

Appendix 4 – River Crossing Monitoring Checklist

River	Khayambusibin River			Crossing Date:	Oil	X	5 April 2006
KP	21.00				Gas		
Category	High, Type 2				FOC	X	5 April 2006
	Compliance requirement	Yes	No	Reference	Comments [please note: reviewed/approved by A Gordine, 08-04-2006]		
	Pre works start items.						
1	Approved River Crossing Assessment Sheet plus all appendices is available	X		River Crossing Assessment Sheet	The documents were provided to RCOT by SEIC River Crossing Engineer one day before construction started.		
2	External observers are present	X		River Crossing Monitoring Plan	RCOT was present before, during and after instream works, and attended the site kick-off meeting.		
3	Contractor has Environmental Monitor present and logistics to carry out monitoring tasks	X		River Crossing Monitoring Plan, annex 1	Environmental Monitor was present.		
4	Environmental Monitor has attended site kick-off meeting	X		River Crossing Monitoring Plan, annex 1	Environmental Monitor attended the kick-off meeting.		
5	Environmental Monitor has the required field equipment present and functioning and calibrated	X		River Crossing Monitoring Plan, annex 1	All equipment required for monitoring was available.		
6	Environmental Monitor has the required reporting documents	X		River Crossing Monitoring Plan, annex 1	Environmental Monitor had the Monitoring Sheets, and Chain of Custody forms for water samples obtained during monitoring.		
7	Refuelling equipment in good order, free of leaks, pumps have automatic shut off switches, spill response equipment nearby	X		River Crossing Construction Guide	The equipment was clean, free of leaks, and appeared to be well-maintained. A containment boom, absorbent materials, and spill trays were present.		
8	Contractor has sufficient stocks of temporary soil erosion mitigation	X		River Crossing Construction Guide	Silt fence materials were available. Gravel was hauled to the site, and stockpiled for reinstating river bed and banks later.		

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	equipment and materials before works start						
9	Contractor applies appropriate temporary soil erosion control measures prior to works start	X		River Crossing Assessment Sheet Appendix 3	Silt fences were installed. Soil/snow berms were built to contain the excavated material.		
10	All resources listed in the River Crossing Construction Guide are present	X		River Crossing Construction Guide	Spill response equipment and materials for erosion control were present.		
11	Water Protection Zones were delineated prior to work start	X		River Crossing Assessment Sheet Appendix 3	The Water Protection Zone signs were installed on both sides of the river.		
12	All of the above pre start items are present before site works start.	X			All pre-start items were present or looked after.		
	Items during site works.						
13	Contractor applies execution erosion control measures	X		River Crossing Assessment Sheet Appendix 3	Snow berms were built around the spoil stockpile locations. Silt fences were installed along river banks and around containment berms.		
14	Contractor applies appropriate erosion control measures in the Water Protection Zone	X		River Crossing Assessment Sheet Appendix 3	Stockpiles were properly managed.		
15	The delineated Water Protection Zones were respected	X		River Crossing Assessment Sheet Appendix 3	All equipment was refuelled and parked outside Water Protection Zone.		

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16	Contractor follows the proper spoil removal/stockpiling techniques	X		River Crossing Assessment Sheet Appendix 3	Spoil stockpiles were managed properly. Bed and bank materials were segregated.		
17	Areas of disturbance were minimised as far as possible	X		River Crossing Assessment Sheet Appendix 3	Construction activities were contained within and along Right-of-Way. Contractor tried to limit amount and extent of disturbance.		
18	Contractor adopts appropriate measures to prevent oil spills to the water body	X		River Crossing Construction Guide	Equipment refuelling was conducted outside the Water Protection Zone. Construction equipment was clean and appeared to be in good working order. A spill response kit was located nearby.		
19	Hazardous materials, including chemicals, fuels, lubricating oils etc were not stored between the designated Water Protection Zone and the water body	X		River Crossing Construction Guide	Hazardous materials were not stored inside the Water Protection Zone.		
20	Environmental Monitor carried out the field measurements as required in the Scope of Work			River Crossing Monitoring Plan, Appendix 1	Not applicable. The watercourse was dry when the crossing took place. Turbidity and water velocity could not be measured, and water samples for TSS could not be collected, for this crossing.		
21	The environmental monitoring measurements have been carried out safely	X		River Crossing Monitoring Plan	To the limited extent it occurred, given that no measurements or sample collection was possible since the watercourse was dry, the monitoring was safely performed.		
22	If a non-compliance was revealed, corrective actions were			River Crossing Monitoring Plan	Not applicable. Non-compliances were not observed by RCOT during the construction period.		

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	undertaken						
23	Clean gravel/cobbles were used as upper backfill where required.	X		River Crossing Assessment Appendix 3	Crushed rock backfill was placed across entire width of the Right-of-Way when bed and banks were being reinstated.		
24	Site works were carried out in the time specified	X		River Crossing Assessment Appendix 1	It took roughly 2.5 hours to complete this crossing, significantly less than the specified time.		
25	The second crossing was done consecutive to the first crossing			River Crossing Assessment Sheet	Not applicable. This was the first crossing.		
26	The Contractor executed the site works in the minimum amount of time necessary.	X		River Crossing Assessment Appendix 1	Construction took place according to plan, without any delays or equipment breakdowns.		
27	In the case of any incident, the proper response procedure was followed up			River Crossing Construction Guide	Not applicable. No incidents took place.		
	Items after crossing installed.						
28	Contractor has installed permanent soil erosion mitigation works as specified in the site execution plan.	X		River Crossing Assessment Appendix 3	Temporary sediment and erosion control measures (silt fences and upper gravel cap) were installed. According to late December guidance from SEIC, this crossing can be regarded as finished until it is revisited in the Spring, when permanent erosion control will be implemented.		