

**DEPARTMENT OF NATIONAL DEFENCE
DOCUMENTS REVEAL CONCERNS FOR
ENVIRONMENTAL IMPACT FROM TC ENERGY'S
PROPOSED PUMPED STORAGE PROJECT**

SUMMARY

Department of National Defence documents (obtained through an Access to Information process) show:

- Eight decades of live-fire weapons training has left the land contaminated by heavy metals and other toxins.
- DND is concerned that disturbing the soil could expose the contamination to the surrounding air, land, and water, creating “large concerns for marine animals’ health and for any person drawing water from the bay for personal use.”
- TC Energy had committed to undertaking the costs of remediating the contamination, however we now know that taxpayers will be shouldering the costs of TC Energy’s project, so essentially it would be Ontario taxpayers paying for this remediation.
- DND is concerned about TC Energy’s lack of experience dealing with UXO and that dealing with the UXO could add years to the project’s 10-year development and construction timeline.
- DND is concerned about potential impacts to Species-at-Risk (SAR), migratory birds, fish and fish habitat, water quality, and drainage.
- DND is concerned about potential impact to the surrounding community from the development of a large breakwall, noise pollution, and impacts to drainage causing erosion.
- DND is concerned about the project’s potential impact/interruption to base operations.



ACCESS TO INFORMATION RESPONSE EXERPTS

ENVIRONMENTAL IMPACT OF PROPOSED TRANSCANADA ENERGY PSP AT 4 CDTC

1. Species at Risk. At each location visited during the Site Visit, 4 CDTC staff provided a thorough list of species that could potentially be impacted by this project and noted that an in-depth study must be conducted for a full impact assessment on the flora and fauna.
2. Noise Pollution. 4 CDTC Staff raised the concern of noise pollution from the PSP due to its proximity to quarters. TCE noted that noise from operations in and around the reservoir would be negligible, but that noise at the water pumping/discharge location at the shore would potentially be a concern and could disturb local residents. This will need to be addressed in the environmental assessment.
3. Hydrological Concerns. The PSP may alter the natural drainage patterns of existing water courses and will require the pumping/discharging of water from/to Georgian Bay. There will be a requirement to consult with Department of Fisheries and Oceans (DFO) with respect to the proposed near shore and in-water works. Water courses/drainage features that could be impacted by the proposed facility were identified. TCE inquired on the availability of data from existing groundwater monitoring wells/boreholes, as well as topographical data for the site. They were informed that data exists, but were reminded that any requests for data would need to be requested via NDHQ (ADM(IE); DLI; DLE).
4. Contaminated Site at Bldg M-249. TCE was informed of soil and groundwater contamination beneath Bldg M-249 and the concrete pad to the east and south of the bldg, where a legacy asbestos dump is buried. A risk management plan is currently being developed for this site, however, should the proposed TCE project proceed this site would need to be remediated prior to construction.
5. Blocking of Natural Light. The proposed location and height (30+ m) of the reservoir walls would most likely block natural light from shining on accommodations bldgs, which could cause a build-up of ice and snow during the winter months.
6. Pump House Wave Break. To ensure environmental protection of the TCE Pump House, TCE detailed that a wave break would be built approx 850 m into Georgian Bay. Due to the depth of the bay at that distance, this would be a substantial undertaking. TCE is required to have detailed discussion with DFO to determine the impact of the wave break, though ATT no direct impact is expected on 4 CDTC, unless the unit is associated with any public backlash to the wave break.

Environmental Concerns

- Contaminated soils – Disturbing the soil may release heavy metals and toxins into the environment.
- Species at Risk (special interest to endangered) & Migratory Birds.
- Dept of Fisheries and Oceans (DFO) – possible affects on fish bearing streams and other aquatic life in Georgian Bay. Analysis required.
- Natural drainage from the impact area will be changed, increasing flow in other streams and increasing erosion affecting local community.



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On UXO

Q10. Isn't the area TC Energy has identified littered with munitions and unexploded bombs? Are there any safety concerns with providing access to 4 CDTC for feasibility studies?

A10. As 4 CDTC Meaford is the site of ongoing training and live-fire practice, access to the property must be carefully coordinated to minimize impacts on training, and to ensure the safety of TC Energy representatives. Additionally, the nature of training at 4 CDTC means that there is unexploded explosive ordnance (UXO) at the site, including the area where TC Energy has requested access.

We have a UXO mitigation strategy to ensure that TC Energy representatives can safely access areas where there is a UXO risk. TC Energy will be responsible for covering all costs that may result from this work.

Q11. If a project moves forward, how can they build a reservoir on top of UXO? Can UXO get into the PSP and into the bay? Can UXO explode and destroy the reservoir, posing a risk to the public?

A11. Should a project pass through all necessary approvals and begin construction in the area identified by TC Energy, it would require significant UXO mitigation measures, such as survey and clearance operations, to ensure that there would be no possible impacts to the public. TC Energy would be responsible for covering all costs that may result from this type of work.

enough to override the other benefits.

- TransCanada has limited to no experience working in an area with UXOs. Their current estimate sees three years of consultation and planning and four years of construction. They have not factored in the UXO problem. ADM(IE) pers around the table stated that UXO clearance could add years to construction.
 - TransCanada states that they want to ensure their work doesn't impact training. This may change as the full scope of the UXO problem becomes known. This could be a

showstopper or it could be a lever that they use to get access to more time on the RTA, interfering with training.

Q5. Are there any safety concerns with providing access to 4 CDTC for feasibility studies?

A5. As 4 CDTC Meaford is the site of ongoing training and live-fire practice, access to the property must be carefully coordinated to minimize impacts on training, and to ensure the safety of TransCanada representatives. Additionally, the nature of training at 4 CDTC means that there is unexploded explosive ordnance (UXO) at the site, including the area where TransCanada has requested access. As a result, a UXO mitigation strategy is being developed and the necessary clearance work will be completed before TransCanada representatives can safely access areas where there is a UXO risk. TransCanada Energy will be responsible for covering all costs that may result from this work.

f. DND briefed TCE about the extent of the presence of Unexploded Explosive Ordnance (UXO) on the Base. DND explained that the Base has been for many years and remains an active live firing range, therefore, significant amounts of UXO are present throughout the Base. DND further stated that any access to the Base by TCE would require a complete UXO clearance for all areas being accessed. This includes proper level of both surface and sub-surface UXO clearance, to the standard of the DND-approved UXO contractor. DND stated that the level of UXO clearance will depend on the specific activity being undertaken, however, at a minimum, all areas being accessed (including roads) will require a surface UXO clearance (minimum Level 1 clearance). Additionally, DND made it clear to TCE that all costs associated to UXO clearance will be paid in its entirety by TCE, including any costs incurred by DND, such as on-Base escort. TCE acknowledged and agreed.

g. TCE asked that any available UXO information be included in the Information Sharing Agreement.

7. Proposed Early Stage Development

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DISCUSSION

4. TCE requested access to 4 CDTC under a priority permit for a period of 1 year in order to conduct a site survey, which was consented by the 'Land Owner', Adm(IE), in January 2018 and approved by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) on 14 March 2018. However, DND will need to negotiate, an Access Agreement with TCE in accordance with Defence Controlled Access Area Regulations (DCAARS) and under BComd control, which requires review by RP Ops Det Meaford and the Department of Justice as significant Unexploded Ordnance (UXO) sites are present throughout the RTA, requiring a UXO clearance strategy. The agreement will be based on surveying operations must not impact training – training will have primacy at all times.

Q9. Who will be paying for the costs associated with the assessment work?

A9. In accordance with Treasury Board policy and regulation, TC Energy will be responsible for covering all costs associated with their engineering and environmental assessments, including any costs incurred from clearing unexploded explosive ordnance (UXO).

3. Initial analysis conducted by Comd 4 CDTC in ref B indicates that the proposed reservoir footprint would impact 90 % of the existing range safety templates. There is likely an ability to facilitate the feasibility studies within the current training calendar but if construction, or UXO clearance to facilitate construction, is allowed to commence it will close down most of Meaford's ranges. Comd 4 CDTC is drafting a BN through his CoC to CCA to outline the implications of this project on RegF and ResF training. It is unlikely that the trg in Meaford can be absorbed by Petawawa and Borden RTA but confirmation requires additional analysis.

11. Time-lapsed Construction Activities 3D video (embedded in presentation).

Q&A:

- Q – DS(IE): Will the excavated materials be used on the project?
A – This is to be determined. The geotech/physical study will help inform this.
- A – DS(IE): What is the height of the reservoir?
A – : Approximately 22m high. Height will be confirmed as design progresses.
- Q – KR: Will the soil be tested for contaminants prior to it being re-used on-site or only if it is to be taken off-site?
A – More investigation required; will have to be done if taking off-site.
- Q – DS(IE): Will the shading study include the Maint/Supply Bldgs?
A – TC Energy will reconfirm the scope of the shading study and include those bldgs and how the sun affects the rate of melting of snow and ice. Hatch can also include the shading timeline in the construction video.
- Q – DH: Is there a mitigation plan for blasting during construction?
A – Results from the geotech study will inform this; it is also a requirement of the EA.
- Q – DH: Has NOTRA provided any inputs with regards to timings for UXO clearances for the construction of the roads?
A – TC Energy has just engaged NOTRA and they will have them provide inputs regarding this.
- Q – PS: Who is responsible for the liability of construction workers?
A – The General Contractor is responsible for the construction site and the workers. Important there will be a hard demarcation between construction site (civilian workers) and Base (military personnel).
- Q – PS: How will traffic to the Base be managed during construction?
A – All aspects of mitigations will be looked at for traffic movement of construction workers to and from site. A traffic study will be conducted for the project.

- f. DND briefed TCE about the extent of the presence of Unexploded Explosive Ordnance (UXO) on the Base. DND explained that the Base has been for many years and remains an active live firing range, therefore, significant amounts of UXO are present throughout the Base. DND further stated that any access to the Base by TCE would require a complete UXO clearance for all areas being accessed. This includes proper level of both surface and sub-surface UXO clearance, to the standard of the DND-approved UXO contractor. DND stated that the level of UXO clearance will depend on the specific activity being undertaken, however, at a minimum, all areas being accessed (including roads) will require a surface UXO clearance (minimum Level 1 clearance). Additionally, DND made it clear to TCE that all costs associated to UXO clearance will be paid in its entirety by TCE, including any costs incurred by DND, such as on-Base escort. TCE acknowledged and agreed.
- g. TCE asked that any available UXO information be included in the Information Sharing Agreement.

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| <p>➤ Project operational 7 years from 2018</p> <p>g. DND advised TCE to be flexible with their timelines, as certain issues, primarily UXO, could significantly prolong their timeline until operational.</p> <p>h. DND expressed that they have concerns with TCE's proposed location given their lack of UXO expertise, given their history of projects.</p> <p>i. TCE stated that they have already been in contact with UXO experts regarding the project. TCE also asked if DND was able to provide them with a list of UXO approved contractors they have used in the past?</p> <p>j. DND stated that they are not entitled to provide TCE with a UXO contractor list as this may be seen as showing preferential treatment. DND did however provide TCE with an approximate cost and timeline for Level 1 UXO clearance, at \$50,000/ha and ranging from approximately 5 – 10 years in cleanup time. These estimates were based on similar Level 1 UXO clearances on other CFB's, however should only be used as an estimate, as Level 1 UXO clearance can</p> | |
| <p>Apr 15, 2021 9:43AM By: Anderson Capt N78C Army DA Full</p> | |
| <p>Item: FW TCE's Purpose Pumped Storage Project File on 4CDTC-Attachment 1</p> | |
| <p>TransCanada Grey County Pumped Storage Project Meaford Meeting with National Defence - Notes and Action Items 16 April 2018 1:00pm – 3:00pm EST 66 Slater 2nd Floor Boardroom B220, Ottawa ON, K1P 5K8</p> | |
| <p>DISCUSSION NOTES</p> <p>Increase substantively depending on terrain and previous/current training as well as other factors. DND also noted that Level 2 and 3 UXO clearance are more costly.</p> <p>k. DND communicated to TCE that Level 1 UXO clearance only allows for users to walk on the contaminated lands, any ground disturbance, such as digging would likely require Level 3 UXO clearance, which is more costly and time consuming.</p> <p>l. DND and TCE agreed that it is important, moving forward, that a UXO risk assessment be undertaken on the Base. DND stated that they want to be upfront about UXO risk and level of clearance needed, further stating "it won't be any easy or cheap ride".</p> | <p>ACT</p> |

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| <p>ENVIRONMENTAL CONSIDERATIONS</p> <p>1. Environmental Concerns. The following are a list of environment considerations that have been identified as requiring further study given they have a direct impact to TCE's project.</p> <p>a. Contaminated Soils. Over the years, the impact area has been heavily used for various types of fires. The expended rounds have caused various types of contamination from heavy metals to other toxins. Disturbing the soil would expose more of these elements to the surrounding area (air, land and water) and if the soil were used as part of the reservoir walls, then the heavy metals and toxins could cause increased contamination of the water. Pollution of the water creates large concerns for marine animals' health and for any person drawing water from the bay for personal use.</p> <p>b. Species at Risk. The project presents a concern that any protected species found in the area of interest could necessitate a change to the plan and may force an abrupt end to any potential development. There are potentially up to 30 federally protected species at risk (SAR) throughout the 4 CDTC property; and potentially 20 SAR within the proposed project location. At this time, we have no way of knowing what is currently inhabiting the portion of terrain in the danger area as no one has stepped foot in that area due to the extremely high UXO threat. A SAR survey to verify SAR counts would be very difficult to carry out and can only be completed with an UXO avoidance escort under the direction of Range Control. Environment and Climate Change Canada (ECCC) would be implicated if permitting is required due to the proposed project.</p> <p>c. Migratory Birds. There are likely many migratory birds using this area. Migratory birds are protected federally under the <i>Migratory Bird Convention Act</i>. Surveys would need to be undertaken and ECCC would be implicated if permitting is required due to the proposed project.</p> <p>d. Fish and Fish Habitat. The proposed project would have adverse impacts on fish and fish habitat in the Georgian Bay, from discharging water with increased temperatures and altering water quantity. The Department of Fisheries and Oceans would be implicated if permitting is required due to the project.</p> <p>e. Water Quality and Natural Drainage. The placement of the reservoir will directly impact the stream and the natural drainage coming off the top of the escarpment. As it is a fish bearing stream, DFO would have to be involved and without the overall plan for the site we are unsure of how water would travel down Warner Hill after the proposed changes. The alteration could cause increased water flow in areas that are inadequate to handle the volume. New erosion could cause deterioration of areas previously used for training, or could impact existing works such as roads, for example. Neighbouring civilians, as well, have complained in the past about the base causing sedimentation in the bay, or that we have caused flooding on their private properties and they have demanded compensation.</p> <p>f. CAF Liability Post-Construction. Given the nature of the area being proposed, there is a very real concern that contaminants introduced by the CAF over years of training area use could spread once the area is disturbed by construction. Despite being disturbed by a civilian company, the CAF remains liable for those contaminants even if they are removed by the civilian company and introduced to a third location (i.e. surrounding geography or another site).</p> |
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| <p>clearance are more costly.</p> <p>k. DND communicated to TCE that Level 1 UXO clearance only allows for users to walk on the contaminated lands, any ground disturbance, such as digging would likely require Level 3 UXO clearance, which is more costly and time consuming.</p> <p>l. DND and TCE agreed that it is important, moving forward, that a UXO risk assessment be undertaken on the Base. DND stated that they want to be upfront about UXO risk and level of clearance needed, further stating "it won't be any easy or cheap ride".</p> <p>m. DND expressed concerns about where the power grid electrical lines would pass, asking TCE whether they would be overhead, underground or in the air? DND stated that overhead electrical lines would be prone to interfere with artillery and air fire training.</p> <p>n. TCE proposed running the electrical lines along the shore of the Base, as far away as possible from the Range Training Area. DND showed interest in this idea, however stated that such discussions are long-term and would be reinitiated when needed.</p> <p>o. DND informed TCE that any access to the Base would require security clearance of contracting companies as well as all employees, which often takes several months to obtain. Additionally, DND stated that all 3rd party access to the Base will require DND escort and surveillance throughout the activities, which will be 100% cost recovered by TCE.</p> <p>p. TCE acknowledged, and stated that they likely already have a corporate security clearance, however understand that individual employees will still require security clearance prior to access.</p> <p>q. DND stated that any access given to TCE as part of the 1-Year Access Agreement for the purpose of feasibility assessments, does not imply support, approval or access permission for any future applications by TCE or any future licences required by TCE related to the project. TCE acknowledged and agreed to the above.</p> |
| <p>10. Centre for Greening Government</p> <p>a. DND stated that they can wait until the environmental assessment is complete before commencing discussions regarding the Centre for Greening Government and the projects GHG emissions reductions.</p> <p>b. TCE agreed.</p> |
| <p>11. Conclusion/Next Steps</p> <p>a. DND and TCE agreed to create a working group which would meet/teleconference on a weekly/bi-weekly basis for tactical touchpoints, as well as on a monthly basis for broader perspective project issues and development. The working group will be composed of most of the meetings attendees as well as a few extra personnel for each party.</p> |



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Q7. How will access to 4 CDTC impact the environment?

A7. The types of engineering and environmental feasibility studies that will be conducted by TransCanada are not expected to impact the surrounding environment. Once completed, these environmental assessments will provide a better understanding of potential environmental impacts should the project move forward.

Q8. Are there any at-risk species that may be impacted by this project?

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A8. TransCanada's is responsible for ensuring that all of its feasibility studies comply with the *Species at Risk Act* (SARA). Environment and Climate Change Canada (ECCC) is responsible for enforcing the SARA and ensuring that species at risk habitats on federal lands are protected from activities that could have an impact on them.

4 CDTC Meaford is home to species listed under the *Species at Risk Act* (SARA). As part of our commitment to meeting the obligations under Species at Risk legislation, we work with biologists to implement various protection measures from the Species at Risk Work Plan for 4 CDTC. The measures include keeping an up-to-date inventory of all species at risk, species monitoring activities, mitigation activities to reduce potential impacts, and educational activities to increase SARA awareness among personnel.

Does DND have a policy for species at risk in an aquatic environment?

DND is dedicated to responsible environmental stewardship and to meeting the obligations under the Species at Risk Act (SARA).

4 CDTC Meaford is home to 30 species listed under the SARA. These include species of birds, amphibians, reptiles, mammals and plants. The list does not include aquatic species.

The SARA does apply to species in an aquatic environment. Environment and Climate Change Canada (ECCC) and Department of Fisheries and Oceans (DFO) are responsible for enforcing the SARA, and ensuring that species at risk habitats on federal lands and waters are protected from activities that could have an impact on them. In this case it is expected DFO would lead the portion of the Impact Assessment examining impact to the aquatic environment.

ANALYSIS

11. Three areas of concern were identified and reviewed. These areas are outlined on the map at Annex A as Area 1, Area 2 and Area 3.

- a. Area 1 – Proposed relocation site for displaced garrison buildings. Overall, this area has been assessed as **moderate risk for development** due to the presence of special concern SAR, as well as its close proximity to watercourses. There are some high risk areas associated with threatened SAR in the southern portion of the area that may require reconfiguration of the building footprints; however it's likely that development in this area could proceed with some mitigations.
- b. Area 2 – Proposed footprint for the TC Energy reservoir. Overall, this area is assessed as **high risk for development** due to the large number of endangered and threatened SAR in the proposed project footprint. These species are associated with an old-growth woodlot at that site. The TC Energy project would require the destruction of the woodlot habitat. It should be noted this risk accrues to TC Energy (not DND/CAF) as this is the proposed site for their reservoir. DND/CAF must consider this risk should it decide to pursue its own infrastructure development in this area.
- c. Area 3 - Proposed site for the new Alpha Range. Overall, this site has been assessed as **high risk for development** due to the presence of endangered and threatened SAR. In particular, the area hosts Western Chorus Frog (*Pseudacris triseriata*) (Threatened). (This species is significant as it is one of only two species in Canada whose habitat has been granted protection from development by ECCC through the issuance of an Emergency Order. Although that Order applies only to the specified habitat in eastern Quebec, it establishes a precedence for the protection of this species in other areas.) It is not certain whether ECCC would support the potential harm/ killing of individuals and destruction of habitat required to build the Alpha Range in the proposed location. Any approval would likely be issued with conditions on the scope and/or timing of the development.

CONCLUSIONS

12. Of the three areas assessed, **Area 3 poses the highest risk to the ability of 4 CDTC to continue its operations should the proposed TC Energy project proceed.** The presence and nature of the SAR in that area may limit or prevent the construction of Alpha Range by TC Energy in that location. Area 1 shows a moderate degree of risk to the relocation of 4 CDTC infrastructure due to the presence of SAR; however development would likely be allowed to

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CONCLUSIONS

12. Of the three areas assessed, **Area 3 poses the highest risk to the ability of 4 CDTC to continue its operations should the proposed TC Energy project proceed.** The presence and nature of the SAR in that area may limit or prevent the construction of Alpha Range by TC Energy in that location. Area 1 shows a moderate degree of risk to the relocation of 4 CDTC infrastructure due to the presence of SAR; however development would likely be allowed to

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proceed in that location with some conditions. Area 2 demonstrates a high degree of risk for development due abundance of SAR. However, that risk would be assumed by TC Energy in order for it to realize its reservoir construction.

13. DND is responsible for managing the identified species and habitat as long as the land remains DND property. Those responsibilities are manageable under current conditions. For its decision on whether to allocate its land to TC Energy, DND will need to consider and reconcile its extant obligations for protecting SAR under the *SARA*, as well as in its departmental commitments documented in the *Strong, Secure Engaged* Canada's Defense Policy and the *Defence Energy and Environment Strategy*.

BACKGROUND

8. The evaluation of the Operational Impact Committee will be used to inform the Minister of National Defence's (MND) decision on whether or not to allocate a portion of 4 CDTC land for the proposed PSP. If granted land usage, the proposed PSP would be subject to a federal Environmental Assessment (EA) under the *Canadian Environmental Assessment Act* (CEAA). The federal EA process enables the Minister of Environment to make a decision with regards to the likeliness of significant adverse environmental effects. The EA process is proponent-driven (from the perspective of TCE); DND would have limited ability to comment. Thus the decision to allow for TCE to occupy the land is pivotal.

9. DND has committed itself to measures that extend above and beyond CEAA. This includes protecting wildlife species on DND lands as noted in the Defence Energy and Environment Strategy, the Federal Sustainable Development Strategy and Strong Secure Engaged defence policy.

10. TCE has identified "land loss replacement/ mitigation" as one of their principles. Although where and how this would unfold remains unknown. This proposed PSP is estimated to devastate approximately 10% of 4 CDTC's wildlife with direct effects alone.

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CURRENT STATUS

3. A Site Development Plan is being drafted by ADM(IE) to identify options for relocation of the affected training facilities; however, its has to date, omitted considerations to the natural environment and its hindrances to possible land development.
4. Federally protected species at risk and migratory birds are found more abundantly in some areas of 4 CDTC than others. Also certain species at risk require a specific habitat type and extent for their survival. As such, certain areas of 4 CDTC pose a greater risk of possible land development/ facility relocation because they are dependent upon receiving a permit from Environment and Climate Change Canada (ECCC).
5. If granted DND land for its usage, the proposed PSP would be subject to a federal Impact Assessment under the *Impact Assessment Act* (IAA). The IA process is 'proponent-driven' meaning, it will be written and submitted from the perspective of TCE. The Minister of Environment and Energy would then be the federal authority making a decision on this proposed project (rather than DND).
6. DND has committed itself to measures that extend above and beyond the IAA as noted in the *Defence Energy and Environment Strategy, the Federal Sustainable Development Strategy and Strong Secure Engaged defence policy*. Since the proposed PSP is estimated

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to devastate approximately 10% of 4 CDTC's wildlife with direct effects alone, the DND strategies and policies noted above would be contravened.

DISCUSSION

7. If the pivotal decision is made by the Minister of National Defence on granting access to 4 CDTC for the TCE proposed project, under the current IAA legislative framework, the Minister of Environment and Climate Change (MOEE) would have the authority to make a decision about the proposed project on behalf of the best interests of Canadians as delineated in the IAA.

ENVIRONMENTAL CONSIDERATIONS

1. **Environmental Concerns.** The following are a list of environment considerations that have been identified are requiring further study given they have a direct impact to TCE's project.
 - a. **Contaminated Soils.** Over the years, the impact area has been heavily used for various types of fires. The expended rounds have caused various types of contamination from heavy metals to other toxins. Disturbing the soil would expose more of these elements to the surrounding area (air, land and water) and if the soil were used as part of the reservoir walls, then the heavy metals and toxins could cause increased contamination of the water. Pollution of the water creates large concerns for marine animals' health and for any person drawing water from the bay for personal use.
 - b. **Species at Risk.** The project presents a concern that any protected species found in the area of interest could necessitate a change to the plan and may force an abrupt end to any potential development. There are potentially up to 30 federally protected species at risk (SAR) throughout the 4 CDTC property; and potentially 20 SAR within the proposed project location. At this time, we have no way of knowing what is currently inhabiting the portion of terrain in the danger area as no one has stepped foot in that area due to the extremely high UXO threat. A SAR survey to verify SAR counts would be very difficult to carry out and can only be completed with an UXO avoidance escort under the direction of Range Control. Environment and Climate Change Canada (ECCC) would be implicated if permitting is required due to the proposed project.
 - c. **Migratory Birds.** There are likely many migratory birds using this area. Migratory birds are protected federally under the *Migratory Bird Convention Act*. Surveys would need to be undertaken and ECCC would be implicated if permitting is required due to the proposed project.
 - d. **Fish and Fish Habitat.** The proposed project would have adverse impacts on fish and fish habitat in the Georgian Bay, from discharging water with increased temperatures and altering water quantity. The Department of Fisheries and Oceans would be implicated if permitting is required due to the project.
 - e. **Water Quality and Natural Drainage.** The placement of the reservoir will directly impact the stream and the natural drainage coming off the top of the escarpment. As it is a fish bearing stream, DFO would have to be involved and without the overall plan for the site we are unsure of how water would travel down Warner Hill after the proposed changes. The alteration could cause increased water flow in areas that are inadequate to handle the volume. New erosion could cause deterioration of areas previously used for training, or could impact existing works such as roads, for example. Neighbouring civilians, as well, have complained in the past about the base causing sedimentation in the bay, or that we have caused flooding on their private properties and they have demanded compensation.
 - f. **CAF Liability Post-Construction.** Given the nature of the area being proposed, there is a very real concern that contaminants introduced by the CAF over years of training area use could spread once the area is disturbed by construction. Despite being disturbed by a civilian company, the CAF remains liable for those contaminants even if they are removed by the civilian company and introduced to a third location (i.e. surrounding geography or another site).

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METHODOLOGY

7. The Development Hindrances: Risks Map (Annex A) was produced by overlaying environmental data collected by 4 CDTC Environmental Services staff with TC Energy's proposed development footprint and associated CA facility/ training area relocations, using a Geographic Information System (GIS). Areas of environmental concern featured on the map include, SAR observances, watercourses, contaminated site locations and unexploded ordnance (UXO) locations. Although migratory birds and fish have been observed throughout the study area, their locations could not be mapped due to the lack of georeferenced data.

8. A 100-meter buffer was added surrounding the SAR data points to represent habitat protection requirements. Similarly, a 30-meter buffer was added around water bodies to reflect fish habitat protection requirements. The buffer distances were selected arbitrarily; in reality, some species and/or their habitat may require greater or less distances for protection. The precise size and location of critical habitat is determined for each SAR by ECCC.

9. The twelve (12) SAR identified in the study area were plotted on the map and divided into the following categories:

- a. **High Risk.** Defined as areas where "Endangered" and/or "Threatened" SAR are present (i.e. species at the highest threat status and for which critical habitat is protected under the *SARA*);
- b. **Moderate Risk.** Defined as areas where "Special Concern" SAR are present; and
- c. **Low Risk.** Defined as areas where there are no SAR, or where there may be SAR or SAR habitat present, but these have not yet been surveyed.

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10. Although migratory birds and fish are found in the study areas and represent a risk to development due to the need for permitting/authorization, the lack of documented data meant their presence could not be factored into the risk determination at this time. Since watercourses, contaminated sites and UXO points did not significantly overlap with the proposed project siting, the overall risk determination was based solely on the legal protection status of the SAR.

