

# Centermount Coal Ltd.

## 加拿大中山焦煤有限公司

The following are Bingay and East Kootenay area clean coal qualities:

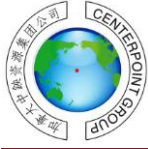
下面为滨盖和东库特尼区域煤矿的精煤质量:

	Bingay Standard MV JM 滨盖标准 中度挥发焦煤	East Kootenay area MV JM 东库特尼区域中度挥发焦煤
Ash 灰分 (adb)	9.6%	9.0%
Total Sulphur 全硫	0.48%	0.70%
Volatile Matter (adb) 挥发分	27.9%	27.5%
Y mm	15 to 17.5	15

Other Bingay and East Kootenay area MV JM clean coal qualities are:

其他的滨盖和东库特尼区域煤矿焦煤精煤:

Residual Moisture 内在水分	0.6%	0.7%
Fixed Carbon 固定碳	61.9%	63.3%
Phosphorus 磷	0.043%	0.075%
FSI 坍塌膨胀系数	6	8
HGI 哈氏可磨指数	73	80
Romax 最大镜质	1.02	1.09
CSR 焦炭反应后强度	66-68	68-71
CRI 焦炭反应性指数	24-25	18-22
Maximum fluidity 最大流动度	80 ddpm	600 ddpm
Caking Index G 焦炭指数 G	93	91
Sopaznikov x	26.5 mm	18 mm

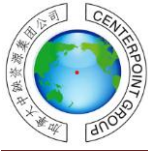


# Centermount Coal Ltd.

## 加拿大中山焦煤有限公司

### East Kootenay area and Bingay coal quality comparison sheet 东库特尼区域煤矿与滨盖煤质比较表

		East Kootenay area coking coal quality 东库特尼区域炼焦煤标准特性				Bingay 滨盖
		Area 1 区域 1	Area2 区域 2	Area3 区域 3	Area4 区域 4	
Updated: Feb 09, 2010						
<b>Proximate Analysis (db)</b> 化学分析						
Moisture as Received	全水分	% 9.0	9.0	9.0	9.0	9.0
Residual Moisture	内在水分	% 0.5	0.6	0.6	0.7	0.6
Ash (adb)	灰分	% 9.5(+0.5)	9.5(+0.5)	8.75 (+0.5)	8.5 (+0.3)	9.5
Volatile Matter (adb)	挥发分	% 21.0(20.0-22.0)	23.5(22.5-24.5)	25.5(24.5-26.5)	27.5(26.5-28.5)	27.9
Fixed Carbon (adb)	固定碳	% 69.0	66.4	65.15	63.3	62
Sulphur (adb)	硫	% 0.40(Max 0.45)	0.50 (Max 0.55)	0.65 (Max 0.70)	0.70(Max 0.75)	0.5
Phosphorus (db)	磷	% 0.065	0.070	0.075	0.070	0.043
FSI	坍塌膨胀系数	7.0 (6-8)	7.5 (7-8)	7.5 (7-9)	8.0 (7-9)	6.0
HGI	哈氏可磨指数	85	83	83	80	70
<b>Vitrinite Types</b> 岩相分析						
V8		%			1	
V9		% 2	2	9	14	
V10		% 4	9	38	47	
V11		% 9	30	33	28	
V12		% 20	37	12	8	
V13		% 44	16	6	2	
V14		% 18	6	2		
V15		% 3				
Vitrinite Reflectance Rom	最大平均反射率	% 1.31±0.03	1.22±0.05	1.12±0.05	1.08±0.05	1.02
<b>Maceral Analysis</b> 显微煤岩组成						
Vitrinite	镜质组	% 51.0	54.5	59.5	65.3	61.0
Reactive Semi-fusinite	活性半丝质组	% 15.5	13.5	12.0	8.5	12.9
Exinite	亮质组	% 0.5	1.0	1.5	1.7	1.1
<b>Total Reactives</b>	总活性组分	% 67.0±5	69.0±5	73.0±5	75.5±5	75.0
<b>INERTS</b> 惰性组分						
Semi-fusinite	惰性半丝质组	% 15.6	13.5	12.0	12.0	12.9
Micrinite etc	微粒体等	% 3.0	3.0	2.8	2.0	2.1
Fusinite	丝质组	% 8.9	9.0	7.2	6.0	4.4
Mineral Matter	矿物质	% 5.5	5.5	5.0	4.5	5.6
<b>Total Inerts</b>	总惰性组分	% 33.0±5	31.0±5	27.0±5	24.5±5	25.0
<b>Gieseler Plasticity</b> 基氏流动度						
Plastic Range	塑性范围	°C 66	75	73	72	50
Max Fluidity	最大流动度	ddpm 60 (10-100)	150 (50-250)	300 (200-500)	600(450-850)	300
<b>Dilatation</b> 膨胀度						
Contraction	a	% 25	25	25	25	24
Dilatation	b	% 5	35	65	105	100
<b>Total Dilatation</b>		30±10	60±10	90±20	130±30	124
<b>Coke Indices</b> 焦炭强度						
Micum M40	米贡抗碎强度	% 81.0	80.0	80.0	78.0	
Micum M10	米贡耐磨强度	% 6.5	7.2	6.8	7.4	
CRI	CSI	% 21 - 23	20 - 23	18 - 22	18 - 22	20
CSR	CSR	% 70 - 74	70 - 74	70 - 74	68 - 71	68
<b>Sopaznikov</b>						
X	X 值	mm 22	24	22	18	20
Y	Y 值	mm 11	13	13.5	15	17
<b>Caking Index G</b>	粘结指数 G 值	75	80	87	91	93



# Centermount Coal Ltd.

## 加拿大中山焦煤有限公司

			Area 1 区域 1	Area2 区域 2	Area3 区域 3	Area4 区域 4	Bingay 滨盖
<b>SIZE (mm)-% passing</b>	<b>粒度分析</b>						
2" (50mm)	%		100	100	100	100	
1/8" (3.4mm)	%		77	75	74	74	
32 Mesh (0.5mm)	%		36	38	37	35	
100 Mesh (0.15mm)	%		13	14	14	13	
<b>Ultimate Analysis (db)</b>	<b>元素分析</b>						
Carbon	碳	%	82.0	81.2	81.7	82.6	
Hydrogen	氢	%	4.3	4.4	4.5	4.7	
Nitrogen	氮	%	1.3	1.2	1.2	1.3	
Ash	灰份	%	9.5	9.6	8.8	8.6	
Sulphur	硫	%	0.4	0.5	0.65	0.7	
Oxygen	氧	%	2.5	3.1	3.15	2.1	
<b>Ash Analysis (db)</b>	<b>灰成分</b>						
SiO <sub>2</sub>	%		57.9	57.5	56.9	58.1	<b>60.3</b>
Al <sub>2</sub> O <sub>3</sub>	%		28.6	29.9	28.9	26.9	<b>27.9</b>
TiO <sub>2</sub>	%		1.7	1.7	1.7	1.5	<b>1.7</b>
Fe <sub>2</sub> O <sub>3</sub>	%		3.3	3.9	3.9	4.6	<b>2.7</b>
CaO	%		2.9	1.9	2.2	1.9	<b>2.5</b>
MgO	%		0.6	0.6	0.6	0.6	<b>0.6</b>
K <sub>2</sub> O	%		0.7	0.9	1.1	1.2	<b>0.7</b>
Na <sub>2</sub> O	%		0.1	0.1	0.1	0.1	<b>0.1</b>
P <sub>2</sub> O <sub>5</sub>	%		1.56	1.68	1.95	1.87	<b>1.65</b>
SO <sub>3</sub>	%		1.1	0.8	0.8	0.8	<b>0.34</b>
Other/Undetermined	%		1.54	1.02	1.85	2.43	<b>1.51</b>
<b>Carbonization</b>	<b>炼焦试验</b>						
Max. Wall Pressure	最大炉墙压力	kPa	2.0	2.0	3.0	5.0	
Sole Heated Oven Expans.	收缩度	%	-10.0	-10.0	-9.0	-10.0	
<b>Ash Fusion (Reducing)</b>	<b>灰熔点</b>						
Initial temperature	变形温度	°C	+1482	+1482	+1482	+1482	<b>+1480</b>
Softening temperature	软化温度	°C	+1482	+1482	+1482	+1482	<b>+1480</b>
Hemispherical temperature	半球温度	°C	+1482	+1482	+1482	+1482	<b>+1480</b>
Fluid temperature	流动温度	°C	+1482	+1482	+1482	+1482	<b>+1480</b>

### Conclusion:

#### 结论:

The Bingay Coal Quality is similar to East Kootenay area Medium Volatile coal. Based on drilling and trenching coal results, Bingay Coal is classed as Medium Volatile coking coal which is 70 % of the resource, and is considered as JM (coking coal) in the Chinese standards. The remaining 30% is fat coking coal with 10% being low ash class.

滨盖煤质和东库特尼区域中度挥发焦煤类似。基于钻孔和刨槽的结果，滨盖的煤，70%为中度挥发焦煤，即中国的JM（焦煤），20%为肥焦煤，10%为低灰肥焦煤。