



**Joint Review Panel
Reference No. 80101
The Grassy Mountain Coal Project**

**Final Argument of The Canadian Parks and Parks and Wilderness
Society, Southern Alberta Chapter**

January 8, 2021

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Introduction

1. This is the final argument of the Canadian Parks and Wilderness Society Southern Alberta Chapter (CPAWS) in the Joint Review Panel (Panel) hearing for the Grassy Mountain Coal Project (GMCP) proposed by Benga Mining Limited (Benga).
2. CPAWS is a national charity; the Southern Alberta Chapter is dedicated to the protection of Alberta's wilderness and public lands and participated in the hearing in order to protect Alberta's land, water, and wilderness from needless degradation.
3. CPAWS participated on a limited number of issues to avoid duplication of evidence with other hearing participants. CPAWS's final argument focuses on the evidence CPAWS entered at the hearing, but CPAWS supports the final arguments of the Livingstone Landowner's Group, the Coalition of the Alberta Wilderness Association and the Grassy Mountain Group, the Timberwolf Wilderness Society, the MD of Ranchlands, Ms. Barbara Janusz and Mr. Jim Rennie.
4. CPAWS called three experts:
 - i. Martin Olszynski, on adaptive management,
 - ii. Cornelis Koliijn, on metallurgical coal quality,
 - iii. Marc Bowles, on selenium treatment systems.
5. Benga was unable to impugn the expertise or credibility of CPAWS's experts, and has attempted to dismiss CPAWS's expert evidence as irrelevant. The relevance of CPAWS's experts is generally self-evident, but highlights of their evidence and its relevance will be summarized in the topics below.
6. Based on the evidence before it, the Panel ought to conclude that the GMCP, with the planned mitigation measures, is likely to have many significant adverse environmental effects. This submission focuses on just four of them.
 - i. The GMCP will endanger the survival and recovery of the Westslope Cutthroat Trout,
 - ii. the GMCP will release selenium and other metals into Blairmore creek, Gold Creek, and the Oldman watershed,
 - iii. the GMCP will lead to significant habitat loss in the Eastern Slopes, and
 - iv. the GMCP will leave wetlands with long-term metal contamination on the landscape for many decades after closure

7. The Panel's report should conclude that the GMCP is unlikely to have any social or economic benefits, and is likely to cause significant adverse environmental effects, and that the GMCP is not in the public interest.
8. Under the Panel's authority to grant licenses as the AER, the Panel should conclude that the GMCP is not a wise use of the environment or a reasonable balance of environmental effects and economic benefits. The Panel should dismiss all of Benga's applications for licenses, permits, and approvals related to the GMCP.

Benga's strategy prolonged the information request process

9. Both the information request process and the hearing for the GMCP were unusually long. The length of the information request process was the result of Benga's strategy of attempting to obtain an approval on a conceptual, barebones plan for the GMCP with minimal detail or clarity. Even after many rounds of information requests, Benga's Environmental Impact Assessment (EIA) contained omissions, errors, and important parts of the project plan that Benga had given little or no attention to.
10. Benga could not have benefitted from advancing to hearing sooner, as Benga's EIA would have been missing even more information necessary for the Panel's assessment. The lengthy process was entirely caused by Benga's refusal to provide sufficient detail or clarity in their EIA.
11. Benga's approach was based on their position that "final detailed plans" cannot be required for an EIA and that plans to mitigate environmental impacts can be developed after the project approval is granted.¹
12. The project assessment process cannot eliminate uncertainty, but it is meant to provide a workable project plan that shows, on a high-level, how environmental impacts will be mitigated. The plan Benga has submitted produces a number of water quality guideline exceedances; long-term loss of habitat, and no evidence the project will be profitable enough to pay for the monitoring, mitigation, and reclamation work the project will require. Even on a very high level, Benga's plan for the GMCP does not work.
13. CPAWS submits that a project plan should be sufficiently detailed to be used as a plan for the regulator to carry out the closure and environmental protection actions necessary in the event a bankruptcy takes the proponent out of the picture.

¹ Benga's final argument, paragraphs 40-45

² Consider that Teck's Elk Valley operations remain open despite their Selenium problems.

³ CIAR 881, hearing transcript vol 20, page 4374 lines 1-4.

⁴ *Taseko Mines Limited v. Canada (Environment)*, 2017 FC 1099, paragraphs 123-

14. Follow-up programs, as understood in *The Canadian Environmental Impact Act*, are intended to confirm that planned mitigation is working. Follow-up programs should not be used to fill in material missing from a project plan.
15. The question is whether Benga's plan for closure and reclamation is sufficient for a public regulator to carry out the closure and reclamation if it becomes the regulators responsibility. Whether Benga is confident they can fill in the missing details in the closure and reclamation plan is immaterial, the panel should consider whether the regulator is confident they could fill in the details in the closure and reclamation plan if closure and reclamation becomes the regulator's responsibility.
16. CPAWS remains concerned that Benga's strategy is to get an approval and start mining as quickly as possible, at which point the mine becomes a *fait accompli* and regulators are unlikely to stop the project regardless of environmental problems.² Even if regulators did stop the project in the middle of mining, it would not stop the environmental problems.³
17. Benga's plan for the GMCP is not deficient for lack of detail and finality, but because it does not properly mitigate environmental impacts on even a conceptual level. There is no basis on which the panel should expect the detailed plan will mitigate environmental impacts better than the conceptual version. In 2017, the Federal Court judicially review the Review Panel Report for the New Prosperity Gold-Copper Mine and found

[123] It was reasonable for the Panel not to accept Taseko's "vague assurances" that it would engage in adaptive management in order to deal with adverse environmental effects. The Panel sought information on environmental effects and mitigation measures, and Taseko refused to provide this information. It was entirely reasonable, and in line with the Panel's (reasonable) interpretation of the precautionary principle, for the Panel to conclude that the concentration of water quality variables in Fish Lake (Teztan Biny) and Wasp Lake would likely be a significant adverse environmental effect.

[124] Indeed, acceptance of vague adaptive management schemes in circumstances such as these would, in my view, tend to call into question the value of the entire review panel process – if all such

² Consider that Teck's Elk Valley operations remain open despite their Selenium problems.

³ CIAR 881, hearing transcript vol 20, page 4374 lines 1-4.

decisions could be left to a later stage, then the review panel process would simply be for the sake of appearances.⁴

Benga's strategy prolonged the hearing

18. The length and complexity of the hearing itself was caused by two strategic decisions by Benga. The first was Benga's refusal to reorganize and resubmit their EIA material and addendums prior to advancing to a hearing, The second was Benga's decision to use their vice president of external relations as their primary witness throughout the entire cross-examination process.⁵
19. Benga's decision not to repackage and resubmit their material meant that the hearing discussed material that included duplication,⁶ out of date material due to changes in the project plan, and 12 addendums with no internal organization. In one instance, material that contained math errors was submitted twice.⁷ In another, information was incorrectly copy pasted into the wrong context.⁸
20. Benga's decision to use their vice president of external relations as their chief witness throughout the entire hearing obstructed the cross-examination process. Benga's vice president of external relations is a contractor for Benga with no experience operating a coalmine.⁹
21. Benga's vice president of external relations gave long and unfocused answers to all questions, including technical questions asked directly to subject matter experts by name.¹⁰ He sometimes decided that questions about the impacts of the proposed project were unanswerable because they referred to the hypothetical situation of the mine being built.¹¹ Instead of answering questions he often said what he thought was important, whether or not it was responsive to the question.¹²

⁴ *Taseko Mines Limited v. Canada (Environment)*, 2017 FC 1099, paragraphs 123-124.

⁵ CIAR 740, hearing transcript vol 1, page 43.

⁶ CIAR 830, hearing transcript vol 13, page 2703.

⁷ CIAR 830, hearing transcript vol 13, pages 2700 line 26 and page 2702 line 21 to 2703 at line 9.

⁸ CIAR 848, hearing transcript vol 16, pages 3384 line 14 to 3385 line 5.

⁹ CIAR 762, hearing transcript vol 4, pages 847 line 22 to 848 line 16.

¹⁰ CIAR 799, hearing transcript vol 9, page 2027 lines 8-24; CIAR 854, hearing transcript vol 17, pages 3455-3456; CIAR 884, hearing transcript vol 21, page 4474.

¹¹ CIAR 762, hearing transcript vol 4, page 867-868; CIAR 848, hearing transcript vol 16, page 3405; CIAR 928, hearing transcript vol 26, page 5596.

¹² CIAR 762, hearing transcript vol 4, page 763 lines 20-25; CIAR 739, hearing transcript vol 5, page 939 line 10; CIAR 799, hearing transcript vol 9, page 2024 line

22. Where answers to questions on cross-examination were unclear because Benga's vice president of external relations spoke for one of Benga's subject-matter experts, the Panel should draw adverse inferences against Benga. Allowing project proponents to benefit from this type of strategy would encourage the future use of this type of strategy, making the environmental assessment process increasingly tedious.

The GMCP would not be profitable enough to pay for the necessary remediation and reclamation

23. CPAWS takes an interest in the financial aspect of the GMCP out of concern that the GMCP will not generate sufficient profit to meet the GMCP's environmental protection and reclamation commitments. The polluter pays principle must be vigorously enforced.
24. Benga has made many 'commitments'.¹³ When considering these 'commitments', the panel ought to focus carefully on the money behind these commitments. A commitment is worth nothing unless there is money available to carry it out and an effective enforcement mechanism that ensures the commitment is met. A company's commitments can quickly become meaningless in the event of bankruptcy.
25. One of Benga's experts said during the hearing that "with enough time and -- and enough effort you can do anything."¹⁴ That statement is reflective of Benga's overall optimistic approach. But time and effort are not the key issue -- when dealing with corporate commitments, what is at issue is money. Nothing will be done to fulfill Benga's commitments if Benga runs out of money.
26. Benga is a Canadian company in the sense it was incorporated in Canada and rents office space in Canada. Ownership is the meaningful question: Benga is owned and controlled entirely by the Australian corporation Hancock Prospecting.¹⁵ Hancock will not be responsible for environmental clean-up costs in the event Benga is unable to cover their environmental liabilities.¹⁶

21-26, CIAR 830, hearing transcript vol 13, page 2713 lines 18-25; CIAR 884, hearing transcript vol 21, page 4583.

¹³ Particularly important is Benga's commitment to long term site monitoring: see CIAR 962, Benga's final argument, paragraphs 348-351.

¹⁴ CIAR 884, hearing transcript vol 21, page 4422, lines 4-6.

¹⁵ CIAR 740, hearing transcript vol 1, page 45.

¹⁶ CIAR 771, hearing transcript vol 5, page 996-998.

27. Hancock has no experience operating metallurgical coalmines anywhere. Hancock is primarily engaged in mining for iron ore in Australia.¹⁷
28. The foundation for the socioeconomic benefits of a coal mine is the value of the coal in the mine.
29. Benga has said the GMCP will produce high quality steel-making coal.¹⁸ That is incorrect. The GMCP will produce a 2nd tier hard coking coal with poor coking properties, and the coal quality will drop over the life of the GMCP forcing Benga to sell at an increasing discount as buyers will need to blend GMCP coal with increasingly expensive high-quality coals in order to produce a useable coking blend.
30. Benga's expert on coal quality and price was Mr. Youl. Mr. Youl's answers on cross-examination were evasive. Mr. Youl would not provide answers to questions that a competent coke maker would be able to answer on the basis of information Benga had already made public. The justification that the GMCP's coal quality information was commercially sensitive does not make sense.¹⁹ Customers undertake their own testing processes based on representative samples of coking coal before making purchasing decisions.²⁰ Benga cannot keep their coal quality secret from potential buyers.
31. When pressed on what the actual value of the coal from GMCP would be, Mr. Youl said that the pricing of metallurgical coal, an internationally traded commodity, was "not science; it's more of an art form."²¹
32. CPAWS's expert on coal quality was Mr. Cornelis Kolijn, a semi-retired mining engineer with decades of international experience with coking coal.²² The panel should prefer Mr. Kolijn's fulsome and forthright evidence.
33. Coke strength after reaction is a key property for coking coal. Mr. Youl said that the "publically stated CSR we've been running with is 65".²³ A CSR of 64 or 65 is the lower bound for what typically counts as a premium hard coking coal.²⁴

¹⁷ CIAR 762, hearing transcript vol 4, page 847, lines 5-17.

¹⁸ CIAR 962, Benga's final argument, at paras 109 and 534.

¹⁹ CIAR 762, hearing transcript vol 4, pages 910, lines 1-7.

²⁰ CIAR 555, CPAWS Hearing submission, PDF page 549, Executive Summary of C. Kolijn's expert report.

²¹ CIAR 762, hearing transcript vol 4, page 858, lines 13-15.

²² CIAR 782, hearing transcript vol 6, pages 1385-1398.

²³ CIAR 762, hearing transcript vol 4, page 882, lines 5-20.

²⁴ CIAR 762, hearing transcript vol 4, page 857-858.

34. Mr. Youl later contradicted his earlier statement and said that the coal at GMCP is “in that upper end of the second-tier coking coal category”.²⁵ The entire category of second-tier coking coal has a CSR of lower than 65.²⁶ Benga’s ‘publically stated CSR’ exaggerates the actual quality of the coal at GMCP.
35. The best predication of the CSR for the coal at GMCP is 62. Only years 1 and 4 of operation will be notably higher, and years 10-14 and 20-23 will fall just below a CSR of 62.²⁷
36. The coal at GMCP has an undesirably high ash content,²⁸ and the fluidity of the coal becomes much worse after year 9.²⁹ The net expansion also suffers a significant drop following year 10.³⁰
37. The 140\$ per tonne long-term price estimate given by Benga refers to the price of Premium Hard Coking Coals, a significantly more valuable product than the GMCP will ever produce. The coal at GMCP will always sell at a significant discount from premium hard coking coal, and that discount will increase over mine life.
38. Benga took the position there was no “markers out there that actively monitor the price of varying grades of coal”.³¹ Mr. Koliijn was able to provide such markers showing prices for 2nd tier hard coking coal.³²
39. Benga’s use of the forecasted price for a quality of coal notably different from what the GMCP will actually produce was misleading.
40. Mr. Youl initially said he was unable to determine which of the three coal seams at the GMCP was the most valuable.³³ Mr. Koliijn was able to determine the answer from the carbonization results Benga had provided: seam 1 has significantly better coking properties and is significantly more valuable than seams 2 or 4. Seam 2 has minimal dilatation³⁴ indicating a serious problem for the quality and value of coal that includes higher percentages of coal from

²⁵ CIAR 762, hearing transcript vol 4, page 890, at lines 10-12.

²⁶ For a visual aid, see the chart Benga provided to CPAWS in CIAR 555, page 48.

²⁷ CIAR 777, hearing presentation of Mr. C. Koliijn at PDF page 8.

²⁸ CIAR 782, hearing transcript vol 6, pages 1414-1415.

²⁹ CIAR 782, hearing transcript vol 6, page 1432.

³⁰ CIAR 777, Hearing presentation of Mr. C. Koliijn at PDF page 9.

³¹ CIAR 762, hearing transcript volume 4, page 856, at lines 15-16.

³² CIAR 555, CPAWS hearing submission at PDF 555.

³³ CIAR 762, hearing transcript vol 4, pages 885 line 26 to 887 line 8.

³⁴ CIAR 762, hearing transcript vol 4, pages 891-892.

seam 2. Mr. Youl's later testimony remained evasive, but seemed to imply he had come to the same conclusions.³⁵

41. The percentage of seam 1 coal is only 16% for the entire mine, and the percentage of seam 1 coal declines significantly across the life of the project.³⁶ Even if the market for coking coal were to be completely stable, the decrease in seam 1 coal will force Benga to sell at a lower price per tonne.
42. Counsel for Benga attempted to impugn the accuracy of Benga's published carbonization runs by suggesting Benga might have newer and better results.³⁷ This contradicted Mr. Youl's defence of the accuracy of the carbonization runs ALS had done for Benga.³⁸
43. If Benga had evidence of better coal quality and economic feasibility for the GMCP, they ought to have submitted it into evidence at the hearing, not had their counsel allude to its possible existence during cross-examination. The panel can only consider the evidence actually on the record.
44. Further testing cannot mitigate the problem of the low coal quality. The quality of the coal in the mountain is not improved by further testing. Monitoring and testing do not change the facts.
45. Benga's mine plan does not indicate care was taken for the long-term viability of the GMCP. Judicious blending of the three coal seams (particularly seam 1) is necessary to keep the GMCP viable.³⁹ The plan Benga presented has the highest percentage of seam 1 coal being mined in the first three phases, with the phases with the lowest percentage of seam 1 coal being mined last.⁴⁰ It also has a rising stripping ratio through the life of the mine.⁴¹ This shows no attempt to judiciously release seam 1 or prolong the life of the GMCP – it shows Benga focused on increasing profits as much as possible during the first 10 years.
46. Benga noted their mine plan was not specific or detailed and that they might change the plan.⁴² Benga should have put more thought into their mine plan before the hearing.

³⁵ CIAR 762, hearing transcript vol 4, pages 892 at line 12 to 893 at line 14.

³⁶ CIAR 762, hearing transcript vol 4, pages 906-908; see also table E7 produced by Mr. Kolijn in CIAR 555, page 566; see also CIAR 782, hearing transcript vol 6, pages 1415-1416.

³⁷ CIAR 782, hearing transcript vol 6, page 1441, lines 11-18.

³⁸ CIAR 762, hearing transcript vol 4, pages 902 line 17 to 903 line 15.

³⁹ CIAR 799, hearing transcript vol 9, pages 1985-1986.

⁴⁰ CIAR 799, hearing transcript vol 9, page 1995 lines 12-26.

⁴¹ CIAR 799, hearing transcript vol 9, page 1997 lines 7-19.

⁴² CIAR 799, hearing transcript vol 9, page 1991, lines 13-26.

47. Metallurgical coal prices are highly variable and dependent on a number of complex factors including future international attempts to control climate change, international relations, and the global economy. The poor coal quality at GMCP will make the GMCP particularly vulnerable to price fluctuations. It is not realistic to assume metallurgical coal prices will be stable for 23 years.
48. Benga failed to grasp the significance of Alberta's 1976 Coal Policy. Since the 1976 Coal Policy never blocked coal development at Grassy Mountain, something else did – that something else is the low coal quality that made mining unprofitable.
49. The coal quality problems at GMCP mean that none of the socioeconomic benefits anticipated by Benga are likely because the GMCP will not be as profitable as Benga anticipates, and is unlikely to operate for 23 years. The Panel should reject all of Benga's estimates for the socioeconomic benefits of the GMCP.
50. Benga expects to operate the GMCP from 2023 to 2046.⁴³ Because the evidence shows there will be cashflow problems for the GMCP around year 10, CPAWS asks the panel to consider and describe in their final report what the impact of the early closure of GMCP with Benga entering bankruptcy around year 10 of project life would have. This is a more realistic scenario than GMCP running for 23 years, and it merits scrutiny and consideration in advance of approval decisions.
51. Benga feigned an implausible level of unfamiliarity about the functioning of the Mine financial Security Program (MFSP).⁴⁴ Benga's vice president of external relations claimed he was unable to determine if the asset-to-liability method created greater risk for the Alberta government than the full security option.⁴⁵
52. Benga has not committed to putting up full security and is considering relying on the MFSP's asset-to-liability system to post security throughout mine life.⁴⁶ This would be a disaster for Alberta. If the GMCP uses the MFSP asset-to-liability approach, it would leave at least a \$48,960,198 gap between security and clean-up costs at year 10 of project life.⁴⁷ This cost would be left on the shoulders of the environment and Albertan citizens.

⁴³ CIAR 762, hearing transcript vol 4, page 884, lines 19-24.

⁴⁴ CIAR 830, hearing transcript vol 13, pages 2713-2717.

⁴⁵ CIAR 830, hearing transcript vol 13, pages 2708 line 22 to 2711 at line 14.

⁴⁶ CIAR 830, hearing transcript vol 13, page 2708, lines 14-21.

⁴⁷ CIAR 863, Benga Mining Limited to the Joint Review Panel re: Response to Undertaking #14.

53. Many of the challenging reclamation projects at GMCP will not be proven to work or even started by year 10 of project life. Groundwater seepage from the selenium management system might not be detected for years after the SBZ is in place,⁴⁸ and Whitebark Pine will not be reintroduced on the project site until year 15.⁴⁹
54. CPAWS understands that Benga is not responsible for the design problems with the MFSP. However, CPAWS asks the panel to include in their final report a summary of the financial and environmental risks early closure of the GMCP would create for Alberta, particularly if Benga were to rely on the MFSP's asset-to-liability system. As Benga's vice president of external relations said about the MFSP "I think risk has got to be evaluated by the government and not by a proponent."⁵⁰
55. Benga's estimates for remediation costs of the GMCP should not be relied on. Benga's experts were confused by their own material and had difficulty determining if their estimated reclamation costs included their progressive reclamation.⁵¹ Benga's estimates of future reclamation and monitoring costs are likely to be major underestimates, particularly Benga's estimates of the costs of monitoring the selenium management system.
56. CPAWS believes the GMCP cannot be made compliant with the polluter pays principle because the environmental clean-up costs are likely to exceed the total profits.

The GMCP would not be improved by adaptive management post-approval

57. Benga's strategy of providing only conceptual plans is what makes Benga's understanding of 'adaptive management' so important.
58. The key question is how Benga will fill in the details of their conceptual plans, and the answer is that Benga intends to use what they call "adaptive management".⁵²
59. Benga does not employ a precise or technical definition of the term "adaptive management". Benga's witnesses used "adaptive management" as a synonym

⁴⁸ CIAR 848, hearing transcript vol 16, page 3277 lines 23-25.

⁴⁹ CIAR 830, hearing transcript vol 13, pages 2730 lines 15-18.

⁵⁰ CIAR 830, hearing transcript vol 13, page 2709 at lines 21-22.

⁵¹ CIAR 830, hearing transcript vol 13, page 2720 lines 17-23, and pages 2721, lines 11-15.

⁵² CIAR 962, Benga's final argument, paragraphs 300-304.

for ‘planning’, ‘continuous improvement’,⁵³ or “contingency planning”.⁵⁴ Benga’s expert on soil and vegetation reclamation considers adaptive management to be only a new term for practices that have been in use since the 1970’s.⁵⁵ Benga also referred to the practice of unsystematically looking at technological developments that may take place at other mines as “adaptive management”.⁵⁶

60. In general, Benga uses “adaptive management” as an industry buzzword with no specific meaning.
61. Benga does not plan to carry out the rigorous and systematic process known as “adaptive management” in the relevant scientific and environmental management literature and described in regulatory guidance documents. The panel should make a clear distinction between a rigorous and fulsome form of adaptive management and the ‘adaptive management light’ that Benga proposes, which amounts to little more than *ad-hoc* reacting to problems that come to Benga’s attention.
62. In Benga’s final argument, Benga impugned the evidence of Martin Olszynski.⁵⁷ Benga has failed to understand Mr. Olszynski’s evidence or to grasp its relevance.
63. Professor Olszynski’s evidence is that companies have a habit of calling non-rigorous, non-systematic approaches “adaptive management” in order to generate an illusion of guaranteed continuous improvement for regulators.⁵⁸ Benga’s explanations of adaptive management and their resistance to definitions from peer-reviewed literature indicate Benga is taking the same approach.
64. Professor Olszynski’s answers were clear that waiting around for new technologies to be developed by other companies is not a good way to understand adaptive management, as it replaces a systematic process with an *ad hoc* approach consisting mostly of hoping that someone else will find a solution to the project’s environmental problems.⁵⁹

⁵³ CIAR 842, hearing transcript vol 15, at 3055-3060.

⁵⁴ CIAR 799, hearing transcript vol 9, page 2168 lines 9-15.

⁵⁵ CIAR 848, hearing transcript vol 16 at 3301-3302; see also CIAR 830, hearing transcript vol 13, pages 2731-2733.

⁵⁶ CIAR 830, hearing transcript vol 13, page 2641 line 25 to page 2642 line 4.

⁵⁷ CIAR 962, Benga’s final argument, paragraphs 309-310.

⁵⁸ CIAR 555, CPAWS hearing submission, expert report of Martin Olszynski, PDF pages 601-603, paragraphs 12-17.

⁵⁹ CIAR 848, hearing transcript vol 16, 3198.

65. The problem of selenium contamination was discovered in the 1970's⁶⁰, but the mining industry only started to work on the problem in the 1990's⁶¹ under pressure from regulators as the problem grew out of control, and the problem has not been solved yet. That is the impact of the approach of monitoring and waiting for someone to develop a new technology to solve the problem – an approach Benga calls adaptive management.
66. Notwithstanding numerous information requests urging Benga to provide further details, including actual objectives, indicators, and thresholds (including from the Panel), Benga did not submit any completed adaptive management plans (in the sense of true 'adaptive management' as it exists in academic literature). Benga's proposed 'adaptive management' plans could not be assessed for appropriateness or feasibility.
67. Rather, Benga provided at best "conceptual" plans with the concrete details to be worked out after obtaining project approvals. Bearing in mind the extensive reliance on adaptive management for the GMCP,⁶² this approach amounts to a circumvention of the environmental assessment process.
68. Benga will be filling in the details necessary for mining in an unsystematic fashion. This is not adaptive management. None of Benga's supposed 'adaptive management plans' have the detail to count as adaptive management.
69. The detailed plans for mitigating the impacts of the GMCP are unlikely to be better than the conceptual plans or have any improved ability to mitigate the adverse impacts of the mine, and Benga's monitoring is unlikely to generate data that that will allow them to better understand or mitigate environmental impacts.
70. The Panel's should conclude that the EIA includes no plans for actual adaptive management and that Benga has not provided sufficient information to rely on "adaptive management" to mitigate any of the adverse environmental impacts of the GMCP.

The GMCP would threaten the survival and recovery of the WSCT

Benga's baseline monitoring data is unreliable

⁶⁰ CIAR 848, hearing transcript vol 16, page 3321 lines 8-12,

⁶¹ CIAR 848, hearing transcript vol 16, page 3319-3321.

⁶² CIAR 555, CPAWS hearing submission, PDF pages 605-606, Expert report of M. Olzysynski at paras 23-24.

71. Benga has already failed to effectively monitor the Gold Creek population of Westslope Cutthroat Trout.
72. Benga's expert on the Westslope Cutthroat Trout was Mr. Bettles. Mr. Bettles had difficulty determining how many trout Benga caught and sampled during Benga's population surveys, and where they were caught.⁶³ At one point, he said Benga caught 1,625 Westslope Cutthroat out of Gold Creek in 2016.⁶⁴ He later realized that was an estimate of the total trout numbers, not the number Benga actually caught.⁶⁵
73. During the hearing, the vice president of external relations for Benga forgot to mute his microphone and reminded Benga's experts "Careful. We're not estimating the total number of fish."⁶⁶ Benga should have been estimating the total number of fish, as that is clearly important data for Benga to have. The Panel should be suspicious why Benga was careful not to make that estimate.
74. Benga described their monitoring of the Westslope Cutthroat Trout in Gold Creek and Blairmore Creek as extensive.⁶⁷ However, Benga had been unable to estimate the population sizes of the fish with a useful level of certainty. Benga's 95% confidence interval for the number of Westslope Cutthroat Trout in Gold Creek in 2016 was from 485 -2741.⁶⁸ This level of certainty is not sufficient to allow for useful monitoring or any kind of adaptive approaches.
75. Mr. Jim Rennie, a retired geologist, local fisherman, and statistics enthusiast did a better job of documenting the population collapse and determining its likely cause than Benga did. Mr. Rennie had a dataset going back to 1993⁶⁹, and it indicated Gold Creek was good habitat for the Westslope Cutthroat Trout from 1993 to 2015.⁷⁰
76. The evidence of Mr. Rennie was impartial, clearer, more extensive, and better organized than the evidence gathered by Mr. Bettles. Mr. Rennie's evidence showed the impact of the 2015 coal fines incident on Gold Creek. The panel should prefer the evidence of Mr. Rennie to that prepared by Benga.

⁶³ CIAR 848, hearing transcript vol 16, pages 3379 line 18 to 3384 line 7. (At page 3384 line 8 Benga's vice president of external relations intervenes to interrupt the cross-examination.)

⁶⁴ CIAR 848, hearing transcript vol 16, pages 3394 line 10 to 3395 line 3.

⁶⁵ CIAR 848, hearing transcript vol 16 page 3396 lines 1-22.

⁶⁶ CIAR 848, hearing transcript vol 16, page 3385 lines 6-18.

⁶⁷ CIAR 740, hearing transcript vol 1, page 56, lines 13-17.

⁶⁸ CIAR 877, Benga Mining Limited to the Joint Review Panel re: Response to Undertaking #19, PDF page 4.

⁶⁹ CIAR 903, hearing transcript vol 23, pages 5062-5063.

⁷⁰ CIAR 903, hearing transcript vol 23, page 5064 lines 5-25.

77. Benga failed to appreciate the cause of the Westslope Cutthroat Trout population collapse. Benga blamed “multiple existing stressors” for making Gold Creek poor habitat, and a dry year in 2015 for what Benga’s data indicated to be a 90% population collapse after 2016.⁷¹
78. In response to what appeared to be a 90% population collapse, Benga did not modify any of their plans for GMCP. Benga instead modified their method of surveying Westslope Cutthroat Trout to add new surveying sites to their index sites.⁷² Based on their changed methods, Benga concluded the population drop might have been much smaller than then Benga initially thought.⁷³ This theory, based on modified method of data collection, is contradicted by the independent evidence of the population drop provided by Mr. Rennie, who used a consistent approach.
79. Benga’s reaction to a major drop in the Westslope Cutthroat Trout population was to change their methods of data collection to generate inflated population numbers. That illustrates why conditions on the GMCP requiring monitoring of the Westslope Cutthroat Trout would be a waste of time – Benga has already shown it is unable to effectively monitor the Westslope Cutthroat Trout population.
80. This is a helpful real world example of how Benga’s adaptive management would work: where monitoring found a problem, the methods used in monitoring were changed to generate data that covered up the problem.
81. Gold Creek was reasonably good habitat for the Westslope Cutthroat Trout until Benga showed up. Benga is incorrect that there was agreement from most participants that Gold Creek was not good habitat.⁷⁴ Jim Rennie’s evidence was clear that up until 2015 Gold Creek supported a large and healthy population of Westslope Cutthroat Trout.⁷⁵ Neither did John Post agree Gold Creek was poor quality habitat.⁷⁶
82. Benga’s continued belief that WSCT numbers are declining because of “present habitat conditions”⁷⁷ is not supported by the evidence. Benga produced no evidence about the Westslope Cutthroat Trout population in

⁷¹ CIAR 848, hearing transcript vol 16, pages 3270 lines 7-11, and 3401 line 17 to page 3403 line 4.

⁷² CIAR 848, Hearing Transcript vol 16, pages 3390 line 21 to 3391 line 15.

⁷³ CIAR 848, Hearing Transcript vol 16, page 3399-3401. Also note that Mr. Houston answers the question instead of Mr. Bettles.

⁷⁴ CIAR 962, Benga’s final argument, paragraph 359.

⁷⁵ CIAR 527, Mr. Rennie’s hearing submission, PDF pages 7-10.

⁷⁶ CIAR 903, hearing transcript vol 23, pages 4969-4970.

⁷⁷ CIAR 962, Benga final argument, para 369.

Gold Creek before 2016,⁷⁸ despite Benga having been conducting aquatic baseline studies in 2014 that included observing fish in reaches of Gold Creek.⁷⁹ The July 17, 2015 coal fine incident most likely caused the population collapse in Gold Creek. Benga has wrongly identified the natural variation of flows in mountain creeks as the cause of the population drop.⁸⁰

83. The AER's investigation report into the July 2015 coal fine incident found that "erosion and transport of sediments and coal into Gold Creek has been happening for some time."⁸¹ However, Jim Rennie's evidence indicates that the 2015 coal sediment incident was not simply part of an ongoing trend.
84. The 2015 coal sediment incident was unique since Mr. Rennie started collecting data in 1993. Both the AER and Benga failed to appreciate that. This finding brings the AER's conclusion that Benga's 2015 drilling work on the GMCP site was unrelated to the 2015 coal sediment incident into doubt. The major collapse in Westslope Cutthroat Trout numbers occurred after Benga arrived and engaged in drilling on Grassy Mountain. The panel should conclude that Mr. Rennie's suspicion is correct – Benga's core hole drilling program and the associated roadwork in 2015 caused the 2015 coal sediment incident and associated release into Gold Creek.⁸² The explanation that heavy rains alone caused the 2015 coal sediment incident after rains had not caused such an incident in the preceding 22 years is implausible.
85. Benga is wrong that a lack of overwintering pools is a limiting factor for the WSCT population in Gold Creek, and that Benga's habitat offsetting plan is necessary or helpful for the Westslope Cutthroat Trout. The limiting factor for the WSCT in Gold Creek is far more likely to be the water quality problems from the 2015 coal sediment incident that occurred while Benga was working on the GMCP site. Benga's habitat offsetting plan has no basis in fact.
86. Benga has not started construction on the GMCP and has likely already cut the Gold Creek Westslope Cutthroat Trout population by 90%. The AER and DFO should have conducted more thorough investigations of the 2015 coal sediment incident.
87. Benga and Mr. Bettles failed to appreciate the impact of the 2015 coal sediment incident on the Westslope Cutthroat Trout population of Gold

⁷⁸ CIAR 848, hearing transcript vol 16, pages 3401-3402

⁷⁹ CIAR 42, Updates EIA, Consultant Report 6, PDF page 32.

⁸⁰ CIAR 962, Benga's final argument, paragraph 357.

⁸¹ CIAR 897, 2017-03-08 AER Investigation Summary Report, PDF page 10.

⁸² CIAR 903, hearing transcript vol 23, pages 5062-5063; see also CIAR 527, Mr. Rennie's hearing submission, PDF page 13 (Figure 3).

Creek. This failure is glaring. The Panel should have no confidence Benga can effectively monitor the Westslope Cutthroat Trout Populations.

88. Benga's proposed offsetting plan is based on incorrect assumptions about the habitat limitations of Gold Creek. The proposed offsetting would convert the natural habitat of Gold Creek into a managed site where Benga would be controlling the flow and path of Gold Creek.⁸³ The conversion of natural habitat into habitat controlled and monitored by a coal mining company is unlikely to benefit the Westslope Cutthroat Trout.
89. Benga's proposed offsetting plan for the lost habitat in Gold Creek is further deficient because it will be ruined by the water contamination and flow rate problems. The overwintering pools Benga will be attempting to build in Gold Creek will be useless once the GMCP has contaminated the water and reduced the flow rates in Gold Creek.
90. Adaptive management would require a long-term data set made using consistent methods. Benga has trouble explaining or remembering their methods, and has already changed their approach by adding to their index sites.
91. It is not clear that the Westslope Cutthroat Trout populations in Blairmore and Gold Creek are resilient enough to be as consistently sampled and monitored as they would need to be to make monitoring useful for any adaptive management purposes.⁸⁴
92. Benga will not be able to reliably monitor project impacts on the Westslope Cutthroat Trout, and there is no air of reality to their claims they can reliably protect the Westslope Cutthroat Trout from the impacts of the GMCP.
93. Any commitment or condition requiring Benga to conduct monitoring and adaptive management for the Westslope Cutthroat trout would be a waste of time. Benga demonstrated an inability to reliably or accurately gather information on the WSCT populations. Benga would produce only more inaccurate and inconsistent information like the information Benga submitted in the EIA.
94. The Westslope Cutthroat Trout do not need a mining company to manage them on a year-over-year basis,⁸⁵ what the Westslope Cutthroat Trout need is for Canadian regulators to keep coal mining companies far away from their habitat.

⁸³ CIAR 848, hearing transcript vol 16, pages 3270-3271.

⁸⁴ CIAR 848, hearing transcript vol 16, page 3389 lines 10-22.

⁸⁵ CIAR 884, hearing transcript vol 21, page 4598 lines 7-14.

95. The GMCP would be likely to extirpate the WSCT in Gold Creek and Blairmore Creek and the loss of those populations will jeopardize the recovery of the species.

The GMCP cannot be permitted under the *Species at Risk Act*

96. Because the GMCP will jeopardize the recovery of the Westslope Cutthroat Trout, the GMCP cannot be permitted under the *Species at Risk Act* section 73(3). The Department of Fisheries and Oceans (DFO) belatedly recognized that. Although that decision is not directly before the panel, but CPAWS would like to briefly respond to Benga's submissions.
97. A section 73 permit can be granted where the competent minister is of the opinion that affecting the species is incidental to the carrying out of the activity.⁸⁶
98. Benga and DFO take the position that "incidental" means "the effect that carrying out the activity has upon the species must not be the purpose of the activity."⁸⁷ This interpretation of the *Species at Risk Act* has not been upheld in any court, and DFO has not produced a final permitting policy for the *Species at Risk Act*, despite posting their draft policy for comment in 2016.⁸⁸
99. The interpretation proposed by DFO is inconsistent with the scheme of the *Species at Risk Act*, and so unnatural that Benga inadvertently used the correct (and more natural interpretation) in one paragraph of their final argument.⁸⁹ Under DFO's interpretation of "incidental", only activities with the explicit purpose of affecting species at risk could not be permitted under section 73(2).
100. CPAWS takes the position that "incidental" requires that the impacts on the species at risk be negligibly small. This interpretation is consistent with the purposes of the *Species at Risk Act*.
101. Benga has listed previous section 73 permits that harmed species at risk and their critical habitat as evidence that Benga should be given their permit.
102. Benga has identified 3 instances of the government of Canada wrongly granting s.73 permits to federal government bodies.⁹⁰ Evidence of these past

⁸⁶ *Species at Risk Act*, SC 2002, c 29, s.73(2)(c).

⁸⁷ CIAR 962, Benga's final argument, para 53; CIAR 891 at 4700:8-22.

⁸⁸ CIAR 891, hearing transcript vol 22, page 4714.

⁸⁹ CIAR 962, Benga's final argument, para 377. The proposed offsets have nothing to do with whether the purpose of the mine is to harm the WSCT – but purport to be relevant to the scale of the impacts.

⁹⁰ CIAR 962, Benga's final argument para 55, items a, b, c.

harmful permits relating to species at risk shows the importance of rejecting DFO's interpretation of "incidental" and the need for better supervision of permitting under s.73.

103. Benga also identified three section 73 permits that are not comparable to the permit they are seeking for GMCP. In the first, the only activity permitted was ongoing monitoring started prior to the Rainbow Trout being listed under *SARA*.⁹¹ The second was a permit for bank stabilization, and the third was for remedial work on an already existing bridge.⁹² Remedial work and stabilization work can be permitted under section 73 because they must occur to prevent greater adverse impacts in the future, thereby benefitting the species.
104. Rather than letting Benga try to get the GMCP through a loophole in the *Species at Risk Act*, the Panel should recommend the federal government close the loophole. If Benga is granted a 73 *SARA* permit, it would set a precedent for more projects to destroy critical habitat.
105. Canada has a large regulatory body tasked with preserving and monitoring the critical habitat of species at risk: the Department of Fisheries and Oceans. DFO should carry out any reclamation work it determines is necessary to protect Gold Creek. That reclamation work can properly be the subject of a section 73 permit – a coalmine cannot. The GMCP and the reclamation of the legacy mining operations are clearly two fully separate activities.⁹³
106. Benga has complained that DFO did not specifically ask for Benga to update their plans in response to the new Recovery Strategy and Action Plan for the Westslope Cutthroat Trout.⁹⁴ Benga should have been aware of the importance of the changes to the designated critical habitat. There was no need for DFO to specifically request updates to Benga's offsetting plans.
107. CPAWS has legitimate complaints about DFO's conduct of the GMCP and the protection of the Westslope Cutthroat Trout. DFO did not meet the legislated timelines to post recovery documents for the WSCT.⁹⁵ DFO has not posted a report on the implementation of the recovery strategy for the Westslope Cutthroat Trout, despite the statutory deadline for them to do so being March 2019.⁹⁶ That report on the implementation of the recovery strategy ought to have been available for consideration at the hearing. DFO

⁹¹ CIAR 891, hearing transcript vol 22, page 4750.

⁹² CIAR 962, Benga's final argument para 55 items d, e, and f.

⁹³ CIAR 848, hearing transcript vol 16, pages 3365-3367

⁹⁴ CIAR 962, Benga's final argument, para 392.

⁹⁵ CIAR 891, hearing transcript vol 22, page 4711, lines 13-26.

⁹⁶ CIAR 891, hearing transcript vol 22, page 4714 line 23 to 4715 line 17.

should have taken action years ago to protect the genetically pure population of WSCT in a reach of Blairmore creek, instead of monitoring that population until it was hybridized and then removing that reach of Blairmore Creek from the list of critical habitat. If DFO had taken action sooner, at least a portion of Blairmore Creek would still be critical habitat with a genetically pure population of WSCT.

108. DFO employees who are no longer involved with reviewing the GMCP appear to have misled Benga early in the impact assessment process by giving the impression the GMCP could be permitted under *SARA*. DFO did not bring any the individuals involved in those early communication with Benga to the hearing as witnesses.⁹⁷

109. This is an area where regulatory certainty is called for: under no condition should a mine adjacent to critical habitat be permitted under *SARA*. DFO should have informed Benga at the outset that the GMCP could never be permitted unless the Alberta population of Westslope Cutthroat Trout had been recovered and was duly removed from the list of species at risk.

Selenium management: the site-specific selenium water quality limit

110. Benga abandoned the conservative approach to selenium management. A conservative approach gave a clear answer: the GMCP produces unacceptable levels of water pollution and “very conservative across-the-board measures wouldn’t be achievable”.⁹⁸ After realizing this, Benga abandoned the conservative approach in favour of a risk-tolerant approach that Benga believes would help them to obtain approvals for the GMCP.⁹⁹

111. Benga hired Mr. Deforest to develop a different approach that would justify the high levels of Selenium the GMCP will release. Mr. Deforest’s career consists of about 20 years of publications done on behalf of the mining industry to argue that regulatory limits for Selenium and other metals can be set higher. He has worked for Kennecott mining in Utah, the Utility Solid Waste Advisory Group, the North American Metals Council, Rio Tinto, Wharf Resources, and the International Lead Association.¹⁰⁰

112. No approach based on the work of Mr. Deforest can be considered conservative. He is a mining industry expert whose role is to justify maximally risk-tolerant approaches to metal contamination levels. Because

⁹⁷ CIAR 962, Benga’s final argument, para 388.

⁹⁸ CIAR 848, hearing transcript vol 16, page 3286 lines 1-19.

⁹⁹ CIAR 848, hearing transcript vol 16, pages 3285 line 15 to 3287 line 3.

¹⁰⁰ CIAR 848, hearing transcript vol 16, pages 3355-3363.

of the Panel's obligation to take a precautionary and conservative approach, the evidence of Mr. Deforest should be completely disregarded.

113. CPAWS included a published academic paper of Dennis Lemly on the likely impacts of the GMCP.¹⁰¹ Dr. Lemly has been working on Selenium contamination problems since 1970,¹⁰² and, in contrast to Mr. Deforest, Dr. Lemly does take a precautionary approach. The Panel should prefer Dr. Lemly's work to the submissions of Mr. Deforest. Dr. Lemly is clear that the GMCP is likely to extirpate the surrounding populations of Westslope Cutthroat Trout.

114. Benga's request for a proposed site-specific water guideline is a request for a relaxation of regulatory requirements before operations have even started. CPAWS is deeply concerned by Benga's choice to hire experts to argue for lower environmental standards instead of hiring experts to help them meet environmental standards. These are not the actions of a responsible mining company.

115. Benga should not be granted any exceptions to the standard water quality limits. This Panel should not approve or support any site-specific selenium water quality limits for the GMCP.

Selenium management: the saturated backfill zone

116. Benga described the technology of the Saturated Backfill Zone as being well-established and in use for around 20 years.¹⁰³ The 'general technology' is not the SBZ though, it is the basic principle of reductive precipitation or anaerobic biological reduction as a means of controlling water contamination. The differences between the specific application for selenium and the basic principles of reductive precipitation are enormous.

117. SBZ's for selenium comparable to what Benga proposes have been in use for at most three years.¹⁰⁴ This is not long enough to understand the long-term efficacy or maintenance requirements of the SBZ.

118. Benga switched approach from language of 'attenuation rates of percentage removal' in their EIA to language of 'concentration achieved in the effluent' at the hearing.¹⁰⁵ Percentage removal, in Benga's view "would be something that's more suitable if we were, you know, installing filter or

¹⁰¹ CIAR 555, CPAWS hearing Submission PDF pages 11-21.

¹⁰² CIAR 848, Hearing transcript vol 16, page 3321 lines 8-12.

¹⁰³ CIAR 848, hearing transcript vol 16, page 3299.

¹⁰⁴ CIAR 848, hearing transcript vol 16, pages 3295, 3303-3304.

¹⁰⁵ CIAR 848, hearing transcript vol 16, page 3306, and 3339-3340.

something like that.”¹⁰⁶ Benga is doing something like that, as later Benga’s expert said “the backfilled rock in the - - in the SBZ or in the mined-out pit acts as a huge filter for these less soluble forms of selenium.”¹⁰⁷

119. CPAWS retained Mr. Marc Bowles to give evidence on the likely effectiveness of the SBZ. Mr. Bowles’s evidence was that Benga has an unrealistically optimistic view of the expenses and difficulties involved in maintaining the SBZ in the long term. Two significant problems Benga will need to face are biofouling and the sealing of preferential flow paths in the SBZ.¹⁰⁸
120. Benga did not attempt to challenge any of Mr. Bowles evidence on cross-examination.¹⁰⁹
121. Benga’s expected level of selenium attenuation in the SBZ is very optimistic, and despite that optimism, Benga expects to exceed water quality guidelines for Selenium.¹¹⁰
122. One of Benga’s experts (Mr. Jensen) involved in designing the SBZ was unaware Teck’s SBZ had biofouling issues until it was brought to his attention during cross-examination.¹¹¹ Despite having learned of the potential issue with the SBZ only moments before, he assured the panel that dealing with biofouling would be cheap.¹¹²
123. A major concern with the SBZ is that if the anoxic conditions are not properly maintained or are disturbed, the selenium that has precipitated out in the SBZ will be remobilized and flow out of the SBZ.¹¹³
124. Benga’s plan involves the SBZ remaining in an anoxic and undisturbed state in perpetuity. This requires the SBZ to persist not for decades or centuries, but forever.¹¹⁴ That is not a realistic long-term plan.
125. The panel should reject Benga’s plan to permanently leave the SBZ with the precipitated elemental selenium underground at the GMCP, as it would make the risk of a sudden selenium release permanent.¹¹⁵ The SBZ has a small surface footprint only because it is underground, not because it is

¹⁰⁶ CIAR 848, hearing transcript vol 16, page 3306 lines 17-20.

¹⁰⁷ CIAR 848, hearing transcript vol 16, page 3323 lines 2-5.

¹⁰⁸ CIAR 903, hearing transcript vol 23, pages 5089 and 5102.

¹⁰⁹ CIAR 903, hearing transcript vol 23, page 5098 lines 1-9.

¹¹⁰ CIAR 903, hearing transcript vol 23, pages 5095 at line 17 to 5096 at line 14.

¹¹¹ CIAR 848, hearing transcript vol 16, page 3309.

¹¹² CIAR 848, hearing transcript vol 16, page 3312 lines 4-18.

¹¹³ CIAR 903, hearing transcript vol 23, pages 5094-5095.

¹¹⁴ CIAR 848, hearing transcript vol 16, page 3324 line 23 to 3326 line 3.

¹¹⁵ CIAR 848, hearing transcript vol 16, pages 3324-3326.

small.¹¹⁶ When the SBZ needs monitoring and maintenance, it will be much more difficult, complicated, and expensive to conduct the monitoring or maintenance because the SBZ is underground.

126. The value of building an SBZ as a pilot test would be minimal because such a test is already being run in the Elk Valley, where Teck is attempting to use SBZ technology to deal with their out of control selenium contamination problem.¹¹⁷ There is no value in approving Benga to run a copycat experiment.

127. Benga's contingency plans for the SBZ are all variations on the same technology.¹¹⁸ Benga did not explain why these variations would work if the initial SBZ fails.

128. Once the selenium-leaching problem starts, stopping or suspending mining will do nothing to control it. The selenium-leaching persists for decades whether or not mining continues.¹¹⁹

129. The panel should conclude that:

- i. the SBZ will not sufficiently reduce selenium contamination to protect the Westslope Cutthroat Trout,
- ii. the SBZ will have much higher monitoring and maintenance costs than Benga expects, and for a longer period of time, and
- iii. that leaving the SBZ and the associated selenium in place underground produces an unacceptable risk of future environmental damage.

Other metal contaminants

130. Benga did not correctly identify potential contaminants of concern. Benga's experts confused bioaccumulation and bioconcentration when determining which metals should be assessed for bioaccumulation risks.¹²⁰ Skipping over bioaccumulation and considering bioconcentration does not comply with the *Canadian Environmental Protection Act's* approach to bioaccumulation.

¹¹⁶ CIAR 848, hearing transcript vol 16, page 3323 lines 14-24.

¹¹⁷ CIAR 876, hearing transcript vol 19, pages 4002-4003.

¹¹⁸ CIAR 848, hearing transcript vol 16, pages 3294, 3317, lines 5-13, and 3335 lines 18-21; see also CIAR 876, hearing transcript vol 19, pages 3655-3656.

¹¹⁹ CIAR 881, hearing transcript vol 20, page 4374 lines 1-4.

¹²⁰ CIAR 928, hearing transcript vol 26, page 5579 at line 13 to page 5585 at line 17.

131. A properly conservative approach would require environmental impacts to be below release guidelines using conservative assumptions. Benga's plan includes exceedances of the Alberta water quality guidelines in relation to chromium, cobalt, ammonia, and nitrate in Blairmore and Gold creek,¹²¹ and selenium, arsenic, cadmium, cobalt, copper, nickel, and zinc in the end pit lake.¹²²
132. Benga disregarded those exceedances because they "are the product of conservative analyses".¹²³ That line of thinking defeats the purpose of a conservative approach by considering the results of a conservative approach unimportant for planning purposes. The panel should conclude Benga failed to properly take a conservative approach to this issue.

The GMCP would have significant adverse impacts on wildlife and habitat availability

133. Benga used a threshold level of 20% habitat loss in the wildlife study area for the significance of habitat loss. This approach meant a loss of habitat 5 times larger than the entire project footprint was necessary to cause what Benga considered to be a "significant" habitat loss.¹²⁴
134. Benga's approach all but removed the possibility of a determination of a significant habitat loss from the outset. Benga has no plan to monitor the 20% habitat loss expected.¹²⁵ The panel should conclude Benga did not provide a useful analysis of whether habitat loss from the GMCP was significant.
135. Benga specified that other factors were considered in their approach to determining if habitat loss was significant, but when questioned admitted those factors did not make any difference to Benga's conclusions.¹²⁶
136. Benga's claims about the benefit of reclaiming the existing mine are also exaggerated. Benga described the existing disturbance as extensive and having had little to no mitigation or reclamation,¹²⁷ but the historic mining disturbance is only 185 hectares of the GMCP's 1,500 hectare footprint.¹²⁸

¹²¹ CIAR 962, Benga's final argument para 342.

¹²² CIAR 962, Benga's final argument para 343,

¹²³ CIAR 962, Benga final argument at para 344.

¹²⁴ CIAR 928, hearing transcript vol 26, page 5586, line 19 to page 5587 line 20.

¹²⁵ CIAR 928, hearing transcript vol 26, pages 5732-5733.

¹²⁶ CIAR 928, hearing transcript vol 26, page 5588, lines 5-22.

¹²⁷ CIAR 740, hearing transcript vol 1, page 55.

¹²⁸ CIAR 835, hearing transcript vol 14, pages 2920 line 21 to 2921 line 5.

Disturbing 1,500 hectares in order to clean up the existing 185 hectares of mining disturbance is absurd.

137. Benga's evidence also shows that some of that existing disturbance has already returned to being useful habitat for wildlife. The legacy-mining disturbance has large ponds that support amphibian life.¹²⁹ If Benga mines these areas again, they will not be useful habitat for at least several decades.

The end-pit lake has dangerous metal and selenium contamination

138. Benga attempted to avoid admitting the end-pit lake is significantly toxic during cross-examination.¹³⁰ This was a confusing approach given that it was obvious from their submissions that the end pit lake had serious contamination problems. Benga had already abandoned their original plan to drain the end-pit lake into Gold Creek because it would cause unacceptable contamination problems in Gold Creek.¹³¹

139. The metal and selenium levels in the end-pit lake will cause adverse impacts on any aquatic life that may develop in the lake, as well as the semi-aquatic insects and birds that will live near the end-pit lake and consume algae, plants, or insects from the end-pit lake. The contaminants in the end-pit lake will bioaccumulate through the food chain into species not inside the end-pit lake.¹³²

140. Where a conservative approach indicated the end-pit lake would cause problems, Benga re-evaluated the conservative approach as being overly conservative.¹³³ Benga proposed to work on solving the metal contamination problems going forward.¹³⁴ Benga was supposed to have provided a solution to those problems in their EIA.

141. Benga produced only a very preliminary conceptual design for the end-pit lake.¹³⁵ That preliminary conceptual design leads to significant metal contamination problems. Benga's refusal to produce a completed design also defeats Benga's claim that the GMCP has the advantage of being "designed from the beginning to deal with this problem".¹³⁶ The design does not deal with the problem, it ignores it.

¹²⁹ CIAR 928, hearing transcript vol 26, page 5605 lines 8 to page 5606 line 8.

¹³⁰ CIAR 884, hearing transcript vol 21, page 4612.

¹³¹ CIAR 884, hearing transcript vol 21, pages 4516-4517.

¹³² CIAR 928, hearing transcript vol 26, page 5579 lines 8-9.

¹³³ CIAR 928, hearing transcript vol 26, page 5590-5591.

¹³⁴ CIAR 928, hearing transcript vol 26, page 5579 line 12 to page 5580 line 17.

¹³⁵ CIAR 928, hearing transcript vol 26, page 5592 lines 12-15.

¹³⁶ CIAR 962, Benga's final argument, para 320.

142. The Panel should conclude the metal-contaminated end-pit lake is a serious adverse impact on the environment that Benga will be unable to mitigate.

Benga wrongly omitted the Elan South project from the cumulative impacts assessment

143. Benga did not include Atrum's Elan Coal project in their cumulative impact assessment.

144. The Agency's Cumulative Effects Technical Guidance document for assessing cumulative effects under *CEAA 2012* says:

145.

A future physical activity could be considered reasonably foreseeable and should generally be included in the cumulative effects assessment if one or more of the following criteria are met:

- The intent to proceed is officially announced by a proponent. This information could be found in news media, the proponent's website or via an announcement from the proponent directly to regulatory agencies.

146. ...

- The submission for regulatory review is imminent. This could be known if the collection of data has already commenced, regulatory authorities have been contacted about information requirements, or through an announcement from the proponent.¹³⁷

147. Benga ignored this agency guidance. Benga decided that they should consider a project only once an application to a regulator for the project had been made, and that gathering baseline information to prepare for the regulatory application was not enough to make a project reasonably foreseeable.¹³⁸

148. Benga ought to have known that the submission for regulatory review of Elan South was imminent. At least two of Benga's experts (Mr. Bettles and

¹³⁷Government of Canada, "Assessing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012", Interim Technical Guidance (March 2018) at 1.3 online: <<https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/assessing-cumulative-environmental-effects-ceaa2012.html>>.

¹³⁸ CIAR 848, hearing transcript vol 16, pages 3287-3289

Mr. Bewley) are working on the collection of data for Atrum's applications for regulatory review.¹³⁹ These two experts are not just aware Atrum is preparing a regulatory submission for Elan South, these experts are preparing Atrum's submission for Elan South.

149. Benga closed their eyes to avoid information that would have required them to consider Elan South in their cumulative impact assessment. This is particularly egregious given that Benga, Benga's consultants, Atrum, and Benga's counsel are all members of an industry lobby group together.¹⁴⁰ Given that the coal industry works together to lobby for changes to land planning laws to help the coal industry and get "coal mining expertise" for the regulator,¹⁴¹ it is not unreasonable to ask Benga to pick up the phone to check if Atrum was planning to build a mine on the land adjacent to the GMCP.

150. Benga's decision to exclude Elan South from their cumulative impacts assessment on narrow technical grounds is indicative of Benga's approach to environmental obligations: they interpret their environmental monitoring and reporting obligations in the narrowest manner possible.

151. The Panel should comment on Benga's choice to exclude the Elan South project in their final report. The coal industry should not be permitted to feign ignorance of each other's activities for the purposes of avoiding cumulative impacts assessments when the coal industry can work together when it benefits them.

Benga failed to assess the risk of wildfires in relation to the project

152. Benga submitted a table showing likely impacts of wildfires on the project.¹⁴² The table contained clear errors¹⁴³, including a conclusion that the risk of wildfires inside the project footprint was triple the wildfire risk outside the project. Given that the project footprint will be increasingly

¹³⁹ See the resumes in CIAR 571, Benga's Hearing Response Submission, PDF pages 153 and 164. See also CIAR 830, Hearing transcript vol 13, pages 2698-2699 for Benga declining to provide this information despite having already placed it on the record.

¹⁴⁰ CIAR 750, hearing transcript vol 2, pages 429-430, and 434 lines 11-12; and CIAR 766, Coal Association of Canada to the Joint Review Panel re: Response to Undertaking #1.

¹⁴¹ CIAR 766, Coal Association of Canada to the Joint Review Panel re: Response to Undertaking #1.

¹⁴² CIAR 55, Fourth Addendum to the Environmental Impact Statement, Attachment 2, PDF pages 94-95.

¹⁴³ CIAR 799, hearing transcript vol 9, pages 2021-2023.

stripped of trees and vegetation, that conclusion did not seem correct to Benga's experts.¹⁴⁴

153. The table contained math errors,¹⁴⁵ and a misapplication of an academic paper (Boulanger 2014) based on the unreasonable assumption that the paper's conclusions about a large area of Canada (the Southern Cordillera) could be assumed to be true for an area as small as the regional area surrounding the project. Benga's experts said they determined Boulanger's 2014 paper was the most appropriate model,¹⁴⁶ but Benga's experts had difficulty determining the boundaries of the Southern Cordillera even with the academic paper that they relied on in front of them.¹⁴⁷ Much of the data was produced by extrapolating from a single historical fire.¹⁴⁸ A direct application of Boulanger's study would have used the years 1961-1990, but under that analysis would have indicated that there was a zero wildfire risk for the area around GMCP.¹⁴⁹ The time periods Benga used had inconsistent numbers of years, with some of the time periods overlapping by several years.¹⁵⁰

154. Benga initially suggested the expert who would best be able to explain Benga's data on wildfires was Ms. Bauman¹⁵¹, but Ms. Bauman was not involved with the GMCP project until more than a year after the error-riddled table was submitted.¹⁵² She was familiar with the Boulanger's 2014 paper only "at a high level".¹⁵³ None of Benga's experts took responsibility for Benga's submissions on wildfires. Benga submitted the table twice, once in November 2017 and again in July of 2019, and made no improvements to it.¹⁵⁴

155. Benga's actual approach, and what their vice president of external relations wanted to focus on was Benga's view that wildfires would not be a problem because there have not been many wildfires in the wildlife local study area in the past.¹⁵⁵ Unfortunately for Benga, "the previous outcome

¹⁴⁴ CIAR 799, hearing transcript vol 9, pages 2015 lines 8-17.

¹⁴⁵ CIAR 830, hearing transcript vol 13, page 2700 lines 5-8.

¹⁴⁶ CIAR 799, hearing transcript vol 9, page 2031 line 24 to 2032 line 10.

¹⁴⁷ CIAR 830, hearing transcript vol 13, pages 2703 line 14 to 2704 line 4.

¹⁴⁸ CIAR 799, hearing transcript vol 9, page 2024 lines 12-18.

¹⁴⁹ CIAR 799, hearing transcript vol 9, page 2041 to 2042.

¹⁵⁰ CIAR 799, hearing transcript vol 9, page 2026.

¹⁵¹ CIAR 799, hearing transcript vol 9, page 2046-2047.

¹⁵² CIAR 830, hearing transcript vol 13, pages 2700 line 15 to 2701 line 5.

¹⁵³ CIAR 830, hearing transcript vol 13, pages 2700 lines 11-12.

¹⁵⁴ CIAR 830, hearing transcript vol 13, pages 2700 line 26 and page 2702 line 21 to 2703 at line 9.

¹⁵⁵ CIAR 799, hearing transcript vol 9, page 2024 line 21 to page 2025 line 5; see also page 2030 lines 8-25.

doesn't dictate the future outcome".¹⁵⁶ Benga also based their analysis largely on a single wildfire, which is not a correct approach.¹⁵⁷

156. Benga's detailed submission relating to wildfires were 'filler': hastily assembled and inapplicable data used to give an illusion of completeness and thoroughness to a shoddy analysis.

157. The panel should conclude that Benga provided no reliable useful information on wildfire risks relating to the project. Benga's environmental assessment should have assessed whether the project is likely to increase wildfire risk and assessed how the wildfire risk is impacted by climate change. Coal is a flammable and sometimes explosive substance – the assessment of fire risk should not have been an afterthought.

158. Benga's failure to describe or understand wildfire risks undermines many of their other conclusions. Particularly their conclusions about future habitat availability in the regional study area because of the failure to estimate likely habitat loss from wildfire, their estimates of future air quality conditions because of the failure to include wildfire smoke,¹⁵⁸ and potentially the geological safety of the mine itself because the coal seams that supports the mine walls can be destabilized if wildfire ignite those coal seams.¹⁵⁹

The GMCP would have a significant adverse impact on amphibians and wetlands

159. Benga concluded the GMCP would not have significant impacts on the Western Toad and Columbia Spotted Frog.¹⁶⁰ Benga's expert, Mr. John Kansas, made serious errors in reaching this conclusion.

160. Mr. Kansas failed to appreciate that the large shrubby open fen was the largest wetland on the project site, initially believing there was another larger wetland during cross-examination.¹⁶¹

161. Benga's amphibian surveys failed to check for amphibians in the large shrubby open fen.¹⁶² That is to say, when looking for amphibians, Benga's experts forgot to check the largest wetland on the project site. The Panel should have no confidence in Benga's baseline wildlife surveys.

¹⁵⁶ CIAR 799, hearing transcript vol 9, page 2004 lines 6-15.

¹⁵⁷ CIAR 799, hearing transcript vol 9, page 2006 lines 11-18.

¹⁵⁸ CIAR 799, hearing transcript vol 9, page 2007.

¹⁵⁹ CIAR 799, hearing transcript vol 9, page 2050-2052.

¹⁶⁰ CIAR 928, hearing transcript vol 26, page 5601, lines 8-11.

¹⁶¹ CIAR 928, hearing transcript vol 26, page 5604 line 22 to page 5605 line 6.

¹⁶² CIAR 928, hearing transcript vol 26, page 5606-5608. CIAR 921 shows the overlay map of the acoustic surveys to the fen.

162. Mr. Kansas, who had earlier not given any answer to what an ecological trap was, and who had allowed one of Benga's other experts to make an incorrect guess at what an 'ecological trap' was,¹⁶³ chose to declare that the large shrubby open fen that he had never visited during the amphibian breeding season,¹⁶⁴ was such an ecological trap.¹⁶⁵

163. Mr. Kansas's evidence was transparently defensive of the mining industry, sometimes verging on taking the position that wildlife preferred disturbed former coalmines to undisturbed habitat,¹⁶⁶ and that the real problem might be that there would be too many large mammals on the mine site after reclamation:

It's going to attract bighorn sheep, who have range within 6 or 7 or 8 kilometres of the Grassy site. It's going to attract grizzly bears. It's going to attract wolves, who are going to hunt elk, who will be attracted as well. And sometimes when you have that kind of biomass of -- almost like the Serengeti -- Serengeti plains, which is literally what it's like up in the Luscar grave complex, at the times, you wonder where some of these animals might go, and they may -- they -- are they going to leave and start new subpopulations, or are they going to stay and where the -- where the habitat is good? So it's not a serious problem, but I have a academic curiosity about that.¹⁶⁷

164. Mr. Kansas completely failed to appreciate the problem of an ecological trap. He noted that "amphibians, and specifically spotted frogs and western toads, are very readily -- very readily colonize created wetlands, constructed wetlands"¹⁶⁸ but failed to recognize that this meant the amphibians would be attempting to recolonize ponds with toxic selenium and metal contamination.

165. Mr. Kansas realized during cross-examination that most of the wetlands on the project footprint at closure would be the former surge ponds and raw water ponds.¹⁶⁹ Mr. Kansas had been under the impression it would be mostly the sedimentation ponds without metal contamination.

166. 13.6 of the 18.2 hectares of treed wetland Benga is counting on to replace the lost wetlands at the end of mine life will be toxic to amphibian

¹⁶³ CIAR 928, hearing transcript vol 26, page 5600.

¹⁶⁴ CIAR 928, hearing transcript vol 26, page 5608 lines 18-20.

¹⁶⁵ CIAR 928, hearing transcript vol 26, page 5607 lines 21-23.

¹⁶⁶ CIAR 907, hearing transcript vol 24, pages 5268-5270.

¹⁶⁷ CIAR 907, hearing transcript vol 24 5270 line 10 to 5271 line 4.

¹⁶⁸ CIAR 928, hearing transcript vol 26, page 5609 lines 7-24.

¹⁶⁹ CIAR 928, hearing transcript vol 26, page 5612, lines 13-17.

life.¹⁷⁰ After being told this, Mr. Kansas may have forgotten, as he mentioned this replacement wetland when answering a different question later in the hearing.¹⁷¹

167. Those constructed wetlands will have dangerous metal contamination for at least several decades past the end of project life, possibly longer.

168. The panel should not consider Mr. Kansas's evidence credible given his general belief that mining helps the environment, and that Mr. Kansas failed to understand the details of the GMCP reclamation plan.

169. Benga failed to plan for the long-term toxicity problems the constructed wetlands on the project will have. The constructed wetlands Benga counted as replacement habitat for amphibians will be so toxic that Benga will need to have a long-term monitoring and capture program in place so that amphibians do not touch those wetlands.¹⁷²

170. Insects, amphibians, and birds that interact with the waters of those wetlands will carry bioaccumulating metal contamination out of those wetlands into other habitats, including Gold Creek.¹⁷³

171. Benga suggested they could use amphibian fencing and trap holes to prevent amphibians from contacting the contaminated wetlands. These would need to be active and monitored for at least several decades.

172. Benga suggested they could prevent birds from contacting the contaminated wetlands with "flagging tape on ropes, fencing, water cannons, and effigies or scarecrows".¹⁷⁴ AER staff should be highly aware these methods are not very effective from their experience regulating the oilsands. "Water cannons" are particularly ineffective because they do not exist – Benga was confused by a reference in the hearing to sound cannons.¹⁷⁵ Benga has not given this problem any serious thought.

173. Benga's suggestion at the hearing to use sound cannons is also not consistent with Benga's plans to control noise from the project, or have wildlife return to the rest of the project site. Benga did not assess how sound cannons sufficient to deter waterbirds would interfere with the return of other wildlife.

¹⁷⁰ CIAR 928, hearing transcript vol 26, page 5611-5614.

¹⁷¹ CIAR 931, hearing transcript vol 27, page 5943 line 13 to page 5944 line 9.

¹⁷² CIAR 928, hearing transcript vol 26, page 5614 line 17 to 5617 line 20.

¹⁷³ CIAR 928, hearing transcript vol 26, page 5618 line 14 to page 5619 line 15.

¹⁷⁴ CIAR 962, Benga's final argument, para 510.

¹⁷⁵ CIAR 931, hearing transcript vol 27, page 5944, lines 10-18.

174. Benga's experts failed to appreciate the environmental consequences of replacing existing wetlands on the project footprint with contaminated wetlands that will need to be managed for decades, the associated bioaccumulation problems the contaminated wetlands will cause, and did not account for these sources of metal contamination in their environmental assessment.
175. These errors also show Benga's estimates for the cost of site monitoring and management to be too low. Benga has not sufficiently considered what the post-closure site management would entail.
176. The Panel should conclude that the GMCP will have significant adverse impacts on the Western Toad, the Columbia Spotted Frog, and wetlands, and that Benga has failed to quantify or mitigate those impacts.

Conclusion

177. Canada, Alberta, and Indigenous communities are relying on the technical review of the Joint Review Panel to determine if the GMCP can proceed in a manner that will protect the environment while providing economic and social benefits. CPAWS submits that the evidence shows it cannot.
178. Benga is unable to properly predict, monitor, mitigate or remediate the environmental impacts of the project. The GMCP would have significant adverse environmental impacts on the landscape, rivers, and wildlife, including species at risk, of Southern Alberta.
179. Benga refused to produce a complete EIA because that would 'put the cart before the horse'. If Benga has complaints about the EIA process, Benga can continue having the Coal Association lobby for changes to the law, but the Panel is tasked with conducting a complete environmental assessment.
180. Benga repeatedly abandoned the conservative approach whenever modelling indicated unacceptable environmental outcomes.¹⁷⁶ This strategy of replacing conservative modelling defeats the purpose of a conservative approach and is fairly characterized as a risk-tolerant approach.
181. The precautionary principle says that "if there are threats of serious or irreversible damage to a wildlife species, cost-effective measures to prevent the reduction or loss of the species should not be postponed for a lack of full scientific certainty." Benga proposes to take minimal steps to

¹⁷⁶ Benga produced a chart showing this approach in CIAR 856, Benga response to undertaking 18, PDF page 2.

control threats of irreversible damage until Benga has proof of that damage¹⁷⁷, at which point it will be too late.

182. Benga's evidence does not show Benga to be a responsible or competent operator. The panel should have no confidence in Benga to develop solutions for the many problems the GMCP's would have in the future.
183. An approval for the GMCP would represent a significant lowering of Canada's environmental standards and the standards of clarity and correctness required for an EIA. This should be unacceptable to the panel.
184. Although CPAWS considered proposing a list of conditions required for GMCP,¹⁷⁸ CPAWS does not believe any set of conditions would be sufficient to allow the GMCP to serve the public interest. The GMCP simply should not be approved.

ALL OF WHICH IS RESPECTFULLY SUBMITTED THIS 8TH DAY OF JANUARY 2021.

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¹⁷⁷ CIAR 884, hearing transcript vol 21, pages 4407-4416.

¹⁷⁸ In CIAR 555 (CPAWS's hearing submission) CPAWS did suggest conditions on PDF pages 7-8. CPAWS does not consider those conditions sufficient to mitigate the environmental consequences of the GMCP or protect the public interest.