

Steering Committee

May 28, 2025



Agenda

- Review of last meeting deliverables
- Size of the vessel used in studies
- Boreholes map
- Sediments Samples Analysis
- Noise Study (parameters to be used)
- Pozzolan Production at the mine or Port?
- CO2 impact of the Project

Last meeting deliverables

- Size of vessel used in studies
 - Included in this presentation
- Boreholes map
 - The map was sent to committee members and is included in this presentation
- Real Estate Agents must inform, by law, their client of a possible mine
 - This was investigated and is false; real estate agents are not forced by law to declare the possibility of a mine in the area.

Size of vessel used in studies

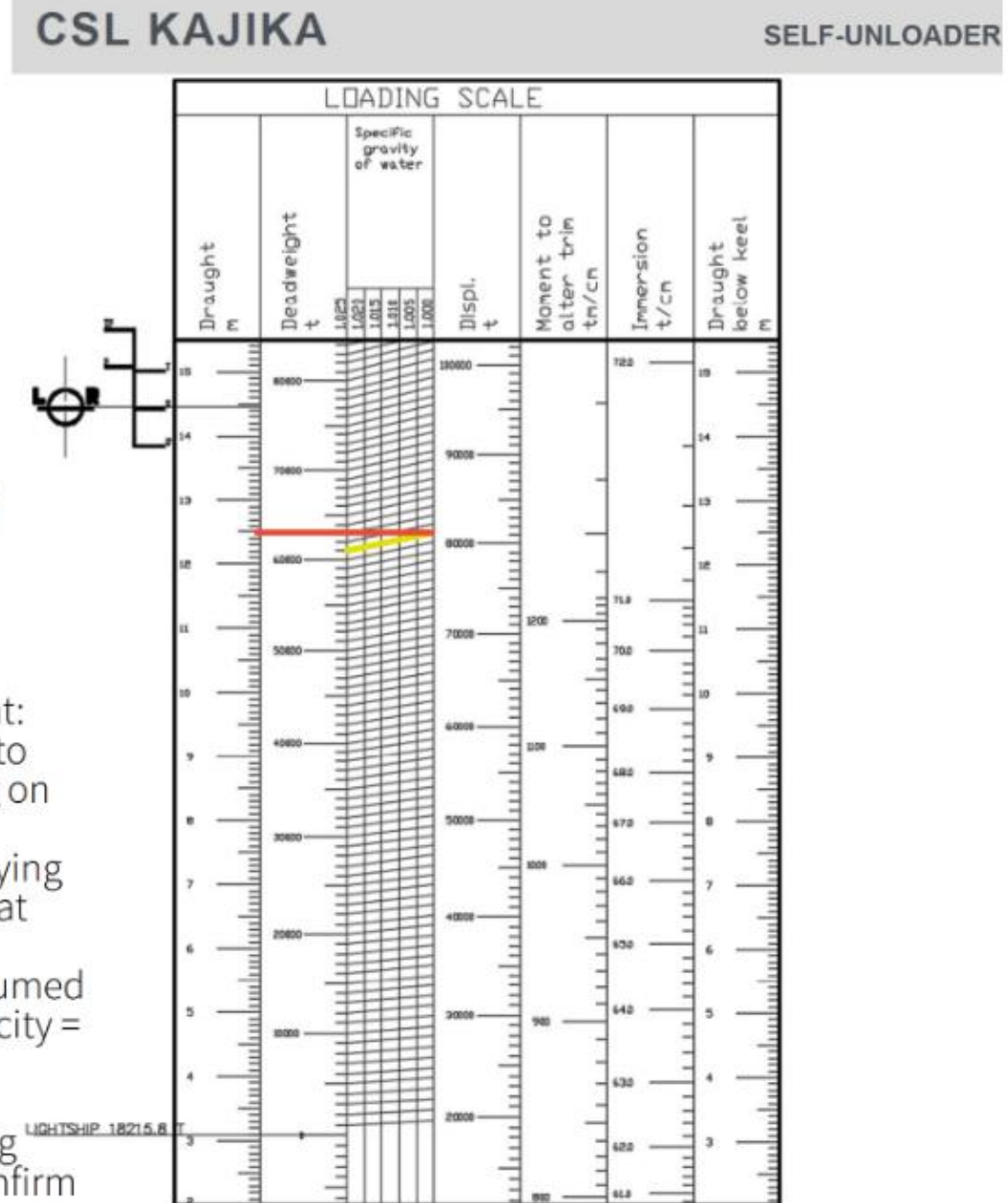
Design Vessel

- CSL Kajika
 - Panamax
 - Has berthed before at Dalhousie
- Draught requirement established at 12.5 m based on discussions with Ecorock, assuming ship will leave at high tide, and high tide will provide sufficient freeboard between ship and sea bottom



CSL Kajika | CSL

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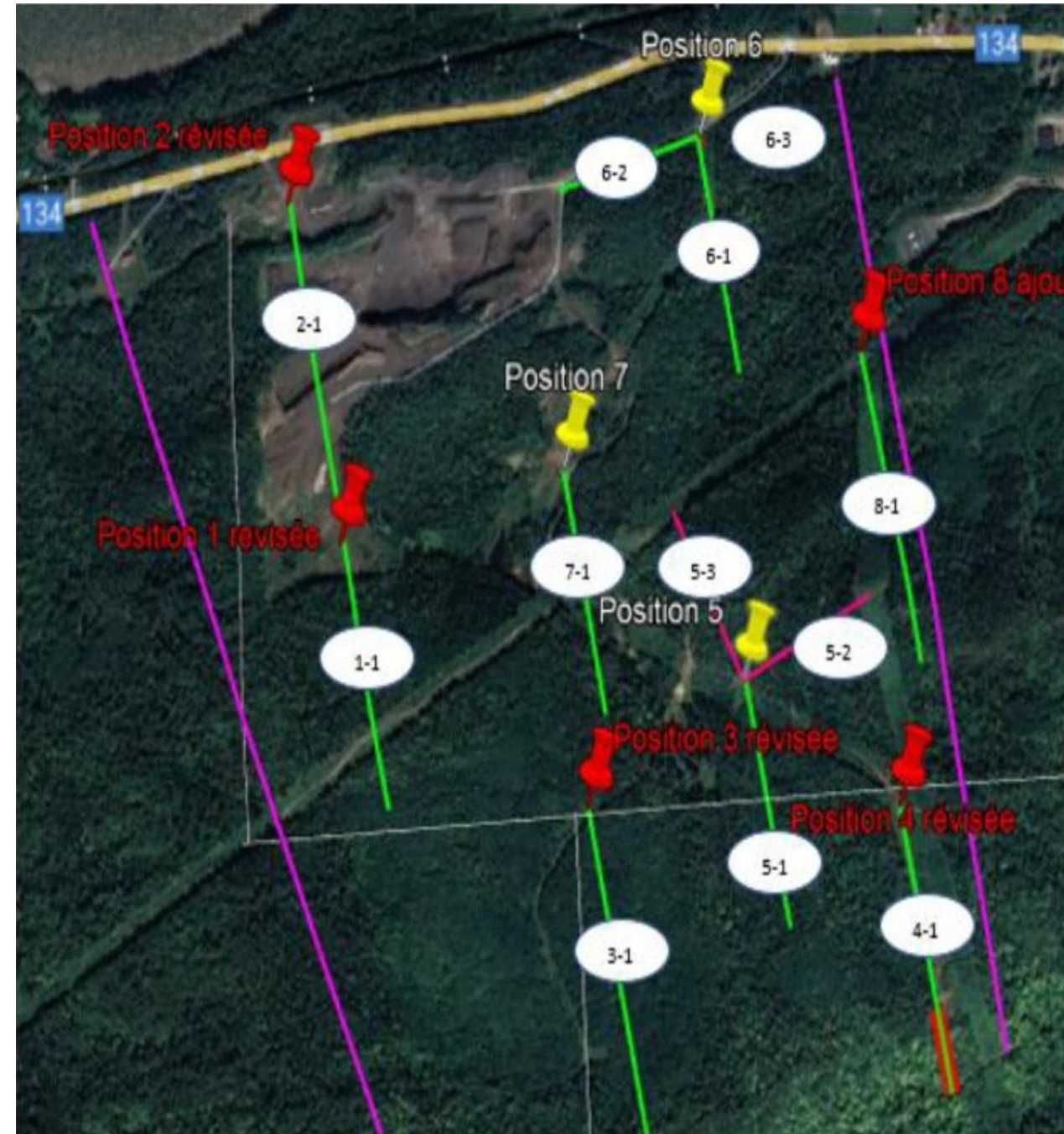


Assuming a 12.5 draught:

- Deadweight 61,000 to 63,000 t (depending on water density)
- Corresponding carrying capacity estimated at 48,800 t to 59,850 t
 - Based on assumed carrying capacity = 80-95% of deadweight
- Obtain loading manual to confirm

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Boreholes map



Samples Taken in Dredge Area to Date



Sample Taken Outside Dredge Area to Date



Parameters Analyzed and Guidelines considered

- Metals
 - 23 parameters tested for metals
 - *aluminum, antimony, arsenic, barium, beryllium, boron, chromium, cobalt, copper, iron, lead, lithium, manganese, mercury, nickel, selenium, silver, strontium, thallium, tin, uranium, vanadium, zinc*
- Hydrocarbons
 - benzene, toluene, ethylbenzene, xylene, gasoline, fuel oil, lube oil, etc.
- PAH's
 - 22 PAH constituents
- PCB's
 - 28 PCB constituents
- Guidelines considered
 - **Provincial (Atlantic)**
 - Atlantic Risk Based Corrective Action (RBCA) Human Health Tier I Environmental Quality Standards for Soil (Non-Potable)
 - RBCA Ecological Tier I Environmental Quality Standards for Soil (Coarse-Grained)
 - RBCA Ecological Tier I Environmental Quality Standards for Sediments (Marine)
 - **Federal**
 - Canadian Council Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Human Health (Industrial)
 - CCME Sediment Quality Guidelines for the Protection of Aquatic Life (Marine)

Provincial Guidelines

- For Land Disposal
 - Some of the parameters that exceeded in the dredge area included
 - **arsenic, lead, selenium, vanadium**
 - Other parameters that exceeded outside of the dredge area included:
 - arsenic, cadmium, copper, lead, vanadium, zinc
- For Marine sediments
 - Some of the parameters that exceeded in the dredge area included:
 - nickel, selenium, TPH, PAH**
 - Other parameters that exceeded outside of the dredge area included:
 - cadmium, copper, lead, manganese, mercury, nickel, silver, zinc, TPH, PAH

Analyte of Concern	Human Health Guideline (mg/L)	Ecological Guideline (mg/L)	Notes
Arsenic	31	26	1/ 9 samples had a level of 31 mg/L
Lead	740	32	3/ 9 samples exceeded, ranging rom 34 to 48 mg/L
Senium	1135	2.9	3/9 samples exceedended, ranging from 3 to 4 mg/L
Vanadiaum	160	18	9 /9 exceeded, with levels ranging from 37 to 59 mg/L

****No parameter exceeded the human health guideline for sediment disposal on land.***

Analyte of Concern	Marine Standards (mg/L)	Notes
Nickel	50	7 / 9 samples exceeded, ranging 54 to 80 mg/L
Selenium	2	3 /9 samples exceedended, ranging from 3 to 4 mg/L
TPH	25	4 / 9 samples exceedended, ranging from 64 to 154 mg/L
PAH	Varies	3 / 9 samples had some constituents that exceeded

Federal Guidelines

- For Land Disposal
 - Some of the parameters that exceeded in the dredge area included
 - **arsenic, selenium**
 - Other parameters that exceeded outside of the dredge area included:
 - arsenic, copper, lead, zinc

Analyte of Concern	Human Health Guideline (mg/L)	Notes
Arsenic	12	8/ 9 samples exceeded, ranging from 13 to 31 mg/L
Selenium	2.9	3 / 9 samples exceeded, ranging from 3 to 4 mg/L

–For Marine sediments

- Some of the parameters that exceeded in the dredge area included:
 - arsenic, chromium, copper, lead, mercury, zinc, PAH**
- Other parameters that exceeded outside of the dredge area included:

Analyte of Concern	ISQG (mg/L)	PEL (mg/L)	Notes
Arsenic	7.24	41.6	9 /9 exceeded ISQG, but not PEL. Levels ranged 10-31 mg/L
Chromium	52.3	160	7/9 exceeded ISQG, but not PEL. Levels ranged 53-73 mg/L
Copper	18.7	108	4/9 exceeded ISQG, but not PEL. Levels ranged 20-41
Lead	30.2	112	3/9 exceeded ISQG, but not PEL. Levels ranged 33.2-47.7
Mercury	0.13	0.7	2/9 exceeded ISQG, but not PEL. Levels ranged 0.14-0.16 mg/L
Zinc	124	271	4/9 exceeded ISQG, but not PEL. Levels ranged 130-214
PAH	Varies		5/9 exceeded ISQG. Three samples exceeded PEL

***Only PAH exceeded the PEL in two sample locations. All other below PEL.**

ISQG: Interim Standard Quality Guideline. Levels below rarely cause effects.
PEL: Probable Effects Level. Levels between ISQG and PEL are associated with infrequently occurring adverse effects

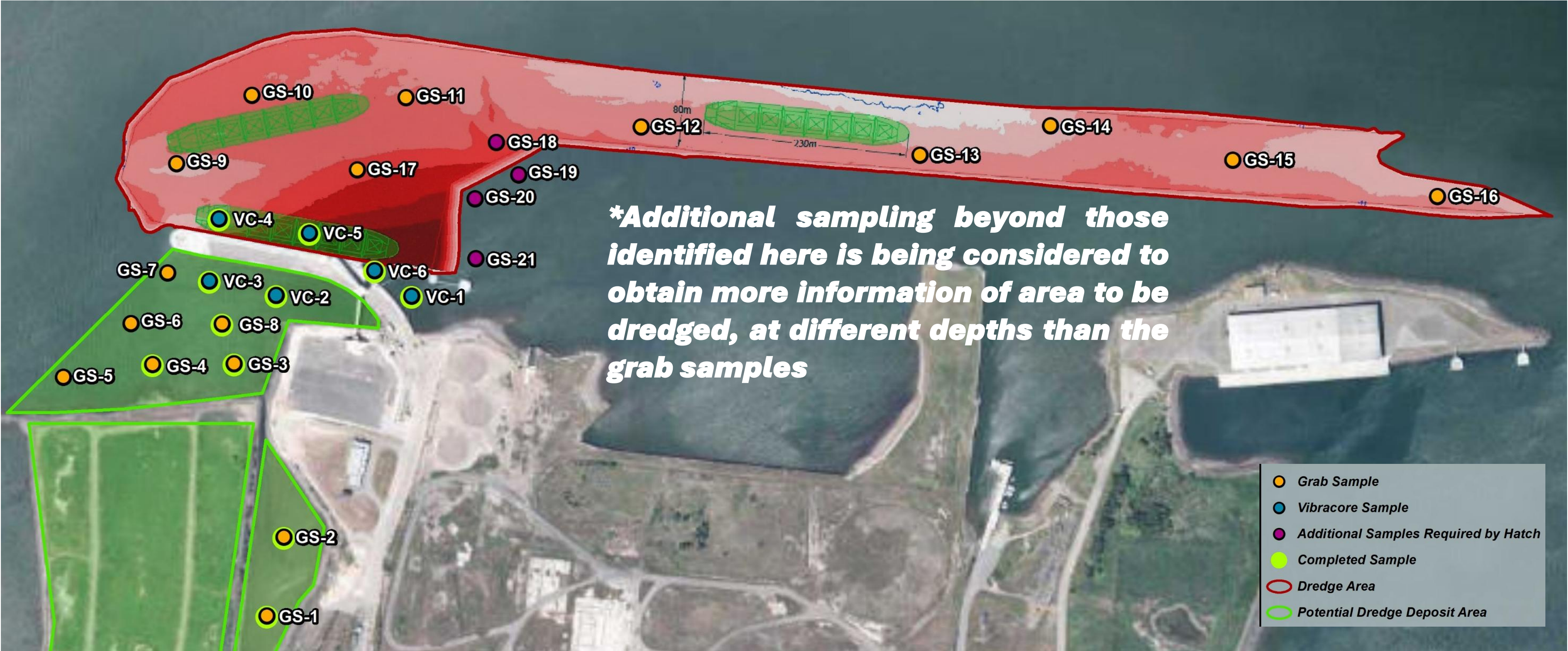
Guideline Comparison – Dredge Area



	Provincial		Federal		
	Marine Sediments	Land Disposal	Marine Sediments	Land Disposal	
Hydrocarbons	X				Hydrocarbons
PAH	X		X		PAH
Arsenic		X	X	X	Arsenic
Cadmium					Cadmium
Chromium			X		Chromium
Copper			X		Copper
Lead		X			Lead
Mercury			X		Mercury
Nickel	X				Nickel
Selenium	X	X		X	Selenium
Silver					Silver
Vanadium		X			Vanadium
Zinc			X		Zinc



Sample Taken & Proposed (May 2025)



***This is a preliminary analysis only. All environmental samples and potential impacts will be evaluated as part of the EIA process**

Noise Study

Environmental Noise

»»»» Impact of quarry operation

- Environmental noise
 - Noise from all sources
 - not including workplace noise (occupational noise)
- Noise
 - unwanted sound
 - sounds that causes psychosocial effect
 - annoyance (discomfort and disturbance), effects on learning, attention deficit, etc.
 - sounds that can have health impact
 - such as sleep disorders, cardiovascular diseases, hearing loss and tinnitus
- Environmental noise poses a risk to people's health and quality of life
World Health Organization (WHO)

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Noise Study

Sound Level Thresholds »» Guidelines »»» Preliminary overview

Dalhousie, Baie-des-Hérons	New-Brunswick	Canada
Municipal Plan	Mining and Mineral Extracting Projects	Canada Health
No negative impact from noise	Measures to reduce noise on adjacent sensitive land uses	Noise mitigation measures > 6.5 %HA (percent highly annoyed)
No specific noise threshold	No specific noise threshold	Noise threshold relative to baseline noise level

Annoyance avoidance

- In accordance with actual soundscape
- Long term noise measurements (baseline) and observations

45 dBA threshold »»» for preliminary overview

- 50 dBA moderate annoyance daytime and evening (OMS, 1999)
- 55 dBA serious annoyance daytime and evening (OMS, 1999)

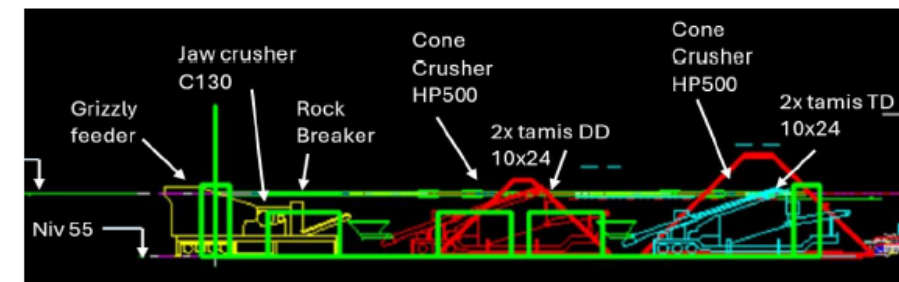
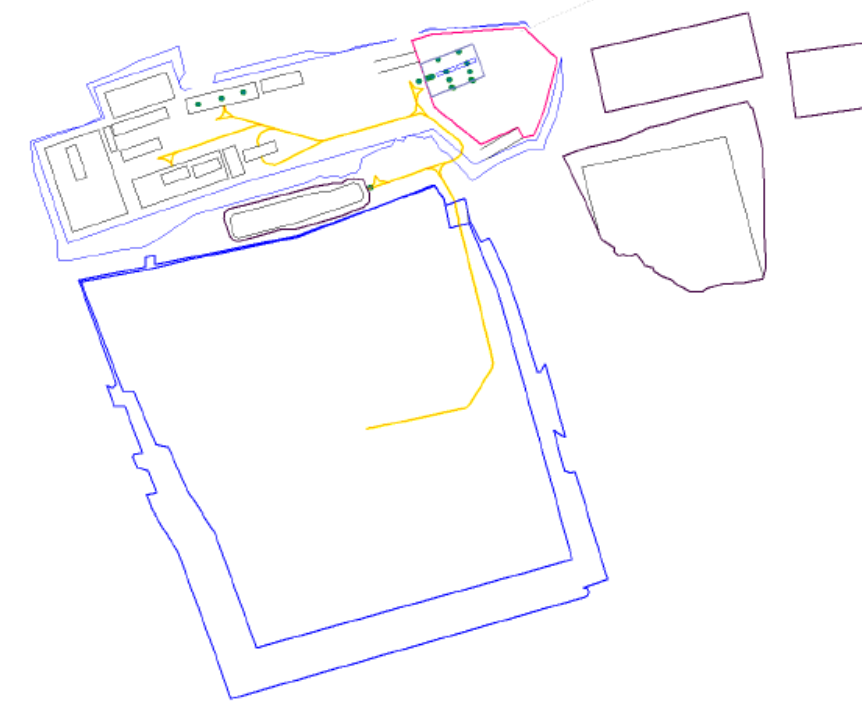
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Noise Study

Modelled Quarry Operations »»»» Sound level estimates

- Grizzly feeder
- Jaw crusher (CP130)
- Rock breaker
- Cone crushers (HP500) x2
- Screeners x2
- Dust collectors (fan) x2
- Off-highway truck (CAT777) x3
 - trajectories / parking / dumping
- Not included :
 - Other mobile equipment
 - Air classifier
 - Blasting
 - Etc.



Sound power levels used are from equipment representative of what will be used but not specifically what will be used

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Noise Study

Noise Mitigation Strategies

- Platform lowering – 10m
- Platform lowering – 20m
- Noise barrier on the north side (5m height > 600m length)
- Megadome with acoustic isolation (to be determined)



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Pozzolan Production at the mine or the Port?

Paramètres des scénarios

Entreposage	
E1	500kt carrière + 100kt port
E2	500kt carrière + 50kt port
E3	500kt carrière + 25kt port
E4	500kt carrière + 5kt port

Option de transport	
T1	2000t/h 5x10
T2	2000t/h 5x10 + OT
T3	2000t/h 7x12
T4	2000t/h 7x24

Option de configuration d'usine	
O1	Aggrégats seuls (Classification)
O2	Pouzzolane mine (205 t/h)
O3	Pouzzolane port (205 t/h)

- Pour ces deux cas, on ajuste les ventes et les tamis du concassage pour obtenir environ 33% de fines, afin de produire la pouzzolane

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Arrêts de convoyeurs au modèle

Arrêts par années:

- Arrêts imprévus majeurs et arrêts pour météo:
 - 2 x 20h
- Arrêts imprévus courts
 - Alimentation: 4 x 4h
 - Chutes: 8 x 7h
 - Autres: 4 x 8h
- Entretien majeurs planifiés
 - 1 x 5 jours
- Entretien mineurs
 - Assumés fait de manière opportuniste lorsque le convoyeur n'est pas requis.

- Durée: De 3.5 à 9.5h (moyenne de 6.5h)
- Fréquence : À chaque 3.25 semaines en moyenne (+/- 25%)
- Total de 16 événements impactant 104 h / année

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Pozzolan Production at the mine or the Port?

Entreposage de pouzzolane

- La taille des entrepôts (point de départ, à discuter et à simuler) proposés sont affichés au tableau suivant.
- L'usine de pouzzolane peut fonctionner 24h / 7j

	Activation à la carrière		Activation au port	
Paramètres	Taille de l'entrepôt	Commentaire	Taille de l'entrepôt	Commentaire
Trémie / Silo d'alimentation	1 500t*	8h x 195t/h	12 000t**	62h x 195t/h
Silo de pouzzolane à la carrière	12 000t	62h x 195t/h Production weekend	N/A	N/A
Silo de pouzzolane au port	30 000t	1 cimentier	42 000t	Capacité totale « après » l'usine à la carrière

*Gestion du mélange à l'alimentation

**Besoin de capacité d'entreposage additionnelle, mais
possiblement extérieure vu qu'il s'agit de fines et d'agréats.

Cette capacité est « remplacée » par la même capacité à la
carrière.

On compare deux cas qui ont le même total en silos de pouzzolane
activée, et non en capacité d'entreposage totale au port.

Pozzolan Production at the mine or the Port?

Pouzzolane à la carrière ou au port?

Code de scénario		PP6V4E1T2O2	PP6V4E2T2O2	PP6V4E3T2O2	PP6V4E4T2O2	PP6V4E1T3O2	PP6V4E2T3O2	PP6V4E3T3O2	PP6V4E4T3O2	PP6V4E1T4O2	PP6V4E2T4O2	PP6V4E3T4O2	PP6V4E4T4O2
Description		500kt mine 100kt port w_OT_5/10	500kt mine 50kt port w_OT_5/10	500kt mine 25kt port w_OT_5/10	500kt mine 5kt port w_OT_5/10	500kt mine 100kt port no_OT_7/12	500kt mine 50kt port no_OT_7/12	500kt mine 25kt port no_OT_7/12	500kt mine 5kt port no_OT_7/12	500kt mine 100kt port no_OT_7/24	500kt mine 50kt port no_OT_7/24	500kt mine 25kt port no_OT_7/24	500kt mine 5kt port no_OT_7/24
Pouzzolane à la carrière	Nb. Navires chargés	85.0	85.0	85.0	85.0	85.0	85.0	85.0	84.9	85.0	85.0	85.0	85.0
	Temps de cycle - Agrégats	41.26	41.32	42.30	42.30	41.62	41.92	48.63	64.31	41.64	41.63	42.31	42.81
	Temps de cycle - Rip-rap	63.93	63.93	64.02	64.02	63.93	63.93	65.25	72.49	63.93	63.93	64.02	64.23
	Temps de cycle - Pouzz. Concassée	43.83	43.22	43.76	43.76	42.78	43.46	54.89	75.52	42.54	42.54	42.61	42.99
	Temps de cycle - Pouzz. Activée	59.21	57.01	54.01	54.01	51.05	51.98	59.29	75.05	50.22	50.20	50.20	50.27
Pouzzolane au port	Nb. Navires chargés	85.0	85.0	85.0	85.0	85.0	85.0	85.0	84.9	85.0	85.0	85.0	85.0
	Temps de cycle - Agrégats	41.36	41.67	42.70	43.03	41.52	41.84	49.00	64.31	41.77	41.77	42.46	42.78
	Temps de cycle - Rip-rap	63.93	63.93	64.02	64.28	63.93	63.93	65.25	71.98	63.93	63.93	64.02	64.23
	Temps de cycle - Pouzz. Concassée	42.88	44.53	43.81	43.83	42.57	43.09	54.47	75.13	42.54	42.54	42.61	42.94
	Temps de cycle - Pouzz. Activée	55.07	54.09	54.20	52.00	50.49	51.06	57.14	73.17	50.15	50.15	50.20	50.27
Comparatif	Écart Nb. Navires chargés	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Écart Agrégats	-0.23%	-0.86%	-0.95%	-1.70%	0.24%	0.20%	-0.76%	0.00%	-0.31%	-0.34%	-0.35%	0.07%
	Écart Rip-rap	0.00%	0.00%	0.00%	-0.41%	0.00%	0.00%	0.01%	0.71%	0.00%	0.00%	0.00%	0.00%
	Écart Pouzz. Concassée	2.22%	-2.93%	-0.10%	-0.16%	0.50%	0.87%	0.78%	0.51%	0.00%	0.00%	0.00%	0.12%
	Écart Pouzz. Activée	7.53%	5.40%	-0.35%	3.86%	1.11%	1.80%	3.77%	2.56%	0.14%	0.11%	0.01%	-0.01%

- La taille totale des entrepôts de pouzzolane activée demeure inchangée dans les deux cas (30 000t + 12 000t).
- Les temps de cycles sont très similaires dans les deux cas (environ +2% plus long pour les navires de pouzzolane, lorsque la pouzzolane est activée à la carrière).
- D'autres implications devraient mener au choix entre les deux options.
- **Nous utiliserons la pouzzolane à la carrière pour la suite.**

CO2 impact of the Project

If the Project goes forward, it is not only job creation for the region, but also a major impact on carbon reduction for New Brunswick

If EcoRock produces 1.5Mt of pozzolan, it can replace 1.5Mt of cement which produces 0.8t of CO2 per tonne. This means that the CO2 production would decrease by 1.2Mt

A car produces an average of 4t of CO2 per year which means that the EcoRock Project would be equivalent of taking off the road half of the registered vehicles of New Brunswick!!

