

1 **Q. Please state your name, business address, and present position with**  
2 **PacifiCorp dba Rocky Mountain Power (“the Company”).**

3 A. My name is Cindy A. Crane. My business address is 1407 West North Temple,  
4 Suite 310, Salt Lake City, Utah 84116. My position is Vice President, Interwest  
5 Mining Company and Fuel Resources for PacifiCorp Energy.

6 **Qualifications**

7 **Q. Briefly describe your business experience.**

8 A. I joined PacifiCorp in 1990 and have held positions of increasing responsibility,  
9 including Director of Business Systems Integration, Managing Director of  
10 Business Planning and Strategic Analysis and Vice President of Strategy and  
11 Division Services. My responsibilities have included the management and  
12 development of PacifiCorp’s 10-year business plan, assessing individual business  
13 strategies for PacifiCorp Energy, managing the construction of the Company’s  
14 Wyoming wind plants and assessing the feasibility of a nuclear power plant. In  
15 March 2009, I was appointed to my present position as Vice President of  
16 Interwest Mining Company and Fuel Resources. In my position I am responsible  
17 for the operations of Energy West Mining Company and Bridger Coal Company  
18 as well as overall coal supply acquisition and fuel management for PacifiCorp’s  
19 coal plants.

20 **Purpose and Summary**

21 **Q. What is the purpose of your testimony?**

22 A. I explain the Company’s overall approach to providing the coal supply for the  
23 Company’s coal plants and support for the level of coal costs included in fuel

24 expense in this case. Several of the Company's very favorably priced long-term  
25 coal purchase agreements terminated in 2011 and have been replaced with new  
26 agreements at prevailing market prices or contain market reopener provisions that  
27 allow resetting of the contract price. As these contracts expire they must be  
28 renegotiated and replaced at prices reflective of the current market.

29 **Q. Please summarize your testimony.**

30 A. My testimony:

- 31 • Explains the primary causes of the \$47.6 million price related to the coal cost  
32 increase reflected in the Utah general rate case for the May 2013 ending test  
33 period;
- 34 • Provides background on the third-party coal contract revisions that are driving  
35 the majority of the coal cost price increase in this case;
- 36 • Reviews the Company's affiliate mine coal costs and compares them to other  
37 supply alternatives;
- 38 • Demonstrates that Utah customers benefit from the Company's diversified  
39 coal supply strategy; and
- 40 • Discusses the increasing sulfur content of the Company's Utah coal supplies.

41 **Overview of the Coal Supplies for the Company's Coal Plants**

42 **Q. How does the Company plan to meet fuel supplies for its coal plants during**  
43 **the June 2012 through May 2013 test period?**

44 A. As reflected in Table 1: *Coal Sourcing* below, the Company employs a diversified  
45 coal supply strategy. The Company will supply approximately 65.5 percent of its  
46 coal requirements from third-party multi-year contracts and 34.5 percent with coal

47 from the Company's affiliate mines. Approximately 29.8 percent of the  
 48 Company's total coal requirements are supplied under fixed-price contracts, 35.3  
 49 percent under contracts that escalate or de-escalate based on changes to producer  
 50 and consumer price indices and 0.4 percent through spot coal purchases.

**Table 1: Coal Sourcing**

	Plant	New Contract	Price Reopener	MMBtu's (000's)	MMBtu's (000's)
<b>Captive Mines</b>					
Bridger Coal Company/Bridger	Bridger			72,479	
Energy West/Deer Creek	Utah			75,990	
Trapper Mining Inc/Trapper	Craig			9,274	
<b>Subtotal Captive Mines</b>					<b>157,743 34.5%</b>
<b>Fixed Price Contracts</b>					
Rhino Energy/Castle Valley	Utah	√		7,080	
America West Resources/Horizon	Utah			5,046	
Arch/Sufco	Utah			49,107	
Utah American Energy/West Ridge	Utah			20,711	
Arch/Coal Creek	Dave Johnston	√		9,252	
Western Fuels/Dry Fork	Dave Johnston	√		22,134	
Peabody/Rawhide	Dave Johnston			22,825	
<b>Subtotal Fixed Price Contracts</b>					<b>136,155 29.8%</b>
<b>Escalating Contracts</b>					
Amber Energy/Black Butte	Bridger			31,478	
Peabody/Lee Ranch	Cholla			27,876	
Westmoreland/Rosebud	Colstrip			11,916	
Rio Tinto/Colowyo	Craig			4,201	
Peabody/Twenty mile	Hayden	√		6,044	
Westmoreland/Kemmerer	Naughton		√	55,480	
Black Hills/Wyodak	Wyodak			24,685	
<b>Subtotal Escalating Contracts</b>					<b>161,680 35.3%</b>
<b>Spot/Unidentified Supplies</b>					<b>1,846 0.4%</b>
<b>Total Coal Supplies</b>					<b>457,424 100%</b>

51 **Q. Please explain how the Company's Utah plants are supplied with coal.**

52 A. The Utah plants are sourced collectively through a diversified portfolio of coal  
 53 supplies. While the Deer Creek mine supplies primarily the Huntington plant and  
 54 a portion of the Hunter plant, the contract coal supplies are typically  
 55 interchangeable between the plants.

56 **Q. Why is it important that they be interchangeable?**

57 A. Interchangeable coal supplies allow the Company to minimize transportation  
58 costs between the coal mines and power plants while ensuring the coal quality  
59 blend meets plant quality specifications.

60 **Summary of Coal Cost Increases in the Current Filing**

61 **Q. Do coal costs in this case reflect an increase above cost levels in the 2011  
62 general rate case?**

63 A. Yes. As mentioned in the testimony of Company witness Mr. Gregory N. Duvall,  
64 test period coal costs have increased on a total company basis from \$733.7 million  
65 in the June 2012 ending test period, used in the 2011 rate case, to \$767.4 million  
66 in the May 2013 ending test period used in this case, an increase of \$33.7 million.  
67 The increase related to higher coal prices is approximately \$47.6 million; the  
68 decrease related to reduced coal fired generation is approximately \$13.9 million.  
69 Average coal costs have increased from \$30.91 per ton to \$32.81, an increase of  
70 \$1.90 per ton.

71 **Q. What are the primary drivers of the \$47.6 million increase in coal prices?**

72 A. Approximately \$18.0 million of the cost increase is associated with the affiliate  
73 mines; \$0.3 million is associated with increased operating costs at the Hunter prep  
74 plant and the remainder of the increase, \$29.3 million, is associated with third  
75 party coal purchases and transportation costs.

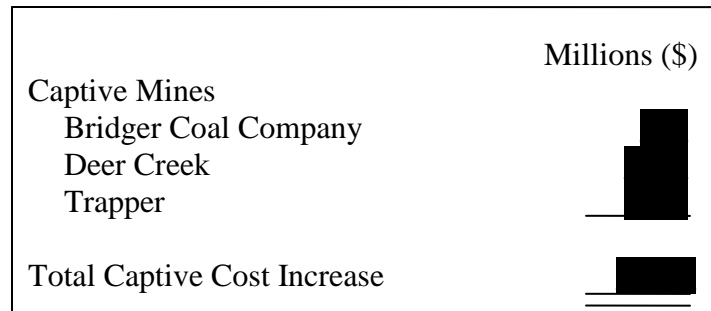
76 **Affiliate Mine Costs**

77 **Q. Please explain the increase associated with the affiliate mines.**

78 A. Deer Creek mine production costs have increased from [REDACTED] per ton to [REDACTED]

79 per ton, an increase of [REDACTED] per ton. Bridger mine costs have increased from  
 80 [REDACTED] per ton to [REDACTED] per ton, an increase of [REDACTED] per ton, and Trapper mine  
 81 costs have decreased slightly from [REDACTED] to [REDACTED] per ton, or [REDACTED] per ton.  
 82 These changes result in the following increases:

**Table 2: Affiliate Mine Cost Increase**



83 **Third-Party Coal Costs**

84 **Q. Please identify the major aspects of the \$29.3 million increase in third-party**  
 85 **coal supplies.**

86 **A.** For the May 2013 ending test period, the Company expects third-party coal  
 87 supply cost increases at all of the plants, as set forth below:

**Table 3: Contract Price Increases**

Plant	Contract	Millions (\$)
Utah	Skyline Mine Contract Replacement	\$
Utah	Sufco Coal Cost Increase	
Utah	West Ridge Coal Cost Increase	
Naughton	Kemmerer Mine Price Increase	
Bridger	Black Butte Rail and Coal Cost Increase	
Dave Johnston	Wyodak Contract Replacement	
Dave Johnston	Dry Fork and Rawhide Price Increases	
Dave Johnston	BNSF Rail Rate Increase	
Wyodak	Wyodak Contract Price Increase	
Hayden	Peabody Contract Replacement	
Cholla	Lee Ranch Rail and Coal Cost Increase	
Colstrip	Rosebud Mine Cost Increase	
Craig	Colowyo Coal Cost Increase	
Other		
Total Contract Cost Increases		<u>29.3</u>

88 **Coal Supply Agreements for the Utah Plants**

89 **Q. Please describe the Skyline coal agreement for the Carbon plant.**

90 A. In the prior test period, the Carbon plant was supplied, in part, with 150,000 tons  
 91 of coal from the Skyline mine that was deferred from 2009. In 2008, the Company  
 92 and Arch agreed (“2008 Agreement”) to defer 300,000 tons of the Company’s  
 93 2009 contract tonnage under the long-term Sufco coal supply agreement, a  
 94 separate agreement, until 2011. Under the 2008 Agreement, Arch also agreed to  
 95 supply the coal from its Skyline mine, a substitute source for Sufco. In addition to  
 96 obtaining the Skyline tonnage at the 2009 Sufco contract price the Company  
 97 required Arch to discount the Skyline coal price by [REDACTED] per ton in exchange for  
 98 the Company agreeing to the 2009 tonnage deferral. With the expiration of this  
 99 supply transaction in December 2011, the Company entered into negotiations with

100 Rhino Energy, the operator of the Castle Valley mine, for a new long-term coal  
101 supply agreement as well as increased volumes under the Company's long-term  
102 agreement with the West Ridge mine. Replacement of the Skyline coal supply  
103 will increase test period costs by [REDACTED] million.

104 **Q. Please explain the cost increase under the Sufco contract.**

105 A. The majority of the Hunter and a portion of the Huntington power plant  
106 requirements are supplied by the Sufco and Dugout mine under the Company's  
107 long-term coal supply agreement with Arch Coal Sales. The delivered price of  
108 coal supplied by the Arch mines has increased from [REDACTED] per ton in the June  
109 2012 ending test period to [REDACTED] per ton in the May 2013 ending test period,  
110 used in this case, an increase of approximately [REDACTED] million. The increase is due  
111 primarily to the annual price increase under the Sufco contract and the savings  
112 included in the prior test period with the inclusion of Sufco carryover tonnage  
113 from 2010 at the 2010 contract price. As part of the Arch 2011 price re-opener  
114 dispute settlement, Arch agreed to provide the Company on a pro-rata basis in  
115 2011 with 817,000 tons of Sufco contract shortfall associated with 2010 contract  
116 deliveries at the 2010 contract price. The inclusion of the carryover tonnage at an  
117 approximate [REDACTED] per ton savings in the prior test period accounts for [REDACTED] million  
118 of the [REDACTED] million increase. The remainder of the increase is associated with  
119 annual escalation of the Sufco contract price.

120 **Q. Please explain the [REDACTED] million cost increase under the West Ridge**  
121 **agreement.**

122 A. A portion of both the Carbon and Hunter plant requirements is supplied by the

123 West Ridge mine under a long-term fixed price coal supply agreement that  
124 expires in December 2014. The approximately [REDACTED] million increase in coal costs  
125 reflects both an increase in delivered costs from [REDACTED] per ton in the June 2012  
126 ending test period to [REDACTED] per ton in the May 2013 ending test period and an  
127 increase in contract tonnage from approximately 700,000 tons in the prior test  
128 period to approximately 870,000 tons in this test period.

129 **Coal Supply Agreements for the Wyoming Plants**

130 **Q. Please describe the increase relating to the Naughton contract.**

131 A. The Naughton power plant is supplied under a long-term coal supply agreement  
132 with Westmoreland Coal Company's Kemmerer mine. Test period costs will  
133 increase from [REDACTED] per ton in the prior test period to [REDACTED] per ton for the May  
134 2013 ending test period, an increase of a [REDACTED] per ton. The contract price adjusts  
135 with changes in contract specific producer and consumer price indices as well as  
136 production taxes and royalties. As part of the September 2010 contract  
137 renegotiation, the parties agreed to several price resets over the term of the  
138 agreement with the first price reset occurring January 2013. This price reset  
139 adjusts the contract price to [REDACTED]  
140 [REDACTED]. Approximately [REDACTED] million of the [REDACTED] million increase is associated  
141 with the January 2013 price reset; the remainder is associated with higher diesel  
142 fuel expense.

143 **Q. Please explain the [REDACTED] million increase in Black Butte costs.**

144 A. Almost 30 percent of the Bridger plant coal requirements are supplied by the  
145 Black Butte mine. The delivered cost of Black Butte coal to the Jim Bridger



146 power plant has increased to [REDACTED] per ton from the June 2012 ending test period  
147 cost of [REDACTED] per ton, an increase of [REDACTED] per ton. Higher rail costs account for  
148 [REDACTED] per ton of the increase; the remaining [REDACTED] per ton is associated with  
149 higher F.O.B. mine costs. Coal costs adjust monthly based on changes to contract  
150 specific producer and consumer price increases as well as Wyoming production  
151 taxes and royalties; Union Pacific rail rates are adjusted quarterly based on the  
152 changes to the All-Inclusive Index less Fuel published by the Association of  
153 American Railroads.

154 **Q. Please explain the [REDACTED] million increase in Dave Johnston power plant coal**  
155 **supply costs.**

156 A. In October 2007, the Company entered into a long-term coal supply agreement  
157 with Wyodak Resources Company for up to 1.8 million tons of coal annually for  
158 the Dave Johnston plant from the Wyodak mine that extended through December  
159 2011. During the spring of 2011, the Company issued a solicitation for Powder  
160 River Basin coal supplies for the Dave Johnston power plant. Based on the results  
161 of the coal solicitation, the Company entered into new coal supply arrangements  
162 with Arch, Peabody and Western Fuels for coal supplies from the Coal Creek,  
163 Rawhide and Dry Fork mines.

164 **Q. How much of the [REDACTED] million increase at the Dave Johnston plant is**  
165 **associated with replacing the Wyodak coal supply?**

166 A. The majority of the increase, approximately [REDACTED] million, is associated with  
167 replacing the Wyodak coal supply with new coal supply arrangements.

168 **Q. Has the Dave Johnston plant rail rate changed from the prior case?**

169 A. Yes. Coal is transported to the Dave Johnston plant under a long term rail  
170 agreement with the BNSF Railway Company. Rail rates are adjusted quarterly  
171 based on the changes to the unadjusted Rail Cost Adjustment Factor published by  
172 the Association of American Railroads and have increased from [REDACTED] per ton in  
173 the June 2012 ending test period to [REDACTED] per ton in the May 2013 ending test  
174 period. The increase, approximately [REDACTED] million, is due primarily to higher diesel  
175 fuel expense and application of dust suppression.

176 **Q. Please discuss the causes for the remaining [REDACTED] million increase in Dave  
177 Johnston fuel costs.**

178 A. The remaining [REDACTED] million increase in Dave Johnston fuel costs is associated  
179 with fixed annual price increases under the long-term coal supply agreements.

180 **Q. Please explain the [REDACTED] million increase in Wyodak plant costs.**

181 A. The Wyodak plant is entirely supplied by the Wyodak mine under a long-term  
182 coal supply agreement through 2022 via an overland conveyor. The average mine  
183 price of Wyodak coal has increased to [REDACTED] per ton from the June 2012 ending  
184 test period cost of [REDACTED] per ton, an increase of [REDACTED] per ton. Coal costs adjust  
185 monthly based on changes to contract specific producer and consumer price  
186 increases as well as Wyoming production taxes and royalties.

### 187 **Coal Supply Agreements for the Joint Owned Plants**

188 **Q. Please discuss the Hayden plant coal supply.**

189 A. Since its inception, the Hayden plant has been supplied by Peabody under several  
190 long-term coal supply agreements. The previous coal supply agreement was

191 negotiated in December 2005 and extended through December 2011. The Hayden  
192 plant owners made numerous attempts to negotiate a contract extension prior to  
193 the expiration of the agreement; however, Peabody was unwilling to extend the  
194 Twentymile agreement under similar terms and conditions. Consequently, Xcel,  
195 on behalf of the other Hayden plant participants, issued a request for proposal for  
196 new coal supplies for the 2012 through 2014 timeframe.

197 **Q. Which coal production basins were targeted with the coal solicitation?**

198 A. Xcel received multi-year proposals from Powder River Basin coal suppliers as  
199 well as suppliers in the Green River and Uinta Basin in Colorado. Based on the  
200 results of the solicitation, the Hayden plant owners negotiated a new coal supply  
201 agreement with Peabody. The test period reflects the recently negotiated coal  
202 price with Peabody as well as the Union Pacific Railroad's cost to transport the  
203 Twentymile coal by rail.

204 **Q. Has the Hayden plant's coal cost changed from the June 2012 ending test  
205 period?**

206 A. Yes, the increase above the prior test period is approximately [REDACTED] million.  
207 Approximately [REDACTED] million of the [REDACTED] million increase in Hayden plant cost is  
208 associated with the new coal supply agreement and the remaining [REDACTED] million  
209 reflects increased transportation costs.

210 **Q. Please explain the [REDACTED] million increase in Cholla plant costs.**

211 A. The Cholla plant is supplied under a long-term coal supply agreement with  
212 Peabody's Lee Ranch/El Segundo mine complex and transported by the BNSF  
213 Railway. Contract prices under both agreements adjust quarterly; the coal contract

214 adjusts to changes in contract specific producer and consumer price indices while  
215 the rail agreement adjusts based on changes to the Railroad Cost Recovery Factor  
216 published by the Association of American Railroads and diesel fuel prices. Test  
217 period costs have increased from ██████ per ton to ██████ per ton in the May  
218 2013 ending test period; higher rail costs account for ██████ per ton of the  
219 increase; the remaining ██████ per ton is associated with higher mine costs.

220 **Q. Please explain the ██████ million increase in Colowyo test period costs.**

221 A. The long-term contract with Colowyo adjusts semi-annually based on changes to  
222 contract specific producer and consumer price indices. Colowyo contract costs  
223 have increased from ██████ per ton in the June 2012 ending test period to ██████  
224 per ton in the May 2013 ending test period, an increase of ██████ per ton.

#### 225 **Captive Mine Costs**

226 **Q. Please describe the change in Bridger Coal costs.**

227 A. Bridger Coal costs have increased by approximately ██████ million over the June  
228 2012 ending test period. Bridger Coal test period costs have increased from  
229 ██████ per ton to ██████ per ton, an increase of ██████ per ton or ██████ million. A  
230 reduction in Bridger Coal's heat content accounts for the remaining ██████ million  
231 increase.

232 **Q. Have Bridger Coal's production levels changed?**

233 A. Yes. Total Bridger Coal plant deliveries from the surface mine decreased from  
234 1,609,150 tons in the prior case to 1,214,785 tons, a reduction of 394,365 tons;  
235 however, underground mine deliveries have increased from 4,396,850 to  
236 4,697,215, an increase of 300,365.

237 **Q. Please explain the [REDACTED] per ton increase in Bridger Coal costs.**

238 A. The majority of the increase is related to increased fixed costs such as  
239 depreciation and depletion expense, [REDACTED] per ton, and an increase in third party  
240 costs of [REDACTED] per ton. Third party costs include increased royalty payments of  
241 [REDACTED] per ton and [REDACTED] for production taxes.

242 **Q. Please explain Bridger Coal's reduced heat content.**

243 A. During the June 2012 ending test period, the heat content of the coal deliveries  
244 from the underground mine was projected to average 9,492 British thermal units  
245 per pound. The heat content in the May 2013 ending test period is forecast at  
246 9,262 British thermal units per pound. The approximately 230 btu/lb decrease in  
247 heat content is the result of increased ash content in the coal stream. Increased  
248 out-of-seam dilution associated with the current sandstone roof has caused the ash  
249 content of the underground mine to increase from 11.79 percent in the prior  
250 period to 13.67 percent in the May 2013 ending test period.

251 **Q. How do Bridger Coal mine costs compare to the Company's other supply  
252 options?**

253 A. Though test period delivered costs of Bridger Coal and Black Butte are similar,  
254 [REDACTED] per ton versus [REDACTED] per ton, the Black Butte mine has no additional  
255 production capacity. The Company was forced to purchase approximately  
256 130,000 tons of Black Butte coal from the Valmy plant owners during the last half  
257 of 2011 to supplement the current year coal supply at a delivered cost into the  
258 Bridger plant in excess of [REDACTED] per ton.

259 **Q. Please describe the [REDACTED] million increase for Deer Creek production costs.**

260 A. Deer Creek costs are projected to increase from [REDACTED] per ton in the June 2012  
261 ending test period to [REDACTED] per ton in the May 2013 ending test period, an  
262 increase of [REDACTED] per ton. There are three primary drivers for the Deer Creek cost  
263 increase: (1) reduced coal production; (2) increased material and supply costs;  
264 and, (3) increased longwall set-up costs. Deer Creek's coal production is  
265 projected to be approximately 265,000 tons less in the May 2013 ending test  
266 period; the lower production accounts for approximately [REDACTED] per ton of the  
267 [REDACTED] per ton increase. Materials and supply costs have increased from [REDACTED] per  
268 ton in the prior case to [REDACTED] per ton in the current test period, a [REDACTED] per ton  
269 increase. The rise is primarily due to increased unit costs and higher usage of  
270 operating supplies for roof support and adverse geological conditions associated  
271 with elevated levels of ash and sulfur. Finally, due to two additional longwall  
272 moves in the May 2013 ending test period and lower coal recovery from the  
273 longwall panels, the longwall set-up cost per ton will increase to [REDACTED] per ton, a  
274 [REDACTED] per ton increase over the prior test period.

275 **Q. How do Deer Creek mine costs compare to the Company's other Utah**  
276 **supplies?**

277 A. The Deer Creek mine represents the lowest cost Company coal supply in Utah.  
278 Deer Creek costs are more than [REDACTED] per ton less than the delivered cost of Castle  
279 Valley and Sufco coals into the Huntington power plant.

280 **Q. Have Trapper mine costs changed from the prior test period?**

281 A. Trapper mine costs have decreased slightly from [REDACTED] per ton in the June 2012

282 ending test period to [REDACTED] per ton in the May 2013 ending test period, a  
283 decrease of [REDACTED] per ton.

284 **Q. How does the Company's Trapper mine compare to other alternatives?**

285 A. Favorably. Trapper's test period cost of [REDACTED] per ton, delivered to the Craig  
286 plant, is considerably less than the Company's other Colorado coal supplies. The  
287 price is roughly [REDACTED] per ton less than the [REDACTED] delivered price of Colowyo  
288 coal to the Craig plant and approximately [REDACTED] per ton less than the delivered  
289 coal price of Twentymile coal to the Hayden plant.

290 **Q. Please summarize the benefits of the Company's coal supply strategy.**

291 A. Customers have significantly benefited from the Company's diversified fueling  
292 strategy. The Company has pursued a diversified coal supply strategy, relying on  
293 fixed contracts, indexed contracts and affiliate-owned coal mines to meet the fuel  
294 needs of its coal fired power plants. While coal costs have increased in this case  
295 as a result of contract terminations and reopeners, the company's strategy has  
296 resulted in a long-term, stable and low-cost supply of coal for its customers.

#### 297 **Utah Coal Supplies – Increasing Sulfur Content**

298 **Q. Is the sulfur content of the Hunter and Huntington plant coal supplies**  
299 **increasing?**

300 A. Yes. The Company is experiencing an increase in sulfur content in coal delivered  
301 and consumed at the Hunter and Huntington plants. The increase in sulfur content  
302 is due primarily to an increase in West Ridge mine coal supplies and an increase  
303 in the sulfur content of Deer Creek coal.

304 **Q. Please discuss the Company's contract for West Ridge mine coal with Utah**  
305 **American Energy Inc.**

306 A. In December 2010, the Company executed a coal supply agreement with Utah  
307 American Energy for coal from the West Ridge mine for 2011 through 2014.  
308 West Ridge mine's high ash fusion temperature mitigates the low ash fusion  
309 characteristics of Arch's Sufco coal that causes boiler slagging at Hunter and its  
310 high sulfur content improves precipitator performance at the Carbon plant. The  
311 contract established 500,000 tons as the annual contract minimum in 2011 and 1.0  
312 million tons as the contract minimum for 2012 through 2014.

313 **Q. What other Utah mines produce high ash fusion temperature coal?**

314 A. Arch Coal's Dugout mine is the only other active longwall operation in Utah that  
315 produces high ash fusion temperature coal. Arch previously supplied the  
316 Company with over 1.0 million tons of Dugout coal, annually, under the Electric  
317 Lake settlement and as substitute coal under the Company's long term agreement  
318 with Sufco.

319 **Q. Is Arch still required to supply Dugout coal?**

320 A. No. Arch's contractual requirement to supply Dugout coal as substitute for Sufco  
321 coal expired in December 2010. [REDACTED]

322 [REDACTED]

323 [REDACTED]

324 [REDACTED].



325 **Q. How does the “typical” quality specifications for West Ridge coal compare to**  
326 **coal supplied from the Dugout mine?**

327 A. As reflected below, the typical quality specifications for both coals are similar  
328 with the exception of ash and sulfur content. The typical sulfur content of the  
329 West Ridge coal is [REDACTED] times as much as the Company’s previous Dugout supply.

330 **Typical Quality Specifications**

	<b>West Ridge</b>	<b>Dugout</b>
332 Calorific Value	[REDACTED]	[REDACTED]
333 Moisture	[REDACTED]	[REDACTED]
334 Percent Sulfur	[REDACTED]	[REDACTED]
335 Lbs SO <sub>2</sub> /MMBtu	[REDACTED]	[REDACTED]
336 Percent Ash	[REDACTED]	[REDACTED]
337 Ash Softening Temperature	[REDACTED]	[REDACTED]

338 **Q. Is the sulfur content increasing at the Company’s Deer Creek mine?**

339 A. Yes, Deer Creek’s sulfur content has increased with the movement of longwall  
340 operations in December 2010 from the upper Blind Canyon seam to the lower  
341 quality Hiawatha seam.

342 **Q. Has the Deer Creek mine already encountered pocket areas of high sulfur**  
343 **coal in the Hiawatha seam?**

344 A. Yes, during the first quarter of 2011, the Company’s Deer Creek mine  
345 encountered areas of high ash and high sulfur with the sulfur content at times  
346 exceeding 1 percent. The Company did not previously encounter pockets of high  
347 sulfur coal in the Blind Canyon seam.

348 **Q. Will mining continue in high sulfur areas during the test period?**

349 A. Yes, the Deer Creek mine will again encounter elevated levels of ash and sulfur  
350 coal with sulfur reaching as high as 1.4 percent in 2012.

351 **Q. How does the Company manage high ash, high sulfur Deer Creek coal  
352 production?**

353 A. To ensure emissions compliance, the Company segregates the coal at the  
354 Huntington plant and then depending upon quality the coal will be shipped to the  
355 Hunter and/or Cottonwood Prep plant. This coal is then reclaimed and comingled  
356 with other coals to ensure the blended product does not cause a sulfur exceedance  
357 nor violates meeting minimum heat content requirements.

358 **Q. Does the test period include blending and consuming of Deer Creek high ash,  
359 high sulfur coal?**

360 A. Yes, for instance, the Hunter plant is forecasted to consume at least 300,000 tons  
361 of Deer Creek mine's high ash, high sulfur coal during the May 2013 ending test  
362 period.

363 **Q. Can Deer Creek avoid mining these high sulfur areas?**

364 A. Yes, however, not without significantly increasing Deer Creek's production costs  
365 and supplementing with higher cost third party coal purchases.

366 **Q. Does this conclude your direct testimony?**

367 A. Yes.