



REPORT

Supplemental Impact Assessment Report for the Magino Gold Project

Change to the Designated Project

Submitted to:

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Executive Summary

The Magino Gold Project was a Designated Project that was previously assessed under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). Prodigy Gold Incorporated (PGI), a subsidiary of Argonaut Gold Incorporated, completed a federal Environmental Assessment (EA) for the Magino Gold Project in accordance with CEAA 2012 and after extensive federal review, the Minister of Environment and Climate Change issued a positive EA decision determining that the project was not likely to cause significant adverse environmental effects.

Since the Minister's Decision Statement, project construction began in February 2021, including tree clearing in preparation for more intensive construction activities.

The purpose of this Supplemental Assessment report is to describe the assessment of a change to the Magino Gold Project, which involves construction and operation of an on-site electrical power generation facility to provide power to the Magino Gold Mine. At this time, on-site power generation has been determined to be the only feasible option for supplying the full demands of the mine operations start-up scheduled for Q1 2023 due to an inability to secure sufficient power from local distribution and/or transmission lines beforehand. PGI is continuing to explore options for connecting with a distribution and/or transmission line when new powerline projects are proposed in the region of the Magino Gold Mine project site. This report documents the consultation undertaken and the assessment of potential adverse effects of the change, as required by the Magino Gold Project Decision Statement issued by the Minister of the Environment and Climate Change in January 2020.

The proposed construction and operation of an on-site electrical power generation facility to provide power to the Magino Gold Mine will not interact with most assessed Valued Components (VCs). Nonetheless, it was predicted that the construction or operation of the liquefied natural gas (LNG) power generation plant and associated LNG storage facility may increase air emissions, noise levels at nearby receptors, and greenhouse gases (GHGs) at a higher carbon intensity compared to the previously proposed project. Thus, the VCs of air quality, noise, and GHGs were carried through to the assessment.

The assessment found that, while air, noise, and GHG emissions will all increase at varying levels, and there will be a very slight increase in truck transportation to deliver fuel, overall, the types of environmental effects predicted as a result of the new project component remain the same as previously identified for the Magino Gold Project as a whole. The effects from the construction and operations, including highway transportation, will be mitigated through a variety of measures, as outlined in this report. No new types of adverse effects have been identified.

Taking into account the implementation of the mitigation described in the original EA and this Supplemental Assessment, the conclusions presented in the EA report have not changed with respect to the significance of the environmental effects. The environmental effects will be mitigated by standard and project-specific environmental protection measures, and thus the adverse residual environmental effects associated with this new project component are predicted to be not significant.

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1.0 INTRODUCTION

The purpose of this Supplemental Assessment report is to describe the assessment of a change to the Magino Gold Project, which was a Designated Project that was previously assessed under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). The proposed change involves construction and operation of an on-site electrical power generation facility to provide power to the Magino Gold Mine. Since the original proposal did not contemplate on-site power generation for operating the mill processing plant, additional environmental review and approval will be required. This report documents the consultation undertaken and assessment of potential adverse effects of the change, as required by the Magino Gold Project Decision Statement issued by the Minister of the Environment and Climate Change in January 2020.

1.1 Background

The Magino Gold Project was originally proposed by Prodigy Gold Incorporated (PGI), now a subsidiary of Argonaut Gold Incorporated, in Finan Township, Algoma District, Ontario (Figure 1). On September 3, 2013, the Canadian Environmental Assessment Agency (the Agency) determined that undertaking the Magino Gold Project, a Designated Project under the *Regulations Designating Physical Activities*, required a federal environmental assessment (EA). The Agency issued Environmental Impact Statement Guidelines (EIS Guidelines) on November 1, 2013, and PGI subsequently completed an EA and submitted an Environmental Impact Statement (EIS) to the Agency in accordance with CEAA 2012.

The Agency determined that the EIS report was in conformity with the EIS Guidelines in July 2017. Over the following 18-month period, the Agency determined that the proponent had sufficiently addressed subsequent comments and information requests received from Indigenous communities and stakeholders, including regulatory agencies. After extensive federal review, the Minister of Environment and Climate Change issued a positive EA decision per CEAA 2012, in January 2020, determining that the Magino Gold Project was not likely to cause significant adverse environmental effects.

The Magino Gold Project Decision Statement contained conditions, including that the company must report on annually to demonstrate compliance with the Decision Statement. Clauses 2.14 and 2.15 of the Decision Statement outlined the requirements related to a Change to the Designated Project. Specifically:

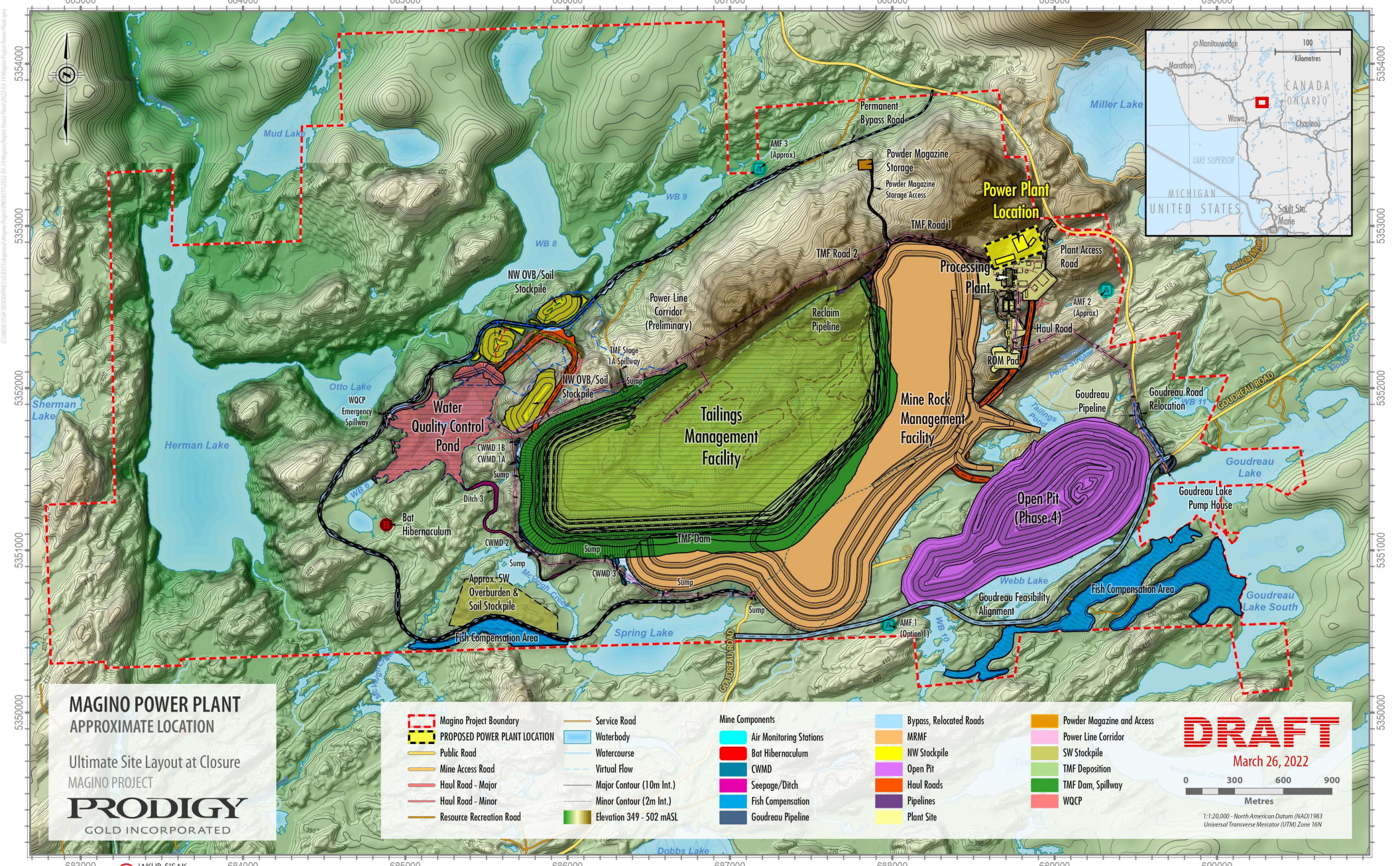
Change to the Designated Project

2.1.4 The Proponent shall consult with Indigenous groups, Pic Mobert First Nation and relevant authorities prior to initiating any changes to the Designated project that may result in adverse environmental effects, and shall notify the Agency in writing no later than 60 days prior to initiating the change.

2.1.5 In notifying the Agency pursuant to condition 2.14, the Proponent shall provide the Agency with a description of the potential adverse environmental effects of the change(s) to the Designated Project, the proposed mitigation measures and follow-up requirements to be implemented by the proponent and the results of the consultation with Indigenous group, Pic Mobert First Nation and relevant authorities.

Since the Minister's Decision Statement, project construction began in February 2021, in accordance with the conditions of the various regulatory approvals associated with the Magino Gold Project, tree clearing was completed during 2021 and early 2022, and intensive construction activities for the mine commenced in Q1 2022.

It is understood that the proposal of an on-site electrical power generation facility to provide power to the Magino Gold Mine would be considered a change to the previously assessed Designated Project; thus, PGI has notified the Agency (now the Impact Assessment Agency of Canada [IAAC]) of the proposed change, and has undertaken an assessment of the potential adverse environmental effects of the change.



MAGINO POWER PLANT APPROXIMATE LOCATION

Ultimate Site Layout at Closure
MAGINO PROJECT

PRODIGY
GOLD INCORPORATED

- | | | | |
|-------------------------------|--------------------------|-------------------------|-------------------------|
| Magino Project Boundary | Service Road | Mine Components | Bypass, Relocated Roads |
| PROPOSED POWER PLANT LOCATION | Waterbody | Air Monitoring Stations | MRMF |
| Public Road | Watercourse | Bat Hibernaculum | NW Stockpile |
| Mine Access Road | Virtual Flow | CWMD | Open Pit |
| Haul Road - Major | Major Contour (10m Int.) | Seepage/Ditch | Haul Roads |
| Haul Road - Minor | Minor Contour (2m Int.) | Fish Compensation | Pipelines |
| Resource Recreation Road | Elevation 349 - 502 mASL | Goudreau Pipeline | Plant Site |

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March 26, 2022

0 300 600 900
Metres

1:1,200,000 - North American Datum (NAD) 1983
Universal Transverse Mercator (UTM) Zone 18N

2.0 PROPOSED CHANGE TO THE DESIGNATED PROJECT

2.1 Need for the Project Change

The Magino Project requires approximately 16.5 MW of power for its operations phase and on-site power generation is required to supply power to the Magino Project due to an inability to secure sufficient power from local distribution and/or transmission lines in time to support the start of mining and processing scheduled for Q1 2023.

Algoma Power Inc. (API) is a power distribution company that owns and operates a 44 kilovolt (kV) powerline from Hawk Junction to Dubreuilville. This powerline services surrounding communities and mining operations including the Magino Gold Mine. The existing line does not have sufficient spare capacity to supply the Magino Gold Mine; therefore, improvements and upgrades were proposed. PGI and API had been working together since 2018 to define the scope for the line upgrades and the schedule requirements.

API conducted a load analysis and developed a cost estimate and preliminary schedule to upgrade the line to meet PGI's needs. Based on the analysis, updated costs, and schedule, it became evident that the estimated cost to replace the line and upgrade certain other portions of the power system infrastructure, to provide the full power demands of the Magino Project, was cost prohibitive, and that the schedule for completion would be several months beyond the Magino Gold Mine's anticipated start-up date of Q1 2023.

API and PGI recently agreed to a smaller distribution line upgrade and re-alignment that will support the Magino Gold Mine development with 4 MW. The new plan will include upgrading the existing distribution line from the seasonal recreation Village of Goudreau, located 4.5 km southwest of the Magino Gold Project site, as well as a re-alignment of a portion of the existing distribution line right-of-way near the Magino Project site. This realignment would move the distribution line from within the open pit footprint and around the Magino Gold Project site to re-route the new section of powerline away from the blast exclusion zone of the open pit, similar to the alignment discussed in the EIS report for the Magino Gold Project. As the proponent, API will be responsible for the relevant permits and approvals for the distribution line work.

To provide the remaining approximately 12.5 MW power demand needed for the Magino Gold Mine, PGI has explored the option of an on-site electrical power generation facility for the Magino Gold Project site. PGI evaluated on-site diesel power generation against natural gas power generation and has determined that natural gas power generation will cause lower environmental effects than diesel power generation due to higher emissions from diesel combustion. Equipment deliveries and the time to design and construct a power generation plant are satisfactory for the mine's operational requirements. PGI believes the best alternative to supply power to the mine is a combination of a connection to API's upgraded distribution line (which can supply 4 MW of power to the Magino Gold Project site), with the remaining 12.5 MW to be generated by an on-site natural gas-fired power plant. As such, PGI has proposed to install an on-site natural gas-fired power plant.

As a longer-term solution, PGI is aiming to secure a larger portion or the entire demand of the operations phase power demands from a local distribution and/or transmission powerline and will communicate with local and regional power distribution and transmission companies to secure the full power demands as new and upgraded distribution and/or transmission lines fed from renewable power generation systems become available near the Magino Gold Project site.

Construction of the newly proposed facilities would be within the previously assessed study area for the Magino Gold Project site and can be completed within the time frame required for the operations phase of the Magino Gold Project.

2.2 Previously Approved Power Source

An existing 44 kV power line owned and operated by API was servicing the Magino Gold Project site at the time of the EA and continues to do so. This circuit originates near Highway 101, south of Hawk Junction, and provides power to the towns of Hawk Junction and Dubreuilville, as well as the settlements of Goudreau, Lochalsh, and Missanabie. The maximum power needs of the Magino Gold Project are estimated to be approximately 16.5 megawatts (MW); thus, the existing single-circuit 44 kV system cannot accommodate the additional load and will need to be upgraded.

The EIS, Chapter 6, provided a description of the Magino Gold Project as it was proposed in 2017 (PGI 2017a). In addition to the main Magino Gold Project components and ancillary facilities, the enabling infrastructure includes electrical distribution lines and substation, and power generation equipment, which are describe in the following sections.

2.2.1 Electrical Distribution Lines and Substation

The previously assessed Magino Gold Project indicated additional power requirements were proposed to be provided by API, with an additional 44 kilovolt (kV) line to be installed from Hawk Junction to the Magino Gold Project site. The incoming power line was planned to terminate at a main substation on the Magino Gold Project site. The main substation would contain one transformer that will feed power to an outdoor switchgear unit located inside a building within the substation area. The installation would include a grounding grid and will be fenced in on a pad in close proximity (within 100 m) to the grinding area, which will be the single biggest draw on power. It was also identified that the existing 44 kV line that crosses the site and open pit will need to be re-routed to a new right-of-way that is located outside the blast exclusion zone of the open pit. The power distribution system will use a combination of overhead structures, buried conduit, and cable.

2.2.2 Power Generation Equipment

The previously assessed Magino Gold Project included three power generation sets of 1 MW each, to be installed on-site to supply back-up power to the process plant, administration building, and the staff accommodation complex.

At that time, it was anticipated that requirements for on-site power generation would be limited to the initial site preparation and construction phases, and to provision of back-up power, and that this would minimize storage and use of diesel fuel to reduce GHGs and other emissions to the atmosphere.

2.3 Proposed Natural Gas Power Plant

To supply the power demands of the Magino Gold Project operations phase, a 22 MW natural gas power plant is proposed to be commissioned near the Magino Gold Mine Process Plant facility during Q4 of 2022, pending approvals. Under this proposal, API will upgrade a portion of their 44 kV line between Hawk Junction and the Magino property. Hydro One, the energy provider to API, will upgrade its facilities at Hollingsworth substation to provide better service to API. The upgraded API line will provide approximately 4 MW to the Magino Gold Mine, with the ability to supply close to 25% of the 16.5 MW operating load. The remaining 12.5 MW will be generated by the new power plant.

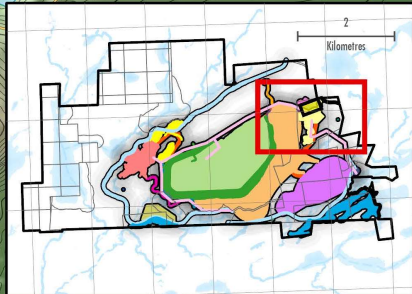
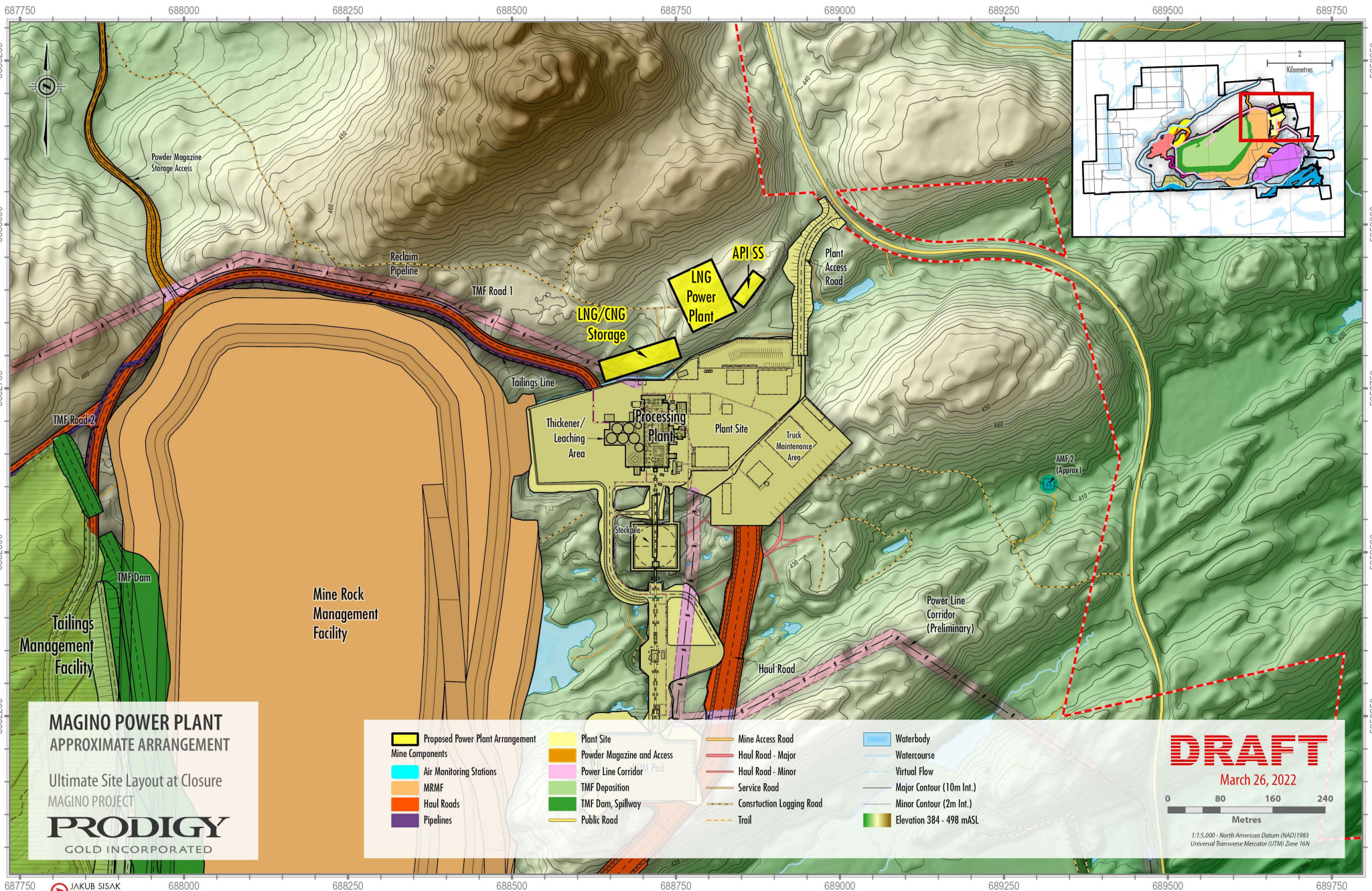
The power generation plant will generally operate in parallel with the power from the API powerline. The system will be designed such that an operator can determine how much power will be provided by the utility and how much by the power plant. Most days the power plant will have three generators in operation with API providing 4 MW of power and the power plant providing the rest on a variable scale. When power is not available from API,

three or four generators will be operational, depending on load requirements of the mine site at the time of operation.

As proposed, the liquefied natural gas (LNG) power generation plant (LNG power plant) and associated LNG storage facility (storage facility) will include the following:

- **Engines:** Four Wartsila 5.56 MW generators, each driven by a 12-cylinder reciprocating engine are proposed. Each engine/generator combination will have a liquid to air heat exchanger, exhaust stack with silencer and various pieces of ancillary equipment. Engine temperature control will be via air to liquid heat exchangers secured to concrete foundations located some distance from the engine hall and exhaust stacks. Engine exhaust stacks will be supported by individual foundations adjacent to the engine hall. Exhaust stacks will be designed for local conditions, but for the purpose of assessment, are expected to be approximately 1.2 m in diameter, with a stack height of approximately 27.5 m above ground level) and attenuate the noise by 35 dBA.
- **Engine Hall:** An engine hall will enclose the four units, while the heat exchangers and exhaust stacks will be exterior to the building. The engine hall will consist of concrete foundations for the building and equipment, an insulated pre-engineered metal clad steel structure building with the required ventilation equipment. The engine hall is proposed to be approximately 30 m by 21 m (approximately 630 m²).
- **Engine Hall Electrical Room:** A free-standing electrical room will be installed near the engine hall. The electrical room will be a separate prefabricated structure designed to enclose the electrical switchgear (i.e., the system monitoring, control, and electrical protection equipment).
- The **LNG storage facility** is proposed adjacent to the power plant and will include several foundations for tanks for the storage of required liquids. The storage facility will have a prepared pad for the off-loading of the over the road trucks (e.g., B train and single trailer truck/trailer combinations). The storage facility will also have six vertical LNG storage tanks, each with a capacity of 133 m³, a gas vaporization system, and a vaporized fuel buffer (surge) tank. There will be a steel gas line from the storage facility to the power plant with a pressure regulating station. A portion of the LNG storage area will be allocated for compressed natural gas (CNG) supply backup. Unlike the LNG where fuel is transferred to on site storage tanks, the CNG delivery is a tractor trailer drop off and pick up service with natural gas consumption taken directly from the trailers. The natural gas storage facility will be located an appropriate distance from the power generation plant.
- **Fuel Supply:** Fuel for the engines will be LNG, supplemented as needed by compressed natural gas (CNG).
- **Fire Protection water** will be available at the LNG power plant and storage facility.
- **Power distribution line:** A 13.8 kV overhead power line will be run from the power plant to the electrical substation located near the Magino Mine processing plant.
- **Substation Electrical Room:** A small electrical room at the substation will house switchgear that will provide metering, circuit protection and paralleling equipment allowing API and the new power plant to supply the site electrical needs simultaneously. Alternately, this electrical room may be located with the power plant electrical room.

The LNG power plant and storage facility will be constructed and commissioned in a period of approximately 12 months. Clearing of the proposed site, which was assessed under the previously approved EIS, was undertaken in 2021 and Q1 2022. Earthworks will be necessary to prepare the power plant and storage facility site, and to provide a corridor for required support infrastructure. The sites will be prepared in a manner that will direct storm water away from the equipment and buildings and provide drainage away from potential contamination sources.



**MAGINO POWER PLANT
APPROXIMATE ARRANGEMENT**

Ultimate Site Layout at Closure
MAGINO PROJECT

PRODIGY
GOLD INCORPORATED

- | | | | |
|----------------------------------|----------------------------|---------------------------|--------------------------|
| Proposed Power Plant Arrangement | Plant Site | Mine Access Road | Waterbody |
| Mine Components | Powder Magazine and Access | Haul Road - Major | Watercourse |
| Air Monitoring Stations | Power Line Corridor | Haul Road - Minor | Virtual Flow |
| MRMF | TMF Deposition | Service Road | Major Contour (10m Int.) |
| Haul Roads | TMF Dam, Spillway | Construction Logging Road | Minor Contour (2m Int.) |
| Pipelines | Public Road | Trail | Elevation 384 - 498 mASL |

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March 26, 2022

0 80 160 240
Metres

1:15,000 - North American Datum (NAD) 1983
Universal Transverse Mercator (UTM) Zone 16N

Operations: During operation, both LNG and CNG, will be trucked into the site via public highways from various existing regional supply points by conventional over-the-road truck and single trailer or B-train truck and double trailer transports. Typically, two to three B-train loads per day will be required but the number of loads per day could reach as high as nine when CNG is being used. The truck area at the storage facility will be able to accommodate six to ten CNG trailers and three LNG trucks with the LNG trucks off loaded one at a time into the on-site LNG storage tanks as soon as it arrives on site. The off-loading process will take 1 to 2 hours. Trucks carrying CNG will discharge directly into the power plant gas supply line, requiring increased time on the site. The design will allow six to ten trucks to be connected at the off-loading station at a time. There will be parking at the site for up to three LNG trucks waiting to be off loaded.

The Magino Gold Project will continue to monitor the potential for purchasing electricity from lower carbon power sources. When available, the Magino Gold Project will switch to fully purchasing electricity as new and/or upgraded distribution and/or transmission lines fed from renewable power generation systems become available near the Magino Gold Project site, at which point the Magino Gold Project will no longer rely on the LNG plant for the primary power supply.

Emergency Response Measures: PGI is preparing an Environmental Emergency Plan (also known as an E2 plan) that will provide emergency response scenarios for natural gas spills, gas leaks, fires, and other potential emergencies at the LNG Power Plant and fuel management facilities. PGI's on-site Emergency Response Team (ERT) will conduct training to respond to potential emergencies at the LNG Power Plant based on the emergency response scenarios in the Environmental Emergency Plan. Fire fighting equipment and other emergency response equipment and vehicles will be available on the Process Plant site. The Magino ERT will respond to on-site and local off-site LNG-related emergencies with a team of trained responders, emergency vehicles, and equipment. Additional emergency services will be coordinated with regional and local services including full-time staffed and volunteer fire departments and emergency medical and ambulance services through Algoma District Services Administration Board. Emergency responders and services personnel will be familiarized with responding to potential LNG fuel transport and LNG power plant and fuel storage related emergencies with the appropriate emergency vehicles, equipment, and personnel. PGI will share emergency consultation activities with local and regional emergency service providers to plan for potential Magino Project related on-site and off-site events and will develop appropriate mitigation and response measures for emergency scenarios.

Decommissioning: PGI's intention is to secure the full power demands of the Magino Gold Project from a new and/or upgraded distribution and transmission powerline as soon as a long-term power supply solution is feasible. API has plans for upgrading and re-routing the local distribution line to provide a portion of the power demands, but it is currently only in the planning stage and would not be available in time for the start up of mine operations in March 2023. As well, there is no guarantee of when API or other distribution and/or transmission companies could fill the full demands of the Magino Gold Mine; thus, PGI does not have a schedule regarding the expected operating life of the LNG power plant. For the purpose of this assessment PGI has conservatively assumed that the power plant will run for the duration of the mine's life and will be decommissioned with other infrastructure at the mine site.

3.0 CONSULTATION SUMMARY

PGI has undertaken extensive consultations since 2013 with Indigenous communities as well as the general public relating to environmental assessment, permitting, and construction of the Magino Gold Project. Consultation and engagement were conducted during preparation of the EIS report with a wide range of stakeholders and Indigenous communities through various methods to gather feedback on the Magino Gold Project and the preliminary EA findings. Comments received during the draft EIS report reviews were responded to as appropriate, and subsequently addressed in the final EIS report. During the federal and provincial EA processes for the Magino Gold Project, PGI engaged and consulted with regulatory authorities and six regional Indigenous communities associated with the Magino Gold Project area.

Since the Magino Gold Mine construction began in February 2021, PGI has been implementing the various regulatory approvals associated with the Magino Gold Project. The below sections provide an overview of the ongoing consultations and approvals status for the overall Magino Gold Project.

3.1 Indigenous Communities and Organizations

The Magino Gold Project Decision Statement (clause 2.1.5) specified that the Proponent shall provide the Agency with the results of the consultation with Indigenous groups, Pic Mobert First Nation, and relevant authorities.

Since Pic Mobert First Nation was specifically identified in the Decision Statement, PGI reached out to them and received an email reply from a representative of the First Nation indicating that it would not require engagement for the LNG power plant because the Magino Gold Project is outside of their area of concern. This is documented in the Summary of Indigenous Engagement (Appendix A).

Six other Indigenous communities have indicated that their traditional territories, and some areas of current and historical land use, are in the immediate vicinity of the mine. PGI has developed very close working relationships with each of the Indigenous communities (First Nations and Métis) that have indicated interest in engaging with the company. The six Indigenous communities are the following:

- Michipicoten First Nation (MFN),
- Missanabie Cree First Nation (MCFN),
- Métis Nation of Ontario (MNO),
- Batchewana First Nation (BFN),
- Red Sky Métis Independent Nation (RSMIN), and,
- Garden River First Nation (GRFN).

During the Magino Gold Project EA process, there was an independent First Nations technical review of the EIS initiated by four of the Indigenous communities. The technical review team included experts in mine construction management as well as water quality. Michipicoten First Nation (MFN) later pursued its own technical review of the EIS with PGI. The Métis Nation of Ontario (MNO) also retained technical experts to review the Magino Gold Project.

Implementation of the Indigenous agreements continues as part of the Magino Gold Project development with regular meetings and consultations providing the communities regular updates on progress. As well, PGI is an active member of the local communities and has provided sponsorships for various events over several years, including during the on-going COVID-19 Pandemic. The regional communities have expressed strong support for

the Magino Gold Mine and with the start of construction in early 2021, local business activity and employment levels have increased substantially.

With regard to the proposed change to the Project, PGI has continued to engage these communities to demonstrate ongoing efforts aimed at reducing impacts to Indigenous communities.

Summary of Comments

Since taking the decision to pursue on site power generation, PGI has been discussing the Magino Gold Project with each of the interested Indigenous communities through regular Indigenous Environmental Monitoring Committee meetings. PGI is providing this Supplemental Assessment to the communities for review, and has continued to discuss mitigation measures with the communities. These events, and related correspondence, have been summarized in the Summary of Indigenous Engagement (Appendix A).

During the engagement meetings, the following key topics were expressed about the proposed Project:

- Concerns about emissions/by-products such as heat, noise, air and GHGs, from the operation of the LNG power plant, including a request for a comparison between the emissions from the LNG power plant and other alternatives, such as diesel). Also questions about carbon offsets.
 - PGI indicated that there will not be any measurable effects of the emissions on local communities due to the remote location of the mine site. An assessment of the noise, air, and GHG emissions are provided in Section 4.3, including information on emissions associated with the LNG power plant and a comparable diesel power generation option.
 - It also advised that heat released from the liquid to air heat exchangers is low-heat value heat that is not suitable for co-generation use. The amount of heat released will be minimal and will dissipate into the air without any measurable environmental effects.
 - PGI also explained that there are currently three air quality monitoring stations in operation at the property that monitor total suspended particulate (TSP), particulate matter that is 10-microns or smaller (PM₁₀), fine particulate matter that is 2.5-microns or smaller (PM_{2.5}), oxides of nitrogen (NO_x), and sulphur dioxide (SO₂).
 - PGI also indicated that it will comply with carbon emissions reduction and taxation requirements of Ontario, though it is not currently planning to do any additional carbon offsetting aside from paying the required carbon taxes for fuel purchases, as it is confident that the increases in carbon emissions associated with the LNG Power Plant will be minimal.
- General preference for PGI to switch to low carbon renewable power (e.g., hydroelectric, wind, solar, etc.) from a distribution or transmission line to replace the LNG power plant when possible.
 - PGI indicated that the local API-owned and operated distribution powerline does not have the capacity to provide the power demands due to technical constraints. API has plans for upgrading and re-routing the local distribution line to provide a portion of the power demands, but it is currently only in the planning stage and would not be available in time for the start up of mine operations in March 2023.

- PGI also indicated that its preference is that the LNG power plant is not operated for the full mine life; the preference and intention is to secure the full power demands from a transmission or distribution line as soon as a long-term power supply solution is feasible. However, there is no guarantee of when this could happen from transmission and/or distribution companies; thus, it does not have detailed information on the expected operating life of the LNG power plant.
- Concerns about increased risk of highway traffic accidents, potential spills, and wildlife collisions associated with trucks transporting fuel to the project site, and the associated emergency response (off and on-site), as well as concerns about increased diesel exhaust emissions (e.g., GHGs, particulate matter, sulphur dioxide), and road dust, particularly on the local gravel road to the site, as a result of trucks transporting natural gas fuels.
 - PGI committed to provide more details and mitigation measures for reducing the risk of potential highway safety incidents and responding to incidents if, and/or when, they occur (refer to Section 4.3.6), and has started to do so in follow-up meetings. An assessment of the noise, air, and GHG emissions are provided in Sections 4.3.1, 4.3.2, and 4.3.3.

There were also general questions about the need for the power plant, routes to transport fuel, similar power plants in use, the timelines, costs, and the contractors. Responses are summarized in the Summary of Indigenous Engagement (Appendix A).

This Supplemental Assessment has been updated to incorporate the issues of concern to communities and augmented with the commitments to avoid and mitigate effects relating to these topics. The Magino Mine project as a whole, including the LNG power plant, will continue to be discussed at the Indigenous Environmental Monitoring Committee meetings, which will continue into Project implementation and the operating phase of the Magino Gold Mine.

3.2 Regulatory Authorities

3.2.1 Fisheries and Oceans

Federal approvals related to the Magino Gold Project were required from Fisheries and Oceans Canada (DFO) under section 35(2) of the *Fisheries Act* as it had been determined that the Magino Gold Project would result in serious harm to fish. After extensive consultation efforts with both DFO and the Ministry of Natural Resources and Forestry (MNRF), as well as Indigenous communities during 2018 and 2019, it was concluded that a Fish Habitat Compensation and Offsetting Plan that prescribes replacement fish habitat and associated monitoring must be undertaken commensurate with the fisheries impacts associated with the Magino Gold Project. DFO subsequently issued the Section 35 fisheries authorization effective February 10, 2021. PGI has been appraising the DFO on the construction progress of the new fish habitat with the intensive construction activities for the mine to begin in Q1 2022, after tree clearing is completed during Q4 2021 and Q1 2022.

The proposed changes in relation to the on-site LNG power plant to provide power to the Magino Gold Mine will not further impact fish or fish habitat, or the reclamation program or long-term monitoring required as a condition of the DFO permit.

3.2.2 Environment and Climate Change Canada (ECCC)

Waterbodies located within the footprint of proposed Tailings Management Facility, Waste Rock Management Facility, and Water Quality Control Pond were determined by Environment and Climate Change Canada (ECCC) to require listing on Schedule 2 of the *Metal and Diamond Mining Effluent Regulations* (MDMER) prior to their use

as mine waste management areas. After extensive public consultation with each of the six designated Indigenous communities, PGI received notification in the spring of 2020 that these waterbodies were listed on Schedule 2 of the MDMER as of June 2020.

The proposed changes in relation to the on-site electrical power generation facility to provide power to the Magino Gold Mine will not result in any changes to the tailings management, waste rock management, or water quality control pond; therefore, further approvals from ECCC regarding the MDMER are not required as a result of the change to the Designated Project.

3.2.3 Transport Canada

Transport Canada determined that the Magino Gold Project will not interfere with waterway navigability and is therefore not subject to authorization pursuant to the *Navigation Protection Act* (now the *Canadian Navigable Waters Act*).

The proposed changes in relation to the on-site electrical power generation facility are within the previously approved study area and do not change that determination.

3.2.4 Ministry of the Environment, Conservation and Parks (MECP)

One of the key provincial authorizations requiring substantial investigation and study was the *Endangered Species Act, 2007* permit related to the loss of sensitive bat habitat at the Magino Gold Mine site. After forming a technical working group in late 2018, PGI, together with its consultants, began working closely with the provincial biologists to identify the options for providing benefits to bats that will lose habitat as a result of the mine development. Through the technical review and consultation process, PGI agreed to construct an artificial bat habitat (hibernaculum) during the mine construction phase to off-set the loss of the old mine adit on the property that was deemed to be species at risk bat habitat in 2017, and a permit was granted by the province in November of 2019, enabling the Magino Gold Project to proceed. The construction of the bat hibernaculum and the technical details associated with the design have been formally approved by the MECP species at risk biologists, and the hibernaculum must be constructed by the summer of 2022 to comply with the conditions of the permit.

The proposed changes in relation to the on-site electrical power generation facility to provide power to the Magino Gold Mine will not further impact bat habitat or the creation of the artificial bat habitat (hibernaculum) required as a condition of the MECP permit.

Through recent discussion with the MECP's Environmental Assessment Branch, which administers the provincial *Environmental Assessment Act*, PGI has confirmed that the power generation proposal will not require a new Ontario Individual EA since power generated at the Magino Gold Mine will be used on site only.

As part of the permitting process for the new LNG power plant facility, PGI reviewed the power generation equipment and emissions against the existing construction and operations for a provincial Environmental Compliance Approval (ECA) for air and noise. In consultation with the MECP, the regulator has verified that an amendment to the ECA will not be required as a result of the LNG power plant, since the on-site power plant is considered ancillary equipment and covered under the limited operational flexibility (LOF) condition of the ECA.

3.2.5 Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNR)

In consultation with the Province of Ontario, the MNR Class EA for Resource Stewardship and Facility Development Projects (RSFD) was applied to the Magino Gold Project since the site is a former mine site. PGI submitted a revised project description to the MNR in November 2016. After conclusion of the Class EA and associated consultation process, the MNR issued the Approval of the Statement of Completion (Category B Project) on March 13, 2019, enabling provincial permitting associated with the Magino Gold Project to be initiated.

The Ministry, now called the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNR) has since confirmed that it has no additional EA requirements in relation to the on-site electrical power generation facility to provide power to the Magino Gold Mine.

The *Ontario Mining Act* deals with surface water and groundwater, as well as biological factors under Parts 5 and 6, Schedule 1 of Ontario Regulation 240/00, as amended by O. Reg. 304/07 Mine Development and Closure, under Part VII of the Act. In Ontario, proponents cannot commence, or recommence, mining operations until a certified closure plan and associated financial assurance are in place. The Closure Plan must be certified by both the professional authors as well as the company executive upon submission in final form for filing with the province. PGI began engagement with the then provincial Ministry of Energy, Northern Development and Mines (ENDM) in 2018 related to the timeline for submission of the Magino Mine Closure Plan and associated financial assurance, which must be provided for closure and rehabilitation of the Magino Gold Project along with the certified closure plan. The financial assurance amount will cover the cost of closure and rehabilitation and be provided at part of the filing of a certified closure plan to be acknowledged by the Ministry in order to satisfy the requirements under the *Mining Act*.

Based upon the detail provided as part of both the 2017 Magino Feasibility Study as well as the associated EA report, a draft Mine Closure Plan was developed for the mine in 2019. As part of company consultation and engagement with Indigenous communities, the draft Closure Plan was provided to each of the six Indigenous communities in June 2020. Subsequent to consultation with each of the communities the draft was then shared with ENDM prior to formal filing in January 2021. Financial Assurance for Phase 1 of the Magino Gold Project was also provided to ENDM as part of the Closure Plan filing process. Phase 2 financial assurance was filed with the Province during Q2 2022.

It is understood that the proposed addition of the LNG power plan will require an update to the Project Closure Plan and associated bonding and is scheduled to be completed in Q4 2022.

3.3 Ongoing Natural Gas Power Plant Consultation

Under the federal regulation, the newly proposed project component will require the Minister of Environment and Climate Change to undertake a change to the EA Decision Statement.

As part of the federal EA process, PGI is providing this Supplemental Assessment report to the interested Indigenous communities and relevant authorities for review of the assessment of the potential effects of the change to the Designated Project. PGI is considering input received to identify concerns and additional mitigation or follow-up measures, and input received from Indigenous communities to date has been reflected in this report. A Summary of Indigenous Engagement has also been developed to document the discussions and any mitigation modifications that may result. The discussions up to August 15, 2022, are summarized and attached as Appendix A, and will be provided to IAAC in accordance with the Magino Gold Project Decision Statement. Supplemental Assessment consultations are expected to be concluded during Q3 2022.

4.0 EFFECTS ASSESSMENT

The Magino Gold Project Decision Statement (clause 2.1.5) specified that the Proponent shall provide the Agency with:

- *a description of the potential adverse environmental effects of the change(s) to the Designated Project,*
- *the proposed mitigation measures and follow-up requirements to be implemented by the proponent, and,*
- *the results of the consultation with Indigenous groups, Pic Mobert First Nation, and relevant authorities.*

This section is intended to address the first two bullets. Section 3.3 speaks to the third bullet.

This section describes the approach and methods used to carry out the assessment of potential adverse environmental effects for the new project component. The methodology for this Supplemental Assessment involved the following steps.

- Review the current environmental and socio-economic setting (i.e., baseline conditions), in which the new project component will be constructed and operated.
- Conduct an initial screening of potential environment interactions with the new project component by reviewing the previously assessed environmental and socio-economic Valued Components (VCs) and associated key indicators to determine whether they may interact with the new project component.
- Where interactions are predicted, conduct the effects assessment, including identification of potential effects, recommended mitigation measures, evaluation of residual effects, and determination of their significance if applicable.
- Identify any follow-up and monitoring programs that will be undertaken post-construction to evaluate effectiveness of planned mitigation and address environmental issues identified during operation of the new project component.

4.1 Baseline Conditions Update

Construction of the newly proposed LNG power plant and storage facility is within the previously assessed study area for the Magino Gold Project. The overall mine site construction began in February 2021, with tree clearing and minor earthworks transitioning to major earthworks during Q2 2021. The approximate area proposed for the LNG power plant and storage facility has been cleared, stripped, and graded; thus, biological features have been largely eliminated from the proposed location of the LNG power plant and storage facility. This area no longer represents the naturalized forested area or provides the wildlife habitat previously assessed in the EA process.

The surrounding Regional Study Area is generally as described in the Magino Gold Project EA (PGI 2017a).

4.2 Project-Component and Environment Interactions

The assessment of effects on the environment that may be impacted by the new project component focuses on the environmental and socio-economic VCs that were identified for the EA for the Magino Gold Project, as a Designated Project under CEAA 2012. These were described in the EIS in Chapter 7: Effects Assessment and summarized in Table 7-1: Listing of Proposed Valued Components and Indicators (PGI 2017b). While each VC considered is described in the original EA, only those identified as having potential interactions with the new project component were carried for further evaluation in this Supplemental Assessment.

To determine which VCs warranted further evaluation, the likely project component-environment interactions were identified at a screening level. The screening approach allowed the assessment to focus on the issues of key importance. All relevant works or activities relating to the new project component were analyzed individually to determine if there is a plausible mechanism for an effect on each VC during normal conditions. The analysis was based on professional judgement and experience of the assessment team with regard to the physical and operational features of the proposed LNG power plant and storage facility, and their potential for interaction with the environment. The results are summarized in Table 1.

Where Table 1 identifies those biophysical and socio-economic VCs that are predicted to not interact with the proposed new project component, the rationale for that prediction is included. No further analysis was completed where interactions between the project component and biophysical or socio-economic VCs were not predicted. Where the new project component may potentially interact with the biophysical or socio-economic VCs and where adverse effects are likely or possible, the interactions identified in the table were used to focus the assessment and mitigation of potential effects, which are discussed further in Section 4.3.

Temporal and spatial boundaries for the assessment of each VC are discussed on a case-by-case basis in Section 4.3.

Table 1: Screening of Project Environment Interactions

Environmental Component	Valued Component	Indicators	Potential Adverse Interaction (Y/N)	Description of Adverse Interaction(s)
Atmospheric Environment	Air Quality	Particulate Matter Nitrogen Dioxide Sulphur Dioxide Carbon Monoxide	Y	Construction and operation of the new project component, including transportation of fuel, is expected to increase air emissions. Please refer to Section 4.3.1 for the assessment.
	Noise	Night-time Noise	Y	Construction and operation of the new project component, including transportation of fuel, may increase noise levels at nearby receptors. Please refer to Section 4.3.2 for the assessment.
	Vibration	Air Vibration Ground Vibration	N	Construction and operation of the new project component is not expected to increase vibrations at nearby receptors.
	Light	Light Trespass Sky Glow	N	Construction and operation of the new project component is not expected to increase light trespass or sky glow.

Environmental Component	Valued Component	Indicators	Potential Adverse Interaction (Y/N)	Description of Adverse Interaction(s)
	Greenhouse Gases (GHGs)	Annual GHG Emissions	Y	<p>The operation of the LNG power plant, including transportation of fuel, has the potential to produce GHGs at a higher carbon intensity compared to the purchased grid electricity. The GHG emissions are expected to increase as a result of the new project component.</p> <p>Please refer to Section 4.3.3 for the assessment.</p>
Physical Environment	Terrain and Soils	Terrain and Topography Soil Quality	N	<p>Construction and operation of the new project component are not expected to interact with terrain and soils. The location for the LNG power plant and storage facility has already been cleared, stripped, and graded as part of the previously approved Magino Gold Project.</p>
	Groundwater	Groundwater Levels and Quantity Groundwater Quality	Y	<p>Construction of the new project component may interact with groundwater as some limited blasting for excavation is expected to be required. Groundwater will not be used for construction or operations of the LNG power plant or storage facility.</p> <p>Please refer to Section 4.3.4 for the assessment.</p>

Environmental Component	Valued Component	Indicators	Potential Adverse Interaction (Y/N)	Description of Adverse Interaction(s)
	Surface Water Hydrology	Surface Water Quantity and Flows	N	Construction and operation of the new project component are not expected to interact with surface water quantity and flows as water features are greater than 30 m from approximate the location for the LNG power plant or storage facility.
	Stream and Lake Sediments	Sediment Quality	N	Construction and operation of the new project component are not expected to interact with stream or lake sediments as water features are greater than 30 m from approximate the location for the LNG power plant or storage facility.
	Visual Resources	Visibility	N	Construction and operation of the new project component are not expected to interact with visibility or aesthetics as although the stacks are expected to be approximately 27.5 m above ground level (approximately 5 storeys), they are planned to be only 1.2 m in diameter and the location is visually secluded from receptors.
Biological Environment	Fish and Fish Habitat	Lower Trophic Level Community Aboriginal and Sport Fisheries Species Forage Fish Species	N	Construction and operation of the new project component are not expected to interact with fish and fish habitat (including aquatic species at risk) as water features are greater than 30 m from approximate the location for the LNG power plant or storage facility.

Environmental Component	Valued Component	Indicators	Potential Adverse Interaction (Y/N)	Description of Adverse Interaction(s)
Biological Environment (cont'd)	Terrestrial Vegetation	Upland Forests Rock Barren Vegetation	N	<p>Construction and operation of the new project component are not expected to interact with terrestrial vegetation, wetlands, significant wildlife habitat, migratory and breeding birds, or mammals, including terrestrial species at risk as the location for the LNG power plant or storage facility has already been cleared, stripped, and graded as part of the previously approved Magino Gold Project.</p> <p>There is also potential for wildlife collisions by transport trucks, which is assessed in Section 4.3.5.</p>
	Wetlands	Organic/Peat Accumulating Wetlands Mineral Wetlands		
	Significant Wildlife Habitat	Moose Calving and Feeding Areas Amphibian Breeding Areas Species of Special Concern Habitat		
	Migratory and Breeding Birds	Passerines Marsh Birds Waterfowl Raptors		
	Mammals	Furbearers Moose Carnivores (e.g., Bear, Wolves)		
Species at Risk (Aquatic and Terrestrial)	Whip-poor-will Chimney Swift Little Brown Bat Northern Long-eared Bat			

Environmental Component	Valued Component	Indicators	Potential Adverse Interaction (Y/N)	Description of Adverse Interaction(s)
Social Environment	Population and Demographics	Population Levels and Mobility Population Demographics	N	Construction and operation of the new project component is not expected to interact with population and demographics; it will not result in a measurable change in population.
	Community Vitality	Recreation and Leisure Community Facilities and Services Health and Social Services Adult Education and Training Crime and Public Safety Individual and Family Well-being Community Character	N	Construction and operation of the new project component is not expected to interact with community vitality; it will not result in a measurable change in use of community facilities or services, or otherwise impact community character.
	Infrastructure and Services	Housing Emergency Services (i.e., police, fire, EMS) Utilities (i.e., water, wastewater, waste management) Road Transportation Communications Energy Supply	N	Construction and operation of the new project component is not expected to interact with infrastructure and services. On average, only two to three truck loads per day will be required to bring the LNG into the site via public highways from various existing regional supply points; thus, it will not result in a measurable increase or change in infrastructure.

Environmental Component	Valued Component	Indicators	Potential Adverse Interaction (Y/N)	Description of Adverse Interaction(s)
Economic Environment	Land Use and Tourism	Land Ownership / Tenure Mining Forestry Commercial Tourism and Recreation Commercial Trapping Parks and Protected Areas Other Land Uses	N	Positive economic opportunities may arise from the addition of this project component. Construction and operation of the new project component is not expected to adversely interact with land use and tourism, employment and business opportunities, or government revenues. It will not increase land use or change access to natural resources outside the mine site or have an adverse increase in labour demand, business activities or government revenues.
	Employment and Business Opportunities	Employment (i.e., jobs) and Wage Income Labour Supply Business Activity		
	Government Revenues	Municipal Revenues Provincial Revenues Federal Revenues		
Indigenous Interests	Indigenous Employment and Business Opportunities	Indigenous Employment (i.e., jobs) and Wage Income Aboriginal Labour Supply Aboriginal Education and Training Aboriginal Business Activity (including commercial use of lands and resources)	N	Positive economic opportunities for Indigenous communities may arise from the addition of this project component. Construction and operation of the new project component is not expected to adversely interact with Indigenous employment and business opportunities. It will not have an adverse increase in labour demand, business activities or commercial use of lands or resources.

Environmental Component	Valued Component	Indicators	Potential Adverse Interaction (Y/N)	Description of Adverse Interaction(s)
Indigenous Interests (cont'd)	Traditional Use of Lands and Resources	Hunting Fishing Trapping Gathering (e.g., berries, medicinal plants)	N	Construction and operation of the new project component is not expected to interact with Indigenous traditional use of lands and resources as the location for the LNG power plant or storage facility has already been cleared, stripped, and graded as part of the previously approved Magino Gold Project.
	Indigenous Cultural Activities and Special Places	Archaeological Sites Spiritual Sites Trails and Camps Cultural Activities	N	Construction and operation of the new project component is not expected to interact with Indigenous cultural activities and special places as the location for the LNG power plant or storage facility has already been cleared, stripped, and graded as part of the previously approved Magino Gold Project.
Human Health	Public Health	Risks to Human Health	N	<p>Construction and operation of the new project component is not expected to interact with public health. Specifically, it will not result in increased exposure to air and water contaminants by inhalation or ingestion.</p> <p>Potential interactions as a result of accidents, e.g., from truck traffic, are considered in Section 4.3.6 of the assessment.</p>

Environmental Component	Valued Component	Indicators	Potential Adverse Interaction (Y/N)	Description of Adverse Interaction(s)
Human Health (cont'd)	Worker Safety	Workplace Hazards	Y	<p>Operation of the new project component introduces workplace hazards that could interact with worker safety if an accident or malfunction were to occur. Such scenarios associated with LNG leaks are considered extremely rare events; however, two scenarios have been considered: LNG Transportation Accident and LNG fuel storage failure.</p> <p>Please refer to Section 4.3.6 of the assessment.</p>

4.3 Effects of the Environment on the Project

4.3.1 Air Quality

As described in Section 2.1, PGI is proposing to add a natural gas fired power plant that includes four 5.56 MW Wartsila generators (power plant) in the absence of reliable prime power from API. This process would also include the truck delivery of LNG or CNG to provide fuel for the power plant. The addition of the power plant to the Magino Gold Project would introduce the following sources of emissions:

- Products of natural gas combustion from the four 5.56 MW Wartsila generators.
- Products of diesel combustion from the tailpipes of the truck delivery of LNG or CNG.
- Particulates from the increase in traffic on roadways.

As identified in Table 1, operation of the new power plant is expected to increase air emissions. The following sections describe the assessment of whether these additional emissions will have an adverse effect or change the conclusions of the Magino Gold Project's effects assessment in the previous EA, as outlined in the Meteorology and Air Quality Technical Supporting Document (TSD), dated January 2017 (Air Quality TSD; Golder 2017).

Only the operational phase has been discussed within this section to be consistent with the Air Quality TSD (i.e., construction phase assumed to have lower emissions than the operational phase of the Magino Gold Project and are short in duration).

4.3.1.1 Method of Assessment

To assess the effects of the additional emissions sources to the Magino Gold Project, the following were considered:

- An assessment of the emissions from the power plant and associated activities.
- A qualitative discussion of air dispersion modelling of the power plant sources.
- A qualitative discussion about potential effects on air quality from off-site truck traffic.
- A review of the key assumptions used for the Magino Gold Project operations, as described in the original EA Air Quality TSD.
- A discussion of the power plant findings relative to the existing Magino Gold Project and whether these emissions are likely to change the results of the effects assessment for air quality in the original EA.

4.3.1.1.1 Emission Rates

The methods used for calculating and quantifying the air emissions are as follows:

- **Identify emissions sources:** The identification of emission sources was based on information provided by PGI Project Engineering and the previous Air Quality TSD (Golder 2017).
- **Calculation of emission rates:** Air emission rates were calculated using accepted methods, such as emission factors.

- As part of the EA process, indicators and measures were identified, quantified, and assessed for each VC to determine the predicted effects to the VC. The effects of the Magino Gold Project on air quality were characterized using a series of indicator compounds, which represent compounds that may be emitted due to Magino Gold Project activities in measurable amounts and as noted above, are regulated in Canada through the National Ambient Air Quality Objectives (NAAQO) and/or Canadian Ambient Air Quality Standards (CAAQS). The indicator compounds included the following:
 - Total suspended particulates (TSP)
 - Particulate matter nominally smaller than 10 µm in aerodynamic diameter (PM₁₀)
 - Particulate matter nominally smaller than 2.5 µm in aerodynamic diameter (PM_{2.5})
 - Nitrogen dioxide (NO₂), predicted from emissions of nitrogen oxides (NO_x)
 - Sulphur dioxide (SO₂)
 - Carbon monoxide (CO)

Concentrations of NO₂ were estimated using the Ozone Limiting Method (OLM) as described in the Air Quality TSD.

4.3.1.1.2 Key Emissions Assumptions – Proposed Mine Operations

The following represents the key assumptions from the proposed mine operations as described in the original EA Air Quality TSD. These assumptions represent a theoretical maximum emissions scenario, which may be an over-estimate of actual emissions, but provided PGI the flexibility to implement reasonable design modifications as the Magino Gold Project is constructed. As previously stated in the Air Quality TSD, the throughputs and details provided as assumptions may not be the final design values; however, they were chosen so that the emissions calculated will be conservative and likely would not have to be modified if reasonable design changes are made during construction. The assumptions are as follows:

- Maximum ore extraction rate of 45,200 t/d (based on Year 3 of the Mine Plan).
- Maximum mine rock extraction rate of 141,370 t/d (based on Year 5 of the Mine Plan).
- A maximum ore processing rate of 35,000 t/d for the process plant was assumed.
- Emissions from open pit extraction operations were calculated assuming that the pit is in its final year of operation. This scenario corresponds to the deepest pit depth and longest in-pit haul roads which will in turn have the potential to generate the greatest amount of fugitive dust emissions.
- The longest haul truck routes on surface were assessed which will have the potential to generate the greatest amount of fugitive dust emissions.
- Propane gas used to provide comfort heating.
- Particulate outlet loading concentrations for dust collectors were assumed to be less than 5 mg/m³.
- Exhaust emissions from non-road equipment will meet the Tier 3 emission standards for off-road diesel engines. This is a conservative assumption as new equipment purchased in 2014 and later need to meet the more stringent Tier 4 standards, the federal air emissions standards for road diesel engines promulgated under the *Canadian Environmental Protection Act* (1999).

The above assumptions result in an emissions scenario that is considered conservative, with a low likelihood to underestimate the emissions from the Magino Gold Project. The Air Quality TSD contains a full description of the assumptions for this assessment.

This Supplemental Assessment will review whether the power plant and its associated processes can be considered to have an effect on Air Quality relative to the other sources and assumptions in the original Air Quality TSD.

4.3.1.2 Emission Rate Estimates for the Power Plant Sources

Emission rate estimates were prepared for the additional sources from the power plant to assess the effects relative to the emission rates presented in the original Air Quality TSD. Table 2 presents the emission estimates from the power plant, additional fuel trucks delivering LNG or CNG, and the increased road dust from vehicle traffic on the roadways. These emission estimates are based on two 5.56 MW generators operating at 100% and one 5.56 MW generator operating at 25% and represent the worst-case scenario, and are therefore, unlikely to underestimate the worst-case scenario.

For comparison, the Magino Gold Project total emission rates prior to the addition of power plant sources have been presented in both tables.

Table 2: Natural Gas Power Plant Emissions in Comparison to Project Total

Activity	Hourly Emission Rates (g/s)					
	TSP	PM ₁₀	PM _{2.5}	NO _x	SO ₂	CO
Power Plant (4 x 5.56 MW natural gas generators)	0.3	0.001	0.001	4.3	0.007	4.8
Additional traffic tail-pipe	0.1	0.1	0.1	1.9	0.004	1.9
Fugitive dust from roads	0.2	0.04	0.004	—	—	—
Additional Power Plant Project Emissions Total	0.6	0.1	0.1	6.2	0.01	6.7
<i>Magino Gold Project Previously Approved Project Total</i>	197	63.7	8.9	72.9	1.0	63.3
Additional Percentage of Magino Gold Project	<1%	<1%	1.1%	8.5%	1%	10.6%

“—” indicates no emission estimate

For comparison purposes, emission estimates assuming equivalent power output from diesel generators in the power plant are provided in Table 3. As shown, relying on diesel generation leads to notable emissions above the previously approved project total, supporting the selection of LNG or CNG based power generation in the absence of reliable prime power from API.

Table 3: Diesel Power Plant Emissions in Comparison to Project Total

Activity	Hourly Emission Rates (g/s)					
	TSP	PM ₁₀	PM _{2.5}	NO _x	SO ₂	CO
Diesel Power Plant (12.5 MW diesel generators)	1.5	1.5	1.5	50.8	0.03	11.6
Additional traffic tail-pipe	0.1	0.1	0.1	1.9	0.004	1.9
Fugitive dust from roads	0.2	0.04	0.004	—	—	—
Additional Power Plant Project Emissions Total	1.8	1.6	1.6	52.7	0.03	13.5
<i>Magino Gold Project Previously Approved Project Total</i>	197	63.7	8.9	72.9	1.0	63.3
Additional Percentage of Magino Gold Project	<1%	2.5%	18%	72.3%	3%	21.3%

“—” indicates no emission estimate

The detailed calculations to support power plant emissions have been provided in Appendix B. Estimates related to the fugitive road estimates and tailpipe from the fuel delivery trucks followed the same methods as those presented in the Air Quality TSD.

4.3.1.3 Magino Gold Project Previous Effects Assessment

Due to the nature of the air quality assessment and the fact that the mitigation measures inherent to the Magino Gold Project design, outlined in the Air Quality TSD, were already incorporated into the assessment, all of the effects predicted by the dispersion modelling assessment in the Air Quality TSD were considered residual effects. Residual effects are considered those likely to remain after the implementation of mitigation measures. Each of the residual effects was assessed for significance in the next section.

The significance effects assessment or residual air quality effects for the Magino Gold Project, as presented in the Air Quality TSD is provided in the following Table. All indicator compounds were assessed as 'Not Significant' for their overall significance of effect. It is important to note that this table and footnotes as presented is the result of the assessment prior to the addition of the power plant and accurate as of January 2017.

Table 4: Significance Assessment of Residual Air Quality Effects for the Project Assessment of Residual (Table 5.4-2 in Golder Air Quality TSD, January 2017)

Indicator		Magnitude Level for Consideration	Geographic Extent	Frequency	Overall Significance of Effect
Compound	Averaging Period				
TSP	24-hour	High	Low	Low ^(b)	Not Significant
	Annual	Medium	— ^(a)	—	Not Significant
PM ₁₀	24-hour	High	Low	Medium ^(c)	Not Significant (monitor to confirm)
PM _{2.5}	24-hour	High	Low	Low ^(d)	Not Significant
	Annual	Medium	—	—	Not Significant
NO ₂	1-hour	High	Low	Low ^(e)	Not Significant
	24-hour	Medium	—	—	Not Significant

Indicator		Magnitude Level for Consideration	Geographic Extent	Frequency	Overall Significance of Effect
Compound	Averaging Period				
	Annual	Medium	—	—	Not Significant
SO ₂	1-hour	Low	—	—	Not Significant
	24-hour	Low	—	—	Not Significant
	Annual	Low	—	—	Not Significant
CO	1-hour	Low	—	—	Not Significant
	8-hour	Low	—	—	Not Significant

- a) “—” indicates that effects criteria not required to determine significance.
- b) Of the 1,827 days of 24-hour predictions, 3.4% of the days were predicted to have high magnitudes for this indicator.
- c) Of the 1,827 days of 24-hour predictions, 22.7% of the days were predicted to have high magnitudes for this indicator.
- d) Of the 1,827 days of 24-hour predictions, 1.6% of the days were predicted to have high magnitudes for this indicator.
- e) Of the 43,800 hours of 1-hr predictions, 0.2% of the hours were predicted to have high magnitudes for this indicator.

For the 1-hour NO₂ averaging period, the magnitude was assigned to be ‘High’. An assignment of ‘High’ for the 1-hour NO₂, represented predicted concentrations (including the background) to be in the range of greater than 400 ug/m³. In the local study area, there were predicted concentrations that were higher than the NAAQO/CAAQS, but none in the Magino Gold Project or regional study areas. However, the 1-hour NO₂ concentration was assigned an overall significance of effect of ‘Not Significant’ due to its low geographic extent and low frequency of occurrence. For the 24-hour and annual averaging periods of NO₂, the magnitude was assigned to be ‘Medium’ as the predicted concentrations were greater than 50% of the criteria but not above it. Similarly, the 24-hour and annual NO₂ concentration was assigned an overall significance of effect of ‘Not Significant’ due to its low geographic extent and low frequency of occurrence.

The 1-hour and 8-hour CO averaging period was assigned a magnitude of ‘low’ due to the predicted concentrations in all study areas below 50% of the criteria including the background. Similar to NO₂, an overall significance of effect of ‘Not Significant’ was assigned.

Assessment of All Indicator Compounds Except CO and NO₂

As presented in Table 2, the additional power plant emissions are all 1.1% or less of the Magino Gold Project emissions, with the exception to NO_x and CO. All indicator compounds other than NO_x (assessed as NO₂) and CO are expected to have an insignificant change in effect on air quality due to their negligible emissions.

Assessment of CO and NO₂

With the addition of the power plant, it is estimated that the Magino Gold Project emissions will increase by 10.6% for CO. Given that the Magino Gold Project was assigned a low magnitude and assessed as having no overall significant effect, it is unlikely that this assessment would change with an increase in CO emissions of 10.6%. Therefore, it is expected that the addition of the power plant will not result in a significant overall effect.

With the addition of the power plant, it is estimated that the Magino Gold Project emissions will increase by 8.5% for NO_x (assessed as NO₂ using OLM). Unlike, for CO, NO₂ was assessed as having a high magnitude but with no overall significant effect. Since the magnitude was assessed as being high, and the emissions of NO_x have increased by 8.5% with the addition of the power plant, the following section considers some mitigation and inherent conservatism within the assessment. However, it still remains unlikely that an increase of 8.5% of NO_x emission will result in a change to the conclusion that there is no significant overall effect NO₂.

US EPA Tier 3 vs Tier 4 Emission Standards

As mentioned in Section 4.3.1.1.2, a conservative assumption of the assessment in the Air Quality TSD was that the emissions from the offroad vehicles were estimated using the US EPA Tier 3 emissions standards (and in some cases Tier 2). It was noted that the offroad vehicle fleet was likely to meet US EPA Tier 4 emission standards prior to the operational phase of the Magino Gold Project due to the phase in of the Tier 4 standards for new vehicles after 2014. The US EPA Tier 4 emissions standards are much more stringent than US EPA Tier 3 emission standards for NO_x. An offroad vehicle fleet that meets the US EPA Tier 4 emissions standards would have significantly lower NO_x emissions in comparison to a fleet that meets the US EPA Tier 3 emissions.

The offroad vehicle fleet represents the largest source of NO_x from the project. Assessing the offroad vehicles using US EPA Tier 4 emissions standards would significantly reduce the NO_x emissions from the Magino Gold Project and subsequent NO₂ concentrations within the study area. For example, an offroad vehicle with a horsepower (hp) rating of greater than 750 (i.e., the haul trucks), has a Tier 2 (no Tier 3 standard for this size) zero state emission factor of 4.1 grams per hp-hour. The Tier 4 (Tier 4FA) emission factor is 2.278 grams per hp-hour (US EPA 2018). Therefore, if PGI were to use offroad vehicle equipment that meets the US EPA Tier 4 emission standards, they could reduce the NO_x emissions estimates from the haul trucks by nearly 50%.

4.3.1.4 Assessment of Effects and Mitigation

The majority of the NO₂ and CO emission sources from the Magino Gold Project are from fugitive sources that result in poor air dispersion (e.g., pit, tailpipe, and haul roads), whereas the power plant emissions will be primarily from tall stacks that result in good air dispersion.

LNG Power Plant Emissions

Emissions resulting from poor air dispersion sources yield higher predicted concentrations in comparison to tall stacks (i.e., point sources). This is due to several factors such as release height, buoyancy from the temperature of the exhaust gases, and vertical momentum of flow that are typical of point sources. Reducing the emissions from poor dispersing sources, while increasing emissions from sources that have good dispersion, is expected to result in an overall reduction in predicted concentrations.

Emission rates estimates of the indicator compounds were prepared for the power plant to assess their overall effect on the Magino Gold Project. The additional power plant emissions are calculated to be 1.1% or less of the overall Magino Gold Project emissions, with the exception to NO_x and CO. All indicator compounds other than CO and NO_x (assessed as NO₂) are expected to have residual effects on air quality that have been assessed to be not significant due to their negligible emissions.

For CO and NO₂, the power plant emissions will result in an increase of emissions of 10.6% and 8.5%, respectively. Given that the Magino Gold Project was assigned a low magnitude and assessed as having no overall significant effect for CO, it is unlikely that this assessment would change with an increase in CO emissions of 10.6% with the addition of the power plant. NO₂ was assessed as having a high magnitude but with no overall significant effect. It remains unlikely that an increase of 8.5% of NO_x emission will result in a significant overall effect with the addition of the power plant. The following are inherent conservatism of the assessment:

- The emissions from the offroad vehicles in the Air Quality TSD were estimated using the US EPA Tier 3 emissions standards (and in some cases Tier 2). It was noted that the offroad vehicle fleet was likely to meet US EPA Tier 4 emission standards prior to the operational phase of the Magino Gold Project. The US EPA Tier 4 emissions standards are much more stringent than US EPA Tier 3 emission standards for NO_x. The offroad vehicle fleet represents the largest source of NO_x from the Magino Gold Project and assessing the offroad vehicles using US EPA Tier 4 emissions standards would significantly reduce the NO_x emissions from the Magino Gold Project and subsequent NO₂ concentrations within the study area.

The majority of the NO₂ and CO emission sources from the Magino Gold Project are from fugitive sources that result in poor air dispersion (e.g., pit, tailpipe, and haul roads), whereas the power plant emissions will be primarily from tall stacks that result in good air dispersion. Emissions resulting from poor air dispersion sources yield higher predicted concentrations in comparison to tall stacks (i.e., point sources). This is due to several factors such as release height, buoyancy from the temperature of the exhaust gases, and vertical momentum of flow. Reducing the emissions from poor dispersing sources, while increasing emissions from sources that have good dispersion, is expected to result in an overall reduction in predicted concentrations.

In addition, PGI was issued ECA number 5420-BKFMGV on 3 December 2020, for the Magino Gold Project. The Magino Gold Project's current Emission Summary and Dispersion Modelling (ESDM) Report and Noise Screening Documents, which were submitted as part of the ECA application, were prepared by Golder Associates Ltd. (Golder) and are dated October 2019. PGI retained Golder to assess its section 9 *Environmental Protection Act* (EPA) requirements and is committing to satisfy section 9 EPA requirements prior to operating the power plant. In consultation with the MECP, the regulator has verified that an amendment to the ECA will not be required as a result of the LNG power plant.

Off-site Truck Traffic Emissions

With respect to potential effects on air quality from off-site truck traffic in the vicinity of the project, a technical assessment of potential air and noise emissions associated with vehicular traffic along Goudreau Road during the Project was previously completed (Golder 2018). That assessment conservatively assumed a maximum of 50 daily and eight hourly heavy truck trips along Goudreau Road (the main Project access road from Dubreuilville) during the Project. In considering the calculated emissions and dispersion modelling results from fugitive road dust and vehicle tailpipe exhaust, the assessment concluded that potential effects from this volume of traffic are not likely to cause significant environmental effects on air quality or noise during the Project along Goudreau Road. As previously indicated, on average, only two to three truck loads per day will be required to bring the LNG into the Project site. Adding this small volume of traffic to the previously assessed traffic volume along Goudreau Road is not likely to change the findings of the previous technical assessment. Furthermore, this amount of traffic on other nearby public roads used to access the Project site is likely insignificant compared to the volume of traffic already travelling these roads.

For the reasons mentioned above, it is unlikely that the addition of the power plant, including the related truck transportation, will result in a change to the overall determination of no significant adverse residual effects for the air quality indicators assessed in the EA.

4.3.2 Noise

As described in Section 2.2, the change to the Designated Project involves commissioning the power plant near the Mine's Mill facility. The construction and operation of the power plant has the potential to impact noise levels at points of reception (PORs) in the vicinity of the Magino Gold Mine site. The nearest PORs, based on the PORs

identified for the noise assessment prepared in support of the 2017 EIS (2017 Noise Assessment), are located approximately 5 km northwest, west, and southwest of the proposed power plant location.

In the 2017 Noise Assessment, noise levels at the identified PORs were predicted using available information through the development of a 3-dimensional noise prediction model. Major noise sources associated with operation of the Mine included heavy mobile equipment (e.g., haul trucks, dozers, loaders), drills, crushing equipment, and sources associated with the Mill. Noise levels were predicted to meet applicable sound level limits from the MECP's *NPC-300 Stationary and Transportation Sources – Approval and Planning* (MECP 2013) at the identified PORs. The Mine received an ECA #5420-BKFMGV from the MECP on December 3, 2020. An acoustic audit was carried out in October 2021 which confirmed the Mine was operating within compliance of the noise limits set out in the ECA at the time of the site visit.

Sources of noise associated with the operation of the power plant include the following:

- Four enclosed 5.56 MW generators, each with an outdoor liquid to air heat exchanger, exhaust stack, and two air intakes.
- LNG or CNG truck traffic associated with fuel for the power plant. Both the LNG and CNG will be trucked to the site via public highways from various existing regional supply points.

Sources of noise during construction are expected to be similar to those operating on the mine site (i.e., heavy mobile equipment). It is expected that noise effects due to the Magino Gold Project's operation phase have the potential to be greater than noise effects due to other phases of the project (i.e., construction). Accordingly, the noise assessment considered the operation phase of the Magino Gold Project.

4.3.2.1 Assessment of Effects and Mitigation

Based on the design of the LNG power plant and expected noise levels of major equipment provided by PGI Project Engineering, expected noise levels from the LNG power plant were considered for the identified PORs and assessed against predicted noise levels from the 2017 Noise Assessment. Consideration was given to the following noise control measures:

- The facades and openings of the generator enclosure are acoustically designed such that occupational noise thresholds are met outside of the generator enclosure.
- Silencers are installed on the generator exhaust stacks and air intakes.

With the implementation of the noise control measures above, and effective consideration of noise levels during detailed design, it is expected that the introduction of the power plant at the mine site will not result in a measurable change in noise levels at the identified PORs when compared to the previously assessed mine activities. It is also expected that noise levels from the mine activities, at the PORs, are anticipated to meet the MECP's applicable sound level limits.

Therefore, the new LNG power plant is not expected to result in significant adverse residual noise effects.

4.3.3 Climate and Greenhouse Gas

The following sections build on the Climate Change Technical Supporting Document (2016 Climate Change TSD; Golder 2016) for the Magino Gold Project. In Section 4.3.3.1, the proposed LNG power plant has been assessed for its influence on the Scope 1 and 2 greenhouse gas (GHG) emissions. In Section 4.3.3.2, the most recent available climate projections have been compared to the climate projections provided in the 2016 Climate Change

TSD to understand how any changes in the projections may modify the climate resilience of the Magino Gold Project.

4.3.3.1 Greenhouse Gas Emissions

The LNG power plant will generate GHGs. The LNG power plant has a higher carbon intensity compared to the purchased grid electricity; hence, the GHGs from the Magino Gold Project are expected to increase. The GHG emissions estimates for the Scope 1 and Scope 2 emission sources associated with the plant were calculated and incorporated into the Magino Gold Project's existing GHG emission inventory. The updated GHG emissions were used to identify the new project component's contributions to the provincial, federal, and global GHG levels, and to identify whether the significance of GHG emissions has changed from the 2016 Climate Change TSD. In addition, the context of the GHG emissions is expanded to consider the applicability of updated federal assessment requirements under the new *Impact Assessment Act* (IAA), which came into force in 2019 (IAA 2019). A comparison between the IAA (2019) and CEAA 2012 is also provided to demonstrate the additional requirements would not change the significance assessment provided below.

4.3.3.1.1 Method of Assessment

GHG emissions for the Magino Gold Project were calculated in the 2016 Climate Change TSD based on emissions estimation methods which follow generally accepted practices for conducting EIAs and, where applicable, the guidance document for Ontario's GHG Emissions Reporting Regulation (O.Reg. 452/09 at the time, now O.Reg.390/18) and for the Government of Canada's GHG Emissions Reporting Program (the GHGRP). The GHG emission calculations methodology used in this assessment is consistent to the one used in the approved 2016 Climate Change TSD and was used to calculate the additional GHG emissions associated with the LNG power plant.

Emissions associated with electricity production from the LNG power plant were included in the stationary and process sources emissions as direct emissions (Scope 1). Emissions associated with the LNG power plant were calculated based on fuel consumption data. Fuel consumption data for the LNG power plant was estimated based on the following specifications and assumptions:

- The total energy demand for the Magino Gold Project is estimated to be 16.5 MW. Approximately 4 MW of power will be supplied by an upgraded API distribution powerline (purchased electricity) and an additional 12.5 MW of energy supply would be met by the LNG power plant.
- There would be a total of four engines used in the LNG power plant with each having a maximum power output of 5,564 kW respectively. This is a conservative estimate as full design load is likely to be met by only three engines. All four engines would not be operating at maximum capacity. It is assumed that the total power output of the natural gas generators would be 12.5 MW based on the energy needs for the Project.
- The annual operating hours for the LNG power plant would be 8,760. This is a conservative estimate as the plant will not operate at full design load continuously throughout the year.
- The engine fuel consumption would be approximately 7,615 BTU/kWh, but it is expected to vary nominally.
- GHG emissions associated with transportation of the fuel used by the LNG power plant are considered Scope 3 and are outside of the scope of this assessment.

The annual carbon dioxide, methane and nitrous oxide emissions from the LNG power plant were calculated using the method described in the 2020 GHGRP Guidance Document (ECCC 2020a). Carbon dioxide emissions were calculated using the following equation:

$$CO_2 = \sum Fuel \times EF \times conversion\ factors$$

Where:

- CO₂ = annual mass of carbon dioxide emissions for liquified natural gas, in tonnes per year;
- Fuel = mass or volume of the liquified natural gas combusted per year;
- EF = fuel type specific carbon dioxide emission factors, in grams of carbon dioxide per volume of fuel (litres or cubic metres); and,
- conversion factors = standard unit conversion factors (e.g., from kilograms to tonnes)

The annual methane and nitrous oxide emissions were calculated using the following equation:

$$CH_4\ or\ N_2O = \sum Fuel \times EF \times 10^{-3}$$

Where:

- CH₄ or N₂O = annual mass of methane (CH₄) or nitrous oxide (N₂O) emissions for liquified natural gas, in tonnes of methane or nitrous oxide per year;
- Fuel = mass or volume of liquified natural gas combusted per year;
- EF = methane or nitrous oxide emission factor by fuel type, in grams of methane or nitrous oxide per volume of fuel (litres or cubic metres); and,
- 10⁻³ = conversion factor from kilograms to tonnes.

4.3.3.1.2 Assessment of Effects and Mitigation

Based on the installation of the LNG plant, the GHG emissions for the Magino Gold Project are projected to increase. Table 5 presents the direct and indirect GHG sources identified for the Project boundary.

Table 5: Direct and Indirect Sources Included in the GHG Assessment

Activity	Emission Source	Source Category
Stationary Combustion	Emissions associated with on-site fuel combustion from power generation and comfort heating.	Scope 1 (Direct emissions)
Process Sources	Process related emissions such as emissions from blasting.	Scope 1 (Direct emissions)
Mobile Fleet	Emissions associated with on-site mobile fuel combustion.	Scope 1 (Direct emissions)
Purchased Electricity	Emissions associated with electricity purchase.	Scope 2 (Indirect emissions)

The direct annual GHGs from the stationary combustion, process sources, and mobile fleet sources associated with the project are presented in Table 6. Emissions associated with electricity production from the power plant are included in the stationary combustion. These annual emissions were calculated for the maximum operating

scenario. The GHG emissions from the direct sources represent 99.4% of the project GHG emissions. In the 2016 Climate Change TSD, the direct annual GHG emissions were estimated to be approximately 137,361 tonnes of carbon dioxide equivalent (t CO₂e), which contributed to approximately 89.3% of the Magino Gold Project's total GHG emissions. Due to the presence of the LNG power plant, the direct annual GHG emissions are estimated to be around 180,728 t CO₂e, which contribute around 99.4% to the project's total emissions. The direct annual GHG emissions are projected to increase due to the LNG power plant as emissions associated with it are from on-site electricity generation, which are Scope 1 emissions as illustrated in Table 6.

The indirect source associated with purchased electricity is included for the purpose of comparing project GHG emissions to global emissions. The indirect emissions are those resulting from the amount of electricity required to be purchased from the Ontario grid and reflects the estimated maximum electricity requirement for the mine and associated facilities. The remaining indirect sources that may be associated with the Magino Gold Project, such as land clearing or use of access roads, have not been qualitatively evaluated due to their insignificance in comparison to the other GHG sources. As well, the planned location of the new project component is a brownfield site, which has been cleared as part of the preparation of the mine site. The GHG emissions from purchased electricity are calculated based on an annual average emission factor for the Ontario grid, published in the National Inventory Report 1990-2019 by Environment Canada (ECCC 2021). Total emissions are presented as CO₂e, as separate emission factors for CO₂, CH₄, and N₂O were not published. The indirect GHGs are presented in Table 6. The GHG emissions from indirect sources represent 1.8% of the project GHG emissions. In the 2016 Climate Change TSD, the indirect annual GHG emissions were estimated to be approximately 16,381 t CO₂e, which contributed to approximately 10.7% of the Magino Gold Project's total GHG emissions. Due to presence of the LNG power plant, the indirect annual GHG emissions are estimated to be around 1,051 t CO₂e, which contribute around 0.6% to the project's total emissions, as illustrated in Table 6. The indirect annual GHG emissions are projected to decrease as the amount of electricity that would be purchased from the grid would be approximately 24% of the total energy demand.

Table 6: Direct and Indirect Annual Project Greenhouse Gas Emissions from Significant Sources for Maximum Operating Scenario

Activity	Emissions (tonnes)					2016 CO ₂ e*
	CO ₂	CH ₄	N ₂ O	CO ₂ e	% of Project Total	
Stationary Combustion	43,827	0.9	0.8	44,078	24.2 %	3,882
Process Sources	3,186	n/a	n/a	3,186	1.8%	n/a
Mobile fleet	132,183	7.4	3.7	133,464	73.4 %	133,478
Total Direct Project GHG Emissions	179,197	8.3	4.4	180,728	99.4 %	137,361
Purchased Electricity	1,051	n/a	n/a	1,051	0.6%	16,381
Total Indirect Project GHG Emissions	1,051	n/a	n/a	1,051	0.6%	16,381

Note: The 2016 CO₂e emissions come from the 2016 Climate Change TSD, n/a = not applicable

A comparison of the GHG emissions from the project to the annual GHG emissions (in CO₂e) for Ontario, Canada and globally is provided in Table 7. Data for Ontario and Canada GHG releases are provided by the National Inventory Report 1990-2019 by Environment Canada (ECCC 2021). The global baseline emissions for the

year 2000 were based on IPCC 2000 (Nakicenovic and Swart 2000). The GHG emissions from the project are a very minor contribution to the totals reported for the provincial and federal reporting programs.

In the 2016 Climate Change TSD, the annual GHG emissions for Ontario and Canada were based on the National Inventory Report 1990-2011 by Environment Canada (Environment Canada 2013), while the global GHG emissions baseline was based on IPCC 2000 (Nakicenovic and Swart 2000). Based on the baselines used in the 2016 Climate Change TSD and the updated baselines used in this report, the overall emission contributions to the global, provincial, and federal levels are similar to the ones assessed for the previously as illustrated in Table 7.

Table 7: Comparison of the Project Greenhouse Gas Emissions to Provincial, Canadian and Global Totals

Source	GHG Emissions (kt CO ₂ e)	Estimations from 2016 Climate Change TSD
Global GHG Emissions	16,927,000	16,927,000
Canada-wide GHG Emissions	730,000	732,000
Ontario-wide GHG Emissions	163,000	170,200
Project GHG Emissions	181.8	153
Comparison to Global Total	0.001%	0.001%
Comparison to Canada-wide Total	0.02%	0.02%
Comparison to Ontario Total	0.1%	0.1%

Note:

- The global emissions data for the 2016 Climate Change TSD and this assessment is based on the year 2000 (Nakicenovic and Swart 2000)
- The national and provincial emissions data for the 2016 Climate Change TSD was based on the year 2011 (Environment Canada 2013), while the national and provincial emissions data used in this report is based on the 2019 year (ECCC 2021).

Based on this analysis, there is no impact to the significance assessment from the previous 2016 Climate Change TSD, based on the updated GHG emissions.

The monitoring and commitments for GHG emissions would be consistent with the ones provided in the previous 2016 Climate Change TSD.

4.3.3.1.3 Qualitative Assessment of Federal Components

The following provides a discussion of GHG emissions for the project in the context of an Upstream Assessment, Best Available Technology/Best Environmental Practice (BAT/BEP) Determination, and Net-Zero Plan. While these components are not strictly required under CEAA 2012, it is important to qualitatively discuss their applicability to the project. Further comparison between requirements for CEAA 2012 and IAA 2019 are provided in Section 4.3.3.1.4, building on the qualitative discussions presented below.

Upstream Assessment

In accordance with the Strategic Assessment of Climate Change (SACC 2020), an upstream GHG emission assessment is required for the project if the upstream emissions are likely to exceed 500 kt CO₂e a year. Based on the project's GHG calculations provided in Section 4.3.3.1.2, the project upstream emissions are expected to be below the threshold provided by the SACC (Government of Canada 2020), and therefore, an upstream assessment would not be required for the project. The Magino Gold Project has already received approval under CEAA 2012, and the addition of the LNG plant is not likely to notably increase the upstream emissions associated with the project or cross the threshold to require an assessment under IAA (2019).

BAT/BEP Determination

As part of the EA for the Magino Gold Project, and in accordance with the Operational Policy Statement Addressing “Purpose of” and “Alternative Means” under the CEAA 2012, the Magino Gold Project EA reviewed alternative options against economic, technical, and environmental impacts of associated alternatives. In this assessment, environmental impacts for alternative solutions in regard to all aspects of the Magino Gold Project’s life cycle were completed. Specifically, the use of renewable energy sources for linear infrastructure. However, renewable energy was determined to not be economically feasible since new infrastructure (e.g., distribution lines, wind turbines) would be required. In turn, an evaluation between diesel power generation and LNG was completed. In this comparison, associated GHG emissions were evaluated, and it was identified that LNG power generation was the preferred alternative due to LNG power production having lower GHG emissions and production costs. The Magino Gold Project will continue to monitor the potential for purchasing electricity from lower carbon power sources, where available. When available, the Project will switch to fully purchasing electricity from the upgraded API distribution line and will no longer rely on the LNG plant for primary power production.

LNG power generation shares several advantages with diesel power in that both energy sources provide a steady and reliable power supply. However, LNG has additional advantages in the forms of lower carbon pricing costs, and reduced lifecycle GHG emissions of up to 23% compared to diesel fueled electricity (McFarlan 2020). Further emission reductions are possible through the incorporation of renewable natural gas, which could reduce LNG emissions by an additional 12% (McFarlan 2020). GHG emissions were also calculated for the Project assuming that the power plant would rely on diesel generators for the 12.5 MW of power output (Table 7). The GHG emissions from diesel powered power plant were estimated to be 78,402 t CO₂e compared to the LNG power plant, which were estimated to be 43,382 t CO₂e. Relying on diesel generators would increase the GHG emissions from power generation by almost a factor of approximately 2 compared to the proposed LNG power plant. This further supports the selection of the LNG power plant in the absence of reliable prime power from API.

Table 8: Comparison of the Greenhouse Gas Emissions By Fuel Source for the Power Plant

Fuel Source	GHG Emissions (tonnes CO ₂ e)
Natural Gas ^(a)	43,382
Diesel ^(b)	78,402

Note:

a) Emission factors from Canada National Inventory Report 1990 - 2019 - Part 2 (ECCC 2021). b) Emission factors from AP 42: Compilation of Air Emissions Factors, Table 3.4-1 (EPA 2009)

An LNG plant will require the liquified natural gas fuel to be transported to site by truck, which will create increased highway traffic, as well as increased GHG emissions through mobile fuel combustion by said transport trucks. However, these emissions will not fall within the Scope 1 and Scope 2 emission categories considered by the Project in Section 4.3.3.1.2. The emissions fall under Scope 3, as the transportation of fuel will be controlled by a contracted third party, neither directly owned nor controlled by the project. Scope 3 emissions are not included in the scope of this assessment. The Magino Gold Project will work with fuel suppliers to reduce GHG emissions associated with fuel transportation where possible and will apply relevant GHG mitigation measures for on site mobile fleets to the supplier fleets.

Therefore, a formal BAT/BEP Determination for the new project component is not applicable as it was evaluated as part of the Magino Gold Project EA.

Net-Zero Plan

In accordance with SACC (2020) Net-Zero Plans are required for all projects that the lifetime extends beyond 2050, to align projects with Canada's net-zero emissions goal by 2050. Projected lifetime of operation for the Magino Gold Project including construction, operations, and mine decommissioning is 18-21 years and is scheduled to be complete prior to 2050. As a result, the project does not require a Net-Zero Plan under SACC (2020).

4.3.3.1.4 Comparison of Climate Change Regulatory Requirements for Federal EAs

The 2016 Climate Change TSD has been completed to satisfy the CEAA 2012. In October 2020, the federal government released the Strategic Assessment of Climate Change (SACC) guidance document on how to incorporate climate into EAs under the new IAA, which came into force in 2019. Within the SACC there are additional requirements for proponents compared to those within CEAA 2012. In August 2021, the federal government has released the draft Technical Guide Related to the Strategic Assessment of Climate Change: Guidance on Quantification of Net GHG Emissions, Impact on Carbon Sinks, Mitigation Measures, Net-Zero Plan, and Upstream GHG Assessment.

In comparison to the guidance under the new IAA, there is limited guidance available in the CEAA 2012 on incorporating climate change into EAs. The main source of guidance is Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners (Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment, 2003) and the Canada Gazette, Part I, Volume 150, Number 12 (estimating upstream greenhouse gas (GHG) emissions).

The following tables outline the climate change requirements under both CEAA 2012 and IAA, highlighting the key differences between the two Acts, and provide comments and recommendations regarding the differences that could be addressed to fill any gaps identified within the 2016 Climate Change TSD completed, as well as the proposed LNG power plant.

Table 9: Greenhouse Gas (GHG) Emissions

CEAA 2012	IAA	Key Differences	Comments and Recommendations
<ul style="list-style-type: none"> ▪ Preliminary scoping for GHG considerations (provide rationale on level of analysis completed). ▪ Identify GHG considerations: jurisdictional considerations, industry profile and project specifics. ▪ Assess GHG considerations: direct and indirect GHG emissions, and large-scale effects on carbon sinks. ▪ GHG Management Plans: jurisdictional considerations and project specifics. ▪ Monitoring, Follow-up, and Adaptive Management: jurisdictional considerations and project specifics. 	<ul style="list-style-type: none"> ▪ A description of each of the project’s main sources of GHG emissions and their estimated annual GHG emissions over the lifetime of the project. ▪ Net GHG emissions by year for each phase of the project based on the project’s maximum throughput or capacity. Net GHG emissions are defined as the combination of direct GHG emissions, acquired energy GHG emissions, CO₂ captured and stored, avoided domestic GHG emissions and offset credits (if applicable). ▪ Emission intensity including the quantity and a description of the “units produced” to estimate the emission intensity for each year of the operation phase of the project. ▪ Methodology, data, emission factors and assumptions used to quantify each element of the net GHG emissions. ▪ A discussion on the development of emissions estimates and uncertainty assessment. ▪ A description of large sources of GHG emissions that may be the consequence of accidents or malfunctions. 	<ul style="list-style-type: none"> ▪ GHG emissions provided for each year of the project under IAA (2019) and switches the focus to net GHG emissions of the project. ▪ Impact on carbon sinks is considered a separate requirement under IAA (2019) and goes beyond the large-scale sources. See discussion under next component. ▪ Emission intensity provided for each year of the project. ▪ Description of large sources of GHG emissions from accidents and malfunctions. 	<ul style="list-style-type: none"> ▪ GHG emissions could be provided for each year of the project, but the maximum year was provided for each phase. Having emissions for each year would not change the approach for the significance assessment. ▪ Emissions intensity is not included as an assessment indicator and industry benchmarks can be challenging to find. ▪ A description of large sources of GHG emissions from accidents or malfunctions is not included in the significance assessment. <p>Actions Recommended:</p> <ul style="list-style-type: none"> ▪ Add statements related to GHG emissions in the section describing accidents and malfunctions (Section 4.3.6)

Table 10: Impact of the Project on Carbon Sinks

CEAA 2012	IAA	Key Differences	Comments and Recommendations
<ul style="list-style-type: none"> ■ Consider impacts to large-scale carbon sinks, including emission reduction or offset measures, in line with jurisdictional policies and regulations. 	<ul style="list-style-type: none"> ■ Provide a qualitative description of the project’s positive or negative impact on carbon sinks. ■ Description of project activities in relation to significant landscape features such as topography, hydrology, and regionally dominant ecosystems. ■ Land areas directly impacted by the project, by ecosystem type (forests, cropland, grassland, wetlands, built-up land) over the course of the project lifetime; this includes the areas of restored or reclaimed ecosystem(s). ■ Initial carbon stocks in living biomass, dead biomass, and soils (by ecosystem type) on land directly impacted by the project over the course of the project lifetime. ■ Fate of carbon stocks on directly impacted land, by ecosystem type: immediate emissions, delayed emissions (timeframe), storage (e.g., in wood products). ■ Anticipated land cover on the impacted land areas after the project is in place. ■ Technical guidance will be published to provide further guidance but is currently not available. 	<ul style="list-style-type: none"> ■ IAA (2019) requires a far more detailed study of the impacts of carbon sinks compared to the quantification of large-scale impacts required under CEAA 2012. 	<ul style="list-style-type: none"> ■ The Magino Gold Project site considered in the 2016 Climate Change TSD was a brownfield site with little disturbance of carbon sinks. Similarly, the LNG Plant footprint is currently a brownfield site. Actions Recommended: ■ No additional actions required at this time with brownfield status at the site of the new project component.

Table 11: Impact of the Project on the Federal Emissions Reduction Efforts and on Global GHG Emissions

CEAA 2012	IAA	Key Differences	Comments and Recommendations
<ul style="list-style-type: none"> ▪ Not directly included but could be part of understanding the jurisdictional policies. ▪ Guidance states the impact of one project on a global scale cannot be measured (NTD: this is no longer an accepted argument to solely focus on the global emissions). 	<ul style="list-style-type: none"> ▪ An explanation of how the project may impact Canada's efforts to reduce GHG emissions (if applicable), including explaining how the project would result in GHG emission reductions in Canada. ▪ A discussion on how the project could impact global GHG emissions, if applicable (e.g., carbon leakage, displaced international emissions) 	<ul style="list-style-type: none"> ▪ New element under IAA (2019) 	<ul style="list-style-type: none"> ▪ Not applicable to this project under CEAA 2012, but project GHG emissions are compared to provincial, federal, and global emissions to understand impact on the emissions. Small contribution will not impact Canada's efforts to reduce GHG emissions. <p>Actions Recommended:</p> <ul style="list-style-type: none"> ▪ No additional actions needed under CEAA 2012 and no anticipated impact to Canada's efforts.

Table 12: Best Available Technologies / Best Environmental Practices Determination

CEAA 2012	IAA	Key Differences	Comments and Recommendations
<ul style="list-style-type: none"> ▪ Not required. 	<ul style="list-style-type: none"> ▪ BAT/BEP are defined as the most effective technologies, techniques, or practices, including emerging technologies, that can be technically and economically feasible for reducing GHG emissions during the lifetime of the project. ▪ Listing of all technologies and practices applicable. ▪ Technical feasibility assessment for all listings. ▪ GHG reduction potential assessment. ▪ Economic feasibility assessment and additional considerations (e.g., environmental, social) ▪ Selection of BAT/BEP with justification. ▪ Review by the IAAC or the relevant lifecycle regulator. ▪ Include conclusions in the Impact Statement ▪ Technical guide will be published to provide additional information on process used to complete component. 	<ul style="list-style-type: none"> ▪ New requirement under IAA (2019). 	<ul style="list-style-type: none"> ▪ Project has minimal technologies and practices to address. With electrical grid power no longer possible, LNG power plant is the preferred alternative power source based on the specific constraints of the project. See statements provided in Section 4.3.3.1.4. <p>Actions Recommended:</p> <ul style="list-style-type: none"> ▪ No additional actions required with statement included in Section 4.3.3.1.4 and requirements of CEAA 2012.

Table 13: Upstream GHG Emissions Assessment

CEAA 2012	IAA	Key Differences	Comments and Recommendations
<ul style="list-style-type: none"> ▪ Only required for oil and gas projects according to the 2016 Gazette requirements. 	<ul style="list-style-type: none"> ▪ Required if emissions are greater than or equal to the threshold outlined in SACC. ▪ Part A is a quantitative estimate of upstream GHG emissions associated with the project based on the project's maximum throughput or capacity (new project. This requires information on the methodology, data, assumptions, and approach to estimating those upstream GHG emissions. ▪ Part B is a qualitative discussion about the incrementality of the upstream GHG emissions estimated in Part A. It provides the conditions under which the upstream emissions estimated in Part A could be expected to occur regardless of whether the project proceeds. 	<ul style="list-style-type: none"> ▪ New requirement under IAA (2019). 	<ul style="list-style-type: none"> ▪ Project has already received approval under CEAA 2012, and the addition of the LNG plant is not likely to notably increase the upstream emissions or cross the threshold to require an assessment. See statements provided in Section 4.3.3.1.4. <p>Actions Recommended:</p> <ul style="list-style-type: none"> ▪ No additional actions required with statement included in Section 4.3.3.1.4 and requirements of CEAA 2012.

Table 14: Net-Zero Plan

CEAA 2012	IAA	Key Differences	Comments and Recommendations
<ul style="list-style-type: none"> ▪ Not required under CEAA 2012. 	<ul style="list-style-type: none"> ▪ If operating beyond 2050, provide a credible plan that describes how the project will achieve net-zero emissions by 2050. The plan will complement and be informed by the GHG mitigation measures planned by the proponent. ▪ The plan to achieve net-zero emissions does not apply to upstream emissions. ▪ Identify supportive actions from the government needed to achieve net-zero emissions. ▪ Can refer to a corporate net-zero plan. ▪ Technical guidance will be published to provide further instructions and details (currently not available). 	<ul style="list-style-type: none"> ▪ New requirement under IAA (2019). 	<ul style="list-style-type: none"> ▪ Project is not currently planning to operate beyond 2050 other than monitoring and therefor a Net-Zero Plan is not required under IAA. See statements provided in Section 4.3.3.1.4. <p>Actions Recommended:</p> <ul style="list-style-type: none"> ▪ No additional actions required with statement included in Section 4.3.3.1.4 and planned project lifetime.

Table 15: GHG Mitigation Measures

CEAA 2012	IAA	Key Differences	Comments and Recommendations
<ul style="list-style-type: none"> ▪ Considered in the GHG Management Plan requirements with no specific guidance. 	<ul style="list-style-type: none"> ▪ A description of any additional mitigation measures (such as direct air capture technology and afforestation) that will be taken to mitigate remaining GHG emissions, after implementing the net-zero plan. ▪ A description of any offset credits that have been or will be obtained to mitigate remaining GHG emissions, if applicable. Proponents may also provide information on their intent to acquire or generate international offset credits. Offset credits must comply with the criteria in Section 3.1.1 of the SACC, and will be considered as the last option in terms of GHG mitigation measures. ▪ A description of measures taken to mitigate the project’s impact on carbon sinks, including measures to restore disturbed carbon sinks, if applicable. ▪ Subject to the public availability of information, a comparison of the project’s projected GHG emission intensity to the emission intensity of similar high-performing, energy-efficient project types in Canada and internationally. If applicable, the comparison should explain why the emission intensity of the project is different. ▪ A list of the federal, provincial, or territorial GHG legislation, policies or regulations that will apply to the project. 	<ul style="list-style-type: none"> ▪ Essentially a new requirement under IAA (2019) given the level of detail required. ▪ Offsets and comparison of emission intensities not required under CEAA 2012. 	<ul style="list-style-type: none"> ▪ 2016 Climate Change TSD provided the available mitigation measures to reduce emissions from all applicable sources. Offset credits, carbon sinks and emissions intensity comparisons are not discussed as part of this project. However, this does not change the significance assessment. <p>Actions Recommended:</p> <ul style="list-style-type: none"> ▪ No additional assessment is required with project approval under CEAA 2012 and no change in significance with the LNG Plant.

Table 16: Climate Change Resilience

CEAA 2012	IAA	Key Differences	Comments and Recommendations
<ul style="list-style-type: none"> ▪ Preliminary scoping for impacts considerations. ▪ Identify impacts considerations: regional considerations and project sensitivity, including developing climate projections for the project. ▪ Assess impacts considerations: impact on project and risks to public and the environment, including climate-project interactions. ▪ Impacts Management Plans: project specifics and ongoing data clarification, including measures to reduce vulnerability. ▪ Monitoring, Follow-up, and Adaptive Management. 	<ul style="list-style-type: none"> ▪ The scope and timescale of the climate change resilience assessment and of the methods used to identify, evaluate, and manage the climate risks that could affect the project itself and thereby the surrounding environment. ▪ The project’s vulnerabilities to climate change both in mean conditions and extremes over the full project lifetime from project construction to decommissioning. ▪ The resilience assessment should consider multiple scenarios and should discuss the assumptions and data sources used and the confidence or uncertainty in the results. ▪ Technical guidance will be published to provide further instructions and details (currently not available). 	<ul style="list-style-type: none"> ▪ Scopes are quite similar based on industry standard practices for assessing climate vulnerability at the time of writing. 	<ul style="list-style-type: none"> ▪ 2016 Climate Change TSD provided qualitative statements on climate resilience and climate change projections were used by each discipline to identify climate-facility/infrastructure interactions by physical work or activity in their assessments. Climate change identified to not likely have a significant effect on the project. ▪ The climate change projections have been updated based on IPCC’s Fifth Assessment Report (AR5) and Sixth Assessment Report (AR6) to provide high-level, qualitative climate change trends for the project region. Any changes in trends unlikely to modify discipline significance assessments and project resilience. <p>Actions Recommended:</p> <ul style="list-style-type: none"> ▪ No additional action required as part of the EA. ▪ Climate resilience could be assessed quantitatively as part of the continual improvement and risk management practices and policies during planning and operations.

4.3.3.2 Climate Resilience

Following the 2016 Climate Change TSD, the climate change data for the Magino Gold Project region has been updated with the most recent climate change projections available for the region. The updated climate projections were first compared to the previous projections from the 2016 Climate Change TSD and then used to identify the potential changes in climate resilience of the project.

4.3.3.2.1 Method of Assessment

The Intergovernmental Panel on Climate Change (IPCC) is generally considered to be the definitive source of information related to past and future climate change as well as climate science. The IPCC is a United Nations body dedicated to providing an objective, scientific assessment of climate change information, and the potential natural, political, economic, and human impacts of climate change. The IPCC periodically releases Assessment Reports, each of which provides the current state of climate change science, where there is agreement within the scientific community. The Fourth Assessment Report (AR4) was released in 2007, the Fifth Assessment Report (AR5) was released in 2013 and the Sixth Assessment Report (AR6) was released in 2021. The AR6 is the most current complete synthesis of information regarding climate change that include general global and regional trends.

When projecting future climate conditions, there needs to be a consideration of future climate scenarios which is based on assumptions about future GHG emissions and atmospheric concentrations. These future climate scenarios are termed as Representative Concentration Pathways (RCPs). They are described for changing climatic conditions till 2100. In AR5, IPCC (2013) has defined four scenarios, RCP 2.6 (low emissions), RCP 4.5, RCP 6.0, and RCP 8.5 (high emissions). These four RCPs have been described more fully by van Vuuren et al. (2011) in their paper *The Representative Concentration Pathways: An Overview* and are summarized in Table 17.

Table 17: Characterization of Representative Concentration Pathways

Name	Radiative Forcing in 2100	Characterization
RCP 8.5 (high emissions scenario)	8.5 W/m ²	Increasing greenhouse gas emissions over time, with no stabilization, representative of scenarios leading to high greenhouse gas concentration levels.
RCP 6.0	6.0 W/m ²	Without additional efforts to constraint emissions (baseline scenarios).
RCP 4.5	4.5 W/m ²	Total radiative forcing is stabilized shortly after 2100, without overshoot. This is achieved through a reduction in greenhouse gases over time through climate policy.
RCP 2.6 (low emissions scenario)	2.6 W/m ²	“Peak and decline” scenario where the radiative forcing first reaches 3.1 W/m ² by mid-century and returns to 2.6 W/m ² by 2100. This is achieved through a substantial reduction in greenhouse gases over time through stringent climate policy.

Source: Summarized from Van Vuuren et al. 2011.

RCP = representative concentration pathway; W/m² = Watts per square metre.

Compared to IPCC Fifth Assessment Report (AR5), a wider range of scenarios are provided in AR6, covering an updated set of pathways for future climate to unfold which are summarized in Table 18. Where possible, the analogous pathway of the Special Report on Emissions Scenarios (SRES) from the IPCC Fourth Assessment Report (AR4) and the Representative Concentration Pathways (RCP) from the IPCC Fifth Assessment Report (AR5) are noted for each SSP from O’Neil et al. (2014).

Table 18: Characterization of Shared Socioeconomic Pathways (SSPs) in IPCC Sixth Assessment Report

SSP	Radiative Forcing in 2100	Challenges	Global Temperature Change	Characterization
SSP1	1.9 W/m ² 2.6 W/m ²	Sustainability – Low for mitigation and adaptation	1.0°C – 2.4°C	Sustainable development proceeds at a reasonably high pace. Analogous to SRES B1 and A1T scenarios.
SSP2	4.5 W/m ²	Middle of the Road – Medium for mitigation and adaptation	2.1°C – 3.5°C	An intermediate case between SSP1 and SSP3. Analogous to RCP 4.5 scenario.
SSP3	7.0 W/m ²	Regional Rivalry – High for mitigation and adaptation	2.8°C – 4.6°C	Unmitigated emissions are high due to moderate economic growth. Analogous to SRES A2 scenario.
SSP4	3.4 W/m ² 6.0 W/m ²	Inequality – High for adaptation, low for mitigation	—	A mixed world, with relatively rapid technological development in low carbon energy sources in key emitting regions, leading to relatively large mitigative capacity in places where it mattered most to global emissions.
SSP5	8.5 W/m ²	Fossil-fueled Development – Low for mitigation, high for adaptation	3.3 – 5.7°C	In the absence of climate policies, energy demand is high and most of this demand is met with carbon-based fuels. Analogous to SRES A1F1 scenario. Analogous to RCP 8.5 scenario.

Source: O'Neil et al. 2014.

Climate change projections were already developed for the Magino Gold Project in the 2016 Climate Change TSD based on the IPCC Fourth Assessment Report (AR4). However, the following section presents updated climate change projections for the region based on IPCC Fifth Assessment Report (AR5) and IPCC Sixth Assessment Report (AR6). AR6 projections are used to describe future conditions for the Eastern North American region, while AR5 projections are used to describe future conditions for the Magino Gold Project region, as statistically downscaled projections are not yet available from AR6 for the project location. Although AR6 projections are not used for the project location, the climate scenarios in AR5 capture a similar upper level of greenhouse gas emissions and are comparable to the projections in AR6 as described in Table 18.

Future climate projections from peer-reviewed publicly available research for the region were used to describe changing trends. Specifically, data from Government of Canada's most recent report *Canada's Changing Climate Report* (Bush, E. and Lemmen, D.S. 2019) was used to describe trends at a national level, data from *IPCC's Interactive Atlas: Regional Information* (IPCC 2021b) was used to describe trends for the Eastern North America region, while data from *ClimateData.ca* (ECCC 2019) and *Climate Atlas* (Prairie Climate Centre 2019) was used to describe trends for the Magino Gold Project region. The updated projections from these sources were then compared to the projections provided in 2016 Climate Change TSD, to identify if there are any differences in the trends based on updated climate science.

Based on the updated climate change projections, it was identified whether the project's climate resiliency is projected to change in the future. This was assessed by identifying whether any climate-infrastructure interactions from Chapter 9: Effects of the Environment on the Project (PGI 2017c) are likely to change based on the updated climate projections. The approach for assessing the climate resiliency follows a high-level, qualitative assessment similar to the one used in Chapter 9: Effects of the Environment on the Project (PGI 2017c). As a part of a continual improvement process, climate resiliency could be assessed quantitatively in the future and integrated in

the risk management practices and policies during the planning and operations phase. The climate resiliency approach could follow the framework developed in Mining Association of Canada's *Guide on Climate Change Adaptation in Mining Sector* guide (MAC 2021).

4.3.3.2 Updated Climate Change Projections

The updated climate projections for the Magino Gold Project region are summarized in Table 19. Most of the climate change projections indicate a similar trend to the projections provided in 2016 Climate Change TSD, except for projections on freeze-thaw cycles and wind speed. Overall, projections indicate an increase in the mean annual temperatures and precipitation, increase in the frequency and intensity of extreme precipitation events, and an increase in extreme events such as wildfires and storms.

Table 19: Climate Change Projections for the Project Region

Climate Hazard	Trend	Description
Temperature		
Mean Annual Temperature	Increasing	<ul style="list-style-type: none"> In Canada, projections indicate that by 2050s, the annual mean temperature will increase by 1.5°C under RCP 2.6 scenario and by 2.3°C under RCP 8.5 scenario, compared to the 1986-2005 baseline (Bush. E. and Lemmen. D. S. 2019). For the Eastern North America region, the mean annual temperature is projected to increase by under SSP2-4.5 and SSP5-8.5 scenario by 2050s and 2080s, compared to the 1981-2010 baseline (IPCC 2021b). For the Finan Township, under RCP 8.5 scenario, the mean annual temperature is projected to increase by 1.8°C from 2021-2050, by 4.1°C from 2051-2080, and by 5.8°C by 2081-2100, compared to the 1951-1980 baseline (ECCC 2019). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>
Extreme Heat/ Extended Heat Waves	Increasing	<ul style="list-style-type: none"> In Canada, projections indicate a likely increase in the frequency and magnitude of unusually warm days and nights (Bush. E. and Lemmen. D. S. 2019). For the Eastern North America region, days above 35°C are projected to increase under SSP2-4.5 and under SSP5-8.5 scenario, with larger increases by 2081-2100 period, compared to the 2081-2010 baseline (IPCC 2021b). For the Finan Township, days with temperatures above 25°C and 30°C are projected to increase under RCP 4.5 and RCP 8.5 scenarios, with larger increases observed towards the end-of-the century. The minimum and maximum temperatures for the Finan Township are also projected to increase under RCP 4.5 and RCP 8.5, compared to the 2081-2100 baseline (ECCC 2019). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>
Freeze-thaw Cycles	Decreasing	<ul style="list-style-type: none"> In Ontario, by 2050s, the freeze-thaw cycles are projected to decrease under RCP 8.5 scenario (Prairie Climate Centre 2019). For the Finan Township, freeze-thaw cycles are projected to decrease under RCP 4.5 and RCP 8.5 scenario, with larger decreases projected in 2081-2100 period compared to 2021-2050 and 2051-2080 period, compared to the 2081-2100 baseline (ECCC 2019). <p>The projections for freeze-thaw cycles show a decreasing trend, which is not consistent with the trends provided in 2016 Climate Change TSD. The impact of freeze-thaw cycles on the project's resiliency is discussed in Section 4.3.3.2.3.</p>

Climate Hazard	Trend	Description
Extended Cold Spells	Increasing	<ul style="list-style-type: none"> In Canada, the number of cold days and nights has decreased between 1951 to 2010 and is expected to continue decreasing. It is projected that extreme cold days (i.e., days when daily minimum (daytime) temperatures are below the 10th percentile) will likely decrease in the future, as the annual number of extreme warm days and nights continue to increase (Lemmen et al. 2014). For the Finan Township, days with temperatures <-15°C and <-25°C are projected to decrease under RCP 4.5 and RCP 8.5 scenario by 2021-2050, 2051-2080 and 2081-2100 period, compared to the 2081-2100 baseline (ECCC 2019). <p>The projections for extended cold spells were not considered in 2016 Climate Change TSD. The impact of extended cold spells on the project's resiliency is discussed in Section 4.3.3.2.3.</p>
Precipitation		
Mean Annual Rainfall	Increasing	<ul style="list-style-type: none"> In Canada, projections indicate that by 2050s the annual mean precipitation is projected to increase by 5.5% under RCP 2.6 scenario and by 7.3% under RCP 8.5 scenario, compared to the 1986-2005 baseline (Bush. E. and Lemmen. D.S. 2019). For the Eastern North America region, the mean annual precipitation is projected to increase by 3.2% from 2021-2040, 5.3% from 2041-2060, and by 7.1% from 2081-2100 under SSP2-4.5 scenario, compared to the 1981-2010 baseline. Under SSP5-8.5 scenario, the mean annual temperature is projected to increase by 3.3% from 2021-2040, by 5.7% from 2041-2060, and by 9% from 2081-2100, compared to the 1981-2010 baseline (IPCC 2021b). For the Finan Township, under RCP 8.5 scenario, the average annual precipitation is projected to increase by 7% from 2021-2050, by 13% from 2051-2080 and by 17% from 2081-2100, compared to the 1951-1980 baseline (ECCC 2019). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>
Amount and frequency of rain	Increasing	<ul style="list-style-type: none"> In Canada, extreme precipitation events are projected to become twice as frequent by 2050. Extreme precipitation with a return period of 20 years is projected to become a 1-in-10-year event by 2050s under RCP 8.5 scenario, compared to the 1986-2005 baseline (Bush. E. and Lemmen. D.S. 2019). For the Eastern North America region, the maximum 1-day precipitation and maximum 5-day precipitation is projected to increase in the future, compared to the 1981-2010 baseline (IPCC 2021b). For the Finan Township, the maximum 1-day precipitation and maximum 5-day precipitation is projected to increase in the future under RCP 4.5 and RCP 8.5 scenario, compared to the 1951-1980 baseline, indicating an increase in the amount of rainfall in the region (ECCC 2019). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>
Drought	Increasing	<ul style="list-style-type: none"> In Canada, extreme hot temperatures are projected to become more frequent and more intense which could lead to increase in severity of drought-like conditions (Bush. E. and Lemmen. D.S. 2019). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>

Climate Hazard	Trend	Description
Changes in snowfall and snowpack	Decreasing	<ul style="list-style-type: none"> In Canada, projections indicate that it is likely that seasonal snow accumulation will further decrease by 2050s under all emission scenarios due to increase in surface air temperatures (Bush, E. and Lemmen, D.S. 2019). It is likely that there would be decrease the length of time available for snow accumulation during the winter season (Lemmen, Warren, Lacroix, and Bush 2008). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>
Extreme Events		
Wind speed	Increasing	<ul style="list-style-type: none"> The severity and frequency of future wind gust events is expected to change late in the century (Warren and Lemmen 2014). Percentage increase in future daily wind gust events of more than 70 km/h could be 10% to 20% higher compared to the current conditions in most of the regions across Canada, corresponding increases in future hourly wind gust events are projected to be 20% to 30% (Cheng et al. 2014). For Ontario, projections indicate that the frequency of wind gusts is likely to increase, more towards 2080s (Cheng, C.S. et al 2012). <p>The projections for wind speed show an increasing trend, which is not consistent with the trends provided in 2016 Climate Change TSD. The impact of changing wind speeds on the project's resiliency is discussed in Section 4.3.3.2.3.</p>
Storms (e.g., ice storms, thunderstorms)	Increasing	<ul style="list-style-type: none"> As climate warming has made more moisture available in the atmosphere, this additional moisture can lead to an increase in the intensity of extreme precipitation events that will vary between locations (Bush, E. and Lemmen, D. S. 2019). There is high confidence that the frequency and intensity of storm events are increasing globally (Palko and Lemmen 2017). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>
Wildfires	Increasing	<ul style="list-style-type: none"> In Ontario, climate change is expected to result in longer and more severe fire seasons in some areas (Government of Ontario 2014). It is estimated that there would be an increase in the number of lightning fires by 24% by 2040 and by 80% by 2090 in Ontario (Wotton et al. 2005). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>
Evaporation	Increasing	<ul style="list-style-type: none"> In Canada, extreme hot temperatures are projected to become more frequent and more intense, particularly in the summer months that could cause increase in evaporation (Bush, E. and Lemmen, D.S. 2019). Observations indicate that evaporation in Lake Superior has increased, and run-off has decreased over the past years (Bush, E. and Lemmen, D.S. 2019). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>
Evapotranspiration	Increasing	<ul style="list-style-type: none"> Canada-wide trends in evapotranspiration indicate that from 1960 to 2000 evapotranspiration has increased by approximately 35% at certain station locations, including the Laurentiak Great Lakes region. Increasing temperatures are projected to increase evapotranspiration across different regions in Canada (Bush, E. and Lemmen, D.S. 2019). <p>These trends are consistent to the ones provided in 2016 Climate Change TSD.</p>

4.3.3.2.3 Updates to Climate Resiliency

As most of the updated climate change projections show a similar trend to the projections provided in the Climate Change Technical Support Document (Golder 2016), the impact of climate change on the new project is similar to the ones identified in Chapter 9: Effects of the Environment on the Project (PGI 2017c). A different trend has been identified for changes to the freeze-thaw cycles and wind speed events for the future, compared to the trends provided in the 2016 Climate Change TSD. However, there would be no changes to the impact of these trends on the Project's overall resiliency as it was identified that, trends to the changes to freeze-thaw cycles and wind speed events would not affect the conclusions of the environmental assessment based on implications to Project design and Project operations, and this assumption remains the same based on updates to climate projections (PGI 2017c).

Climate change has a potential to impact the LNG plant, and to be consistent with the Magino Gold Project EA, impact of climate change on the LNG power plant has been considered. A range of environmental factors such as temperature fluctuations, forest fires, storms could impact the operations of the LNG power plant.

Temperature Fluctuations

Temperature fluctuations in form of extreme heat and extreme cold could increase the demand of the LNG power plant overwhelming the capacity of the system, that could cause temporary shutdowns. Extreme cold and freeze-thaw cycles could cause physical damage to the power plant causing loss on on-site heat generation and electricity. However, to avoid impact of temperature fluctuations on the Project infrastructure, all the Project components will be inspected regularly, and damages will be repaired regularly.

Changes to Precipitation

Increase in the frequency and intensity of rainfall events could cause flooding at the mine site, causing physical damage to the LNG plant or limiting access to the plant, both impacting electricity generation on-site. However, the water management systems on site would include capacity to manage storm water, minimizing the impact of flooding on the plant.

Extreme Events

Increase in the frequency and intensity of extreme weather events could impact the LNG power events including high winds, tornadoes, and wildfires could cause structural damage to the systems, impacting the on-site power generation. However, to minimize the impacts of fire, fuel would be stored in non-vegetated buffer, and adequate number of fire staff would be present at the site. In addition, the emergency response plan will work to minimize impacts from extreme events.

4.3.4 Groundwater

In 2021, Golder was retained to complete the installation of 38 monitoring wells downgradient of the future tailings management facility (TMF), waste rock piles, and mill area at the Magino Gold Mine site. Thirty six groundwater monitoring wells were installed at eighteen monitoring well nests. Nine of the wells were screened exclusively in overburden, 26 were screened exclusively in bedrock, and one (MW21-20B) was partially screened in overburden and partially screened in bedrock. Groundwater levels ranged from between <-0.76 metres below ground surface (mbgs) to 4.90 mbgs in the 35 monitoring wells installed in 2021 that were not dry (WSP Golder 2022).

Although no wells have been installed at the project location, information from those wells has been reviewed to provide baseline that is expected to be characteristic of the power plant location. The closest well (MW21-18A) was installed at a depth of 9.2 mbgs, with a static water level at 0.73 mbgs. The next closest wells (MW21- 2A and 2B) were installed at depths of 10.8 and 7.7 mbgs, with a static water level at 1.57 mbgs each. Thus, it is anticipated that depth to groundwater at the proposed power plant site is likely to be within 2.0 mbgs.

4.3.4.1 Effects Assessment and Mitigation

Given the depth of groundwater at the site, construction of the new project component may interact with groundwater as some limited blasting for excavation is expected to be required for site preparation. Such effects on groundwater levels would be low magnitude, local in geographic extent, short-term duration and occur only once for the site preparation and reversible. The effects will be substantially less than the effects identified in the original EA, which included residual effects of lowering of groundwater levels in the vicinity of the open pit because of pit dewatering, increases in groundwater levels at the TMF and the mine rock management facility (MRMF), reduced flow of groundwater due to dewatering of the pit, and reduced groundwater quality under the TMF, MRMF, and between the pit lake and the TMF/MRMF.

Groundwater will not be used for construction or operations of the LNG power plant or storage facility.

The overall Project mitigation will be applied during the blasting activities for the construction. As well, the overall Project design incorporates groundwater level and quality monitoring, and adaptive management to address unexpected conditions or failures. The groundwater monitoring wells installed currently will be used to monitor groundwater quality and will be used to detect hydraulic head changes around the proposed open pit and assess water quality changes, if any, prior to and during development of the overall mine site.

Based on the evaluation, no further mitigation is warranted, and no residual effects are predicted as a result of the new Project component.

4.3.5 Wildlife Collisions

During operation, LNG and CNG will be trucked into the site via public highways from various existing regional supply points by conventional over-the-road truck and single trailer or B-train truck and double trailer transports. Typically, two to three B-train loads per day will be required but the number of loads per day could reach as high as nine when CNG is being used. Concerns about increased risk of highway traffic accidents, including wildlife collisions associated with trucks transporting fuel to the project site, were mentioned by several Indigenous communities during the engagement events regarding the proposed power plant.

The original EA for the mine assessed the potential for increased mammal-vehicular collisions. It noted that effects to wildlife may intensify due to increased human activity, including vehicular traffic during construction and operation, that may result in vehicle collisions with wildlife, including but not limited to bear and moose.

Mitigation included:

- Compliance with speed limits on the site roads will be strictly enforced to limit the potential for vehicle collisions with wildlife in the area.
- New roads on the site which may be required will be designed to maximize line of site to provide safety for vehicle and wildlife collisions.

Although the assessment did identify that there could be measurable effects beyond the local study area (LSA) due to increased use of Goudreau Road and other transportation routes to the site (e.g., effects could be high in geographic extent), such effects could have high frequency (because the risk is continuous for the duration of operations), and that the mammal species may be used or may be important to the community, the residual effects were determined to be not significant. This was because the:

- effects would not change the viability of the wildlife population (i.e., low magnitude);
- effects will return to existing levels with closure of the Magino Mine (i.e., medium duration and low degree of irreversibility); and,
- wildlife is acclimated to existing persistent traffic along the routes (i.e., low ecological context).

4.3.5.1 Effects Assessment and Mitigation

As identified in Section 4.3.6.1, PGI will make the location of the fuel supplier and travel distance a key decision factor when selecting fuel suppliers, because the shortest travel distance will likely be the preferred option for transport related air and carbon emissions, delivery costs and times, highway traffic safety, and wildlife collisions. Furthermore, PGI has indicated that its preference is that the LNG power plant is not operated for the full mine life if a long-term power supply solution becomes feasible, which would reduce the added number of the additional LNG/CNG trucks back to the vehicle numbers assumed in the original EA.

Although the potential for wildlife collisions may slightly intensify due to increased truck traffic during the operational phase of the LNG power plant, the additional truck traffic would not change the previous assessment, which already considered a large geographic extent and potential high frequency. The additional trucks are not predicted to result in a significant effect, because the added number is so small (two to three loads per day) it is not likely to change the viability of a wildlife population, particularly since the transportation routes are all pre-existing and wildlife may be acclimatized to the transportation routes (e.g., the highways and Goudreau Road, are well-maintained with frequent traffic). Further, staff education and speed enforcement are known to be effective in avoiding collisions.

As recommended by the original EA, wildlife/human interactions, including mortality due to vehicular collisions, should be monitored and the reporting system for documenting wildlife collisions proposed in the original EA should be instituted (documenting the species, time of use/collision, and location). Lessons learned, such as specific areas of concern along the routes, can then be communicated to staff, contractors, and other truck drivers.

4.3.6 Accidents and Malfunctions

The original EA for the Magino Gold Project identified the effects of potential accidents or malfunctions, with a tailings management facility dam failure assessed as the worst-case scenario. The previously unassessed risks from a new LNG power plant and new fuel storage facility relate to the operations phase, when the natural gas will be trucked into the site, off-loaded, and stored. Transportation will be via public highways from various existing regional supply points by conventional over-the-road truck and single trailer or B-train truck and double trailer transports, with two to three LNG B-train loads per day, or up to nine CNG loads.

Malfunctions and accident scenarios associated with LNG leaks are considered extremely rare events; however, two scenarios have been considered: LNG Transportation Accident and LNG fuel storage failure.

4.3.6.1 **Effects Assessment and Mitigation**

LNG Transportation Accident or LNG Storage Failure

Fuel transported to the Project site could be released along the transportation corridor or at site as a result of a traffic accident. Similarly, an LNG power plant or fuel storage failure could result in the release of gas, for example through piping component failure, vaporization unit failure, or pump failure.

Under a scenario where an LNG tanker truck accident or a power plant or fuel storage failure resulted in a release of liquified natural gas, the release would most likely undergo a phenomenon called cold explosion. The released gas would evaporate quickly and be released to the atmosphere (Melhem and Ozog 2006). Unlike a release of gasoline, solvents, or diesel fuel, such an unplanned release is unlikely to pose a threat to aquatic or terrestrial organisms, soil, or water. The release would emit methane into the air, impacting GHG emissions.

Under this scenario, based on the release characterization and extreme rarity of such an accident, the effects of releases of liquified natural gas are not predicted to result in adverse environmental effects outside of the increase of GHG emissions. The increase in GHG emissions from a transportation accident are very likely to be negligible compared to the provincial and federal emission inventories and are likely within the uncertainty associated with the inventories (i.e., not measurable).

Under a worst-case scenario, an LNG truck accident or leaks in piping, storage, and transfer infrastructure could result in:

- flammable gas clouds from leaks producing a flash fire on ignition;
- pool or jet fires generating high thermal radiation on structures, process plant, buildings, or people;
- explosion overpressures from ignition of a flammable gas cloud in a congested region of the facility; and,
- boiling liquid expanding vapour explosion (BLEVEs) arising from failure of a vessel containing a pressurized liquid above its boiling point.

Any of the above could result in death and serious injuries to on-site workers and damage facility components. Exposure to cryogenic LNG and LNG vapour clouds could result in personal death and injuries related to freezing burns or asphyxiation. Fires could also trigger fires in other on-site locations, which could cause the release of products of combustion (smoke and carbon particulates) and may cause other fires involving containers at the facility which may release potentially hazardous substances.

To address the safety concerns, several measures relating to driver safety procedures, facility design, and emergency response preparedness will be implemented, or have already been implemented, by PGI to minimize risk from an accident or malfunction.

Truck Transportation Mitigation

Risks associated with a potential transportation accident are managed through the implementation of mitigation measures and policies related to safe travel along the Project's transportation route, already in place as part of the Magino Gold Project. Risk mitigation includes the implementation of traffic control measures, training for drivers, adherence to posted speed limits, and emergency response planning.

- PGI will make the location of the fuel supplier and travel distance a key decision factor when selecting fuel suppliers, because the shortest travel distance will likely be the preferred option for transport related air and carbon emissions, delivery costs and times, highway traffic safety, and wildlife collisions.

- Procedures to be followed by highway transport truck drivers:
 - All delivery trucks will be tracked between place of loading and the Magino Project site via a GPS based tracking system.
 - All delivery trucks will carry emergency spill kits.
 - All delivery trucks and facilities will be Ontario Technical Standards and Safety Authority (TSSA) compliant.
 - Transportation companies will possess a valid Federal Motor Carrier Safety Administration (FMCSA) Hazardous Materials Safety Permit for natural gas transport.
 - Each transportation company will have well established and documented Emergency Response Procedures.

On-site Risk Management

For the on-site facility, risk management measures will be built into the overall project design. The LNG power plant and storage facility will be designed, constructed, and operated in accordance with rigid codes and standards specifically created for LNG facilities, including on-site emergency response unit and systems. The emergency response procedure will be implemented immediately upon the detection of an LNG release. Risk management includes:

- Prevention and minimizing risk through design, construction operation in compliance with applicable regulatory requirements including LNG-specific codes and standards.
- There will be automatic leak detection equipment installed in the LNG power plant engine hall building to detect and signal an alarm for releases for natural gas and hazardous gases.
- Integration of comprehensive facility design features and operational procedures as a result of above design and analysis processes.
- Establishment of vapour dispersion exclusion zone and thermal radiation exclusion zone as per code requirements.
- Fire fighting water supply and hydrant systems at the site to be developed in consultation with local fire chief and emergency response services and in accordance with building code and all other applicable standards.
- Fire detection and protection systems provided in critical locations such as fuel storage tanks.
- Updated emergency response planning to prescribe on-site response equipment, personnel, and training; responsibilities; emergency response measures; communication and reporting; coordination with local/regional response teams; shut in procedures for fire fighting.

Emergency Response Measures

Emergency response measures to respond to incidents include:

- PGI is preparing an Environmental Emergency Plan (“E2 Plan”) that will provide emergency response scenarios for natural gas spills, gas leaks, fires, and other potential emergencies at the LNG Power Plant and fuel management facilities.

- PGI's on-site ERT will conduct training to respond to potential emergencies at the LNG Power Plant based on the emergency response scenarios in the E2 Plan.
- The necessary fire fighting equipment and other emergency response equipment and vehicles will be available for the ERT on the Process Plant site.
- The Magino ERT will respond to on-site and local off-site LNG-related emergencies with a team of trained responders, emergency vehicles, and equipment. (The Team will also be made available to support community emergencies when required.)
- Volunteer fire departments, and emergency medical/ambulance services are provided through the Algoma District Services Administration Board. Emergency services will be coordinated with regional and local services, including full-time staffed and volunteer fire departments, and emergency medical and ambulance services through Algoma District Services Administration Board.
- Emergency responders and services personnel (regional and local), will be familiarized with responding to potential LNG fuel transport and LNG power plant and fuel storage related emergencies with the appropriate emergency vehicles, equipment, and personnel.
- PGI will undertake liaison and consultation activities with local and regional emergency service providers to plan for potential Magino Project related on-site and off-site events and will develop appropriate mitigation and response measures for emergency scenarios.
- Applicable sections and provisions of the Magino Construction Environmental Management Plan (CEMP) will be referred to for developing specific requirements for the power plant and Natural Gas Facility Emergency Procedures.

Residual Effects

Rigorous regulatory requirements associated with comprehensive management measures, prevention, and contingency planning, will make a failure, or release an extremely rare event. If such a rare event were to occur, LNG is colourless, odourless, and leaves no residues; therefore, the effects of a release are primarily related to GHG emissions through the release of methane. LNG environmental clean up would not be required; clean up would focus on the secondary effects described above.

Based on the release characterization and extreme rarity of such a malfunction, the effects of releases of LNG are not predicted to result in adverse environmental effects outside of the increase of GHG emissions. The increase in GHG emissions from a storage failure is very likely to be negligible compared to the provincial and federal emission inventories and are likely within the uncertainty associated with the inventories (i.e., not measurable).

5.0 CONCLUSION

The proposed construction and operation of an on-site electrical power generation facility to provide power to the Magino Gold Mine will not interact with most assessed VCs. This is primarily because several valued components are not present or in proximity to the project site, limiting the potential for direct and indirect effects. For example, the proposed site location for the LNG power plant and storage facility has been cleared, stripped, and graded in accordance with the mitigation and approval previously identified through the CEAA 2012 EA process; thus, this area no longer represents the naturalized forested area or provides the wildlife habitat previously assessed in the EA process.

Nonetheless, it was predicted that the construction or operation of the LNG power generation plant and associated LNG storage facility may increase air emissions, noise levels at nearby receptors, and GHGs at a higher carbon intensity compared to the previously proposed Project. Thus, the VCs of air quality, noise, and GHGs were carried through to the assessment.

The assessment found that, while air, noise, and GHG emissions will all increase at varying levels, overall, the types of environmental effects predicted as a result of the new Project component remain the same as previously identified for the Magino Gold Project as a whole. No new adverse effects have been identified.

Taking into account the implementation of the mitigation described in the original EA and this Supplemental Assessment, the conclusions presented in the EA report have not changed with respect to the significance of the environmental effects. Specifically, the addition of power generation from the LNG plant instead of provincial electrical grid is not likely to modify the significance assessments presented in the 2017 Air Quality TSD, based on the assessment provided in Section 4.3.1, and the 2016 Climate Change TSD based on the assessments provided in Sections 4.3.3.1 and 4.3.3.2. The environmental effects will be mitigated by standard and project-specific environmental protection measures, and thus the adverse residual environmental effects associated with this new Project component are predicted to be not significant.

6.0 CLOSURE

The material contained in this report reflects Golder's best judgment based on the information available and provided at the time of preparation. Golder has relied upon the representations or opinions of persons or representatives of organizations contacted during the preparation of this report. The accuracy of these representations and opinions will affect the accuracy of this report.

The reported information is believed to provide a reasonable representation of the Project being proposed at this time and the general environmental conditions at the Project location. Any use of this report, or any reliance on or decisions based on this report, by a third party is the responsibility of such third party. Golder will not be held responsible or liable for any damages to the physical environment, any property, or to life, which may have occurred from actions of decisions based upon any of the information within this report.

Golder Associates Ltd.

<Original signed by>

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JDM/TS/ca/wlw

[https://golderassociates.sharepoint.com/sites/156158/project files/5 technical work/1008 reporting/revf/21504834_r_rev0_16sep2022_mp2020-msa005-en-rpt-013-00.docx](https://golderassociates.sharepoint.com/sites/156158/project%20files/5%20technical%20work/1008%20reporting/revf/21504834_r_rev0_16sep2022_mp2020-msa005-en-rpt-013-00.docx)

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APPENDIX A

**Summary of Indigenous
Engagement**

Table A-1: Michipicoten First Nation Engagement Summary

TABLE A-1: MICHIPICOTEN FIRST NATION – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
January 18, 2022	Engagement meeting with John Kim Bell, Lynn McCarty, Michael Reid, Dr. Dean Fitzgerald, and Dalton McFarland of the MFN via Teams web-based meeting.	<p>Prodigy met with MFN and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <p>Project Description:</p> <ul style="list-style-type: none"> • Installation of LNG power generation system capable of operating on LNG and/or CNG fuel to provide electrical power for the Magino Project site. • A diesel fueled system was previously eliminated from the initial options due to greater air and carbon emissions and greater risk of spills. • Generation plant to be constructed north of the Plant Site with four (4) generators. • Maps of potential highway transport routes were shown for transporting LNG and/or CNG fuel from regional supply points located near Sudbury, ON, Minneapolis, U.S., Montreal, QC, and Nipigon, ON. • An explanation was provided of emergency services and mitigation measures for responding to on and off-site emergencies associated with LNG and CNG fuel transport and storage. • An explanation of safety procedures for highway transport drivers and transport companies to prevent and respond to emergencies during highway transport of LNG and CNG. 	

TABLE A-1: MICHIPICOTEN FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Prodigy will likely be required to prepare an Environmental Emergency plan for responding to potential emergencies with the LNG Power Plant and fuel storage tanks. • Prodigy will amend the Closure Plan for the Magino Project to include costs for decommissioning, removing, and demolishing LNG Power Plant infrastructure at the end of Magino operations. <p>Questions from MFN:</p> <ul style="list-style-type: none"> • What are the full power demands of the Magino Project, and will the LNG Power Plant have enough capacity to supply the demands? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • The full power demands of the Magino Project estimated at the time of the meeting will be around 30 MW (This was later determined to be 22 MW when new project info was made available in April 2022). The LNG Power Plant will provide a portion of the full power demands, but additional power is expected to be provided from an Algoma Power Inc. (API) locally owned distribution line that will be upgraded and rerouted to connect with the Magino Project site.

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> <li data-bbox="919 298 1409 423">• Will the LNG Power Plant be operated for the full life of the Magino Project or only as a temporary power source until other options become available? <li data-bbox="919 1273 1409 1398">• What is the fuel storage capacity for the LNG Power Plant? Will the storage tanks have a sufficient capacity if fuel deliveries are delayed at any time? 	<p data-bbox="1444 298 1703 326">Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1493 331 1829 1230">• Prodigy currently does not have detailed information on the expected operating life of the LNG Power Plant. Prodigy's preference will be to connect with a transmission or distribution line that will provide the full power demands of the Magino Project, but none are currently available in the nearby region of the project site. Prodigy added that there are currently no new transmission lines being installed in close enough proximity to the site to be a feasible option and none would be available in time for the startup of mine operations in March 2023. There might be future transmission lines in the region that will make this a feasible option but not currently. <p data-bbox="1444 1273 1703 1300">Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1493 1305 1829 1425">• Prodigy does not currently have detailed information on the fuel storage capacity and the duration

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> What will the air quality emissions be from the operation of the LNG Power Plant? 	<p>of time that the LNG Power Plant can operated between fuel deliveries, but that information will be made available and will be shared with MFN as the design work for the LNG Power Plant moves forward.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> Prodigy does not currently have detailed information on the air quality emissions of operating the LNG Power Plant, but that information will be made available and will be shared with MFN as the design work for the LNG Power Plant moves forward.
<p>April 8, 2022</p>	<p>Email meeting invite sent to Chief Patricia Tangie (Email: ptangie@michipicoten.com), John Kim Bell (Email: johnkimbell@bellbernard.com), Steven Murphy, Manager of Lands & Environmental Stewardship (Email: s.murphy@michipicoten.com), Jessica Labranche (Email: j.labranche@michipicoten.com), Dr. Dean Fitzgerald (Email: deanfishy@hotmail.com), Michael Reid, Mineral Development Advisor</p>	<p>Prodigy invited MFN to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on April 14, 2022. John Kim Bell, Jessica Labranche, Dr. Dean Fitzgerald, Michael Reid, and Lynn McCarty accepted the meeting invite.</p>	

TABLE A-1: MICHIPICOTEN FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
	(Email: m.reid@michipicoten.com), and Lynn McCarty (Email: Lsmccarty@rogers.com)		
April 14, 2022	Engagement meeting with Michael Reid, John Kim Bell, Lynn McCarty, Dr. Dean Fitzgerald, and Jessica Labranche of the MFN via Teams web-based meeting.	<p>Prodigy met with MFN and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <p>Project Description:</p> <ul style="list-style-type: none"> • Magino Project power demands of 16.5 MW will be partly covered by API powerline but additional 12.5 MW is needed. • LNG power plant with capacity of 22 MW with four (4) generators operating on LNG and/or CNG fuel. • 30 m X 12 m powerhouse on concrete foundation with four (4) engine compartments. • On site LNG fuel storage with six (6) 133 m³ tanks for total of 800 m³ of capacity. • 13.8 kV overhead powerline to Process Plant Substation. <p>Environmental Effects:</p> <ul style="list-style-type: none"> • Air emissions of total suspended particulate (TSP), particulate matter (PM₁₀), fine particulate (PM_{2.5}), sulphur dioxide (SO₂), oxides of nitrogen (NO_x) and carbon monoxide (CO) will increase. • Noise effects will increase but noise will be mitigated by silencers on stacks and sound reduction building materials in the powerhouse. 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Carbon emissions for the Magino Project will increase due to natural gas combustion in the power plant and diesel fuel combustion by fuel transport trucks. <p>Permitting and Agreement Requirements:</p> <ul style="list-style-type: none"> • Impact Assessment Agency of Canada (IAAC) amendment approval to the Environmental Assessment approval for the Magino Project. • Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approval for Air and Noise. • Closure Plan amendment for LNG Power Plant, powerline, and fuel storage systems. • Indigenous engagement and support including letters of support to be submitted for the Environmental Assessment amendment approval. <p>Questions from MFN:</p> <ul style="list-style-type: none"> • What are the costs and full operating timeline for the LNG Power Plant? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy currently does not have detailed information on the costs or expected operating life of the LNG Power Plant. Prodigy’s preference will be to connect with a transmission or distribution line that will provide the full power demands of the Magino Project, but none are

TABLE A-1: MICHIPICOTEN FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Comments from MFN:</p> <ul style="list-style-type: none"> Prodigy should include the particulate matter and other air emissions data for power from local transmission or distribution lines in the Supplemental Environmental Assessment report for a proper comparison. 	<p>currently available in the nearby region of the project site. Prodigy added that there are currently no new transmission lines being installed in close enough proximity to the site to be a feasible option and none would be available in time for the startup of mine operations in March 2023. There might be future transmission lines in the region that will make this a feasible option but not currently.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> This information was not included in the draft version of the Supplemental Environmental Assessment since there are currently no transmission lines or distribution lines located in close enough proximity to the site to be a feasible option and none would be available in time for the startup of mine operations in March

TABLE A-1: MICHIPICOTEN FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
			2023. There might be future transmission lines in the region that will make this a feasible option but not currently.
May 3, 2022	Email sent to Chief Patricia Tangie (Email: ptangie@michipicoten.com), John Kim Bell (Email: johnkimbell@bellbernard.com), Steven Murphy, Manager of Lands & Environmental Stewardship (Email: s.murphy@michipicoten.com), Jessica Labranche (Email: j.labranche@michipicoten.com), Dr. Dean Fitzgerald (Email: deanfishy@hotmail.com), Michael Reid, Mineral Development Advisor (Email: m.reid@michipicoten.com), and Lynn McCarty (Email: Lsmccarty@rogers.com)	Prodigy emailed a copy of the draft Supplemental Environmental Impact Report for the LNG Power Plant was provided to MFN and request was made for review feedback to be provided by June 4, 2022.	
May 11, 2022	Email meeting invite sent to Steven Murphy, Manager of Lands & Environmental Stewardship (Email: s.murphy@michipicoten.com) and Michael Reid, Mineral Development Advisor (Email: m.reid@michipicoten.com).	Prodigy invited the MFN Environmental Committee to engage for Magino project objectives including the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on May 16, 2022. Michael Reid accepted the meeting invite.	
May 16, 2022	Engagement meeting with Michael Reid, Mineral Development Advisor of the MFN via Teams web-based meeting.	Prodigy met with MFN for an Environmental Committee meeting where an update for the proposed LNG Power Plant was provided. The following topics, comments, and questions were discussed during the meeting: <ul style="list-style-type: none"> • Prodigy provided an update on the engineering work in progress for the LNG Power Plant. 	

TABLE A-1: MICHIPICOTEN FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> Prodigy explained that a letter of support will be requested from MFN in June 2022 to be included with the Supplemental Environmental Assessment report submission to the Impact Assessment Agency of Canada (IAAC). 	
June 20, 2022	Email meeting invite sent to Chief Patricia Tangie, John Kim Bell, Steven Murphy, Jessica Labranche Dr. Dean Fitzgerald, Michael Reid, Lynn McCarty, and Irene Armstrong.	Prodigy invited the MFN Environmental Committee to engage for Magino project objectives including the amendment to the Environmental Assessment for the proposed LNG Power Plant in web-based meeting on June 27, 2022. Chief Patricia Tangie, Michael Reid, Dr. Dean Fitzgerald, John Kim Bell, and Lynn McCarty accepted the meeting invite.	
June 27, 2022	Engagement meeting with Chief Patricia Tangie, Michael Reid, Dr. Dean Fitzgerald, John Kim Bell, and Lynn McCarty of the MFN via Teams web-based meeting.	<p>Prodigy met with MFN for an Environmental Committee meeting where an update for the proposed LNG Power Plant was provided. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> Prodigy presented design specifications and drawings for the LNG Power Plant and the LNG fuel storage tanks including a map showing the location of the LNG Power Plant and fuel storage tanks on the Process Plant, the site layout drawing of the plant, section drawing of the plant, engine hall layout of the plant. On site fuel storage for LNG will be in six (6) tanks each with 133 m³ of storage for a total on site storage capacity of 800 m³. Location where LNG Power Plant will be constructed is on an area of disturbed ground that was previously cleared for the Process Plant development construction. 	

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		<ul style="list-style-type: none"> • Prodigy presented information on potential frequencies and delivery methods for fuel deliveries when operating the plant using LNG or Compressed Natural Gas (CNG) including highway transportation routes from regional and suppliers. • Prodigy presented information on safety and emergency response systems and services that will be utilized for responding to on-site and community level LNG related emergencies including using resources of the Magino emergency Response Team, on-site firefighting equipment, and the assistance of local volunteer firefighters. • Prodigy presented information on the expected environmental effects of the plant including effects on air quality related emissions of airborne particulate, sulphur dioxide, oxides of nitrogen and carbon monoxide, noise increases due to operating plant equipment and flows of stack exhaust and fresh air intakes including measures that will be installed to mitigate the magnitude of the noise increases. Noise effects on local cabin owners will be negligible due to noise mitigation measures and distance to local cabins. • Prodigy provided a summary of greenhouse gas emissions that will be released during the operation of the plant and the commitment to adhere to 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>all Ontario and federal carbon emissions reduction programs.</p> <ul style="list-style-type: none"> Prodigy explained that in addition to the amendment environmental assessment approval for the Magino Project, that Prodigy will also be amending the Ontario Environmental Compliance Approval (ECA) for Air & Noise to include the emissions for the LNG Power Plant and amending the Closure Plan to include costs for reclaiming the area where the plant will be constructed at the end of the mine life. Prodigy explained that they will be requesting a letter of support from the MFN and submitting Indigenous engagement records for the LNG related engagement completed with MFN since January 18, 2022. <p>Questions from MFN:</p> <ul style="list-style-type: none"> Is there statistics data available on all the accidents that have occurred related to LNG transport, fuel storage, and power plants? How long will the LNG Power Plant operate when the fuel storage tanks are full? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> Prodigy was unable to provide LNG related accident statistics during the meeting but agreed to provide them at a future engagement meeting. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> The on-site storage tanks will supply the plant for approximately one day after which additional fuel truck deliveries will be

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		<ul style="list-style-type: none"> Are the roads from the fuel supply points to the LNG fuel storage tank area rated for the weight of the fuel trucks and the number of deliveries? 	<p>needed to resupply the storage tanks daily at a frequency of up to three (3) truckloads per day.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> Yes, the roads are rated for the fuel deliveries. The on-site roads for delivering fuel to the LNG storage tanks and the power plant fuel transfer system are designed to accommodate the turning radius and weights of the delivery trucks.
June 27, 2022	Email sent to Chief Patricia Tangie, Steven Murphy, Michael Reid, Dr. Dean Fitzgerald, Lynn McCarty, Jessica Labranche, Irene Armstrong, and John Kim Bell to invite them to attend a meeting on June 30, 2022.	Prodigy invited the MFN Environmental Committee to engage for Magino project objectives including the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on June 30, 2022. John Kim Bell replied on June 27 that June 30 is not a suitable date for a meeting due to lack of availability for MFN representatives.	
June 29, 2022	Email sent to Chief Patricia Tangie, Steven Murphy, Michael Reid, Dr. Dean Fitzgerald, Lynn McCarty, Jessica Labranche, Irene Armstrong, and John Kim Bell to invite them to attend meetings on July 7, July 12 or 14, and July 18 or 20, 2022.	Prodigy invited the MFN Environmental Committee to engage for Magino project objectives including the amendment to the Environmental Assessment for the proposed LNG Power Plant in web-based meetings on July 7, July 12 or 14, and July 18 or 20, 2022. John Kim Bell replied on July 6 that MFN welcomes a meeting on July 7 at 10 am.	Prodigy sent a meeting invite for an MFN Environmental Committee Meeting on July 7 at 10:00 am via Teams web-based meeting.
July 7, 2022	Engagement meeting with Michael Reid, Steven Murphy, Dr. Dean Fitzgerald, John Kim Bell, and Lynn	Prodigy met with MFN for an Environmental Committee meeting where an update for the proposed LNG Power Plant was provided. The	

TABLE A-1: MICHIPICOTEN FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
	<p>McCarty of the MFN via Teams web-based meeting.</p>	<p>following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy provided information on the capacity of the LNG Power Plant in relation to the expected power demands of the Magino Project Operations Phase. The rated capacity of the LNG Power Plant is 22 MW with four generators running simultaneously. Expected power demand of Magino Project is 16.5 MW. A proposed upgrade and re-route of an existing distribution line operated by Algoma Power Inc. (API) will supply 4 MW to the Magino Project and the LNG Power Plant will normally provide the additional 12.5 MW. LNG Power Plant will normally have one generator in standby mode. It is common practice for a power plant to have at least one generator in standby mode if any of the four generators has a mechanical failure or needs to be shut down for routine maintenance. • Prodigy informed MFN that a revised draft supplemental environmental assessment report is currently being prepared and will be circulated for review feedback. The revised report will address Indigenous concerns regarding the effects and mitigation measures for greenhouse gas emissions, fuel transportation safety, emergency response, wildlife collisions, and increased traffic on local roads 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Questions from MFN:</p> <ul style="list-style-type: none"> • What will be the total power supply from the API distribution powerline upgrade project? • Will the LNG Power Plant be a permanent source of electricity for the entire mine life of the Magino Project? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • The upgraded API distribution powerline is expected to provide a total of up to 10 MW of power including 4 MW for the Magino Project, 4 MW for the Island Gold Mine, and 2 MW for API's other customers further down the line. <p>Response for Prodigy:</p> <ul style="list-style-type: none"> • Yes, the LNG Power Plant is a permanent power supply for the entire mine life of the Magino Project since there are currently no distribution or transmission powerlines under construction or planned in close enough proximity to the mine to be a feasible option for receiving additional power. Prodigy will continue to investigate the feasibility of connecting to future transmission or distribution powerlines planned for the region if and when they become available.

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Is it Prodigy’s intention to operate the LNG Power Plant with all four generators running to avoid purchasing power from the API distribution powerline? • Has the recent rise in LNG fuel prices changed Prodigy’s planning for the LNG Power Plant or caused a reconsideration of using diesel generators instead of LNG? • Does Prodigy intend to receive the maximum power available from the API 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • No, it is Prodigy’s intention to always use the full 4 MW of power supply available from the API distribution powerline, but if there is a power outage on the API powerline, Prodigy will be able to provide the 16.5 MW of the operations power demand by operating the LNG Power Plant with three of the four generators running. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • No, Prodigy has not changed anything for the plan to generate on-site power by operating a LNG Power Plant, regardless of recent price changes for natural gas fuel. Prodigy pointed out that diesel fuel prices are currently higher than historical prices so there would be no financial benefit of generating on-site power using diesel powered generators. <p>Response from Prodigy:</p>

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>powerline re-route and upgrade project of 4 MW, which would likely be more affordable power when compared with the remaining power generated by operating the on-site LNG Power Plant, to allow the LNG Power Plant to be operated at a reduced capacity to cut costs?</p> <ul style="list-style-type: none"> At the time that Prodigy submitted the original Environmental Impact Statement for the Magino Project, did the Prodigy board believe that a new powerline would have been constructed in time to provide the full power demand for the Operations Phase? The 4 MW that Prodigy will receive from the API powerline re-route is only a portion of the full power demand for the Magino Project, so the planning was not well done for ensuring that the required power supply would be in place for the 	<ul style="list-style-type: none"> The intention is to receive the full 4 MW of power available for the API powerline and then make up any additional demand by operating the LNG Power Plant. The LNG Power Plant combined with the 4 MW of power from the API powerline will be the primary source of electricity for the Magino Project Operations Phase until any new transmission or distribution powerline becomes available for connecting to the Magino Project, at which point the LNG Power Plant would not be needed. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> In hindsight there could have been more urgency put forward to secure the full power demand for the Magino Project Operations Phase from a new transmission or distribution powerline, but it would have required a significant project completed over a relatively short amount of

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		start of the Magino Project Operations Phase.	time to make that a feasible option. Prodigy is open to all options for connecting to a future transmission or distribution line if and when there is a feasible option available to connect. Until that is a feasible possibility, Prodigy will receive the 4 MW of power from the API powerline and intends to operate the LNG Power Plant to provide the remaining power demand for the Magino Project.
August 15, 2022	Email sent to Chief Patricia Tangie, Steven Murphy, Michael Reid, Dr. Dean Fitzgerald, Lynn McCarty, Jessica Labranche, Irene Armstrong, and John Kim Bell to invite them to attend an engagement meeting on August 25, 2022.	Prodigy invited the MFN Environmental Committee to engage for Magino project objectives including the amendment to the Environmental Assessment for the proposed LNG Power Plant in web-based meetings on August 25 at 10:00 am.	MFN responded on August 15 to accept the meeting date and followed up by sending a meeting invite to Prodigy for an August 25 meeting at 10:00 am via Teams web-based meeting.
August 16, 2022	Email sent to Chief Patricia Tangie, Steven Murphy, Michael Reid, Dr. Dean Fitzgerald, Lynn McCarty, and John Kim Bell.	Prodigy emailed a copy of the revised draft Supplemental Environmental Assessment Report for the proposed LNG Power Plant and asked for any review feedback to be provided by end of day on Friday, August 26. Prodigy advised that the current version of the draft report had been updated to address comments and concerns that MFN had expressed since the first LNG related engagement meeting on January 18, 2022.	
August 25, 2022	Engagement meeting with Steven Murphy, Dr. Dean Fitzgerald, John	Prodigy met with MFN for an Environmental Committee meeting where an update for the	

TABLE A-1: MICHIPICOTEN FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
	<p>Kim Bell, Lynn McCarty, and Jessica Zadori of the MFN via Teams web-based meeting.</p>	<p>proposed LNG Power Plant was provided. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy presented slides on the reasoning for constructing and operating an on-site LNG Power Plant to provide electricity for the Magino Project Operations Phase including a summary of the available power that Prodigy will receive from a planned re-route and upgrade of an Algoma Power Inc. (API) owned and operated distribution powerline of 4 MW versus the 16.5 MW of power demand that is needed for the project. Prodigy explained that the LNG Power Plant will provide approximately 12.5 MW of power under normal operating demands. • Prodigy presented design drawings showing the proposed locations of the LNG Power Plant, LNG fuel storage area, and substation as well as surface water control berms for directing stormwater from the LNG Power Plant pad to the contact water management drains on the Process Plant Site. • Prodigy explained that the LNG Power Plant can operate on LNG or CNG fuel and will have six on-site fuel storage tanks for LNG that have a total capacity of 800 m3. LNG fuel will be delivered from potential supply points located in Sudbury, Minneapolis, or Montreal and CNG fuel will be delivered from a potential supply point located in Red 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Rock (near Nipigon). LNG fuel deliveries will be provided by up to three truck deliveries per day but CNG fuel deliveries could take up to nine fuel truck deliveries per day due to lower fuel density of CNG.</p> <ul style="list-style-type: none"> • Prodigy presented information on mitigation measures to minimize the potential for fuel delivery truck traffic related wildlife collisions including strictly enforced speed limits for on-site roads and designing and constructing roads with direct line of sight to avoid blind spots and blind corners where visibility could be limited. • Prodigy presented slides on Emergency Response Systems that will be implemented for responding to LNG Power Plant related emergencies, monitoring systems for fuel leak detection, smoke detection, and occupational safety related indoor air quality monitoring systems for detecting carbon monoxide inside the LNG Power Plant building. • Prodigy started to present data on the expected air quality effects of the LNG Power Plant operations when the scheduled end time for the meeting was reached. Plans were made to schedule a follow up meeting to work through the remainder of the LNG Power Plant presentation. 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Questions from MFN:</p> <ul style="list-style-type: none"> Has Prodigy consider receiving LNG fuel deliveries by rail cars to minimize the amount of road traffic for fuel deliveries? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> Prodigy has not consider receiving fuel deliveries by rail cars since the local railroad passes through Dubreuilville which is approximately 14 km from the Magino Project site. If fuel deliveries came on the local railroad, then a fuel transfer system would need to be constructed and operated in Dubreuilville for transferring LNG from rail cars onto trucks to haul the LNG fuel the remaining 14 km on the road to the project site. Such a system would negate any potential benefit of transporting LNG fuel by rail cars.

Table A-2: Missanabie Cree First Nation Engagement Summary

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
December 16, 2021	Email meeting invite sent to Tess Sullivan, Director Lands & Resources at MCFN (Email: tsullivan@missanabiecree.com) and	Prodigy invited MCFN to engage for the proposed LNG Power Plant in a web-based meeting on January 11, 2022. Tess and Ty both accepted the meeting invite.	

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
	Ty Hourtovenko, Lands & Resources Department (Email: thourtovenko@missanabiecree.com)		
January 11, 2022	Engagement meeting with Tess Sullivan and Ty Hourtovenko of the MCFN via Teams web-based meeting.	<p>Prodigy met with MCFN and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <p>Project Description:</p> <ul style="list-style-type: none"> • Installation of LNG power generation system capable of operating on LNG and/or CNG fuel to provide electrical power for the Magino Project site. • A diesel fueled system was previously eliminated from the initial options due to greater air and carbon emissions and greater risk of spills. • Generation plant to be constructed north of the Plant Site with four (4) generators. <p>Question from MCFN:</p> <ul style="list-style-type: none"> • Can Prodigy provide info on the byproducts of the generation plant (i.e., carbon dioxide) to allow better informed assessment of expected emissions? <p>Comment from MCFN:</p> <ul style="list-style-type: none"> • Information on global climate change related carbon emissions reductions and 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Information on the emissions products will be provided in the supplemental Environmental Assessment report for the LNG project that will be shared when the draft version is available. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Information on carbon emissions associated with

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		carbon credits is needed as supporting info that influenced the choice of LNG versus diesel.	the LNG Power Plant and a comparable diesel power generation option will be provided in the supplemental Environmental Assessment report for the LNG project that will be shared when the draft version is available.
April 5, 2022	Email meeting invite sent to Tess Sullivan, Director Lands & Resources at MCFN (Email: tsullivan@missanabiecree.com) and Ty Hourtovenko, Mineral Development Advisor (Email: thourtovenko@missanabiecree.com)	Prodigy invited MCFN to engage again for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on April 12, 2022. Tess and Ty both accepted the meeting invite.	
April 12, 2022	Engagement meeting with Tess Sullivan, Ty Hourtovenko, Jason Gauthier, and Joe Sayers of the MCFN via Teams web-based meeting.	<p>Prodigy met with MCFN and gave another project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <p>Project Description:</p> <ul style="list-style-type: none"> • Magino Project power demands of 16.5 MW will be partly covered by API powerline but additional 12.5 MW is needed. • LNG power plant with capacity of 22 MW with four (4) generators operating on LNG and/or CNG fuel. • 30 m X 12 m powerhouse on concrete foundation with four (4) engine compartments. 	

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • On site LNG fuel storage with six (6) 133 m³ tanks for total of 800 m³ of capacity. • 13.8 kV overhead powerline to Process Plant Substation. <p>Environmental Effects:</p> <ul style="list-style-type: none"> • Air emissions of total suspended particulate (TSP), particulate matter (PM₁₀), fine particulate (PM_{2.5}), sulphur dioxide (SO₂), oxides of nitrogen (NO_x) and carbon monoxide (CO) will increase. • Noise effects will increase but noise will be mitigated by silencers on stacks and sound reduction building materials in the powerhouse. • Carbon emissions for the Magino Project will increase due to natural gas combustion in the power plant and diesel fuel combustion by fuel transport trucks. <p>Permitting and Agreement Requirements:</p> <ul style="list-style-type: none"> • Impact Assessment Agency of Canada (IAAC) amendment approval to the Environmental Assessment approval for the Magino Project. • Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approval for Air and Noise. • Closure Plan amendment for LNG Power Plant, powerline, and fuel storage systems. • Indigenous engagement and support including letters of support to be 	

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>submitted for the Environmental Assessment amendment approval.</p> <p>Questions from MCFN:</p> <ul style="list-style-type: none"> <li data-bbox="934 423 1394 483">• What contractor will be designing the powerhouse? <li data-bbox="934 1073 1411 1133">• Where is the supply point for the LNG and how will it be delivered to the site? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1509 456 1829 1036">• Prodigy was unable to provide an answer at the time of the meeting, but the question was recorded as an action item for follow up. A follow up email was sent to MCFN on April 18, 2022, that specified that BBA Engineering Consultant is designing the general engineering design services for the powerhouse. Additional contractor responsibilities were included in the April 18, 2022 follow up email. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1509 1105 1829 1393">• Prodigy answered that there are several regional suppliers that will potentially supply LNG and/or CNG fuel for the plant but the exact supply point hasn't been selected yet. All LNG and CNG will be transported

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> <li data-bbox="936 396 1377 451">• What is the timeline for building the LNG Power Plant? <li data-bbox="936 818 1377 873">• What is the status of the Magino air quality monitoring station network? <li data-bbox="936 1110 1377 1198">• Does Prodigy plan on receiving future long term operating power from a future transmission line project? 	<p data-bbox="1556 298 1835 354">to the site using highway transport tanker trucks.</p> <p data-bbox="1451 396 1709 418">Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1514 428 1835 776">• Prodigy answered that the goal is to have everything running prior to the March 2023 mine operations startup date, but a detailed timeline for completion of project milestones will be provided as a follow up email (email was sent on April 18, 2022). <p data-bbox="1451 818 1709 841">Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1514 850 1835 1068">• There is currently one (1) air monitoring station in operation, but two (2) additional stations will be in continuous operation prior to the LNG Power Plant startup. <p data-bbox="1451 1110 1709 1133">Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1514 1143 1835 1419">• Prodigy answered that there are currently no new transmission lines being installed in close enough proximity to the site to be a feasible option and none would be available in time for the startup of mine

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Is there a current forecast for when the LNG Power Plant can be replaced by a permanent connection to a new transmission line? • Can a copy of the presentation be shared with MCFN? 	<p>operations in March 2023. There might be future transmission lines in the region that will make this a feasible option but not currently.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy does not currently have a forecast for replacing the LNG Power Plant with a connection to a new transmission line. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy answered yes. Prodigy emailed a copy of the presentation was emailed to MCFN on April 12, 2022, shortly after the meeting ended.
April 18, 2022	Email sent to Tess Sullivan, Director Lands & Resources at MCFN (Email: tsullivan@missanabiecree.com) and Ty Hourtovenko, Mineral Development Advisor (Email: thourtovenko@missanabiecree.com)	<p>Responses to questions from the April 12, 2022, meeting were emailed to MCFN. The follow up questions included the following:</p> <ul style="list-style-type: none"> • Which contractors and consultants will be involved with the LNG Power Plant Project: 	<p>Responses from Prodigy:</p> <ul style="list-style-type: none"> • BBA Engineering Consultant: General engineering design services for the LNG Power Plant.

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> What are the LNG Power Plant project timeline dates? 	<ul style="list-style-type: none"> Wartsila: Manufacturer and supplier of generators and engines. Steel Can: Generator engine hall construction/installations contractor. E. Corbiere: Heavy civil earthwork contractor. Fuel suppliers: to be determined. <p>Responses from Prodigy:</p> <ul style="list-style-type: none"> June – July 2022: Foundation installation for Powerhouse Building. Aug – Sept 2022: Building construction for Engine Hall and Substation Room. End of Sept 2022: Installation of generators and engines. October 2022: Installation of fuel tanks, steel fuel line, and complete construction of fuel transfer area. Nov 2022: Installation of 13.8 kV overhead powerline from LNG Power Plant to Magino Process Plant.

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
			<ul style="list-style-type: none"> • Nov – Dec 2022: Installation of exhaust stacks, fresh air intakes, heat exchanger, and substation electrical components. • Jan – Feb 2023: LNG Power Plant Commissioning.
May 3, 2022	Email sent to Tess Sullivan, Director Lands & Resources at MCFN (Email: tsullivan@missanabiecree.com) and Ty Hourtovenko, Mineral Development Advisor (Email: thourtovenko@missanabiecree.com)	Prodigy emailed a copy of the draft Supplemental Environmental Impact Report for the LNG Power Plant was provided to MCFN and request was made for review feedback to be provided by June 4, 2022.	
May 17, 2022	Email meeting invite sent to Tess Sullivan, Director Lands & Resources at MCFN (Email: tsullivan@missanabiecree.com) and Ty Hourtovenko, Mineral Development Advisor (Email: thourtovenko@missanabiecree.com)	Prodigy invited MCFN to engage for an Environmental Committee meeting that included a status update for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on May 19, 2022. Tess and Ty both accepted the meeting invite.	
May 19, 2022	Engagement meeting with Tess Sullivan and Ty Hourtovenko of the MCFN via Teams web-based meeting.	<p>Prodigy met with MCFN for an Environmental Committee meeting that included an update on the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy provided an update on the engineering work in progress for the LNG Power Plant. • Prodigy explained that a letter of support will be requested from MCFN in June 2022 to be included with the Supplemental Environmental Assessment 	

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		report submission to the Impact Assessment Agency of Canada (IAAC).	
June 29, 2022	Email meeting invite sent to Tess Sullivan, Director Lands & Resources at MCFN (Email: tsullivan@missanabiecree.com), Ty Hourtovenko, Mineral Development Advisor (Email: thourtovenko@missanabiecree.com), and Stephen Hawkins, MCFN Energy Advisor (Email: shawkins@missanabiecree.com).	Prodigy invited MCFN to engage for an Environmental Committee meeting that included a status update for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on July 5, 2022. Ty and Stephen both accepted the meeting invite but Tess replied that she was tentatively accepting.	
July 5, 2022	Engagement meeting with Ty Hourtovenko and Stephen Hawkins of the MCFN via Teams web-based meeting.	<p>Prodigy met with MCFN for an Environmental Committee meeting that included an update on the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy presented an overview summary of the proposed LNG Power Plant project including a summary of the power generation capacity, the layout and location of the plant engine hall, fuel storage area, substation, exhaust stacks, and surface water drainage control berms. • Prodigy provided information on potential fuel supply points, highway hauling routes, highway transportation safety systems, fuel delivery frequencies and methods that would be used for transferring LNG fuel to the on-site storage tanks versus feeding CNG fuel directly into the plant while the CNG fuel trucks remain on-site. 	

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Prodigy explained the emergency response systems that will be utilized for responding to on-site LNG plant and fuel related emergencies including the Magino Project Emergency Response Team that will train for responding to LNG related emergencies and has emergency response and firefighting equipment. • Prodigy provided information on the estimated environmental effects of the LNG Power Plant and mitigation measures that will be implemented to minimize the effects including air quality, noise, and greenhouse gas related effects. Prodigy explained that since the Magino Project operating phase and closure work is scheduled to be completed before 2050 that Prodigy is not required to participate in the Net-Zero by 2050 greenhouse gas reduction program under the Strategic Assessment of Climate Change (SACC), but Prodigy will participate in all current greenhouse gas reduction programs including paying all applicable carbon taxes on fuel purchases. • Prodigy explained that the Magino Project Environmental Assessment will be amended, the Ontario Environmental Compliance Approval for Air and Noise will be amended, and the Closure Plan will be amended to include the LNG Power Plant. Prodigy also explained that records of engagement meetings held 	

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>with MCFN will be summarized for the Supplemental Environmental Assessment Report that will be submitted to the Impact Assessment Agency of Canada and that a letter of support will be requested from MCFN.</p> <p>Comments from MCFN:</p> <ul style="list-style-type: none"> • Ty commented that if the Magino Project mine life is extended to 2050 and beyond that MCFN expects Prodigy to participate in the Net Zero by 2050 carbon emissions reduction program, which could be a potential scenario if additional gold reserves are identified or if Prodigy extends the Magino mining operations via underground mining. 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy answered that the current mining plan for the Magino Project and closure work will not extend to 2050, but if the mine life is extended to 2050 or beyond that Prodigy will comply with the participation requirements of the Net Zero by 2050 carbon emissions reduction program and any additional environmental requirements that are active at that future date.
August 2, 2022	<p>Email meeting invite sent to Tess Sullivan, Director Lands & Resources at MCFN (Email: tsullivan@missanabiecree.com) and Ty Hourtovenko, Mineral Development Advisor (Email: thourtovenko@missanabiecree.com).</p>	<p>Prodigy invited MCFN to engage for an Environmental Committee meeting that included a status update for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on August 3, 2022. Tess and Ty both accepted the meeting invite.</p>	
August 3, 2022	<p>Engagement meeting with Tess Sullivan and Ty Hourtovenko of the MCFN via Teams web-based meeting.</p>	<p>Prodigy met with MCFN for an Environmental Committee meeting that included an update on the proposed LNG Power Plant. The following</p>	

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy presented current design information for the proposed LNG Power Plant including the proposed location of the plant on the north side of the Magino Process Plant site, the power generation capacity of 22 MW with four generators operating, the six on-site LNG fuel storage tanks with a total combined fuel storage capacity of 800 m³, the substation and 13.8 kV overhead powerline connecting to the Process Plant substation, and the surface water control berms for directing stormwater to the contact water collection drains on the Process Plant site. • Prodigy provided information on potential environmental effects and proposed mitigation measures for minimizing air quality, noise, greenhouse gas emissions, and transportation safety incidents including potential wildlife collisions. • Prodigy provided information on emergency response systems that will be implemented for identifying and responding to potential fuel leaks, spills, fires, and other emergencies including the Magino Project Emergency Response Team and emergency response and firefighting equipment. The Emergency Response Team will receive training specifically for responding to LNG Power Plant related emergencies. 	

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> Prodigy explained that the Magino Project Environmental Assessment will be amended, the Ontario Environmental Compliance Approval for Air and Noise will be amended, and the Closure Plan will be amended to include the LNG Power Plant. Prodigy also explained that records of engagement meetings held with MCFN will be summarized for the Supplemental Environmental Assessment Report that will be submitted to the Impact Assessment Agency of Canada and that a letter of support will be requested from MCFN. <p>Comments from MCFN:</p> <ul style="list-style-type: none"> Ty commented that the air quality emissions need to properly address the potential effects of fuel delivery trucks idling while the trucks are on-site delivering fuel, especially if delivery trucks are idling the entire time they are on-site while a trailer load of CNG fuel is being fed directly into the LNG Power Plant. Ty commented that if CNG fuel trucks will feed CNG fuel directly into the LNG Power Plant while the fuel trailers remain on-site, then it would make sense for the fuel trucks to leave the trailers on-site and swap out full fuel trailers for empty ones as needed, instead of leaving the trucks on-site idling and generating more diesel exhaust emissions while the CNG fuel is being transferred. 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> The methods for fuel deliveries of CNG fuel will depend on the supplier procedures, fuel truck and trailer availabilities, transport distances, and delivery schedules. If trucks are required to remain on-site while CNG fuel is being fed into the LNG Power Plant, then the trucks must abide with Magino Project idling restrictions that prevent excessive idling unless idling is required to avoid cold weather starting difficulties under

TABLE A-2: MISSANABIE CREE FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> Ty asked for comparative data for air quality and greenhouse gas emissions to be provided in the Supplemental Environmental Assessment Report to show the differences between the estimated emissions of the proposed LNG Power Plant with that of diesel power generation with an equivalent capacity. This would be helpful for demonstrating the environmental benefits of a LNG Power Plant over diesel generation to the MCFN Chief and Council. 	<p>extremely cold weather conditions. Prodigy explained that LNG fuel will be preferred over CNG, which will minimize the amount of time that fuel delivery trucks remain on-site since LNG will be transferred into the on-site fuel storage tanks, whereas the CNG fuel delivery trucks will remain on-site while CNG is fed directly into the LNG Power Plant.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> Prodigy agreed to request that air quality and greenhouse gas emissions for LNG versus diesel power generation be included in the report.
August 15, 2022	Email sent to Tess Sullivan and Ty Hourtovenko.	Prodigy emailed a copy of the revised draft Supplemental Environmental Assessment Report for the proposed LNG Power Plant and asked for any review feedback to be provided by end of day on Friday, August 26, 2022. Prodigy advised that the current version of the draft report had been updated to address comments and concerns that	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		MCFN had expressed since the first LNG related engagement meeting held on December 16, 2021. Prodigy included tables of air quality and greenhouse gas emissions in the body of the email showing the comparative emissions between the proposed LNG Power Plant and an equivalent sized diesel power generation system that were copied from the draft report. The comparative emissions data was added to the draft report in response to Ty's request during the August 3 engagement meeting.	
September 14, 2022	Letter of Support from MCFN.	Tess Sullivan, Director Lands & Resources provided Prodigy a letter of support for the construction and operation of the LNG Power Plant as an email attachment. The letter of support was signed by Chief Jason Gauthier of the MCFN.	

Table A-3: Métis Nation of Ontario Engagement Summary

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
April 7, 2022	Email meeting invite sent to Vanessa Potvin, Mineral Development Advisor for Northeast Region (Email: vanessap@metisnation.org).	Prodigy invited MNO to engage for a meeting to discuss the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on April 21, 2022. Vanessa accepted the meeting invite and forwarded it to invite Victoria Stinson (Email: victorias@metisnation.org), Tim Sinclair (Email: tims@metisnation.org), Kim Powley (Email: kimmysue2014@gmail.com),	

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Mitch Case (Email: mitchc@metisnation.org), Stephen Gjos (whitewolfclan61@gmail.com), and Yvonne Jensen (Email: nc_yvonne@live.ca)</p>	
<p>April 21, 2022</p>	<p>Engagement meeting with Vanessa Potvin, Mineral Development Advisor for Northeast Region (Email: vanessap@metisnation.org), Victoria Stinson (Email: victorias@metisnation.org), Tim Sinclair (Email: tims@metisnation.org), Kim Powley (Email: kimmysue2014@gmail.com), Mitch Case (Email: mitchc@metisnation.org), and Yvonne Jensen (Email: nc_yvonne@live.ca) of the MNO via Teams web-based meeting.</p>	<p>Prodigy met with MNO and gave another project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <p>Project Description:</p> <ul style="list-style-type: none"> • Magino Project power demands of 16.5 MW will be partly covered by API powerline but additional 12.5 MW is needed. • LNG power plant with capacity of 22 MW with four (4) generators operating on LNG and/or CNG fuel. • 30 m X 12 m powerhouse on concrete foundation with four (4) engine compartments. • On site LNG fuel storage with six (6) 133 m³ tanks for total of 800 m³ of capacity. • 13.8 kV overhead powerline to Process Plant Substation. <p>Environmental Effects:</p>	

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Air emissions of total suspended particulate (TSP), particulate matter (PM₁₀), fine particulate (PM_{2.5}), sulphur dioxide (SO₂), oxides of nitrogen (NO_x) and carbon monoxide (CO) will increase. • Noise effects will increase but noise will be mitigated by silencers on stacks and sound reduction building materials in the powerhouse. • Carbon emissions for the Magino Project will increase due to natural gas combustion in the power plant and diesel fuel combustion by fuel transport trucks. <p>Permitting and Agreement Requirements:</p> <ul style="list-style-type: none"> • Impact Assessment Agency of Canada (IAAC) amendment approval to the Environmental Assessment approval for the Magino Project. • Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approval for Air and Noise. 	

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Closure Plan amendment for LNG Power Plant, powerline, and fuel storage systems. • Indigenous engagement and support including letters of support to be submitted for the Environmental Assessment amendment approval. <p>Questions from MNO:</p> <ul style="list-style-type: none"> • Will there be stench gas used as an additive in the natural gas and will leak detection sniffers be installed at or near the LNG Power Plant and the fuel storage tanks to detect potential fuel leaks and releases? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy did not have that information available at the time of the meeting but assigned an action item to provide the information after the meeting. A follow up email was sent to MNO on April 26, 2022, to provide the following answers: <ul style="list-style-type: none"> ○ Detailed contract specifications have not been confirmed yet with the LNG and CNG suppliers to confirm if stench gas will be used. ○ Yes, there will be automatic leak detection equipment installed in the LNG Power Plant

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> <li data-bbox="1079 586 1436 711">• Will heat released from the liquid to air heat exchangers be used for energy co-generation use? <li data-bbox="1079 1235 1436 1425">• If Prodigy can receive the full power demands of the mine from local transmission or distribution powerlines at some future time during the operating life of the Magino 	<p data-bbox="1675 297 1864 516">engine hall building to detect and signal an alarm for releases for natural gas and hazardous gases.</p> <p data-bbox="1472 557 1730 581">Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1520 589 1871 1166">• Prodigy did not have that information available at the time of the meeting but assigned an action item to provide the information after the meeting. A follow up email was sent to MNO on April 26, 2022, to advise that heat released from the liquid to air heat exchangers is low-heat value heat that is not suitable for co-generation use. The amount of heat released will be minimal and will dissipate into the air without any measurable environmental effects. <p data-bbox="1472 1206 1730 1230">Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1520 1239 1860 1425">• That potential decision is unknown at this time but will be considered as an option if new transmission or distribution lines capable of providing the

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Project, will some of the LNG generators be kept as a backup power supply?</p> <ul style="list-style-type: none"> • What is the timeline for MNO to provide a letter of support for the LNG Power Plant? • Will Prodigy be obtaining carbon emissions offsets for the carbon emissions released during the operation of the LNG Power Plant? Due to the carbon emissions of the LNG Power Plant, MNO would like to see Prodigy obtain carbon offsets for the emissions. 	<p>full power demands of the Magino Project become available in the future.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • A letter of support will likely be requested from MNO in June 2022. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy did not have information available during the meeting on whether carbon offsets will be obtained, but an action item was assigned for information on potential carbon offsets to be provided as a follow up response. A follow up email was sent to MNO on April 26, 2022, to advise that Prodigy will comply with all carbon emissions reduction and taxation requirements of Ontario and is not currently planning to do any additional carbon offsetting aside from paying the required carbon taxes for fuel purchases.
April 26, 2022	Email sent to Vanessa Potvin, Mineral Development Advisor for Northeast Region (Email:	Prodigy provided follow up responses to questions that MNO asked during the engagement meeting on April 21,	

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
	<p>vanessap@metisnation.org), Victoria Stinson (Email: victorias@metisnation.org), Tim Sinclair (Email: tims@metisnation.org), Kim Powley (Email: kimmysue2014@gmail.com), Mitch Case (Email: mitchc@metisnation.org), Stephen Gjos (Email: whitewolfclan61@gmail.com), and Yvonne Jensen (Email: nc_yvonne@live.ca) of the MNO.</p>	<p>2022, for which Prodigy did not have information available to answer at the time of the meeting. The following were responses that Prodigy provided for the unanswered questions from the April 21st meeting:</p> <p>Will there be stench gas and leak detection sniffers installed at and near the LNG Power Plan and the fuel storage tanks to detect potential fuel leaks and releases?</p> <p>Will heat released from the liquid to air heat exchangers be used for energy co-generation use?</p>	<p>Responses from Prodigy:</p> <ul style="list-style-type: none"> Detailed contract specifications have not been confirmed yet with the LNG and CNG suppliers to confirm if stench gas will be used. Yes, there will be automatic leak detection equipment installed in the LNG Power Plant engine hall building to detect and signal an alarm for releases for natural gas and hazardous gases. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> No, heat released from the liquid to air heat exchangers is low-heat value heat that is not suitable for co-generation use. The amount of heat released will be minimal and will dissipate into the air without any measurable environmental effects.

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>What is the timeline for MNO to provide a letter of support for the LNG Power Plant?</p> <p>Will Prodigy be obtaining carbon emissions offsets for the carbon emissions released during the operation of the LNG Power Plant? Due to the carbon emissions of the LNG Power Plant, MNO would like to see Prodigy obtain carbon offsets for the emissions.</p>	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> A letter of support will be requested from MNO in June 2022. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> Prodigy will comply with all carbon emissions reduction and taxation requirements of Ontario and is not currently planning any carbon offsetting or an immediate carbon reduction strategy aside from paying the required carbon taxes for fuel purchases.
<p>May 3, 2022</p>	<p>Email sent to Vanessa Potvin, Mineral Development Advisor for Northeast Region (Email: vanessap@metisnation.org), Victoria Stinson (Email: victorias@metisnation.org), Tim Sinclair (Email: tims@metisnation.org), Kim Powley (Email: kimmysue2014@gmail.com), Mitch Case (Email: mitchc@metisnation.org), Stephen Gjos (Email: whitewolfclan61@gmail.com), and Yvonne Jensen (Email: nc_yvonne@live.ca) of the MNO.</p>	<p>Prodigy emailed a copy of the draft Supplemental Environmental Impact Report for the LNG Power Plant was provided to MNO and request was made for review feedback to be provided by June 4, 2022.</p>	
<p>May 16, 2022</p>	<p>Email meeting invite sent to Vanessa Potvin, Mineral</p>	<p>Prodigy invited MNO to an Environmental Committee meeting</p>	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
	<p>Development Advisor for Northeast Region (Email: vanessap@metisnation.org), Victoria Stinson (Email: victorias@metisnation.org), Tim Sinclair (Email: tims@metisnation.org), Kim Powley (Email: kimmysue2014@gmail.com), Mitch Case (Email: mitchc@metisnation.org), Stephen Gjos (Email: whitewolfclan61@gmail.com), and Yvonne Jensen (Email: nc_yvonne@live.ca) of the MNO.</p>	<p>including a status update for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on May 19, 2022. Vanessa and Stephen accepted the meeting invite and Vanessa forwarded the invitation to Trent Desaulniers (Email: desaulniers@shaw.ca) who also accepted the meeting invite.</p>	
<p>May 19, 2022</p>	<p>Engagement meeting with Vanessa Potvin, Mineral Development Advisor for Northeast Region (Email: vanessap@metisnation.org), Stephen Gjos (Email: whitewolfclan61@gmail.com), and Trent Desaulniers (Email: desaulniers@shaw.ca) of the MNO via Teams web-based meeting.</p>	<p>Prodigy met with MNO for an Environmental Committee engagement meeting that included update on the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy provided an update on the engineering work in progress for the LNG Power Plant. • Prodigy explained that a letter of support will be requested from MNO in June 2022 to be included with the Supplemental Environmental Assessment report submission to the Impact Assessment Agency of Canada (IAAC). 	

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Questions from MNO:</p> <ul style="list-style-type: none"> • Can Prodigy provide a draft template for the letter of support? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Yes, Prodigy will prepare a draft template for the letter of support and will likely provide it to MNO in June 2022.
<p>June 29, 2022</p>	<p>Email meeting invite sent to Victoria Stinson, Manager of Lands, Resources and Consultations (victorias@metisnation.org), Tim Sinclair (Email: tims@metisnation.org), Stephen Gjos (Email: whitewolfclan61@gmail.com), Trent Desaulniers (Email: desaulniers@shaw.ca), Ryan Kowalchuk (ryank@metisnation.org), Alexandra Kosmides (AlexandraK@metisnation.org), and Steven Sarrazin (stevens@metisnation.org) of the MNO.</p>	<p>Prodigy invited MNO to an Environmental Committee meeting including a status update for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on July 11, 2022. Victoria, Steven, Tim, Trent, and Alexandra accepted the meeting invite.</p>	
<p>July 11, 2022</p>	<p>Engagement meeting with Victoria Stinson, Trent Desaulniers, Tim Sinclair, Steven Sarrazin, and Alexandra Kosmides of the MNO via Teams web-based meeting.</p>	<p>Prodigy met with MNO for an Environmental Committee engagement meeting that included update on the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy provided an update on the design and operating capacity of the proposed LNG 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Power Plant including the location of the Process Plant site where the plant will be constructed, an explanation of the reasoning for deciding to choose on-site power generation with an LNG Power Plant for providing electricity for the Magino Project Operations Phase, details on the power generation capacity of the plant, fuel storage capacity of the on-site LNG fuel storage tanks, surface water control berms for directing stormwater to the contact water collection system, the detection and alarm systems for fuel leaks, smoke, and carbon monoxide, and the configuration of the engine hall and exhaust stacks.</p> <ul style="list-style-type: none"> • Prodigy provided information on fuel deliveries, transportation safety, emergency response systems, and other LNG Power Plant related safety measures. • Prodigy provided information on the air quality, greenhouse gas, and noise related environmental effects as well as mitigation 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>measures that will be implemented to minimize the effects.</p> <ul style="list-style-type: none"> Prodigy explained that the Magino Project Environmental Assessment Approval will be amended, the Ontario Environmental Compliance Approval for Air and Noise will be amended, and the Magino Mine Closure Plan will be amended for the LNG Power Plant and records of MNO engagement meetings will be recorded and a letter of support will be requested from the MNO. <p>Questions from MNO:</p> <ul style="list-style-type: none"> Tim asked if there will be a heat recovery system to recover waste energy from the LNG generator engine hall. 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> Prodigy answered that the heat from the generator engine hall is low heat value heat that does not provide a significant source of energy recovery, but the extra heat will help to keep the LNG Power Plant building warm during the cold winter months which will help to reduce extra heating for the building.

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Tim asked if there are plans to extend the Magino Mine life by developing an underground mine after the open pit mining is completed. • Victoria asked if Prodigy will provide a template for the letter of support for the LNG Power Plant. 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • No, there are currently no plans to develop and underground mine. The current Magino Project is only intended to be an open pit mine based on the current gold ore and mining plan. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Yes, Prodigy will provide a template to MNO when the request for a letter of support is made.
<p>August 2, 2022</p>	<p>Email meeting invite sent to Victoria Stinson, Manager of Lands, Resources and Consultations (victorias@metisnation.org), Tim Sinclair (Email: tims@metisnation.org), Stephen Gjos (Email: whitewolfclan61@gmail.com), Trent Desaulniers (Email: desaulniers@shaw.ca), Ryan Kowalchuk (ryank@metisnation.org), Alexandra Kosmides (AlexandraK@metisnation.org), Steven Sarrazin (stevens@metisnation.org), and Russell Ott (RussellO@metisnation.org) of the MNO.</p>	<p>Prodigy invited MNO to an Environmental Committee meeting including a status update for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on August 4, 2022. Victoria, Stephen, Steven, Tim, and Trent accepted the meeting invite.</p>	

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
August 4, 2022	Engagement meeting with Victoria Stinson, Trent Desaulniers, Tim Sinclair, Steven Sarrazin, and Stephen Gjos of the MNO via Teams web-based meeting.	<p>Prodigy met with MNO for an Environmental Committee engagement meeting that included update on the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy provided design information for the proposed LNG Power Plant including an explanation of why on-site LNG power generation was selected, the power generation capacity of the plant, the capacity of the on-site storage tanks, the locations of the plant, LNG storage tanks, and substation, the design details and location of the surface water control berm that will direct stormwater to the contact water collection drains. • Prodigy explained the options for supplying fuel to the plant including highway transportation routes from LNG and CNG fuel supply points in Ontario and out of province suppliers and details on the expected delivery frequencies for LNG versus CNG, and info on transferring LNG into the on- 	

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>site storage tanks versus feeding CNG directly into the plant while the CNG fuel trucks remain on-site.</p> <ul style="list-style-type: none"> • Prodigy explained the environmental effects of the plant including air quality emissions, greenhouse gas emissions, and noise and mitigation measures that will be implemented to minimize the effects. • Prodigy explained that the Environmental Assessment Approval, Environmental Compliance Approval for Air and Noise, and mine closure plan will be amended for the LNG Power Plant. Prodigy also explained that records of MNO engagement will be compiled and included with the Supplemental Environmental Assessment Report and that a letter for support will be requested from MNO. <p>Comments from MNO:</p> <ul style="list-style-type: none"> • Tim commented that it will be in Prodigy's best interest to receive fuel deliveries from the nearest fuel supply point possible due to the risks associated with highway 	<p>Responses from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy responded that they don't currently have a contingency plan for

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>closures during winter snowstorms that could delay fuel deliveries and could affect Prodigy’s ability to keep the LNG Power Plant running at those times. Tim mentioned that he experienced a blizzard in the 1990’s that resulted in a 4–5-day highway closure when no vehicles or transport trucks were able to travel through until the snow was cleared. Tim asked if Prodigy has a contingency plan for assisting the Ontario highways crews to clear snow if fuel deliveries are delayed due to snow.</p>	<p>providing support to the Ontario highways in the event of a highway closure due to a blizzard, but if there are snowstorms that cause fuel delivery delays, that the Magino Project power demands will be reduced to essential needs, the LNG Power Plant will be operated at reduced capacity to conserve fuel, and electricity from the API powerline will be used for providing essential power demands until the highway is re-opened.</p>
<p>August 16, 2022</p>	<p>Email sent to Victoria Stinson, Steven Sarrazin, Russell Ott, Trent Desaulniers, Tim Sinclair, and Stephen Gjos.</p>	<p>Prodigy emailed a copy of the revised draft Supplemental Environmental Assessment Report for the proposed LNG Power Plant and asked for any review feedback to be provided by end of day on Friday, August 26, 2022. Prodigy advised that the current version of the draft report had been updated to address comments and concerns that MNO had expressed since the first LNG related engagement meeting held on April 21, 2022. Prodigy also provided a template for a letter of support as an attachment to the email and requested that the</p>	

TABLE A-3: MÉTIS NATION OF ONTARIO – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		MNO provide a letter of support for the LNG Power Plant.	
September 2, 2022	Letter of Support from MNO.	Victoria Stinson, Manager of Lands, Resources and Consultations provided Prodigy with a letter of support for the supplemental Environmental Assessment for the LNG Power Plant as an email attachment. The letter of support was signed by Tim Sinclair, Region 2 Councillor and Mitch Case Region 4 Councillor of the MNO.	

Table A-4: Batchewana First Nation Engagement Summary

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
April 5, 2022	Email meeting invite sent to Vic Bolduc (Email: vic_bolduc@hotmail.com), Wayne Greer (wayne@abnetwork.ca), and Dan Sayers (dannysayers@hotmail.com).	Prodigy invited BFN to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on April 11, 2022. Vic, Wayne, and Dan all accepted the invitation.	
April 11, 2022	Engagement meeting with Vic Bolduc, Wayne Greer, and Dan Sayers of the BFN via Teams web-based meeting.	Prodigy met with BFN and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting: Project Description: <ul style="list-style-type: none"> Magino Project power demands of 16.5 MW will be partly covered by API 	

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>powerline but additional 12.5 MW is needed.</p> <ul style="list-style-type: none"> • LNG power plant with capacity of 22 MW with four (4) generators operating on LNG and/or CNG fuel. • 30 m X 12 m powerhouse on concrete foundation with four (4) engine compartments. • On site LNG fuel storage with six (6) 133 m³ tanks for total of 800 m³ of capacity. • 13.8 kV overhead powerline to Process Plant Substation. <p>Environmental Effects:</p> <ul style="list-style-type: none"> • Air emissions of total suspended particulate (TSP), particulate matter (PM₁₀), fine particulate (PM_{2.5}), sulphur dioxide (SO₂), oxides of nitrogen (NO_x) and carbon monoxide (CO) will increase. • Noise effects will increase but noise will be mitigated by silencers on stacks and sound reduction building materials in the powerhouse. • Carbon emissions for the Magino Project will increase due to natural gas combustion in the power plant and diesel fuel 	

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>combustion by fuel transport trucks.</p> <p>Permitting and Agreement Requirements:</p> <ul style="list-style-type: none"> • Impact Assessment Agency of Canada (IAAC) amendment approval to the Environmental Assessment approval for the Magino Project. • Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approval for Air and Noise. • Closure Plan amendment for LNG Power Plant, powerline, and fuel storage systems. • Indigenous engagement and support including letters of support to be submitted for the Environmental Assessment amendment approval. <p>Questions from BFN:</p> <ul style="list-style-type: none"> • Is the LNG Power Plant an expensive system for supplying the power demands of the Magino Project? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • The full costs of constructing and operating the LNG Power Plant are not fully known at the time of the meeting, but the need for having power for the

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> Why does Prodigy want to also receive 4 MW of power from a proposed upgrade to a local Algoma Power Inc. (API) distribution line if the LNG Power Plant alone can provide the full power demands of the Magino Project? 	<p>proposed start of operations in March 2023 make the on-site power generation requirement a necessary cost for the project due to the lack of other available power sources. There are currently no new transmission lines being installed in close enough proximity to the site to be a feasible option and none would be available in time for the startup of mine operations in March 2023. There might be future transmission lines in the region that will make this a feasible option but not currently.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> Although the LNG Power Plant alone will have enough capacity for the full power demands of the Magino Project, having an additional 4 MW of power from the proposed upgrade to the API distribution line will allow some of the generators to be operated as a backup power supply during

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Will the air quality effects of operating the LNG Power Plant be a concern for communities located near the Magino Project site? • When will the draft Supplemental Environmental Assessment report and design documents for the 	<p>power outages. Having the extra power will allow the LNG Power Plant to be operated without all four generators running simultaneously. The power from the API distribution line will be a more cost-effective source of power to supplement the power generated by the LNG Power Plant.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • No, there will not be any measurable effects of the air emissions on local communities since the Magino Project site is in a remote area that is far enough away from local communities for there to be any effects in Dubreuilville or other nearby communities in the region. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • The Supplemental Environmental Assessment report will be provided to BFN in May 2022 and design documents for the LNG

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		LNG Power Plant be provided to BFN to review?	Power Plant will be shared with BFN as they become available over the next several months with frequent updates as items are available to share. Monthly updates will be provided to BFN to share draft design documents as they are prepared. Prodigy will provide a minimum of 30-days to review each item and provide feedback.
May 3, 2022	Email sent to Vic Bolduc (Email: vic_bolduc@hotmail.com), Wayne Greer (wayne@abnetwork.ca), and Dan Sayers (dannysayers@hotmail.com).	Prodigy emailed a copy of the draft Supplemental Environmental Impact Report for the LNG Power Plant was provided to BFN and request was made for review feedback to be provided by June 4, 2022.	
May 18, 2022	Email meeting invite sent to Vic Bolduc (Email: vic_bolduc@hotmail.com), Wayne Greer (Email: wayne@abnetwork.ca), Dan Sayers (dannysayers@hotmail.com), and Steve Aiken (Email: saiken@knightpiesold.com).	Prodigy invited BFN to an Environmental Committee meeting to include an update for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on May 26, 2022. Vic, Wayne, Dan, and Steve all accepted the invitation.	
May 26, 2022	Engagement meeting with Vic Bolduc, Wayne Greer, Dan Sayers, and Steve Aiken of the BFN via Teams web-based meeting.	Prodigy met with BFN for an Environmental Committee meeting that included an update for the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:	

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Prodigy provided an update on the engineering work in progress for the LNG Power Plant including the proposed location of the plant on the north side of the Process Plant site. • Prodigy requested that BFN provide feedback by June 4 for the draft supplemental Environmental Assessment report that was emailed to BFN on May 3, 2022. • Prodigy explained that a letter of support will be requested from BFN in June 2022 to be included with the Supplemental Environmental Assessment report submission to the Impact Assessment Agency of Canada (IAAC). 	
<p>June 27, 2022</p>	<p>Engagement meeting with Vic Bolduc, Wayne Greer, and Steve Aiken of the BFN via Teams web-based meeting.</p>	<p>Prodigy met with BFN for an Environmental Committee meeting that included an update for the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy presented information on the engineering design and the proposed location of the LNG Power Plant including the 	

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>design diagrams for the plant engine hall, stacks, substation, and fuel storage area.</p> <ul style="list-style-type: none"> • Prodigy presented information on potential fuel supply points, fuel transportation routes, frequencies of fuel deliveries, fuel transportation safety measures, and emergency systems for responding to transportation and on-site LNG related emergencies. • Prodigy provided information on environmental effects for air quality, greenhouse gas emissions, and noise as well as mitigation measures that will be implemented to minimize those effects. Prodigy explained that they will comply with all applicable greenhouse gas reduction programs but will not be required to comply with the Strategic Assessment of Climate Change (SACC) Net Zero by 2050 program since the mine life and closure work will be completed before 2050. • Prodigy explained that the LNG Power Plant requires amending the federal 	

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Environmental Assessment Approval, the Ontario Environmental Compliance Approval for Air and Noise, and the Closure Plan for the Magino Project. Prodigy also mentioned that the BFN engagement records will be included with the supplemental environmental assessment report and that a letter of support will also be requested from BFN for the proposed LNG Power Plant.</p> <p>Comments from BFN:</p> <ul style="list-style-type: none"> • Vic asked if there are any LNG or CNG suppliers based in Sault Ste, Marie that can supply fuel for the LNG Power Plant. • Wayne mentioned that the BFN council doesn't support projects that are not renewable and that the LNG Power Plant would need to be considered a temporary 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy replied that they would need to check with the Procurement Department for that information, but the only LNG fuel suppliers currently known are based out of Sudbury, Montreal, and Minneapolis and the only CNG supplier in the region is based in Red Rock. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Potential carbon neutral energy projects do not meet the timing or feasibility requirements for the proposed start date for

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>power generation system to receive support.</p> <ul style="list-style-type: none"> • Wayne asked if there were any thoughts to offset the greenhouse gas emissions by investing in carbon neutral energy projects or other carbon offsetting measures. • BFN mentioned that the timing for utilizing LNG power generation is not ideal based on concerns about global climate change. 	<p>the Magino Project and are not suitable for the conditions at the Magino Project site where a continuous and reliable energy supply is needed 24-hours per day on a year-round basis.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy’s preference would be to connect to a powerline that can provide the full power demands of the Magino Project Operations Phase as soon as a feasible option becomes available but with the current situation there are no potential powerlines to connect with in the region of the project site. Prodigy will continue to evaluate options for connecting to a powerline as more powerline projects are initiated in the region. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • The LNG Power Plant will provide the power needed to start the Operations Phase and then other options are expected to become available part way

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> BFN indicated that Prodigy should only consider the LNG Power Plant as a temporary solution to their energy needs with a plan to connect to a powerline as soon as an option becomes available. 	<p>into the mine life that could replace the plant.</p>
<p>August 23, 2022</p>	<p>Email meeting invite sent to Vic Bolduc (Email: vic_bolduc@hotmail.com), Wayne Greer (Email: wayne@abnetwork.ca), Dan Sayers (dannysayers@hotmail.com), and Steve Aiken (Email: saiken@knightpiesold.com).</p>	<p>Prodigy invited BFN to an Environmental Committee meeting to include an update for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on August 25, 2022. Vic, Wayne, and Steve all accepted the invitation.</p>	
<p>August 25, 2022</p>	<p>Engagement meeting with Vic Bolduc, Wayne Greer, and Steve Aiken of the BFN via Teams web-based meeting.</p>	<p>Prodigy met with BFN for an Environmental Committee engagement meeting that included update on the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> Prodigy provided design information for the proposed LNG Power Plant including an explanation of why on-site LNG power generation was selected, the power generation capacity of the plant, the capacity of the on-site storage tanks, the locations of the plant, LNG 	

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>storage tanks, and substation, the design details and location of the surface water control berm that will direct stormwater to the contact water collection drains.</p> <ul style="list-style-type: none"> • Prodigy explained the options for supplying fuel to the plant including highway transportation routes from LNG and CNG fuel supply points in Ontario and out of province suppliers and details on the expected delivery frequencies for LNG versus CNG, and info on transferring LNG into the on-site storage tanks versus feeding CNG directly into the plant while the CNG fuel trucks remain on-site. • Prodigy explained the environmental effects of the plant including air quality emissions, greenhouse gas emissions, and noise and mitigation measures that will be implemented to minimize the effects. • Prodigy explained that the Environmental Assessment Approval, Environmental Compliance Approval for Air and Noise, and mine closure 	

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>plan will be amended for the LNG Power Plant. Prodigy also explained that records of BFN engagement will be compiled and included with the Supplemental Environmental Assessment Report and that a letter for support will be requested from BFN.</p> <p>Comments from BFN:</p> <ul style="list-style-type: none"> • Vic commented that he was under the impression that the LNG Power Plant was only intended to be a temporary source of power for the Magino Project but based on the Closure Plan being amended to include the LNG Power Plant it appears to be a permanent power generation system that will be operated for the life of the mine. 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • The LNG Power Plant is currently needed to provide power generation for the project since there are no feasible alternatives that are available. The intention is that Prodigy will be able to connect with a powerline when there is a suitable option but for the start of operations there are no options available. The LNG Power Plant needs to be included in the Closure Plan since it is required for mines to include all infrastructure regardless of how long the infrastructure remains in operation as part of the project.

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Steve commented that Prodigy should emphasize that the LNG Power Plant is intended to be a short-term solution to the power demands for the project and that they are seeking alternatives including the option of connecting with a powerline when one becomes available. It would also be better if Prodigy would take a more proactive approach to their power needs to address the need for a low carbon source of power for the Magino Project. • BFN commented that the wording surrounding the LNG Power Plant should be modified to indicate that the LNG Power Plant is not considered to be a permanent solution to the power needs of the project and that Prodigy is actively seeking other options including connecting with a feasible powerline project that could be constructed within 3-5 years that would have potential to provide the full power demands of the 	

TABLE A-4: BATCHEWANA FIRST NATION – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		project. If that is possible the LNG Power Plant would be considered as a back-up power supply that could be used during power outages if needed. That option would be more favourable to BFN council to support the LNG Power Plant as a short-term solution.	

Table A-5: Red Sky Métis Independent Nation Engagement Summary

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
February 2, 2022	Email meeting invite sent to Donelda DeLaRonde, Executive Director (Email: donelda@rsmn.ca), Sandra Van Dong, Community Development Director & Mineral Development Advisor (Email: sandravandong@rsmn.ca), and Prashant Kanwar, Forest Management Liaison (Email: forestmanagementliaison@rsmn.ca).	Prodigy invited RSMIN to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on February 9, 2022. Donelda, Sandra, and Prashant accepted the meeting invite.	
February 9, 2022	Engagement meeting with Donelda DeLaRonde, Sandra Van Dong, and Prashant Kanwar of the RSMIN via Teams web-based meeting.	Prodigy met with RSMIN and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:	

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Project Description:</p> <ul style="list-style-type: none"> • Installation of LNG power generation system capable of operating on LNG and/or CNG fuel to provide electrical power for the Magino Project site. • A diesel fueled system was previously eliminated from the initial options due to greater air and carbon emissions and greater risk of spills. • Generation plant to be constructed north of the Plant Site with four (4) generators. • Maps of potential highway transport routes were shown for transporting LNG and/or CNG fuel from regional supply points located near Sudbury, ON, Minneapolis, U.S., Montreal, QC, and Nipigon, ON. • An explanation was provided of emergency services and mitigation measures for responding to on and off-site emergencies associated with LNG and CNG fuel transport and storage. 	

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • An explanation of safety procedures for highway transport drivers and transport companies to prevent and respond to emergencies during highway transport of LNG and CNG. • Prodigy will amend the Closure Plan for the Magino Project to include costs for decommissioning, removing, and demolishing LNG Power Plant infrastructure at the end of Magino operations. <p>Questions from RSMIN:</p> <ul style="list-style-type: none"> • Why would LNG be transported from as far away as Minneapolis, U.S.? 	<p>Response for Prodigy:</p> <ul style="list-style-type: none"> • Prodigy’s preference is to purchase LNG and CNG from local and regional Canadian based supply points but a supply point in Minneapolis is also being considered to provide an additional option if there are any issues or delays in securing fuel supply contracts with Canadian based suppliers. No final decisions have been made and no contracts are currently in place with any of the potential fuel suppliers. <p>Response from Prodigy:</p>

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Are there any similar LNG Power Plants in northern Ontario? • Will the LNG Power Plant be a temporary or permanent solution to Prodigy’s power demands? 	<ul style="list-style-type: none"> • An LNG Power Plant is currently under construction at the Greenstone Gold Mine located near Geraldton, ON. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy’s preference is that the LNG Power Plant will be temporary if there becomes an opportunity to receive the full power demands from a regional transmission or distribution powerline. There are currently no existing or new transmission or distribution lines being installed in close enough proximity to the site to be a feasible option for providing the full power demands and none would be available in time for the startup of mine operations in March 2023. There might be future transmission lines in the region that will make this a feasible option but not currently. <p>Response from Prodigy:</p>

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • Why would Environment and Climate Change Canada (ECCC) approve the LNG Power Plant if climate change related carbon reductions are currently a priority of the federal government? • Why Can't Algoma Power Inc. (API) supply Prodigy's full power demands? <p>Comments from RSMIN:</p> <ul style="list-style-type: none"> • There are many safety risks associated with the increased highway transport traffic for fuel transport trucks. Prodigy should conduct a risk assessment for the potential 	<ul style="list-style-type: none"> • Although ECCC has made carbon reductions a priority, Prodigy is confident that the minimal increases in carbon emissions associated with the LNG Power Plant will be acceptable to the federal agency. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • The local API owned and operated distribution powerline does not have the capacity to provide the power demands due to technical constraints. API has plans for upgrading and re-routing the local distribution line to provide a portion of Prodigy's power demands, but it is currently only in the planning stage. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy is assessing the risks associated with the increased highway traffic and will provide follow up responses as the LNG

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		safety effects of the increased traffic.	Power Plant project proceeds.
May 3, 2022	Email to Sandra Van Dong, Community Development Director & Mineral Development Advisor (Email: sandravandong@rsmn.ca).	Prodigy emailed a copy of the draft Supplemental Environmental Impact Report for the LNG Power Plant was provided to BFN and request was made for review feedback to be provided by June 4, 2022.	
May 26, 2022	Email meeting invite sent to Donelda DeLaRonde, Executive Director (Email: donelda@rsmn.ca), Sandra Van Dong, Community Development Director & Mineral Development Advisor (Email: sandravandong@rsmn.ca).	Prodigy invited RSMIN to an Environmental Committee meeting that included an update on the proposed LNG Power Plant in a web-based meeting on May 31, 2022. Donelda and Sandra accepted the meeting invite.	
May 31, 2022	Engagement meeting with Donelda DeLaRonde and Sandra Van Dong of the RSMIN via Teams web-based meeting.	<p>Prodigy met with RSMIN for an Environmental Committee meeting and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <p>Project Description and Permitting and Agreement Requirements:</p> <ul style="list-style-type: none"> • Power Plant to generate up to 22 MW onsite at Process Plant area. • Status of supplemental Environmental Assessment: <ul style="list-style-type: none"> ○ Argonaut Gold requested for RSMIN feedback to be provided in June 2022 	

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> ○ Indigenous recommendation letters needed for final submission of supplemental impact assessment report in June 2022 <p>Questions from RSMIN:</p> <ul style="list-style-type: none"> • Did Prodigy consider nuclear power as an option for the on-site power generation? <p>Comments from RSMIN:</p> <ul style="list-style-type: none"> • The safety and environmental effects associated with the highway transport of LNG and/or CNG fuel from regional suppliers to the Magino Project site is a major concern for RSMIN. Of particular concern are the air and carbon emissions, potential for highway vehicle accidents, and the potential for wildlife collisions due to the increased highway traffic. RSMIN also requested more 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • No, nuclear power was not considered as a viable option for the on-site power generation due to strict waste management requirements associated with spent nuclear fuel rods and other waste materials. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy’s preference is to receive fuel from the nearest suppliers in the region since a shorter travel distance will reduce cost, travel time, air and carbon emissions, and the risk for safety incidents and wildlife collisions. Prodigy offered to hold a longer engagement meeting on June 6, 2022, to review the LNG Power Plant project description, environmental effects, and permitting and

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		information about the on-site infrastructure that is required for the LNG Power Plant.	Indigenous agreement requirements of the project and to better address RSMIN’s concerns about the potential effects of the increased highway traffic and to provide information about the on-site infrastructure.
May 31, 2022	Email meeting invite sent to Donelda DeLaRonde, Executive Director (Email: donelda@rsmn.ca) and Sandra Van Dong, Community Development Director & Mineral Development Advisor (Email: sandravandong@rsmn.ca).	Prodigy invited RSMIN to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on June 6, 2022. Donelda and Sandra accepted the meeting invite.	
June 6, 2022	Engagement meeting with Donelda DeLaRonde and Sandra Van Dong of the RSMIN via Teams web-based meeting.	<p>Prodigy met with RSMIN and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <p>Project Description:</p> <ul style="list-style-type: none"> • Magino Project power demands of 16.5 MW will be partly covered by API powerline but additional 12.5 MW is needed. • LNG power plant with capacity of 22 MW with four (4) generators operating on LNG and/or CNG fuel. 	

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • 30 m X 12 m powerhouse on concrete foundation with four (4) engine compartments. • On site LNG fuel storage with six (6) 133 m³ tanks for total of 800 m³ of capacity. • Maps of potential highway transport routes were shown for transporting LNG and/or CNG fuel from regional supply points located near Sudbury, ON, Minneapolis, U.S., Montreal, QC, and Nipigon, ON. • 13.8 kV overhead powerline to Process Plant Substation. <p>Environmental Effects:</p> <ul style="list-style-type: none"> • Air emissions of total suspended particulate (TSP), particulate matter (PM₁₀), fine particulate (PM_{2.5}), sulphur dioxide (SO₂), oxides of nitrogen (NO_x) and carbon monoxide (CO) will increase. • Noise effects will increase but noise will be mitigated by silencers on stacks and sound reduction building materials in the powerhouse. • Carbon emissions for the Magino Project will increase due to natural gas 	

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>combustion in the power plant and diesel fuel combustion by fuel transport trucks.</p> <p>Permitting and Agreement Requirements:</p> <ul style="list-style-type: none"> • Impact Assessment Agency of Canada (IAAC) amendment approval to the Environmental Assessment approval for the Magino Project. • Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approval for Air and Noise. • Closure Plan amendment for LNG Power Plant, powerline, and fuel storage systems. • Indigenous engagement and support including letters of support to be submitted for the Environmental Assessment amendment approval. <p>Questions from RSMIN:</p> <ul style="list-style-type: none"> • Will the natural gas be off-loaded directly into the storage tanks? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • LNG will be off loaded directly into the on-site storage tanks, but CNG will be fed directly to the LNG Power Plant from the

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • What criteria will be used to select fuel suppliers for LNG and/or CNG? • Will fuel deliveries by rail cars be possible using the existing railroad that runs through Dubreuilville, ON? <p>Comments from RSMIN:</p>	<p>transport truck trailers. The CNG offloading system will require that the CNG tanker truck trailers remain on-site while the fuel is fed into the plant.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy will select the fuel suppliers based on the lowest cost and shortest travel distances available. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Rail car fuel deliveries will not be a viable option because the local railroad is located approximately 10-20 km from the Magino Project site and truck transport from the railroad to the site would still be required. This approach would not be a better option than truck transport directly from the supplier to the site because it would require a combination of rail and truck transport as well as an additional step for offloading fuel from rail cars to trucks in Dubreuilville.

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> <li data-bbox="1100 302 1465 743">• Prodigy should select the nearest fuel supplier for the LNG and/or CNG to minimize the distances that transport trucks travel and the potential safety and environmental effects associated with the increased traffic. RSMIN is concerned about the air and carbon emissions from the transport trucks and the increased risk of highway traffic accidents and wildlife collisions. <li data-bbox="1100 1110 1465 1422">• RSMIN is willing to provide a letter of support for the LNG Power Plant to Prodigy within 3 weeks if the concerns related to the safety and environmental risks associated with the highway transport of fuel are adequately addressed in the Supplemental Environmental 	<p data-bbox="1495 298 1755 324">Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1541 331 1894 1068">• Prodigy’s preference will be to select the nearest supplier since it will likely also be the lowest delivery cost option and will minimize the amount of time required for refueling the storage tanks. The shortest travel distance will also have the lowest fuel transport air and carbon emissions. Prodigy will work with the consultant preparing the Supplemental Environmental Assessment report to provide more details and mitigation measures for reducing the risk of potential highway safety incidents and responding to incidents if and/or when they occur. <p data-bbox="1495 1110 1755 1136">Response from Prodigy:</p> <ul style="list-style-type: none"> <li data-bbox="1541 1143 1894 1422">• Prodigy will work with the consultant preparing the Supplemental Environmental Assessment report to provide more details and mitigation measures for reducing the risk of potential highway safety incidents and

TABLE A-5: RED SKY MÉTIS INDEPENDENT NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Assessment Report and followed through with once the power plant goes into operation.</p>	<p>responding to incidents if and/or when they occur. Prodigy will also make travel distance a key decision factor when selecting fuel suppliers since the shortest travel distance will likely be the preferred option for transport related air and carbon emissions, delivery costs and times, highway traffic safety, and wildlife collisions.</p>
<p>June 15, 2022</p>	<p>Email sent to Donelda DeLaRonde, Executive Director (Email: donelda@rsmn.ca) and Sandra Van Dong, Community Development Director & Mineral Development Advisor (Email: sandravandong@rsmn.ca).</p>	<p>Prodigy emailed a summary of emergency response services and driver safety procedures and systems that will be utilized to minimize risk of safety incidents for the highway transport of LNG and/or CNG fuel to the Magino Project site.</p> <p>Emergency services to be utilized:</p> <ul style="list-style-type: none"> • Volunteer fire departments, and emergency medical/ambulance services are provided through the Algoma District Services Administration Board. • Emergency Responders and Emergency Services personnel, regional and local, will be familiarized with the power plant and natural gas facilities and trained to 	

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		<p>properly handle emergencies and to notify the appropriate management personnel.</p> <ul style="list-style-type: none"> • An on-site Emergency Response Team will include the necessary vehicles and equipment will be provided. The Team will be made available to support community emergencies when required • Prodigy will undertake liaison and consultation activities with local and regional emergency service providers to plan for potential Project-related on and off-site events, and to develop mitigation as appropriate. <p>Safety procedures and systems for drivers:</p> <ul style="list-style-type: none"> • All delivery trucks will be tracked between place of loading and the Magino Project site via a GPS based tracking system. • All delivery trucks will carry emergency spill kits. • All delivery trucks and facilities will be Ontario Technical Standards and Safety Authority (TSSA) compliant. 	

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		<ul style="list-style-type: none"> • Transportation companies will possess a valid Federal Motor Carrier Safety Administration (FMCSA) Hazardous Materials Safety Permit for natural gas transport. • Each transportation company will have well established and documented Emergency Response Procedures. 	
June 29, 2022	<p>Email meeting invite sent to Donelda DeLaRonde, Executive Director (Email: donelda@rsmn.ca) and Sandra Van Dong, Community Development Director & Mineral Development Advisor (Email: sandravandong@rsmn.ca).</p>	<p>Prodigy invited RSMIN to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on July 14, 2022. Donelda and Sandra accepted the meeting invite.</p>	
July 14, 2022	<p>Engagement meeting with Donelda DeLaRonde and Sandra Van Dong of the RSMIN via Teams web-based meeting.</p>	<p>Prodigy met with RSMIN and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy provided an update on the design and operating capacity of the proposed LNG Power Plant including the location of the Process Plant site where the plant will be constructed, an explanation of the reasoning for deciding to choose on-site power generation with an LNG 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Power Plant for providing electricity for the Magino Project Operations Phase, details on the power generation capacity of the plant, fuel storage capacity of the on-site LNG fuel storage tanks, surface water control berms for directing stormwater to the contact water collection system, the detection and alarm systems for fuel leaks, smoke, and carbon monoxide, and the configuration of the engine hall and exhaust stacks.</p> <ul style="list-style-type: none"> • Prodigy provided information on fuel deliveries, transportation safety, emergency response systems, and other LNG Power Plant related safety measures. • Prodigy provided information on the air quality, greenhouse gas, and noise related environmental effects as well as mitigation measures that will be implemented to minimize the effects. • Prodigy information on a study completed in the U.S. (United States Department of Transportation, Pipeline and 	

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		<p>Hazardous Materials Safety Administration published <i>Risk Assessment of Surface Transport of Liquid Natural Gas</i> in 2019) that assessed 45-years of LNG truck transport that involved 300,000 truck trips up to 150 miles (240 km) each with only two incidents, one truck rollover and one engine fire. Neither incident resulted in a release of LNG fuel from the tanker.</p> <ul style="list-style-type: none"> Prodigy explained that the Magino Project Environmental Assessment Approval will be amended, the Ontario Environmental Compliance Approval for Air and Noise will be amended, and the Magino Mine Closure Plan will be amended for the LNG Power Plant and records of RSMIN engagement meetings will be recorded and a letter of support will be requested from the RSMIN. <p>Comments from RSMIN:</p> <ul style="list-style-type: none"> Transportation safety is the greatest concern that RSMIN has regarding the LNG Power Plant project because of the 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> The transportation routes and related information

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		increase in highway traffic and the potential for vehicle collisions and wildlife collisions. Information will be appreciated once Prodigy confirms the fuel supply points and transportation routes.	will be shared with RSMIN as soon as it is known.
August 8, 2022	Email meeting invite sent to Donelda DeLaRonde, Executive Director (Email: donelda@rsmn.ca) and Sandra Van Dong, Community Development Director & Mineral Development Advisor (Email: sandravandong@rsmn.ca).	Prodigy invited RSMIN to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant in a web-based meeting on August 15, 2022. Donelda and Sandra accepted the meeting invite.	
August 15, 2022	Engagement meeting with Donelda DeLaRonde and Sandra Van Dong of the RSMIN via Teams web-based meeting.	Prodigy met with RSMIN for an Environmental Committee engagement meeting that included update on the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting: <ul style="list-style-type: none"> • Prodigy provided design information for the proposed LNG Power Plant including an explanation of why on-site LNG power generation was selected, the power generation capacity of the plant, the capacity of the on-site storage tanks, the locations of the plant, LNG storage tanks, and substation, the design details and location of the surface 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>water control berm that will direct stormwater to the contact water collection drains.</p> <ul style="list-style-type: none"> • Prodigy explained the options for supplying fuel to the plant including highway transportation routes from LNG and CNG fuel supply points in Ontario and out of province suppliers and details on the expected delivery frequencies for LNG versus CNG, and info on transferring LNG into the on-site storage tanks versus feeding CNG directly into the plant while the CNG fuel trucks remain on-site. • Prodigy explained the environmental effects of the plant including air quality emissions, greenhouse gas emissions, and noise and mitigation measures that will be implemented to minimize the effects. • Prodigy explained that the Environmental Assessment Approval, Environmental Compliance Approval for Air and Noise, and mine closure plan will be amended for the LNG Power Plant. Prodigy also explained that records 	

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		<p>of RSMIN engagement will be complied and included with the Supplemental Environmental Assessment Report and that a letter for support will be requested from RSMIN.</p> <p>Comments from RSMIN:</p> <ul style="list-style-type: none"> RSMIN mentioned that they would like to know if Prodigy has decided if the LNG Power Plant will be operated on LNG or CNG fuel since CNG fuel will require a significantly larger number of fuel deliveries per day. The greatest concern that RSMIN has regarding the LNG Power Plant is the risk for fuel transportation related accidents due to the increased highway traffic. The air quality emissions associated with the diesel-powered fuel transport trucks is also a significant concerns for RSMIN. 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> Prodigy’s preference will be to operate the LNG Power Plant on LNG fuel whenever possible since it will require fewer fuel deliveries and it will also allow the fuel to be transferred into the on-site fuel storage tanks instead of the delivery trucks remaining on-site while fuel is fed directly into the plant, as would be required for CNG fuel. The preference will also be to receive LNG fuel deliveries from the nearest supply point, which is Sudbury, to minimize the driving distance for the fuel trucks. Prodigy’s Procurement Department is still working to establish a fuel supply contract, but they are focusing on LNG fuel from

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
			the nearest supply point as their priority in the process.
August 15, 2022	Email sent to Donelda DeLaRonde and Sandra Van Dong.	<p>Prodigy emailed a copy of the revised draft Supplemental Environmental Assessment Report for the proposed LNG Power Plant and asked for any review feedback to be provided by end of day on Friday, August 26, 2022. Prodigy advised that the current version of the draft report had been updated to address comments and concerns that RSMIN had expressed since the first LNG related engagement meeting held on February 2, 2022.</p> <p>Prodigy also provided a template for a letter of support as an attachment to the email and requested that the RSMIN provide a letter of support for the LNG Power Plant.</p>	

Table A-6: Garden River First Nation Engagement Summary

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
April 5, 2022	Email sent to Chief Andy Rickard of the GRFN (Email: arickard@gardenriver.org)	Prodigy contacted Chief Rickard to invite GRFN to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant. No email reply was received in response to the invitation.	

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
May 20, 2022	Email sent to Chief Andy Rickard of the GRFN (Email: arickard@gardenriver.org)	Prodigy contacted Chief Rickard to invite GRFN to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant. Chief Rickard contacted Prodigy by phone call to advise that Jauvonne Kitto is the GRFN contact person for requesting engagement.	Prodigy emailed Jauvonne Kitto on May 20, 2022, to make an introduction and to welcome her to participate with Magino Project Environmental Committee meetings and to engage with Prodigy for the LNG Power Plant.
May 24, 2022	Email sent to Jauvonne Kitto, Executive Director (Email: jkitto@gardenriver.org) if the GRFN.	Prodigy emailed a copy of the draft Supplemental Environmental Assessment report to GRFN along with a description of the LNG Power Plant project and a request to receive feedback and a letter of support for the EA submission In June 2022.	
May 25, 2022	Email meeting invite sent to Jauvonne Kitto, Executive Director of the GRFN (Email: jkitto@gardenriver.org) for engagement meeting with GRFN staff.	Prodigy contacted Jauvonne Kitto to invite GRFN to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant. Jauvonne replied that Garden River will be available for an engagement meeting on May 30, 2022.	
May 30, 2022	Engagement meeting with Jauvonne Kitto, Executive Director (Email: jkitto@gardenriver.org), Richard Perrault, Environmental Coordinator (Email: rperrault@gardenriver.org), and Tanya Boissoneau (Email: tboissoneau@gardenriver.org) of the GRFN via Teams web-based meeting.	Prodigy met with GRFN and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting: Project Description: <ul style="list-style-type: none"> • Magino Project power demands of 16.5 MW will be partly covered by API powerline but additional 12.5 MW is needed. 	

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<ul style="list-style-type: none"> • LNG power plant with capacity of 22 MW with four (4) generators operating on LNG and/or CNG fuel. • 30 m X 12 m powerhouse on concrete foundation with four (4) engine compartments. • On site LNG fuel storage with six (6) 133 m³ tanks for total of 800 m³ of capacity. • 13.8 kV overhead powerline to Process Plant Substation. <p>Environmental Effects:</p> <ul style="list-style-type: none"> • Air emissions of total suspended particulate (TSP), particulate matter (PM₁₀), fine particulate (PM_{2.5}), sulphur dioxide (SO₂), oxides of nitrogen (NO_x) and carbon monoxide (CO) will increase. • Noise effects will increase but noise will be mitigated by silencers on stacks and sound reduction building materials in the powerhouse. • Carbon emissions for the Magino Project will increase due to natural gas combustion in the power plant and diesel fuel combustion by fuel transport trucks. 	

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Permitting and Agreement Requirements:</p> <ul style="list-style-type: none"> • Impact Assessment Agency of Canada (IAAC) amendment approval to the Environmental Assessment approval for the Magino Project. • Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approval for Air and Noise. • Closure Plan amendment for LNG Power Plant, powerline, and fuel storage systems. • Indigenous engagement and support including letters of support to be submitted for the Environmental Assessment amendment approval. <p>Questions from GRFN:</p> <ul style="list-style-type: none"> • Where are the air monitoring stations on the Magino Project site located? 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy explained that prior to the startup of the LNG Power Plant there will be three air Monitoring stations in operation including AM1 located at the south fence line of the project boundary, AM2 located at the east

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY

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		<ul style="list-style-type: none"> • Would Prodigy provide GRFN a letter of support if they wanted to create their own air quality monitoring stations. • Who will own the LNG Power Plant? • How long will the LNG Power Plant be operated? 	<p>fence line of the project boundary, and AM3 located at the north property boundary.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Yes, Prodigy will provide a letter of support for this. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy/Argonaut Gold will be the owner of the LNG Power Plant. <p>Response from Prodigy:</p> <ul style="list-style-type: none"> • Prodigy answered that the preference will be to connect to a large enough transmission or distribution powerline that can provide the full power demands of the Magino Project but there are currently no new transmission lines being installed in close enough proximity to the site to be a feasible option and none would be available in time for the startup of mine operations in March 2023. There might be future transmission or higher capacity distribution lines in

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY

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		<ul style="list-style-type: none"> Can Prodigy share a copy of the LNG Power Plant engagement presentation? 	<p>the region that will make This a feasible option but not currently.</p> <p>Response from Prodigy:</p> <ul style="list-style-type: none"> Yes. A copy of the presentation was shared with GRFN on May 31, 2022, shortly after the end of the meeting using a OneDrive folder that was accessible to the meeting participants.
<p>June 28, 2022</p>	<p>Engagement meeting with Jauvonne Kitto, Executive Director (Email: jkitto@gardenriver.org), Richard Perrault, Environmental Coordinator (Email: rperrault@gardenriver.org), Cheyenne Nolan, Stephanie Seymour, Alexis Vanderheyden, and Jayselen Moore of the GRFN via Teams web-based meeting.</p>	<p>Prodigy met with GRFN and gave a project overview presentation of the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> Prodigy provided an update on the design and operating capacity of the proposed LNG Power Plant including the location of the Process Plant site where the plant will be constructed, an explanation of the reasoning for deciding to choose on-site power generation with an LNG Power Plant for providing electricity for the Magino Project Operations Phase, details on the power generation capacity of the 	

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>plant, fuel storage capacity of the on-site LNG fuel storage tanks, surface water control berms for directing stormwater to the contact water collection system, the detection and alarm systems for fuel leaks, smoke, and carbon monoxide, and the configuration of the engine hall and exhaust stacks.</p> <ul style="list-style-type: none"> • Prodigy provided information on fuel deliveries, transportation safety, emergency response systems, and other LNG Power Plant related safety measures. • Prodigy provided information on the air quality, greenhouse gas, and noise related environmental effects as well as mitigation measures that will be implemented to minimize the effects. • Prodigy explained that the Magino Project Environmental Assessment Approval will be amended, the Ontario Environmental Compliance Approval for Air and Noise will be amended, and the Magino Mine 	

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Closure Plan will be amended for the LNG Power Plant and records of GRFN engagement meetings will be recorded and a letter of support will be requested from GRFN.</p> <p>Comments from GRFN:</p> <ul style="list-style-type: none"> • Will there be Requests for Proposals for the LNG Power Plant Project? GRFN would like to have a summary of the scope of work. • The shorter fuel transportation option for the LNG and CNG fuel deliveries is preferred by GRFN to minimize risk for transportation related accidents and to minimize transportation related air emissions. • GRFN is uneasy to provide a letter of support for the LNG Power Plant without knowing more about the project. Perhaps a sight visit to the 	<p>Response form Prodigy:</p> <ul style="list-style-type: none"> • There will be Requests for Proposals for some of the LNG Power Plant work that will be issued by the Prodigy Contracts Procurement Department. GRFN can bid on the work if they meet the requirements in the tender documents. <p>Response for Prodigy:</p> <ul style="list-style-type: none"> • It is a priority for the Procurement Department to get a fuel supply contract with the nearest fuel supplier for those reasons and also to be able to receive fuel deliveries faster. <p>Response form Prodigy:</p> <ul style="list-style-type: none"> • Prodigy welcomes GRFN to visit the Magino Project site and July will be a fine time for a visit.

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		<p>Magino Project would be helpful for understanding the design and location of the plant. GRFN suggested that they could do a site visit towards the end of July and would get back to Prodigy with proposed dates.</p> <ul style="list-style-type: none"> GRFN asked for additional information on the timeline for reviewing the draft supplemental environmental assessment report and providing their feedback. 	<p>Response from Prodigy:</p> <ul style="list-style-type: none"> There will be additional time to provide feedback and a revised version of the draft report will be issued in August that has been updated for concerns addressed by other Indigenous partners during previous engagement meeting for the LNG Power Plant Project. The revised draft report will be provided when it is available.
<p>June 29, 2022</p>	<p>Email meeting invite sent to Chief Andy Rickard (Email: ARickard@gardenriver.org), Jauvonne Kitto, Executive Director of the GRFN (Email: jkitto@gardenriver.org), Richard Perreault (Email: rperrault@gardenriver.org), Alexis Vanderheyden (Email: AVanderheyden@gardenriver.org), and Stephanie Seymour (Email: sseymour@gardenriver.org) for engagement meeting with GRFN staff.</p>	<p>Prodigy invited GRFN to engage for an environmental committee meeting on July 12, 2022 that included the amendment to the Environmental Assessment for the proposed LNG Power Plant. Chief Andy Rickard, Jauvonne, and Stephanie Seymour accepted the meeting.</p>	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
July 12, 2022	Engagement meeting with Chief Andy Rickard, Jauvonne Kitto, Richard Perrault, and Stephanie Seymour of the GRFN via Teams web-based meeting.	<p>Prodigy met with GRFN for an Environmental Committee engagement meeting that included update on the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting:</p> <ul style="list-style-type: none"> • Prodigy provided an update on the design and operating capacity of the proposed LNG Power Plant including the location of the Process Plant site where the plant will be constructed, an explanation of the reasoning for deciding to choose on-site power generation with an LNG Power Plant for providing electricity for the Magino Project Operations Phase, details on the power generation capacity of the plant, fuel storage capacity of the on-site LNG fuel storage tanks, surface water control berms for directing stormwater to the contact water collection system, the detection and alarm systems for fuel leaks, smoke, and carbon monoxide, and the configuration of the engine hall and exhaust stacks. • Prodigy provided information on fuel deliveries, 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>transportation safety, emergency response systems, and other LNG Power Plant related safety measures.</p> <ul style="list-style-type: none"> • Prodigy provided information on the air quality, greenhouse gas, and noise related environmental effects as well as mitigation measures that will be implemented to minimize the effects. • Prodigy explained that the Magino Project Environmental Assessment Approval will be amended, the Ontario Environmental Compliance Approval for Air and Noise will be amended, and the Magino Mine Closure Plan will be amended for the LNG Power Plant and records of GRFN engagement meetings will be recorded and a letter of support will be requested from GRFN. 	
<p>July 20, 2022</p>	<p>In person meeting between Chief Andy Rickard, Jauvonne Kitto, Magino General Manager Victor Barua, and Magino Environmental Superintendent Leon Kennedy at the Prodigy Admin Office in Dubreuilville. A site visit of the Magino Project site was completed with Chief Rickard and Jauvonne after the meeting.</p>	<p>Discussion about the LNG Power Plant completed during the meeting involved the purpose of the plant to provide power for the start of the Magino Project Operations Phase. Additional discussion was focused on potential contracts for GRFN to</p>	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		support the LNG Power Plant construction.	
August 2, 2022	Email meeting invite sent to Chief Andy Rickard (Email: ARickard@gardenriver.org), Jauvonne Kitto, Executive Director of the GRFN (Email: jkitto@gardenriver.org), Richard Perrault (Email: rperrault@gardenriver.org), Alexis Vanderheyden (Email: AVanderheyden@gardenriver.org), and Stephanie Seymour (Email: sseymour@gardenriver.org) for engagement meeting with GRFN staff.	Prodigy invited GRFN to engage for an environmental committee meeting on August 9, 2022 that included the amendment to the Environmental Assessment for the proposed LNG Power Plant. Chief Andy Rickard, Jauvonne, Richard Perrault, and Stephanie Seymour accepted the meeting.	
August 9, 2022	Engagement meeting with Chief Andy Rickard, Jauvonne Kitto, Richard Perrault, and Stephanie Seymour of the GRFN via Teams web-based meeting.	Prodigy met with GRFN for an Environmental Committee engagement meeting that included updates on the proposed LNG Power Plant. The following topics, comments, and questions were discussed during the meeting: <ul style="list-style-type: none"> • Prodigy presented current design information for the proposed LNG Power Plant including the proposed location of the plant on the north side of the Magino Process Plant site, the power generation capacity of 22 MW with four generators operating, the six on-site LNG fuel storage tanks with a total combined fuel storage capacity of 800 m³, the substation and 13.8 kV 	

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY

DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>overhead powerline connecting to the Process Plant substation, and the surface water control berms for directing stormwater to the contact water collection drains on the Process Plant site.</p> <ul style="list-style-type: none"> • Prodigy provided information on potential environmental effects and proposed mitigation measures for minimizing air quality, noise, greenhouse gas emissions, and transportation safety incidents including potential wildlife collisions. • Prodigy provided information on emergency response systems that will be implemented for identifying and responding to potential fuel leaks, spills, fires, and other emergencies including the Magino Project Emergency Response Team and emergency response and firefighting equipment. The Emergency Response Team will receive training specifically for responding to LNG Power Plant related emergencies. • Prodigy explained that the Magino Project 	

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DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		<p>Environmental Assessment will be amended, the Ontario Environmental Compliance Approval for Air and Noise will be amended, and the Closure Plan will be amended to include the LNG Power Plant. Prodigy also explained that records of engagement meetings held with GRFN will be summarized for the Supplemental Environmental Assessment Report that will be submitted to the Impact Assessment Agency of Canada and that a letter of support will be requested from GRFN.</p>	
<p>August 16, 2022</p>	<p>Email sent to Chief Andy Rickard, Jauvonne Kitto, Stephanie Seymour, and Richard Perrault.</p>	<p>Prodigy emailed a copy of the revised draft Supplemental Environmental Assessment Report for the proposed LNG Power Plant and asked for any review feedback to be provided by end of day on Friday, August 26, 2022. Prodigy advised that the current version of the draft report had been updated to address comments and concerns that GRFN had expressed since the first LNG related engagement meeting held on May 30, 2022.</p> <p>Prodigy also provided a template for a letter of support as an attachment to the email and requested that the</p>	

TABLE A-6: GARDEN RIVER FIRST NATION – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
		GRFN provide a letter of support for the LNG Power Plant.	

Table A-7: Pic Mobert First Nation Engagement Summary

TABLE A-7: PIC MOBERT FIRST NATION – ENGAGEMENT SUMMARY			
DATE	SELECTED ENGAGEMENT TECHNIQUE OR MILESTONE	DESCRIPTION OF TOPIC(S)/QUESTION(S)/COMMENT(S)	PRODIGY RESPONSE(S)
May 3, 2022	Email sent to Jesse Gaudette, Lands & Resources Manager at Pic Mobert First Nation (Email: lansandresources@picmobert.ca)	Prodigy contacted Jesse Gaudette to invite Pic Mobert to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant. An automatic out of office email reply advised contacting Jennifer Jacques, Consultation Coordinator for Pic Mobert.	Prodigy emailed Jennifer Jacques on May 3, to make an introduction and to welcome to engage for the Magino Project and the LNG Power Plant.
May 3, 2022	Email sent to Jennifer Jacques, Consultation Coordinator at Pic Mobert First Nation (Email: consultationcoordinator@picmobert.ca)	Prodigy contact Jennifer Jacques to invite Pic Mobert to engage for the amendment to the Environmental Assessment for the proposed LNG Power Plant.	
May 4, 2022	Email received from Jennifer Jacques, Consultation Coordinator at Pic Mobert First Nation (Email: consultationcoordinator@picmobert.ca)	Pic Mobert confirmed that the first nation does not have an interest in the Magino Project since the project footprint falls outside of their area of concern.	
May 4, 2022	Email sent to Jennifer Jacques, Consultation Coordinator at Pic Mobert First Nation (Email: consultationcoordinator@picmobert.ca)	Prodigy thanked Pic Mobert for their response confirming that they are not interested in engaging for the Magino Project due to it being outside their area of concern.	

APPENDIX B

**Detailed Calculations to Support
Power Plant Emissions**

B1.0 POWER PLANT EMISSIONS

The power plant consists of four 5.564 MW Wartsila natural gas engines. The Wartsila engines are four-stroke lean-burn engines. For assessment purposes, it is assumed that three engines will operate simultaneously for 24 hours per day, 7 days per week and 365 days per year to reach a power supply of 12.5 MW. As outlined in Argonaut's "Magino EA Project Desc Nov 2021" document, at 100% load each engine will consume 7,615 BTU/kWh low heat value (LHV) natural gas. Emission factors for NOx, CO, and TSP were provided by Argonaut in the document entitled "Magino EA Project Desc Nov 2021". Emission factors for all other contaminants were taken from Table 3.2-2 of the U.S. EPA AP-42 Chapter 3.2 "Natural Gas-fired Reciprocating Engines" dated 07/00.

Emission factors used in the emission rate calculations for natural gas generators are shown in the table below:

Contaminant	Emission Factor	Emission Factor Units	Quality Rating	Reference
TSP	0.08	g/kWh	A	Argonaut
NOx	1.23	g/kWh	A	Argonaut
CO	1.38	g/kWh	A	Argonaut
SO ₂	5.88E-04	lb/MMBtu	A	AP-42 s.3.2
PM ₁₀	7.71E-05	lb/MMBtu	D	AP-42 s.3.2
PM _{2.5}	7.71E-05	lb/MMBtu	D	AP-42 s.3.2

To identify whether the Project has used Best Available Practices, emissions were also estimated assuming the power plant would be diesel powered, to provide a comparison with natural gas generator emissions. For assessment purpose it was assumed that the engines will operate simultaneously for 24 hours per day, 7 days per week and 365 days per year and would have an output power of 12.5 MW. Emission factors were taken from Table 3.4-1 of the U.S. EPA AP-42 Chapter 3.4 "Large Stationary Diesel and All Stationary Dual-fuel Engines".

Emission factors used in the emission rate calculations for diesel powered generators are shown in the table below:

Contaminant	Emission Factor	Emission Factor Units	Quality Rating	Reference
TSP	0.426	g/kWh	B	AP-42 s.3.4
NOx	14.6	g/kWh	B	AP-42 s.3.4
CO	3.35	g/kWh	C	AP-42 s.3.4
SO ₂	7.38E-03	g/kWh	B	AP-42 s.3.4
PM ₁₀	0.426	g/kWh	B	AP-42 s.3.4
PM _{2.5}	0.426	g/kWh	B	AP-42 s.3.4

The emission rate equation, including unit conversions is as follows:

$$ER = EF \times \text{Power of each engine} \times \# \text{ of engines} \times \frac{1000 \text{ kW}}{1 \text{ MW}} \times \frac{1 \text{ hr}}{3600 \text{ s}}$$

Where: ER = emission rate (g/s)
 EF = emission factor (g/kWh)
 Power of each engine = 5.564 MW
 # of engines = 2.25 engines

The following is a sample calculation for TSP emission rate from the power plant.

$$ER = \frac{0.08 \text{ g}}{\text{kWh}} \times 5.564 \text{ MW} \times 2.25 \text{ engines} \times \frac{1,000 \text{ kW}}{1 \text{ MW}} \times \frac{1 \text{ hr}}{3600 \text{ s}}$$

$$ER = 0.28 \text{ g/s}$$

Emission factors for SO_2 , PM_{10} , and $\text{PM}_{2.5}$ are expressed in units of lb/MMBtu when taken from the U.S. EPA AP-42 Chapter 3.2. The following is a sample calculation of the emission factor conversion from lb/MMBtu to g/kWh for SO_2 .

$$EF \left(\frac{\text{g}}{\text{kWh}} \right) = EF \left(\frac{\text{lb}}{\text{MMBtu}} \right) \times LHV \times \frac{1 \text{ MMBtu}}{1,000,000 \text{ Btu}} \times \frac{453.591 \text{ g}}{1 \text{ lb}}$$

$$EF \left(\frac{\text{g}}{\text{kWh}} \right) = \frac{0.0006 \text{ lb}}{\text{MMBtu}} \times \frac{7615 \text{ Btu}}{\text{kWh}} \times \frac{1 \text{ MMBtu}}{1,000,000 \text{ Btu}} \times \frac{453.591 \text{ g}}{1 \text{ lb}}$$

$$EF \left(\frac{\text{g}}{\text{kWh}} \right) = 0.0020 \text{ g/kWh}$$

B2.0 FUGITIVE DUST FROM UNPAVED ROADS

The predictive equation in U.S. EPA AP-42 Chapter 13.2.2 “Unpaved Roads” (November 2006) was used to calculate the fugitive dust emissions from the unpaved onsite roadways. The equation, including unit conversions and a control factor for fugitive dust best management practices is as follows:

$$EF = k \left(\frac{s}{12} \right)^a \times \left(\frac{W}{3} \right)^b \times 281.9 \times (1 - 80\%)$$

Where: EF = particulate emission factor (g/VKT)

k = empirical constant for particle size range (pounds per vehicle mile travelled)

s = road surface silt content (%)

W = average weight (tons) of the vehicles traveling the road

a = empirical constant for particle size range (dimensionless)

b = empirical constant for particle size range (dimensionless)

281.9 = conversion from pounds per vehicle miles travelled to grams per vehicle kilometres travelled

80% = reduction of fugitive dust emissions due to best management practices to control fugitive dust

The table below shows the constants used for the unpaved roadways fugitive dust emissions.

Size Range	k (lb/VMT)	a	b
PM _{2.5}	0.15	0.9	0.45
PM ₁₀	1.5	0.9	0.45
TSP	4.9	0.7	0.45

Unpaved road dust emissions were conservatively calculated without an adjustment for natural mitigation. The following is a sample calculation for the TSP emission factor for the fuel delivery trucks travelling on the access road (UPR4). The following values were used for the calculation.

Silt content (%) = 5.80

Average weight of vehicles (tons)^(a) = 87.5

Length of road segment (km) = 0.417

Number of one-way vehicle passes per day = 9

- a) Average weight assumes a full truck weighs 105 tons and an empty truck weighs 70 tons and the truck drives there and back in one trip.

$$EF = 4.9 \left(\frac{5.8}{12}\right)^{0.7} \times \left(\frac{87.5}{3}\right)^{0.45} \times 281.9 \times (1 - 80\%)$$

$$EF = 758 \text{ g/VKT}$$

The following is a sample calculation for the controlled TSP emission rate:

$$ER = EF \times \text{Daily Vehicle Kilometres Travelled} \times \frac{1 \text{ day}}{24 \text{ hr}} \times \frac{1 \text{ hr}}{3,600 \text{ s}}$$

$$ER = \frac{758 \text{ g}}{\text{VKT}} \times \frac{18 \text{ vehicles}}{24 \text{ hours}} \times \frac{0.417 \text{ km}}{\text{trip}} \times \frac{1 \text{ hr}}{3,600 \text{ s}}$$

$$ER = 0.066 \text{ g/s}$$

The emissions of PM₁₀ and PM_{2.5} were calculated in a similar manner.

B3.0 MOBILE EXHAUSTS

Crank case emission standards from Nonroad Engine Modelling (Compression Ignition) – U.S. EPA 009d (Report No. NR-009d) (July 2010) were used to calculate the exhaust emissions from the fuel delivery trucks. It was assumed that all fuel delivery trucks comply with at least Tier 3 emission standards.

Emission standards were not provided for PM₁₀ and PM_{2.5}; therefore, it was assumed that all TSP emissions consist of PM₁₀ and that PM_{2.5} emissions are 97% of PM₁₀ emissions. Load factors are provided based on vehicle type as per Table F4 and F6 in Report No. NR-009d.

The following equation was used to determine the emission rates for on-site vehicles:

$$ER = EF \times \text{Engine Horsepower Rating} \times LF \times \# \text{ of vehicles} \times \frac{\text{Hours of Operation}}{24 \text{ hr}} \times \frac{1 \text{ hr}}{3,600 \text{ s}}$$

Where: ER = emission rate (g/s)

EF = emission factor (g/HP-hr)

LF = load factor

The sample calculation for the TSP emission rate for the fuel delivery trucks which are dedicated to the unpaved road 4 (URP4) is below and uses the following parameters:

Vehicle HP = 511

Hours of operation in 24 hours = 24

Emission standard (g/HP-hr) = 0.15

Load factor = 0.58

Number of vehicles = 9

$$ER = \frac{0.15 \text{ g}}{\text{HP} - \text{hr}} \times 511 \text{ HP} \times 0.58 \times 9 \times \frac{24 \text{ hr of operation}}{24 \text{ hr}} \times \frac{1 \text{ hr}}{3,600 \text{ s}}$$

$$ER = 0.11 \text{ g/s}$$

The emissions of CO, NO_x, PM₁₀ and PM_{2.5} were calculated in the same manner presented above.

Sulphur dioxide (SO₂) emissions were estimated using fuel consumption data for the non-road engines. The sulphur content of fuel was assumed to be 15 parts per million (ppm) which is the maximum allowable sulphur in fuel content in Ontario. The following equation was used to determine the SO₂ emission factor:

$$EF = \text{Fuel Density} \times \text{Sulphur Content} \times \frac{\text{MM SO}_2}{\text{MM Sulphur}}$$

Where: EF = particulate emission factor (g/L)

MM = molar mass (g/mol)

The following is a calculation for the SO₂ emissions from the fuel delivery trucks using the following values:

Fuel density (g/L) = 845

Sulphur content (ppm) = 15

MM SO₂ (g/mol) = 64

MM S (g/mol) = 32

BSFC (lb/HP-hr)^(a) = 0.367

(a) For all HPs greater than 100 as per Table A4 of Report No. NR-009D.

$$EF = \frac{845 \text{ g}}{\text{L}} \times \frac{15}{1,000,000} \times \frac{64 \frac{\text{g}}{\text{mol}}}{32 \frac{\text{g}}{\text{mol}}}$$

$$EF = 0.025 \frac{\text{g}}{\text{L}}$$

The fuel consumption can be calculated using the steady state brake specific fuel consumption (BSFC) conversion in Table A4 of Report No. NR-009D and is as follows:

$$\text{Fuel Consumption} = \text{BSFC} \left(\frac{\text{lb}}{\text{HP} - \text{hr}} \right) \times \text{HP} \times \frac{\text{LF}}{\text{fuel density}}$$

$$\text{Fuel Consumption} = 0.367 \frac{\text{lb}}{\text{HP} - \text{hr}} \times 511 \text{ HP} \times \frac{0.58}{0.845 \text{ kg/L}} \times \frac{0.45359 \text{ kg}}{\text{lb}}$$

$$\text{Fuel Consumption} = 58.4 \frac{\text{L}}{\text{hr}}$$

The SO₂ emission rate can be calculated as follows:

$$ER = EF \times \text{Fuel Consumption} \times \# \text{ of Vehicles} \times \frac{\text{Hours of Operation}}{24 \text{ hr}} \times \frac{1 \text{ hr}}{3,600 \text{ s}}$$

Where: *ER* = emission rate (g/s)

EF = emission factor (g/L)

$$ER = \frac{0.025 \text{ g}}{\text{L}} \times \frac{58.4 \text{ L}}{\text{hr}} \times 9 \times \frac{24 \text{ hr of operation}}{24 \text{ hr}} \times \frac{1 \text{ hr}}{3,600 \text{ s}}$$

$$ER = 0.004 \text{ g/s}$$

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