



Canadian Natural

DETECHTION

Report Date: April 17, 2025

Module Setup 3519 - Martin Birley C1			
Detection Number	3519	Asset Name	Martin Birley C1
Client Asset #	3519	Asset Location	a-48-G/94-H-06
Asset Type	Recip	Recipient Location	
Latitude	57.36875	Elevation - fast	2529
Longitude	-121.215625	Time Zone	Canada/Mountain
Area	Fort St. John North	Field	3170 - Tommy Lakes
Foreman	Gordon Vibert		
Operator	Kelly Batten	Province/State	British Columbia
Packager Name		Package Serial #	
Package Manufacturer Date			
Noise Suppression Installed		Asset Sound Level (dB)	0
Noise Suppression Description			
Cost Center Code	80113132		
Eub License Num		Environmental Registration #	
Asset Properties			
Gas Working Interest %	100	Gas Pricing - \$/mscf	3.25
Skid Type	Housed	Electricity Pricing - \$/kWh	0.089
Oil Pricing - (\$/bbl)	60	NGL Pricing - (\$/bbl)	13
NGL Production - (bbl/MMSCF)		Oil Production - (bbl/day)	
NGL Energy Density - (MMBtu/bbl)	4		
Optimization Limit	Not Reviewed	Sour Service	No
Asset Application	Gathering		
Ownership Status	Owned	Vibration Planes	1
Disable HP Savings CFR Due To Bypass	No		
Setup Date	4/30/2014	Setup Fee	Setup Fee # 2
		Enalysis Fee	Enalysis Fee # 1
Active Status	Surplus	Using Maintenance	No
Surplus Condition	Unknown		
Stand-by	Yes	Using SCADA	Yes
Remote Asset ID	3519		
Reason Unit is not Operating	Facility shut in per Mike Wilders, January 15, 2016		

Gas Analysis 3519 - Martin Birley C1			
Stream Name	Inlet Stream	Fuel Gas	
Stream Type	Inlet Stream	Fuel Gas	
Sample Date	05/16/2013	08/19/2013	
Hydrogen	0.0001	0.0001	
Helium	0.0001	0.0001	
Nitrogen	0.0029	0.0028	
Carbon Dioxide	0.0112	0.0111	
Hydrogen Sulfide	0.0000	0.0000	
Methane	0.8104	0.8114	
Ethane	0.0961	0.0955	
Propane	0.0465	0.0465	
ISO Butane	0.0061	0.0061	
Normal Butane	0.0138	0.0138	
ISO Pentane	0.0034	0.0034	
Normal Pentane	0.0039	0.0040	
Hexane	0.0028	0.0028	
Heptane	0.0013	0.0013	
Octane	0.0014	0.0011	
Oxygen	0.0000	0.0000	
Ammonia	0.0000	0.0000	
Water	0.0000	0.0000	
Pseudo Critical Temperature Adjustment	2.02	2	
Specific Gravity	0.716	0.715	
Dehydrated Gas	Yes	Yes	
Temperature Base - °F	60	60	
Pressure Base - psia	14.696	14.696	

Driver Setup 3519 - Martin Birley C1			
Manufacturer	Waukesha	Model	L7042GL
Serial Number	C-116032	Asset Tracking Number	
Driver Type	Turbo	Engine Manufacturer Date	
Engine Configuration	V	Number of Cylinders	12
Compression Ratio	10.5		
Rated rpm	1200	Min rpm	900
Max Horsepower @Sea Level	1478	Max Derated Horsepower	1437
Min Horsepower @Sea Level	1108	Min Derated Horsepower	1077
Fuel Requirements - Btu/hphr	7284	Inlet Stream LHV - Btu/ft³	1112.74
Engine Timing - BTDC °	4	Air / Fuel Ratio	16.8
Max Boost - psig	14.36	Max Engine Exhaust Temp - °F	708
Exhaust Flow - cfm	8108	Exhaust O2 %	9.8
Max Engine NOx - g/bhp-hr	1.5	Max Engine CO - g/bhp-hr	2.65
Max Engine CO2 - g/bhp-hr	444.2	Overall Exhaust dB @ 1.5m	112
Water Pump - hp	29.56	Other Auxiliary Draw - hp	0
Max Top End Overhaul Hours	999999	Max BTTM End Overhaul Hours	999999
Max Oil Change Hours	999999	Ambient Operating Temp - °F	60
Gear Ratio	1	Compressor rpm @ Rated Driver rpm	1200
Intake Valve Recession Limit	0.06	Exhaust Valve Recession Limit	0.06
Valves per Cylinder	2	Stroke Type	
Burn Type		Burn Type Effective Date	
Engine Muffler Make		Engine Muffler Model	
Engine Muffler Serial Number		Engine Coolant Type	
Catalytic Converter Installed	N/A		
Catalytic Converter Make		Catalytic Converter Model	
Catalytic Converter Serial Number		Element Installed	

Engine Flags Setup 3519 - Martin Birley C1									
Pressure - psig	High	High	Low	Low	Temperature - °F	High	High	Low	Low
Oil Header	75	63	35	30	Oil Header	205	195	170	140
Jacket	21.7	18	7	2.5	Jacket	200	190	170	150
Fuel Gas	65	60	50	43	Fuel Gas	140	130	-10	-20
Intercooler	21.7	18	7	2.5	Intercooler	150	137	124	110
Intake Manifold	14.7	13	10	7	Intake Manifold	160	155	130	110
					Exhaust Manifold	900	860	760	685
					Aux. Water	140	130	120	100
					Cylinder Deviation	75			

Frame Setup 3519 - Martin Birley C1			
Manufacturer	Superior	Model	Ram54
Serial Number	329230	Asset Tracking Number	
Manufacturer Date Frame		Stroke - inches	5
Number of Throws	4	Number of Stages	3
Unloader Type	None		
Rod Load Type	External		
Max Compression - lbs	30000	Max Tension - lbs	30000
Total Max Rod Load - lbs	0		
Dynamic Max Compression - lbs	30000	Dynamic Max Tension - lbs	30000
Max Overhaul Hours	999999	Max Horsepower	2375
Rated rpm	1500	Min rpm	750

Cylinder Setup		3519 - Martin Birley C1			
Stage	1	1	2	3	
Throw	2	4	3	1	
Cylinder Model	418CC	418CC	412CC	427CC	
Dummy Cylinder	No	No	No	No	
Cylinder Serial #	328281	328282	330857	324782	
Cylinder MAWP - psig	330	330	660	1375	
Lube Status	Lube	Lube	Lube	Lube	
Cylinder Action	DA	DA	DA	DA	
Cylinder Diameter - inches	16	16	11	7.75	
Rod Diameter - inches	2	2	2	2	
Tail Rod Diameter - inches	0	0	0	0	
Associated Gas Stream	Inlet Stream	Inlet Stream	Inlet Stream	Inlet Stream	
Orifice Data					
Suct. Internal Pipe Diam. - inches	10.119	10.119	6.875	4.897	
Suct. Orifice Diam. - inches	4.658	4.658	4.064	2.884	
Disc. Internal Pipe Diam. - inches	6.875	6.875	4.897	3.152	
Disc. Orifice Diam. - inches	3.249	3.249	3.173	1.992	
Cylinder Heating/Cooling Factor		3519 - Martin Birley C1			
Heating/Cooling Factor - %	0	0	0	0	
Cylinder Blowby Thresholds		3519 - Martin Birley C1			
SA Severe Threshold - %	20	20	20	20	
SA Warning Threshold - %	12	12	12	12	
DA Severe Threshold - %	15	15	15	15	
DA Warning Threshold - %	7	7	7	7	
Deviation Severe Threshold - %	1000	1000	1000	1000	
Deviation Warning Threshold - %	10	10	10	10	

Valve Setup		3519 - Martin Birley C1			
Stage	1	1	2	3	
Throw	2	4	3	1	
HE Suction Valve Resist VHDS	4.44	4.44	4.44	4.44	
HE Suction Valve Quantity	2	2	2	1	
HE Suction Valve Lift - inches	0.094	0.094	0.094	0.094	
HE Suction Valve Area - sq. in .	13.38	13.38	7.01	8.37	
HE Discharge Valve Resist VHDS	4.44	4.44	4.44	4.44	
HE Discharge Valve Quantity	2	2	2	1	
HE Discharge Valve Lift - inches	0.094	0.094	0.094	0.094	
HE Discharge Valve Area - sq. in .	13.38	13.38	7.01	8.37	
CE Suction Valve Resist VHDS	4.44	4.44	4.44	4.44	
CE Suction Valve Quantity	2	2	2	1	
CE Suction Valve Lift - inches	0.094	0.094	0.094	0.094	
CE Suction Valve Area - sq. in.	13.38	13.38	7.01	8.37	
CE Discharge Valve Resist VHDS	4.44	4.44	4.44	4.44	
CE Discharge Valve Quantity	2	2	2	1	
CE Discharge Valve Lift - inches	0.094	0.094	0.094	0.094	
CE Discharge Valve Area - sq. in .	13.38	13.38	7.01	8.37	
Suction Valve Manufacturer					
Suction Valve Model					
Suction Valve Type					
Discharge Valve Manufacturer					

Discharge Valve Model						
Discharge Valve Type						

Clearance Setup		3519 - Martin Birley C1			
Stage	1	1	2	3	
Throw	2	4	3	1	
HE Clearance Min - %	11.7	11.7	16	18	
HE Clearance Max - %	36.7	36.7	68.89	68.36	
Max Pocket Travel - inches	5	5	5	5	
HE Spacers Max Quantity	0	0	0	0	
HE Clearance per Spacer - %	0	0	0	0	
CE Clearance Min - %	11.8	11.8	16.2	20	
CE Clearance Max - %	11.8	11.8	16.2	20	
CE Spacers Max Quantity	0	0	0	0	
CE Clearance per Spacer - %	0	0	0	0	

Reciprocating Setup		3519 - Martin Birley C1			
Stage	1	1	2	3	
Throw	2	4	3	1	
Con. Rod Length - inches	12	12	12	12	
1/3 Con Rod Weights - lbs.	0	0	0	0	
Crosshead Pin Weight - lbs.	0	0	0	0	
Piston Weight - lbs.	0	0	0	0	
Rod Weight - lbs.	0	0	0	0	
Crosshead Weight - lbs.	0	0	0	0	
Balance Weight Added - lbs.	253.99	253.99	253.99	253.99	
Total Weight - lbs.	253.99	253.99	253.99	253.99	

Aerial Cooler Setup 3519 - Martin Birley C1			
Manufacturer	Air-X-Changer	Model	156EH
Serial Number	964129A	Horsepower Draw	59.12
Coolant Type		Rated RPM	0
Blade RPM		Blade Diameter	
Electricity Draw			

Stage	1	2	3			
Design Pressure MAWP - psig	655	655	1315			
Required Temperature Out - °F	120	120	120			
Estimated Pressure Drop - psig	5	5	5			
Max Design Temperature - °F	300	300	300			
# of Passes/Section						
# of Tubes/Section						
# of Rows						
Tube O.D. - inches						
Tube Gauge						
Tube I.D. - inches						
Length of Tubes - feet						
Tube Material - feet						
Corrosion Allowance - inches						
Fouling Factor						
Ambient Air Design Temp - °F						

Design Conditions Setup 3519 - Martin Birley C1						
Stage	1	2	3			
PSV Setting - psig	330	655	1315			
Max Discharge Valve Temp - °F	299.99	299.99	299.99			
Piping/Bottles Max Temp - °F	299.99	299.99	299.99			
Discharge Piping/Bottles MAWP - psig						

Reporting Compliance 3519 - Martin Birley C1	
Set Expected Interval	No

Group Assignment

Group Designation	Group Effective Date	
Designated to Subset	Subset Effective Date	
Low Use	Low Use Effective Date	
Engine Registration Type		

Engine Properties

Burn Type	Burn Type Effective Date	
Stroke Type		
Emission Control Systems Type	Emission Control Systems Type if Other	
Emission control systems before or on March 31, 2020?	Emission Control Systems Effective Date	

Module Properties

Year Organization Became Responsible Person	Company Role	
If Owner, owned before 2016-06-17?	Date of ownership if on or after June 17, 2016	
Internal ID		
Requesting unique identifier?	Reason for requesting unique identifier	
Unique Alphanumeric Identifier		
Records located at facility?	Records Location	
Has sample port	Sample port description	
Sample port required equipment		

NOx Assignment

NOx Emission Type	NOx Value	
NOx Unit of Measure	NOx Effective Date	
Schedule Preference		

Facility Assignment

Facility	Facility Effective Date	
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Additional Responsible Persons Assignment**Registration Dates**

Registered Date	Last Updated Date	
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Linked Modules 3519 - Martin Birley C1

Links to related asset modules.

