DEERE HYDRAU (--- QTS)

#### RECOMMENDATION

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

#### WEAR

Metal levels are typical for a new component breaking in.

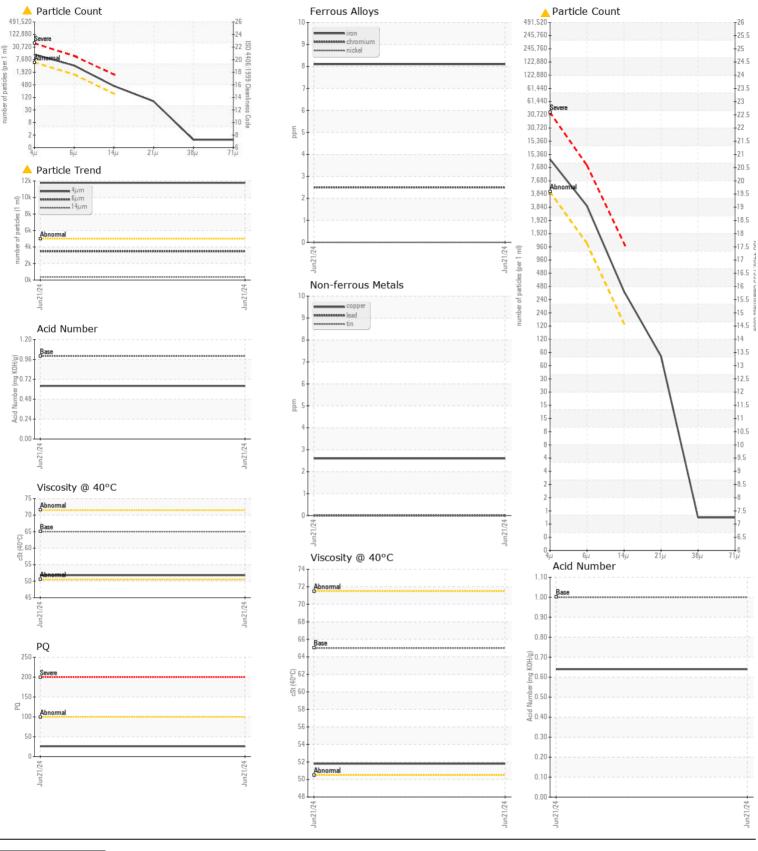
### CONTAMINATION

There is a high amount of particulates present in the oil.

## FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

Test         UOM         Method         Limit/An         Current         History1         History2           Sample Number         Client Info         21 Jun 204             Machine Age         hrs         Client Info         0             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Filter Age         hrs         Client Info         Changed             Sample Status          ASTM D8184         26             PQ         ASTM D8184         26              Chromium         ppm         ASTM D8185         >10         0             Nickel         ppm         ASTM D8185         0              Silver         ppm         ASTM D8185         10         0             Aluminum         ppm         ASTM D5185         >10         0             Vanadium         ppm <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
Sample Number         Client Info         WE0006967             Machine Age         hrs         Client Info         735             Oil Age         hrs         Client Info         0             Oil Changed         Ins         Client Info         0             Oil Changed         Client Info         N/A             Filter Age         hrs         Client Info         N/A             Filter Changed         Client Info         Changed              Sample Status         ASTM D5185m         20         8             Nickel         ppm         ASTM D5185m         10         0             Silver         ppm         ASTM D5185m         0         3             Aluminum         ppm         ASTM D5185m         10         0             Aluminum         ppm         ASTM D5185m         10         0             Vanadium         ppm         ASTM D5185m         <	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age         hrs         Client Info         735             Filter Age         hrs         Client Info         0             Filter Age         hrs         Client Info         N/A             Filter Changed         Client Info         N/A             Sample Status         Client Info         N/A             Filter Changed         Client Info         N/A             Sample Status          ABNORNAL             Filter Changed         ASTM D5185m<>10         0             Nickel         ppm         ASTM D5185m<>10         0             Nickel         ppm         ASTM D5185m<>10         0             Aluminum         ppm         ASTM D5185m<>10         0             Lead         ppm         ASTM D5185m<>10         0             Vanadium         ppm         ASTM D5185m<>20         15             Silicon         ppm <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>WE0006967</th> <th></th> <th></th>	Sample Number		Client Info		WE0006967		
Machine Age Oil Age Filter Age Nrs         Nrs         Client Info         0             Filter Age Oil Changed         Client Info         0              Filter Age Sample Status         Client Info         N/A              PQ         ASTM D5185         Sample Status              PQ         ASTM D5185         >20         8             Nickel         ppm         ASTM D5185         >20         8             Nickel         ppm         ASTM D5185         >10         0             Nickel         ppm         ASTM D5185         0         3             Aluminum         ppm         ASTM D5185         10         0             Lead         ppm         ASTM D5185         10         0             Vanadium         ppm         ASTM D5185         10         0             Veladu         scalar         Visual         NONE        <			Client Info		21 Jun 2024		
Oil Age         hrs         Client Info         0             Filter Age         hrs         Client Info         N/A             Oil Changed         Client Info         N/A             Filter Changed         Client Info         N/A             Sample Status         ABNORMAL             PQ         ASTM D5185m         20         8             Nickel         ppm         ASTM D5185m         10         0             Nickel         ppm         ASTM D5185m         10         0             Nickel         ppm         ASTM D5185m         10         0             Silver         ppm         ASTM D5185m         10         0             Vanadium         ppm         ASTM D5185m         10         0             Vanadium         ppm         ASTM D5185m         20         15             Vallow Metal         scalar         *Visual         NONE         NONE <th></th> <th>hrs</th> <th>Client Info</th> <th></th> <th>735</th> <th></th> <th></th>		hrs	Client Info		735		
Filter Åge Oli Changed         hrs         Client Info         0             Oli Changed         Client Info         N/A             Filter Changed         Client Info         N/A             Sample Status         ASTM D8184              PQ         ASTM D5185m         >20         8             Chromium         ppm         ASTM D5185m         >10         2             Nickel         ppm         ASTM D5185m         10         0             Aluminum         ppm         ASTM D5185m         10         3             Silver         ppm         ASTM D5185m         10         0             Auminum         ppm         ASTM D5185m         10         0             Vanadium         ppm         ASTM D5185m         20         9             Value         scalar         *Visual         NONE              Value         scalar	•	hrs	Client Info		0		
Oil Changed Sample Status         Client Info         N/A             Sample Status         Client Info         Changed ABNORMAL             PQ         ASTM D8184         26             Iron         ppm         ASTM D5185m         >20         8             Nickel         ppm         ASTM D5185m         >10         0             Nickel         ppm         ASTM D5185m         0              Silver         ppm         ASTM D5185m         >10         0             Lead         ppm         ASTM D5185m         >10         0             Vanadium ppm         ASTM D5185m         >10         0             Vanadum ppm         ASTM D5185m         >10         0             Vanadum ppm         ASTM D5185m         >20         15             Yellow Metal         scalar<*Visual         NONE         NONE             Silicon         ppm         ASTM D5185m	0	hrs	Client Info		0		
Filter Changed Sample Status         Client Info         Changed ABNORMAL             PQ         ASTM D8184         26             Iron         ppm         ASTM D5185m         >20         8            Nickel         ppm         ASTM D5185m         >10         2             Nickel         ppm         ASTM D5185m         >10         0             Silver         ppm         ASTM D5185m         >10         3             Silver         ppm         ASTM D5185m         >10         0             Lead         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >10         0             Yellow Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE	Ũ				-		
Sample Status         ABNORMAL            PQ         ASTM D8184         26            Iron         ppm         ASTM D5185m         >20         8            Nickel         ppm         ASTM D5185m         >10         0            Nickel         ppm         ASTM D5185m         0             Silver         ppm         ASTM D5185m         0             Aluminum         ppm         ASTM D5185m         >10         0             Aluminum         ppm         ASTM D5185m         >10         0             Aluminum         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >20         P             Vanadium         ppm         ASTM D5185m         >20         P             Vanadium         ppm         ASTM D5185m         >20         P	•						
PQ         ASTM D8184         26             Iron         ppm         ASTM D5185m         >20         8             Nickel         ppm         ASTM D5185m         >10         2             Nickel         ppm         ASTM D5185m         >10         0             Silver         ppm         ASTM D5185m         >10         3             Lead         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >20         0             Vanadium         ppm         ASTM D5185m         >20         9             Ventor Metal         scalar         *Visual         NONE         NONE             Particles >4µm         ASTM D7647         >10         A         370	-		0.0.0.1		Ū.		
Iron         ppm         ASTM D5185m         >20         8             Nickel         ppm         ASTM D5185m         >10         0             Titanium         ppm         ASTM D5185m         0             Aluminum         ppm         ASTM D5185m         0             Aluminum         ppm         ASTM D5185m         >10         0             Aluminum         ppm         ASTM D5185m         >10         0             Astm D5185m         >10         0               Vanadium         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >0         0             Yellow Metal         scalar         *Visual         NONE             Silicon         ppm         ASTM D7647         >10         1             Particles >4µm         ASTM D7647         >10         1 <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>							
Chromium         ppm         ASTM D5185m         >10         2            Nickel         ppm         ASTM D5185m         0             Silver         ppm         ASTM D5185m         0             Silver         ppm         ASTM D5185m         10         3             Lead         ppm         ASTM D5185m         >10         0             Copper         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >0              Vanadium         ppm         ASTM D5185m         >20         15             Vellow Metal         scalar         *Visual         NONE         NONE             Paticles >4µm         ASTM D7647         >100         NEG             Paticles >38µm         ASTM D7647         >10         1	PQ		ASTM D8184		26		
Nickel         ppm         ASTM D5185m         >10         0             Titanium         ppm         ASTM D5185m         0             Silver         ppm         ASTM D5185m         >10         3             Aluminum         ppm         ASTM D5185m         >10         0             Lead         ppm         ASTM D5185m         >10         0             Copper         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >20         15             Vellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D7647         >20         9             Particles >4µm         ASTM D7647         >10         1             Particles >8µm         ASTM D7647         >3         1	Iron	ppm	ASTM D5185m	>20	8		
Titanium       ppm       ASTM D5185m       0           Silver       ppm       ASTM D5185m       >10       3           Auminum       ppm       ASTM D5185m       >10       0           Lead       ppm       ASTM D5185m       >10       0           Copper       ppm       ASTM D5185m       >10       0           Vanadium       ppm       ASTM D5185m       10       0           Vanadium       ppm       ASTM D5185m       20       0           Vanadium       ppm       ASTM D5185m       >20       9           Vanadium       ppm       ASTM D5185m       >20       9           Vellow Metal       scalar       *Visual       NONE       NONE           Patricles >4µm       ASTM D7647       >1300       A 370            Particles >4µm       ASTM D7647       >3       1            Patricles >4µm       ASTM D7647	Chromium	ppm	ASTM D5185m	>10	2		
Silver         ppm         ASTM D5185m         0             Aluminum         ppm         ASTM D5185m         >10         3             Lead         ppm         ASTM D5185m         >10         0             Copper         ppm         ASTM D5185m         >10         0             Tin         ppm         ASTM D5185m         >10         0             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Potassium         ppm         ASTM D5185m         >20         9             Paticles >4µm         ASTM D7647         >5000         ▲ 11767             Particles >4µm         ASTM D7647         >100         ▲ 370             Particles >21µm         ASTM D7647         >10         1             Particles >38µm         ASTM D7647         >3         1	Nickel	ppm	ASTM D5185m	>10	0		
Aluminum         ppm         ASTM D5185m         >10         3             Lead         ppm         ASTM D5185m         >10         0             Copper         ppm         ASTM D5185m         >75         3             Vanadium         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         0              White Metal         scalar         *Visual         NONE              Value         ppm         ASTM D5185m         >20         9             Potassium         ppm         ASTM D5185m         >20         9             Paticles >4µm         ASTM D7647         >5000         ▲ 1767             Particles >6µm         ASTM D7647         >100         ▲ 370             Particles >71µm         ASTM D7647         >3         1             Particles >71µm         ASTM D7647         3         1	Titanium	ppm	ASTM D5185m		0		
Aluminum         ppm         ASTM D5185m         >10         3             Lead         ppm         ASTM D5185m         >10         0             Copper         ppm         ASTM D5185m         >75         3             Vanadium         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         >10         NONE             Vanadium         ppm         ASTM D5185m         >20         9             Vellow Metal         scalar         *Visual         NONE              Potassium         ppm         ASTM D7647         >5000         ▲ 11767             Particles >4µm         ASTM D7647         >10         ▲ 3464             Particles >54µm         ASTM D7647         >40         ▲ 68             Particles >71µm         ASTM D7647         >1<	Silver		ASTM D5185m		0		
Lead         ppm         ASTM D5185m         >10         0             Copper         ppm         ASTM D5185m         >75         3             Tin         ppm         ASTM D5185m         >10         0             Wanadium         ppm         ASTM D5185m         >10         0             Wate         scalar         *Visual         NONE              Silicon         ppm         ASTM D5185m         >20         9             Potassium         ppm         ASTM D5185m         >20         9             Patticles >4µm         ASTM D7647         >5000         A 11767             Particles >4µm         ASTM D7647         >100         1             Particles >4µm         ASTM D7647         >10         1             Particles >4µm         ASTM D7647         >10         1             Particles >4µm         ASTM D7647         >10         1          <	Aluminum		ASTM D5185m	>10	3		
Copper         ppm         ASTM D5185m         >75         3             Tin         ppm         ASTM D5185m         0             White Metal         scalar         *Visual         NONE         NONE             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Potassium         ppm         ASTM D5185m<>20         9             Patricles >4µm         ASTM D7647         >5000         A 11767             Particles >21µm         ASTM D7647         >100         A 3464             Particles >21µm         ASTM D7647         >40         68             Particles >21µm         ASTM D7647         >10         1             Oil Cleanliness         ISO 4406 (c)         >191714         2119716             Sadd/Dirt         scalar         *Visual         NONE         NONE <th>Lead</th> <th></th> <th>ASTM D5185m</th> <th>&gt;10</th> <th>0</th> <th></th> <th></th>	Lead		ASTM D5185m	>10	0		
Tin         ppm         ASTM D5185m         >10         0             Vanadium         ppm         ASTM D5185m         0             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Potassium         ppm         ASTM D5185m         >20         9             Potassium         ppm         ASTM D5185m         >20         9             Patticles >4µm         ASTM D7647         >5000         ▲ 11767             Particles >6µm         ASTM D7647         >100         1             Particles >38µm         ASTM D7647         >10         1             Particles >38µm         ASTM D7647         >10         1             Particles >38µm         ASTM D7647         >10         1	Copper			>75	3		
Vanadium         ppm         ASTM D5185m         0             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >20         9             Potassium         ppm         ASTM D5185m         >20         9             Patticles >4µm         ASTM D7647         >5000         A<11767             Particles >6µm         ASTM D7647         >100         A         3464             Particles >14µm         ASTM D7647         >10         1             Particles >38µm         ASTM D7647         >10         1             Particles >71µm         ASTM D7647         >10         1             Particles >38µm         ASTM D7647         >3         1             Sold (c)         >19/17/14         21/19/16           -			ASTM D5185m	>10			
White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >20         9             Potassium         ppm         ASTM D5185m         >20         9             Paticles >4µm         PASTM D7647         >5000         A 11767             Particles >6µm         ASTM D7647         >1300         A 668             Particles >14µm         ASTM D7647         >10         1             Particles >38µm         ASTM D7647         >10         1             Particles >14µm         ASTM D7647         >1         1             Particles >38µm         ASTM D7647         >1         1             Particles >38µm         ASTM D7647         >3         1             Solit         scalar         *Visual         NONE         NONE					-		
Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >20         9             Potassium         ppm         ASTM D5185m         >20         9             Paticles >4µm         ASTM D7647         >5000         ▲ 11767             Particles >6µm         ASTM D7647         >100         ▲ 3640             Particles >21µm         ASTM D7647         >100         ▲ 688             Particles >21µm         ASTM D7647         >10         1             Particles >21µm         ASTM D7647         >10         1             Particles >21µm         ASTM D7647         >3         1             Particles >21µm         ASTM D7647         >3         1             Particles >21µm         ASTM D7647         >3         1             Silt         scalar         *Visual         NONE         NONE <td< th=""><th>White Metal</th><th>scalar</th><th>*Visual</th><th>NONE</th><th>NONE</th><th></th><th></th></td<>	White Metal	scalar	*Visual	NONE	NONE		
Potassium         ppm         ASTM D5185m         >20         9            Water         WC Method         >0.1         NEG            Particles >4µm         ASTM D7647         >5000         ▲ 11767            Particles >6µm         ASTM D7647         >100         ▲ 3464            Particles >14µm         ASTM D7647         >100         ▲ 370            Particles >21µm         ASTM D7647         >4         68            Particles >38µm         ASTM D7647         >10         1            Particles >71µm         ASTM D7647         >3         1            Oil Cleanliness         ISO 4406 (c)         >19/17/14         ▲ 21/19/16            Silt         scalar         *Visual         NONE             Sand/Dirt         scalar         *Visual         NORM         NORE             Appearance         scalar         *Visual         NORM         NORM             Odor         scalar         *Visual         NORM         NORM             B	Yellow Metal	scalar	*Visual	NONE			
Potassium         ppm         ASTM D5185m         >20         9            Water         WC Method         >0.1         NEG            Particles >4µm         ASTM D7647         >5000         ▲ 11767            Particles >6µm         ASTM D7647         >100         ▲ 3464            Particles >14µm         ASTM D7647         >100         ▲ 370            Particles >21µm         ASTM D7647         >4         68            Particles >38µm         ASTM D7647         >10         1            Particles >71µm         ASTM D7647         >3         1            Oil Cleanliness         ISO 4406 (c)         >19/17/14         ▲ 21/19/16            Silt         scalar         *Visual         NONE             Sand/Dirt         scalar         *Visual         NORM         NORE             Appearance         scalar         *Visual         NORM         NORM             Odor         scalar         *Visual         NORM         NORM             B							
Water         WC Method         >0.1         NEG            Particles >4µm         ASTM D7647         >5000         A 11767            Particles >6µm         ASTM D7647         >1300         A 3464            Particles >14µm         ASTM D7647         >100         A 370            Particles >14µm         ASTM D7647         >40         A 68            Particles >21µm         ASTM D7647         >1             Particles >38µm         ASTM D7647         >3         1             Particles >71µm         ASTM D7647         >3         1             Particles >71µm         ASTM D7647         >3         1             Oil Cleanliness         ISO 4406 (c)         51917/14         21/19/16             Silt         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORM         NORML             Appearance         scalar         *Visual         NOR         3	Silicon	ppm	ASTM D5185m	>20	15		
Particles >4µm         ASTM D7647         >5000         ▲ 11767             Particles >6µm         ASTM D7647         >1300         ▲ 3464             Particles >14µm         ASTM D7647         >160         ▲ 370             Particles >21µm         ASTM D7647         >10         1             Particles >38µm         ASTM D7647         >10         1             Particles >71µm         ASTM D7647         >3         1             Particles >71µm         ASTM D7647         >3         1             Particles >71µm         ASTM D7647         >3         1             Oil Cleanliness         ISO 4406 (c)         19/17/14         ▲ 21/19/16             Silt         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORM         NORML             Appearance         scalar         *Visual         NORML         NORML <th>Potassium</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;20</th> <th>9</th> <th></th> <th></th>	Potassium	ppm	ASTM D5185m	>20	9		
Particles >6μm         ASTM D7647         >1300         ▲ 3464            Particles >14μm         ASTM D7647         >160         ▲ 370            Particles >21μm         ASTM D7647         >100         ▲ 68            Particles >38µm         ASTM D7647         >10         1            Particles >38µm         ASTM D7647         >10         1            Particles >38µm         ASTM D7647         >3         1            Particles >71µm         ASTM D7647         >3         1            Oil Cleanliness         ISO 4406 (c)         >19/17/14         21/19/16            Silt         scalar         *Visual         NONE             Sold Uhrt         scalar         *Visual         NONE             Appearance         scalar         *Visual         NORML         NORML             Godor         scalar         *Visual         NORML         NORML             Boron         ppm         ASTM D5185m         3             Barium	Water		WC Method	>0.1	NEG		
Particles >14µm       ASTM D7647       >160       ▲ 370           Particles >21µm       ASTM D7647       >40       ▲ 68           Particles >38µm       ASTM D7647       >10       1           Particles >71µm       ASTM D7647       >3       1           Oil Cleanliness       ISO 4406 (c)       >19/17/14       ▲ 21/19/16           Silt       scalar       *Visual       NONE       NONE           Debris       scalar       *Visual       NONE       NONE           Sand/Dirt       scalar       *Visual       NORE       NONE           Appearance       scalar       *Visual       NORM       NORML           Odor       scalar       *Visual       NORM       NORML           Sodium       ppm       ASTM D5185m       3            Boron       ppm       ASTM D5185m       <1            Barium       ppm       ASTM D5185m <td< th=""><th>Particles &gt;4µm</th><th></th><th>ASTM D7647</th><th>&gt;5000</th><th>🔺 11767</th><th></th><th></th></td<>	Particles >4µm		ASTM D7647	>5000	🔺 11767		
Particles >21 µmASTM D7647>40▲ 68Particles >38µmASTM D7647>101Particles >71µmASTM D7647>31Oil CleanlinessISO 4406 (c)>19/17/14▲ 21/19/16Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNORENONEAppearancescalar*VisualNORMNORMLOdorscalar*VisualNORMNORMLBoronppmASTM D5185m3BariumppmASTM D5185m<11MaganeseppmASTM D5185m<11MagnesiumppmASTM D5185m<11PhosphorusppmASTM D5185m727390ZincppmASTM D5185m727390SulfurppmASTM D5185m1002338Acid Number (AN)mg KOHgASTM D5185m1.00.64	Particles >6µm		ASTM D7647	>1300	🔺 3464		
Particles >38µm         ASTM D7647         >10         1             Particles >71µm         ASTM D7647         >3         1             Oil Cleanliness         ISO 4406 (c)         >19/17/14         21/19/16             Silt         scalar         *Visual         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORE         NONE             Appearance         scalar         *Visual         NOR         NORML             Odor         scalar         *Visual         NOR         NORML             Odor         scalar         *Visual         NOR         NORML             Boron         ppm         ASTM D5185m         3             Barium         ppm         ASTM D5185m         <1             Magnesium         ppm         ASTM D5185m         <1	Particles >14µm		ASTM D7647	>160	<b>A</b> 370		
Particles >71µm         ASTM D7647         >3         1             Oil Cleanliness         ISO 4406 (c)         >19/17/14         ▲ 21/19/16             Silt         scalar         *Visual         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NOR         NONE             Appearance         scalar         *Visual         NOR         NORML             Odor         scalar         *Visual         NOR         NORML             Odor         scalar         *Visual         NOR         NORML             Odor         scalar         *Visual         >0.1         NEG             Sodium         ppm         ASTM D5185m         3              Boron         ppm         ASTM D5185m         21              Molybdenum         ppm         ASTM D5185m	Particles >21µm		ASTM D7647	>40	<b>6</b> 8		
Oil CleanlinessISO 4406 (c)\$19/17/14▲ 21/19/16Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m3BoronppmASTM D5185m21BariumppmASTM D5185m<11MolybdenumppmASTM D5185m<11MagnesiumppmASTM D5185m<48PhosphorusppmASTM D5185m727390ZincppmASTM D5185m900441SulfurppmASTM D5185m1.00.64	Particles >38µm		ASTM D7647	>10	1		
Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMNORMLOdorscalar*VisualNORMNORMLEmulsified Waterscalar*VisualNORMNORMLSodiumppmASTM D5185m3BoronppmASTM D5185m21BariumppmASTM D5185m<11MolybdenumppmASTM D5185m<11MagnesiumppmASTM D5185m<11MagnesiumppmASTM D5185m727390ZincppmASTM D5185m900441SulfurppmASTM D5185m1.00.64	Particles >71µm		ASTM D7647	>3	1		
Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m3BoronppmASTM D5185m21BariumppmASTM D5185m<11MolybdenumppmASTM D5185m<11MagnesiumppmASTM D5185m<48MagnesiumppmASTM D5185m<48PhosphorusppmASTM D5185m727390ZincppmASTM D5185m900441SulfurppmASTM D5185m1.00.64	Oil Cleanliness		ISO 4406 (c)	>19/17/14	🔺 21/19/16		
Sand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m3BoronppmASTM D5185m21BariumppmASTM D5185m<11MolybdenumppmASTM D5185m<11MagnesiumppmASTM D5185m<11MagnesiumppmASTM D5185m448PhosphorusppmASTM D5185m727390ZincppmASTM D5185m900441SulfurppmASTM D5185m1.00.64	Silt	scalar	*Visual	NONE	NONE		
Appearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m3BoronppmASTM D5185m21BariumppmASTM D5185m<11MolybdenumppmASTM D5185m<11MagnesiumppmASTM D5185m<11MagnesiumppmASTM D5185m727390PhosphorusppmASTM D5185m727390ZincppmASTM D5185m15002338SulfurppmASTM D5185m1.00.64	Debris	scalar	*Visual	NONE	NONE		
Odor         scalar         *Visual         NORML         NORML            Emulsified Water         scalar         *Visual         >0.1         NEG             Sodium         ppm         ASTM D5185m         3             Boron         ppm         ASTM D5185m         21             Barium         ppm         ASTM D5185m          11             Molybdenum         ppm         ASTM D5185m          11             Magnesium         ppm         ASTM D5185m          48             Phosphorus         ppm         ASTM D5185m         87         241             Phosphorus         ppm         ASTM D5185m         727         390             Zinc         ppm         ASTM D5185m         900         441             Sulfur         ppm         ASTM D5185m         1500         2338             Acid Number (AN)         mg KOHg         ASTM D545         1.0         0.	Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m3BoronppmASTM D5185m21BariumppmASTM D5185m<11MolybdenumppmASTM D5185m<11MagnesiumppmASTM D5185m<11MagnesiumppmASTM D5185m<48PhosphorusppmASTM D5185m727390ZincppmASTM D5185m900441SulfurppmASTM D5185m15002338Acid Number (AN)mg KOHgASTM D80451.00.644	Appearance	scalar	*Visual	NORML	NORML		
Sodium         ppm         ASTM D5185m         3             Boron         ppm         ASTM D5185m         21             Barium         ppm         ASTM D5185m         <1             Molybdenum         ppm         ASTM D5185m         <11             Manganese         ppm         ASTM D5185m         <11             Magnesium         ppm         ASTM D5185m         <48             Calcium         ppm         ASTM D5185m         87         241             Phosphorus         ppm         ASTM D5185m         727         390             Zinc         ppm         ASTM D5185m         900         441             Sulfur         ppm         ASTM D5185m         1500         2338             Acid Number (AN)         mg KOHg         ASTM D8045         1.0         0.64	Odor	scalar	*Visual	NORML	NORML		
Boron         ppm         ASTM D5185m         21             Barium         ppm         ASTM D5185m         <1             Molybdenum         ppm         ASTM D5185m         <11             Manganese         ppm         ASTM D5185m         <11             Magnesium         ppm         ASTM D5185m         <148             Calcium         ppm         ASTM D5185m         87         241             Phosphorus         ppm         ASTM D5185m         727         390             Zinc         ppm         ASTM D5185m         900         441             Sulfur         ppm         ASTM D5185m         1500         2338             Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         0.64	Emulsified Water	scalar	*Visual	>0.1	NEG		
Boron         ppm         ASTM D5185m         21             Barium         ppm         ASTM D5185m         <1             Molybdenum         ppm         ASTM D5185m         <11             Manganese         ppm         ASTM D5185m         <11             Magnesium         ppm         ASTM D5185m         <148             Calcium         ppm         ASTM D5185m         87         241             Phosphorus         ppm         ASTM D5185m         727         390             Zinc         ppm         ASTM D5185m         900         441             Sulfur         ppm         ASTM D5185m         1500         2338             Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         0.64							
Barium         ppm         ASTM D5185m         <1							
Molybdenum         ppm         ASTM D5185m         11            Manganese         ppm         ASTM D5185m         <1            Magnesium         ppm         ASTM D5185m         <48            Calcium         ppm         ASTM D5185m         <241            Phosphorus         ppm         ASTM D5185m         727         390            Zinc         ppm         ASTM D5185m         900         441            Sulfur         ppm         ASTM D5185m         1500         2338            Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         0.64		ppm			21		
Manganese         ppm         ASTM D5185m         <1		ppm					
Magnesium         ppm         ASTM D5185m         48             Calcium         ppm         ASTM D5185m         87         241             Phosphorus         ppm         ASTM D5185m         727         390             Zinc         ppm         ASTM D5185m         900         441             Sulfur         ppm         ASTM D5185m         1500         2338             Acid Number (AN)         mg KOHg         ASTM D8045         1.0         0.64		ppm					
Calcium         ppm         ASTM D5185m         87         241            Phosphorus         ppm         ASTM D5185m         727         390            Zinc         ppm         ASTM D5185m         900         441            Sulfur         ppm         ASTM D5185m         1500         2338            Acid Number (AN)         mg KOHg         ASTM D8045         1.0         0.64	U	ppm					
Phosphorus         ppm         ASTM D5185m         727 <b>390</b> Zinc         ppm         ASTM D5185m         900 <b>441</b> Sulfur         ppm         ASTM D5185m         1500 <b>2338</b> Acid Number (AN)         mg KOHg         ASTM D8045         1.0 <b>0.64</b>	-	ppm					
Zinc         ppm         ASTM D5185m         900         441             Sulfur         ppm         ASTM D5185m         1500         2338             Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         0.64		ppm					
Sulfur         ppm         ASTM D5185m         1500         2338             Acid Number (AN)         mg KOH/g         ASTM D8045         1.0         0.64		ppm					
Acid Number (AN) mg KOH/g ASTM D8045 1.0 0.64	-	ppm					
			ASTM D5185m	1500	2338		
Visc @ 40°C cSt ASTM D445 65 51.8	. ,			1.0			
	Visc @ 40°C	cSt	ASTM D445	65	51.8		



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