

| #  | Category                            | Mitigation Strategy Description   | Where applicable  |
|----|-------------------------------------|---|---|
| 1. | <b>Construction on the Facility</b> |   |   |
|    | (a) Dust                            | Prior to the start of construction, a "baseline level" particulate matter, dust fall and nitrogen dioxide monitoring program will be implemented to quantify the pre-project levels. This will provide a comparative reference for future monitoring. Two monitoring stations with Met One E- Samplers and dust fall canisters would be installed at least six months prior to construction and take continual samples over that period. A meteorological monitoring station would measure wind speed, wind direction, rainfall, temperature and relative humidity. Nitrogen dioxide would be tested using a hand held monitor on a monthly basis. Current total particulate matter concentrations can be analyzed by wind speed and direction to infer potential existing sources. | All construction activities and post facility activity  |
|    | (b) Noise                           | Construction activity will take place between 7:00 AM and 10:00 PM in accordance with City of Surrey noise bylaws and in order to minimize noise during the night. There will be no work Sundays.   | All construction activities   |
|    | (c) Noise                           | Pile driving, which is expected to be the largest source of noise, is expected to last no longer than two weeks. This activity will adhere to the City of Surrey Bylaws with respect to timing. These bylaws require that work is conducted between 7:00 AM and 10:00 PM, Monday to Saturday. Most work is expected to occur between 9:00 AM and 6:00 PM, Monday to Friday.   | A total of 12 piles are to be installed.  |
|    | (d) Noise                           | A vibratory pile driving process will be used, rather than a hammer process, to reduce noise.   | A total of 12 piles are to be installed.  |
|    | (e) Dust                            | Air quality will be monitored throughout the construction period and during operations via two Met One E-Sampler air quality measurement stations sampling total particulate matter. If total particulate matter monitoring data exceeds air quality objectives or baseline levels, then the origin or source of the emissions will be investigated and documented. The cause and potential reasons will be determined and corrective action will be taken to ensure ambient air quality is below air quality objectives or baseline levels.  | Air quality will be monitored where dust emissions from construction activities will be most prevalent. |

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| (f) | Dust            | <p>Contractors will be required to employ the following mitigation practices during construction:</p> <ul style="list-style-type: none"> <li>- Grading of the construction site in phases, to coincide with actual construction in each specific area</li> <li>- Commencing linear construction at the location that is upwind from the prevailing wind direction</li> <li>- Using wind fencing in construction areas that are frequently subjected to high winds (will be evaluated once construction commences)</li> <li>- As necessary during the construction process, use water spray to control dust on access roads, lay-down areas, work areas and disposal areas</li> <li>- Minimizing drop heights when transferring material (such as when loading soil onto haul trucks)</li> <li>- Large portions of the construction site where possible will be fenced in to eliminate non-essential traffic and dust propagation.</li> </ul> | During entire construction phase  |
| (g) | Surface run off | <p>No significant impacts are expected. Catch basin protection will be installed prior to construction in the Shed 1 working areas. Excavation discharge will be directed to in-ground pits specifically created to manage turbid excavation waters.</p>   | <p>In ground construction work near shed 1; installation of the receiving pits, water settlement ponds and support columns for the conveyors</p>                                      |
| (h) | Lighting        | <p>Existing overhead Terminal lighting for the facility is expected to be adequate for the construction of the proposed facility. However, if any additional lighting is required for any excessively dark days or confined work , lighting will be directed away from residential areas.</p>  | All construction activities   |
| (i) | Traffic         | <p>All construction traffic will access/egress the terminal at pre-arranged times to avoid concerns with regular traffic patterns to and from the terminal. Construction impacting regular and public traffic routes will be performed during off peak times with full flagging. Notifications will be posted one week in advance and sent to all surrounding properties detailing times and impacts of proposed construction work on regular and public traffic routes.</p>   | <p>All construction activities within the terminal. Rail construction activities, particularly the rail crossing on Robson Road and Elevator Road. Bekaert access reconstruction.</p> |

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| (j)                                 | Riparian Planting | <p>Plantings will be undertaken in the Shadow Brook area to mitigate the loss of riparian vegetation</p> <p>The current design does not impact the Shadow Brook area. The current design of the rail loop/Bekaert's relocated access and proposed rail works within the rail holding yard potentially impacts green and possibly yellow coded ditches. Due to these impacts, it was proposed to mitigate by way of enhancing 1,206 m<sup>2</sup> in the Shadow Brook and area with approximately 1,206 native plant species.</p> <p>The species planted will be appropriate native species.</p> <p>Riparian planting will be undertaken in the fall to maximize survival.</p> | Shadow Brook Channel, green coded ditch east of Elevator Road and Rail Yard work.   |
| (k)                                 | Communications    | <p>Questions, concerns or enquiries during construction can be directed to Public Affairs:<br/>604-581-2233 (24x7)<br/>604-582-2244 (M-F)<br/>Community@fsd.bc.ca</p>   | All construction activities   |
| <b>2. Operations - Rail Transit</b> |                   |   |   |
| (a)                                 | Dust              | <p>To be compliant with the BNSF loading requirements, all customers will be required to contractually commit to: :</p> <ul style="list-style-type: none"> <li>- Applying a veneer suppressant at mines pre departure (binds the surface particles together to provide a membrane that is resistant to dust lift off)</li> <li>- Profiling coal loads in accordance with the BNSF loading template</li> <li>- Removing excess coal on wagon sills by using a car sill brush</li> </ul>  | <ul style="list-style-type: none"> <li>- Coal trains in transit between the origin mines and FSD</li> <li>- Coal trains in the PARY, pre unloading</li> <li>- Coal trains on the FSD terminal, pre unloading</li> </ul> |

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|           | (b) Dust  | The sides and bottom of the empty cars will be automatically sprayed to remove any remaining coal after leaving dumper pit shed enclosure at a defined wash car station. The spray device is configured in an arch shape up either side and across the bottom with nozzles at specific intervals to ensure full coverage. The spray device is automatically triggered from a sensor in the track that recognizes movement of the railcar. All water collected from car washing will be automatically pumped to the adjacent water treatment/settling pond for proper handling, recycling and/or disposal. | For all empty rail cars upon departure from the unloading shed. |
|           | (c) Noise   | Cars will be shunted through the two bottom dump receiving pits via an electric positioner (an indexer), which is quieter than a locomotive. A positioner is quieter as it eliminates the frequent stopping and starting that occurs with a locomotive. Use of the positioner eliminates the recurring compaction and retraction of rail car couplings and associated noise.  | All rail cars to be unloaded                                    |
|           | (d) Noise   | The on dock rail has been designed to have turning angles no greater than 12.5 degrees in order to reduce noise. If unexpected squealing noise does occur at certain points, FSD will install track lubricators in order to help mitigate.  | All curves on the proposed rail unloading loop.                 |
|           | (e) Spills  | All spills will be cleaned immediately in accordance with FSD's Spill Response Plan. The method of addressing spills will be dependent on the size and location of the spill. The different scenarios and respective actions and authorities are outlined in FSD Spill Response Plans. All Operational and Maintenance Supervisors will be trained to safely and effectively deal with a spill. All spills will be handled in the priority of human safety, environment, and equipment and infrastructure.  | Coal spills   |
|           | (f) Operation Time                                    | FSD is a 24x7 operation. Although railcars are expected to be received between 4am and 8am and picked up between 5pm and 9pm it could take place at any time of the day. FSD will post alternate receiving or delivery periods on their website 48 hours in advance prior to operations.  |   |
|           |   |   | Rail receiving and delivery                                     |
| <b>3.</b> | <b>Operations - Coal receiving pits and conveyors</b> |   |   |
|           | (a) Dust  | Receiving pits will be within a covered structure, except for the opening at either end for the train to enter/exit.  | Both receiving pits   |

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|   | (b) Dust                  | Atomized water mist/fog system will be projected directly at both sides and tops of both bottom dump rail car unloading pits. There are three spray bars, one on each side and one on top, equipped with several nozzles at appropriate distances to ensure complete coverage. The system is automatically triggered by the railcar movement and will apply a steady mist to all areas receiving coal during the entire unloading process.  | Both receiving pits   |
|   | (c) Dust                  | All conveyors will be covered on the top and sides with steel sheeting to prevent coal or dust from exiting. All transfer points from one conveyor to the other will be fully enclosed on all four sides, top and bottom. In addition, all transfer points will be equipped with water/misting spray that is automatically applied on a continual basis while system is in operation. A spray bar is located above the conveyor and has several nozzles at appropriate distances to ensure complete coverage. Transfer points are also equipped with washdown equipment used for cleaning out the system. | <p>Eight conveyor segments:</p> <ul style="list-style-type: none"> <li>- Quad receiving conveyors (4) exiting the dual receiving pits</li> <li>- Dual out feed conveyors (2) from the quad conveyors</li> <li>- Single feed conveyor</li> <li>- Single barge loading conveyor</li> </ul> <p>Three transfer points:</p> <ul style="list-style-type: none"> <li>- Quad receiving conveyors to dual out feed conveyors</li> <li>- 100mt Surge hopper - Dual out conveyors to single feed conveyor</li> <li>- Single feed conveyor to barge loader</li> </ul> |
|   | (d) Dust                  | Coal on conveyors will be mechanically profiled to not exceed belt edge height to limit exposure to air flow. Profiling is accomplished through the use of a steel plate at the designated height to shape the coal as it passes by.  | All conveyors (see list in 3(c))  |
|   | (e) Dust                  | Water spray will automatically be applied at each transfer point between conveyors on a continual basis while system is in operation. The spray bar is located above the conveyor and has several nozzles at appropriate distances to ensure complete coverage.   | All three transfer points between conveyors (see list in 3(c))  |
|   | (f) Dust                  | Dust suppression technology will be incorporated into the design of the transfer point chutes. Use of dust limiting shapes such as curved chutes or drop limiting devices such as baffles, belt skirting and shrouds to reduce the amount of turbulence and wind which increases exposure to air and can create dust.   | All conveyors (see list in 3(c))  |
|   | (g) Grey Water Management | Pits will be mounted on a sealed concrete sump. All collected water will be pumped to the water treatment/settling ponds for proper handling, recycling and/or disposal. The maximum depth of the sumps will be 10', or approximately 3 m.  | Both receiving pits   |

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|           | (h) Leachate                         | All collected water, exposed water and wash down water will be pumped to the water treatment/settling ponds for proper handling, recycling and/or disposal.   | Full facility area and applicable watershed   |
|           | (i) Lighting                         | Existing overhead Terminal lighting for the facility is expected to be adequate for the proposed facility. If lighting is required on the facility it will be directed away from residential areas.   | The two receiving pits inside the rail receiving shed, along the length of conveyors and catwalks, around the three transfer points, around the two control rooms (barge and pit), and along the barge loader |
| <b>4.</b> | <b><i>Loading coal on barges</i></b> |   |   |
|           | (a) Dust                             | Coal drop heights will be limited through the use of a variable height (luffing) loader to reduce the ability for the product to catch wind and create dust. Max height in this condition can be more controlled would have a maximum drop height of 1m. The loader will be covered to contain the product and reduce emissions.  | Barge loading conveyor or when conveyor is used to deposit product in emergency stockpile area  |
|           | (b) Dust                             | A short directional snorkel off the end of barge loader will be used to reduce turbulence of the product and drop height which eliminates the ability for the product to separate or catch wind and create dust. The snorkel will be enclosed to contain the product and reduce emissions.  | Barge loading conveyor or when conveyor is used to deposit product in emergency stockpile area  |
|           | (c) Dust                             | The adjustable barge loader will be used to shape the coal pile on the barge such that it is slightly rounded and not peaked to reduce the ability of the coal to catch wind and create dust. The barge loader will be manually controlled and the operator will move the unit side to side, forward and back to flatten out the coal.  | Barges during loading operation   |
|           | (d) Dust                             | In response to dust generation, and when weather conditions are expected to lead to dust generation (days with no precipitation, sunny conditions, winds greater than 19 km/hr), water will be applied to wet the coal as it is loaded onto the barge and when the barge is sitting at the berth awaiting departure. Application will be via a manually operated spray halo installed on the tip of the barge loader and a series of manually operated rain birds along the berth face. | Barges during loading operation, as weather conditions dictate  |
|           | (e) Dust                             | An anemometer and dust monitor will be located within 10 metres south west of the barge loader. Meteorological data will be monitored continuously and will be available in real time to the terminal operator and on the terminal's website to the general public. The monitoring will include air quality, temperature, relative humidity and rain. Operations will shut down in periods of winds in excess of 40kmh on a sustained basis of more than 5 minutes..                    | Barge loading conveyor or when conveyor is used to deposit product in emergency stockpile area  |

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|           | (f) Dust  | Two of the six re-circulated barges will be fitted with dust monitoring stations. Potential fugitive dust emissions from the loaded barges at berth side and during river transits will be monitored via these two Met One E-Sampler particulate monitors monitoring total particulate matter. The monitors will be powered by a battery bank or gas generator and will collect data continuously while barges are travelling. Data will be downloaded at the end of every round trip. After the first year of operations, the monitoring strategy will be assessed and possibly modified depending on initial results. | Loaded and loading coal barges at the berth face                |
|           | (g) Leachate  | While the barges are at FSD, the coal surface on loaded barges will be wetted as required (i.e. rain birds operated from the berth for five minutes every 30 minutes). The coal on the barges is expected to absorb all of the water that will be sprayed on it during normal operations.   | Barges during loading operation, as weather conditions dictate. |
|           | (h) Lighting  | Existing overhead Terminal lighting for the facility is expected to be adequate for the proposed facility and we do not expect to require any new lighting. If lighting is required on the barge loader it will be directed away from residential areas.  | The barge loading conveyor and the control room                 |
| <b>5.</b> | <b><i>Coal barge transit down Fraser River to Texada Island</i></b> |   |   |
|           | (a) Dust  | Barge sidewalls will be used to partially protect coal from airflow   | All coal barges used between FSD and Texada Island              |
|           | (b) Dust  | Two of the six re-circulated barges will be fitted with dust monitoring stations. Potential fugitive dust emissions from the loaded barges at berth side and during river transits will be monitored via two Met-one E-Sampler particulate monitors monitoring total particulate matter. The monitors will be powered by a battery bank or gas generator and will collect data continuously while barges are travelling. Data will be downloaded at the end of every round trip. After the first year of operations, the monitoring strategy will be assessed and possibly modified depending on initial results.       | Loaded and loading coal barges at the berth face                |
|           | (c) Dust  | The adjustable barge loader will be used to shape the coal pile on the barge such that it is slightly rounded and not peaked to reduce the ability of the coal to catch wind and create dust. The barge loader will be manually controlled and the operator will move the unit side to side, forward and back to flatten out the coal.  | All coal barges used between FSD and Texada Island              |

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|           | (d) Dust                       | Coal barge will be sprayed with water prior to departure from FSD if the surface of the coal is not sufficiently wet to help control dusting during transit.   | All coal barges used between FSD and Texada Island   |
|           | (e) Dust                       | Coal barges will not operate in periods of high wind in excess of 40km (22 knots per hour) on a sustained basis of more than 5 minutes.  | All coal barges used between FSD and Texada Island   |
|           | (f) Marine safety              | Barge movements will only be conducted when wind conditions are appropriate  | All coal barges used between FSD and Texada Island   |
|           | (g) Marine safety              | Compartmentalized barges will be used, such that a leak in one compartment will not compromise the entire barge  | All coal barges used between FSD and Texada Island   |
|           | (h) Marine safety              | No coal storage in hull of barges, such that a puncture of the hull would not lead directly to a coal spill  | All coal barges used between FSD and Texada Island   |
|           | (i) Fishing Communications     | The project barge schedule will be available to the public online  | All coal barges used between FSD and Texada Island   |
|           | (j) Fishing                    | Where practical, barge movements will be scheduled around fishing windows  | To be applied where practical and where the barge operators feel there is a potential conflict with fishing groups |
|           | (k) Fishing                    | Pre-emptively notify fishing groups if a conflict is expected  | To be applied where practical and where the barge operators feel there is a potential conflict with fishing groups |
| <b>6.</b> | <b>Emergency Stockpile Use</b> |  |  |
|           | (a) Dust                       | Coal drop heights will be limited through the use of a variable height (luffing) loader to reduce the ability for the product to catch wind and create dust. Max height in this condition can be more controlled would have a maximum drop height of 1m. The loader will be covered to contain the product and reduce emissions. | When conveyor is used to deposit product in emergency stockpile area   |
|           | (b) Dust                       | A short directional snorkel off the end of barge loader will be used to reduce turbulence of the product and drop height which eliminates the ability for the product to separate or catch wind and create dust. The snorkel will be enclosed to contain the product and any reduce emissions.                                   | When conveyor is used to deposit product in emergency stockpile area   |



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| (c) | Dust     | An anemometer and dust monitor will be permanently located within 10 metres south west of the barge loader (used to deposit coal in the emergency stockpile in this case). Meteorological data will be monitored continuously and will be available in real time to the terminal operator and on the terminal's website to the general public. The monitoring will include wind, air quality (total particulate matter), temperature, relative humidity and rain. Operations will shut down in periods of winds in excess of 40kmh on a sustained basis of more than 5 minutes. | When conveyor is used to deposit product in emergency stockpile area           |
| (d) | Dust     | In response to dust generation, and when weather conditions are expected to lead to dust generation (days with no precipitation, sunny conditions, winds greater than 19 km/hr), water will be applied to wet the coal in the stockpile. Application will be via manually operated rain birds installed in various locations around the outside of the pile that spray water on top of the pile for a period of time or continuously.   | When coal is temporarily stored in stockpile area in emergency circumstances   |
| (e) | Dust     | Pile profiled with limited height, surrounded by a short concrete wall to prevent the coal pile from moving or sloughing. The height of the pile will be a maximum of 3m to prevent any peaking and avoid dust generation. The concrete wall/berm can be constructed up to a height of 2.3m, or more than 2/3 of the height of the pile.  | When coal is temporarily stored in stockpile area in emergency circumstances   |
| (f) | Dust     | Stockpile will not remain on the ground for very long. It is expected that coal would not be stored in the stockpile for more than 48 hours.  | When coal is temporarily stored in stockpile area in emergency circumstances   |
| (g) | Dust     | Short drop heights (to a maximum of 1m) from front end loader buckets to hopper to reduce turbulence which eliminates the ability for the product to separate or catch wind and create dust.  | When coal is reclaimed from the stockpile and loaded to the barge via a hopper |
| (h) | Dust     | Wind walls on three sides of the hopper to reduce air flow. The height of the wind walls will be up to 1m which reduces the ability for the product to catch wind and create dust.  | When coal is reclaimed from the stockpile and loaded to the barge via a hopper |
| (i) | Dust     | Atomized water mist/fog system projected directly at both sides and tops of hopper. This will prevent dusting as the product is loaded from the bucket into the bin.  | When coal is reclaimed from the stockpile and loaded to the barge via a hopper |
| (j) | Dust     | An anemometer and dust monitor will be located in the immediate vicinity of the barge loader (within 10 m). Meteorological data will be monitored continuously and will be available in real time to the terminal operator and on the terminal's website to the general public. The monitoring will include wind, air quality, temperature, relative humidity and rain. Operations will shut down in periods of winds in excess of 40kmh on a sustained basis of more than 5 minutes.   | When coal is reclaimed from the stockpile and loaded to the barge via a hopper |

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|           | (k) Leachate                  | Drainage berms around perimeter of pile. All collected water will be pumped to the water treatment/settling tanks for proper handling, recycling, and/or disposal.   | When coal is temporarily stored in stockpile area in emergency circumstances |
|           | (l) Lighting                  | Existing overhead Terminal lighting for the facility is expected to be adequate for the proposed facility and we do not expect to require any new lighting. Should any additional lighting be required, it will be directed away from residences and be less than 200W.  | When coal is temporarily stored in stockpile area in emergency circumstances |
| <b>7.</b> | <b>Emergency Response</b>     |  |  |
|           | (a) Fire Prevention           | Conveyor belts will be equipped with fire taps with valves at regular intervals  | All conveyor segments  |
|           | (b) Fire Prevention           | A hose tap will be located at the belt drive area directly upwind of the belt drive  | Conveyor system  |
|           | (c) Fire Prevention           | The conveyor system will use fire retardant hydraulic fluids and fire resistant belting  | Conveyor system  |
|           | (d) Fire Prevention           | Compaction by a tracked machine (i.e. bull dozer) to reduce oxygen and dust.   | When coal is temporarily stored in stockpile area in emergency circumstances |
|           | (e) Marine Emergency Response | <p>FSD has worked with its barging operator to develop a marine emergency response protocol. The protocol prioritizes response in the following manner:</p> <ol style="list-style-type: none"> <li>1. Human safety: ensure the wellbeing of the surrounding public, emergency responders and staff.</li> <li>2. Containment: ensure vessel is secure to mitigate further damage or spillage and if relevant, employ containment tactics to surround and recover lost cargo.</li> <li>3. Assessment: review shoreline impacts using adapted Shoreline Clean-Up Assessment Tactics, in close consultation with Environment Canada, and review marine impacts in consultation with the Department of Fisheries and Oceans (DFO);</li> <li>4. Cleanup: following consultation with regulators and other stakeholders, undertake dredge or other clean up operations. This activity would likely be done in collaboration with specialized clean up agencies.</li> <li>5. Resumption of business for users of the Fraser River: once it is deemed safe to do so, open route in Fraser River so users can resume business in a timely manner.</li> </ol> | All Project barging operations   |

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|----|--------------------|--|--|
| 8. | <b>General</b>     |  |  |
|    | (a) Communications | Questions, concerns or enquiries during operations can be directed to Public Affairs:<br>604-581-2233 (24x7)<br>604-582-2244 (M-F)<br>Community @fsd.bc.ca   | During operations rail, facility or barging          |
|    | (b) Operation Time | FSD is a 24x7 operation. Although coal receiving is anticipated to be during dayshift hours (8am to 4:30pm) it could take place on the afternoon (4:30pm to 1:00am) and graveyard (1:00am to 8:00am) shifts. FSD will post afternoon and graveyard working periods on their website 48 hours in advance prior to operations. | During operations of coal receiving or barge loading |