Table 2: Summary of petroleum exploration plays in the Beaufort-Mackenzie area of the Mackenzie Corridor

Play Name	Territory/State	Play type	Reservoir	Source	Gas/Oil	Seal	Trap style	Discoveries/shows	Exploration risks	Oil reserve (10^6 m^3) (recoverable) (mean)	Gas reserve (10^6 m^3) (recoverable) (mean)	Total Oil resource (10^6 m^3) (recoverable) (mean)	Total Gas resource (10^6 m^3) (recoverable) (mean)	Number of fields	Author	Methodology
A) Onshore/Shallow Offshore Play Group																
1) Parsons	Northwest Territories	Established-immature	Parsons Group (Kamik Fm) and Mount Goodenough sandstones	Husky & Mount Goodenough shales (gas) Arctic Red & Smoking Hills shales (oil)	oil; gas	Cretaceous shales	anticlinal and tilted fault block closures against Eskimo Lakes fault zone	2 gas/condensate fields; Parsons F-09; Tuk L-09 2 oil fields; Imnak J-29; Kamik D-48	Adequate reservoir							
2) Atkinson Point	Northwest Territories	Established-immature	Atkinson Point sandstones and conglomerates	Smoking Hills shales	oil	Cretaceous shales (top seal); faults or facies changes (lateral seal)	tilted fault block closures on margin of Eskimo Lakes Arch	1 oil field; Atkinson H-25	Adequate reservoir							
3) Tuk	Northwest Territories	Established-immature	Taglu Sequence (upper Reindeer Fm) delta-front sandstones	Smoking Hills & Boundary Creek shales (oil) Deep burial of above shales may generate gas Possible Jurassic source for gas	oil; gas	interbedded Tertiary shales	onlap sands along Eskimo Lakes Arch, normal fault traps; stratigraphic pinchouts	1 gas field; Ikhil K-35 1 oil field; Tuk J-29	Adequate reservoir, seal, degradation of oils by meteoric water flushing							
4) Taglu	Northwest Territories; Yukon Territory	Established-immature	Taglu Sequence (upper Reindeer Fm) delta-front, mouth bar and channel sandstones	Lower Richards Formation shales (oil) unknown (gas)	oil; gas	Richards Fm shales	faulted anticlines; angular unconformities	3 oil/gas/condensate fields; Garry South P-04; Niglintgak H-30; Kumak J-06 2 oil and gas fields; Adgo F-28; Unipkat N-12 4 gas/condensate fields; Taglu G-33; Ya Ya South P-53; Garry North G-07; Minuk I-53 3 gas fields; Tidalik K-26; Ya Ya North A-28; Reindeer F-36	Adequate seal							
5) Ivik	Northwest Territories	Established-immature	Upper Richards and Kugmallit delta-front sandstones	Lower Richards Formation shales (oil) unknown (gas)	oil; gas	interbedded Tertiary siltstones & shales	rollover anticlines on listric growth faults; stratigraphic pinchouts	2 oil/gas/condensate fields; Hansen G-07; Arnak K-06 2 oil fields; Ivik J-26; Ivik K-54 2 gas fields; Pelly B-35; Mallik L-38	Adequate reservoir; seal							
6) South Delta – Mesozoic	Northwest Territories; Yukon Territory	Established-immature	Bug Creek, Parsons, Mount Goodenough, and Rat River sandstones	Husky, Mount Goodenough & Arctic Red shales (gas); possibly Boundary Creek & Smoking Hills shales (oil)	oil; gas	interbedded thick shale successions	closures against normal and thrust faults; angular unconformities	1 oil field; Kugpik O-13 1 gas/condensate field; Unak L-28	Adequate reservoir, source rocks; closure; preservation			0.95*	1824*	4 (oil); 8 (gas)	Hannigan, 2001a	Petrimes-volumetric probability distributions
7) South Delta – Paleozoic	Northwest Territories; Yukon Territory	Established-immature	Lisburne Group limestones	possibly Husky, Mount Goodenough & Arctic Red shales	gas	Permian & Jurassic shales	closures against normal and thrust faults; angular unconformities	1 gas field; Unak L-28	Adequate reservoir, source rocks; closure				5643*	15	Hannigan, 2001a	Petrimes-volumetric probability distributions
8) Mayogiak	Northwest Territories	Established-immature	Mount Kindle dolomites; Hume limestones	Smoking Hills shales (oil); Canol shales (gas)	oil; possible gas	Jurassic-Cretaceous shales	tilted fault block closures on margin of Eskimo Lakes Arch	2 oil fields; Mayogiak J-17; West Atkinson L-17	Adequate reservoir							
Total endowment – Onshore/Shallow Offshore Play Group										39.91	214360	206.85	568320	162 (oil); 182 (gas)	Dixon et al., 1994	Petrimes-volumetric probability distributions
B) Offshore Delta Play Group																
1) Netserk	Northwest Territories	Established-immature	Kugmallit delta plain sandstones; Mackenzie Bay transgressive sandstones	organic-rich facies in Kugmallit sequence (gas)	gas; oil	interbedded & overlying shales	updip pinchouts of channels on flanks of anticlines, anticlinal traps	2 gas fields; Netserk F-40; Kadluk O-07 1 oil and gas field; S. Isserk I-15	Adequate seal							
2) Amauligak	Northwest Territories	Established-immature	Kugmallit delta-front sandstones	Lower Richards shales	oil; gas	interbedded & overlying Mackenzie Bay shales	tilted fault blocks bounded by listric faults	2 oil/gas/condensate fields; Issungnak O-61; West Amauligak I-65A/O-86 4 oil and gas fields; Amauligak J-44; Nipterk P-32; South Isserk I-15; Itiyok I-27 1 gas/condensate field; Amerk O-09 1 gas field; Isserk E-27	Adequate seal; adequate closure; adequate migration							
3) Tarsiut	Northwest Territories; Yukon Territory	Established-immature	Kugmallit delta-front sandstones	Lower Richards shales	oil; gas	interbedded & overlying Mackenzie Bay shales	rollover anticlines on listric growth faults; closures on normal faults; stratigraphic pinchouts; subconformity traps	1 oil and gas field; Tarsiut A-25 1 oil field; Pitsiulak A-05 2 gas fields; Kiggavik A-43; Ukalerk C-50	Adequate reservoir; adequate seal							
4) Akpak	Northwest Territories; Yukon Territory	Conceptual	Kugmallit distal delta-front sandstones	Lower Richards shales	oil; gas	interbedded & overlying Mackenzie Bay shales	updip traps beneath shelf edge unconformity; sand pinchouts	none	Adequate reservoir, migration							
Total endowment – Offshore Delta Play Group										144.69	9316	343.44	359343	86 (oil); 126 (gas)	Dixon et al., 1994	Petrimes-volumetric probability distributions
C) West Beaufort Play Group																
1) Adlartok	Northwest Territories; Yukon Territory	Established-immature	Moose Channel and Reindeer delta-front, delta-plain and transgressive sandstones	Lower Richards, Tent Island & Boundary Creek shales (oil and gas)	oil; gas	overlying Oligocene & Miocene shales	asymmetric anticlines, thrust or reverse faults, normal listric faults; onlap sands on unconformity	1 oil field; Adlartok P-09 1 oil and gas field; Kingark J-54	Adequate reservoir							
2) Herschel	Northwest Territories; Yukon Territory; Alaska	Conceptual	Moose Channel and Reindeer delta-front and delta-plain sandstones	Tent Island & Boundary Creek shales (oil and gas)	oil; gas	overlying Oligocene & Miocene shales	closely-spaced folds and reverse faults, unconformity subcrops	none	Presence of closure; adequate seal, source			10.6*	14685*	5 (oil); 5 (gas)	Hannigan, 2001a	Petrimes-volumetric probability distributions
3) Demarcation	Yukon Territory; Alaska	Conceptual	Richards and Kugmallit transgressive, turbidite and shelf sandstones	Lower Richards, Tent Island & Boundary Creek shales (oil and gas)	oil; gas	interbedded & overlying shales	porosity pinchouts, onlap sands on unconformity, normal fault traps	none	Adequate seal, source							
Total endowment – West Offshore Play Group										35.93		342.8	353963	72 (oil)	Dixon et al., 1994	Petrimes-volumetric probability distributions
D) Deep Water and Other Play Group																
1) Kopanoar	Northwest Territories; Yukon Territory	Established-immature	Akpak, Mackenzie Bay and Kugmallit channel and interchannel submarine fan sandstones	Lower Richards (oil & condensate); gas (unknown)	oil; gas	interbedded & overlying shales	structural drape; stratigraphic pinchouts	1 oil/gas/condensate field; Nektoralik K-59 2 oil and gas fields; Koakoak O-22; Kopanoar M-13 2 oil fields; Nerlerk M-98; Havik B-41 1 gas field; Kenalooak J-94	Adequate reservoir, reservoir continuity; source							
2) Deep-marine West	Northwest Territories; Yukon Territory	Conceptual	Tertiary turbidite sandstones	unknown	gas; oil possible	interbedded & overlying shales	structural drape; stratigraphic pinchouts	none	Adequate reservoir; source							
3) Hinge	Northwest Territories	Conceptual	Cretaceous rift-related sandstones and Lower Tertiary post-rift sandstones	Husky & Mount Goodenough shales (gas) Arctic Red & Smoking Hills shales (oil)	oil; gas	interbedded & overlying shales	onlap wedges; normal fault-bounded graben fills	none	Adequate reservoir; source							
4) Imperial clastics	Northwest Territories	Conceptual	Imperial sediment gravity-flow sandstones and conglomerates	organic matter in Imperial, Canol shales (gas)	gas	overlying Jurassic/Lower Cretaceous shales	normal fault traps, unconformity subcrops	none	Adequate reservoir							
5) Yukon coastal plain	Yukon Territory	Conceptual	Paleozoic carbonates and clastics; Triassic sandstones; Albian-Jurassic sandstones	Jurassic & Cretaceous shales (gas)	gas	interbedded & overlying shales	thrust, normal and strike-slip faults with associated folds	none	Adequate reservoir; closure, timing, preservation				9332*	3	Hannigan, 2001a	Petrimes-volumetric probability distributions
Total endowment – Deep Water and Other Play Group										56.76	2492	241.2	557279		Dixon et al., 1994	Petrimes-volumetric probability distributions

* Originally predicted in-place resource volume; converted to recoverable volumes; recovery factors: oil - 0.25; gas - 0.75