REGIONAL MUNICIPALITY OF WOOD BUFFALO CARB ORDER CARB 001-2014

IN THE MATTER OF A COMPLAINT filed with the Regional Municipality of Wood Buffalo Composite Assessment Review Board (CARB) pursuant to Part 11 of the *Municipal Government Act*, being Chapter M-26 of the Revised Statutes of Alberta 2000

BETWEEN:

Canadian Natural Resources Limited (CNRL) represented by Wilson Laycraft - Complainant

- and -

Regional Municipality of Wood Buffalo (RMWB) represented by Reynolds Mirth Richards & Farmer LLP - Respondent

BEFORE:

Members:	W. Kipp, Presiding Officer
	D. Thomas, Member
	P. Klug, Member
CARB Counsel:	G. Stewart-Palmer, Barrister & Solicitor

Roll Number:	8992004911
Legal Description:	NE – 08- 096-11-W4M
Assessment Value	$3,410,553,820
Assessment Year	2011
Tax Year:	2012

A merit hearing was held October 16 – November 18, 2013 in Edmonton in relation to a complaint filed in April 2012 relating to the 2012 amended assessment notice (2011 assessment for 2012 tax year) of the following property tax roll number:

8992004911 Revised Assessment: $3,410,553,820 File 12-032

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PART A: BACKGROUND AND DESCRIPTION OF PROPERTY UNDER COMPLAINT

[1] This merit hearing was in regard to the assessment of Phase 1 of the Canadian Natural Resources Ltd. (CNRL) Horizon oil sands project. This hearing related specifically to the 2011 machinery and equipment assessment for the 2012 tax year.

[2] The CARB derives its authority to make decisions under Part 11 of the *Municipal Government Act*, R.S.A. 2000, c.M-26 (the MGA).

PART B: PRELIMINARY OR PROCEDURAL MATTERS

The CARB heard a number of preliminary and procedural issues before and during the course of the merit hearing. An outline of the submissions and the CARB's decision and reasons regarding these preliminary and procedural matters is set out below.

Sealing Order

[3] The Complainant requested that certain portions of Ms. Zeidler's testimony and disclosure be sealed due to the confidential nature of those pieces of information. All of the following references come from Exhibit C51:

a. Slide Number 21 on page 11;
b. Slide 27 on page 14;
c. Slides 30 to 32 on pages 15 and 16;
d. Slides 37 to 41 on pages 19 to 21; and
e. Slides 43 to 55 on pages 22 to 28.

[4] The Respondent did not have any objections to that sealing order.

[5] In light of the consent of the Respondent, the CARB ordered the sealing of the above noted portions of Exhibit C51 of Ms. Zeidler. The CARB recognizes that CNRL had concerns with certain matters which were discussed during the hearing becoming public. The CARB determined that it would seal the identified portions based upon the representations made by the Complainant to prevent the information from being accessed more broadly than to the participants in the hearing. The CARB was of the view that such a sealing order was appropriate, particularly in light of the consent the municipality.

Confidentiality

[6] The Complainant requested that the Respondent's witnesses sign a confidentiality undertaking with regard to the information learned during the hearing.

[7] The Respondent had no objection to so doing and the Respondent's witnesses signed the confidentiality undertaking in regard to the document marked as Exhibit C51 in the hearing.

[8] As a result of the consent of the Respondent, the CARB did not need to make a ruling in relation to the request for a confidentiality undertaking.

Scope of Mr. Shaw's Evidence

[9] During the course of the hearing, when Mr. Shaw was giving evidence, he was asked questions about other projects upon which he had worked. Mr. Shaw stated that answering those questions would breach his confidentiality undertakings in regard to those projects.

[10] The CARB was asked to make a ruling in relation to that evidence. The Respondent's concern was that without further details, it would be difficult to test that evidence on cross-examination.

[11] The CARB recognizes the stated concern of Mr. Shaw about compliance with his undertaking of confidentiality. However, it also recognizes that the Respondent must be able to test the evidence given through cross-examination. In order to weigh those competing concerns, the CARB ruled that it would not prevent the Respondent from asking questions in relation to those other contracts where Mr. Shaw had provided services. The CARB would not direct Mr. Shaw to respond to those questions. However, the CARB would weigh the evidence it received and give it appropriate weight. The CARB is of the opinion that this solution permits Mr. Shaw to abide by his undertakings of confidentiality, while recognizing that without details of the projects, etc. the CARB may not be able to give much weight to this evidence.

Mr. Stowell's Evidence

[12] At the start of the hearing, the Complainant indicated that Mr. Stowell would not be able to attend the portion of the hearing relating to his direct testimony due to a significant health issue that he was experiencing. Mr. Stowell was under doctors' orders not to attend the hearing. Later in the hearing, the Complainant advised that Mr. Stowell would not be able to attend the hearing to present his rebuttal evidence.

[13] The Respondent recognized the significant health concerns being experienced by Mr. Stowell. There was no objection to having the main and rebuttal reports of Mr. Stowell (Exhibit C23 and Exhibit C46) being retained as Exhibits within the hearing.

[14] The CARB held that it was prepared to accept the reports of Mr. Stowell as evidence. However, given Mr. Stowell's absence, the CARB would accord appropriate weight to those reports, given that Mr. Stowell's evidence could not be tested in cross-examination.

Appendices to Mr. Otsu's Report

[15] During the course of the hearing, questions arose about the scope of the documents included within Exhibit C26 - the background documents filed with the report of Mr. Otsu. The Respondent indicated that following the Complainant's June filing, it had requested the documents referred to by Mr. Otsu in his report (which was marked in this hearing as Exhibit C24). In July, 2013, the Complainant had provided 12 electronic documents which were to have represented the background documents referred to by Mr. Otsu. The Respondent filed its

materials August 22, 2013. On September 6, 2013, the Complainant sent to the Respondent and the CARB the hard (paper) copies of the electronic documents disclosed in July, 2013. However, in the paper materials, there were two additional documents (a total of 14 documents). The Respondent confirmed that the two additional documents which it received in September had not been provided electronically in July. Since the additional 2 documents had come after the Respondent was required to file its materials, the Respondent argued that it would be unfair to the Respondent to permit the Complainant to refer to or rely upon these additional 2 reference materials, or to have them admitted as evidence.

[16] The Complainant acknowledged that, through oversight, the following two documents had not been sent electronically:

a. Section 2 - Cost Estimating (AACE International), Chapter 9 – "Estimating" by Larry R. Dysert, CCC; and
b. Construction Industry Institute "Effects of Scheduled Overtime on Labor Productivity: A Quantitative Analysis" report.

[17] The CARB ruled that the above two referenced documents not be included as part of the evidence before the CARB. The CARB noted that the documents were not included within the Complainant's original filings provided electronically in July, 2013. The impugned references were not provided to the Respondent prior to its filing its disclosure materials. Therefore, it would be unfair to permit the Complainant to rely upon them when the Respondent had no opportunity to rebut their contents and given the fact that the Respondent has only one opportunity to provide written materials.

Mr. Celis' evidence

[18] During the direct evidence given by Mr. Celis on October 21, 2013, Mr. Celis was attempting to refer to an exhibit marked in the 2011 tax year hearing (Exhibit C72 from that hearing). In his current (2012 Tax year hearing) materials, he referred to a portion of the transcript from the previous year's hearing at page 76 of his report (Exhibit C16).

[19] The Respondent objected to the reference to Exhibit C72 which came from the previous year's merit hearing (2011 Tax year hearing) on the basis that Exhibit C16 does not make reference to that previous year's Exhibit. Reference was made to three pages of transcript from the 2011 Tax year hearing. The Respondent objected on the basis that there is no reference to the 2011 Tax year hearing Exhibit C72.

[20] In response, the Complainant indicated that its witness wished to refer to a diagram filed in the previous year's hearing referencing double counting in regard to productivity and delay losses. However, the Complainant indicated it would leave the decision about admissibility in the CARB's hands as to whether the material would be allowed into the report.

[21] The CARB noted that the references in the materials did not align with the suggestion and, as a result, the CARB did not permit the entry of Exhibit C72 from the 2011 Tax year hearing into the current (2012) tax year hearing on the basis that the disclosure had not occurred in accordance with the previous directions of the CARB or in compliance with the Regulations.

Proper Scope of Rebuttal

[22] The Respondent argued that some of the Complainant's rebuttal evidence should have been filed with its main reports. This was in the area of productivity. The Respondent alleged that, in regard to the issue of the Edmonton area adjustment factor, the Stowell rebuttal report (Exhibit C46) and the Shaw rebuttal report (Exhibit C44) both contained correspondence and newsletters and minutes of meeting from 2000 – 2001 which should have been included within the initial disclosure from the Complainant. The Respondent's view was that the appropriate way for the CARB to address the issue was to either exclude that information as being outside the scope of proper rebuttal evidence or to have the Complainant give evidence about that in direct evidence.

[23] The Respondent also suggested that the rebuttal report of Mr. Schwartzkopf (Exhibit C48) was responding to the report of Mr. Otsu (Exhibit C24), and not the report of Dr. Thompson.

[24] In response, the Complainant stated that it did not know what the Respondent's position would be in regard to the Edmonton area adjustment factor as it related to productivity and it would not know until such time as the Respondent's disclosure was made. It had never come up previously in the five years of reporting. Although the Complainant had suggested that the Respondent should provide its disclosure first, the CARB directed the Complainant to file its materials first. The Complainant's position was that the information contained within the Respondent's section 299 response did not raise the Edmonton area in the calculation of productivity. Although the municipality has put the Complainant on notice that they may move away from the Edmonton area adjustment in subsequent years, it indicated that the Edmonton area factor is not an issue for 2012. The Complainant has filed information responding to the suggestion that there is a change in the municipality's position on Edmonton area factoring. The Complainant's position is that it could not have anticipated that this was going to be an issue for this hearing. Therefore, there is no need to deal with this other than in the ordinary course of presenting rebuttal evidence and testimony.

[25] In relation to Mr. Schwartzkopf's report, the Complainant's position is that the 2011 CARB accepted the Otsu calculation, but not his 1.38 factor. The CARB did not accept that there should be a 3% component in the factor for one of the components used by Mr. Otsu. The CARB indicated that it accepted the assessor's number from the section 299 report of $418 million. The Complainant's position is that using a two part productivity model, using the 1.24 factor results in a loss of productivity claim of $550 million. The Respondent municipality has filed a report putting all assumptions into question including one from Dr. Thompson saying that the municipality does not accept the Complaint's methodology. Since the two part methodology is under attack, in response to Dr. Thompson's report, the Complainant had Mr. Schwartzkopf provide his report which responds to the allegation about the methodology. It is a fair and direct response to the Respondent's attack on the methodology.

[26] The CARB's ruling in relation to this matter was a direction that the evidence be presented by the Complainant, then the Respondent and then the Complainant in rebuttal. For any particular witness, the CARB might order that direct testimony should include some materials from rebuttal exhibits and the CARB confirmed that its priority was the issues

identified in CARB Order 023-2013 and it directed the parties to focus the oral evidence of their witnesses on those issues.

Scope of Mr. Moore's evidence

[27] During the testimony of Mr. Moore, the Complainant asked the witness to provide a copy of the notes to which he was referring during his testimony. It appeared that Mr. Moore had made speaking notes on his report. Upon being provided with those speaking notes, the Complainant objected to their being entered as an exhibit.

[28] The Respondent's position was that they were in evidence as having been given orally by Mr. Moore. Further, the Complainant had requested the document and it was in response to that request that the CARB and the Complainant had been provided with the speaking notes.

[29] The CARB reviewed the speaking notes provided by Mr. Moore. The CARB directed that the speaking notes remove a reference to conversation which had occurred between Mr. Moore and third parties which had not been disclosed in its original report (Exhibit R37).

[30] The CARB directed that the speaking notes would be marked as Exhibit RA for identification. The CARB had already accepted and heard the evidence from Mr. Moore, which included those speaking notes. As a result, while it wished to identify the paper for the record, it did not need to give the document a separate exhibit number.

Evidence regarding ratios

[31] During the testimony heard by the CARB, a question was raised by both parties relating to the evidence to be heard by the CARB in relation to the ratios. There were objections raised about the appropriateness of the testimony and whether it should be heard by the CARB during the course of the hearing or after the CARB had issued its decision.

[32] In CARB Order 023-2013, the CARB had indicated that the issue of ratios was one which would be addressed following the CARB's decision regarding the issues in question. It would only be upon a determination as to whether the assessment would change that the issue of the ratios would come into being. Therefore, although the Respondent had objected to the ordering of the evidence and its ability to respond to the testimony about ratios as the evidence came in following its witnesses, the CARB directed that the issue be put over and would be dealt with more fully following the decision on the merits by the CARB. The CARB contemplated that there would be an implementation hearing wherein such issues would be fully canvassed.

Application by Syncrude

[33] On November 8, 2013, with only one day of evidence and one day of argument left in the hearing, the CARB received a letter from corporate counsel from Syncrude which was addressed to the municipality. Syncrude expressed its concerns in relation to the confidentiality of its materials which had been referenced in the hearing and expressed a desire to make an application for sealing of its materials. Counsel for Syncrude indicated its intention to seal any information relating to Syncrude which was contained with the Respondent's materials.

[34] The CARB wrote to Syncrude advising that it would hear Syncrude's application on November 21, 2013, prior to the closing of the hearing. This was done to ensure that the CARB retained jurisdiction to address the confidentiality concerns of Syncrude.

[35] On November 18, 2013, counsel for Syncrude wrote to the CARB advising that it had had an opportunity to review the documents included in the evidence introduced by the Respondent. Having had that opportunity, Syncrude was not concerned with the confidentiality of the Syncrude documents introduced in the hearing, and withdrew its request for a sealing or confidentiality order with regard to those documents.

[36] As a result of the withdrawal, the CARB did not need to make a ruling in this regard.

PART C: MERIT SUBMISSIONS

Summary of the Complaint's Evidence

[37] The Complainant called seven witnesses:

a. Mr. Kerry Minter;
b. Mr. Marco Celis;
c. Ms. Lynn Zeidler;
d. Mr. Ken Shaw;
e. Mr. Fumio Otsu;
f. Mr. Terrence Tham; and
g. Mr. William Schwartzkopf

[38] The CARB has reviewed the witness reports and their oral evidence. The following are summaries of the witnesses' evidence both in direct and in rebuttal.

Mr. Kerry Minter

[39] Mr. Minter is the Supervisor of Operations Accounting for the Complainant, responsible for the accounting and reporting functions associated with property taxes for CNRL Canadian Operations, including the Horizon facility.

[40] Prior to the first complete assessment being rendered in 2010, while the Horizon plant was still undergoing commissioning, the Complainant reported $9.855 billion to the assessor as the total cost. In the rendition provided to the industrial assessor, deductions were made for excluded and non-assessable costs, including pre-investment at $861 million, productivity losses at $616 million, and delays at $944 million (account 29). Front end loading costs had been reported in 2007 at $597 million. The total assessable cost for Phase 1 of $4.44 billion (which came directly from the CNRL renditions made to the industrial assessor) was carried over to January, 2009. Even though the project was not functional as of December 31, 2008, the Complainant entered into a tax deal with the assessor and paid $35 million in taxes for the 2009 tax year. A 67% "Operational Adjustment" factor was applied to the total reported costs, resulting in a machinery and equipment (M & E) assessment value of $1.722 billion.

[41] On March 1, 2010, CNRL was issued an assessment notice with a total M & E assessment of $2.4 billion which was based on essentially the same total cost as was reported the previous year. On March 5, 2010, an amended assessment notice was received in the amount of $3.22 billion. The total installed cost had been raised by $1.4 billion which resulted in an $809 million increase in the M & E assessment value.

[42] The included costs that formed the basis of the original assessment of March 1, 2010 were $4.2 billion. The amended assessment of March 5, 2010 was based on $5.7 billion included costs. CNRL filed a complaint against the amended 2010 assessment. In materials filed to the CARB by the Respondent on August 23, 2010, the included costs were referenced at $6.5 billion. On February 28, 2011, the number became $6.147 billion and on May 12, 2011, in the section 299 response, the amount was unchanged at $6.147 billion and it remained at that amount in a March 9, 2012 report by the municipality for the 2011 assessment complaint.

[43] The municipality stayed with that number until after the CARB Order 001-2013 was rendered and the number then became $5.497 billion, based on the municipality's interpretation of the order. For a subsequent implementation hearing, an April 11, 2013 report showed the number at $5.491 billion and in the municipality's disclosure on August 22, 2013 for this hearing, Mr. Elzinga's reports have one reference to the value of $5.862 billion even though the July 3, 2013 CARB Order referenced a value of $4.466 billion. The variance of $1.4 billion is approximately the same as the amount of the increase between the included cost amounts that formed the basis of the assessments shown on the March 1, 2010 and March 5, 2010 assessment notices.

[44] The complainant, as it had in prior years, made a request for assessment detail information on its own and other similar plants pursuant to section 299 and 300 of the MGA. In September, 2011, the municipality sent its annual request for information and it was fundamentally the same as in prior years. All it asked for was the costs of new additional or replacement M & E installed in 2011. It did not ask for any details of categories of costs such as Design Brief Memorandums (DBM), Engineering Design Studies (EDS) or Front End Loading (FEL) costs. The section 299 response was fundamentally the same as the Complainant had received in prior years.

[45] On December 11, 2012, the Complainant and Respondent had a site tour in which the Complainant identified all new facilities completed during the year or that were still under construction. Mr. Elzinga, Dr. Thompson, Mr. Celis, Mr. Minter and Ms. Zeidler were on the tour. During the tour, there was no request by the municipality for the production of any documents.

[46] Mr. Minter then compared the information provided in the "hindcast" report prepared by the Respondent to the information provided in response to the Complainant's section 300 information request. Mr. Minter's view was that the information failed to provide any clarity with regard to the issue of equity for the treatment of the Horizon plant. He suggested that the hindcast report demonstrates that in major cost categories that are in dispute, allowances for excluded costs on other plants were made by the municipality. There was no specific information given as to aspects of the undisclosed facilities that would impact how included costs were determined to be such at the time of construction, costing categories chosen in the

renditions, corporate structure, accounting practices, labour availability and the like. Mr. Minter stated that for each of the facilities, CNRL had asked for explanations and quantitative measures of excluded costs that would include the ratios of excluded costs or non-assessable costs in each of the listed categories to the overall assessment and to the overall cost, the year of construction and the year the machinery and equipment was first placed on the roll. The attempt was to get some context as to how the Complainant measured against other facilities in the municipality.

[47] In response to the municipality's reference to the Connacher DBM, Mr. Minter stated that it is described only as a summary and there are no details or context as to what is actually in the document. An entire DBM will be too large to send as an attachment to an email.

[48] In relation to Syncrude 21, stage 4 project upgrading expansion 1 and Aurora Train 2, the hindcast report makes references to a sanction budget. The material in the Respondent's report comprises a table of contents and a cover page but neither mentions a sanction budget. In Mr. Minter's view, it is supplemental authority for an expenditure, not a sanction budget. It merely requests additional funds for the project. There is no indication of the substance of the supplemental approval for expenditure (AFE) or under what circumstances it arose.

[49] In response to the hindcast coverage of the Syncrude UE-1 Project 2001, Mr. Minter commented that the document was not a sanction budget but an AFE. For the Suncor Millennium Coker unit, project charter 2004-2005, although the municipality described a document as a sanction budget, Mr. Minter stated that it was not a sanction budget but merely a reference to a revision of the project charter. With regard to the reference to the Syncrude EDS book 1, Aurora System Selection, Aurora Mine Project 1997, he stated that in his opinion, one could not draw any conclusions as to how a contractor would use the document. There was no indication if and what the document would be used for.

[50] Mr. Minter commented upon the fact that the municipality had notified property owners that taxpayers' documents could not be released for confidentiality reasons. He stated that although Mr. Elzinga had claimed that the municipality has evidence that the DBM and EDS are included costs in other projects, nothing is provided to substantiate the claim. There are no specifics or circumstances as to the individual project planning or execution as set out by Mr. Elzinga. CNRL was not asked by the assessor to provide copies of the DBM or EDS in the request dated September 21, 2011. Nor had such detail been requested by Mr. Schmidt or Mr. Elzinga in their efforts to prepare assessments for any of the years prior to 2012.

[51] Mr. Minter stated that the references contained within Mr. Elzinga's report were confusing. There is an initial reference to 36 properties, which then drops to 28 major oil sands projects having been reviewed. The nomenclature describing the projects was also unclear. Several of the projects have a capital value of less than $500 million, which would not put those projects in the major oil sands project category. Mr. Minter questioned how projects such as tailing reduction or sulphur emission reduction operations could be deemed similar to Horizon and questioned their suitability as a comparable to the Horizon project. Due to the descriptors used, Mr. Minter was not certain how to interpret the information contained in the hindcast report. In his view, there were a number of projects which were missing from the 36 project list (by his count), including numbers 14, 18, 20, 21, 22, 24 and 27. Mr. Elzinga and Dr. Thompson refer to 28 projects but the list at the front of their document contains 36 names. Although 28

projects were said to be listed in the study, the chart actually shows 21, and the absence of the additional seven was not explained.

[52] Having regard to pre-construction, he stated that the hindcast study stated that DBM and EDS costs are shown as a percentage of total costs, and that pre-construction has been included in the total project costs. CNRL reported its pre-construction costs separately, outside of the rendition. In his view, project costs are not analogous to construction costs.

[53] Given the size of some of the projects, Mr. Minter did not feel that they were comparable to Horizon. In his view, the statements raised questions about how the properties were picked for inclusion in the study, the basis for excluding other properties, how the study was conducted, what information was used and how it was interpreted. Further, he questioned whether and how the results were representative of what they purported to show. Mr. Minter also questioned how it was possible to review so many project files in such a short period of time.

[54] In his view, the larger the project, the more complex it is and there is more potential for issues with controlling costs. In his view, analyses of "SAGD" (steam assisted gravity drainage) projects should not have been included in the study because they are less capital intensive than mines or upgraders and are not comparable. Further, SAGD projects lend themselves to modularization which allows the construction work to be done off site in fabrication shops or in different locations. To that end, they are not subject to the same concerns for cost control. There are not as many issues with transportation because the modules are smaller and easier to transport. Mr. Minter made comments with regard to the type, timing of construction, size and difficulty of construction in relation to the projects chosen by the municipality as comparable to Horizon.

[55] Mr. Minter checked the *Oilsands Review* and determined that it lists 42 projects in the Athabasca area that started production between 1999 and 2012. He attempted to do reverse calculations from the information contained within the Thompson report to determine the excluded costs. By his calculations, the two "boom time" projects which he looked at would have total excluded project cost ratios in line with CNRL's excluded costs claims. He stated that the Respondent's hindcast synopsis did not present meaningful benchmarks for analysis or comparison. In his view, every project must be reviewed on its own merits based upon its issues and challenges and the factors which need to be considered during the assessment rendition process. In his view, the numbers in and of themselves were not as relevant as the process employed in the assessment. Without recognition of the economics and the construction period of the individual plants, he did not believe reliance could be placed upon the study. He further commented that neither Mr. Elzinga nor Dr. Thompson proposed any method by which the percentages could be adjusted for time, technology, size, location, project costs or accounting procedures. Due to the absence of context, the hindcast study did not allow for meaningful comparison between projects nor did it undermine the analysis of the CARB decision 001-2013 and the implementation decisions which followed. In his view, the correct cost upon which to base an assessment is $4.466 billion as concluded by the CARB in the previous tax year hearing. CNRL's excluded costs of 51% are not out of line with other projects such as UE-1 which is at 57%. Removing the pre-investment and adjusting Front End Loading (FEL) for non-assessable costs associated with scoping, DBM and EDS would further place CNRL in line with or below excluded cost allowances granted to other projects.

[56] In cross-examination, Mr. Minter advised that at the time of the 2013 site inspection, the documents requested by the municipality were available for inspection by the municipality's team, but they chose not to take advantage of that opportunity. The document review was to occur immediately after the site inspection. Mr. Minter confirmed that the documents had been collected for inspection by the municipality over a period of time. In his view, there were hundreds of binders containing many documents. Mr. Minter confirmed that information was made available to the municipality pursuant to the section 295 request under specified confidentiality conditions. He stated that CNRL did not know who was going to have access to the information. Further, he did not think it appropriate that this type of request could be used to defend an assessment already on the roll. The municipality did not accept the conditions imposed or attempted to be imposed by CNRL. Mr. Minter confirmed that he was aware that the current assessor was Mr. Elzinga and the assessor's role was to prepare a correct assessment.

[57] CNRL's concern in relation to disclosing information pursuant to the section 295 request was due to concerns about confidentiality. In Mr. Minter's view, an assessor must have appropriate qualifications and be bound by the confidentiality provisions for assessors. Although Dr. Thompson had been instructed to comply with the same confidentiality provisions that the assessors were, CNRL took the issue of confidentiality very seriously and their position was that Dr. Thompson would not be allowed into the room to see the documents unless he signed a confidentiality agreement. This was due to the commercially sensitive nature of the documents. Notwithstanding that Mr. Campbell and Mr. Elzinga were bound by confidentiality obligations as assessors, and despite the fact that they had been advised that Dr. Thompson received instructions that he would be bound by the same confidentiality obligations as the assessors, CNRL demanded that Dr. Thompson sign an independent agreement.

Ms. Lynn Zeidler

[58] Ms. Zeidler is a Vice President of Horizon Oilsands currently on secondment to the Northwest Redwater Partnership as Senior Vice President – Engineering and Construction. She provided some background on the development of the Horizon project. The initial lease for the Horizon site was acquired in 1999 and the project was planned to be developed in multiple phases to mitigate the risk for the operator. A mine must commence with about 100,000 barrels per day capacity so Phase 1 of Horizon was designed for a 110,000 barrel per day production. The approved expansion of Phase 2/3 will take CNRL to 250,000 barrels production with targeted expansions in the future taking CNRL to 500,000 barrels per day over time. CNRL has a facility that had the mine, the upstream facilities and the upgrader – all in Wood Buffalo. Given the nature of the operations, CNRL had a significant clearing exercise to remove and retain top soil and muskeg. Layers of sand and gravel had to be removed and stock piled so that it could be replaced when the site is reclaimed. Then CNRL started a significant drilling program to assess the reserves. The mining unit is responsible for the ore up to the point that it is delivered to the ore preparation unit. The ore preparation facilities include a large crusher to segregate as much of the non-ore bearing rock, tree stumps, etc. The prepared ore is then sent to the mix box and hot water added to create slurry allowing the transport of the ore into the main plant for processing. The slurry moves into bitumen extraction to separate the sand, water and bitumen. Froth is created and sent to froth treatment to clean. The froth mixture is comprised of small fines oil and air. Naphtha (a solvent) is added to help drop the fines so they are not included for processing in the upgrader. Following that, the product moves to the upgrader.

CNRL went with a new design which it had patented and the costs of which were ultimately deemed non-assessable. CNRL has several licences in the plant and have exceptionally rigorous requirements of confidentiality.

[59] Once CNRL produces the froth or the bitumen feed for the primary upgrader, it splits out the various components. The asphaltene is taken out. The oil grades are separated. The products to be created are naphtha, white oil, diesel, and gas oil. Product moves to the secondary upgrader. CNRL sells synthetic crude oil, so it recombines the products to meet client specifications. CNRL also deals with the waste products, which includes sulphur. It has a co-generation facility on site.

[60] After the 1999 acquisition, preliminary work was done and formal project definition started in February 2002. There is a degree of overlap because certain items were continuing while other project items were starting. Company authorization was received in February, 2005 and detailed engineering had started a year ahead of that. Procurement for long lead items started as early as March of 2004 completing in April 2008. By September 2005, CNRL had its first flights to the site bringing in construction crews. The total execution phase was planned to be from February 2004 to May 2008, but the plant was not completed until January 2009.

[61] The sanction budget was approved by the CNRL board in February 2005. It was a $6.1 billion sanction budget with a $700 million contingency rounded to a total of $6.8 billion. The forecast was subsequently updated to a $10.1 billion project cost or a variance in the order of approximately $4 billion. There were cost overruns in the bitumen production area (in the order of $959 million) in the upgrading area ($1.9 billion) and in the utilities and offsite sector ($400 million).

[62] Although there were cost overruns, Ms. Zeidler stood by the quality of the sanction estimate. She stated that it was a cautious estimate because the size of the project was almost the same size as the company. CNRL examined not just Phase 1, but wanted to know how it was going to execute the other phases. Sixty-eight percent of the capital cost estimate was based upon contractor pricing which included contractors' fixed price bids, unit price bids, equipment vendor quotes and on the known license costs. The balance of the cost estimate was supported from third-party engineering estimates or internal estimates of CNRL. At the time of sanction, CNRL had a reasonable expectation that any deviation from cost estimates would be consistent with the industry average, which was in the order of two percent. Based upon the experience of other projects, CNRL felt that it could complete at or around the sanction budget amount. Further, it was proceeding with strong contractors who were competent in their areas of expertise. CNRL's strategy was to break the plant development into projects in the order of $500 million each which could generally be successfully executed by contractors with predictable outcomes in terms of costs. The company was trying to ensure that the projects it was asking its contractors to do were consistent with the size of projects that they had done in the past; that they would have the personnel for, the supervision when it came to the construction and that they had systems in place to manage the projects. CNRL did not wish its contractors to be overwhelmed by the size of project.

[63] The sanction estimate was based on: fixed priced bids (14% or $800 million); target price bids (28% or $1.7 billion); unit price bids (16% or $953 million); actual equipment quotes or

license agreements (10% or $620 million); third party engineering estimates (18% or 1.076 billion) and CNRL estimates (15% or $892 million). CNRL's estimates were primarily for owner's costs and for a part of the mining component.

[64] There was little scope growth during the entire project. It was measured at about two percent. Completion of Phase 1 was delayed 7-8 months beyond its sanctioned plan completion date. There were significant cost overruns during the construction period. These overruns were 13.4 percent in May 2007, increasing to 28 percent by February 2008, to 36 percent by September 2009 and finally, over 40 percent by May 2010. Depending upon how the calculations were done, the total overrun was somewhere between 40 – 50 percent.

[65] The Horizon facility was built during an extremely volatile and inflationary business environment. The inflationary nature of the environment post-sanction was well beyond the anticipation of the company and the contractors who bid on components of the construction project. High demand and a lack of labour brought about problems with procurement and acquisition of materials. Productivity was affected by manpower quality, turnover and shortages. Workforce problems impacted the contractors' ability to perform in all facets of the workforce– engineering, professional, supervisory and labourer positions. The costs of direct and indirect labour accounted for 77 percent of the total increased construction cost. The growth in construction costs was caused primarily by poor productivity due to several factors such as availability of contractors and labour due to the heated market, delays caused by rework, redesign and out of sequence construction activities and the need to develop additional contractor and supplier capacity to address the strain on the marketplace. Unusually cold winter conditions lead to productivity losses. Delays occurred in the completion of detailed engineering, which supported supply, fabrication and construction. Late engineering or late equipment module deliveries resulted in construction having to proceed out of sequence. This resulted in out of sequence delivery results, out of sequence modules and incomplete modules, resulting in lost productivity. All of these delays and changes caused CNRL to change its execution strategy which increased the number of contractors on site, increased the need for more interface management and extended the schedule for the completion of work. This resulted in increased effort, work and complexity of the contractors accountable for the scope. The need for additional contractors caused a need for additional camp space and infrastructure to house those additional workers. In her evidence, Ms. Zeidler presented much detail on cost increases and construction problems.

[66] In relation to the issue of an adjustment factor from Edmonton to Fort McMurray, Ms. Zeidler stated that the reality in Alberta is that readily available resources, materials and services are centered in Edmonton. In her view, the balanced market tends to be Edmonton.

[67] In relation to pre-investment and front end loading, the Complainant undertook extensive analysis, including prefeasibility, feasibility, scoping studies, evaluation and technologies and cost analysis to determine whether the project was viable from an economic standpoint and which technology was the most appropriate to use. CNRL concluded that the best economics would result from the expanded plant so there was little doubt that additional phases after Phase 1 would be built. Given the size of the undertaking, CNRL required a high degree of certainty. It was the first project that the Complainant had undertaken into a mineable oil sands industry at the time. The list of 46 excluded cost categories was the summary of knowledge passed on

between owners and assessors to new owners and assessors to apply on a consistent basis. The plant was laid out in the manner in which it was due to the expected expansions for Phases 2/3 and beyond. It was unusual but not unreasonable to put in such a significant amount of pre-investment. CNRL invested in the size of some of the key piping for utilities and other processes common between Phases 2 and 3 and left tie in locations for additional plants. Certain plants were doubled in size or numbers to prepare for the future expansions. Because the operation runs 24 hours a day and there is very limited storage on site, the plant had to be developed in a way that would allow future expansions to occur without impacting production. In her view, it was not normal for owners to do this level of pre-investment; however, it was done because the project was meant to be Phases 1, 2 and 3, although only the first stage was built first. While it was unusual, Ms. Zeidler did not believe that it was unreasonable to have that degree of pre-investment. The economics of the plant were based on the ability the produce 250,000 barrels of product per day which should be seen in 2017.

[68] Ms. Zeidler confirmed that the equipment which had been oversized to accommodate future expansion was operating December 31, 2011. Ms. Zeidler outlined which equipment was proposed to be coming on stream for Phase 2/3 between 2013 – 2017.

[69] Ms. Zeidler confirmed her understanding that overtime or premium time costs were excluded from the assessment. Further, busing and flights were also excluded from the assessment under the list of 46 excluded items. In addition, unplanned night shift costs were excluded from the assessment. Ms. Zeidler confirmed that the costs for co-generation were not assessed by Wood Buffalo, but assessed by the Provincial Linear Assessor. This information, while provided by this witness, was the responsibility of other witnesses who would be giving evidence at this hearing. For that reason, no additional detail is provided here about this topic.

[70] Ms. Zeidler confirmed that as an engineer, she and others governed by APEGA have obligations to protect confidential information. However, in relation to Dr. Thompson's obligations of confidentiality, as an engineer, Ms. Zeidler stated that CNRL is under significant and very specific confidentiality agreements for a variety of technologies on the project. Although 90 percent of her staff is engineers, there is a protocol and requirement for specific confidentialities to be signed in respect of those technologies. CNRL must demonstrate a vigorous control process on proprietary technologies. She stated that the DBM's have multiple evaluations of different technologies and the EDS are all subject to confidentiality agreements, because they are evaluations of different technologies that may or may not have been used. Ms. Zeidler was not aware of the duties of a property owner under the Municipal Government Act to require an assessor or the municipality to enter a confidentiality agreement of the property owner's choosing. Ms. Zeidler stated that in terms of the evaluation process, there are a number of units for which alternate technology was being evaluated. Even after a technology had been chosen, there was an evaluation of costs. It was an iterative process through the phase. Ms. Zeidler acknowledged that Horizon's DBM had the same sections as referred to within those contained within the general provisions set out in Dr. Thompson's report.

[71] At the beginning of her rebuttal evidence, Ms. Zeidler provided a list of facilities to be completed in 2013. Those include the Calumet and Chelsea camps, the mine shop expansion stage 1, the dike shop (a maintenance facility) and facilities associated with the tailings early works, specifically a pump house, a substation, an electrical station and an electrical building.

The mine shop expansion is approximately $20 million, the dike shop - $8.5 million, and Ms. Zeidler did not have a value on the other facilities.

[72] Ms. Zeidler again confirmed that the Horizon project was CNRL's first venture into the oilsands and was unique due to the significant amount of pre-investment, labour shortages and execution challenges cause by a period of hyper-inflation. This caused significant cost overruns and delay and productivity losses. Due to the size of the project, it demanded an increased level of scrutiny for viability.

[73] Ms. Zeidler confirmed that Dr. Thompson's assumption that the costs for feasibility studies, design basis memorandum and engineering design specifications are to be included in the total project costs. She stated that CNRL accepted the CARB's finding that the costs were not assessable for the Horizon project.

[74] In relation to DBM and EDS, she agrees the FEL phase is foundational, but does not agree that merely because engineering is involved, the costs become assessable. CNRL has never objected to the suggestion that the DBM phases and EDS phases include engineering costs. However, it is CNRL's view the costs were incurred primarily for the determination of the feasibility of the viability of the project and support the sanctioning process. As such, they are properly excluded pre-construction costs. Where work in this period supported engineering long lead orders, the costs have been captured and appropriately assessed.

[75] Because the Horizon project was CNRL's first entry into the mining and bitumen upgrading industry, it undertook extensive feasibility analysis. The feasibility analyses were both from a technical perspective and an economic viability standpoint. There was also testing against regulatory approval. The scoping study, DBM and EDS stage encompasses many types of pre-construction activities used to assess the viability of the project. In her view, the feasibility cost is non-assessable under the CCRG.

[76] Ms. Zeidler commented upon Dr. Thompson's evidence that all engineering costs are included costs. She stated that despite a broad statement in his report that all engineering costs should be included, even in his own testimony, he gave examples of cases where this was not so.

[77] Ms. Zeidler stated that in her view, the timing of when a cost is incurred is relevant to determine if the cost is an engineering cost or a construction cost. The timing of when a cost was incurred can be a relevant factor in determining its purpose and function. Although no one item is determinative, timing can be indicative of the particular relevance within the process and whether it is assessable or not.

[78] Ms. Zeidler stated that in response to Dr. Thompson's comment about the overlap between FEL and detailed engineering, each owner has its own gated process and therefore it is not of value to compare the Horizon project against others, including Exxon as was done within Dr. Thompson's report.

[79] Ms. Zeidler stated that although there is engineering within the DBM and EDS stages, they are relating to translating the owners preferences of what they want and are therefore not costs of construction and should be non-assessable. By undertaking the DBM and EDS pre-

construction activities on the Horizon Phase 1 project, CNRL could prepare execution plans, the estimate and ultimately determine the schedule that it was prepared to sanction.

[80] In relation to the hindcast study, Ms. Zeidler questioned how it enabled the comparison of anonymous companies and how they booked pre-construction costs against the Horizon project. She stated the costs may have been booked to other locations within other companies' cost renditions. Without understanding how a company has undertaken its work to determine viability of a project, it is impossible to compare one plant to another. Further, because the companies had already built initial facilities and were doing expansions, the numbers would be different and it is difficult to make a meaningful comparison.

[81] Ms. Zeidler stated that schedule 23.3 which was used by the Respondent in its analysis was prepared during without prejudice negotiations and originally included for discussion. This amount contained within schedule 23.3 was never accepted as included costs by CNRL.

[82] Ms. Zeidler stated that CNRL had nine different Engineering, Procurement and Construction (EPC) contractors and therefore had multiple DBM and EDS for different facilities.

[83] Ms. Zeidler stated that in relation to the question of whether abnormal costs are to be measured against what is typical and normal in the Respondent municipality, she stated that Edmonton is commonly used as the source of readily available labour, goods and services that are indicative of a balanced market. The Complainant understood that typical Edmonton was the basis upon which abnormal costss were considered and accepted by the previous assessor. The Complainant works with assessors in other municipalities throughout the Province who accept that Edmonton is the centre within Alberta most likely to reflect normal conditions associated with a balanced market.

[84] In rebuttal, Ms. Zeidler commented upon two assumptions made by Dr. Thompson in his report. The first was that "the oversized Phase 1 equipment, which CNRL calls pre-investment, was operating on December 31st." Ms. Zeidler stated this was not relevant to the CARB's finding or the restatement of the municipality's position. Further, the second quote was "the oversized Phase 1 equipment meets the legislative definition of machinery and equipment as decided in paragraph 289 of the CARB Order." Ms. Zeidler also stated that this was not particularly relevant to the CARB's finding or re-statement of the municipality's position. She did state that the Complainant accepted the CARB's finding that the cost of this equipment was an excluded cost pursuant to the CCRG. Her position was that the arguments presented by the municipality that pre-investment should not be allowed based on the hindcast study are of limited value. She stated that the level of pre-investment undertaken by CNRL was abnormal and therefore should be excluded. In her view, the temporary reduction in the assessment undertaken under Schedule A was reasonable to address a temporary abnormal cost.

[85] Ms. Zeidler disputed Dr. Thompson's evidence that the cost overrun for Horizon was not extraordinary. In her view, any time one is approximately 50 percent over a budget that has been validated and believed to be proven, it is an extraordinary event. She stated that Dr. Thompson's analysis ignored the unprecedented labour shortages occurring during the period of high inflation in 2005 – 2008. She stated there was no real evidence about how others constructing during the same time period were assessed or whether Horizon was out of line with those projects.

Mr. Marco Celis

[86] Mr. Celis is responsible for the Horizon property tax rendition for the Complainant. He stated that CNRL's view is that the 2011 assessment was a carryover from the 2010 assessment. Mr. Celis outlined the creation of the Horizon rendition including meetings with the assessor and the creation of the excluded cost categories. It had been a collaborative process between the Complainant and the assessor during the construction period of the plant. CNRL reported a total cost for the 2008 assessment for the 2009 tax year and then in 2010, the cost was updated from a $9.8 billion estimate to the $10.1 final cost for the construction. CNRL did not include Front End Loading (FEL) costs as part of the total construction cost, but those costs were reported separately. The assessor did not express any questions or concerns about the original rendition or the updated 2010 version. Mr. Celis outlined the history of the assessments for each year from 2010 to date, including the 2011 tax year assessment which was the subject of a six week CARB hearing that resulted in a Board Order. The 2012 tax year assessment, the one under complaint, was a revised assessment. CNRL received an initial assessment notice on March 1st and an amended notice on March 9th. The amount of the machinery and equipment assessment on the revised notice was $3.4 billion. CNRL made a request for information pursuant to section 299 of the MGA and it received a similar response to its request for the previous year. The municipality carried forward the same arguments and numbers from the previous year notwithstanding the 2011 CARB board order. For that reason CNRL takes the position that the 2012 tax year assessment was not based upon the CCRG.

[87] Mr. Celis outlined the origins of the cost rendition prepared by CNRL. He and Mr. Stowell identified the 46 excluded costs categories (at first, there were only 45 items) and then showed the cost rendition to the assessor. CNRL wanted to determine what the practice was regarding exclusion of costs for these items. Each of the items was referenced to a clause in the CCRG. When first presented to the assessor, only the categories and items were presented. Dollar figures were provided in subsequent renditions.

[88] The excluded costs were identified using four methodologies. The first was an account code analysis. If there was a specific excluded cost, it would have an account code. An example of this is the FEL costs. The second methodology was a change order analysis. The original control budget was $6.8 billion and at the end, the total cost was $10.1 billion with $3.3 billion in change orders. They reviewed each of the change orders and classified them based upon the 46 accounts previously identified to the assessor. The third methodology included a model used to estimate or calculate excluded costs. If the invoice did not provide a breakdown, there was a model used to calculate certain costs. Finally, there was a combination of two of the methodologies; for example, a combination of account code and change order.

[89] FEL costs were reported in a separate category, but not included in the $10.1 billion total project cost. Building and structure costs were also separated out. In order to determine the cost for pre-investment, CNRL did a calculation of the pre-investment costs for Phase 2 and 3 based on the capacity of the plant and the estimations of the process engineer. CNRL split the machinery and equipment costs between Phase 1 and Phase 2/3. The Phase 2/3 pre-investment cost was approximately $900 million with the balance attributed to Phase 1. The final step of the methodology in the rendition was to calculate the excluded costs. CNRL did this using the 46 items and classifying each one in relation to sections of the CCRG for costs not related to an

improvement, exempt or abnormal. After identifying the excluded costs, CNRL realized the excluded costs were for the whole project. They had to split the excluded costs for Phase 1 and Phase 2/3 in the same ratio that it used in the Phase 1 and Phase 2/3 machinery and equipment costs.

[90] For the pre-investment costs, the process engineer provided the operation capacity of the equipment based upon total capacity. CNRL applied the $6/10^{th}$ power rule to identify the total costs of the facility and from that identified a percentage for that plant for Phase 2/3. The amount of pre-investment is set out as a percentage. It is applied in the final rendition to the final costs of the project. The summary of all pre-investment costs were presented to the assessor, but the assessor had the backup information for each of the plants.

[91] In relation to productivity, CNRL had a productivity model and a different spreadsheet calculation for each of the areas. Some claims for lost productivity were identified by actual costs and some were identified by models to identify the excluded costs. For oversized freight, CNRL used actual information because it had invoices for that kind of freight. However, for other areas, like in the change order analysis, CNRL did not have the full amount of the excluded cost and therefore claimed a portion. All of the information from the detailed spreadsheets was put together into the summary spreadsheet which is the Horizon Property Tax Cost Report, November 2009, revised December 15, 2010.

[92] Mr. Celis explained how the data in the cost rendition was entered. Following the insertion of the data into the cost rendition, the next step in the methodology was to calculate the Phase 2/3 pre-investment. For each of the plants and based upon information provided by the process engineer and the cost engineer and the application of the $6/10^{th}$ power rule, they received a percentage of the pre-investment for each plant. Using the percentage from the pre-investment model, they calculated the percentage based upon total project costs. For example, in the extraction plant, CNRL had two percent pre-investment. In the froth treatment, it was five percent pre-investment. In the boiler, there was 22 percent pre-investment. They populated the percentages from the pre-investment model to column "G" (in the cost rendition) to calculate the total costs of pre-investment based upon the M&E costs. The work was divided year by year because it was created as the information came in. Mr. Celis and others reviewed the thousands of change orders which totalled $3.3 billion. A summary was provided to the assessor to identify the description of each change order.

[93] Mr. Celis reiterated that there was a process in preparing the rendition that started in 2005 and concluded in 2009 when the construction was essentially completed. For the assessment under complaint, the municipality sent its standard request for additions and deletions information in September 2011. There was no request for additional information on any of the items where there were claims for excluded costs. CNRL provided the information that was requested. When the 2012 tax year assessment was rendered, it indicated about $4.1 billion in excluded costs. CNRL requested additional information under section 299 and it was Mr. Celis' analysis of the response that led to the $4.1 billion amount. The CARB board order for the 2011 Tax year assessment set out excluded costs totalling $5.2 billion and it was the position of CNRL that this same amount should be excluded for 2012.

[94] For the 2012 Tax year assessment (the one under complaint), the municipality has reverted to the same position regarding FEL as it took for the 2011 tax year assessment – a position that was rejected by the CARB. Subsequently, in the section 299 response for the 2013 tax year assessment (which is under complaint but not at this hearing), the municipality stated that $129 million of FEL costs should now be considered as included costs. Mr. Celis denied that CNRL had ever acknowledged that $129 million should be an excluded cost. He stated that the amount of $129 million arose out of the context of a negotiation meeting with the municipality in relation to how much of the DBM and EDS related to studies. CNRL agreed to identify how much of those costs related to studies but it was never agreed that this would be an included cost.

[95] Mr. Celis took the CARB through the cost that had been booked for FEL which were found at pages 137-139 of schedule 8. Those included licences, employee costs, mining costs, DBM and EDS costs and an access road.

[96] With regard to site preparation costs, land is assessable as finished industrial land - stripped and graded. For that reason, CNRL removed the actual site preparation costs. The land assessment at Horizon is based upon the finished industrial stripped and graded land. CNRL agreed with the assessor to replace the site preparation costs for the industrial land rate in the land assessment. The cost information in relation to site preparation was presented to the assessor in November 2008. The total amount claimed for site preparation was $503 million. Part of the cost included the removal of the overburden of the mine at a cost of $332 million. The second was the overall site preparation spent to level the ground and be ready for construction for a total of $114 million. The third area is based on change orders totalling $38 million. The item in question is booked into business unit 9700105 for a total of $114 million. The scope of the work in that cost account was related to the grading of the main plant site. The site preparation booked to that cost account was the site grading provided to a finished, well-drained construction grade for subsequent work at the project site. The site preparation was left in a condition to turn the site over to the contractor for future development. Mr. Celis stated that all site preparation for each of the four areas was the same. CNRL divided the plant site into four areas for different contractors and the scope of the work was the same in all four areas. CNRL provided a rough grade area to be developed by the contractor for the foundations and the deep underground services. The work was rough site preparation work for the contractors to develop. The details are found at schedule 21 of Mr. Celis' report (Exhibit C16). The next category of site preparation was the change order analysis which totaled $38 million. Fifteen million of that was related to utilities and offsites for de-watering. Further, a change order for $20 million was booked for site preparation for the co-generation plant specific to the contractor. Mr. Celis indicated that it was the same evidence provided in the previous year's hearing in relation to site preparation. In relation to site preparation, Mr. Celis stated that the difference between rough grading is +/- 50 centimetres or ½ a meter. Construction grade is level. This was explained to him by Carl Hann, an engineer for CNRL.

[97] To calculate productivity losses, Mr. Celis passed to Mr. Tham information from change orders as a percentage by business unit. Mr. Celis took the business unit, calculated the percentage of change orders claimed in relation to each business unit and then sent that information to Mr. Tham so that Mr. Tham could exclude that percentage from the analysis of

the productivity analysis. This was done to prevent double counting between delays and productivity.

[98] On cross-examination, Mr. Celis confirmed that his report in the 2012 Tax year hearing and his rebuttal report do not include any hard copies of change orders. Nor were any provided in the previous year's hearing. A team of CNRL personnel prepared a change order analysis that was provided to the assessor each year. The assessor was not part of the team.

[99] In relation to FEL, on cross-examination, Mr. Celis confirmed that Exhibit 16, schedule 8 set out information in relation to the FEL and that the following were not in dispute: excluded costs for licences, employee costs, mining, access roads, raw water pond, scoping.

[100] Mr. Celis confirmed that he had no firsthand knowledge of the reporting of other property owners in Wood Buffalo relating to DBM or EDS. He formed his opinions on information provided to him from Mr. Stowell and the latter's experiences.

[101] In cross-examination, Mr. Celis stated that the information found in the chart at paragraph 264 of Tab 19, Exhibit C16 (this was a chart in the municipality's 299 response) was different from the information in the chart taken from Exhibit C54. However, Mr. Celis did acknowledge that C54 was filed in his Exhibit C43 in the 2011 tax year hearing. In redirect examination, he explained that part of the difference was terminology based. He did not agree with the term "CNRL included cost" which was a column heading in the chart in the 299 response. He reiterated his testimony that the amounts there were simply to set out the amounts of DBM and EDS that related to studies and it was never intended to be interpreted as a position wherein those should be included costs.

[102] In relation to the EDS, in his materials, Mr. Celis had a notation that the primary purpose of the EDS was to determine the viability of the Horizon project, but confirmed that he had no involvement in the preparation of the EDS documents and was not an engineer. During cross-examination, Mr. Celis confirmed that without looking at the backup information of change orders, it is not possible to know who prepared the estimates of productivity factors.

Mr. Fumio Otsu

[103] It was agreed between the parties that Mr. Otsu was qualified to give expert evidence in cost estimating. Mr. Otsu is not licensed as a professional engineer in Alberta, but the parties have agreed that he is entitled to give expert evidence as a cost estimator or cost professional.

[104] Mr. Otsu has been a member of the American Association of Cost Engineers (AACE) since 1968. He has done productivity analyses for Syncrude and then more recently on the Muskeg River (Shell Project), Syncrude UE1, Suncor Millenium Project, and the Prairie Rose Project. In addition, Mr. Otsu worked on the Shell upgrader expansion at Scotford and also worked on Shell Jackpine. In relation to Suncor Millennium, Shell Muskeg, Jackpine and the Shell upgrader, he was involved in the costs segregation for assessment purposes in relation to the productivity calculation of abnormal costs. Mr. Otsu's methodology involved a two-step methodology.

[105] In relation to his two-step methodology, Mr. Otsu understood that the 2011 CARB accepted his two-step methodology with the exception of the adjusting factor between the mid-Alberta and Fort McMurray components. His methodology is to measure performance on a project based upon a base line. Then, one takes actual cost, and the difference between the base line and the actual cost, whether positive or negative, determines whether the project has been performing better or worse than the base line. In the CNRL calculation, the base line requires a couple of important adjustments. One is that in order to calculate the performance at the end of the project, the model has to be certain that the base line reflects the final installed quantity of the project. The model requires that the budget estimate is adjusted to the final installed cost. In so far as the base line is concerned, budget estimate is interchangeable with sanction estimate. The quantity adjusted budget is referred to as the QAB. The sanction estimate in CNRL's case was based upon more than 60 or 65 percent contractor estimates and quotes which reflect a high level of accuracy in the base line. Mr. Otsu stated that the sanction estimate would fall within an AACE categorization of class 1 (of the available classes 1 through 5) with class 1 being the most defined.

[106] Once the base line has been adjusted in order to ensure that the costs represent the same work that the base line reflects, the non-assessable costs are deducted before the calculation is made. The non-assessable items are things like re-work and field changes.

[107] In relation to productivity 2, the second step calculation, it is important to take the actual final cost and to subtract the QAB or base line budget. He stated this is the standard practice for all projects. This is the productivity 2 calculation.

[108] To calculate the base calculation (productivity 2) one must remove all costs not associated with that work, particularly non-assessables which would include re-work, field changes, and claims. This avoids the issue of double counting because all non-assessables have been removed before the start of the calculation process. Mr. Otsu stated that a productivity 2 calculation was carried out on the Suncor Millennium, Shell Muskeg and Shell Jackpine projects which he worked on. A similar productivity 2 calculation would be carried out on all projects, regardless of where that project was located in the world.

[109] Mr. Otsu stated that the productivity 1 methodology was developed on the first project he had worked with Mr. Stowell. The productivity 1 calculation is the difference in productivity between mid-Alberta and Fort McMurray. Since the basis for abnormal included a mid-Alberta productivity adjustment, he needed to come up with a methodology to derive the mid-Alberta and Fort McMurray productivity loss. Table 1 at page 8 of his report (Exhibit C24) refers to the productivity loss expected between mid-Alberta to Fort McMurray. It includes factors such as overtime, lack of craft labour and supervision, etc. The percentage difference is 27 percent between mid-Alberta and Fort McMurray.

[110] The basic calculation is to determine the Fort McMurray abnormal productivity loss which is seen in the figure 1 calculation. This is the actual cost minus the Fort McMurray base line budget.

[111] The issue about double counting between Mr. Celis' calculation and Mr. Tham's calculations show that field charges and non-assessable items are deducted from the actual costs before starting the productivity calculations so that it is not possible to double count.

[112] Productivity 1 is the mid-Alberta adjustment. This is the adjustment from a mid-Alberta budget and a Fort McMurray adjustment to take it to the Fort McMurray base line.

[113] The basic calculation is shown in figure 1 on page 4 of Exhibit C24. This is the Fort McMurray abnormal productivity loss. It is called productivity 2 in the calculation. That calculation is derived by taking actual reported costs and deducting the Fort McMurray base line budget. The base line budget is the sanction estimate adjusted by QAB to bring it to the final installed quantities at the project.

[114] The actual costs deduct all non-assessable costs so that it cannot be double counted. Those non-assessable costs include re-work, back charges, field changes and other non-assessable items. As a result, the final installed quantity reflects what is actually at the facility. Following that, one moves to the productivity 2 analysis which is the actual minus the Fort McMurray base line. In figure 2, Mr. Otsu determined the Fort McMurray productivity adjustment. This is represented by the 27 percent ratio seen in the pages that follow which are productivity factors. It is also called the mid-Alberta adjustment. It is the adjustment to the Fort McMurray base line which does not depend on actual costs. The productivity loss is derived by adding productivity 1 and productivity 2. The Fort McMurray base line is the sanction budget adjusted by the QAB (the final installed quantity for the project). This is used for productivity 2.

[115] The unit labour rate calculated for the QAB is based on the contractor base line bids. To create the QAB base line, one uses the base line hours of the contractors. That estimate has two elements: one being quantity, the other unit rate. The quantity cannot be adjusted on a QAB because it is the final quantity. The unit rate is for the hours per unit of work expected for the project. To that a dollar figure is applied to convert the hours to dollars. The Complainant used $50 an hour with an adjustment for indirect costs on labour. The percentage used was 15 percent for indirect costs. The $50 per hour was on the low side, as was the indirect cost.

[116] The mid-Alberta budget is the adjustment to make if the project was being performed in mid-Alberta versus Fort McMurray. This reflects the conditions on site including busing, shift work, the higher turnover of craft, weather conditions, material logistics due to the size of the project, shortage of labour, etc. The CARB had rejected the three percent materials logistics loss in the 2011 hearing, so the calculation for the current abnormal calculation is 24 percent which results in a productivity loss of productivity 1 and productivity 2 of $553.8 million.

[117] Mr. Otsu indicated that the 1.38 factor he utilized in his 2011 report was a calculation made to the original productivity calculation on the basis that it was a productivity loss in Fort McMurray that was going to be adjusted as compared to factoring from mid-Alberta to Fort McMurray. For productivity 1, the busing was included because workers live in the camps and must ride the bus to the site. The non-productive labour is 3.3 percent.

[118] The overtime productivity loss is the loss resulting from an extension from a 40 hour work week to an extended work week. Eight percent was used for that calculation. Eight

percent was also used because the work day in Alberta is 10 hours but because of work shifts of 10 day and 4 days off, it was considered to be a 7 day work week. The utilization of eight percent was a judgement calculation.

[119] In relation to turnover and absenteeism, there is a higher degree of turnover in a camp situation because people get tired of flying in and out and working the long shifts. If mid-Alberta is 2 percent and there is a 2 ½ times increase in Fort McMurray that results in the 5 percent productivity loss.

[120] The winter adjustment is made because in Fort McMurray the temperature and humidity create productivity losses. The average productivity loss calculated for winter performance was 5.6 percent but he calculated at 5 percent. The final component is training. The apprentice productivity was expected to be 50 percent of craft productivity resulting in a calculation set out at table one. In the event of an imbalanced market, that will affect the shortage of labour because the labour pool will or may go to other industries. The labour market up until 2004 was relatively steady. However, in 2008, the imbalanced market was very prominent. The imbalanced market would affect productivity 2, which is the actual experience of the project. The breakdown of productivity losses was $161 million for productivity 1 and $393 million for productivity 2 for a total of approximately $554 million.

[121] This is to be compared with the calculations done for the 2011 complaint hearing where productivity 1 was $230 million and productivity 2 was $383 million using an adjustment factor of 27 percent coming to a total of $613 million.

[122] Mr. Otsu confirmed that the $230 million for productivity 1 for 2011 was calculated using the 1.38 factor and only productivity 1 is affected by the factor of 1.38 or 1.27 or 1.24.

[123] In cross-examination, Mr. Otsu acknowledged that although he used the productivity 1 and 2 methodology in other projects referenced above, he was not certain whether they were accepted by the assessor in the assessment calculations. His understanding for Shell Jackpine is that there were negotiations between the owner and the municipality which were based upon that model. The factor used in the Shell Jackpine calculation was very similar to the one for CNRL because it was the same cost engineer, Mr. El Chayati, who started with CNRL and then went to Shell. In relation to the Shell upgrader in Strathcona, on cross-examination, Mr. Otsu indicated that his model was used in that calculation.

[124] Mr. Otsu commented that although he had given instructions to make calculations regarding change orders so that they would not be double counted, he did not know what actually happened on the project. Further, he confirmed that he looked at examples of change orders, but did not go through the details of them to determine actual site specific productivity loss situations.

[125] In cross-examination, Mr. Otsu acknowledged that in the AACE document "Recommended Practice No. 46R-11, Required Skills Knowledge of Project Cost Estimating", there is no description of his productivity model. That document shows the process of putting together an estimate. There is nothing in that document specifically showing his model.

[126] In relation to how to the $50 labour unit rate was derived, Mr. Otsu stated that those details would be in Mr. Tham's calculation. Mr. Otsu believed that the $50/hour was derived by Mr. El Chayati. The background documentation for the calculation was not in his records.

[127] In cross-examination, Mr. Otsu confirmed that the work in Table 1 (the factors) were derived from the work of Mr. El Chayati.

[128] Mr. Otsu confirmed that when looking at the calculations at Tab 1 of Exhibit C25, there was no way to look at a particular change order and trace through to see if it had been excluded in the calculations. He confirmed that he had not double checked any of the work done to exclude specific change orders.

[129] In relation to Exhibit C25, Tab 1, the report did not contain a definition of the base line hours, but did set out a dollar value for it. Mr. Otsu confirmed that there was no definition for base line hours contained within Exhibit C25, Tab 1. Mr. Otsu confirmed that in other projects that he has seen, there have been different factors used for different disciplines. This is in reference to the adjustment factor used for civil, mechanical, piping and structural steel categories.

[130] In cross-examination, Mr. Otsu confirmed that for productivity 2, the middle box in Figure 1 of his report makes reference to actual cost. He further confirmed that to his understanding the final cost report used for Exhibit C25, Tab 1, column J was the forecast as of September, 2008 which he understood to be the end of the job report.

Mr. Terence Tham

[131] Mr. Tham is a Cost Estimator with CNRL. He is a Certified Estimating Professional with AACE International. His main duties include reviewing change orders in the Phase one portion of the project and setting up the budgets for the Phase 2/3 execution. He is currently responsible for setting up the budgets for the Phase 2/3 portion of the project and overseeing the execution of Phase 2/3. There are approximately 100 people in the Phase 2/3 cost estimators group working with him at CNRL. Mr. Tham had been asked to produce the abnormal productivity calculation based upon Mr. Otsu's productivity model. At C24, Tab 1 was the basis for his calculation. Page 1 of 27 at Tab 1 is the summary page, summarizing the abnormal productivity calculation for the report. It is broken down by the different units and the plants within the various areas. It uses the mid-Alberta factor of 1.24. The total is $553.8 million. There were two ways of calculating the total abnormal productivity loss. One was using the actual method which involved pulling actual man hours information from contractor documents. The second was the model application method which was used for cases in which CNRL did not have man hour information, for example lump sum contracts. At page 2 of 27, the top spreadsheet shows the calculation to get abnormal 1 and the second table shows the calculations to obtain abnormal 2. In his calculation, he eliminated all costs not related to direct labour. Moving along in the columns shows the factors applied to eliminate all costs not associated with direct labour. Column G sets out the final assessable direct labour costs. Column H is abnormal factor 1 or productivity 1 one representing the mid-Alberta factor, which is 0.19. 0.19 is made up of .24 divided by 1.24 which is the abnormal calculation to take it back to mid-Alberta. This results in the abnormal costs 1.

[132] Each line of the table has multiple contracts built into it. The table also references various disciples, for example, civil, etc.

[133] Abnormal 2 is shown in the second table at page 2 of 27. This was created using actual costs from the PRISM cost report which was the forecast of the final costs and based on September 2008. From the actual costs, his calculations removed all non-assessable change orders to focus on items deemed assessable. This was to avoid double counting. Column R is the total direct labour costs that are assessable. To that number, Mr. Tham applied abnormal 2. Finally, taking abnormal cost 1 and abnormal cost 2 gives the total abnormal costs claimed for a particular area. This spreadsheet page 2 of 27 represents a calculation based up the model methodology.

[134] Page 3 of 27 represents the actual method which was used in cases where CNRL was able to pull out man hour information to do the analysis. Contract award hours are found at columns A and B (hours and quantities). Columns C and D identified net actual hours and quantities. Mr. Tham indicated that there was a deduction for all non-assessable matters such as rework, field changes, overtime labour, etc. The calculations represent the net hours from which the productivity analysis was done on. Next, the amount was quantity adjusted. The figures in column I are the hours generated to represent abnormal 1. The figures in column K are the hours calculated to represent abnormal 2. When added together, those total hours have the wage rate applied defined by Mr. El Chayati and it establishes the total abnormal productivity costs.

[135] The process of establishing the methodology took a few months. It also involved consultations with engineers to ensure that all non-assessable items were excluded. This analysis was conducted sometime in 2008.

[136] In the hearing for the 2011 tax year, he had generated an abnormal productivity number of $613 million. When he examined it for this year's hearing, he noticed three errors in the spreadsheet. The first error related to the QAB factor for abnormal 1. For some reason, there was an anomaly in the spreadsheet that was not calculating abnormal 1 consistently. It was not applying that 1.38 factor correctly from the last year's hearing. The correction was made to the model spreadsheets to make sure that the calculation is based on a 0.24 divided by a 1.24 factor to calculate abnormal productivity number one correctly.

[137] The second error related to the application of the productivity calculation to miscellaneous units. This has been corrected in the current Exhibit before the CARB.

[138] The third error was in relation to the model calculation done for the secondary upgrading unit. This was missed in the summary sheet. Although it was done in the detailed sheets, it had not been transferred to the summary sheets. The first two errors resulted in an overstatement of the claim and the third error in an understatement of the claim, the net effect was an understatement of the claim by approximately $4 million which is less than one percent of the $613 million claimed last year.

[139] In relation to double counting, Mr. Tham indicated that Mr. Celis had removed certain items during his change order analysis and those were also excluded in Mr. Tham's productivity

calculation. The non-assessable change orders were allocated somewhere else in the rendition and those were not used in the productivity calculation to avoid double counting. Mr. Celis did his change order analysis and once completed, Mr. Celis would provide a ratio or percentage of the change orders that he excluded in his change order analysis. Mr. Celis removed $1 billion out of $3.3 billion in change orders. Mr. Celis provided Mr. Tham with a table to summarize by area what percentages had been removed from each area. For example, in relation to bitumen production, Mr. Celis removed 26 percent of the change orders as being deemed non-assessable. Mr. Tham would take 26 percent from the hours in bitumen production and exclude them from this change order actual hours as well so as not to double count them. The same methodology was used in the actual hour calculation to avoid double counting.

[140] The total abnormal productivity cost is $554 million. Abnormal productivity 1 was $161 million and abnormal productivity 2 was $393 million. The actual hours are contained in the summary spreadsheet. To this, Mr. Tham multiplied by the standard $50/hour rate and applied the 15 percent cost to get the total.

[141] In cross-examination, Mr. Tham confirmed he did not have firsthand knowledge of productivity losses granted by the regional assessor for any other projects. He also confirmed that he was given percentages by Mr. Celis and he accepted those percentages as given to him, utilizing them in his calculations.

[142] Based upon the information contained within Exhibit C25, Tab 1, there was no way to check the work done by Mr. Celis.

[143] Mr. Tham indicated that the rate of $50/hour was calculated by Mr. El Chayati. Mr. Tham confirmed he took the forecast from the September 2008 PRISM report and believed that it represented actual costs.

[144] Mr. Tham confirmed that the model is based upon contract awards and contracts are awarded over time.

Mr. Kenneth Shaw

[145] Mr. Shaw is a tax agent working through Ryan & Company. He has been as assessor and property agent for approximately 30 years. Mr. Shaw was acknowledged as qualified to give opinion evidence in the area of the assessment of machinery and equipment.

[146] Mr. Shaw gave an overview of his report (Exhibit C21). Mr. Shaw stated that it was difficult to prepare his report because he was basing it on the section 299 response provided by the municipality which was basically the same as had been provided in the previous year. Mr. Shaw stated that the regulated assessment process in Alberta for the assessment of machinery and equipment is based either upon the application of assessment rates that the Minister produces and puts in the manuals or, if rates have not been prepared then the assessment must be prepared using the Construction Cost Reporting Guide (CCRG) and its Interpretive Guide. This is done to provide consistency and equity with the rates that the Minister produces. Mr. Shaw stated that equity and consistency are the prime considerations so the guides provide information about how to deal with facilities constructed under different conditions and circumstances to arrive at an

included cost that will be consistent and fair for all facilities regardless of where they are located in the province and regardless of the timeframe that they may have been constructed.

[147] The information used to determine the construction costs are derived from internal records of the company and provided by it to the assessor. The CCRG is designed to specify minimum standards regarding what should be included as information for the undertaking of a costing analysis on a facility like the one under appeal. Page 2 of the Interpretative Guide states that documentation should represent all construction costs, structures and machinery and equipment. Assessors should make initial requests for information when construction begins.

[148] A project cost may be excluded for a number of reasons. It may be pre-construction or post construction activity. Exclusions may be made because components are not defined as property under the Municipal Government Act. For example, licences or other personal property are not assessable. Costs associated with property that is exempt from assessment, for instance water conveyance and water treatment systems are exempt. Finally, abnormal costs which are costs not incurred in a balanced market are also excluded.

[149] Mr. Shaw provided an overview of the application of the CCRG and the Interpretive Guide and his interpretation of them.

[150] In relation to the determination of "normal", Mr. Shaw stated that the sanction budget is a good basis to determine what is normal. That is why it was used by CNRL and it is generally used on all projects.

[151] Mr. Shaw was of the view that the analysis of each facility involves different types of non-assessable costs in varying amounts based upon the nature of the project and how the project was executed. The analysis for non-assessable claims has to remain flexible enough to deal with individual facilities. It is desirable to have the assessor involved in the process in the initial stages to allow for an understanding of the project and to come up with the accepted policies, procedures and terminology to assist both parties through the analysis of the construction project which can take a number of years. The expected non-assessable percentages of a "greenfield" facility had been 35 percent in his experience. During the periods of 2004 – 2008 or 2009, due to labour productivity issues and material cost spikes, non-assessable levels were being raised to between 45 – 50 percent. That spike has reversed itself after 2009 because the labour and material costs have decreased. The main reasons that non-assessable costs exist relate to unproductive labour as a result of the shortage of qualified trades, inadequate staffing, high turnover, poor or inadequate engineering or planning being done before hand resulting in re-engineering and project construction delays, inadequate construction management for the project resulting in delays work scheduling problems and execution problems.

[152] CNRL spent a great deal of time setting up the process to report its costs. It held meetings with the assessor at the initial stages of the project to review the progress. CNRL set out 46 categories determined to be non-assessable cost categories. In his view, the cost report prepared by Mr. Celis exceeded the requirement of many reports he had seen in his career.

[153] He would have expected non-assessable or excluded cost allowances to be in the 50 percent range. CNRL built at the peak of the material steel cost spike and at the peak of labour

demand. Further, it was a fully integrated mine extraction and upgrader which would have had the highest level of non-assessable costs due to the type of facility, its complexity, etc. CNRL was setting up the commercial business activities so considerable costs associated with that would have been business related. Their location costs would have been higher than other facilities because they were located north of those other facilities. Due to the fact that CNRL obtained hard dollar contracts, the risk had been put on the contractors who would have included large risk factors in their bids. Further, CNRL chose to spend $900 million in pre-investment as part of their project as a business decision. This was not typical or necessary. Further, CNRL did not have experience in constructing and operating a facility of the size of the Horizon project and would have incurred additional costs from a conventional or typical operator who had an established plant and operations in the area.

[154] It would be next to impossible to prepare a CCRG report after the project was concluded because the data would not be available. It is difficult to review a project after it has been completed.

[155] Mr. Shaw stated that the CARB had sufficient evidence to show how Mr. Schmidt, the previous assessor, prepared his assessments, what he accepted to be fair in relation to the other work that Mr. Schmidt had done in the municipality, and which resulted in him preparing an assessment based on the original four year analysis that had been done between him and CNRL.

[156] In relation to productivity delays, the CCRG permits labour productivity claims. The CNRL facility was built at the peak of the labour supply shortage and had large material spikes occurring during the time frame. Inexperienced workers were being brought in from other countries and work was not getting completed on time.

[157] Pre-investment costs are removable from the gross project costs or considered to be excluded or non-assessable on the basis that they are abnormal and to be removed to maintain consistency among regulated properties.

[158] Front end loading or pre-construction costs are non-assessable because they are unrelated to the construction cost of the project. Total FEL costs were approximately $598 million. They relate to the determination of viability of the project including costs associated with the selection of the type of processes CNRL was going to use, how the project was going to be executed, the initial cost estimates to determine the viability of the project and the costs, because they were pre-construction were excluded. The costs of the studies, the design basis memorandum and the engineering design specification documents are created to determine the technology to be used, the scope of the project, the time and then ultimately to allow the owner to either approve or not approve the project and go from pre stage to construction stage. He stated that on a number of projects that he had worked on the FEL costs were not part of the project and were tracked separately. In his experience, the costs that CNRL put forward met the requirements of being pre-construction costs which were prior to the sanctioning of the project and were used to determine the viability of the project.

[159] In his view, the Assessment Prepared by Mr. Schmidt was relatively correct and equitable with others. Mr. Shaw acknowledged that when he made references to Mr. Schmidt agreeing to an amount of excluded costs, he had not heard Mr. Schmidt on the amount of the costs. It was

Mr. Shaw's inference that Mr. Schmidt agreed based upon the amounts contained in the assessment.

[160] In cross-examination, Mr. Shaw acknowledged that a number of costs had been accepted as excluded costs and are not an issue including:

i) costs associated with the mine;
ii) owners costs;
iii) flying in and out employees; and
iv) commissioning.

[161] In relation to productivity, Mr. Shaw stated that to his understanding, all of the projects with which he was involved used a two-step model to calculate productivity loss. The first step is to calculate the difference between Edmonton and Fort McMurray and then to take an abnormal labour for the at-site abnormal costs. Mr. Shaw clarified that the two stage assessment was provided to the assessor. His assumption was that it would have been transformed into the assessment. However, he had no direct knowledge of its being used.

[162] Mr. Shaw confirmed on cross-examination that he had no firsthand knowledge of what was contained within the CNRL DBM or EDS and that he had not seen them.

[163] With regard to the oversized machinery and equipment, Mr. Shaw had no knowledge that the overbuilt machinery and equipment was not operating as at December 31, 2011. He accepted that the overbuilt equipment meets the definition of machinery and equipment.

[164] In response to questions about other projects which had oversized equipment, the CARB made its ruling in relation to confidentiality as referenced in paragraph 11 above. Mr. Shaw was questioned about examples of overbuilt components with greater capacity than required for original design rates. He stated that there was an example of that in Wood Buffalo. He stated that there were examples of larger piping probably applying in Wood Buffalo. For electrical substations, he could not say for sure that that facility would have been in Wood Buffalo. In relation to additional control equipment installed for expansion, he believes this was common that there would be examples in Wood Buffalo in the past that would have been part of pre-investment costs.

[165] Mr. Shaw believes that there were steam generation facilities for extraction purposes within Wood Buffalo for which overbuilt equipment was excluded.

[166] In cross-examination, Mr. Shaw acknowledged that if the CARB found that there is no ability to adjust the pre-investment for purposes of consistency, and that there is no other mechanism in Schedule A, then it follows that the only other opportunity to make any adjustment would fall to Schedule D.

Mr. William Schwartzkopf

[167] Mr. Schwartzkopf was a rebuttal witness called by the Complainant to provide additional support for the analysis and evidence presented by the Complainant and in particular, by Mr.

Otsu. Mr. Schwartzkopf was recognized as an expert with extensive experience in cost engineering and measurement of productivity losses.

[168] Mr. Schwartzkopf's report, Exhibit C48 addressed the methodology used by CNRL and how that compared with the typical methodologies used in calculating lost labour productivities. He described lost labour productivity as "spending more labour hours to perform the same amount of work." That is related to cost but it is not the same thing. Cost can go up for reasons other than lost productivity. For this reason, it was appropriate to examine labour hours and then convert them to cost if necessary.

[169] The approach taken by Mr. Otsu comprised two components. As pointed out by Dr. Thompson, these two components could be simplified to a single calculation, but leaving it in two components had value because there were two different things being captured in the process. One was the differential in labour productivity between two points, such as between mid-Alberta and Fort McMurray. That was more of a productivity difference than a loss. The second component captured the productivity loss at the work site. It was necessary to determine the labour hours that should have been spent and then comparing those hours to the actual hours. The hours that should have been spent (i.e., the planned hours) should be adjusted for changes by use of a quality adjusted budget (QAB). The planned hours were based upon the budgeted hours taken from the contract awards. This was a more accurate way of measuring planned hours than using the sanctioned budget because these contractor hours reflect known conditions at the time of the contract bidding. The difference between actual hours and the QAB hours is the lost productivity. In his review of CNRL materials, Mr. Schwartzkopf did not find any instances of double counting any hours which would have had the effect of skewing the productivity loss calculation. He concluded that the method used by CNRL was a reasonable way to determine lost or abnormal productivity.

[170] At the time the contract awards were made, productivity was already declining in the region. A chart in Dr. Thompson's report showed that the productivity index dropped from approximately 87 or 88 in 2005, the effective year of the sanction budget, to 71 or 72 in 2008, the year in which much of the construction work was completed. The calculations by CNRL using award hours were conservative calculations since they reflected a productivity index or ratio which had already dropped.

[171] Mr. Schwartzkopf also reviewed the productivity related materials prepared by Dr. Thompson and Mr. Elzinga. Dr. Thompson correctly defined productivity (which he termed factor productivity) as physical output over work hours. Although Dr. Thompson defined it correctly, Dr. Thompson did not, at any point in his report, use actual productivity figures. All of his examples and all of his references to productivity are to productivity ratios notwithstanding that he criticized CNRL for their use of ratios. There are two ratios that could be calculated – the productivity ratio (Planned Hours/Actual Hours) or the performance ratio (Actual Hours/Planned Hours). The CNRL calculation used the formula: Actual Hours – Planned Hours = Abnormal or Lost Hours of Productivity (note: all hours are adjusted as described previously). Dr. Thompson alleged that his method is different, but it used the same values. If properly applied, it would have produced the same answer. Dr. Thompson used productivity ratios from a chart in his report with the norm set at 1.0. He then multiplied the difference between 1.0 and what he had selected as the productivity factor by the actual hours. Arithmetically, if the actual productivity

factor was selected, this would be exactly equal to subtracting the estimated hours from the actual hours. Dr. Thompson obtained a different value than CNRL for lost or abnormal productivity because rather than using the actual productivity ratio, he selected a different value.

[172] Having regard to the $50 per hour labour rate with the 15 percent add-on, Mr. Schwartzkopf stated that in his experience, those amounts significantly understate the actual labour cost per hour and add-on for insurance, taxes and fringe benefits.

Summary of the Respondent's Evidence

[173] The Respondent called three witnesses:

a. Mr. Brian Moore;
b. Dr. Ed Thompson; and
c. Mr. John Elzinga.

[174] The CARB has reviewed the witness reports and their oral evidence. The following are summaries of the witnesses' evidence both in direct and in rebuttal.

Mr. Brian Moore

[175] Mr. Moore is the Regional Assessor for the Respondent since May, 2012. Mr. Elzinga was appointed to prepare the 2011 assessment under complaint. Upon being appointed as the Regional Assessor, Mr. Moore retained the services of Dr. Thompson to assist in establishing assessments in subsequent years and to provide engineering assistance to Mr. Elzinga in the preparation of assessments and to give testimony in the hearing. Mr. Moore believed that as a designated assessor under the Municipal Government Act, he can delegate duties and responsibilities and has done so to Dr. Thompson (MGA section 284(1)(d).

[176] The municipality's CNRL team included Mr. Elzinga, Dr. Thompson, Mr. Harry Schmidt, Mr. Larry Horne, Mr. Richard Baron and Mr. Barry Campbell. Mr. Elzinga was delegated the responsibility to prepare the 2012 assessment for 2013 tax for CNRL. He was also delegated responsibility to prepare the Shell Jackpine Mine assessment for 2011, 2012 and 2013. Mr. Elzinga has been delegated responsibility to prepare the Esso Kearl Lake assessment for 2013 assessment for 2014 tax. The Kearl Lake construction costs are the same approximate magnitude as the CNRL Horizon construction costs.

[177] The 2011 assessment was prepared in January, 2012 based upon the municipality's best understanding of the legislation and the documents provided by CNRL and their understanding of CNRL's claims for excluded costs at the time. However, it was prepared before CARB Order 001-2013. Once the municipality received that Order, the entire senior assessment team met on more than one occasion to review the decision and met with assessors who deal with the assessment of machinery and equipment in other areas of the Province.

[178] In response to the previous CARB's comment that it had not heard evidence from the assessor who prepared the 2010 assessment for 2011 taxation, Mr. Moore and Mr. Elzinga (the assessor preparing the assessment) are giving testimony in regard to this 2011 assessment for 2012 taxation.

[179] Mr. Moore stated that the CARB in the previous year's hearing relied upon statements made by the Complainant's witnesses about past practices in the municipality. No specific assessments were mentioned in those statements, so Mr. Moore decided to put together a review team to look at historical assessments for evidence that either confirmed or contradicted the statements made by CNRL's witnesses. That review is referred to as "the hindcast study."

[180] In relation to the CARB's decision about schedule D depreciation, Mr. Moore asked Mr. Elzinga to review whether the historic machinery and equipment assessments showed an apportionment of particular costs between included and excluded costs and whether the practice had been to either completely include or completely exclude a particular cost.

[181] Thirty six properties were identified as being relevant for the review. However, due to the amount of time such a review took and the time constraints, it was possible to do a quality review for only 28 properties which formed the basis of the hindcast study. In establishing the properties for review, the municipality took direction from paragraph 447 of CARB Order 001-2013. The review did not look at barrels produced per day. It was the application of the CCRG and historic practice. In addition, the municipality reviewed those properties that Mr. Stowell, Mr. Shaw, and Mr. Otsu had been involved in historically since they had made reference to their past practice.

[182] The municipality understood the CARB's decision to interpret "construction costs" to mean costs with a sufficient nexus to the construction of bricks and mortar or that facilitates the construction. The deciding factor is not who incurred the cost, but whether the cost facilitates construction of machinery and equipment. The municipality also believed the CARB's order supported the view that abnormal costs, including productivity losses were not measured against what was typical or normal in central Alberta or Edmonton, but were to be measured against what was typical or normal within the municipality.

[183] In light of CNRL's claim that it had been singled out for a detailed information request regarding the EDS and DBM, Mr. Moore asked the review team to see if these documents had been provided by other property owners. He made the decision to specifically request the documents from CNRL. Copies of the section 295 response and subsequent correspondence were put into the municipality's volume of documents for the current hearing. Mr. Moore stated that the municipality had prepared a recommended revised assessment using CNRL's response for the 2012 assessment year for 2013 tax, because it contained information not previously provided to the municipality. He instructed that all information received by the municipality would be used for the purposes of this hearing and preparing a correct assessment for the 2011 assessment for 2012 tax as he believed this was in accordance with section 295.

[184] Mr. Moore's position was that it was the assessor's responsibility on an annual basis to prepare the assessment. This included having regard for information known at the time and having regard for direction from the CARB.

[185] The hindcast review covered assessments for the period 1998 – 2012. The review team started their work May 27, 2013. The instructions were to determine if there were assessments where operating machinery and equipment was granted an excluded cost claim for being oversized. The review was also to determine whether documents such as feasibility studies,

design basis memoranda, engineering design specification and sanction budgets had been provided to the municipality by other assessed persons, and then to determine whether costs for such DBM's and EDS's were treated as included or excluded costs. The review was to determine whether productivity claims for property owners had been measured against the productivity 1 and 2 (two step method) and to determine whether abnormal costs were measured against what was typical or normal in central Alberta.

[186] In regard to confidentiality, the municipality and the assessor have a duty to keep information received from the property owner confidential. Mr. Moore stated that the municipality was aware of its confidentiality obligations and those obligations applied to both Mr. Elzinga and Dr. Thompson. For that reason, he instructed the results of the hindcast study to be reported with non-identifying details and at a summary level. The statistical data was to be randomized so it could not be identified against a particular party or property.

[187] He stated that the municipality has written to the companies from which they have received the non-confidential information, showed them the materials which were provided and the only response was a follow up email from one of the companies.

[188] In relation to lost productivity, the review included a review of all productivity claims for the major machinery and equipment projects since 1998. The assessment under complaint included an excluded cost for productivity losses compared to central Alberta/Edmonton. Mr. Moore did not believe that this was correct based upon the CARB's ruling and has made a recommendation to allow this to stay for the 2011 assessment. This was done for two reasons. The first was to provide notice to CNRL that this was the last year that it would be happening and to maintain equity within the assessment phase, because other properties had been treated in a similar fashion.

[189] Mr. Moore referenced the letter from Assistant Deputy Minister Pickering about transportation costs having reference to the Edmonton area, but no adjustment or anything else (Exhibit C46, page 28, paragraph 6). In his view, the Assistant Deputy Minister saw the Special Properties Assessment Guide (SPAG) as being significantly different than the CCRG.

[190] Dr. Thompson was retained to research publically available data regarding typical construction costs in the municipality and to provide recommendations of how to measure productivity losses. In addition, Dr. Thompson was to provide the information to CNRL so they would have notice of how their productivity claim would be considered in future.

[191] Mr. Moore outlined the attempts by the municipality to obtain documents from the Complainant in response to the municipality's section 295 request. He also outlined CNRL's attempt to impose conditions on the sharing of information requested by the municipality. The municipality did not accept those conditions and immediately advised CNRL of its response to CNRL's attempt to impose those conditions.

[192] Mr. Moore indicated on cross-examination that he does not have the AMAA designation, but has a MIMA designation from Ontario. Mr. Moore has approval from the Minister that his equivalent qualifications were satisfactory to meet the requirements of the Act.

[193] On cross-examination, Mr. Moore was questioned about his understanding of the direction provided by the CARB in the hearing for 2010 assessment for 2011 tax. He stated that every year is a fresh year. He also stated that he believed the CARB's decision had been based on the evidence. His understanding was that the evidence before this CARB would be different. He made a determination based upon the facts he had before him in placing the number on the roll for 2011 assessment for 2012 tax.

[194] Mr. Moore's position is that one does not use the previous year's assessment as the starting point for the following year. Therefore, it was not an "add on" of $1.4 billion to the assessment from the previous year's number. He did not consider what was above the rendition or above the CARB Order and add on. The municipality put an assessment on the roll based upon the information that it had at the time. Based upon what the municipality had learned at the previous year's hearing about the importance of particular documents that it had not seen, it requested those documents to ensure that it had the most accurate assessment it could to put on the roll. Because the municipality did not have those documents at that point in time, it took the data it did have, made the adjustments that it could and asked for additional information, with the indication that the municipality would be willing to adjust the assessment once it had full information.

[195] In response to questions about the process for putting the assessment on the roll, Mr. Moore indicated that there are legislative time constraints by which the assessment must be placed on the roll. For that reason, it adjusted the assessment downwards to reflect adjustments it could make with the information it had at that point in time. It asked for additional information with the full intent of making further adjustments, if necessary.

[196] Mr. Moore stated, in response to questions on cross-examination, that he believed that section 295 can be used to obtain information or clarification. He stated that the municipality had made it clear that they were seeking clarification on the information provided and needed additional information for the 2012 assessment year, tax 2013. He stated that Mr. Shaw had also confirmed that it is a practice that assessors use that if you need more information to go back and request it. That is the practice that the municipality has undertaken. He did not find it strange that the municipality would reference section 295 to do that. He saw nothing in section 295 that restricted the use of the information gathered for any particular reason.

[197] The municipality's request for the DBM was to determine when the engineering started for the construction. It was the same for the EDS. The feasibility study was requested to determine if there were any assessable costs. Mr. Moore stated that the municipality knew that in other design basis memorandum, EDS, etc. that it saw from other municipalities that they were partially assessed. Mr. Moore believed that section 295 determined the rights and responsibilities of the property owner who had an obligation to provide it. This section did not permit the owner to set conditions on the information.

[198] Mr. Moore confirmed that he did not require Dr. Thompson to sign a confidentiality agreement on the basis that Dr. Thompson's contract with the municipality already had provisions for confidentiality.

[199] In relation to the Edmonton area as base for measuring abnormal costs other than freight, Mr. Moore stated that this is found at paragraph 361 of the previous CARB Order. For the assessment under appeal, the municipality had used the Edmonton mid-Alberta basis when making the adjustment for costs. However, the municipality has put landowners on notice that the position would be changing for future years.

[200] Mr. Moore understood the CARB's previous decision acknowledged the fact that the CCRG does not recognize central Alberta or Edmonton outside of freight costs. On a go-forward basis, he stated that the municipality would be preparing assessments on the basis of that understanding. The municipality would be treating all properties equitably. If the municipality was going to measure productivity against the local municipality to establish typical or normal, it would be done for all properties. As a result of that understanding, the municipality sent notice to all companies that in 2014 that the municipality would be moving away from the Edmonton area as the basis for measuring non-assessable costs. He was taking that position because there was nothing in the CCRG which indicated that the municipality should be measuring against central Alberta, and this was confirmed by the CARB in the decision from the previous year. The municipality's decision would be implemented for the 2014 assessment for 2015 tax year. Mr. Moore confirmed that the assessments from the review appear to have been based on a mid-Alberta adjustment up until the current date. The municipality will be meeting with other companies to give them sufficient time to make the changes.

[201] Mr. Moore believed that the Municipal Government Act overrules the Freedom of Information and Protection of Privacy Act in relation to assessment matters. Should somebody make a request as to what information goes out in relation to assessment documents, it would be the assessor's decision.

[202] Mr. Moore did not notify other companies, prior to filing the hindcast report of the information that he was going to be making available through the CARB because he did not see that it contained any confidential information. Mr. Moore stated the municipality did not seek the consent of any of the companies listed in the hindcast prior to filing their information because the municipality made a concerted effort to make the information unidentifiable and not to disclose any confidential information. Mr. Moore was aware that the CARB had the power to compel production of any documents it felt necessary, including the full copies of the DBMs, etc. from the various projects referred to in the report of Dr. Thompson.

[203] On cross-examination, Mr. Moore confirmed that he did not give instructions to the assessor regarding any other property to assess those properties on the basis that all engineering costs were to be included in their assessable costs.

[204] Mr. Moore confirmed that the revised recommendation from the municipality is $3,115,270,110.

Dr. Edward Thompson

[205] Dr. Thompson was qualified to give opinion evidence in the area of mathematical modeling, risk analysis and mechanical engineering. Dr. Thompson focused his oral comments in relation to FEL, and then labour and productivity. Although his report dealt with other

matters, in light of the direction from CARB Order 023-2013, the oral comments were focused on the areas as directed by the CARB. Dr. Thompson was not proffered as a cost professional or to give opinion evidence as a cost engineer. His experience in cost engineering matters was discussed at length during his introduction and while under cross-examination.

[206] CNRL reported $598 million in front end loading costs. In its view, all $598 million are an excluded cost. Dr. Thompson noted that CARB Order 001-2013 at paragraph 275 stated that the challenge before the CARB was that if the CARB acknowledges there are included costs within the FEL account, the question is how they are to be measured. He suggested that there were two methods of measuring that included cost. One was based upon an inspection of site specific company documentation; the other was based upon past practices.

[207] The breakdown of the FEL costs are as follows:

Front end loading scoping study	$24 million
Preconstruction	$69 million
DBM	$117 million
EDS	$387 million
Total	**$598 million**

[208] Dr. Thompson gave a definition of DBM and EDS. He stated that the FEL is a rigorous gated approach to front end engineering design to attempt to eliminate possibilities or to minimize the possibilities of cost and schedule overruns. FEL is comprised of a number of steps including the scoping study. CNRL's scoping study is 100 percent excluded. The second phase is "appraise and select and screening stage two". The purpose of this phase is to collect a rich set of developmental alternatives for analysis. The objective of stage two is to develop the best option that meets the business and financial and economic terms of the company and to select a preferred alternative.

[209] What Dr. Thompson termed "FEL 2" is the design basis engineering report. This has been called design basis memorandum ("DBM") in this project. The design basis developed under this stage is a major engineering document that is not discarded as an engineering document, as has been suggested by CNRL witnesses. It defines the design of the process and lives for the whole project length. He stated that for Horizon, the DBM of the whole project will be used for both the Phase 1 design and Phase 2/3 as well as Phase 4/5. The document contains site parameters, environmental conditions and rheological properties of the product as it moves between unit operations. Dr. Thompson agreed with Ms. Zeidler that due to the size of the Horizon project, the project may not have selected a final design, so the engineering team would continue to investigate various options and undertake basic engineering, and compare the costing schedule of one alternative to another. In his view, this is feasibility. Dr. Thompson also accepted Ms. Zeidler's comments that some of the major unit operations costing several billion dollars may have their own design memorandum associated with each operation. However, he stated there would be an overall design basis memorandum for the project.

[210] Dr. Thompson stated that part of the DBM was engineering. In his view, the challenge for the CARB will be to decide the division. Dr. Thompson set out the list of items produced during the DBM part of the development phase (Exhibit R35, page 17). If the owner went from

the DBM to a hard dollar contract for a lump sum bid, the contractors would want a very precise definition of the process for which they are bidding. Under those circumstances, the amount of engineering undertaken within a DBM is even more intense than what would be normal or typical.

[211] FEL Phase 3 is the engineering design specifications. It is at this stage that the project detail engineering plans are developed. These documents which define the process of the facility are precise, but may not be lengthy. In his view, the engineering design specification ("EDS") is all engineering. The phase supports procurement and construction.

[212] Dr. Thompson stated that at Phase 0, Phase 1 and most of Phase 2, the primary part of those documents is feasibility. However, the back end of DBM and EDS is to support the engineering procurement and construction of the project.

[213] The EDS and detailed engineering run in parallel. He stated it is not the case that the EDS is completed prior to the design engineering.

[214] He stated that the full specifications for every equipment and service on a project the size of Horizon would run to tens of thousands of pages because each piece of equipment requires a specification.

[215] Dr. Thompson stated that he disagreed with the comment that FEL is not assessable because it occurs prior to sanction. He stated that that is not certain. In the Horizon project, sanction occurred in February 2005, but detailed engineering started February, 2004 and procurement started February or March, 2004. The definition part of the project, DBM and EDS, finished after sanction. It is customary to run DBM and EDS in parallel with procurement and detailed engineering.

[216] In terms of the assessment records and construction reports that Dr. Thompson had seen in the municipality, when the phrase "basic engineering, preliminary engineering" was used in construction reports, 100 percent of those costs were included in the assessment.

[217] Dr. Thompson stated that he chose an engineering model from the largest resource company in the world. However, there are many FEL models. The DBM model recommended by the Construction Owners Association of Alberta (COAA), has its own recommended practice in how to undertake FEL analysis. A comparison of this approach against the approach in Dr. Thompson's report shows similar activities between both models.

[218] Dr. Thompson stated that in the previous year's hearing, there were comments made by CNRL witnesses that when DBM and EDS are produced, they are given to the contractors who then throw them away and do their own design. He stated that this does not happen and although the documents might be refined through iterative analysis, DBM is never removed because it defines the site and environmental conditions upon which the design is based.

[219] Dr. Thompson stated that the activities of a feasibility study are excluded. The engineering within feasibility studies are excluded because the CCRG excludes them under the feasibility study. Everything else is included.

[220] The key is the measure of engineering activities which are included costs rather than activities of a study nature which are excluded costs.

[221] Dr. Thompson suggested that the engineering cost component of the FEL phase of the Horizon project represents $346 million. The difference between $346 million and $600,000 would be the study costs. The $346 million was taken from schedule 23.3 and adding those which reference engineering.

[222] One of the tasks when finding engineering costs within the category of DBM would be to interpret which engineering costs went toward technologies that were not selected so that these costs could be taken out.

[223] The purpose of the hindcast study was to investigate past practice, not to develop an assessment model. The word "similarity" has been used in the hindcast report. What has been meant by this term is that all of the projects investigated are machinery and equipment assessments, they are wholly within the municipality and they were constructed in a period where property owners started to claim for lost productivity. They were assessed according to CCRG and not another piece of legislation. Another important parameter was that some projects identified by CNRL witnesses were included.

[224] Of the projects examined for the hindcast study, ten of them cost over $1 billion to build. The average cost was $1.4 billion. While this was low compared to the capital cost of Horizon, until this year, Horizon was in a class of its own in terms of an $11 billion project. The purpose of the hindcast study was to determine whether the cost was in or out. The percentages listed in the hindcast report were not used in an assessment fashion. They were put in to show that detailed work had been undertaken, but yet to protect confidentiality of the raw material. The 36 projects were listed at page 35 of Exhibit R35. Dr. Thompson stated that there is no correlation between the list of projects and the subsequent numbers. For the 21 projects listed at page 37, Exhibit R35, each of those projects reported FEL in terms of the nomenclature "scoping study or feasibility study", DBM and EDS. The percentage listed in the hindcast is the percentage of excluded costs once the included costs have been removed.

[225] The reason there are only 21 projects listed is that the balance of the documents reported in the rendition or cost construction report provided by the property owner reported using different phraseology. They reported "basic engineering" "preliminary engineering" and "detailed engineering". Dr. Thompson stated that although he could have assumed that basic engineering meant DBM and preliminary engineering meant EDS, he chose not to include them based upon the different nomenclature.

[226] Dr. Thompson stated that in the hindcast, percentages were put in. However, in the actual construction report the owners reported their actual costs. They were then converted to percentages to prevent disclosure of the actual numbers. Dr. Thompson stated that the preferred practice from all the construction reports that he had viewed was that DBM engineering costs were removed and that this seemed to be a consistent past practice. However, for one of the examples drawn from the hindcast report, in relation to the EDS engineering, 28 percent of the costs for the EDS were excluded which gave a total of 47 percent of FEL costs excluded. Keeping in mind Dr. Thompson's methodology, he stated that the percentage was an actual

dollar value representing the amount. It was listed as an assessable cost by the property owner, accepted by the assessor and placed on the assessment roll. Based upon his review, Dr. Thompson stated that in other cases, approximately 1/3 of those reviewed, the previous assessor had requested parts of the DBM. Dr. Thompson stated that it appears to be a common part of assessment practice to request portions of the DBM.

[227] Dr. Thompson described his method of calculating excluded costs in the hindcast study.

[228] Dr. Thompson stated that looking at Exhibit C43, schedule 23-3 from the previous year's hearing, CNRL had determined that $470 million are excluded costs. $45 million is listed as included costs for DBM including things like bitumen production contract services and secondary upgrading contract services. The EDS comes to $83 million for included costs. The total is $129 million. This amount was included in the assessment.

[229] Mr. Schmidt put $235 million for the same account based on the application of the non-assessable ratio for the whole plant. Using past assessment practices as a guide and taking a portion of EDS, the assessor would assume the whole of the DBM as excluded and deducting the non-assessable parts of the EDS, the included portion is $213 million. Therefore, this results in a range of $119 million at the low end through $230 million using past assessment practice and $235 million as determined by Harry Schmidt.

[230] Because of CARB Order 023-2013 indicating the sole question in dispute is in relation to past practice, Dr. Thompson did not respond to observations made by CNRL witnesses in relation to other matters.

[231] In response to Mr. Otsu's comments that the sanction budget for Horizon is a class one standard, a class two AACE standard requires complete engineering between 30 – 75 percent. If it is a class one AACE standard, Horizon must have undertaken a great deal of engineering in the preliminary phases, more than is typical or normal, so their engineering costs in FEL would be higher.

[232] In response to comments made by Ms. Zeidler at page 52, she stated that because costs were incurred prior to project approval, they were not considered construction costs or assessable. Dr. Thompson disputed this on the basis that the costs ran in parallel to detailed engineering and procurement, and detailed engineering and procurement costs were prior to project approval, yet were included. Further, he stated that it is common practice in engineering that elements of detailed engineering, procurement and construction, DBM and EDS run in parallel and they all run prior to project approval.

[233] In response to Mr. Celis' comments that FEL costs are typically not considered costs of construction, Dr. Thompson stated that based upon his review of the property owner construction reports and renditions and assessments undertaken in Wood Buffalo, it is common past assessment practice to include a component of the cost. Dr. Thompson rebutted similar comments made by Mr. Shaw, and Mr. Stowell.

[234] Based upon his review, it is common assessment practice or past practice to include a component of FEL cost in the assessment. He has suggested two potential methods of

calculating the included FEL costs for Horizon, one based on past practice, and one based upon inspection, and site specific documentation.

[235] In relation to labour productivity losses, for the 2011 assessment, which is the subject matter of the appeal, the municipality applied an Edmonton – Fort McMurray adjustment factor. Dr. Thompson stated that the Edmonton – Fort McMurray adjustment factor was not an issue between the parties, but what was in issue was the manner in which the adjustment is applied.

[236] Mr. Otsu used the adjustment factor on the quantity adjusted budget. The municipality uses the adjustment factor on the actual installed costs.

[237] In assessment practice, as well as on the Horizon project, productivity losses are applied in two parts. The first is a generic model that converts Fort McMurray costs to the mid-Alberta value. The second part is the site specific or project specific abnormal costs resulting from an imbalanced market. Dr. Thompson stated that Ms. Otsu's documentation and evidence was associated with the generic model. He did not comment on the abnormal costs owing to an imbalanced market.

[238] For the 2010 assessment for 2011 tax, the CARB determined that the appropriate total productivity loss, using the generic model, was $418 million. That calculation resulting in $418 million productivity loss is consistent with past assessment practice in Wood Buffalo and is based solely on an adjustment to the actual installed costs.

[239] In CARB Order 001-2013, the CARB directed that the Fort McMurray mid-Alberta adjustment factor of 1.27 should be adjusted to 1.24. The municipality used the same calculation for the assessment under appeal, but adjusted the factor from 1.27 to 1.24. The end result of that change was a lost productivity of $388 million. Dr. Thompson stated that when the Complainant adjusted the factor from 1.27 to 1.24, the end result was $610 million. He believes that they had reintroduced a different calculation than what was used in 2010.

[240] Based upon Dr. Thompson's review of 28 properties in the municipality, Mr. Otsu's generic labour productivity calculation model has not been applied in the municipality. Dr. Thompson stated that he agreed with both Mr. Stowell and Mr. Shaw who say that it is common practice to adjust to an Edmonton base. However, it is not the adjustment to Edmonton, but how Mr. Otsu adjusts to Edmonton that is not correct.

[241] Dr. Thompson stated that contrary to the evidence of Mr. Otsu, the Otsu model was rejected and the assessment was not based upon Mr. Otsu's two-step process. In the hindcast report, 28 properties were examined, but only 22 were included when dealing with the productivity claim. The reason that 6 are missing is that they did not use a generic productivity model, but used a percentage. Because this was a different type of approach, it was not included.

[242] Abnormal costs identified as a result of an inadequate labour force or unavailability of materials must be measured and quantified against normal conditions. Normal conditions use the Edmonton base for the current assessment year. Specific documentation is required to substantiate abnormal cost of claims. For example, productivity is affected by variations in the weather, but that standard for measuring productivity losses owing to weather is not compared to

locations outside the immediate municipality, for example comparing Fort McMurray to the weather in Texas. The definition of weather upon which the facility has been designed, scheduled and constructed, and used by engineers is a known quantity. The related costs must be measured against that standard. The definition of the expected environmental conditions for the site is found in the DBM. The DBM should be used to measure abnormal costs against which the project was designed and constructed. Dr. Thompson stated that Mr. Otsu's model can be simplified as follows:

Productivity 2 = $[AIC]_A$ – [QAB] c

Productivity 1 = $[QAB]_C$ – $[QAB]_{EDM}$

Total Productivity Loss = Productivity # 2 + Productivity #1

= AIC – ~~[QAB]~~$_C$ + ~~[QAB]~~ $_C$ – $[QAB]_{EDM}$

Total Productivity Loss = AIC – $[QAB]_{EDM}$

Total Productivity Loss = AIC – $\frac{[QAB]_C}{1.24}$ (B)

[243] Dr. Thompson stated that in Mr. Otsu's presentation for the 2011 tax year hearing, Mr. Otsu defined *sanction budget* at $[QAB]_c$. In this year's hearing, Mr. Otsu is defining the *contract budget* as ($[QAB]_c$).

[244] Dr. Thompson defines as expression B, total productivity loss = actual installed cost – QAB (contractor) divided by 1.24.

[245] In his report, Mr. Otsu is subtracting an adjusted Edmonton budget from the actual cost. Dr. Thompson stated that although Mr. Otsu said that this expression B was obtained from AACE recommended practice standards, Dr. Thompson has reviewed those documents and can find no support for that relationship. Further, the CCRG deals in dimensions of *cost*, while Mr. Otsu has adjusted *estimates* which are not the same. Dr. Thompson stated that expression B is not used in any Wood Buffalo project and it was not used by Harry Schmidt when he calculated the $418 million excluded from the Horizon assessment. On other projects where Dr. Thompson has been involved, it is recognized that the QAB is subject to estimating uncertainties. In other places, those uncertainties are incorporated into the analysis before the labour productivity is calculated. For the Shell facility at Scotford, Dr. Thompson worked with Mr. Otsu, but Mr. Otsu's model was not used. Dr. Thompson stated that the two part model could not have been used in Scotford because Scotford is in mid-Alberta and does not qualify for the mid-Alberta adjustment. Any calculations to that facility were based upon the one part model only. Expression B requires accuracy on the budget. If actual installed costs are used, the accuracy of the estimating budget does not enter into the analysis. Dr. Thompson stated that Mr. Otsu's method provided the Horizon budget in a deterministic fashion. However, a budget can vary from a probability toward zero of a low value and towards 100 percent of a higher value. The estimated budget is a range, not a single number.

[246] Dr. Thompson stated that the documentation provided by Mr. Otsu (Exhibit C26) does not support expression B.

[247] Dr. Thompson stated that Mr. Otsu does not provide any authorization or geneses of expression B.

[248] In relation to the adjustment factor, Dr. Thompson stated that it appears that Mr. Otsu and Mr. Tham are arguing that the factor should be 1.37 or 1.38. Last year, the CARB decided that it should be 1.27.

[249] What is common amongst all productivity models that Dr. Thompson has reviewed are the first three elements of the model. The first item is trade availability which has the biggest impact on productivity. The second is trade skill levels and the third is infield supervisory quality. Dr. Thompson stated that the busing from camp to gate and from gate to site should not be part of productivity model. Travel is an excluded cost in the CCRG and CNRL has already produced a substantial claim for abnormal travel costs. This was accepted 100 percent by the assessor.

[250] Because travel cost can be recorded and measured precisely, it has no place in the productivity model.

[251] With regard to the hours of the working shift, Dr. Thompson stated that the working shift that Mr. Otsu uses has no relevance to the assessment for productivity. The standard shift (which Mr. Otsu has agreed), for Horizon is the same as the standard shifts in other Wood Buffalo oil sands projects which is a 10 hour day for a ten hour shift. Although Mr. Otsu has compared this shift to a 40 hour per week, 8 hour per day, 5 days a week shift, trades do not work that shift. That is a comparison to an office shift which is not a valid comparison. Because CNRL works a 10 hour day and the average shift is a 10 hour per day shift, there is no productivity loss on the Horizon shift.

[252] With regard to turnover of crafts and absenteeism, there is no data provided to support this percentage claim. It is customary practice to include within the base rate, an hourly rate for turnover and absenteeism and therefore this portion of the claim should be reduced to zero.

[253] With regard to the weather standard, Dr. Thompson accepted that when the weather gets poor, inefficiencies arise. However, the measurement must be calculated against the environmental standards set out in the DBM, and not against Edmonton.

[254] With regard to training, Dr. Thompson objected to Mr. Otsu's factor for two reasons. The first is that Mr. Otsu gave a ratio of apprentices in mid-Alberta and the ratio of apprentices in Fort McMurray. Dr. Thompson was able to find no references to this anywhere in the literature. There is no data on distribution of apprentices. The second objection is that Mr. Otsu stated in his report that when the base rate is put together, it is put together to reflect a trade mix. In the trade mix, apprentices are reflected so the impact on productivity is already included in the base rate and putting an additional factor is double counting.

[255] Dr. Thompson stated that Mr. Otsu has applied one deterministic factor to every project discipline which does not relate to what is happening in the industry.

[256] In relation to double counting, Dr. Thompson stated that someone within CNRL has determined what is non-assessable. However, there is no detail with regard to the claim of $62.5 million (in relation to business unit 31 and 33). For business unit 42, he suggested that $18.3 million be removed from the generic model.

[257] In relation to expression B, Dr. Thompson stated that Mr. Otsu reduced that value, adjusted it with a productivity ratio and then identified what the actual installed costs were and measured from the actual installed costs, not to the QAB of the Horizon. He stated there was no justification of this in the academic or professional literature based upon assessment practice in Wood Buffalo or elsewhere.

[258] Dr. Thompson stated that the $418 million of excluded productivity costs for the 2010 assessment was based upon a factor of 1.27 using one step methodology, which was consistent with past practice. The $418 million was not derived using Mr. Otsu's model.

[259] Contrary to Mr. Otsu's assertion that a two-step methodology formed the basis, Dr. Thompson stated he has been involved is Suncor Millennium, Shell Muskeg River and Jackpine and the labour productivity losses for Suncor Millennium did not use Mr. Otsu's generic model. Rather, actual installed costs were used. The same applied to Shell Muskeg River and Shell Jackpine. Neither was the Otsu model used for the other projects listed.

[260] In Mr. Otsu's rebuttal report, at pages 23 and 24, he states that the analysis produced a value of 10.7 percent contingency with a 50 percent probability of occurring and the 13.9 percent at 90 percent probability of occurring. Dr. Thompson assumed the relationship between those three points was a Gaussian curve. He was able to calculate what the estimate budget at the 90 percent probability was using Mr. Otsu's data and assumptions that it was a class one estimate. The end result was that the Horizon budget was around $7.4 billion, which is $600 million greater than Mr. Otsu used in his deterministic analysis. Dr. Thompson stated that the rate of change between zero and 50 percent probability is 2.8 times greater than the rate of change between 0.5 and 0.9, suggesting a heavily biased distribution to understating. As a result, he did not accept the numbers provided in section 24 of Mr. Otsu's rebuttal report.

[261] Dr. Thompson stated that although he was criticized for using productivity ratios in his report, he stated that he did not use productivity ratios.

[262] On cross-examination, Dr. Thompson acknowledged that the chart from Ms. Zeidler's report showing detailed engineering before the project was sanctioned was in the materials from the 2011 tax year hearing.

[263] Dr. Thompson clarified that the percentages in his hindcast report with respect to DBM and EDS represented the percentage of pre-construction costs reported. It is calculated by putting the pre-construction costs number over the total cost minus excluded costs. This is the ratio of the excluded FEL costs over the total project costs. Dr. Thompson clarified that he is not prepared to release the names of the facilities, the documents or renditions looked at in coming to

the conclusions of the hindcast report or to disclose the owners of the facilities, nor the complete hindcast report. Dr. Thompson confirmed that there are no details contained within his report which could be used to verify the numbers he presented.

[264] Dr. Thompson confirmed on cross-examination that engineering costs are to be included in the assessment when they are found in the pre-construction phase, but are subtracted out when they relate to exempt items such as road, bridges, raw water pond, mining, engineering related to mining.

[265] Dr. Thompson stated that CNRL's position was that everything was feasibility study in the 2011 tax year hearing.

[266] Dr. Thompson acknowledged on cross-examination that he is not a cost estimator. He is an engineer who has done cost estimations. The first productivity analysis that he has done in Wood Buffalo was in 2010. He has since been involved in the Kearl project and Shell Jackpine.

[267] The duplication issue came up this year because costs within account 29 are identified as productivity related and are duplicated in the generic model. That was discovered this year.

[268] To make the assessment more correct, Mr. Elzinga and Dr. Thompson are recommending a further $152 million should be removed from the total for labour and productivity loss. Dr. Thompson conceded that the information dealing with this potential double counting had been known during the previous year's hearing.

[269] On cross-examination, Dr. Thompson stated in response to questioning about the sanction estimate, that a sanction estimate may not be accepted by a CARB as an appropriate determination of typical or normal costs. Because Mr. Otsu deviated in using an inappropriate model, the estimate does not enter into the calculation and then one need not consider uncertainties associated with the estimate.

[270] Dr. Thompson also stated that in the 2011 tax year hearing, Mr. Otsu referred to *sanction budget* whereas this year, he has referenced the *contract budget* so there has been a shift in position on that point.

[271] Dr. Thompson stated that by applying 1.24 to the QAB, CNRL was adjusting the contractor estimates to a mid-Alberta estimate. The difference between the two calculations is that Dr. Thompson applied a generic factor of 1.24 to actuals and Mr. Otsu uses it for a portion of his calculation to take the contractor QAB from Fort McMurray to Edmonton.

[272] Dr. Thompson's interpretation of CARB Order 001-2013 is that the CARB accepted Mr. Otsu's general methodology showing the need to adjust the budget to mid-Alberta. The end result of the calculation ($418 million) is based upon actual costs. The CARB agreed with the general methodology of adjusting, but used the actual cost in doing the adjustment.

[273] Dr. Thompson clarified that the number calculated by Mr. Elzinga for the 2012 tax year is $388 million, not $418 million because the CARB has directed the parties to adjust the factor from 1.27 to 1.24.

[274] Dr. Thompson stated that his use of the 1.27 or 1.24 factor applied to the actuals captures the imbalanced market loss to a large extent. However, also captured is the site specific abnormal costs owing to the imbalanced market. Dr. Thompson stated that the calculation used by the municipality comes up with the correct abnormal costs associated with the difficulties in labour that are derived from the generic model plus site specific abnormal costs owing to the imbalanced market. He stated Mr. Otsu is silent on the second part. Dr. Thompson stated that the entire productivity loss for the Horizon project is not captured by dividing QAB by 1.24. The application of the factor of 1.24 to actual included costs captures a component of the imbalanced market. This must be augmented by the addition of site specific abnormal costs owing to the imbalanced market. Mr. Otsu is silent about site specific adjustments for abnormal costs owing to the imbalanced market. Mr. Otsu's equation B only related to the generic calculation of labour losses, but is silent about the application of the imbalanced market and the associated abnormal costs to site specific conditions.

[275] In cross-examination, Dr. Thompson stated that there are other productivity loss factors unaccounted for by the 1.24 factor. The list of six factors set out by Mr. Otsu is not a comprehensive list of all abnormal loss factors experienced by Horizon in the municipality. To be added to the list of factors is trade availability. A second factor in determining productivity is the quality of the trades. As the quality decreases, it takes longer to complete a set piece of work. The third most important factor is the quality of supervision in the field. Those three factors are major factors impacting construction labour productivity. Those three factors do not measure the impact of an imbalanced market. Dr. Thompson stated that the application of 1.24 to all disciplines in a unified homogenous fashion is incorrect. The lost productivity on a site depends upon each of the disciplines. Different productivity factors are applied per function because some are more sensitive to losses and some of them less sensitive. Dr. Thompson stated that in his experience there will be different tables for different project functions.

[276] The municipality's use of the 1.24 factor in the generic modelling does not take into account losses occasioned by trade availability, quality of trades, and quality of supervision in the field. However, the site specific abnormal cost owing to the imbalanced market within Wood Buffalo does.

[277] Dr. Thompson stated that the $388 million is the productivity loss identified using the 1.24 factor. In addition to that, there is $1.36 billion of abnormal costs that have been allowed by the assessor for the imbalanced market.

[278] In cross-examination, Dr. Thompson stated that looking at the productivity calculations contained at pages 3 of 27 and 4 of 27 in Mr. Tham's report (Exhibit C25) shows that the calculations done at page 4 of 27 do not use expression B. Dr. Thompson stated that Mr. Otsu used abnormal 1, abnormal 2, productivity 1 and productivity 2 as being interchangeable. Mr. Otsu does not do in the calculations what he says he is going to do, so there are a number of mixed calculations not compatible with the instructions in his report.

[279] During cross-examination, Dr. Thompson went through the municipality's calculations to establish productivity loss. The municipality took the actual hours reported by CNRL (as evidenced in the current hearing in column D from Mr. Tham's Exhibit 25) and adjusted it by dividing it by 1.24. The difference between the two is the measure of lost productivity which is

multiplied by CNRL's given number of $50 per hour. That is the measure of lost productivity. This method has been used historically in Wood Buffalo and was used by Mr. Schmidt on the Horizon project. This process is shown at paragraph 302 of Exhibit R35, page 131. In response to the comment that the hours in column D had been adjusted by Mr. Tham to prevent double counting, Dr. Thompson stated that information on that topic had been requested by the municipality but not provided by CNRL. Further, he referenced Mr. Schwartzkopf's theme that the verification of abnormal costs and the need to document it should occur contemporaneously. Dr. Thompson did not agree that the adjustments CNRL made eliminate the concern of double counting between Mr. Celis' change order analysis and Mr. Tham's productivity calculations for two reasons. The first is that an examination of the Horizon construction model in account 29 says it has been handled by a subsequent ratio of assessable to non-assessable costs. It is the role of the assessor and not the taxpayer to determine what is assessable and what is not. Second, for a change in account 29, one would expect a corresponding change to account 24. However, there is no evidence of that happening. The adjustment is an unknown quantity.

[280] In response to questioning regarding Mr. Tham's adjustment to column D at page 3 of 27 to take out change orders that Mr. Celis already calculated, Dr. Thompson indicated that if this has been done under column D, it is a new theory of CNRL which is contrary to what was projected by CNRL over the past four years. Dr. Thompson stated that he believed Mr. Tham was talking about the second part calculation where the adjustments were made which is indicated on the calculation phase. There was no indication on the first calculation that any adjustment had been made.

[281] Dr. Thompson stated that, based upon the hindcast review, it was clear that a component of FEL costs has been included in the assessment. The second conclusion which can be drawn is that no other project used the QAB to calculate productivity.

[282] Dr. Thompson confirmed that there was nothing in the material provided by CNRL to allow the municipality to know how much of the DBM or EDS were used to determine different technologies. He stated that nothing in the material provided by CNRL with regard to the DBM and EDS allows the municipality to identify engineering costs associated with the DBM and EDS devoted to determining the viability of different technologies.

Mr. John Elzinga

[283] Mr. Elzinga had the responsibility of preparing the 2011 assessment for the 2012 tax year. He was also one of the participants in the past-practices study that was undertaken in the municipality (referred to elsewhere in this order as the hindcast study or hindcast report).

[284] Mr. Elzinga confirmed that the construction costs for Phase 2/3 ore preparation plant and the hydrotransport train 3 were not added to the 2011 assessment because those facilities were not completed prior to the end of 2011. Those costs will be added to the next assessment (2012 for 2013 tax).

[285] The 2011 CARB heard testimony from CNRL witnesses that costs for overbuilding or pre-investment were routinely excluded in assessments in the municipality. In that hearing, the

Respondent had no evidence to refute that testimony. Subsequent to the CARB Board Order 001-2013, Mr. Elzinga was part of a team that undertook the previously referenced hindcast study. Twenty eight assessments for other properties were examined and it was found that none of those other plants had overbuilding or pre-investment costs that had been excluded from their assessments. Any pre-investment that was excluded was not related to operating machinery and equipment. Mr. Elzinga agreed with Ms. Zeidler that the extent of overbuilding or pre-investment in the Horizon plant was highly unusual. He recalled just one steel mill in Strathcona County where a furnace was replaced with a new furnace with more capacity than was needed at the time. He applied Schedule D depreciation until such time as the entire plant capacity was increased. The cost of oversized machinery and equipment is not an abnormal cost in and of itself. That machinery and equipment may suffer a loss in value and he came to the conclusion that the oversized Phase 2/3 equipment in the Horizon plant may suffer a loss in value until such time as those new phases are complete. For that reason, he applied Schedule D depreciation of 30 percent by applying seven additional years of depreciation from 2011 to 2018 when Phase 2/3 will be fully operational. Following the hindcast study, Mr. Elzinga concluded that the oversized machinery and equipment in the Horizon plant have been fairly and equitably compared to other properties in Wood Buffalo. CNRL estimates the cost of oversized machinery and equipment is $918 million and Mr. Elzinga accepted that estimate. Contrary to the position of Mr. Stowell, the Horizon overbuilt machinery and equipment meets the definition of machinery and equipment and it therefore must be assessed. In the hindcast study, there was one plant for which pre-investment for overbuilt costs were claimed. In that 2011 project, the equipment was not complete or in operation, thereby not meeting the definition of machinery and equipment, so it was excluded from the assessment. The hindcast study has demonstrated that CNRL is being treated consistently and therefore equitably with other regulated properties in the municipality as well as within the province. Mr. Elzinga maintained that his assessment was prepared in accordance with the *Minister's Guidelines*. His application of Schedule D depreciation is in accordance with those guidelines. Mr. Elzinga added that the evidence of Mr. Shaw about costs being excluded from other plants in the municipality was correct, but those costs were for equipment that did not meet the definition of machinery and equipment so they naturally would be excluded. Such is not the case with the overbuilt components at the Horizon plant. The hindcast study provides evidence that there are no other examples of operating oversized operating machinery and equipment that was constructed post-2000 that has been removed from the assessment as an excluded cost contrary to what Mr. Shaw stated.

[286] Mr. Elzinga stated that he has accepted for exclusion $875 million for delays related to unavailability of labour and materials, $201 million of travel costs, $139 million for freight or transportation and $130 million for overtime and night shift costs. That totals $1.345 billion in site specific excluded costs related to unavailability of labour and materials. He also accepted the inclement weather claim which brings the total to $1.366 billion. He refuted the position of CNRL witnesses who claimed that normal should be measured against Edmonton or mid-Alberta costs. That concept was in the old Special Property Assessment Guide (SPAG) that was replaced by the CCRG and the CCRG says no such thing. He went on to refute evidence from the Stowell and Shaw rebuttal reports that addressed the SPAG, the CCRG and in particular, the Edmonton or mid-Alberta base. In regard to Mr. Otsu's claim that his two step productivity loss calculation was used in reporting costs for the Shell Scotford refinery in Strathcona, Mr. Elzinga pointed out that that facility is located in mid-Alberta so there would have been no adjustment for location. The same comments were made in regard to the Shell upgrader expansion in Strathcona. Mr.

Otsu had worked on measuring productivity losses for the Shell Jackpine facility in Wood Buffalo and suggested that his two step method was used. Mr. Elzinga had been involved in preparing that assessment and confirmed that it was his method and not Mr. Otsu's that was used in making the assessment. The Otsu method may have been presented, but it was rejected.

[287] The hindcast study also revealed that no other properties built after 2000 have an abnormal cost allowance for lost productivity that is based on the two step productivity loss method used by Mr. Otsu. Twenty two of the 28 plants were given an excluded cost claim related to lost productivity.

[288] Mr. Elzinga understood CARB Board Order 023-2013 to say that the CARB would only consider evidence and testimony regarding past and current assessment practices regarding this issue. The hindcast study revealed that not all pre-construction costs are considered to be excluded cost as CNRL is suggesting for the Horizon plant. For plants for which there was an excluded cost claim for pre-construction, those claims are related to feasibility studies and scoping studies as are referenced in the CCRG. Of the 28 plants studied, 21 were given an excluded cost claim for pre-construction. The municipality agrees that cancellation charges and feasibility study costs are excluded costs. Some DBM and EDS costs could be excluded but not all. If it was intended that all such costs should be excluded, the CCRG would have said that specifically, as it does for cancellation charges and feasibility studies.

[289] In his testimony, Mr. Minter had questioned the comparability of the properties in the hindcast study. Mr. Elzinga confirmed that all of the 28 properties are similar to Horizon in that they all have machinery and equipment and they are all located within the Regional municipality of Wood Buffalo. All were built subsequent to 2000. The purpose of the hindcast study was to determine past assessment practices so it does not matter if those other plants apply a different technology, have a different capacity or were built at a smaller cost. The hindcast study was conducted for the purpose of determining past assessment practices in the assessment of machinery and equipment. Mr. Elzinga opined that some of Mr. Minter's calculations based on his review of the hindcast study may or may not have been based on accurate assumptions. The assessment of machinery and equipment is not based on technology nor on plant capacity. It is assessed on the basis of capital cost. The hindcast study was not undertaken to determine parameters for the assessment of the Horizon plant. The study was undertaken to determine past practices in regard to whether the costs of operating oversized machinery and equipment had been excluded as an abnormal cost, the basis of lost productivity claims and whether all pre-construction costs, including DBM and EDS were excluded costs.

[290] In regard to site preparation, Mr. Elzinga testified that CNRL was asking for exclusion of costs of much more than site preparation as described in the CCRG and its guide. CNRL's claims for costs of excavation, backfill, gravelling and compacting are not excluded costs. He concluded that the CNRL claim of $139.25 million should be reduced by approximately $40 million. In the CNRL rendition, he accepted costs related to items described as dewatering, removal of wood piles, forest vegetation removal, site clearing and site grading. The costs of gravelling are not a component of site preparation. Costs associated with Mr. Celis' term "taking the site to construction grade" are included costs, not excluded costs. Where the term "site grading" appeared in the rendition, those costs were excluded but where "site preparation" was used, those costs were considered to be beyond what could be excluded.

[291] Mr. Elzinga maintained that the total amount of excluded costs pertains to all facets of the Horizon facility, including buildings and structures (which are assessed on a separate roll), linear property (which is assessed by a provincial linear assessor) and machinery and equipment (which is the subject of this hearing). The total amount of excluded costs should therefore be allocated to each of those three property categories. A proper allocation using ratios calculated by Mr. Elzinga would correct a $261,406,473 overstated amount in the CNRL rendition.

LIST OF ISSUES

[292] The CARB has determined that the issues it must decide are described in the following paragraphs.

Issue 1 ISSUE ESTOPPEL/ABUSE OF PROCESS

[293] Does the Complainant have an application for abuse of process following the conclusion of the hearing?

a. Which, if any, of the issues does it apply to?
b. If the CARB has accepted the hindcast study, but is not convinced by the evidence presented, does that lead to a conclusion that there is an abuse of process application?

Issue 2 CHANGES WITHIN AN ASSESSMENT

[294] If the overall assessment does not increase, can the assessor "inter-category" raise an assessment amount?

Issue 3 MGA SECTION 295

[295] Regarding section 295 responses:

a. Can the Complainant provide information in response to a section 295 request from the municipality under conditions?
b. If the Respondent obtains information in response to a section 295 request for a subsequent year to the one under appeal, can the Board consider the evidence so obtained?

Issue 4 PRODUCTIVITY

[296] Productivity:

a. Is it a one-step vs. a two-step model
b. Should the calculation adjust to mid-Alberta with a separate adjustment for site specific?
c. Does the CARB need to deal with productivity at all given the municipality's position that it was giving notice to change from the mid-Alberta base for subsequent tax years?
d. Is the factor 1.24?
e. Will the end result be:
   $553 million, $418 million, $388 million or $238 million?

Issue 5 PRE-CONSTRUCTION (FRONT END LOADING – FEL COSTS)

[297] For pre-construction (DBM and EDS), does the hindcast study impact the CARB's determinations?

a. Does the CARB have sufficient evidence to show the percentage of what portions of this were dealing with feasibility?

Issue 6 SITE PREPARATION

[298] Site preparation (cells D120 and E120):

a. What is the interpretation of the words "construction grade"?

b. Does the difference of wordings used in CNRL's cost rendition for sites 1, 2 and 3 as compared to site 4 justify the different treatment?

Issue 7 PRE-INVESTMENT

[299] The pre-investment (overbuilding):

a. The sole issue before the CARB was the equity argument about how others within the municipality had been treated. Is there evidence to support the position of CNRL that others within the municipality had been treated in a similar fashion?

DECISION WITH REASONS

[300] The CARB has decided that changes to the assessment are necessary. The amended 2011 assessment for 2012 tax is $3,410,553,820 as shown on the revised assessment notice mailed by the Respondent municipality to the Complainant on March 9, 2012. At the hearing, the Respondent recommended a reduction in the assessment to $3,287,834,360.

[301] For the assessment of Phase 1 machinery and equipment, the project costs are reduced as follows:

Total Project Cost	$10,732,493,000
Less: Buildings and Structure Cost	- 364,430,000
Total M&E	$10,368,063,000
Less: Secondary Crushers Cost	- 50,238,904
Less: Property Assessed as Linear	- 125,637,248
Total:	$10,192,186,848

[302] CARB Order 023-2013 stated that the CARB will direct the municipality on owners' costs. In that regard, the CARB did not consider new evidence relating to overall owner's costs or to owner's costs by business unit. The direction from the CARB is that excluded costs for Overall Owner's Cost will be $586,816,000 and the total excluded costs for Business Unit Owner's Costs will be $807,527,000. These amounts are unchanged from the Order of the 2011 CARB.

[303] The total excluded cost for site preparation is $40,824,094 plus $9,526,130 minus $3,800,000 equals $46,550,224.

[304] For Pre-construction (Front End Loading or FEL), the total excluded cost is $597,948,000.

[305] Pre-investment (Overbuilding), especially to the scale of that in the Horizon plant is unique to this plant. The CARB finds that there is no evidence to sway the CARB from adopting the conclusion drawn by the 2011 CARB. The excluded cost for pre-investment is $918,541,000 which is the outcome of the application of the 6/10 power rule as described and applied by Complainant's witnesses.

[306] Financial losses due to Unproductive Labour have been measured by various witnesses using methods that are similar but not identical. The findings and conclusions of the 2011 CARB appear to have been misinterpreted to some extent by both the Complainant and the Respondent. The 2011 CARB commented on aspects of the calculation methods and steps of each party, but concluded that neither party had convinced the CARB that any change should be made to the assessment so the CARB chose to leave the excluded cost amount as it was in the assessment on the roll. The CARB did not necessarily endorse the methods and steps undertaken by the assessor in arriving at that amount.

[307] The Productivity issue is not much different this year (2012). Both parties have undertaken calculations and presented the outcomes to the CARB. The CARB heard the Complainant's position and methodology, but does not accept the conclusions as being an accurate measurement of losses. The Respondent informs the CARB that the loss amount of $387,961,000 is arrived at by precisely the same method as the 2010-2011 amount of $418,026,000 with the exception of the factor that was applied. Based on findings of the 2011 CARB, the Respondent altered the factor from 1.27 to 1.24. This CARB does not have the benefit of all of the calculations made by the Respondent. The conclusion is that neither party has convinced the CARB that there is a need to alter the excluded amount for this component. The CARB therefore determined that the amount of $387,961,000 for total productivity losses is the amount to be excluded in making the assessment.

[308] This CARB retains jurisdiction to address any questions relating to the implementation of its decision.

RATIOS

[309] Further to the introduction of this topic as a preliminary matter (see paragraphs 31-32), the CARB will not rule on the use of ratios at this time. In the event that an implementation hearing is set for a future date, the CARB will review party submissions on the matter at that time.

COMMENTS ABOUT THE HEARING

[310] This hearing has, among other things, demonstrated that there are flaws in the legislated framework for assessment of machinery and equipment (M&E).

[311] These problems primarily arise from the complexity and duration of the hearing process that results in CARB decisions for one year being issued after the assessment notice for the same property for a subsequent year has been mailed to the property owner.

[312] That was a significant factor in this hearing, in that the assessor issued the 2011 assessment (for tax 2012) derived in the same manner as the assessment for 2010 (for tax 2011) prior to the release of the CARB order regarding the 2010 (for tax 2011) assessment complaint.

[313] In seeking information for the assessment, the Complainant receives a section 299 information response and frames its complaint on the basis of that section 299 disclosure.

[314] When the CARB decision for the prior year is issued and makes a significant variance to the assessment for that prior year, the Respondent frames its reply to the complaint and evidence in response to the elements found in the board order. To this, the Complainant can only reply in rebuttal.

[315] The legislated appeal regime does intend to produce appeal decisions within the assessment year. Further, the legislated appeal regime does intend that the Complainant shall know at least the principles upon which its assessment was created, although some details and analysis supporting the assessment principles may arise in the appeal process. The result is the Complainant fashions its complaint on the basis of the knowledge of the assessment derivation and expects that the response of the Respondent will be centred on that. Indeed, MRAT says the CARB must not hear anything not so disclosed.

[316] The assessor's position is that every year is a new year and the assessor is entitled to proceed as he sees fit to determine fair and equitable assessments.

[317] The Complainant's position is that the assessor's rationale for the assessment of included costs should generally be static in a regulated assessment regime, except where there are additions or deletions. If that is not the case, the Complainant is at a distinct disadvantage because the core of the assessor's defence now has little relation to the section 299 reply upon which the Complainant had to prepare its complaint.

[318] The CARB notes that if it is the assessor's position that each year is distinct, it may lead to a situation where the CARB's directives might be ignored. This implies that perhaps the assessor's defence of the assessment should be tied to the section 299 disclosure.

[319] This would result in a lack of certainty in the system that would be unacceptable. The CARB has attempted in its procedures for the current year to accommodate the reality of the prior decision and a process to resolve this appeal. The CARB recognizes that the Complainant's ability to confront the "hindcast report" being the principal new evidence coming to this hearing only in rebuttal is disadvantageous, a factor the CARB considered in its scrutiny and weighing of same.

Issue 1 ISSUE ESTOPPEL/ABUSE OF PROCESS

Does the Complainant have an application for abuse of process following the conclusion of the hearing?

a. **Which, if any, of the issues does it apply to?**
b. **If the CARB has accepted the hindcast study, but is not convinced by the evidence presented, does that lead to a conclusion that there is an abuse of process application?**

[320] The Complainant's application on the question of issue estoppel and abuse of process has been discussed in Board Orders 010-2013-P, 013-2013-P and 023-2013-P and the CARB will not repeat the rulings made in those Orders. Following the Complainant's initial application regarding issue estoppel and abuse of process, the CARB found that the application was premature because no evidence had been filed by either party in relation to the complaint against the 2012 assessment. As set out fully in that decision, the CARB found that it without the evidence having been filed, it was not possible for the CARB to determine whether there was fresh evidence.

[321] Following the filing of the disclosures by both parties, the Complainant again applied to the CARB for an order for issue estoppel or abuse of process. At the conclusion of that hearing, the CARB found that there was evidence, notably the Respondent's hindcast study, that was fresh and new. It was largely this hindcast study that brought the CARB to the decision that the 2012 merit hearing should proceed. The CARB determined that it would review the information provided in the hindcast study which would be covered by the witnesses in the merit hearing. The CARB indicated that it would weigh the evidence contained in the hindcast study, as it would weigh all evidence provided to make a determination to change, or not change the assessment.

[322] The merit hearing has now been completed and the CARB has weighed the evidence provided in the hindcast study. As will be discussed below, the CARB has not found significant components of the hindcast study that provide evidence compelling the CARB to decide one way or another on any particular issue. An issue by issue set of reasons follows. Suffice to say, the CARB has not found that there was an abuse of process on the part of the Respondent. The evidence presented by the Respondent was new, and created based upon the Respondent's reading order of the CARB in the previous year's hearing. The new evidence took the matter out of the scope of issue estoppel or abuse of process. The CARB finds that it was not an abuse of process for the Respondent to present evidence to respond to the findings by a previous year's CARB.

Issue 2 CHANGES WITHIN AN ASSESSMENT

If the overall assessment does not increase, can the assessor "inter-category" raise an assessment amount?

[323] Section 285 of the MGA compels an assessor to prepare annually an assessment for each property in a municipality. Machinery and equipment is defined in the Act as "property". The MGA, its regulations and Minister's Guidelines set directions for assessment of various property

types, including M&E. The question that has come before this CARB is in regard to the ability of the assessor to change an assessment of machinery and equipment when there have been no changes to such equipment since the prior year assessment was prepared.

[324] The assessment of M&E is regulated. It is not assessed at market value. For property that is assessed at market value, it is understood that market conditions change from time to time and it is therefore necessary to look at the market value of each property on a frequent basis, such as annually. Changes such as additions and deletions to M&E are accounted for on an annual basis. Annual depreciation is to be applied to M&E that has not yet reached its maximum depreciation level.

[325] Also, the assessor can correct an error that is discovered in a subsequent year. Fairness and equity must be taken into account if a change to an assessment method or procedure is being considered. There is nothing in the regulations and guidelines that precludes an assessor from amending the assessment amount on an entire facility or any component of that facility for an assessment year. Nothing in the statutes prevent an assessor from re-assessing machinery and equipment differently each year. Nor is the assessor precluded from changing the assessment of any component. For example, the assessor might have some compelling reason to change the way in which FEL cost is measured for exclusion. He is able to make that change as long as he does so for every taxpayer in the municipality that has FEL cost exclusions. Fairness and equity dictate that no one taxpayer or property can be singled out and treated differently than others.

Issue 3 MGA SECTION 295

Regarding section 295 responses:

a. **Can the Complainant provide information in response to a section 295 request from the municipality under conditions?**
b. **If the Respondent obtains information in response to a section 295 request for a subsequent year to the one under appeal, can the CARB consider the evidence so obtained?**

[326] During the hearing, the CARB heard testimony from witnesses regarding implications following the making of requests for information pursuant to Sections 294 and 295 of the MGA. During a Horizon plant tour in 2013, the Respondent was to view certain documents that were on site. Prior to the inspection team arriving at Horizon, the Complainant informed the assessor that just one member of the team would be permitted to enter the room to view the requested documents. Confidentiality concerns were cited as the reason for attaching the condition. The Respondent insisted that the assessors were bound by confidentiality rules in the MGA and that Dr. Thompson, while not an assessor, was covered by the same confidentiality conditions as are imposed on assessors by legislation. When providing information to the Respondent pursuant to Section 295 requests, the Complainant provided some information with a condition that it could only be used for the 2013 assessment (2014 tax) sand that it was not to be used to assist in the defence of any past assessment that was under complaint. These Sections 294 and 295 requests were made to assist the assessor in making assessments for years subsequent to the one (2011 assessment for 2012 tax) that is the subject of this complaint hearing.

[327] The Municipality raised the question before the CARB whether it is appropriate for an assessed person to provide information in response to an information request with conditions attached to the use of that information. Although the CARB heard the parties in relation to this issue, the CARB is not a court of full jurisdiction, having the authority only to change or not to change an assessment (section 467(1)). Although this is an important issue, this CARB does not have jurisdiction to make general pronouncements of law. Should the parties wish for clarification about the validity of an attempt to impose conditions, an application should be brought to the Court of Queen's Bench.

[328] A secondary question arises from the Respondent's use of information gained from a subsequent year response to an information request. This is discussed starting at paragraph 371 of this Order.

[329] The MGA and its regulations are clear on the remedies should a person fail to respond to a municipality's information request. If there has been a failure by a person to respond, then the municipality may seek relief from the Court of Queen's Bench pursuant to section 296 of the MGA. Section 9(3) of MRAC provides that a CARB must not hear any evidence from a complainant relating to information that was requested by the assessor under section 294 or 295 of the Act but was not provided to the assessor.

[330] A further link between the provision of information requested by the municipality under section 295 and a hearing before a CARB is found in section 295(4), which prohibits a person from making a complaint under section 460 if the person has failed to provide the information requested under section 295(1).

[331] However, the MGA and MRAC are silent on the matter of an assessed person attaching conditions to information provided pursuant to an assessor's request pursuant to the MGA.

[332] The evidence before the CARB was that the Complainant attempted to or did impose conditions on the disclosure that it made to the municipality during 2013. Since the disclosure in question occurred in relation to the municipality's section 295 request for the 2012 assessment for the 2013 tax year, this is an issue related to an assessment year after the one at hand. It is not necessary for the CARB to determine this issue. Should it become necessary for a subsequent CARB to decide this matter, it can be dealt with in a subsequent CARB hearing.

[333] It is the CARB that must decide on admissibility of such evidence, which it has done at paragraph 372 et seq. of this decision. The evidence which was subject to the Complainant's proposed condition dealt with an attempt to limit the use of the information for a subsequent tax year hearing. Since the CARB is not a court of law, and has a limited mandate, it examined the evidence in question, found it to be relevant, and decided to admit it. If the parties wish for a declaration about the validity of the practice of imposing conditions upon disclosure under s. 295, then they should make an application to the Court of Queen's Bench.

Issue 4 PRODUCTIVITY

Productivity:

a. **Is it a one-step vs. a two-step model**
b. **Should the calculation adjust to mid-Alberta with a separate adjustment for site specific?**
c. **Does the CARB need to deal with productivity at all given the municipality's position that it was giving notice to change from the mid-Alberta base for subsequent tax years?**
d. **Is the factor 1.24?**
e. **Will the end result be:**
   $553 million, $418 million, $388 million or $238 million?

[334] The Respondent admits that the requirement for equity required them to incorporate the 1.24 Edmonton (mid-Alberta) factor into claims of unproductive labour as its inquiry confirmed such a factor has been employed for other similar plants in the municipality.

[335] It advised the CARB that this practice will cease after due notice is given to all affected taxpayers as it believes that the CCRG does not amend any cost to an Edmonton base except transportation, which is not an issue in this hearing. The Respondent argues that the CCRG confirms that typical or normal costs will vary from place to place and there is no basis to attempt an Alberta-wide equalization.

[336] The Respondent invites the CARB to accept this evidence and argument and to issue a "correct" assessment for the Horizon plant for the year under complaint without any labour adjustment to Edmonton to comply with a practice the assessor intends to employ.

[337] The CARB heard evidence that the Horizon project was the only assessment appealed for the 2012 tax year. For the CARB to accept the municipality's invitation would lead to an inequitable result, because the Complainant would be held to a different standard than all others in the municipality for the same tax year. Thus, the CARB is not prepared to direct that the adjustment from Edmonton be ignored in the productivity analysis in this hearing. The CARB makes no comment on the municipality's proposed future actions in regard to an adjustment to the Edmonton area for productivity claims.

[338] The Complainant, through its expert witness, Mr. Otsu, supported by another qualified productivity expert witness, Mr. Schwartzkopf, argues that there are two parts to a calculation of labour productivity loss.

[339] The first part is the locational adjustment (the comparison to mid-Alberta) applied to plants in the municipality to compensate for the lack of an available skilled workforce. This factor has been modified to 1.24 for the current assessment.

[340] Secondly, there needs to be an adjustment to compensate for the site specific, time specific lost productivity found in comparing baseline budget hours contemplated and factored up for growth in scope to actual expended hours needed to complete the work. This number of

hours was costed at $50 per hour with a 15 percent benefit factor. The Complainant deems the the resulting cost abnormal. The Complainant seeks its removal from the included costs. Both of the Complainant's productivity experts stated the value per hour used by the Complainant was very conservative. Dr. Thompson, witness for the Respondent, opined that the rate appeared to be higher than could be supported by trades wage rates.

[341] The Complainant seeks a recognition of abnormal productivity loss of:

> ($161M for the mid-Alberta factor of 1.24) + $393M for the Site/time specific loss = $554M.

[342] The Complainant presented a complex series of spreadsheets to show how the total $553,795,419 claim was calculated. Portions of the calculations were made using actual labour hours, while other components were modelled because precise data was not available.

[343] The Respondent argued that only the site specific lost productivity element above the expected sanction hours should be adjusted and the sanction budget should be adjusted up to a realistic probability of accuracy. Detailed calculations were not provided; however, the final indicated lost productivity claim recommendation from the Respondent was $387,961,000.

[344] For this assessment complaint, the Complainant's baseline budget is the construction contract award value for labour. The Respondent argues that using the original cost estimate compiled during a commercial bidding phase is unreliable.

[345] The CARB notes that both parties agree upon the need for a site specific adjustment to reflect actual labour productivity at the plant.

[346] The CARB findings are:

a. The sanction budget was a Class I estimate incorporating appropriate contingencies both directly from the owner and as well the bidding contractors.
b. The calculations of the sanction budget hours of estimated work incorporate bid contractors estimates of hours.
c. The quantity adjusted budget (QAB) adjusts for scope growth.
d. The hours related to delays have been appropriately separated from the claim for lost labour productivity.
e. A mid-Alberta (Edmonton) factor of 1.24 shall be incorporated to reflect the relationship that a task that would take one hour of labour in mid-Alberta would take 1.24 hours at the Horizon site.
f. An average labour cost of $50 per hour plus a 15% benefit factor are to be used in the calculations.
g. The measurement of lost labour productivity incorporates recognition of two components, whether or not they are accounted for in a one or two step calculation:
    i) An adjustment to mid-Alberta costs applied to plant costs, and
    ii) Site specific losses reflecting additional labour hours spent on project completion that were over the budgeted hours.

[347] Having come to the above conclusions, the CARB sought the calculations or series of calculations that fit with those findings. It also expected to hear logical reasoning, with support, for the positions of each party. Unfortunately, evidence contained much opinion and statistical charts, graphs and data with insufficient ties to the procedures that an assessor should follow when considering excluded costs for productivity losses.

[348] The Complainant's methodology and calculations incorporated productivity ratios (actual costs compared to estimated costs) that the CARB was not convinced were appropriate. The consideration of the imbalanced market is not entirely clear in evidence. The switch from use of the base line budget (2011) to the contractors' estimates (2012) was not clearly supported. The methodology employed by the Complainant may have been presented to assessors in other municipalities as well as the Respondent, but there is no evidence that the methodology was ever employed in an actual assessment calculation. The Respondent's estimate may or may not have included a tolerance adjustment to the base line budget – there was insufficient detailed calculation in the evidence to show how this factor was taken into account. The CARB does not accept that such a tolerance adjustment should be made. Nevertheless, the Respondent's productivity loss amount appears to be based upon more actual amounts which is the approach favoured by the CARB.

[349] One of the purposes of the hindcast study, as explained by Dr. Thompson, was to determine whether the Complainant was treated differently than other assessed persons. The Respondent studied other plants as far as measuring unproductive labour losses was concerned. In the synopsis of the study presented in evidence, this statement was made:

> *Of the 28 plants reviewed, 22 were given an excluded cost claim related to lost productivity. The high, low and average represents the high, low and average for the respective 22 plants expressed as a % of total project cost. CNRL claimed a productivity loss of 5.6% by using the productivity factor incorrectly, the correct application of the factor results in the 2.2% that was allowed. (High = 21.3%, Low = 1.0%, Average = 6.69%)*

[350] The CARB notes that the alleged CNRL claim of 5.6 percent is lower than the average of 22 plants. The CARB is aware that the witnesses for the Respondent affirmed that the percentages, including averages, produced in the hindcast study were not intended to be applied in the assessment of any particular plant. Notwithstanding this affirmation, there was much evidence regarding the relationship of the Complainant's claims to the ranges or averages from the hindcast study. The study is said to have examined assessment data from industrial facilities in the Respondent municipality that were constructed after 1998 (some Respondent witnesses said only post-2000 plants were examined). It was not disclosed which, if any, of the 22 plants were constructed during the imbalanced market period from 2005-2008. The CARB finds that plants constructed during this time of volatile market conditions would be most relevant for comparison purposes. The synopsis did not provide any detail on the method(s) of calculating unproductive labour costs, but Dr. Thompson asserts that none of the other plants were assessed using the two step process promoted by Mr. Otsu. While Mr. Otsu might have represented his various clients by presenting claims calculated using the two step process, none of the assessments resulted from application of his process.

[351] The conclusion drawn from the hindcast study by the CARB is that the vast majority of plants with machinery and equipment assessments in the Respondent municipality were given an allowance for unproductive labour, but there were several unrelated measurement methodologies employed in arriving at excluded amounts. In other words, there was no consistent practice demonstrated.

[352] The hindcast study undertaken by the Respondent is of limited use in deciding this matter. The study lead the CARB to two conclusions:

a. None of the other major plants in Wood Buffalo have been granted excluded costs for lost productivity where those exclusions were measured by use of the two step process put forward by Mr. Otsu; and
b. There was not consistent past practice in the handling of lost productivity calculations. It is apparent that the assessor(s) did not have the benefit of input from engineers or cost professionals when making assessments. The assessor(s) did rely to a large extent on the manner and detail in which the property owners made their claims for such exclusions. The hindcast study results indicate that for each of the plants in the study, the plant owners may have provided differing methodologies and calculations of lost productivity amounts and the assessor of the day accepted each owner's methodology, but may have either accepted the calculated amount or recalculated to arrive at a different amount (the study does not provide this detail). There is no other explanation for there being at least three approaches used (application of a productivity factor, flat percentage of actual hours deducted or factor applied to actual installed costs).

[353] The assessor maintains that the methodology proposed by the Complainant has not been employed in calculating productivity losses in any other plants in the municipality. The CARB understands this position but finds no evidence to say that the method was not proposed to the assessor on one or more occasions. It is known that this method was proposed to Mr. Schmidt as part of the original cost rendition. It is not clear how Mr. Schmidt made his final calculations. The methodology was also proposed to the assessor with respect to the assessment of the Shell Jackpine facility; however, the Respondent insists that the method was not adopted for the actual assessment calculation. The CARB received no evidence that shows that Mr. Otsu's method was used in the making of any assessment in the Regional Municipality of Wood Buffalo.

[354] The difference between Edmonton (mid-Alberta) and Fort McMurray productivity is the measurement of a difference and not a loss. Nevertheless, the dollar amount of the difference is considered to be an abnormal cost to be deducted in accordance with the CCRG.

[355] The CARB reviewed the sections of Order 001-2013 wherein unproductive labour was the topic. The CARB notes that that CARB made a number of observations and comments about processes, factors and the like, but in the end, concluded that neither party had sufficiently explained their position to the extent that the CARB was moved to change the claim for this item. In the end, that CARB chose to retain the amount allowed in the assessment. This CARB interprets that CARB Order to mean that the amount of $418M was not necessarily set because it was the appropriate or correct allowance – it was simply that there was no other supported amount presented to the CARB.

[356] As pointed out by Dr. Thompson and other witnesses, labour productivity losses are based upon site-specific location and execution period. Horizon is one of the most remote plant locations in the Regional District of Wood Buffalo and it was constructed during a time period when there were significant material and labour shortages, the two components that impact on productivity the most.

[357] During the presentation of the Complainant's evidence on productivity losses, there were objections to the manner in which the Complainant's counsel lead evidence. The CARB recognizes that the handling of productivity witnesses was somewhat different than that of others but reminds all parties that the CARB is not bound by the rules of evidence and is free to set its own course for hearing conduct. While it generally frowns on counsel leading a witness, it is recognized that productivity is a complex subject and counsel's attempt to clearly put the evidence before the CARB might have been unorthodox. The CARB does find that the Complainant's evidence on productivity losses was adversely affected by counsel's approach to presenting that evidence to the extent that Mr. Otsu's evidentiary report, in particular, was explained by counsel more than by the witness. The CARB was cognizant of this when it was undertaking its deliberations in regard to productivity loss considerations.

[358] The CARB is satisfied that the reasons stated in CARB Order CARB 001-2013 reflect this CARB's conclusions on the validity of using the sanction budget. Nothing new has been produced that convinces this CARB otherwise.

[359] The CARB notes both parties confirm the continued use of the mid-Alberta area adjustment for at least this year and it will not make any changes to this calculation. In CARB Order 001-2013 (paragraph 361), the CARB observed that the CCRG does not suggest using Edmonton or mid-Alberta as a base for measuring any abnormal costs other than freight. However, for the reasons given, that CARB accepted that the mid-Alberta to Fort McMurray factor is applicable. Careful reading of the entirety of 001-2013 leads this 2012 CARB to the conclusion that the 2011 CARB found that the 1.27 factor was appropriate, but there was no compelling evidence to convince the CARB to make any changes to the assessment so it held that the $418,026,000 allowance built into the assessment (using the 1.27 factor) would be set as the lost productivity loss. Notwithstanding the wording of the order, this CARB does not find that the 2011 CARB's conclusion of $418M endorsed any specific methodology. It elected to maintain that total amount because there was no other suitably supported alternative number.

[360] This CARB finds itself in a similar situation. Based on the evidence, it found that the general descriptions as provided in Mr. Schwartzkopf's evidence were relatively clear and simple. Unfortunately, neither party convinced the CARB that they adhered to these procedures.

[361] Evidence at this 2012 tax year hearing confirmed that, notwithstanding its lack of mention in the CCRG, it is common practice in Alberta to relate local costs to mid-Alberta costs. The CARB relies upon that evidence and confirms that the currently employed factor of 1.24 is applicable in the current productivity loss calculation.

[362] Accordingly, the CARB accepts the exclusion of unproductive labour costs of $387,961,000 as presented by the municipality because the calculation appears to best

incorporate the principles established by the CARB, notwithstanding that it is unclear whether or not the calculations included a contingency adjustment to the sanction budget. This conclusion does not necessarily endorse the methodology employed in finding that amount because it is not clear what the calculations were that lead to the conclusion but it does, in the CARB's findings, provide a reasonable claim amount for lost labour productivity.

Issue 5 PRE-CONSTRUCTION (FRONT END LOADING – FEL) COSTS

For pre-construction (DBM and EDS), does the hindcast report impact the CARB's determinations?

a. Does the CARB have sufficient evidence to show the percentage of what portions of this were dealing with feasibility?

[363] In CARB Order CARB 001-2013, the CARB determined that the entirety of the excluded claim of approximately $597,948,000 was accepted and it was found that the cost of the scoping studies as well as the costs of the DBM and the EDS were primarily for determination of the feasibility and economic viability for this project, being the Complainant's inaugural introduction to oil sands extractions in a remote northern site. These expenditures were largely complete before the company began ordering components for construction. In that decision, that CARB noted that these plans, particularly EDS and DBM may have some ancillary benefit to the construction process, but the primary reason for the expenditure was to determine feasibility.

[364] In the current year being complained against, the assessor, through the evidence of Dr. Thompson, argues that many of these costs are recorded as engineering costs and are part of defining the engineering parameters essential to construction. Engineering costs are included costs in the CCRG, unless they are for activities specifically excluded under CCRG.

[365] The Respondent noted at one point that Mr. Celis' accounting identified significant portions of the EDS and DBM as excluded costs totalling about $162 million. The Respondent argues this amount should now be included in the installed cost, as a minimum.

[366] CNRL denies ever acknowledging or agreeing to returning any of the costs to included costs and says that the document referred to as schedule 23.3 was prepared for other purposes and existed before this hearing because of the assessor's misuse of privileged documents provided on a without prejudice basis. It asks the CARB to reject this as evidence and to reaffirm Order 001-2013.

[367] The CARB has reviewed schedule 23.3 as it was presented before us. Without more back-up this schedule is insufficient to distinguish these costs from others within the feasibility studies and the CARB finds no clear basis to alter the conclusion that the entire $597,948,000 FEL costs are to be excluded from the assessment. That amount is therefore totally excluded.

[368] The Respondent included pre-construction in its hindcast study. Of 28 plants that were reviewed, 21 were given an excluded cost claim for pre-construction. The high, low and average ratios were provided in evidence. This conclusion reaffirms the CARB's finding that the costs of studies such as scoping studies, DBM and EDS should be excluded costs. The hindcast study sheds no light on the proportions of the total costs of each type of study that were excluded. It

might have been 100% or a lesser ratio, but there is no indication of any standard measurement practice.

[369] The CARB has recognized that components of pre-construction studies might have usefulness once construction is underway, but without adequate support for a reduction in amount, the CARB is satisfied that the entire cost of these studies is the fairest method of handling this excluded cost. The application of any arbitrary ratio to determine an included cost amount is unsatisfactory.

Issue 6 SITE PREPARATION

Site preparation (cells D120 and E120):

a. **What is the interpretation of the words "construction grade"?**
b. **Does the difference of wordings used in CNRL's cost rendition for sites 1, 2 and 3 as compared to site 4 justify the different treatment?**

[370] The Complainant sought $503,481,000 as an excluded cost for Item # 4- Site Preparation. The municipality permitted $442,996,000 as an excluded cost, resulting in $60,485,000 being the contested excluded cost claim (Exhibit R33, page 77/132 and Exhibit C61). Of the contested $60,485,000, $40,824,094 relates to Area 4, while $19,660,906 relates to the change order analysis.

[371] In responding to the issue regarding the included costs for site preparation, the Respondent seeks to utilize information it obtained from the Complainant's response to a section 295 request issued in February 2013, well after the time period that is the subject date being considered in this hearing. The Complainant objected to the Respondent's use of that information.

[372] The first issue facing the CARB is whether it can or should accept this evidence. The question is whether accepting this evidence would affect the fairness of the proceedings before it. The second issue is, if the CARB accepts the evidence which comes from the Complainant's response to the 2013 section 295 request, what is the import of that information regarding the inclusion of site preparation expenses.

[373] The CARB notes the concerns expressed by the Complainant of the risks of accepting evidence that may result from a procedural imbalance. Typically, information presented to the CARB on assessment values relates to material current to the year in question or prior published information that may be available to the parties. Due to the timing of this hearing, which has resulted from the length of the previous year's hearing, the timing of that hearing and the timing of the decision, the documents in relation to the 2013 tax year were being prepared as the parties awaited the CARB's decision for the 2011 tax year, and while the 2012 tax year complaint was pending appeal (then scheduled for October, 2013).

[374] The ability of the assessor to issue further information requests to buttress an appeal because of the delays inherent in contested hearings of this nature would appear to provide the assessor an advantage not normally available in assessment hearings proceeding as intended on an annual basis.

[375] However, the CARB has no clear authority in the legislation as it stands to police or interpret the provisions of section 295 of the MGA. Moreover, the CARB notes that there are no limitations contained within section 295 which would prevent information obtained in a subsequent year from being used in a different year's complaint.

[376] The CARB does, however, have the authority to address the weight given evidence and believes evidence of this nature should be viewed cautiously and only perhaps to confirm evidence versus trends otherwise found in the assessor's evidence.

[377] In this case, the CARB looked at the claim of included costs that are not specifically described as "stripped and graded". In this case, the change order references were to "site preparation relative to area 4".

[378] Some descriptions in the cost rendition used the words "clearing and levelling"; others used the phrase "site preparation". Is "clearing and levelling" the same as "stripping and grading"?

[379] The CARB notes that determination of site preparation is found not in the CCRG, but in the Interpretative Guide. The reference in general is to site standards typical for industrial property being included but where land assessment is based on the value of finished industrial land (stripped and graded), actual site preparation costs are excluded. Terminology in some of the change orders is worded primarily as "site preparation". Like other terms, "standards typical for industrial property" is not defined in the Interpretive Guide. The first paragraph under Site Preparation in the Interpretive Guide starts, "The costs to clear, level, and finish the site to standards typical for industrial property in the area are included." Then, at paragraph 2, it states; "When the land assessment is based on the value of finished industrial land (stripped and graded), the actual site preparation costs are excluded."

[380] One clause in the Interpretive Guide to the CCRG states that "clearing and levelling" is not the same as finishing while another suggests that finished means stripped and graded. When preparing muskeg for development of an industrial plant, is "stripping and grading" sufficient to create a finished industrial site? It may not be. The CARB concludes that the CCRG and its Interpretive Guide should not be read on a word specific basis, but in a more general and broad and purposive basis. Thought was also given to the point in the process when a parcel of land is turned over from one contractor to another. For example, one contractor (or set of contractors) prepares the land to a point where a building can be erected. The building contractor will still need to prepare the land that is actually to be occupied by the building. The balance of the site will have to be prepared for paving and/or landscaping. These tasks would be undertaken by a different contractor than the one who prepared the site for sale or occupancy by the building contractor.

[381] The CARB finds no necessary distinction between the site preparation for area 4 which was rejected by the assessor from the site preparation for areas 1, 2 and 3 which was accepted by the assessor as appropriate to assess as finished industrial land. The CARB accepts the evidence of Mr. Celis that although different words were used in the cost rendition, the scope of work for

areas 1, 2, 3 and 4 were the same. The CARB rejects $40,824,094 as included cost. Put another way, $40,824,094 is an excluded cost.

[382] For the remaining $19,660,906 that is in dispute, the Respondent has reviewed a series of change order summaries and concluded that those costs were not a part of site preparation. The CARB has done a similar review and finds that the assessor's focus on key words leads to the conclusion that the Respondent's position is partially supported by the evidence. The CARB examined each line item contained at pages 194-205 of Exhibit R33 to identify which costs were included or excluded costs. In its analysis, the CARB did more than examine the key words "stripped and graded". The CARB attempted to determine if the work done was for site preparation or was for construction and thus an included cost by trying to determine the intended purpose of the work or material. The CARB accepted those items identified as "stripped and graded" as being excluded costs. Given the evidence regarding the site conditions, the CARB was prepared to accept some costs related to gravel as being part of site preparation, and therefore an excluded cost. Where the CARB determined that the purpose went beyond site preparation, and into construction, those costs were included.

[383] The CARB finds that $9,526,130 of the $19,660,906 is an excluded cost, leaving $10,134,776 as an included cost.

[384] The CARB notes that in the rebuttal report (C42) of M. Celis, it is conceded that $3.8M associated with construction of an internal road should be an included cost.

[385] In conclusion, the total excluded cost for site preparation is

$40,824,094 (area 4 site preparation)
plus $9,526,130 (from the change order analysis)
minus $3,800,000 (as conceded by Mr. Celis to be an included cost).

[386] The CARB notes that Mr. Celis conceded during his evidence that the $3,800,000 is an included cost. However, the CARB did not see this $3,800,000 as part of the included costs. The CARB has identified the $3,800,000 to be an included cost. If it has already been included by the assessor, then it should not be "double – counted". However, if the assessment has not already included this amount, the $3,800,000 should form part of the included costs.

Issue 7 PRE-INVESTMENT

The pre-investment (overbuilding):

a. The sole issue before the CARB was the equity argument about how others within the municipality had been treated. Is there evidence to support the position of CNRL that others within the municipality had been treated in a similar fashion?

[387] The CARB hearing the 2011 tax year complaint heard that the massive over-investment (of approximately $918,000,000) was unusual and abnormal compared to other plants and, as such, these costs should be deferred until future expansion brought this plant up to its intended utilization.

[388] In addition, the Complainant argued that the deferral of such costs was typically employed by the Respondent to deal with this type of investment.

[389] In this hearing, the municipality presented its hindcast report to rebut suggestions that the practice in the municipality had been to defer pre-investment rather than to include and depreciate it.

[390] A review of the hindcast report summary shows no report of deferred investment in the municipality; therefore it does not show it to be a practice to assess and depreciate it. The one concrete conclusion which could be derived from the hindcast study is that such pre-investment is, indeed, unique and requires adjustment by the assessor.

[391] Given the unique nature and size of this cost, the CARB was not persuaded by the assessor that his plan to assess and depreciate was a more correct or equitable procedure than that negotiated with the original assessor and endorsed by the CARB in the 2011 tax year complaint hearing.

[392] Given that there is no evidence to support the assessor's position in relation to the inclusion and depreciation (using Schedule D) of such pre-investment, this CARB finds that the decision of the CARB in the 2011 tax year complaint is compelling and appropriate for the 2012 tax year complaint.

[393] It is so ordered.

Dated at the City of Calgary in the Province of Alberta, this 30th day of April, 2014.

W. Kipp, Presiding Officer

APPENDIX "A"
DOCUMENTS RECEIVED AND CONSIDERED BY THE CARB:

NO. ITEM

Exhibit	Description	Date Filed
PC1	Letter of Wilson Laycraft LLP and attachment	February 19, 2013
PR2	Letter of Reynolds Mirth Richards and Farmer LLP	February 21, 2013
PC3	Letter of Wilson Laycraft LLP	February 21, 2013
PR4	Letter of Reynolds Mirth Richards and Farmer LLP	March 15, 2013
PC5	Letter of Wilson Laycraft LLP	March 20, 2013
PC6	Brief of the Complainant Tabs 1 - 3	April 15, 2013
PC7	Brief of the Complainant Tabs 4 - 26	April 15, 2013
PR8	Respondent's Legal Argument – Section 465 Application	April 15, 2013
PC9	Complainant's Response to Section 465	April 22, 2013
PR10	MGA s299 Report for Horizon 2012 Assessment	April 22, 2013
PC11	Letter of Wilson Laycraft LLP	April 24, 2013
PR12	Respondent's Legal Argument - Issue Estoppel	April 24, 2013
C13	Brief of the Complainant	June 12, 2013
C14	Compendium of Legal Briefs of Complainant	June 12, 2013
C15	Consolidated Authorities of Complainant Vol. 4	June 12, 2013
C16	Evidentiary Report of M. Celis, Canadian Natural	June 12, 2013
C17	Schedule 6 - 2009 Assessment Rendition of M. Celis	June 12, 2013
C18	Power Point Presentation of M. Celis	June 12, 2013
C19	Report of L. Zeidler, P. Eng., Canadian Natural	June 12, 2013
C20	Power Point Presentation of L. Zeidler	June 12, 2013
C21	Report of K. Shaw, Ryan & Company	June 12, 2013
C22	Report of K. Minter, Canadian Natural	June 12, 2013
C23	Report of T. Stowell, Stowell Consulting	June 12, 2013

C24	Report of F. Otsu, Project Review & Analysis	June 12, 2013
C25	Report of T. Tham, P. Eng., Canadian Natural	June 12, 2013
C26	Otsu References	July 23, 2013
R27	Respondent's Legal Argument	August 22, 2013
R28	Respondent's Volume of Legislation	August 22, 2013
R29	Respondent's Volume of Authorities	August 22, 2013
R30	Respondent's Volume of Reference Documents - Part 1	August 22, 2013
R31	Respondent's Volume of Reference Documents - Part 2	August 22, 2013
R32	Respondent's Volume of Documents	August 22, 2013
R33	Witness Report of Mr. John Elzinga	August 22, 2013
R34	Powerpoint Presentation of Mr. John Elzinga	August 22, 2013
R35	Witness Report of Dr. Ed Thompson	August 22, 2013
R36	Powerpoint Presentation of Dr. Ed Thompson	August 22, 2013
R37	Witness Report & CV of Mr. Brian Moore	August 22, 2013
C38	Brief of the Complainant August 29, 2013 Re: Issue Estoppel/Abuse of Process Part 2	August 29, 2013
R39	Respondent's Legal Argument – Issue Estoppel	September 6, 2013
R40	Email of C. Zukiwski Re: CNRL 2012 TY Assessment Complaint	September 17, 2013
C41	Rebuttal Brief of the Complainant	October 3, 2013
C42	Rebuttal Report of M. Celis, Canadian Natural	October 3, 2013
C43	Rebuttal Report of L. Zeidler, P. Eng., Canadian Natural	October 3, 2013
C44	Rebuttal Report of K. Shaw, Ryan & Company	October 3, 2013
C45	Rebuttal Report of K. Minter, Canadian Natural	October 3, 2013
C46	Rebuttal Report of T. Stowell, Stowell Consulting	October 3, 2013
C47	Rebuttal Report of F. Otsu, Project Review & Analysis LLC	October 3, 2013
C48	Report prepared by William Schwartzkopf	October 3, 2013
C49	Letter of Wilson Laycraft LLP dated October 15, 2013	October 16, 2013

R50	Chart prepared by Reynolds Mirth Richards & Farmer	October 16, 2013.
C51 -	Revised Powerpoint for L. Zeidler – Repeals and replaces C20	October 17, 2013
R52	Section 4.3.3 of APEGA Code of Conduct	October 17, 2013
C53	Powerpoint presentation of M. Celis dated October 2013	October 21, 2013
C54	Tab 23 from Exhibit C43, Binder 2 of 3 from 2010 Assessment for 2011 Tax year Complaint hearing	October 22, 2013
R55	Witness Confidentiality Agreement: Brian Moore, Ed Thompson and John Elzinga	October 23, 2013
RA for identification	Witness Report of Mr. Brian Moore with statements added (Annotated version of Exhibit R37)	October 31, 2013
R56	Photo of Dr. Thompson's drawing	October 31, 2013
R57	Replacement Tab 1 from R33	November 4, 2013
R58	Replacement Tab 2 from R33	November 4, 2013
R59	Replacement Tab 10 from R33	November 4, 2013
R60	Replacement page 8 of C42	November 5, 2013
R61	Replacement page 18 and 19 of C42	November 5, 2013

APPENDIX "B" REPRESENTATIONS

	PERSON APPEARING	**CAPACITY**
1.	G. Ludwig	Counsel for the Complainant
2.	J. Laycraft, Q.C.	Counsel for the Complainant
3.	B. Dell	Counsel for the Complainant
4.	B. Balog	Manager, Legal Corporate Operations, Legal Counsel, CNRL
5.	M. Celis	Business Analyst, CNRL
6.	K. Minter	Supervisor, Fixed Asset Accounting
7.	L. Zeidler	Vice President (former), Horizon – CNRL
8.	K. Shaw	Ryan ULC
9.	F. Otsu	Project Review & Analysis LLC
10.	T. Tham	Lead Cost Engineer, CNRL
11.	W. Schwartzkopf	Witness for the Complainant
12.	C. M. Zukiwski	Counsel for the Respondent
13.	C. Killick-Dzenick	Counsel for the Respondent
14.	D. Leflar	Regional Solicitor for the Regional Municipality of Wood Buffalo
15.	B. Moore	Chief Regional Assessor, Regional Municipality of Wood Buffalo
16.	R. Baron	Assistant Regional Assessor, Regional Municipality of Wood Buffalo

17. J. Elzinga Assessor
18. E. Thompson Witness for the Respondent

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Subject	Type	Sub-type	Issue	Sub-issue
CARB		Machinery & Equipment		