

# Grand Rapids Pipeline Project

November 26, 2015

VIA EMAIL (jeff.moore@aer.ca)

Alberta Energy Regulator  
Suite 1000, 250 – 5<sup>th</sup> Street S.W.  
Calgary, Alberta T2P 0R4

RE: **Grand Rapids Pipeline GP Ltd. (Grand Rapids)**  
**Decision 2014 ABAER 012 (Decision)**  
**Condition 17 Compliance Update**

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On October 15, 2015 Grand Rapids submitted Water Quality Monitoring (WQM) plans for Spreads 1 and 3A, 3B and 4, and 5 to 8 for the Grand Rapids Pipeline Project (Project) in accordance with Condition 17 of the Decision. Attached please find responses to the Information Requests received from the AER on October 28, 2015.

If AER staff require any further information please contact Craig Losos, Senior Environmental Advisor at (587) 933-3724 or [craig\\_losos@transcanada.com](mailto:craig_losos@transcanada.com).

Yours truly,



**Shairoze Damji**  
**Senior Legal Counsel, Grand Rapids Pipeline Project**  
**Grand Rapids Pipeline GP Ltd.**

## **ATTACHMENT 1**

**Preamble:** In Section 2.2, Page 6 – Grand Rapids Pipeline (GRP) states that watercourses with bankfull widths less than 5m would not have include water quality monitoring due to reduced flows and limited fish habitat.

**Question 1a: Aside from bankfull width, describe flow considerations to be made at time of construction to ensure sediments are not transported further downstream.**

**Response:**

Pipeline installation along Spreads 1 and 3A is currently scheduled to occur from November 2015 to March 2016 during frozen conditions. Therefore, it is anticipated that most watercourses with a bankfull width less than 5 m will be frozen to bottom or have such low water velocity and depth that they cannot support instream water needs for most fish species. A Qualified Aquatic Environment Specialist (QAES) has assessed fish and fish habitat potential in the watercourses along the Project. The results of these assessments indicate that watercourses less than 5 m in width generally have no to poor fish habitat potential, even during non-frozen conditions, due to insufficient water depth. Immediately prior to construction, the characteristics of each watercourse are assessed to confirm site conditions. If conditions (i.e., water depth and discernible velocity) are sufficient to transport sediment downstream or to support fish presence, water quality monitoring will be conducted.

**Question 1b: Describe mitigation measures to be put in place at stream crossings to ensure sediment transport downstream is minimized during high flow periods (e.g. spring runoff period) subsequent to construction activities**

**Response:**

Proper watercourse reclamation, revegetation, and sediment control to prevent downstream transport of sediment during high flow periods is a priority for Grand Rapids. Sediment and erosion control measures include, but are not limited to, the timely revegetation of exposed slopes and banks, native material bank revetments, geo-textiles, coir wraps, ditch blocks/barriers, and silt fencing. These measures will be utilized on a site-specific basis to prevent sediment transport following construction. Grand Rapids' Environmental Inspectors will be onsite during the clean-up and reclamation of all watercourse crossings to ensure that they are completed in an environmentally appropriate manner and in adherence with all best management practices.

**Preamble:** In Section 2.3, Page 7 – GRP references federal and provincial TSS and turbidity guidelines, specifically utilizing AENV 1999 guidelines for TSS.

**Question 2a: The reference and guidelines listed in Table 2 are outdated. Update Section 2.3 and Table 2 to reflect the current provincial guideline document Environmental Quality Guidelines for Alberta Surface Waters (2014). Note that the provincial guideline also includes guidelines for turbidity.**



**Response:**

Information from the Environmental Quality Guidelines for Alberta Surface Water (2014) was applied in the writing of the plan, but was not referenced appropriately. Grand Rapids will apply both the Environmental Quality Guidelines for Alberta Surface Waters (2014) and the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Aquatic Life (2007) to determine thresholds for both total suspended solids (TSS) and turbidity exceedances. The WQM plans have been updated with the appropriate reference for the Environmental Quality Guidelines for Alberta Surface Waters (2014) and Section 2.3 and Table 2 have been updated to reflect these provincial guidelines.

**Question 2b: Provide justification for not utilizing Alberta Transportation's Special Provision for tenders that involve in-stream work when developing the water quality monitoring program.**

**Response:**

The Alberta Transportation Special Provision was not utilized when developing these WQM plans because it is designed for contractors working on Alberta Transportation projects. However, information provided in the Special Provision is applicable to pipeline construction, and all of the parameters outlined in the Special Provision are either met or exceeded within the Project's WQM plans. For example, Section 0.1.3.2 Compliance Point Locations of the Special Provisions outlines where each downstream sampling transect should be located based on stream width. Grand Rapids will rely on the professional expertise of a QAES to determine the most valuable sampling locations based not only on stream width but also water velocity and channel morphology.

Grand Rapids has reviewed the Special Provisions regarding the establishment of a linear relationship between TSS and turbidity prior to construction. Grand Rapids has chosen to develop the site-specific linear relationship between TSS and turbidity only when there has been an exceedance of the Environmental Quality Guidelines for Alberta Surface Waters (2014) or CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life (2007) guidelines for the short-term exposure to turbidity (see the response to Question 3 for further details).

**Preamble:** In Section 2.3, Page 8 – GRP proposes utilizing turbidity monitoring exclusively except during a water quality impacting event when samples for total suspended solids (TSS) would be collected and analyzed.

**Question 3a: Confirm that presence of a visible sediment plume or exceedance of relevant turbidity guidelines at downstream transects would trigger collection of TSS samples irrespective of whether a drilling mud release occurs.**

**Response:**

Based on our experience, visible plumes may not always exceed the regulatory guidelines. However Grand Rapids confirms that the presence of a visible sediment plume would trigger immediate additional sampling. If the provincial Environmental Quality Guidelines for Alberta Surface Waters (2014) or CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life (2007) guidelines for short-term exposure to turbidity are exceeded, TSS samples will be collected regardless of whether the exceedance was caused by natural sedimentation, introduced sources such as equipment, or a suspected or confirmed inadvertent drilling fluid

release. Where possible, 30 water samples would be taken and sent to an accredited laboratory within 48 hours of collection for analysis.

**Question 3b: Describe mitigation measures to be implemented when visible impacts are observed (e.g. temporary work stoppage, monitoring, and reporting procedure).**

**Response:**

Mitigation measures that may be applied when impacts to the watercourse are observed include, but are not limited to, suspension of activities leading to elevated instream sediment levels, application of additional (or alternative) isolation measures, and/or adjustment of pumps and water discharge areas. When elevated levels are noted, the automated turbidity measurements will be continued at 10 minute intervals at all transects and manual sampling will be conducted to best determine the physical extent, duration, and magnitude of the release. Water quality information will be communicated to the onsite Environmental Inspector and additional mitigation will be developed and applied, as appropriate. If a regulatory exceedance is recorded, the appropriate regulatory agencies will be notified and any additional mitigation will be applied as required.

**Question 3c: Describe mitigation measures to be implemented prior to construction activities to avoid downstream transport of suspended sediments.**

**Response:**

In order to minimize instream sedimentation prior to construction, riparian area clearing will be minimized and will not be conducted until immediately prior to construction. A site-specific watercourse crossing plan will be developed by the contractor for each watercourse. These plans will meet the environmental standards and mitigation laid out in the Environmental Protection Plan and detail site-specific materials, locations, and/or layouts for sediment and erosion control. All necessary equipment and materials will be on site prior to commencing any instream works and will be clean and free of sediment. Grand Rapids will complete all instream work as quickly as practical to reduce the duration of instream disturbance while minimizing potential impacts to the environment or safety. Proper sediment and erosion control measures will be applied prior to beginning work and the water velocity will be measured to determine the potential distance any sediment may travel in order that proper WQM sampling transects can be designed. Construction during periods of heavy precipitation, freeze-up and spring thaw will be avoided to minimize the transport of sediment.

**Preamble:** In Section 2.5, Table 3, Page 8 – GRP provides an example of transect sampling for a small watercourse. Distances proposed for downstream monitoring are likely excessive and monitoring may not adequately capture movement of sediment downstream.

**Question 4: Provide planned transect monitoring distances downstream of crossings for streams of varying widths (e.g. <10m wide, 10-30m wide).**

**Response:**

Table 3 was provided only as an example; actual transect locations will be determined in the field on a site specific basis by a QAES based on an assessment of instream conditions including



water velocity, depth, and wetted channel width at the time of construction. Transect placement will be designed to capture the entire zone of influence where it is anticipated that 90% of sediments will settle out, as outlined in the *Guide to the Code of Practice for Pipelines and Telecommunication Lines Crossing a Waterbody, Including Guidelines for Complying with the Code of Practice* (2001). Therefore, transect monitoring distances will vary based on site and condition specific variables. These assigned transect distances will be more truly representative of the site than those based on stream width alone. Based on the physical conditions of the watercourse at the time of construction and the professional experience of the QAES and the Environmental Inspector(s), adjustments to the transect locations will be made, as required. Data at all of the established transects will be collected via an automated system for gathering turbidity data at 10 minute increments. Manual sampling will also be conducted, during daylight hours, throughout the instream construction period both at the prescribed transect locations, as well as other locations within the zone of influence.

**Preamble:** In Section 2.7, Page 9 – GRP refers to frac-out events in this section.

**Question 5: Confirm that there are no plans to undertake a fracking operation and that the term “frac-out” is being used to describe the release of drilling mud to the surface with potential contamination of the surface water.**

**Response:**

Grand Rapids confirms that no fracking operations will be undertaken. In the WQM plans, the term frac-out, an industry-standard term, refers to an inadvertent release of drilling fluids. Grand Rapids has revised the WQM plans to replace the term “frac-out” with the more representative term “inadvertent release of drilling fluids”.

**Preamble:** In Section 2.8, Page 10 – GRP describes collection of TSS samples in the event of an observed or recorded exceedance in proposed turbidity limits.

**Question 6: Confirm whether work stoppage will occur until such time that TSS results are returned from the laboratory and a TSS/turbidity curve has been established for the site.**

**Response:**

All activities contributing to increased turbidity will cease and corrective action will be taken to mitigate the source of sediment. The appropriate number of water samples will be immediately collected to develop an appropriate TSS/turbidity curve. When the source of the increased turbidity is identified and mitigated, construction activities will resume.

**Reference:**

Alberta Environment and Sustainable Resource Development. 2014. Environmental Quality Guidelines for Alberta Surface Waters. Water Policy Branch, Policy Division. Edmonton, AB. 48 pp.

Alberta Transportation. Special Provision – Use in Tenders That Involve In-Stream Work (SPE\_020.wpd). Website: <http://www.transportation.alberta.ca/Content/docType29/production/Spe020.pdf>. Accessed: November 2015. 5 pp.