

J15-035 BEST MANAGEMENT PRACTICES FOR MILE 8 PIT EXTRACTION, CRUSHING & ASPHALT PLANT

MAY 2015

Project Proponent:

Parks Canada – Highway Service Centre Engineering

Project Description

A paving program is planned for the Icefields Parkway in Jasper and Banff NPs during summer 2015. This requires an aggregate source and an asphalt plant. Gravel costs are much higher when purchased outside the park and trucked in, and asphalt must be hot when it is delivered to the paving locations. For work on the Parkway, sourcing and processing the gravel in-park is the only feasible option.

Aggregate will be sourced **within the existing disturbed footprint of Mile 8 Pit**. Clearing and stripping were completed in previous operations, so this project will entail only removal of the few trees, shrubs and forbs that have recently become re-established directly on the mineral substrate. If any topsoil is encountered it will be stockpiled. Crushing will occur on site and may occur during both day and night.

The hot mix asphalt plant will be capable of producing 275 tonnes/hour. It complies with the *BC Asphalt Plant Regulation* and the *Alberta Code of Practice for Asphalt Paving Plants*. The plant will have a footprint of approximately 65 m x 65 m. A 500 kW generator will provide power to the plant and the plant operators' station. The plant operates continuously & will be in standby mode during night and off-paving times to keep the asphalt oil heated and circulating throughout the plant. A minimum of one or two crew members are on site at all times to oversee the safe and secure operation of the plant.

The asphalt plant is equipped with a dry bag emission control system to collect fine dust emissions. A 25,000 L diesel fuel tank for plant equipment and two 90,000 L asphalt oil tanks will be located in lined containment berms. The three aggregate components, rock, manufactured fines and sand, will be stored in pre-hauled stockpiles adjacent to the plant. The aggregate components are added to the mixing process from a three bin hopper attached to the plant. The hot mix asphalt is stored in a vertical 35 tonne storage/loading silo under which trucks pass to be loaded. The truck boxes are coated lightly with diesel in a bermed containment area lined with a layer of sand & plastic prior to loading with hot asphalt mix. Loaded trucks depart from the plant with tarped/covered loads and transport the hot mix product to the paving operation on the roadway.

The total volume of asphalt used will be approximately 40,000 m³. Paving is scheduled for June through August.

Environmental Effects

Best Management Practices (BMPs) are pre-determined environmental management and mitigation measures for defined routine, repetitive projects (e.g. paving) or activities (e.g. erosion control), with well understood and predictable effects. BMPs are an acceptable Environmental Impact Assessment (EIA) pathway as they fulfill Parks Canada's obligations under CEAA 2012 as a manager of federal land. The BMPs listed below will be adhered to during operations.

Timing Windows

- If vegetation is to be removed between April 15 and August 15, the proponent will establish to the satisfaction of the ESO that there is no evidence of birds nesting on the vegetation.
- If a nest is observed on vegetation or on the ground, the area will be left intact with a suitable sized buffer of shrubs/trees around it until the young have fledged and left the nest. Size of buffer to be determined in consultation with the ESO.

Excavation

- Materials shall be placed at storage sites or on the grade without spillage outside the working limits. Any material inadvertently falling outside the work limits is to be removed promptly in a manner that does not damage trees or vegetation.
- All sediment control measures must be in place before starting work in the vicinity of intermittent drainage channels exiting the pit, if present.
- If archaeological resources/cultural artifacts are discovered, immediately cease work at the location where cultural resources are found, and alert ESO.
- Minimize changes to the ground surface that affects its infiltration and runoff characteristics and maintain/re-establish effective surface drainage on completion of the project
- Backfill and compact excavations as soon as possible. Optimize degree of compaction to minimize erosion and allow for re-vegetation.
- All trenches or ditches left unattended overnight must be fenced or covered to prevent wildlife entrapment.

Soil Stripping

- If topsoil is present, strip it under dry conditions whenever possible.
- No stripping shall occur outside of the delineated work area or within 1 metre of the drip line of existing forest.

Topsoil Salvage

- If topsoil is present, salvage it for reclamation purposes.
- Remove stumps and woody debris from topsoil, wherever possible.

Excavated Material Storage

- Allow space for separate storage of topsoil and spoil; where space is available separate stored topsoil from spoil by at least 1 m. Use appropriate material (e.g., geo-textile) to separate soil components where space is limited.
- Topsoil may be stored on hardened surface, geo-textile material or directly on undisturbed vegetation. If storage occurs on vegetation, material recovery by hand may be required.
- Topsoil should be stockpiled on the uphill side of the disturbance on sloped terrain.
- Construct barricades to prevent losses on steep terrain ($>18^\circ$, 3:1).

Excess Materials and Waste (Overburden Removal)

- Surplus excavated material may be used to fill depressions around the project site providing topsoil is stripped before filling, with approval from the ESO.

Gravel Crushing and Washing

- Gravel will not be crushed within 30 meters of any water body.
- If water for cleaning is extracted from a watercourse, a Restricted Activity Permit is required.
- If gravel requires washing, the water used will not be returned directly to any watercourse.
- Water free from chemical contaminants will be discharged into ground where further erosion and runoff into surface water is prevented. Discharging into well vegetated ground surface, at a rate which prevents erosion can often provide increased absorption and reduction of sediment load.
- Contaminated water will be treated to meet CCME guidelines or transported outside of the Parks Canada protected heritage place for disposal at an approved facility.
- For waste removed from the park a detailed receipt of delivery to an approved facility will be provided to the ESO.

Asphalt Plant, Recycling and Disposal

- Asphalt plant operation will comply with all environmental pollution control regulations applicable in the plant area and the plant operational plan.
- Spoil spills and stock piles will be at least 30 meters from the edge of any water body.
- There shall be enough room between the stockpiles and the asphalt plant for a loader in the event of a spill at the asphalt plant.
- A containment berm with an associated liner made of occlusive material (e.g. plastic of a thickness approved by the Departmental Representative) and covered with absorbent sand or clay shall be installed under the asphalt storage tank to ensure containment of 110% of the tank's capacity.

- The Proponent shall be responsible for the purchase and the safe delivery/storage/handling of asphalt cement and emulsions to the asphalt plant site.
- Excess hot mix or reject asphalt shall be stockpiled or temporarily stored as directed by the Departmental Representative, to be ground up in future crushing programs with similar reject asphalt materials to produce RAP, or removed from the Park, prior to completion.
- Ground asphalt material shall be removed, recycled, or properly stored at a location approved by the Departmental Representative or the ESO.
- The Proponent may wish to protect containment/catchment areas and drip trays at the asphalt plant from rainfall since, if contaminated, all of the collected water will have to be disposed of at the expense of the Proponent at an approved disposal facility.
- Dyking and ponding will be required to control the rate and quality of water discharge from the plant site in the form of runoff.
- Every precaution will be taken to ensure that the water in the settling ponds remains clean of petroleum products.
- Every effort will be made to recycle waste asphalt, either as a base course, or by recycling waste asphalt through the asphalt plant according to engineering specifications.
- When advised by the ESO, asphalt to be removed will require sampling and analysis to determine possible lead contamination and corresponding disposal methods. If contaminated, special measures are required to prevent release of lead, and the asphalt should be disposed of only at approved disposal sites with appropriate rehabilitation measures. Contaminated asphalt will be transported an approved waste disposal facility. A receipt of delivery will be provided to the ESO.
- Uncontaminated asphalt will be disposed of at an approved waste disposal facility. A receipt of delivery will be provided to the ESO.

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Oiling of Truck Boxes

- Trucks for hauling asphalt mixture shall have tight, clean, smooth metal beds that have been sprayed with a minimum amount of thin fuel oil to prevent the mixture from adhering and causing waste asphalt.
- Truck boxes may be oiled only when absolutely necessary.
- Oiling will take place on a bermed area, consisting of a plastic underlay with 15 centimetres overlay of clean gravel. Oil contaminated gravel will be hand collected (so as to prevent tearing of the plastic) from the bermed area daily, and put through the asphalt plant.
- The vehicle covers shall be securely fastened.

Air Quality Mitigations

- Emissions from the asphalt plant and paving project equipment will comply with End Product Specifications (EPS) emission control standards. A stack test may be required when the asphalt plant is at full capacity to ensure that the plant is operating within the required standards. If the plant is not operating within the appropriate levels, production will cease until the requirements are met.
- Sludge removed from the clarifier that is free of chemical contamination will be contained to prevent fine dust particles from becoming airborne during windy periods.
- Unannounced stack tests may be conducted throughout the project. If the plant does not meet requirements, all work will cease until the requirements can be met.

Disposal and Clean Up of Other Waste Products

- To ensure regular clean-up of waste asphalt and petroleum spills, a definite clean up schedule will be established during the preconstruction meeting.
- Leaks will be collected by drip-trays, and the collected material will either be removed from the park, or will be recycled back through the Asphalt Plant. For any material removed outside the park to an approved facility, a detailed receipt will be provided to the ESO.
- Used oil, filters, grease cartridges, oil cans and other waste products of plant servicing will be collected and disposed of at the nearest industrial waste facility.

Reclamation Plan

The Mile 8 Pit BMP (for use within the existing disturbed footprint) does not include a reclamation plan because reclamation is intended to be integrated with planning for the proposed pit expansion. Access to the expanded area will be through the old pit, and topsoil, woody material, etc. from the expansion area will need to be stockpiled in the old pit. Upon completion of the activities in the expansion area, both the existing and expanded area will be reclaimed using standard practices - recontouring, redistribution of the stockpiled topsoil, seeding and, if desired, placing of salvaged woody material at nodes throughout the pit.

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