MEMORANDUM

To: Pam Rothwell, Cameco Permit Coordinator

From: Julie Powell, P.E. Project Engineer

Date: April 17, 2012

Re: Mechanical Integrity Testing (MIT) Review; Additional Information Required

Introduction

In October 2011, Cameco Resources began providing documentation to the LQD indicating wells having failed mechanical integrity testing (MIT) pursuant to Chapter 11, Section 8(c). The correspondence from Cameco also requests written authorization from LQD to resume operation of the repaired wells.

A thorough review of all documentation provided since October 2011 contained in the "*Special Volumes*" for MITs has been conducted in order to evaluate Cameco's requests to resume operation of the repaired wells. The review has raised numerous concerns regarding the process utilized by Cameco to repair and retest wells. These concerns have been identified in a letter dated April 2, 2012 sent to Cameco with a deadline of ten (10) days for Cameco to respond and schedule a meeting with LQD to discuss the concerns.

Review Comments

The following comments are being provided for each well pending approval in order to provide Cameco with specific items required to be addressed for each well to receive approval and resume operation of the wells.

Well KI-006

1. The MIT data sheet is incomplete. The "cement to surface" item has not been completed. The test sheet needs to indicate that this has been completed. **(JP)**

2. The well failed MIT at eight hundred-sixty five (865) feet and was retested to only eight hundred-twenty (820) feet. LQD has questions whether the failed portion of the well casing has been repaired. Without a retest to the depth of original failure, there is no way to determine if the casing is now stable. Additional information is required regarding the repair of the casing at the point of failure. **(JP)**

3. The J-top has been reset three (3) feet below the production sand layer. LQD has concerns that the well will not be injecting into the production zone if it is placed back into operation. Additional information regarding the geology adjacent to this well is required prior to authorization to operate. **(JP)**

Well KP-006

4. The J-top has been reset forty (40) feet above its original depth which places it at the top of production sand. LQD has concerns that the well will not be injecting into the production zone if it is placed back into operation. Additional information regarding the geology adjacent to this well is required prior to authorization to operate. **(JP)**

5. The casing was reported as being broken at eight hundred-fifty eight (858) feet. Additional information is required regarding the repair of the broken casing. Based on the information submitted, it appears that the J-top was set above the break and the failed portion of the well was not retested. **(JP)**

Well KP-007

6. The J-top has been moved vertically forty (40) feet and reset at eight hundred-thirty five (835) feet which is five (5) feet above the top of the production sand layer. LQD has concerns that the well will not be injecting into the production zone if it is placed back into operation. Additional information regarding the geology adjacent to this well is required prior to authorization to operate. **(JP)**

Well KP-002

7. The J-top has been reset forty-two (42) feet above its original depth which places it at the top of production sand. LQD has concerns that the well will no longer be injecting into the production zone as a result of the relocation. Additional information regarding the geology adjacent to this well is required prior to authorization to operate. **(JP)**

8. The original MIT failure occurred at eight hundred-sixty (860) feet and the retest was completed to a depth of eight hundred-thirty (830) feet; leaving thirty (30) feet of casing untested. Additional information regarding whether the initial failing portion of the well has been repaired and retested is required prior to authorization to operate. **(JP)**

Well KP-017

9. The J-top has been reset thirty-five (35) feet above its original depth which places it above the production sand. LQD has concerns that the well will no longer be injecting into the production zone as a result of the relocation. Additional information regarding

the geology adjacent to this well is required prior to authorization to operate the well. **(JP)**

10. The original MIT failure occurred at eight hundred-ten (810) feet and the retest was completed to a depth of seven hundred-ninety (790) feet; leaving thirty (30) feet of casing untested. Additional information regarding whether the failing portion of the well has been repaired and retested is required prior to authorization to operate the well. **(JP)**

Well KP-003B

11. The J-top has been reset eighty-nine (89) feet above its original depth which places it forty-five (45) feet above the production sand. LQD has concerns that the well will no longer be injecting into the production zone as a result of the relocation. Additional information regarding the geology adjacent to this well is required prior to authorization to operate the well. **(JP)**

12. The original MIT failure occurred at seven hundred-eighty two (782) feet but the retest was completed to a depth of seven hundred-seventy (770) feet; leaving the failed portion of the well un-tested. Additional information regarding whether the failing portion of the well has been repaired and retested is required prior to authorization to operate the well. **(JP)**

Well KP-041

13. The J-top has been reset one hundred-twenty six (126) feet above its original depth which places it seventy (70) feet above the production sand. LQD has concerns that the well will no longer be injecting into the production zone as a result of the relocation. Additional information regarding the geology adjacent to this well is required prior to authorization to operate the well. **(JP)**

14. The original MIT failure in the form of a crack and bulge in the casing occurred at seven hundred-eighty three (783) feet however the retest was completed to depth of seven hundred-eighty (780) feet; leaving the failed portion of the well un-tested. Additional information regarding whether the failing portion of the well has been repaired and retested is required prior to authorization to operate the well. **(JP)**

Well 1KI-0752

15. The casing failed at four hundred-forty (440) feet however the well was retested to a depth of four hundred-ten (410) feet. Additional information regarding whether the failing portion of the well has been repaired and retested is required prior to authorization to operate the well. **(JP)**

Well KP-023

16. The J-top has been moved up vertically one hundred-thirty three (133) feet. According to the geology adjacent to the well, the J-top is now set above the production zone one-hundred (100) feet. Additional information is required regarding this significant resetting of the J-top and whether the well will be injecting into the production zone. **(JP)**

Well 3I-117

17. The information provided is incomplete for this well. The notice of initial failure did not include information regarding the geology surrounding the well or the configuration of the well at the time of initial failure. Additional information is required prior to authorization to operate the well. **(JP)**

18. The J-top was moved vertically seventy (70) feet to a depth of seven hundred-twenty (720) feet however, the well was only re-tested to a depth of six hundred-fifty (650) feet. Additional information regarding whether the failing portion of the well has been repaired and retested is required prior to authorization to operate the well. **(JP)**

Well 3P-096

19. The J-top was moved vertically ninety-eight (98) feet to a depth of six hundred-twenty (620) feet however, the well was only re-tested to a depth of six hundred-ten (610) feet. Additional information regarding whether the failing portion of the well has been repaired and retested is required prior to authorization to operate the well. **(JP)**

Well KP-026

20. The MIT data sheet is incomplete. The "cement to surface" item has not been completed. The test sheet needs to indicate that this has been completed. **(JP)**

21. The MIT data sheet is signed and dated November 8, 2011, however the comment section notes that the MIT was "due 11-6-11". The dates of testing and required testing need to be clarified. **(JP)**

22. The J-top was reset one hundred-ten (110) feet above its original location in the well. This relocation places the J-top one hundred-five (105) feet above the top of production sand. Additional information is required regarding this significant resetting of the J-top and whether the well will be injecting into the production zone. **(JP)**

Well 3P-129

23. A notification of initial failure was never received. Without this notification, the date of initial MIT failure is unknown, information regarding the surrounding geology of the well has not been provided, and the initial configuration details of the well were not provided. This information is required prior to authorization to operate the well being considered. **(JP)**

24. The MIT data sheet submitted is incomplete. The "cement to surface" item has not been completed. The test sheet needs to indicate that this has been completed. **(JP)**

Well KP-022A

25. A notification of initial failure was never received. Without this notification, the date of initial MIT failure is unknown, information regarding the surrounding geology of the well has not been provided, and the initial configuration details of the well were not provided. This information is required prior to authorization to operate the well being considered. **(JP)**

26. The MIT data sheet submitted is incomplete. The "cement to surface" item has not been completed. The test sheet needs to indicate that this has been completed. **(JP)**

Well KP-031

27. A notification of initial failure was never received. Without this notification, the date of initial MIT failure is unknown, information regarding the surrounding geology of the well has not been provided, and the initial configuration details of the well were not provided. This information is required prior to authorization to operate the well being considered. **(JP)**

Well KP-049

28. A notification of initial failure was never received. Without this notification, the date of initial MIT failure is unknown, information regarding the surrounding geology of the well has not been provided, and the initial configuration details of the well were not provided. This information is required prior to authorization to operate the well being considered. **(JP)**

Well KP-068

29. A notification of initial failure was never received. Without this notification, the date of initial MIT failure is unknown, information regarding the surrounding geology of the well has not been provided, and the initial configuration details of the well were not

provided. This information is required prior to authorization to operate the well being considered. **(JP)**

Well KP-080

30. A notification of initial failure was never received. Without this notification, the date of initial MIT failure is unknown, information regarding the surrounding geology of the well has not been provided, and the initial configuration details of the well were not provided. This information is required prior to authorization to operate the well being considered. **(JP)**

Well KP-095

31. A notification of initial failure was never received. Without this notification, the date of initial MIT failure is unknown, information regarding the surrounding geology of the well has not been provided, and the initial configuration details of the well were not provided. This information is required prior to authorization to operate the well being considered. **(JP)**

Well KP-091

32. A notification of initial failure was never received. Without this notification, the date of initial MIT failure is unknown, information regarding the surrounding geology of the well has not been provided, and the initial configuration details of the well were not provided. This information is required prior to authorization to operate the well being considered. **(JP)**

Well KI-129

33. A notification of initial failure was never received. Without this notification, the date of initial MIT failure is unknown, information regarding the surrounding geology of the well has not been provided, and the initial configuration details of the well were not provided. This information is required prior to authorization to operate the well being considered. **(JP)**

Well CI-064

34. This well was reported as failing routine MIT on August 16, 2011 with a required repair date of October 22, 2011. There is no notice of repair in the PT603 Special Volume and the repair is past due.

Recommendation

The above issues must be adequately addressed by Cameco Resources prior to written authorization to resume operation of any wells that have failed MITs. The above comments were discussed during a meeting on April 18, 2012 between LQD and Cameco. Cameco agreed to provide additional clarification regarding the questions presented in this review memo.

The requirements of submittals for this process was also discussed on April 18, 2012 and agreed upon between LQD and CR. The LQD will receive notification of each well failing MIT with the following information: the date of failure, repair requirement date, depth of failure, depth of J-top, reason for failure, location of screen and the depth of the production zone. Once the well has been repaired, notification will be submitted with the following information: completed MIT sheet, description of repair, location of J-top, location of production zone and date of repair/passing MIT. A tracking spreadsheet will continue to be maintained and placed in the front of the special volumes. The spreadsheet will remain a comprehensive list of all wells that have failed MIT and been repaired.