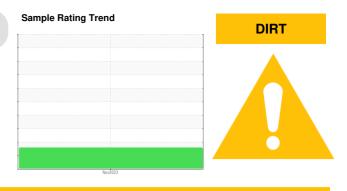


# **PROBLEM SUMMARY**

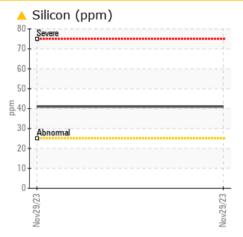


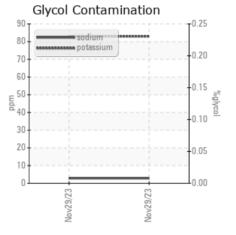
#### Area Walgreens - Tractor [Walgreens - Tractor] 136A624120 Component

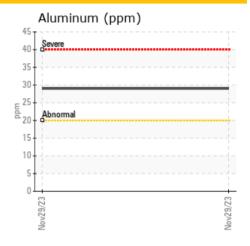
**Diesel Engine** 

### PETRO CANADA DURON SHP 10W30 (11 GAL)

### COMPONENT CONDITION SUMMARY







#### RECOMMENDATION

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

Sample Status			ABNORMAL	 	
Silicon	ppm	ASTM D5185m	>25	<u> </u>	 

Customer Id: TSV1365 Sample No.: PCA0103683 Lab Number: 06035655 Test Package: FLEET



To manage this report scan the QR code

*To discuss the diagnosis or test data:* Don Baldridge +1 <u>don.b505@comcast.net</u>

*To change component or sample information:* Customer Service +1 1-800-237-1369 <u>customerservice@wearcheck.com</u>

RECOMMENDED	RECOMMENDED ACTIONS					
Action	Status	Date	Done By	Description		
Change Fluid			?	Oil and filter change at the time of sampling has been noted.		
Change Filter			?	Oil and filter change at the time of sampling has been noted.		

### HISTORICAL DIAGNOSIS



## **OIL ANALYSIS REPORT**

#### Walgreens - Tractor Machine R [Walgreens - Tractor] 136A624120 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)

#### DIAGNOSIS

#### Recommendation

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

#### Wear

All component wear rates are normal.

#### Contamination

Elemental level of silicon (Si) above normal indicating ingress of seal material. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components.

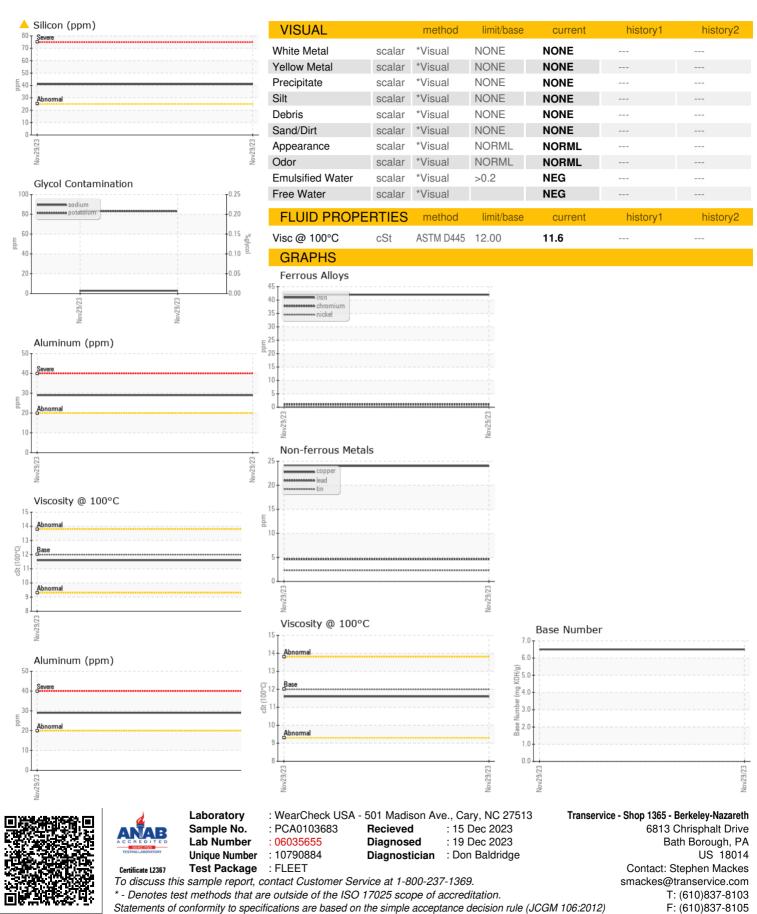
#### Fluid Condition

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

AL)    Initial constraints    Init							
SAMPLE INFORMATION    method    limit/base    current    history1    history2      Sample Number    Client Info    PCA0103883        Sample Number    Client Info    90 Nov 2023        Oli Age    mils    Client Info    30367        Oli Changed    Client Info    S0367         Sample Status    Client Info    Changed         CONTAMINATION    method    Imit/base    current    history1    history2      Sample Status    WC Method    >.0    -1.0        Mater    WC Method    >.0    41        Saycol    NetGe          Water    ppm    ASTM 05185m    >100    42        Saycol    ppm    ASTM 05185m    >20    1        Itanium    ppm    ASTM 05185m	AL)						
Sample Number    Client Info    PCA0103683        Sample Date    Client Info    29 Nov 2023        Sample Date    Client Info    30367        Dil Age    mis    Client Info    30367        Dil Changed    Client Info    30367        Dil Changed    Client Info    30367        Dil Changed    Client Info    30367        Sample Status    Imit base    current    history1    history2      Water    WC Method    >-2.0    <1.0        Water    WC Method    >-0    NEG        Water    WC Method    >-0         Nickel    ppm    ASTM 051555    >4    0        Nickel    ppm    ASTM 051555    >40    5        Romo    ppm	•						
Sample Date    Client Info    29 Nov 2023        Machine Age    mis    Client Info    30367        Oil Age    mis    Client Info    30367        Sample Status    Client Info    Changed         CONTAMINATION    method    limit/base    current    history1    history2      Fuel    WC Method    >0.0         Water    WC Method    >0.2    NEG        Glycol    WC Method    >0.0    42        Vickel    ppm    ASTM 0518m    >100    42        Nickel    ppm    ASTM 0518m    >20    1        Nickel    ppm    ASTM 0518m    >40    0        Aluminum    ppm    ASTM 0518m    >20    29        Aluminum    ppm	SAMPLE INFO	RMATION	method	limit/base	current	history1	history2
Machine Age    mis    Client Info    30367        Di Age    mis    Client Info    30367        Di Changed    Client Info    30367         Sample Status    Client Info    Changed         CONTAMINATION    method    Imit/base    current    history1    history2      Fuel    WC Method    >0.2    NEG        WEAR METALS    method    limit/base    current    history1    history2      ron    ppm    ASTM 05155m    >100    42        Vickel    ppm    ASTM 05155m    >4    0        Vickel    ppm    ASTM 05155m    >3    <1							
Dil Age    mls    Client Info    30367        Dil Changed    Client Info    Changed        Sample Status    M    Method    Securent    history1    history2      CONTAMINATION    method    limit/base    current    history1    history2      Fuel    WC Method    So.2    NEG        Water    WC Method    So.2    NEG        Water    WC Method    So.2    NEG        WEAR METALS    method    limit/base    current    history1    history2      ron    ppm    ASTM D5185m    S-100    42        Wickel    ppm    ASTM D5185m    S-20    1        Silver    ppm    ASTM D5185m    S-30    24        Copper    ppm    ASTM D5185m    S-30    24        Araadium	-						
Dil Changed    Client Info    Changed        GONTAMINATION    method    limit/base    current    history1    history2      Luel    WC Method    >2.0    <1.0	•						
Sample Status    ABNORMAL        CONTAMINATION    method    limit/base    current    history1    history2      Fuel    WC Method    >2.0    <1.0		mis					
CONTAMINATION    method    limit/base    current    history1    history2      'uel    WC Method    >2.0    <1.0	-		Client Info		-		
uel    WC Method    >2.0    <1.0       Nater    WC Method    >0.2    NEG        Slycol    WC Method    NEG        WEAR METALS    method    limit/base    current    history1    history2      ron    ppm    ASTM D5185m    >100    42        Dromium    ppm    ASTM D5185m    >20    1        Silver    ppm    ASTM D5185m    >20    29        Numinum    ppm    ASTM D5185m    >30    24        Sopper    ppm    ASTM D5185m    >15    2        Araadium    ppm    ASTM D5185m    >15    2        Araadium    ppm    ASTM D5185m    0         Adagnesium    ppm    ASTM D5185m    0    0					ADNORMAL		
Vater    WC Method    >0.2    NEG        Skycol    WC Method    NEG        WEAR METALS    method    limit/base    current    history1    history2      oron    ppm    ASTM D5185m    >100    42        bitokel    ppm    ASTM D5185m    >20    1        itiakel    ppm    ASTM D5185m    >3    <1	CONTAMINA	TION	method	limit/base	current	history1	history2
Bilycol    WC Method    NEG        VEAR METALS    method    limit/base    current    history1    history2      oron    ppm    ASTM D5185m    >100    42        Chromium    ppm    ASTM D5185m    >20    1        Lickel    ppm    ASTM D5185m    >20    29        Silver    ppm    ASTM D5185m    >20    29        Silver    ppm    ASTM D5185m    >20    29        Sopper    ppm    ASTM D5185m    >30    24        Copper    ppm    ASTM D5185m    15    2        Admadium    ppm    ASTM D5185m    0         Admadium    ppm    ASTM D5185m    0    0        Admadium    ppm    ASTM D5185m    50    59	uel		WC Method	>2.0	<1.0		
WEAR METALS    method    limit/base    current    history1    history2      Soron    ppm    ASTM D5185m    >100    42        Shronium    ppm    ASTM D5185m    >20    1        Lickel    ppm    ASTM D5185m    >4    0        Itanium    ppm    ASTM D5185m    >3    <1	Vater		WC Method	>0.2	NEG		
on    ppm    ASTM D5185m    >100    42       Chromium    ppm    ASTM D5185m    >20    1       Lickel    ppm    ASTM D5185m    >4    0       Lickel    ppm    ASTM D5185m    >3    <1	àlycol		WC Method		NEG		
Image: brownium    ppm    ASTM D5185m    >20    1        lickel    ppm    ASTM D5185m    >4    0        lickel    ppm    ASTM D5185m    >3    <1	WEAR META	LS	method	limit/base	current	history1	history2
Image: brownium    ppm    ASTM D5185m    >20    1        lickel    ppm    ASTM D5185m    >4    0        lickel    ppm    ASTM D5185m    >3    <1			ASTM D5185m	>100	42		
lickel    ppm    ASTM D5185m    >4    0        ittanium    ppm    ASTM D5185m    >3    <1	-						
Itanium    ppm    ASTM D5185m    0        Silver    ppm    ASTM D5185m    >3    <1							
Silver    ppm    ASTM D5185m    >3    <1        aduminum    ppm    ASTM D5185m    >20    29        ead    ppm    ASTM D5185m    >40    5        bopper    ppm    ASTM D5185m    >15    2        fanadium    ppm    ASTM D5185m    >15    2        Adamium    ppm    ASTM D5185m    >15    2        ADDITIVES    method    limit/base    current    history1    history2      Adamium    ppm    ASTM D5185m    0    0        ADDITIVES    method    160/base    current    history1    history2      Adagnesium    ppm    ASTM D5185m    0    0					-		
Numinum    ppm    ASTM D5185m    >20    29        ead    ppm    ASTM D5185m    >40    5        copper    ppm    ASTM D5185m    >330    24        in    ppm    ASTM D5185m    >15    2        anadium    ppm    ASTM D5185m    >15    2        anadium    ppm    ASTM D5185m    >15    2        ADDITIVES    method    limit/base    current    history1    history2      Adopdenum    ppm    ASTM D5185m    0    0        Maganese    ppm    ASTM D5185m    0    44        Adagnesium    ppm    ASTM D5185m    950    478        Adagnesium    ppm    ASTM D5185m    995    1016        Astm D5185m    995    1016				>3	<1		
ead    ppm    ASTM D5185m    >40    5        Sopper    ppm    ASTM D5185m    >330    24        anadium    ppm    ASTM D5185m    >15    2        anadium    ppm    ASTM D5185m    0         ADDITIVES    method    limit/base    current    history1    history2      foron    ppm    ASTM D5185m    0    0        Adaganese    ppm    ASTM D5185m    0    0        Agagesium    ppm    ASTM D5185m    0    4778        Agagesium    ppm    ASTM D5185m    950    4778        Agagesium    ppm    ASTM D5185m    950    1016	luminum		ASTM D5185m	>20	29		
Dopper    ppm    ASTM D5185m    >330    24        ranadium    ppm    ASTM D5185m    >15    2        ranadium    ppm    ASTM D5185m    0        Additium    ppm    ASTM D5185m    0        ADDITIVES    method    limit/base    current    history1    history2      Aoron    ppm    ASTM D5185m    0    0        Adolybdenum    ppm    ASTM D5185m    0    59        Aganesium    ppm    ASTM D5185m    0    4        Adagnesium    ppm    ASTM D5185m    950    4778        Adagnesium    ppm    ASTM D5185m    1050    1848        Adagnesium    ppm    ASTM D5185m    2600    2912        Goodum    ppm    ASTM D5185m    225	ead		ASTM D5185m	>40	5		
Tim    ppm    ASTM D5185m    >15    2        Aranadium    ppm    ASTM D5185m    0         Admium    ppm    ASTM D5185m    0         ADDITIVES    method    limit/base    current    history1    history2      Adrium    ppm    ASTM D5185m    2    39        Adata    ppm    ASTM D5185m    0    0        Molybdenum    ppm    ASTM D5185m    50    59        Aaganese    ppm    ASTM D5185m    0    478        Adagnesium    ppm    ASTM D5185m    950    4778        Adagnesium    ppm    ASTM D5185m    950    1016        Adagnesium    ppm    ASTM D5185m    955    1016        Solifur    ppm    ASTM D5185m	Copper		ASTM D5185m	>330	24		
Addmium    ppm    ASTM D5185m    0        ADDITIVES    method    limit/base    current    history1    history2      karon    ppm    ASTM D5185m    2    39        Molybdenum    ppm    ASTM D5185m    0    0        Maganese    ppm    ASTM D5185m    50    59        Maganese    ppm    ASTM D5185m    0    4        Maganese    ppm    ASTM D5185m    950    478        Adagnesium    ppm    ASTM D5185m    995    1016        Mosphorus    ppm    ASTM D5185m    995    1016        Sulfur    ppm    ASTM D5185m    2600    2912        CONTAMINANTS    method    limit/base    current    history1    history2      Sodium    ppm    ASTM D5185m    >20		ppm	ASTM D5185m	>15	2		
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m239BariumppmASTM D5185m00MolybdenumppmASTM D5185m5059ManganeseppmASTM D5185m04MagnesiumppmASTM D5185m950478DatciumppmASTM D5185m10501848CalciumppmASTM D5185m9951016PhosphorusppmASTM D5185m11801201PotosphorusppmASTM D5185m26002912CONTAMINANTSmethodlimit/basecurrenthistory1history2SolfurppmASTM D5185m>2083INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7624>208.7FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2DxidationAbs/:mm*ASTM D7414>2518.9	/anadium	ppm	ASTM D5185m		0		
Boron    ppm    ASTM D5185m    2    39        Barium    ppm    ASTM D5185m    0    0	Cadmium	ppm	ASTM D5185m		0		
Barium    ppm    ASTM D5185m    0    0        Molybdenum    ppm    ASTM D5185m    50    59        Manganese    ppm    ASTM D5185m    0    4        Magnesium    ppm    ASTM D5185m    950    478        Calcium    ppm    ASTM D5185m    950    478        Calcium    ppm    ASTM D5185m    1050    1848        Phosphorus    ppm    ASTM D5185m    995    1016        Sulfur    ppm    ASTM D5185m    2600    2912        CONTAMINANTS    method    limit/base    current    history1    history2      Solicon    ppm    ASTM D5185m    >20    83        Solicon    ppm    ASTM D5185m    >20    83        INFRA-RED    method    limit/base <td>ADDITIVES</td> <td></td> <td>method</td> <td>limit/base</td> <td>current</td> <td>history1</td> <td>history2</td>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum    ppm    ASTM D5185m    50    59        Manganese    ppm    ASTM D5185m    0    4          Magnesium    ppm    ASTM D5185m    950    478	Boron	ppm	ASTM D5185m	2	39		
Aarganese  ppm  ASTM D5185m  0  4      Magnesium  ppm  ASTM D5185m  950  478      Calcium  ppm  ASTM D5185m  1050  1848      Calcium  ppm  ASTM D5185m  1050  1848      Phosphorus  ppm  ASTM D5185m  995  1016      Contract  ppm  ASTM D5185m  995  1016      Sulfur  ppm  ASTM D5185m  2600  2912      CONTAMINANTS  method  limit/base  current  history1  history2    Solicon  ppm  ASTM D5185m  >20  83      Sodium  ppm  ASTM D5185m  >20  83      INFRA-RED  method  limit/base  current  history1  history2    Soot %  %  *ASTM D7624  >20  8.7      Soot % <t< td=""><td>Barium</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><td>0</td><td></td><td></td></t<>	Barium	ppm	ASTM D5185m	0	0		
Astm    Astm    D5185m    950    478        Calcium    ppm    ASTM D5185m    1050    1848        Phosphorus    ppm    ASTM D5185m    995    1016        Cinc    ppm    ASTM D5185m    1180    1201        Sulfur    ppm    ASTM D5185m    2600    2912        CONTAMINANTS    method    limit/base    current    history1    history2      Silicon    ppm    ASTM D5185m    >25    41        Contassium    ppm    ASTM D5185m    >20    83        NFRA-RED    method    limit/base    current    history1    history2      Soot %    %    *ASTM D7844    >3    0.3        Iltration    Abs/cm    *ASTM D7414    >20    8.7        FLUID DEGRADATION    method    limit/bas	lolybdenum	ppm	ASTM D5185m	50	59		
Control    Ppm    ASTM D5185m    1050    1848        Phosphorus    ppm    ASTM D5185m    995    1016        Sulfur    ppm    ASTM D5185m    1180    1201        Sulfur    ppm    ASTM D5185m    2600    2912        CONTAMINANTS    method    limit/base    current    history1    history2      Silicon    ppm    ASTM D5185m    >25    41        Sodium    ppm    ASTM D5185m    >25    41        Sodium    ppm    ASTM D5185m    >20    83        INFRA-RED    method    limit/base    current    history1    history2      Soot %    %    *ASTM D7624    >20    8.7        Soot %    %    *ASTM D7624    >20    8.7        Soot %    %    *ASTM D762	langanese	ppm	ASTM D5185m	0	4		
Phosphorus    ppm    ASTM D5185m    995    1016        Cinc    ppm    ASTM D5185m    1180    1201        Gulfur    ppm    ASTM D5185m    2600    2912        CONTAMINANTS    method    limit/base    current    history1    history2      Godium    ppm    ASTM D5185m    >25    41        Godium    ppm    ASTM D5185m    >25    41        Godium    ppm    ASTM D5185m    >20    83        INFRA-RED    method    limit/base    current    history1    history2      Goot %    %    *ASTM D7844    >3    0.3        Goot %    %    *ASTM D7624    >20    8.7        Goot %    %    *ASTM D7624    >20    8.7        Gulfation    Abs/cm    *ASTM D7624 <th< td=""><td>lagnesium</td><td>ppm</td><td>ASTM D5185m</td><td>950</td><td>478</td><td></td><td></td></th<>	lagnesium	ppm	ASTM D5185m	950	478		
Pipe    ASTM D5185m    1180    1201        Sulfur    ppm    ASTM D5185m    2600    2912        CONTAMINANTS    method    limit/base    current    history1    history2      Solicon    ppm    ASTM D5185m    >25    41        Solicon    ppm    ASTM D5185m    >25    41        Solicon    ppm    ASTM D5185m    >25    41        Solicon    ppm    ASTM D5185m    >20    83        Potassium    ppm    ASTM D5185m    >20    83        INFRA-RED    method    limit/base    current    history1    history2      Soot %    %    *ASTM D7844    >3    0.3        Soot %    %    *ASTM D7624    >20    8.7        Sulfation    Abs/.1mm    *ASTM D7415 <td< td=""><td>Calcium</td><td>ppm</td><td>ASTM D5185m</td><td>1050</td><td>1848</td><td></td><td></td></td<>	Calcium	ppm	ASTM D5185m	1050	1848		
BullfurppmASTM D5185m26002912CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25▲ 41SodiumppmASTM D5185m>2083PotassiumppmASTM D5185m>20833INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.3IlitrationAbs/cm*ASTM D7624>208.7FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2518.9	hosphorus	ppm	ASTM D5185m	995	1016		
CONTAMINANTS  method  limit/base  current  history1  history2    Silicon  ppm  ASTM D5185m  >25  ▲ 41      Sodium  ppm  ASTM D5185m  >25  ▲ 41      Sodium  ppm  ASTM D5185m  >20  83      Potassium  ppm  ASTM D5185m  >20  83      INFRA-RED  method  limit/base  current  history1  history2    Soot %  %  *ASTM D7844  >3  0.3      Soot %  %  *ASTM D7624  >20  8.7      Bulfation  Abs/cm  *ASTM D7415  >30  21.8      FLUID DEGRADATION  method  limit/base  current  history1  history2    Oxidation  Abs/.1mm  *ASTM D7414  >25  18.9	linc	ppm	ASTM D5185m	1180	1201		
Silicon  ppm  ASTM D5185m  >25  41      Sodium  ppm  ASTM D5185m  >20  83      Potassium  ppm  ASTM D5185m  >20  83      INFRA-RED  method  limit/base  current  history1  history2    Soot %  %  *ASTM D7844  >3  0.3      Soot %  %  *ASTM D7624  >20  8.7      Soot %  %  *ASTM D7624  >20  8.7      Sulfation  Abs/cm  *ASTM D7415  >30  21.8      FLUID DEGRADATION  method  limit/base  current  history1  history2    Oxidation  Abs/.1mm  *ASTM D7414  >25  18.9	Sulfur	ppm	ASTM D5185m	2600	2912		
Sodium    ppm    ASTM D5185m    3        Potassium    ppm    ASTM D5185m    >20    83        INFRA-RED    method    limit/base    current    history1    history2      Soot %    %    *ASTM D7844    >3    0.3        Nitration    Abs/cm    *ASTM D7624    >20    8.7        Sulfation    Abs/.1mm    *ASTM D7415    >30    21.8        FLUID DEGRADATION    method    limit/base    current    history1    history2      Oxidation    Abs/.1mm    *ASTM D7414    >25    18.9	CONTAMINA	NTS	method	limit/base	current	history1	history2
PotassiumppmASTM D5185m>2083INFRA-REDmethodlimit/basecurrenthistory1history2Goot %%*ASTM D7844>30.3JitrationAbs/cm*ASTM D7624>208.7GulfationAbs/.1mm*ASTM D7415>3021.8FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2518.9	Silicon	ppm	ASTM D5185m	>25	<b>4</b> 1		
INFRA-RED  method  limit/base  current  history1  history2    Soot %  %  *ASTM D7844  >3  0.3      Jitration  Abs/cm  *ASTM D7624  >20  8.7      Sulfation  Abs/.1mm  *ASTM D7415  >30  21.8      FLUID DEGRADATION  method  limit/base  current  history1  history2    Dxidation  Abs/.1mm  *ASTM D7414  >25  18.9	Sodium	ppm	ASTM D5185m		3		
Soot %    %    *ASTM D7844    >3    0.3        Jitration    Abs/cm    *ASTM D7624    >20    8.7        Sulfation    Abs/.1mm    *ASTM D7415    >30    21.8        FLUID DEGRADATION    method    limit/base    current    history1    history2      Dxidation    Abs/.1mm    *ASTM D7414    >25    18.9	Potassium	ppm	ASTM D5185m	>20	83		
Nitration    Abs/cm    *ASTM D7624    >20    8.7        Sulfation    Abs/.1mm    *ASTM D7415    >30    21.8        FLUID DEGRADATION    method    limit/base    current    history1    history2      Dxidation    Abs/.1mm    *ASTM D7414    >25    18.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation  Abs/.1mm  *ASTM D7415  >30  21.8      FLUID DEGRADATION  method  limit/base  current  history1  history2    Dxidation  Abs/.1mm  *ASTM D7414  >25  18.9	Soot %	%	*ASTM D7844	>3	0.3		
FLUID DEGRADATION    method    limit/base    current    history1    history2      Dxidation    Abs/.1mm    *ASTM D7414    >25    18.9	litration	Abs/cm	*ASTM D7624	>20	8.7		
Dxidation    Abs/.1mm    *ASTM D7414    >25    18.9	Sulfation	Abs/.1mm	*ASTM D7415	>30	21.8		
	FLUID DEGRA		method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 6.5	Dxidation	Abs/.1mm	*ASTM D7414	>25	18.9		
	ase Number (BN)	mg KOH/g	ASTM D2896		6.5		

Sample Rating Trend

DIRT



OIL

DIAGNOSTICS

Contact/Location: Stephen Mackes - TSV1365