

# JMCC Peer Review Team Information Request

## WEG Proposed Southwestern Landfill

May 18, 2020

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During the initial review of the draft EA Documents, the PRT identified essential information and data about the design and operation of the proposed landfill and its anticipated effects that were not found in the EA. The following questions are designed to assist the PRT to complete a comprehensive technical review by eliciting this information.

### 1. LANDFILL DESIGN AND OPERATIONS (Vol 1, Section 7.2 +)

1. The use of a ‘permeable’ final cover is proposed. What is the proposed design (soil type, etc.) and hydraulic conductivity of the final cover?
2. What is the planned Contaminating Lifespan (CLS) of the landfill based on the proposed infiltration rates?
3. Please confirm which drainage layer of the liner will be initially used for groundwater control to maintain the groundwater pressure at 260± masl?
4. Will the target groundwater pressure be maintained beneath the base of the landfill liner over the CLS of the site?
5. Based on the anticipated operations for the proposed landfill and experience at Walker’s South Landfill, please provide the expected/assumed timeline over the CLS for: i) quarry dewatering (Southwest Quarry, movement of quarry operations to the northeast, and deactivation of dewatering/rehabilitation), ii) dewatering during landfill construction, iii) groundwater removal from the landfill liner drainage system(s), and iv) the anticipated quarry/landfill overlap of the water removal processes?
6. How does the proposed landfill design (permeable final cover, liner system, backfill, and water/dewatering management) compare to that for Walker’s South Landfill?
7. What is the current operating age of Walker’s South Landfill? What have been the observed infiltration rates, leachate generation rates, and landfill gas generation rates to date?

8. Appendix D, Section 1.5.1.3: Upon deactivation of quarry dewatering one would predict the lake level to be similar to the surface water elevation of the Thames River. What is the rationale for using 267 masl and not the surface elevations of the Thames River (>269 masl at SW6)?

### **AGRICULTURE (Appendix F-1)**

1. Section 8.2: It appears that 453926 Clarke Road, 584366 Beachville Road and 584372 Beachville Road are not illustrated on Figure 6. Please advise whether these farm facilities were included in the Agricultural assessment and if so, where they are referenced in the report.
2. Section 10.1.1 Potential Effects/Page 33: (i) Is the 25 m the travelled portion of the access road (including shoulders), or does the 25 m represent the access road corridor width?  
(ii) The indication is that the haul route/access road will be rehabilitated. Is Walker prepared to commit that it will be rehabilitated back to agriculture?
3. Section 6.4.4.2 Environment Potentially Affected – Agricultural Rehabilitation/Page 51: What criteria will be applied to selection of the 0.6 m of final cover material, and what will be the source of cover material? Is it intended that the final rehabilitation plan provide for agriculture as a possible end use?

### **AIR QUALITY (Appendix F-2)**

1. Vol 1, Table 7-8: Please explain why the summer and winter precipitation levels do not add up to the annual numbers. Are spring and fall data missing? Were annual data used in the climate change calculations, or just summer and winter?
2. Section 7.1.1 / p.8: a) On the basis of what calculations or factual substantiation is the claim made that 85% LFG capture efficiency can be achieved? If it is based on Walker South landfill experience, please provide the assumptions and analysis that substantiate the comparability with the proposed Southwest landfill in terms of design, cover material, waste characteristics and environmental conditions.  
b) Under these conditions, what is the estimated CLS Walker is using throughout this EA?
3. Section 7.3.1/p.12: The Air Quality study relies on data obtained from Walker's South landfill site that odour will be well managed. On what information or assessment of the facility design and environmental conditions of the proposed and existing sites is the conclusion drawn that these sites and their operating parameters are comparable?

4. Section 7.3.1 /p.14: Why were contaminants m-cymene and limonene not assessed? Both of these compounds were measured in the ambient monitoring program as shown in Tables 5 (page 21) and 10 (page 27), and they are listed contaminants to be assessed in the approved TOR developed with the MECP.
5. Section 7.3.4: How was the additional mitigation for odour emissions at the partially covered leachate and aeration ponds modelled?
6. Section 10.1.1/31/Tables 24-27: Were the LFG effects modeled and presented for all sensitive receptors developed in the EA Report Volume 1 (Table 7-7) including ZOR-14 through ZOR-18, ING-11 and SWO-21 and 22? If so, where are they presented?

#### **CULTURAL HERITAGE (Appendix F-4)**

1. Section 6, page 7: Was the identification and screening of potential cultural heritage resources limited to common receptor points?
2. Section 7.6 / Figure 6: Why was ZOR-7 not screened for potential CHVI? 334652 and 334655 33rd Line are clearly more than 40-years of age and fall within the 1-km buffer delineated in Figure 6.
3. Section 7.3.9.1/133: Were other features (i.e. not buildings) more than 40-years of age considered in this review?

#### **ECOLOGICAL ASSESSMENT (Appendix F-7)**

1. Section 2.2.2, Part 1: Why are the Patterson & Robbins Drain and features identified in the Oxford County NHS Study as “ecologically important” not brought forward for discussion/assessment in Section 5 of the report?
2. Section 3.1.2.3, Part 1: Please describe in some detail the restrictions that were placed on the fish collection permit.
3. 3.1.3.3 / Part 1: Why were the full array of biotic indices identified in the Ecology Work Plan not calculated?
4. Section 10.4, Part 2: Please advise whether the PWQO or the CCME toxicity guideline for Selenium was used and how it was integrated into the overall interpretation of potential water quality impacts.

5. Section 10.4, Part 2: What assumptions or calculations has the assessor used to understand (a) the effects of quarry discharge on the quantity and quality of surface water within the Thames River, and (b) how surface water quantity or quality will change as quarry dewatering increases and/or as the landfill operations come online?
6. Section 4.1, Part 3: What discussions were held with Woodstock Airport and Tillsonburg Airport management regarding the potential bird strike hazard associated with the undertaking? Are these discussions documented in the EA?
7. S.6.4 /Pg. 32, Part 3: Was the bird hazard potential analyzed in accordance with Transport Canada's Airport Bird Hazard Risk Assessment Process? If so, where is that analysis reported in the EA? If not, why not?

### **ECONOMICS (Appendix F-8)**

1. Section 3/Page 8: Please itemize the categories of the reported \$218 million in capital expenditures and \$277 million in operating expenditures over the life of the 22-year construction and operation life of the landfill. Are these figures in 2018 dollars?
2. Section 9.2.1.2/Pg 29/30: Does the information provided refer to place of work (businesses in the municipality) or place of residence (employees living in the municipality)?
3. Section 9.2.1.4/Page 32-33: Does the income information refer to jobs in Oxford County or jobs held by residents living in Oxford County (and potentially working outside of the County)? What was the original year of the average income data? Also, in Tables 9.7 and 9.8, which data refer to residents of the municipality versus employees working in the study area? How was the average in Table 9.8 calculated? Was it weighted?
4. Section 10.1/ Page 57: (i) What is the basis for the assumption that roughly 95% of capital expenditures will be made in Ontario? Is this produced by the I/O model? (ii) What method was used to determine that \$148 million in capital expenditures will be made in the Wider Area? (iii) On what basis was it concluded that all operating costs will be made in Ontario? Are all inputs available in the Province? (iv) On what basis (source?) was it determined that 86% of operating expenditures will be made in 'the wider area' and the remaining 14% in the rest of Ontario?
5. Section 10.3.1.2 and 10.3.1.3/Page 67: (i) In Table 10.5, Are the Economic Output figures for the Wider Area derived by the I/O model? (ii) Please reference the analysis carried out to determine that there are local companies with the necessary product lines and expertise to provide the goods and services needed by the project.

6. Section 10.3.1.5/ Page 68: a) Table 10.6, to which geographic region do the Statistics Canada data on household spending apply? Are the data based on averages for Canada, Ontario or something else? b) Table 10.7, how was total disposable income calculated (e.g. \$164.5 million in total). c) Were commuting patterns and availability of consumer products considered to test the assumption that the geographic distribution of household spending would mirror the distribution of project expenditures?
7. Section 10.3.3.2/Page 82: Walker's South Landfill in Niagara has been used as a proxy for forecasting current value assessment. Please explain how the location characteristics of the proposed undertaking relate to Walker's South Landfill location to validate this approach.
8. Section 10.3.4.1/Page 84: What is the basis for the estimated cost saving of \$10 per tonne? How was this figure calculated?
9. Volume I, Section 7.4.4/Pg. 159: What is the basis for the statement that area businesses will save in the range of \$200,000 to \$250,000 per year?

#### **TRAFFIC (Appendix F-9)**

1. Why were Oxford County requirements for conducting Traffic Impact Studies not referenced and applied?
2. Section 10.2, page 43: Please clarify whether the synchro model used for the traffic analysis was calibrated to represent existing traffic operations accurately; and if so, how it was calibrated at the crossing location when the maximum observed queue was only 3 vehicles.
3. Section 12.1.2, page 50: Please provide supporting information (e.g. traffic counts at other Walker landfill sites) showing how the 1,100,000 tonnes of waste and cover soils shipped annually will be distributed over the months of the year and days of the month to confirm any variations in traffic volume over the course of a year, by day of the week and by hours of the day.
4. Section 12.1.2, page 50: Please provide truck characteristics in terms of length, normal carrying capacity in tonnes of waste/soils and haul distance to confirm the operating characteristics of these vehicles.
5. Volume 1, Section 7.2.5.2: We assume that any future waste diversion facility would be located at the landfill site within the operational periods or possibly in the post-closure period. In the event such a facility is proposed, what traffic related approvals would be required before construction can begin?

6. Volume 1, Section 7.3.15.2: Future baseline conditions are assessed at 2040 in the noise assessment and it is assumed that maintaining current ambient noise levels from traffic is a conservative assumption notwithstanding increases in population and traffic levels, which is counterintuitive. The traffic assessment discusses future baseline conditions at 2033, not 2040 or 2043. It is not clear what future traffic volumes are used for the noise study since the traffic study doesn't provide a traffic forecast beyond 2033 or a population and employment growth rate beyond 2038. Please provide the data and explanation for these forecasts.

## **GROUNDWATER (Appendix F-10)**

1. Why was a pumping test(s) not completed to characterize the overall hydraulic characteristics for the conceptual hydrogeological model?
2. Figure 8.4: Where is Well 7 located on Figure 8.4 – should it be between Well 2 and Well 3?
3. As no water conditions are provided in the borehole records, is it interpreted that there are no saturated conditions within the shallow weathered zone at MW17-5 and MW17-6 and that the groundwater levels detected in the deeper wells in the Lucas Formation are representative of the Lucas Formation water table. Please confirm.
4. Section 8.2.3.2, page 19: A comparison of the geometric mean for the packer tests to the slug tests over similar test intervals indicates typically higher hydraulic conductivity results for the slug tests. Why did the conceptual hydrogeological model and assessment report only focus on the packer test results?
5. Section 8.2.4, page 20: Where is background information (GHD data and well logs) found that is presented in Figure 8.8? Why is the groundwater elevation at OW3 about 10 m higher than at other nearby wells?
6. Section 8.2.5: Are the water levels presented in Table 1 for MW17-3D representative of static conditions or are they influenced by the well purging?
7. Section 9.2.1.8: There is no reference to a PTTW for the West Quarry Sump within the Southwest Quarry. Is it part of the Centre Plant PTTW?
8. Section 9.2.1.8: How does the 2018 water taking compare to the 2017 data in terms of historic patterns – were the 2018 data considered for the Surface Water Assessment report? Is the East Plant (Surface Water Assessment report) and East Quarry discharge point the same?

9. Section 9.2.1.10: Where are the ‘pre-existing regional interpretations (Golder, 2010)’ presented/summarized in this report for consideration/review? Sections 8.1.1 and 8.1.2 provide regional frameworks, but do not indicate the noted reference of Golder 2010. References include Goff & Brown and CRA.
10. Section 9.2.2: Bullet 1 – Based on Figure D-14 it appears that Phase A is the southern portion of the Southwest Quarry – is this correct? Bullet 3 – What is the source of 253 masl for the Former West Quarry lake?

#### **SURFACE WATER (Appendix F-11)**

1. Was the volume of clean precipitation and groundwater that has not come into contact with the waste considered when designing the SWM Ponds?

#### **LAND USE (Appendix F-12)**

1. Section 10.2/24-26: The Land Use Assessment and Planning Justification Report relies on the other supporting studies in Volume III for justification that all requirements of the planning process have been fulfilled. Where in the Draft Environmental Assessment Report is consistency with the following PPS policies referenced:
  - 1.2.6.1 (Land Use Compatibility)
  - 1.6.10 (Waste Management)
  - 2.1.8 (Natural heritage)
  - 2.2.2 (Water)
  - 2.3.1 (Agriculture)
  - 2.6.2 (Cultural heritage (Archaeology))
  - 3 (Natural and Man Made Hazards)

#### **NOISE (Appendix F-13)**

1. Section 9.2.1: In the noise assessment were the 2019 traffic volumes provided by the County adjusted using historical/projected growth factors to arrive at a 2020/21 existing baseline forecast just prior to construction. Please explain. (per traffic review)
2. Section 9.2.1: Section 5 of the noise assessment indicates an existing base year for analysis of 2020 just before construction start. Please explain how the 2018 or 2019 volumes were scaled to represent the 2020 existing conditions for the Noise assessment. (per traffic review)
3. Section 9.2.2: Given the traffic assessment uses a 1.09 percent compound average growth rate to inflate 2018 volumes to 2028 volumes and a 1.02 percent CAGR to inflate 2028 volumes to 2033 volumes, on what basis is it assumed that ambient noise levels will remain

at the same level as existing, and that the increased traffic won't have a noise effect either at the mid-point or just before closure of the landfill?

### **SOCIAL (Appendix F-14)**

1. Section 7.4.4, page 159:
  - a. Does the PVP program cover increases in the length of time to sell or any difficulties with remortgaging?
  - b. How are changes in property value determined and who pays for the assessment fees? Does the landowner get to choose the assessor?
  - c. Are the landowner's legal fees covered?
  - d. At what point in time does the PVP take effect and when does it end?
2. Section 8.2.3, Table 10: In total 7.7 per cent of the population in surrounding municipalities (Zorra, SW Oxford, East Zorra and Ingersoll) are classified as immigrants. Was consideration given to providing any of the information disseminated through the PAR and local residents survey in other languages?
3. Appendix L, page 5, Q19 & 20: Some respondents stated that they experience dust, noise and vibration from the quarry. Others reported odour complaints. Did SLR examine Carmeuse's complaints log? Are there other close-by odour emitters? If so, are there additional conclusions that can be drawn about the current quality of life of local residents?

### **HUMAN HEALTH (Appendix F-15)**

1. Throughout the Risk Assessment (RA), including the Conceptual Site Model (CSM) it is stated that direct contact with surface waters and groundwater will be assessed in the RA, which would be consistent with the Ministry of Environment Conservation and Parks (MECP) regulatory approach. However, the RA does not assess these exposure pathways. It merely states that the pathway was blocked due to engineering controls (i.e. leachate control systems). This may be acceptable in a HHRA supporting an EA, but it is inconsistent with the stated approach and parameters set out in Table 1-2 (page 9).
  - a. Please confirm which RA framework is being used and why; and,
  - b. If the MECP approach is not used, what contingency measures are assumed to mitigate any health risk in the event of failure of the leachate collection system?
2. Please explain why the following COCs have been excluded from the RA.
  - a. Metals, e.g., trace metals from truck brakes, tire wear, materials being transported as well as migration of metal-containing dust from Site soils.
  - b. Polynuclear aromatic hydrocarbons (PAHs): why was only Benzo[a]pyrene assessed?
  - c. Diesel particulate matter (DPM).



3. What soil management measures are proposed to ensure materials used for capping, cover and fill will meet soil quality guidelines to limit metals, PAHs, and other contaminants in soils, which could be blown off-Site as fugitive dust during construction and operational activities?