MARY RIVER PROJECT

FINAL ENVIRONMENTAL IMPACT STATEMENT

VOLUME 1

MAIN DOCUMENT

ᓄᓘᓵᓐᓂᑦ ᐅᓴᕋᓐᓂᐊᖅᑕᐅᔪᒪᔪᖅ

ᐊᕙᑎᒧᑦ ᐊᑦᑐᐊᓂᖕᒋᓐᓄᑦ ᐅᓂᒃᑳᖕᖓ

ᑭᒃᑯᓕᒫᓄᑦ ᐅᓂᒃᑳᓕᐊᖑᔪᖅ

SECTION 1.0 - ᓴᓇᔾᐅᔪᒪᔫᑉ ᖃᓄᐃᑦᑑᓂᖓ

ᓴᕕᕋᔾᔅᓴᓕᕆᔾᑯᑦ ᐅᓭᕋᓐᓂᐊᕝᕕᖓᑕ ᑯᐊᐳᕇᓴᖓ (ᓴᕕᕋᔾᔅᓴᓕᕆᔾᑯᑦ) ᐸᓐᓇᐃᓯᒪᕗᑦ ᐊᕙᑎᒧᑦ ᐊᑦᑐᐃᓂᕆᔭᒥᓄᑦ ᐅᓂᒃᑳᒥᒃ (ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ) ᓴᓇᔾᐅᔪᒪᓯᒪᔪᒧᑦ ᐅᓭᕋᓐᓂᐊᕝᕕᒻᒥᑦ ᓄᓘᔾᓐᓂᑦ ᐅᓭᕋᓐᓂᐊᕈᒪᔭᖕᖓᓐᓂᒃ. ᑖᓐᓇ ᐅᓭᕋᓐᓂᐊᕝᕕᑭᔪᒪᔭᖓ ᐃᓂᓪᓚᖕᖓᔪᖅ ᕿᑭᖅᑖᓅᑉ ᐅᐊᖕᓇᖕᖓᓂᑦ, ᓄᓇᕘᑉ ᐊᒡᒍᖅᓯᒪᓂᐊᓂᑦ, ᑲᓇᑕᐅᑉ ᐅᑭᐅᖅᑕᖅᑐᖕᖓᓂ. ᑖᒃᑯᐊ ᓄᓇᕘᒥ ᐊᕙᑎᓕᕆᓂᓪᒧᑦ ᑲᑎᒪᔩᖏᑦ (ᐊᕙᑎᓕᕆᔩᒃᑯᑦ) ᑐᑭᒧᐊᒍᑎᔅᓴᓂᒃ ᐊᑐᐃᓐᓇᕈᐃᓚᐅᖅᑐᑦ ᐊᑐᕐᑯᔭᒥᓂᒃ ᑖᔅᓯᒪᐅᑉ ᐸᓐᓇᑦᑕᐅᓂᖕᖓᓄᑦ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᑦᑕ ᓄᕕᐱᓕ 16, 2009-ᒥ ᐋᖅᑭᐊᕈᑎᒥᓪᓗ ᐃᓚᓯᓪᓗᑎᒃ ᓄᕕᐱᓕ 3, 2010-ᒥ. ᑖᒃᑯᐊ ᑐᑭᒧᐊᒍᑏᑦ ᐊᕙᓗᓕᐊᖃᖅᑐᑦ ᑎᑎᕋᓇᐊᓕᑦᑎᓐᓂᒃ ᑐᑭᓯᕆᐊᕈᑎᔅᓴᐅᔪᓂᒃ ᑕᕝᕗᓇ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᑦᑎᒍᑦ.

ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ ᐃᓚᒋᔭᐅᖃᑕᐅᔪᖅ ᐊᕙᑎᒥᒃ ᖃᒥᕐᕈᐃᔾᔪᑎᒧᑦ ᐊᐅᓚᓂᐅᔪᒧᑦ ᓴᖅᑭᑕᐅᔫᑦ ᑕᒪᒃᑯᓄᖓ ᐱᕙᓪᓕᐊᔪᓄᑦ ᓄᓇᕘᑉ ᐃᓗᐊᓂ ᒪᓕᒃᑲᒍ ᓄᓇᕘᑉ ᓄᓇᑖᕈᑎᒧᑦ ᐊᖏᕈᑎᓪᒪᓇᖓ. ᑖᔅᓯᒪᐅᑉ ᐊᕙᑎᒥᒃ ᖃᒥᕐᕈᐃᔾᔪᑎᒧᑦ ᐊᐅᓚᓂᐅᔪᒃᑯᑦ, ᑖᓐᓇ ᓴᓇᔪᒪᔪᖅ ᐱᕙᓪᓕᐊᓂᐅᔪᒥᒃ, ᓲᓪᓗᓕ ᓄᓘᔾᓐᓂᑦ ᐅᓭᕋᓐᓂᐊᖅᑕᐅᔪᒪᔪᖅ, ᐅᓂᒃᑳᖃᓇᐊᖅᑲᖅᑐᑎᒃ ᓴᓇᔾᐅᔪᒪᔫᑉ ᓄᓇᖕᖏᓐᓂᒃ ᐊᕙᑖᒍᑦ ᓇᔪᖅᑕᖓᑕᓗ ᓴᓇᔪᒪᔭᖓᑕ ᐃᓕᖅᑯᓯᖏᓐᓂᒃ. ᓴᓇᕙᓪᓕᐊᓂᖏᓄᑦ ᐊᑦᑐᐃᔪᓐᓇᖅᑐᑦ ᓇᓚᐅᑦᑖᖅᑲᖏᑦ ᒥᑭᓕᕈᑎᔅᓯᖏᓐᓄᑦ ᐸᓐᓇᐅᑎᖏᑦ ᑎᑎᕋᖅᑕᐅᕙᓪᓕᐊᓪᓗᑎᒃ ᐊᑦᑐᐃᓗᐊᔾᔭᐃᒃᑯᑎᔅᓯᖏᑦ. ᑕᒪᒃᑯᐊ ᐱᐅᖏᓐᓂᓴᖏᑦ ᐅᕙᓗ "ᐊᒃᑎᕆᓂᓴᖏᑕ" ᕿᓪᒪᑯᖏᑕ ᐊᑦᑐᐃᔫᑉ (ᐊᑦᑐᐃᓂᐅᔪᑦ ᐊᒥᐊᒃᑯᔪᑦ ᒥᑭᓕᐊᕈᑎᔅᓯᖏᑦ ᑲᒪᒋᔭᐅᓯᒪᓕᖅᑎᓪᓗᒋᑦ), ᖃᒥᕐᕈᔭᐅᓪᓗᑎᒃ ᐊᑐᖅᑲᒋᑦ ᓴᖅᑭᑕᐅᓂᑰᔪᑦ ᑭᓪᓕᓯᓂᐊᕈᑎᔅᓯᖏᑦ ᖃᐅᔨᒪᔨᑕᓄᓪᓗ ᐃᓯᒪᓕᐅᕈᑕᐅᓂᑰᔪᑦ.

ᓯᕗᓪᓕᖅᐹᖅ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ ᑐᓂᓚᐅᖅᑕᕗᑦ ᔮᓄᐊᓕ 23, 2011-ᒥ ᑖᓐᓇᓗ ᐊᖏᔪᒥᒃ ᖃᒥᕐᕈᔭᐅᓯᒪᓪᓗᓂ, ᖃᐅᔨᒪᔨᑕᓄᑦ ᑲᑎᒪᔾᔪᑕᐅᓯᒪᓪᓗᓂ, ᐅᓄᖅᑐᓂᓪᓗ ᐱᔪᒪᔾᔪᑎᓂᒃ ᑐᑭᓯᕆᐊᕈᑎᔅᓭᓐᓂᓐᓄᑦ ᓴᖅᑭᑦᑏᓂᑯᓪᓗᓂ. ᑭᖑᓪᓕᖅᐹᖅ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ ᑖᒃᑯᓄᖓ ᓴᖅᑭᓐᓂᑰᔪᓄᑦ ᐃᓯᒪᕆᔭᔅᓴᓄᑦ ᐃᓯᒫᓘᑎᐅᔪᓄᓪᓗ ᓵᓐᖓᔭᖅᑲᖅᑐᖅ ᑕᑯᔅᓴᕆᓐᓂᑰᔪᑦ ᖃᒥᕐᕈᔭᐅᓂᐊᒍᑦ ᐅᓂᒃᑳᖅᑯᑎᑦᑕ. ᑭᖑᓪᓕᖅᐹᖅ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ ᖃᒥᕐᕈᔭᐅᓂᐊᓕᖅᑐᖅ ᒐᕙᒪᑐᖅᑲᒃᑯᑦ ᓄᓇᕘᑦᑐ ᒐᕙᒪᖏᑕ ᐱᓕᕆᔨᖏᓐᓄᑦ, ᐃᓄᐃᑦ ᑎᒥᖅᑯᑎᖏᓐᓄᑦ, ᓄᓇᓕᐅᔪᓄᑦ, ᐊᓯᖏᓄᓪᓗ ᐃᓚᒋᔭᐅᖃᑕᐅᔪᓄᑦ. ᐅᓇ ᑭᒃᑯᓕᒫᓄᑦ ᐅᓂᒃᑳᕗᑦ ᐃᓚᒋᔭᐅᔪᖅ ᐋᑐᑎᖃᓪᓚᕆᖃᑕᐅᓪᓗᓂ ᑖᔅᓯᒪᐅᑉ ᑭᖑᓪᓕᖅᐹᖅ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᑦᑕ ᑕᑯᔅᓴᕈᒪᔭᑦᑎᓐᓂᓪᓗ ᓴᖅᑮᓯᒪᓪᓗᓂ ᖃᒥᕐᕈᔭᐅᖁᓗᐊᖅᑕᑦᑎᓐᓄᑦ ᐃᓗᐊᓃᑦᑐᓄᑦ ᑎᑎᕋᖅᓯᒪᔭᓕᒫᑦᑕ ᐊᕙᑎᒨᖓᔪᓂᒃ.

1.1 ᓴᓇᔪᒪᔪᖅ ᐅᓭᕋᓐᓂᐊᕝᕕᒻᒥᒃ

ᓴᕕᕋᔾᔅᓴᓕᕆᔾᑯᑦ ᐅᓭᕋᓐᓂᐊᕝᕕᖓᑕ ᑯᐊᐳᕇᓴᖓᓴ ("ᓴᕕᕋᔾᔅᓴᓕᕆᔾᑯᑦ") ᐱᒋᔭᐅᕗᖅ ᒪᖅᐹᓐᓄᑦ ᑲᒻᐸᓂᖕᓄᑦ 70%-ᖓ ᐊᓰᓗᐊᒥᑦᑖᓪ ᐊᒻᒪ 30%-ᖓ ᓄᓇᕗᑦ ᓴᕕᕋᔾᔅᓂᒃ ᐱᓯᒪᑦᑎᔾᑯᑦ ᑎᒥᖓᓄᑦ. ᓴᕕᕋᔾᔅᓴᓕᕆᔾᑯᑦ ᐊᓪᓚᕝᕕᖃᖅᕕᖓ ᑐᕌᓐᑐ, ᐋᓐᑎᐅᕆᔩᑦᑐᖅ, ᑲᓇᑕᒥ. ᖄᒃᑲᓐᓂᐊᒍᑦ ᑖᔅᓯᒪᐅᑉ ᐊᓪᓚᕝᕕᖁᑎᐊᑕ, ᓴᕕᕋᔾᔅᓴᓕᕆᔾᑯᑦ ᐊᕐᕇᒍᓕᒫᒃᑯᑦ ᑲᒪᔾᖃᐅᖅᐳᖅ ᖃᓂᖅᓴᕝᕕᖓ ᑖᕝᕙᐊᒍᑦ ᑕᐸᐃᑲᓂ ᓄᓘᔾᓐᓂᑦ ᐱᓕᕆᕝᕕᖓᓂ, ᓄᓇᓕᓐᓂᓗ ᑐᓴᐅᒪᒃᑲᐃᔾᔪᑎ ᐊᓪᓚᕝᕕᒋ ᐃᖃᓗᓐᓂ, ᐃᖁᓗᓕᒥ ᒥᑦᑎᒪᑕᓕᒥᓗ. ᐊᓱᓕᒥᑦᑖᓪ ᑲᓇᑕᐅᑉ ᓯᕗᓕᖅᑎᓇᖅᓯᐅᑎᕙᖓᑦ ᓴᕕᕋᔾᔅᒥᒃ ᐊᑐᐃᓐᓇᕈᐃᓪᓗᑎᒃ ᓄᓇᕐᔪᐊᒥᑦ ᓴᕕᕋᓕᐅᖅᑎᖓᓄᑦ, ᐃᒻᒪᖄ 40 ᐳᓴᓐᑎᓪᓗᐊᒥᒃ ᑎᑭᐅᒪᔪᑦ ᑲᓇᑕᐅᑉ ᓴᖅᑭᐸᑦᑕᖏᓐᓂᒃ. ᐃᓕᓴᓇᔾᐅᒪᔪᖅ ᐱᐅᓂᖏᓐᓄᑦ ᓴᓇᔾᖏᑕ, ᐊᔪᓐᖏᓐᓂᖏᓐᓄᑦ ᐱᓕᕆᓂᖏᑦ, ᓯᕗᓕᖅᑎᐅᓂᖓᓄᓪᓗ ᓴᕕᕋᔾᔅᓴᓕᕆᓂᓄᑦ, ᐊᓰᓗᐊᒥᑦᑖᓪ ᓄᓇᔅᔪᐊᒥᑦ ᐊᖏᓛᖑᖃᑕᐅᕗᖅ ᓴᕕᕋᓕᐅᖅᑎᐅᔪᓂᒃ, ᓄᓇᔅᔪᐊᒥᑦ ᓴᓇᓂᖃᐅᖅᑐᑎᒃ 60 ᐅᖓᑖᓄᑦ ᓄᓇᓕᔅᔪᐊᖑᔪᓄᑦ. ᑲᒻᐸᓂᐅᑉ ᓴᓇᔪᓕᕆᓂᖏᑦ ᐊᕙᑎᒧᓪᓗ ᐱᓕᕆᓂᖏᑦ ᐅᑭᐅᖅᑕᖅᑐᒥᑦ ᐱᕙᓪᓕᐊᑎᑦᑎᓂᕐᒧᑦ ᐊᑐᓕᒪᓂᖅᑲᐊᓇᓪᓗᑎᒃ. ᖄᒃᑲᓐᓂᐊᒍᑦ,

ᓴᕕᕋᔭᒃᓴᓕᕆᔨᒃᑯᑦ ᑲᑐᔾᔨᖃᑎᒋᔭᖏᓐᓂᒃ ᑲᒻᐸᓂᐅᔪᓂᒃ ᐋᖅᑭᔅᓯᐃᔪᑦ ᐅᑭᐅᖅᑕᖅᑐᒥᒃ ᐊᑐᓕᒪᓂᖃᖅᑎᐊᖅᑐᓂᒃ, ᑐᑭᓕᐅᑎᑐᒍ ᓲᑦᑐ, ᐅᒥᐊᔾᔪᐊᒃᑯᑦ ᐅᓯᒃᖃᑕᐃᓕᒪᔪᑦ ᓯᑯᓯᐅᓕᒪᔪᓪᓗ. ᐊᓲᓕᒥᑦᑖᓪ ᑲᑎᖅᓱᐃᕙᓪᓕᐊᔪᑦ ᑕᒪᐃᓐᓂᒃ ᑲᑎᑦᑕᕆᐊᓕᒥᓂᒃ ᑲᒪᒋᔭᔅᓴᖏᑦ ᑖᓐᓇ ᐅᔭᕋᓐᓂᐊᕐᕕᒋᔪᒪᔭᖓ ᓴᓇᔭᐅᓯᒪᓂᐊ ᐋᖅᑭᑦᑎᐊᖅᓯᒪᔪᓐᓇᖅᑯᓪᓗᒍ ᑲᔪᓯᑦᑎᐊᖅᑐᒃᑯᓪᓗ ᐱᐅᔪᒥᒃ ᓄᓇᕗᒧᑦ ᑲᓇᑕᒧᓪᓗ ᓴᖅᑮᖃᑎᒌᒍᑎᑦᑎᐊᕋᐅᔪᒥᒃ.

1.2 ᐅᔭᕋᓐᓂᐊᕐᕕᓕᐊᓇᔪᒪᔭᖓ

ᑖᓐᓇ ᓄᓘᔾᓐᓂᑦ ᐅᔭᕋᓐᓂᐊᖅᑕᐅᔪᒪᔪᖅ (ᐅᔭᕋᓐᓂᐊᕐᕕᒋᔪᒪᔭᖓ) ᐃᓗᓕᖅᑲᒪᑦ ᓇᓂᔭᐅᓯᒪᔪᒥᒃ ᓴᕕᕋᔭᔅᓯᒥᒃ ᑖᔅᓯᒪᓐᖓᑦ ᓇᓂᓯᒪᔭᒥᑦ 1 ᐅᔭᕋᓐᓂᐊᕈᒪᓪᓗᒍ ᐊᕋᒎᑉ ᐃᓗᐊᒍᑦ 18 ᒥᓕᐊᓐ ᑖᓐᓯᓄᑦ (Mt/a). ᑖᓐᓇ ᐅᔭᕋᓐᓂᐊᕐᕕᒋᔪᒪᔭᕗᑦ ᐃᓚᓕᒃ ᓴᓇᔭᐅᓂᖓᓂᒃ, ᐊᐅᓚᑕᐅᓂᖓᓂᒃ, ᒪᑐᔭᐅᓂᔅᓴᖓᓄᑦ, ᓄᓇᖓᑐ ᐊᑐᕋᔅᓴᕈᑦᑎᓪᓗᒍ ᐃᑎᖅᓴᓕᐊᕐᕕᓂᖓ ᐊᑦᑐᐊᔪᓪᓗ ᐱᖅᑯᑎᔾᔪᐊᑦ ᓴᓇᔭᐅᓂᒃᑯᑦ ᐅᔭᕋᓐᓂᐊᓐᓂᖏᓄᑦ, ᐅᓯᒃᖃᑕᖅᑕᐅᓂᖓᓄᑦ ᓄᓇᓯᐅᑎᒃᑖᑦᑐᓪᓗ ᐅᓯᓕᖅᓱᖅᑕᐅᓂᖓ ᓴᕕᕋᔭᔅᓴᖓ. ᐱᖓᓱᓪᓗᐊᖑᔪᑦ ᓄᓇᐃᑦ ᐅᔭᕋᓐᓂᐊᕐᕕᔅᓴᐅᑉ ᐃᓚᒋᐅᔭᖅᑕᖅᑎᑦ - ᐅᔭᕋᓐᓂᐊᕐᕕᔅᓴᖅ ᓄᓘᔾᓐᓂᑦ, ᕿᓐᖑᐊᑉ ᑐᓚᒃᑕᕕᖓ ᐅᐊᖕᓇᖑᒍᑦ ᒥᑦᑎᒪᑕᓕᐅᑉ ᐃᒪᖏᓂ, ᐊᒻᒪᓗ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓱᐃᕐᕕᔅᓴᖓ ᓂᕆᖕᒑᖑᒍᑦ. ᕿᓐᖑᐊᑉ ᑐᓚᒃᑕᕕᖓ ᐊᖅᑯᑎᒧᑦ ᐊᑦᑐᐊᔪᖅ ᐅᔭᕋᓐᓂᐊᕐᕕᔅᓴᒧᑦ. ᓄᓇᓯᐅᑎᒃᑖᑉ ᐊᖅᑯᑎᔅᓴᖑᓐᓂᒃ ᓴᓇᒐᔭᖅᑐᒍᑦ 150 ᑭᓛᒥᑕᒥᒃ ᑕᑭᓂᓕᒃ (km) ᐅᔭᕋᓐᓂᐊᕐᕕᔅᓯᑦᑎᓐᓂᒃ ᑕᑲᓄᖓ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓱᐃᕐᕕᖓ. ᓴᓇᔭᐅᕙᓪᓕᐊᓂᖓᒍᑦ, ᑕᒪᒃᑯᐊ ᓴᓇᔾᔪᑎᖏᑦ ᓴᓇᔭᔅᓴᓪᓗ ᐊᑐᓕᐊᓕᖏᑦ ᐅᔭᕋᓐᓂᐊᕐᕕᔅᓯᒥ ᓄᓇᓯᐅᑎᑯᑖᑦᑐ ᐊᖅᑯᑎᔅᓴᖑᓚᑕ ᐱᑎᐊᓐᓂᖓᓄᑦ ᓂᐅᕋᖅᑕᐅᒐᔭᖅᑐᑎᒃ ᑕᐸᐃᑯᓇ ᕿᓐᖑᐊᑉ ᑐᓚᒃᑕᕕᖓᒍᑦ. ᑕᐃᒪᐃᒃᑭᑦᑐᑎᒃ, ᓴᓇᔾᔪᑎᔅᓯᑦ ᐱᖅᑯᑎᔾᔪᐊᑦ ᐊᑐᕋᔅᓴᖏᑦᑐ ᓱᓇᒃᑯᑖᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓱᐃᕐᕕᖓᓄᑦ ᐊᒥᐊᒃᑯᖓᓄᑦᑐ ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᖅᑯᑖᓄᑦ ᓂᐅᕋᖅᑕᐅᒐᔭᖅᑐᑎᒃ ᓴᓇᓯᒪᓕᕈᓂ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓱᐃᕐᕕᖓ.

ᓂᕆᐅᒋᔭᐅᔪᖅ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓱᐃᕐᕕᖓᑦᑕ ᓱᓇᒃᑯᑖᑦᑕᖅᑯᑖᑐ ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᕐᕌᒍᑦ ᑎᓴᒪᓄᑦ ᐃᓱᖅᑲᑐᓂ ᓴᓇᔭᐅᕙᓪᓕᐊᓂᖏᑦ. ᓴᓇᔭᐅᕙᓪᓕᐊᑎᓪᓗᒍ, ᑕᒪᐃᓄᑦ ᓱᓇᒃᑯᑖᔅᓴᖏᑦ ᐊᑐᓂᐊᑕᖏᑦ ᓴᓇᔭᒥᓄᑦ ᓇᔅᓯᐅᑎᔭᐅᖃᑦᑕᓪᓗᑎᒃ ᖃᓐᓂᕐᓂᖅᐸᑦᑕᖏᓐᓄᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓱᐃᕐᕕᖓᓄᑦ ᐊᑐᕋᐅᓂᖏᓐᓄᑦ. ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᖅᑯᑎᔅᓴᖓ ᓴᓇᓯᒪᓕᖅᐸᑦ, ᓴᕕᕋᔭᔅᓴᖅ ᑎᑭᐅᒪᑐᓂ 18 Mt/a ᓴᕕᕋᔭᒥᒃ ᐃᓯᖅᑕᐃᕙᓪᓗᑎᒃ ᑕᕝᕙᖓᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓱᐃᕐᕕᖓᓂᑦ. ᑕᒪᓇ ᐊᕐᕋᒍᓕᒫᖅ ᐊᐅᓚᑕᐅᔪᒪᒐᒥ ᓴᕕᕋᔭᖅ ᐅᔭᕋᓐᓂᐊᖅᑕᐅᔪᖅ ᐅᒥᐊᔾᔪᐊᑦ ᐅᓯᒃᖃᑎᑦ ᓯᑯᓯᐅᑎᓇᓱᐊᖅᑲᖅᑐᑎᒃ. ᑖᓐᓇ ᐊᐅᓚᓕᑐᐊᕈᓂ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓱᐃᕐᕕᖓ, ᕿᓐᖑᐊᑉ ᑐᓚᒃᑕᕕᖓ ᐊᑐᖅᑕᐅᑲᐃᓐᓇᑐᐃᓐᓇᖅᑲᑦᑕᕋᔭᖅᑐᓂ ᑕᒪᒃᑯᐊ ᐅᖅᑯᒪᐃᑦᑐᓪᓚᓂᑦ ᓴᓇᔾᔪᑎᑦᓯᐅᑎᓄᐊᖅᑐᑦ ᐅᔭᕋᓐᓂᐊᕐᕕᒻᒥ ᑎᑭᑎᑕᐅᔪᕋᓐᖓᑕ. ᓴᕕᕋᔭᖓ ᑕᑎᐅᑉ ᐊᑭᐊᓂᒻᒥᐅᑕᓄᑦ ᑐᕋᖓᓪᓗᐊᑕᓐᓂᐊᖅᑐᓂ ᓴᕕᕋᔭᓕᐅᖅᑎᖕᖏᓐᓄᑦ.

1.3 ᐱᑕᖃᕐᓇᐊᖅᑭᑖ ᐅᔭᕋᓐᓂᐊᕐᕕᓕᐊᓕᔭᑦᑕ

ᓄᓇᔾᔪᐊᖅ ᐅᓪᓗᒥᒧᑦ ᓱᓕ ᓴᕕᕋᔭᔅᓯᒥᒃ ᐊᑐᐃᓐᓇᖅᑲᕐᓇᐊᖅᑲᒪᑦ ᓴᓇᔭᐅᒪᓲᑦ ᐊᑐᖅᑕᐅᕙᑦᑐᓪᓗ ᓴᓇᔭᐅᖁᓪᓗᒋᑦ ᐅᓄᕆᐊᓂᑦ. ᓄᓇᔾᔪᐊᒥᑦ ᓴᕕᕋᔭᔅᓯᒥᒃ ᐊᒥᒐᖅᓴᓐᓂᖅᓴᐅᓕᒪᑕ ᐱᓪᓗᒍ ᑕᒪᒃᑯᐊ ᓄᓇᓕᔾᔪᐊᖑᔪᑦ ᓲᑦᑐ ᓴᐃᓅᓯᑦ, ᐃᓐᑎᔭᒥᐅᑕᐃᑦ ᐊᓯᖕᒋᓪᓗ ᐊᔪᕈᓐᓃᖅᐸᓪᓕᐊᓕᖅᑐᑦ ᐱᕈᖅᐸᓪᓕᐊᖕᒋᓐᓇᓂᐊᕋᓯᑎᔭᐅᒪᓚᑕ ᑕᒪᒃᑯᐊ ᖃᓪᓗᓈᑦᑎᕗᑦ ᑮᓇᐅᔭᓕᐅᕈᑎᖕᒋᑦ ᐊᐅᓚᑦᑎᐊᖕᒋᓐᓇᓪᓗᑎᒃ. ᓴᕕᕋᔭᔅᓯᓚᕿᒃᑯᑦ ᐊᑐᕈᒪᕗᑦ ᓴᖅᑮᓗᑎᒃ ᐅᔭᕋᓐᓂᐊᕐᕕᓕᐊᓕᔭᖕᒋᓐᓂᒃ ᓴᕕᕋᔭᔅᓯᑦᑎᐊᕙᒥᒃ ᐅᔭᕋᓐᓂᐊᓪᓗᑎᒃ ᓄᓇᔾᔪᐊᒥᑦ ᓴᕕᕋᔭᓕᐅᖅᑎᓄᑦ ᓈᓚᒋᔭᐅᔪᒥᓪᓗ ᐅᑎᖅᑎᑦᑎᔪᓐᓇᓪᓗᑎᒃ ᑮᓇᐅᔭᒥᒃ ᐊᑐᖅᑎᑦᑎᔪᓄᑦ.

ᓄᓇᕗᒥᐅᑕᐅᔪᓄᓪᓗ, ᐅᔭᕋᓐᓂᐊᕐᕕᓕᐊᓕᔭᕗᑦ ᐃᑲᔪᐃᒍᓐᓇᖅᑐᖅ ᓴᖅᑮᕙᓪᓕᐊᓂᖕᒋᓐᓄᑦ ᐱᕐᑯᑎᔾᔪᐊᓂᒃ, ᐱᔪᓐᓇᐅᑎᓂᒃ, ᐃᖅᑲᓇᐃᔮᓂᒃ, ᐱᓇᓱᓗᓄᑦ ᒪᑉᐱᖅᑎᔪᓂᒃ, ᐊᒻᒪᑦᑕᐅᖅ ᑮᓇᐅᔭᓂᒃ ᐃᓱᖅᑎᑦᑎᖅᑲᓯᐅᑎᒋᔭᐅᓇᓂᒃᑯᑎᒃ ᓄᓇᕗᑉ ᒐᕙᒪᒃᑯᖕᒋᓐᓄᑦ ᐃᓄᐃᓪᓗ ᓄᓇᑖᕈᑎᖏᑦ ᑎᒥᖁᑎᖕᒋᒍᑦ (ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑯᐊᐳᕇᓴᓐ). ᐅᔭᕋᓐᓂᐊᕐᕕᓕᐊᓕᔭᕗᑦ ᓂᕆᐅᒋᔭᐅᕗᖅ ᐅᓄᖅᑐᓂᒃ ᓴᖅᑮᓂᐊᕋᓯᑎᔭᐅᓪᓗᓂ ᐃᑲᔫᑎᔅᓴᐅᔪᓂᒃ ᓄᓇᓕᐅᔪᓂᒃ ᐊᕙᑖᓂᑦ, ᐃᑲᔪᐃᓗᓂ ᑕᒪᐃᓐᓂᒃ ᐃᓄᐃᑦ ᐃᓅᓯᖁᖅᑲᖕᒋᓐᓂᒃ, ᐊᒻᒪᓗ, ᐃᓄᐃᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖕᒍᓕᖅᑐᑦ ᐃᓄᐃᑦ ᓄᓇᓕᖕᒋᓐᓂᒃ ᒪᒃᑯᑦᑐᑦ ᑎᒍᓯᔪᒪᕙᓪᓕᐊᓕᖅᑎᓪᓗᒋᑦ ᑮᓇᐅᔭᒧᑦ-ᑐᓐᖓᕕᔪᒥᒃ ᐃᓅᓯᐅᔪᒥᒃ.

ᑖᓐᓇ ᐃᓄᓐᓄᑦ ᐊᑦᑐᐃᓂᒧᑦ ᐱᕚᓪᓕᕈᑎᓵᖏᓄᓪᓗ ᐊᖏᕈᑎ (ᐊᖏᕈᑦ ᐋᐲᕈᑕᐅᔪᖅ ᐅᓪᓗᒥ ᐊᑯᓐᓂᐅᒍᑦ ᓴᕕᕋᔭᓵᓕᕆᔨᒃᑯᑦ ᖃᑭᖅᑕᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒋᖏᑕᓗ (ᖃᑭᖅᑕᓂᒃᑯᑦ), ᑕᒪᒃᑯᐊ ᐱᕚᓪᓕᕈᑎᓵᖏᑦ ᓴᖅᑭᑎᖅᑐᑦ ᑕᕝᕙᓐᖓᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᒋᔪᒪᔭᑦᑎᓐᓄᑦ ᐃᓄᐃᑦ ᓄᓇᓕᖏᓐᓄᑦ ᓱᐊᒪᖃᓯᐅᑎᒐᔭᖅᐸᓂ ᑕᒪᐃᓐᓄᓪᓗ ᖃᑭᖅᑖᓗᓕᒫᒧᑦ. ᑖᓐᓇ ᐅᔭᕋᓐᓂᐊᕝᕕᒋᔪᒪᔭᕗᑦ ᒪᓕᒃᓯᒪᔪᖅ ᓄᓇᕘᑉ ᐸᓐᓇᐃᔾᔪᑦ ᐃᓗᐃᑦᑑᔪᒧᑦ ᐸᓐᓇᐅᑎᖏᓄᑦ ᑐᓐᖓᕕᓕᐊᖏᓄᑦ, ᐊᑐᐊᒐᖏᓄᑦ, ᐊᒻᒪᑦᑕᐅᖅ ᑐᕌᒐᓇᔭᖏᓐᓄᑦ ᑕᒪᒃᑯᐊᓗ ᓄᓇᕘᑉ ᒐᕙᒪᖏᑕ ᐊᑐᕈᒪᓯᒪᔭᖏᓐᓄᑦ ᐅᔭᕋᓐᓂᐊᕝᕖᑦ ᓴᖅᑭᑎᖅᑐᑦ ᐱᕙᓪᓕᐊᓂᖏᓐᓄᑦ. ᑖᓐᓇ ᐅᔭᕋᓐᓂᐊᕝᕕᒋᔪᒪᔭᕗᑦ ᐃᑲᔪᐃᒐᔭᒻᒥᔪᖅ ᖄᒃᑲᓐᓂᐊᒍᑦ ᐱᓕᕆᔪᒪᔪᓂᒃ ᒪᓂᒻᒪᐃᒋᐊᒥᒃ ᖃᑭᖅᑖᓗᒻᒧᑦ.

ᐅᔭᕋᓐᓂᐊᕝᕕᒋᔪᒪᔭᕗᑦ ᐃᑲᔪᐃᖅᑲᓯᐅᑎᒋᕙᖅ ᑲᓇᑕᐅᑉ ᐊᑐᕈᒪᓯᒪᔭᖏᓐᓄᑦ ᐅᑭᐅᖅᑕᖅᑐᒧᑦ ᐱᓗᐊᖅᑐᒥᒃ ᓴᓐᖏᑎᕆᓂᒻᒥᒃ ᑲᓇᑕᒥᐅᑦ ᓇᒻᒥᓂᖃᓐᓂᖓᓐᓂᒃ ᐅᑭᐅᖅᑕᖅᑐᒥᒃ, ᓴᐳᒻᒥᕆᓂᒻᒥᒃ ᑲᓇᑕᐅᑉ ᐊᕙᑎᐊᑕ ᐃᓕᖅᑯᓯᕆᔭᖏᓐᓂᒃ, ᓯᕗᓕᐅᕆᓂᒻᒥᒃ ᑮᓇᐅᔭᓕᐅᕈᑎᒃᑯᑦ ᐃᓅᖃᑎᕆᑦᑐᓄᓪᓗ ᐱᕚᓪᓕᕈᑎᓭᓂᒃ ᖃᑭᖅᑑᓗᒥ, ᐅᑭᐅᖅᑑᓪᓗ ᐊᐅᓚᑕᐅᓂᖓᓐᓄᑦ ᐱᐅᓯᕆᐊᕆᓗᓂ.

1.4 ᐅᔭᕋᓐᓂᐊᕋᓯᐊᓐᓂᑦᑕ ᐊᐅᓚᕙᓪᓕᐊᓂᖓ ᐱᕙᓪᓕᐊᑎᓪᓗᒍ

ᓴᕕᕋᔭᓵᓕᕆᔨᒃᑯᑦ ᐱᒋᐊᖅᑎᑦᑎᓂᐊᖅᑐᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᒋᔪᒪᔭᒥᒃ ᐃᓕᖅᑯᓯᖃᓪᓗᑎᒃ ᑲᒪᑦᑎᐊᕋᓯᐊᓐᓂᓪᓕᒃ ᑕᒪᐃᓐᓄᑦ ᐊᕙᑎᒥᓄᑦ ᐃᓅᖃᑎᖑᐃᔪᓄᓪᓗ ᓄᓇᓕᓐᓃᑦᑐᓄᑦ. ᑕᒪᒃᑯᐊ ᐱᔭᕆᐊᓕᖏᑦ ᐊᓐᓂᕈᑏᓯᖏᓪᓗ ᐊᓯᖏᑕ, ᐱᓗᐊᖅᑐᒥᒃ ᐊᖑᓇᓯᑦᑏᑦ ᒥᑭᒋᐊᖅᑏᓪᓗ, ᐃᑉᐱᒋᔭᐅᖏᓐᓇᓐᓂᐊᖅᑐᑦ ᐱᓕᕆᐊᖑᕙᓪᓕᐊᑎᓪᓗᒍ ᐊᐅᓚᑉᐸᓪᓕᐊᓕᖅᑎᓪᓗᒍᓗ ᑖᓐᓇ ᐅᔭᕋᓐᓂᐊᕕᓵᕆᔪᒪᔭᕗᑦ. ᓴᕕᕋᔭᓵᓕᕆᔨᒃᑯᑦ ᒪᓕᑦᑎᐊᓐᓂᐊᖅᑐᑦ, ᓇᐅᑯᓕᒫᓪᓗ ᑮᓇᐅᔭᑎᒍᑦ ᓴᓇᔪᓕᕆᓂᒃᑯᓪᓗ ᐊᔪᓐᓇᖏᒃᑯᑎᒃ, ᐅᖓᑕᐅᔾᔨᓗᑎᒍᑦ ᓄᓇᕗᑉ ᒐᕙᒪᑐᕐᒃᑯᓪᓗ ᒪᓕᒐᒃᑯᑦ ᐊᑐᖁᓯᒪᔭᖏᑦ ᐊᑐᓪᓗᑎᒍᑦ ᓴᓇᔪᓕᕆᔨᓄᑦ ᐊᑐᖅᑕᐅᓂᑰᔪᑦ ᑲᔪᓯᑎᐊᓐᓂᑰᓪᓗᑎᒃ ᐊᑭᑐᓗᐊᓐᖏᑦᑐᒃᑯᓪᓗ ᐊᕙᑎᒧᑦ ᓴᕀᓗᑕᓵᓄᑦ ᐱᓕᕆᐊᔅᓴᐅᔪᓂᒃ ᑕᒪᐃᓐᓄᑦ ᐃᓚᒋᔭᖏᑕ ᐅᔭᕋᓐᓂᐊᕝᕕᒋᔪᒪᔭᑦᑕ ᐃᓗᓕᖏᓐᓂᒃ. ᓴᕕᕋᔭᓵᓕᕆᔨᒃᑯᑦ ᑲᒪᓂᕆᔭᖏᑦ ᐋᖅᑮᕙᓪᓕᐊᔾᔪᑎᖏᓪᓗ ᑐᑭᒧᐊᓪᓗᒋᑦ ᑐᓐᖓᕕᖅᑲᓪᓗᑕ ᐊᐅᓚᑦᑎᑎᐊᓐᓂᒻᒧᑦ ᒪᓕᑦᑕᐅᓛᖑᔪᓂᒃ ᐅᖓᕙᖅᐸᓪᓚᓂᖏᑦ ᐅᑯᐊ "ᐊᑐᐊᒐᖅ - ᐸᓐᓇᐃᓂᖅ - ᐊᑐᓕᖅᑎᑦᑎᓂᖅ ᐊᐅᓚᑦᑎᓂᓪᓗ - ᖃᐅᔨᓴᐃᔾᔪᑎᑦ ᐋᖅᑭᒋᐊᕈᑏᑦᑐ - ᑲᒫᐅᔪᑦ ᖃᒥᕈᔭᐅᔾᔪᓯᖏᑦ" ᒪᓕᑦᑕᐅᕙᓪᓗᑎᒃ. ᐊᑐᓂᑦ ᑳᒃᑯᐊ ᐃᓗᐊᒍᑦ ᓄᓇᑖᑦ ᐃᓚᐅᖃᑕᐅᓂᖏᑦ ᐃᓚᒋᔭᐅᓪᓚᑦᑕᓐᓂᐊᖅᐸᓂ ᐱᓕᕆᓂᑦᑐᓐᓄᑦ. ᐊᑐᕈᒪᔭᕗᑦ ᐃᓕᑉᐸᓪᓕᐊᓂᖅ ᐱᓕᕆᐊᕕᑦ ᖃᓄᐃᑦᑐᓂᒃ ᓴᖅᑮᔭᖏᓐᓄᑦ ᐱᕕᒃᖅᑎᑦᑎᕙᔪᖅᑐᖅ ᓴᕕᕋᔭᓵᓕᕆᔨᒃᑯᓐᓂᒃ ᐅᔾᔨᖅᓴᓪᓗᑎᒃ ᐱᐅᓯᕚᓪᓕᐊᑎᑦᑎᓗᑎᒃ ᖃᓚᒥᐅᔪᒃᑯᓪᓗ ᑲᒪᒋᔭᖃᕈᓇᑦᑎᐊᓪᓗᑎᒃ ᐊᓯᔾᔨᐅᑎᔪᓄᑦ ᐱᓕᕆᐊᖏᑕ ᐃᓕᖅᑯᓯᖏᒍᑦ. ᓴᕕᕋᔭᓵᓕᕆᔨᒃᑯᑦ ᐊᔅᓯᕈᐊᖃᖅᑐᑦ ᓯᕗᕋᓂᒃᑯᑦ ᑲᒪᑦᑎᐊᕋᓯᐊᓐᓂᓪᓕᒃ ᓴᓂᖅᑯᑕᐅᔪᓐᓇᖁᓪᓗᑎᑦ ᐊᒻᒪ/ᐅᕝᕙᓘᓐᓃᑦ ᒥᑭᓕᒋᐊᓪᓗᑎᑦ ᐱᐅᓐᖏᑦᑐᒃᑯᑦ ᐊᑐᐃᔪᓐᓇᓐᓂᖏᑦ ᐊᐅᓚᑦᑕᖏᑦ ᑕᒪᐃᓐᓂᒃ ᓴᐳᒥᑦᑎᐊᖁᓪᓗᑎᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᑦ, ᓄᓇᕗᒥᑦ ᓄᓇᖃᖅᑎᐅᔪᓕᖓ, ᓄᓇᐅᓪᓗ ᐃᓕᖅᑯᓯᖕᒐᒍᑦ ᐊᐅᓚᓂᖓ ᓴᐳᒥᔭᐅᑎᓐᓂᖓᒍᓄᑦ.

ᓴᕕᕋᔭᓵᓕᕆᔨᒃᑯᑦ ᐊᑐᓕᖅᑎᑦᑎᓯᒪᕗᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᓵᒥᒃ ᕿᓂᖃᐅᑎᒋᓪᓗᑎᒃ ᐱᔭᓯᖅᑲᓐᓂᒧᓪᓗ ᑐᓐᖓᕕᐅᔪᓂᒃ ᑲᒻᐸᓂᒥᒃ ᑐᑭᒧᐊᕆᓂᐊᖅᑐᑦ ᐊᐅᓚᓂᓕᒫᖑᒐᒧᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᒋᔪᒪᖓᓄᑦ. ᐃᖅᑲᓇᐃᔭᖅᑎᖏᑕ ᐅᓗᕆᐊᓇᖅᑑᒥᖏᓐᓂᖏᑦ ᑕᒪᐃᓐᓄᑦ ᐋᖅᑭᑕᖏᓐᓄᑦ ᑐᓐᖓᕕᑐᐊᖑᒪᒪᑦ. ᓴᕕᕋᔭᓵᓕᕆᔨᒃᑯᑦ ᐃᖅᑲᓇᐃᔭᖅᑐᓕᕆᓂᓪᓕᒃ ᐊᑐᐃᓐᓇᐅᑎᑦᑎᓂᐊᖅᑐᑦ ᐅᐸᑦᑕᐅᔪᒪᔪᒥᒃ, ᐱᕙᓪᓕᐊᑎᑦᑎᔪᒥᒃ, ᐊᒻᒪᑦᑕᐅᖅ ᐱᓯᒪᐃᓐᓇᖅᑲᑦᑕᓪᓗᑎᒃ ᐱᔪᓐᓇᑦᑎᐊᖅᑐᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᓂᒃ ᐃᓄᓐᓂᓪᓗ ᐃᖅᑲᓇᐃᔭᖅᑎᓵᓂᒃ ᐊᖏᑖᕐᔪᑎᑦᑎᓇᓯᓪᓗᑎᒃ. ᐱᔪᓐᓇᓂᓕᖅᑎᑦ ᒪᓪᓗᑎᑦ, ᑳᒃᑯᐊ ᑲᒻᐸᓂᐅᔪᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᓂᒃ ᖃᓂᓪᓗᑎᒃ ᑕᑦᑕᒪᐅᔪᓂᒃ ᓄᓇᓕᓐᓂᒃ ᖃᓂᑖᕐᔪᔪᑦ ᑖᓯᒧᖕᒐ ᐅᔭᕋᓐᓂᐊᕝᕕᒋᔪᒪᖕᒐᓄᑦ. ᓴᕕᕋᔭᓵᓕᕆᔨᒃᑯᑦ ᑲᑐᔾᔨᓗᑎᒃ ᐱᓕᕆᖃᑎᖃᕐᓂᐊᖅᑐᑦ ᖃᑭᖅᑕᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᓐᓂᒃ ᐊᓯᖏᓂᓪᓗ ᐱᓕᒻᒪᓵᐅᑎᓵᐃᑦ ᐊᑐᓇᐊᓕᖏᑦ ᐊᑐᐃᓐᓇᐅᓗᑎᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᓐᓄᑦ ᓄᓇᓕᓐᓂᓗ ᓴᖅᑮᔭᖅᑎᑕᐅᔪᑦ ᐃᑲᔪᖅᓯᖅᑕᐅᓗᑎᒃ ᐱᕚᓪᓗᕈᑎᓄᑦ ᑕᑯᔅᓴᕈᐃᓇᓯᑦᑐ ᐃᑲᔫᑎᓵᖏᒍᑦ ᑖᔅᓯᒪᐅᑉ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᐅᑉ ᓄᓇᓕᓐᓂᒥᐅᔪᔪᓪᓗ ᐱᓕᒪᑦᑎᐊᕈᑎᒥᓂᒃ ᐃᓕᓴᖅᓯᒪᓗᑎᒃ ᐃᖅᑲᓇᐃᔮᖓ ᖃᒪᒃᑲᓗᐊᕈᓂᐅᑉ ᐊᑐᐃᓐᓇᕈᓐᓇᕋᔭᖅᑕᖏᓄᑦ ᒪᑐᒐᓗᐊᓐᓂᕈᓂᓘᓐᓃᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᓵᓕᐊᖑᔪᒪᔪᖅ.

ᓴᓇᓂᐊᖅᑐᑦ ᐅᔭᕐᓂᐊᕐᕕᐅᑉ ᐃᓚᔅᓴᖕᒋᓐᓂᒃ ᐊᑯᓐᓂᖅᓱᓐᓂᐊᖅᑐᖅ ᐅᓄᓕᓅᓕᖅᐸᓪᓗᑎᒃ ᐊᕐᕌᒍᖕᒋᓐᓂᒃ ᑭᓱᐊᓂ 1700-ᒥ 2700-ᒧᑦ ᐃᓱᕐᑲᓪᓗᑎᒃ ᓴᓇᔪᕐᑲᓐᓂᐊᕋᓱᒋᔭᖕᒐᑦ. ᑖᓐᓇ ᐅᔭᕐᓂᐊᓯᒋᐊᓐᓂᕈᓂ ᐅᔭᕐᓂᐊᕐᕕᔅᓴᖓ ᐃᖅᑲᓇᐃᔭᖅᑎᕐᑲᓪᓗᑎᒃ 950-ᓗᐊᓂᒃ. ᓄᓇᕗᑉ ᓄᓇᓕᖕᒋᓐᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᕗᑦ ᒪᕐᕉᓐᓄᑦ ᐱᓇᓱᐊᕈᓰᓐᓄᑦ ᐃᖅᑲᓇᐃᔭᖅᐸᓪᓗᑎᒃ ᒪᕐᕉᓐᓄᓪᓗ ᐱᓇᓱᐊᕈᓰᓐᓄᑦ ᓄᖅᑲᖓᕙᓪᓗᑎᒃ. ᖃᓪᓗᓈᓂᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᕗᑦ ᒪᓕᑐᐃᓐᓇᕋᔭᕐᓗᑎᒃ ᐅᖓᓯᑦᑐᒥᒃ ᐃᖅᑲᓇᐃᔭᓲᑦ ᐅᑦᑐᕐᑯᑎᖕᒋᓐᓂᒃ ᑎᓴᒪᓄᑦ ᐱᓇᓱᐊᕈᓯᓐᓄᑦ ᐃᖅᑲᓇᐃᔭᓪᓗᑎᒃ ᒪᕐᕉᓐᓄᑦ ᐱᓇᓱᐊᕈᓰᓐᓄᑦ ᓄᖅᑲᖓᓗᑎᒃ.

ᑕᒪᐃᓐᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑏᑦ ᓴᓇᕝᕕᒋᓂᐊᖅᑕᒥᓄᑦ ᖃᖓᑕᓲᒃᑯᑦ ᐅᓯᔭᐅᖃᑦᑕᕋᔭᖅᑐᑦ. ᓴᕕᕋᔭᔅᓴᓕᓇᐳᒃᑯᑦ ᖃᖓᑕᓲᖅᑲᓪᓗᑎᒃ ᑕᓪᓕᒪᓄᑦ ᓄᓇᓕᐅᔪᓄᑦ ᐅᑎᖅᑕᕋᖅᑐᒥᒃ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖓᓂ ᐃᖃᓗᓐᓂᓪᓗ ᖃᓪᓗᓈᓂᓪᓗ ᑎᑭᑦᑕᖅᑐᓄᑦ. ᐊᒻᒪᑦᑕᐅᖅ, ᐊᓯᖏᑦ ᓄᓇᖏᑦ ᐃᓱᒪᒋᔭᐅᖃᓯᐅᑎᓂᐊᕇᓪᓗᑎᒃ.

1.5 ᓴᓇᔭᐅᔪᒪᔪᒧᑦ ᐱᔭᕆᐊᑐᑎᑦᑎᔪᑦ

ᓴᓇᔭᐅᕚᓪᓚᐊᓂᖕᒋᑦ ᐊᖕᒋᔫᑎᑦ ᐅᔭᕐᓂᐊᕐᕕᔅᓴᐃᑦ ᐅᖓᓯᑦᑐᒦᑦᑐᑦ ᐱᓗᐊᖅᓗᓂ ᓄᓇᕗᒥᑦ ᓵᖕᖓᔭᖅᑲᒪᑕ ᐊᑦᑐᐃᔪᓂᒃ ᐱᔭᕆᐊᑐᑎᑦᑎᓲᖑᔪᓂᒃ:

- ᐊᑭᑐᔫᑦᑕᓐᓂᖕᒋᑦ ᓴᓇᔭᐅᔪᔅᓴᐃᑦ ᐊᐅᓚᑦᑎᔾᔪᑎᓪᓗ ᐅᔭᕐᓂᐊᕐᕕᒻᒥᒃ ᐅᓯᒃᑖᖅᑕᐅᔾᔪᑎᖕᒋᓄᓪᓗ ᐅᑭᐅᖅᑕᖅᑐᒥ.
- ᐸᓐᓇᐃᔾᔪᑎᓄᑦ ᐱᔭᕆᑦᑐᕈᕈᑎᐅᓱᑦ ᐊᑦᑐᐊᔪᑦ ᓴᓇᔭᐅᓂᖕᒋᓄᑦ ᐊᐅᓚᑕᐅᓂᖕᒋᓄᓪᓗ ᐱᓪᓗᒍ ᓄᓇᖓ ᓴᓇᕝᕕᒋᔭᖓ ᕿᓚᒥᐊᓄᒃ ᒪᑐᐃᖓᕐᑲᑦᑕᓐᓂᖓᓄᑦ ᐱᑕᖅᑲᖕᒋᓐᓂᖓᓄᓪᓗ ᓴᖅᑮᔭᖅᐸᕐᑮᖅᑐᒥᒃ ᐃᖕᒋᕐᕋᔪᓕᓐᓇᐃᔾᔪᑎᓂᒃ ᓴᓇᔪᒪᔅᑎᓐᓄᑦ.
- ᐅᑭᐅᖑᑯᑖᖅᑲᑦᑕᓐᓂᖓ ᓂᓪᓚᓯᑦᓚᓇᖅᑲᑦᑕᓐᓂᖓᓗ ᐊᑦᑐᐃᓂᐅᓴᑐᐃᓐᓇᒻᒪᑦ ᐱᑕᓇᔪᓐᓇᓐᓂᖓᑕ ᓴᓇᔪᑕᓇᕐᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖕᒋᑦ ᐊᐅᓚᑦᑎᓇᓱᐊᖅᑐᓪᓗ.
- ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖕᒋᑦ ᐊᔨᓐᓇᖅᑑᑎᑦ (ᓄᓇᐅᑉ ᖁᐊᖑᓂᐊ, ᓂᓚᐃᑦ ᐊᑯᓐᓂᖅᑲᐅᖅᐸᓐᓂᖕᒋᑦ) ᓴᖅᑮᕚᓪᓚᑕ ᐊᔾᔨᐅᖕᒋᑦᑐᒥᒃ ᐱᑕᓇᓇᓯᐊᓐᓂᓪᒥᒃ ᓄᓇᖓᑕ ᐃᓕᖅᑯᓯᐊ ᐱᓪᓗᒍ ᓴᓇᔪᑕᓂᑕᔪᖕᒋᓪᓗ ᑕᒪᑐᒥᖓ.
- ᓇᑖᕿᕈᑎᖃᑦᑕᓐᓂᖕᒋᓐᓄᑦ ᓴᕕᕋᔭᑕᐅᖅᑎᑦ-ᓴᓇᔪᑕᓂᑕᔪᖕᒋᑦ ᑕᑯᔅᓴᕈᐃᓯᒪᔪᖅ ᑲᔪᓰᓐᓇᖅᑐᒥᒃ, ᓱᖅᑯᐃᖕᒋᑦᑐᒥᒃ, ᓄᖅᑲᔾᔭᖕᒋᑦᑐᒥᓪᓗ ᓴᕕᕋᔭᔅᓴᑐᐊᖅᑎᓯᓇᖅᓯᓂ ᐊᑐᐃᓐᓇᖅᑎᑦᑎᓂᖕᒋᓐᓂ.

ᑖᒃᑯᐊ ᐊᑐᓇᐊᓕᖕᒋᑦ ᓈᒻᒪᓕᖅᓯᒃᓗᓂᔾᔪᒃ, ᑖᓐᓇ ᐅᔭᕐᓂᐊᖅᕕᑎᔪᒪᔪᖓ ᐊᕐᕌᒍᑉ ᐃᓗᓕᒫᖓᒍᑦ ᓄᖅᑲᔾᔭᖕᒋᑦᑐᒥᒃ ᑲᔪᓲᓐᓇᖅᑐᒥᓪᓗ ᐅᓯᒃᑖᖅᑕᐃᔾᔪᑎᖃᕐᓂᐊᖅᑲᑦᑕᕐᒪᑦ ᐅᔭᕐᓂᐊᕐᕕᑎᔪᒥᒃ. ᓂᕆᐅᒋᔭᐅᕗᖅ ᐅᒥᐊᔾᔪᐊᖅ ᐊᑕᐅᓯᖅ ᐅᓯᑦᓯᕝᕕᒥ ᓴᕕᕋᔭᔅᓴᒥᒃ ᐅᓯᑦᓯᕝᕕᑦᑕᐅᔪᑦᑐᓂ ᐃᒃᐱᑭᑦᑐᔾᔨᐊᐸ ᐅᓯᑦᓯᕝᐃᕝᕕᓪᓗᓂ ᐅᑦᑐᓐᓄᑦ ᒪᕐᕉᓐᓄᑦ ᐊᑯᓐᓂᖅᐹᒥᒃᑯᓪᓗ ᐅᑭᐅᑯᓪᓗ ᓯᑯᓯᒪᓕᖅᑲᓗᐊᖅᑎᓪᓗᒍ. ᐅᒥᐊᔾᔪᐊᑦ ᑎᑭᑦᑕᓐᓂᖕᒋᑦ ᐊᒥᓱᖃᕋᔭᖅᑐᑦ ᐊᐅᔭᒃᑯᑦ ᐅᒥᐊᔾᔪᐊᑐᐃᓐᓇᑦ ᑕᒪᐅᖓ ᑎᑭᑦᑐᓇᖅᓯᒍᑎᒃ ᓂᐅᕿᐃᓗᑎᒃ ᐊᑐᓐᓂᐊᖅᑕᒥᓄᑦ ᐊᒻᒪᓗ ᓯᑭᓯᐅᖅᑎᐅᓐᓂᖅᑐᓂᒃ ᐅᓯᒃᑖᖅᑎᓂᒃ ᐅᒥᐊᔾᔪᐊᓂᒃ.

ᒪᕐᕉᒋᕗᒃ ᐊᑑᑎᖅᑲᓪᓚᓚᖅᑯᒃ ᐃᖅᑲᐅᒪᔭᐅᔭᓚᐊᓪᓚᑦ:

- ᑖᓐᓇ ᐅᔭᕐᓂᐊᕐᕕᑎᔪᒪᔪᕗᑦ ᑕᑯᔅᓴᐅᔪᒃᑯᑦ ᕿᒥᕐᕈᓚᐅᔅᓯᒃᑯᓪᓗ ᐱᓪᓚᖅᑎᑦᑎᔭᕆᐊᓕᒃ ᓴᕕᕋᔭᔅᓴᓕᓇᐳᒃᑯᑦ ᓇᒻᒥᓂᖅᑲᖅᑎᖕᒋᓐᓄᑦ, ᐊᒻᒪᑦᑕᐅᖅ, ᐃᓄᐃᑦ ᓄᓇᖅᑲᖅᑎᖕᒋᓐᓄᑦ, ᓄᓇᓕᖕᓄᑦ ᐊᑦᑐᐊᓂᓕᖕᓄᑦ ᓄᓇᒥᓪᓗ ᐊᑐᖅᑎᐅᔪᓄᑦ.
- ᓴᕕᕋᔭᔅᓴᓕᓇᐳᒃᑯᑦ ᑮᓇᐅᔭᓕᐊᔅᓯᖕᒋᑦ ᑐᓐᖓᓪᓚᓪᓚᒪᑕ ᓄᓇᕝᕙᐊᑉ ᐱᕙᓕᐊᓂᖅᑲᓐᓄᑦ ᓴᕕᕋᔭᔅᓯᒥᒃ ᐊᑭᑭᔅᓯᖕᒋᓐᓄᑦ.

ᑖᒃᑯᐊ ᑲᑎᖕᒐᒥᑦ ᐱᔭᕆᐊᑦᑑᔪᑦ ᐃᓱᒪᓕᐅᕆᔭᕆᐊᓕᖕᒐ ᐊᖅᑮᔭᕆᐊᖅᑲᖅᑎᑎᓪᓚᑕ ᑕᐃᒪᐃᓕᖕᒐᔪᒥᒃ ᓴᓇᔪᒪᓂᐅᔪᒥᒃ ᐅᔭᕐᓂᐊᕐᕕᔅᓯᒥᒃ ᐊᑐᓕᖅᑎᑦᑎᓂᒥᓪᓗ ᓴᓇᔭᐅᓂᖕᒐᓄᑦ.

1.6 ᐅᓯᕋᓐᓂᐊᖏᐅᑉ ᓴᓇᓯᐅᓂᔅᓴᖓ ᐊᑯᓂᐅᓂᔅᓴᖓᓗ ᐊᐅᓚᓂᐊᑕ

ᑖᓐᓇ ᐅᓯᕋᓐᓂᐊᖏᕆᔪᒪᔭᕗᑦ ᐊᒡᒍᖅᓯᒪᔪᖅ ᐱᓕᕆᓂᓐᓄᑦ ᐊᑐᓃᖓᔪᓄᑦ. ᓱᕗᓪᓕᖅᐹᖅ, ᓴᓇᓯᐅᓂᖓ ᐱᒋᐊᓐᓂᖓᓄᑦ ᐅᓯᕋᓐᓂᐊᓐᓂᐅᑉ ᓂᕆᐅᒋᔭᐅᕗᖅ ᑎᓴᒪᓄᑦ ᐊᕐᕌᒍᓄᑦ ᑲᒪᒋᓯᐅᓯᕆᐊᖃᓐᓂᐊᕋᓱᒋᓪᓗᒍ. ᐅᓯᕋᓐᓂᐊᓪᓚᕆᓐᓂᖓ, ᒪᓕᒃᑲᒍ ᐅᓪᓗᒥᒧᑦ ᓇᓂᓯᐅᓯᒪᔪᓄᑦ ᓴᕿᕋᔭᔅᓴᖅᑐᓄᑦ, ᐊᕐᕋᒍᓄᑦ 21-ᓄᑦ ᐃᓱᖃᕈᓐᓇᖅᑐᖅ 18 ᒥᓕᐊᓐ ᑖᓯᒥᒃ ᐅᓯᕋᓐᓂᐊᓪᓗᑕ ᐊᕐᕋᒍᑕᒫᒧᑦ. ᒪᑐᓯᐅᓂᔅᓴᖓ ᓄᓘᔮᐸ ᓂᕆᐅᒋᔭᐅᔪᖅ ᑲᔪᓯᕆᐊᖃᕋᓲᓐᓂᖓᓐᓂᒃ ᐱᖓᓱᓄᑦ ᐊᕐᕋᒍᓄᑦ ᒪᑐᓯᐅᓯᒪᓕᖅᑎᓪᓗᒍᓗ ᖃᐅᔨᓴᖅᑕᐅᓂᖓ ᐊᕐᕋᒍᓄᑦ ᑕᓪᓚᒪᓄᑦ ᐊᑐᕆᐊᖃᕋᔭᕆᓪᓗᓂ ᒪᑐᓯᒪᓕᕈᓂ. ᒪᑐᓯᐅᓂᔅᓴᖓᓄᑦ ᑎᑭᖓᔅᓴᖏᑦ ᑎᑭᖏᒃᑯᓂᖏᑦ, ᑖᓐᓇ ᒪᑐᓯᐅᓂᐊᑕ ᑭᖑᕐᖓᒍᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᖓ ᐊᕐᕋᒍᓄᑦ ᑕᓪᓚᒪᓄᑦ ᖄᖏᐅᑎᖓᔭᖅᑲᓂ.

1.7 ᑕᑯᔪᒥᓇᓐᓂᖏᑦ ᑖᔅᓱᒪᐅᑉ ᐅᓯᕋᓐᓂᐊᖏᕆᓯᐅᔪᒪᔫᑉ

ᓄᓘᔮᓐᓂᑦ ᐅᓯᕋᓐᓂᐊᖏᔅᓴᖅ, ᕿᓐᖑᐊᑉ ᐅᓯᓕᖅᓯᐃᖏᖓ, ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓯᐃᖏᖓᓪᓗ ᐱᖓᓲᔪᑦ ᐊᕆᓖᑦ ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᔫᔅᓴᑦ ᐅᓯᕋᓐᓂᐊᖏᔅᓵᒧᑦ. ᐊᑐᓂᑦ ᓄᓇᖏᑦ ᑖᒃᑯᐊ ᑕᒪᐃᓐᓂᒃ ᐱᖁᑎᔾᔪᐊᒥᓂᒃ ᓈᒪᔪᓂᒃ ᐱᓱᒪᓂᐊᖅᑐᑦ ᐊᐅᓚᖁᑦᑐᒋ ᑲᔪᓯᑎᐊᖅᑐᒥᒃ ᐃᓚᖃᓪᓗᑎᒃ ᑲᒫᔪᑎᔅᖏᓄᑦ ᐃᒡᓗᔾᔪᐊᓂᒃ ᐊᐅᓚᑦᑎᔾᕆᑕᓗ ᐱᓕᕆᖏᖏᓂᒃ, ᓯᓪᓗᐊᖏᓂᒃ ᐱᖁᑎᓪᓗ ᐃᓂᖃᖏᖏᑦ ᑐᖅᑯᐃᖏᔅᓴᑦ, ᓴᕿᔭᔅᓴᒃᑯᖏᑦ ᐊᑦᑐᐊᔪᓪᓗ ᑲᒪᒋᔭᐅᓂᖏᓄᑦ ᓄᓇᐅᑉ, ᑕᖕᒫᖏᖏᑦ, ᐃᒪᖃᐅᑎᖏᑦ, ᐊᑐᓐᓂᑯᑦ ᐃᒥᕋᔭᐃᑦ ᐊᓇᓪᓗᐃᓪᓗ ᓴᓗᒻᒪᖅᓴᐅᑎᖏᑦ ᐃᓚᖃᕐᓗᑎᒃ ᐊᒃᑕᖏᓂᒃ, ᐆᒻᒪᖅᑯᑎᓕᕆᔾᔪᑎᓂᒃ, ᐅᖅᓱᐊᓗᖃᐅᑎᒃᑯᕕᑦ, ᐅᖄᓚᐅᑎᖃᐅᑏᑦ, ᐊᒻᒪᓗ ᒥᑦᑕᖏᖃᖅᑲᑎᒃ.

ᖄᒃᑲᓐᓂᐊᒍᑦ ᐱᖁᑎᔾᔪᐊᖑᔪᑦ ᑖᒃᑯᐊ, ᓄᓘᔮᑉ ᐅᓯᕋᓐᓂᐊᖏᔅᓴᖓ ᐃᓚᖃᖅᑐᖅ ᐃᑎᖅᓴᓕᐊᖑᓂᐊᖅᑐᒥᒃ, ᓄᓇᓯᐅᑎᔾᔪᐊᑦ ᐅᓯᒃᖃᐃᔪᑦ ᐅᓯᕋᓐᓂᐊᖅᑕᐅᔪᒥᒃ, ᐱᖁᑎᒃᑯᖏᑦ ᐱᓕᕆᓂᒻᒧᑦ ᑐᖅᑯᐃᖏᖏᓪᓗ ᖄᖅᑕᔫᔅᓴᐃᑦ, ᓴᕿᔭᔅᓴᖃᖏᑦᑐᑦ ᐅᓯᕋᑦ ᑐᖅᑯᐃᖏᖓ, ᓴᕿᔭᔅᓴᐅᑉ ᐊᑎᕆᓂᖓᓄᑦ ᐊᒡᒍᖅᓯᔾᔪᑏᑦ, ᐅᓯᓕᖅᓯᐃᔾᔪᑏᑦ ᑕᒪᐃᓐᓄᑦ ᓄᓇᓯᐅᑎᔾᔪᐊᓄᑦ ᓄᓇᓯᐅᑎᑰᓪᓗ ᑲᓚᖓᕆᓐᓄᑦ. ᕿᓐᖑᐊᑉ ᑐᓚᑦᑕᖏᖓ ᐃᓚᖅᑲᖕᒍᖅ ᐳᑦᑖᓲᓂᒃ ᑐᓚᑦᑕᖏᒻᒥᒃ ᐱᖁᑎᓄᑦ ᐊᒻᒪᑦᑕᐅᖅ ᓄᓇᓯᐅᑎᓚᕆᖏᑦ. ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓯᐃᖏᖓ ᐃᓚᖅᑲᖅᓴᖅᑲᓂ ᐱᖁᑎᓄᑦ ᓂᐅᕋᐃᖏᒻᒥᒃ, ᒪᕿᓐᓄᑦ ᐅᒥᐊᔾᔪᐊᓄᑦ ᐅᓯᓕᖅᓯᐃᖏᑦ ᐃᓂᖏᑦ ᐊᑦᑐᐊᔪᖏᓪᓗ ᑲᒪᒋᔭᖅᑲᐅᑎᑦ/ᐅᓯᓕᖅᓯᐃᔾᔪᐅᑎᑦ ᐱᖁᑎᖏᑦ, ᓄᓇᓯᐅᑎᑰᑉ ᑲᓚᖓᕆᓄᑦ ᑲᑕᖓᐃᖏᖓ ᑲᐃᕙᑦᑐᓪᓗ ᐊᑐᖅᑕᖏ, ᖄᖅᑕᔫᒃᑯᖏᐅᑉ ᐃᓂᖓ/ ᑲᑎᖅᓱᐃᖏᖓ ᖄᖅᑕᔫᓄᑦ, ᐅᖅᓱᐊᓗᖃᐅᑎᒃᑯᖏᓪᓗᐊᖓ, ᐊᒻᒪᑦᑕᐅᖅ ᓄᓇᓯᐅᑎᑰᓚᕆᖏᒃ.

ᓇᐸᐃᓐᓇᖅᑐᔅᓴᑦ ᐊᑐᑲᐃᓐᓇᖅᑐᔅᓴᓂᓪᓗ ᑕᖕᒫᖏᓐᓂᒃ ᐊᕆᓚᕇᑦᑐᓂᒃ ᓴᓇᖃᑦᑕᓐᓂᐊᖅᑐᑦ ᑖᒃᑯᓇᓂ ᐱᖓᓱᓂᒃ ᓄᓇᓂᒃ ᐊᒻᒪᑦᑕᐅᖅ ᐃᓚᕆᓄᑦ ᓄᓇᓯᐅᑎᑰᑉ ᐊᖅᑯᑎᔅᖓᑕ ᓄᓇᕆᒍᑦ. ᑖᒃᑯᐊ ᑕᖕᒫᖏᑦ ᐃᓚᖃᓐᓂᐊᖅᑐᑦ ᓯᓂᑦᑕᖏᓂᒃ, ᓂᕆᖏᓐᓂᒃ, ᐋᓐᓂᖅᑐᓕᕆᖏᓐᓂᒃ ᑭᐱᓐᖑᐃᓯᐃᖏᔅᓴᐅᔪᓂᓪᓗ ᐃᒡᓗᖅᑯᑎᓂᒃ. ᐊᐅᓚᓕᕈᓂ ᐅᓯᕋᓐᓂᐊᖏᒃ ᑕᖕᒫᖏᕗᑦ ᒥᑭᓕᕆᐊᖅᑕᐅᒐᔭᖅᐳᑎᒃ. ᑖᒃᑯᐊ ᓴᓇᓯᒪᔪᑦ ᑲᑎᖅᓱᒐᔅᓴᐅᓪᓗᑎᒃ ᐃᒡᓗᖅᑎᖏᑦ ᓴᓇᓯᐅᓕᕈᓂ ᐅᓯᕋᓐᓂᐊᖏᒃ ᐃᓗᐃᑦᑑᑲᐃᓇᓪᓗᑎᒃ ᑭᖑᓂᐊᒍᑦ ᒥᑭᓕᕆᐊᖅᑕᐅᓗᑎᒃ.

ᓄᓇᓯᐅᑎᑰᑉ ᐊᖅᑯᑖ ᐃᓚᖅᑲᖅᑐᖅ ᐊᖅᑯᑎᐅᑉ ᑐᓐᖓᖏᖓ, ᐊᖅᑯᑖᑕ ᕿᔪᖅᑯᑎᖏᑦ, ᐊᒻᒪᓗ ᓴᕿᔭᖏᑦ ᐃᓂᕆᔭᖏᑦ. ᑕᒪᓐᓇ ᐊᖅᑯᑖᓂᒃ ᓴᓇᓂᖅ ᐃᓚᖅᑲᖅᑐᖅ ᐱᖁᑎᓄᑦ ᐅᓯᓕᖅᓲᑎᖏᓄᑦ ᐊᖅᑯᑎᐅᑲᐃᓇᖅᑐᔅᓴᒥᒃ ᐅᓯᕋᑦᑕᖏᓪᓗ ᑐᓐᖓᖏᔅᓴᖏᓄᑦ. ᐃᒻᒪᖄ 30-ᓂᒃ ᐃᑳᖏᓂᒃ ᓴᓇᓯᐊᖅᑲᕋᔭᖅᑐᒍᑦ, ᒪᕿᒃ ᓱᓪᓗᒃ ᓄᓇᐃᓐᓇᒃᑯᑦ, ᐊᒻᒪᑦᑕᐅᖅ ᐃᓂᓕᐅᕈᑎᔅᑦ ᖃᐃᓐᖑᖓᒍᑦ

ᐅᔾᕋᐅᑉ ᐊᖅᑯᑎᓵᓄᑦ ᑕᓯᑯᑖᑉ ᓯᓇᔾᔪᐊᒍᑦ. ᐃᑳᕈᑎᓵᓂᒃ ᐊᖅᑯᑎᓪᓗᐊᖑᓂᕋᖅᑕᐅᔪᒃᑯᑦ ᓴᓇᒐᔭᖅᑐᒍᑦ ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᖅᑯᑖᒍᑦ ᑐᑦᑐᐃᑦ ᐊᖑᓇᓱᑦᑏᑦᓗ ᐃᑳᕈᓐᓇᕐᑯᓪᓗᑎᑦ ᐅᓗᕆᐊᓇᓐᖏᑦᑐᒃᑯᑦ ᓇᓖᕌᕈᓐᓇᓪᓗᑎᒃ.

ᑖᒃᑯᐊᒃ ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᖅᑯᑎᖓ ᑐᓚᑦᑕᖁᑏᓪᓗ ᐱᖁᑎᔾᔪᐊᖏᑦ ᓴᓇᔭᐅᔭᕇᕈᑎᒃ, ᑖᓐᓇ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓱᐃᖁᖓ ᐊᕐᕌᒍᓕᒫᒧᑦ ᐊᐅᓚᒃᑲᔭᖅᓱᓂ ᐊᒻᒪᑦᑕᐅᖅ ᐅᑭᐅᖅᑕᖅᑐᒧᑦ ᓴᓇᔭᐅᓯᒪᔪᓄᑦ ᓯᑯᓯᐅᕈᓐᓇᖅᑐᓄᑦ, ᐊᖏᔫᑎᓄᑦ ᐅᒥᐊᔾᔪᐊᓂᒃ ᐅᓯᓕᖅᓱᐃᖃᑦᑕᓐᓂᐊᖅᑐᓂᒃ.

1.8 ᓴᕿᔭᕐᓴᐃᑦ ᖃᓄᐃᑦᑑᓂᐊᓐᓂᖏᑦ

ᑕᐃᒪᓕ ᑕᒪᓐᓇ ᓄᓘᔮᑉ ᓴᕿᔭᕐᓴᖓ ᐱᐅᔫᓂᖓᓄᑦ, ᐱᓕᕆᐊᖑᔭᕆᐊᖃᓗᐊᖏᒻᒪᑦ ᑕᒪᓐᓇ ᓴᕿᔭᕐᓴᖓ ᓯᖃᓕᔭᐅᓗᓂ ᒥᑭᓕᕇᖓᔪᓄᑦ ᐊᒡᒍᖅᑐᖅᑕᐅᓗᓂ ᓴᕿᔭᓕᐅᖅᑎᓄᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᓄᑦ ᐊᑦᑎᒋᓂᖏᓄᑦ. ᑖᒃᑯᐊ ᐊᑦᑎᒋᓂᖏᑦ ᐊᔾᔨᕐᖏᑦᑐᑦ ᓴᖅᑭᑕᐅᒐᔭᖅᑐᑦ ᓯᖃᓕᔭᐅᕙᓪᓕᐊᓗᑎᒃ ᐊᒡᒍᖅᑕᐅᓗᑎᒃ ᐊᑦᑎᒋᓂᖏᓄᑦ ᒪᕐᕉᓪᓗᐊᑕᓄᑦ ᓴᕿᔭᕐᓴᐅᑉ “ᓴᖅᑭᑕᖏᓐᓄᑦ”:

- ᐅᓇ **ᑐᐊᐸᑐᑦ ᓴᕿᔭᕐᓴᖅ** ᓴᖅᑭᑕᖅ ᑖᒃᑯᐊ ᓴᕿᔭᕐᓴᐃᑦ ᐊᖏᓂᖃᐅᖅᖢᑎᒃ 6.3 ᒥᓕᒦᑕᒥᒃ 31.5 ᒥᓕᒦᑕᒧᑦ (ᐃᒻᒪᖃ ᐊᓇᐅᓕᒑᒌᑦ ᓴᕿᔭᓄᑦ ᐊᖅᓴᖏᑎᑐᑦ), ᐊᒻᒪᓗ;
- ᐅᓇ **ᓱᐅᕋᐅᔸᖅᑐᖅ ᓴᕿᔭᕐᓴᖅ** ᓴᖅᑭᑕᖅ, ᑕᒪᒃᑯᐊ ᓴᕿᔭᕐᓴᐃᑦ ᒥᑭᓐᓂᖅᓴᐅᓪᓗᑎᒃ 6.3 ᒥᓕᒦᑕᒥᒃ (ᐃᒻᒪᖄ ᖃᑦᑖᔾᔪᒻᒦᓲᑎᑐᑦ ᐱᕈᖅᑐᑎᑐᑦ ᐊᖏᓂᓖᑦ).

ᓱᖃᓕᔾᔪᑮᑦ ᐊᒡᒎᖅᑐᐃᔾᔪᑎᖏᓪᓗ ᐃᒡᓗᔾᔪᐊᑉ ᐃᓗᖏᒍᑦ ᐃᓕᓯᒪᒐᔭᖅᖢᑎᒃ, ᑕᒻᒃᑯᐊᓗ ᑲᐃᕙᑦᑐᑦ ᐅᑎᖅᑕᕋᐃᔪᑦ ᖁᓕᖃᓪᓗᑎᒃ ᐊᒻᒪᓗ ᐅᖅᑯᐃᕝᕕᖃᓪᓗᑎᒃ ᐊᓄᕆᒧᑦ ᑎᑦᑕᐅᖁᓇᕐᑦ ᐳᔪᓗᓕᐅᖁᓇᒍᓗ ᑕᒪᓐᓇ ᓴᕿᔭᕐᓴᖓ. ᑕᒪᐃᓐᓂᒃ ᐊᓄᕆᒧᑦ ᐅᖅᑯᐃᕝᕕᖏᑦ ᒥᓪᓗᐊᕈᑎᓅᖓᓗᑎᒃ ᐳᔪᓪᓗᓕᐊᖏᑦ ᓯᓚᐃᓐᓇᒨᖁᓇᕐᑦ.

1.9 ᒪᑐᔭᐅᓂᖓ ᐅᔾᕋᓐᓂᐊᕝᕕᐅᑉ ᑐᓚᑦᑕᕝᕕᖏᑕ

ᓴᓇᔭᐅᕙᓪᓕᐊᓂᓕᒫᖏᒍᑦ ᑖᓯᒪᐅᑉ ᐅᔾᕋᓐᓂᐊᕝᕕᓵᐅᑉ, ᓴᕿᔭᓵᓕᕆᔩᒃᑯᑦ ᐸᓐᓇᐃᓂᖃᓐᓂᐊᖅᑐᑦ ᐊᐅᓚᓐᓂᖃᓪᓗᑎᓪᓗ ᐃᓕᖅᑯᓯᖃᖅᑐᒥᒃ ᐅᓗᕆᐊᓇᖏᓖᖑᔪᒥᒃ ᐊᑐᓪᓗᑎᒃ ᐅᔾᕋᓐᓂᐊᕝᕕᓵᕆᔭᖏᑕ ᓄᓇᖏᑦ ᐅᑎᖅᑎᑖᓪᓗᓂᑦ ᐅᓗᕆᐊᓇᖏᑦᑐᒧ ᐊᕙᑎᒧᓪᓗ ᐊᑦᑐᐃᔭᓐᖏᑦᑐᒧᑦ ᐃᓕᖅᑯᓯᖃᖅᑐᒧᑦ. ᓴᕿᔭᕐᓴᓕᕆᔩᒃᑯᑦ ᐱᓕᕆᐊᖃᐃᓐᓇᕋᔭᖅᑐᑦ ᑲᔫᓐᓇᖅᑐᓂᒃ ᓄᓇᐅᑉ ᐋᖅᑭᑦᑕᐅᕙᓪᓕᐊᓂᖓᓐᓂᒃ ᑕᐃᒪᓐᖓᓕᒫᖅ ᐅᔾᕋᓐᓂᐊᕝᕕᒃ ᐊᐅᓚᓂᖃᖅᑎᓪᓗᒍ. ᑕᒪᒃᑯᐊ ᐊᑐᑲᐃᓐᓇᖅᑕᕙᓃᑦ ᑐᔪᒥᕖᑦ ᓴᓇᔪᓄᑦ ᐲᔭᖅᑎᖅᑕᐅᓗᑎᒃ ᐊᑐᕋᓵᐅᔫᓃᕈᑎᒃ ᐅᑎᖅᑎᑕᐅᓗᑎᒃ ᖃᓪᓗᓈᓄᑦ. ᓱᐅᕋᖅᑕᕝᕖᑦ, ᐅᔾᕋᑦᑕᕝᕖᑦ, ᐊᑐᑲᐃᓐᓇᖅᑐᑦ ᐊᖅᑯᑏᑦ ᐊᓯᖏᓪᓗ ᓄᓇᐃᑦ ᐊᑦᑐᖅᑕᐅᔪᑦ ᑲᒪᒋᔭᐅᒐᔭᖅᑐᑦ ᓱᕋᐃᖃᓇᒋᑦ ᐊᕙᑎᐊᑕ ᓄᓇᒋᔭᖏᓐᓂᒃ ᐊᑐᕋᓃᑐᐊᕈᑎᓪᓗ ᐃᓕᖅᑯᓯᖏᓄᑦ ᐅᑎᖅᑎᓐᓇᓱᐊᓪᓗᒋᑦ. ᐊᕙᑎᐅᑉ ᓴᐳᒥᔭᐅᓂᖓ ᐅᓗᕆᐊᓇᖅᑐᖃᖏᓐᓂᖓᓄᓪᓗ ᖃᐅᔮᓴᐅᑏᑦ ᑲᔪᓯᓂᐊᖅᑐᑦ.

1.10 ᓯᕗᓂᔅᓴᒥᒃ ᓴᖅᑭᑦᑐᖃᒃᑲᓐᓂᑐᐃᓐᓇᕆᐊᖃᓐᓂᖓ

ᐅᓪᓗᒥᒧᑦ ᐅᔾᕋᓐᓂᐊᕝᕕᓵᐅᔪᖅ ᓴᓇᔭᐅᒪᓂᓵᖓ ᐸᓐᓇᔾᔨᒪᕗᖅ ᐊᕐᕌᒍᑕᒫᖅ 18 ᒥᓕᐊᓐ ᑖᓐᓯᓂᒃ ᐅᔾᕋᓐᓂᐊᖃᑦᑕᓪᓗᑎᒃ. ᐊᕐᕌᒎᒧᑦ ᐅᔾᕋᓐᓂᐊᖅᑕᐅᔪᑦ ᐊᓯᔾᔩᒐᑦᓯᒍᓐᓇᖅᑐᑦ ᒪᓕᓪᓗᒋᑦ ᓂᐅᕕᕋᕈᒪᓂᖏᑦ, ᓴᕿᔭᕐᓴᐅᑉ ᐱᐅᓂᕆᔭᖏᑦ ᓂᕆᐅᓇᖏᑦᑐᓪᓗ ᓴᖅᑭᑎᖅᑐᑦ. ᑕᒪᒃᑯᐊ ᐊᑦᑐᐃᓗᐊᖅᑯᓇᒋᑦ ᐅᔾᕋᓐᓂᐊᖅᑐᓄᑦ ᑎᑭᐅᒪᓇᓯᑦᑐᑦ ᓇᓗᓇᐃᖅᓯᒪᔭᑦᑎᓐᓄᑦ ᐱᕕᖃᖅᑯᓪᓗᑕᓗ ᓂᕆᐅᓇᓐᖏᑦᑐᓄᑦ, ᐅᔾᕋᓐᓂᐊᕝᕕᐅᑉ ᑲᒪᒋᔪᓐᓇᖅᑕᖏᑦ ᐃᓱᒃᑲᖅᑎᑕᐅᓯᒪᕗᑦ ᐊᕐᕌᒍᒧᑦ ᑎᑭᐅᒪᔪᓐᓇᓪᓗᑎᒃ 30 ᒥᓕᐊᓐ ᑖᓐᓯᓄᑦ.

ᑕᒪᐃᓐᓂᒃ ᐅᔾᕋᓐᓂᐊᙳᐊᔅᓴᐅᑉ ᓄᓇᕐᑯᑎᖏᑦ ᓴᓇᔾᔭᐅᒪᓂᖏᑦ ᐱᕕᖃᖅᑐᑦ ᐊᖏᓂᖅᓴᓂᒃ ᑐᖅᑯᐃᙳᐊᕆᔾᔅᓴᓂᒃ, ᐱᕐᑯᑎᓄᑦ ᑲᒪᒋᔭᐅᙳᐊᔅᓴᖃᐅᑎᖏᒍᑦ ᐊᒻᒪᑦᑕᐅᖅ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᓐᓄᑦ ᐊᒥᖂᓐᓇᓐᓂᕆᔭᖏᒍᑦ.

ᖄᒃᑲᓐᓂᐊᒍᓪᓗ, ᐊᕙᑖᑕ ᓄᓇᖏᑦ ᕿᓂᖅᓯᖅᑕᐅᓪᓗᑎᒃ ᐊᕐᖁᒍᓄᑦ ᒪᕐᕿᓐᓄᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᙵᑦ ᓴᕝᕋᔭᔅᓴᒃᑲᓂᐅᔪᓂᒃ ᓄᓇᖏᒍᑦ ᑕᑯᔭᐅᑐᐃᓐᓇᖅᓱᑎᒃ, ᖃᐸᑐᐃᓐᓇᖏᒍᑦ, ᐊᔾᔨᓪᓗᐊᖏᓂᒃ ᐱᐅᓂᖅᑲᖅᑐᓂᒃ ᓴᕝᕋᔭᔅᓴᖃᓂᖏᓐᓂᒃ ᑖᔅᓯᑐᓇᖅ ᓇᓂᔭᐅᓯᒪᔪᑐᑦ 1-ᑎᑐᑦ. ᑕᐃᒪᓕ ᑖᒃᑯᐊ ᐊᓯᖏᑦ ᓇᓂᔭᐅᓯᒪᔪᑦ ᕿᒥᕐᕈᔭᐅᓯᒪᓐᖏᒃᑲᓗᐊᖅᓱᑎᒃ, ᓴᕝᕋᔭᔅᓯᓇᔾᔾᒃᑯᑦ ᕿᓂᖅᓯᖅᑎᖏᑦ ᓇᓗᓇᐃᓇᓯᒪᔪᑦ ᑖᔅᓯᒪᐅᑉ ᐅᔾᕋᓐᓂᐊᖅᑕᐅᔪᔅᓴᐅᑉ ᐊᓯᖏᓐᓂᒃ ᐱᑕᖃᓐᓂᖓᓐᓂᒃ ᐅᖓᕙᐃᒐᔭᖅᑐᒥᒃ ᐅᔾᕋᓐᓂᐊᙳᐅᑉ ᐊᐅᓚᓂᓇᔭᖏᓐᓂᒃ. ᑕᒪᒃᑯᐊ ᐅᔾᕋᓐᓂᐊᙳᐅᑉ ᐱᕐᑯᑎᔾᒍᐊᖏᑦ ᐊᑦᑐᐊᔪᓪᓗ ᐊᑐᖅᑕᖏᑦ ᐃᓯᔾᔪᐥᑦ ᓴᖅᑭᔪᒪᔪᓄᑦ ᐱᔭᓇᐊᕿᑎᑦᑎᒐᔭᖅᑐᑦ ᐅᔾᕋᓐᓂᐊᖏᓐᓇᕈᒪᒐᔭᕈᑎᒃ. ᑕᒪᓐᓇ ᐊᖏᓕᒋᐊᖅᑕᐅᒐᔭᕈᓂ ᐅᖓᕙᓇᐊᕈᓂᓘᓐᓃᑦ ᐊᐅᓚᓂᐊᑕ ᐊᕐᕋᒍᔅᓴᖏᑦ ᖄᒃᑲᓐᓂᐊᒍᑦ ᐊᕙᑎᒍᑦ ᕿᒥᕐᕈᐃᓂᒻᒍᑦ ᓴᖅᑮᑎᑦᑎᒐᔭᖅᑐᖅ ᖄᒃᑲᓐᓂᐊᒍᑦ ᐱᓕᕆᓂᐅᓂᖏᓐᓄᑦ.

SECTION 2.0 - ᓄᓇᓕᓐᓂᑦ ᐃᓚᐅᖃᑕᐅᑎᑦᑎᓂᖅ

ᑲᔪᓰᓐᓇᖅᑐᒥᒃ ᐊᖏᔪᓪᓕᓇᒻᒥᓪᓗ ᑐᓴᕐᓯᐊᖅᓯᒪᔪᒍᑦ ᓄᓇᓕᐅᔪᓂᒃ ᑎᒥᐅᔪᓂᓪᓗ ᐃᓚᐅᖃᑕᐅᓂᓕᓐᓂᒃ ᑕᕝᕙᓂ ᐅᔾᕋᓐᓂᐊᙳᕆᔪᒪᔾᑎᓐᓂᑦ. ᐃᓚᐅᑎᑦᑎᓂᖅ ᐃᓚᖅᑲᖅᓯᒪᕗᖅ ᑮᑯᓕᒫᓂᒃ, ᓄᓇᖃᖅᑎᓂᒃ, ᐊᖑᖅᓯᒪᔪᓪᓗ ᐃᓄᐃᑦ ᑎᒥᕐᑯᑎᖏᑦ, ᓄᓇᕗᑉ ᒐᕙᒪᒃᑯᖏᑦ, ᒐᕙᒪᑐᖅᑲᒃᑯᓪᓗ ᑎᒥᖁᑎᕆᔭᖏᓐᓂᒃ. ᑖᒃᑯᐊ ᐃᓄᐃᑦ ᓄᓇᓕᖏᑦ ᖃᓂᔅᓵᖑᔪᑦ ᓄᓘᔮᓄᑦ ᓵᓐᖓᔭᐅᓂᖅᓴᐅᓯᒪᔪᑦ ᑐᓴᕝᕕᐅᓇᓯᐊᖅᓱᑎᒃ.

ᕿᑭᖅᑖᓗᑉ ᐃᓄᖏᑦ ᐅᖃᐅᓯᒥᒍᑦ ᐅᓂᒃᑳᑐᖃᐅᖅᐳᑦ ᐊᑐᖅᑕᑐᖃᒥᓄᑦ. ᑕᒪᓇ ᐃᓕᖅᑯᓯᑐᖃᖓ ᐊᑦᑐᐃᓯᒪᕗᖅ ᖃᓄᖅ ᓴᕝᕋᔭᔅᓯᓇᔾᔾᒃᑯᑦ ᓄᓇᓕᓐᓂᒃ ᐃᓚᐅᖃᑕᐅᑎᑦᑎᒪᖔᖏᑕ. ᑲᒻᐸᓂᐅᔪᑦ ᓵᓐᖓᔭᖃᓐᓂᖅᓴᐅᓪᓗᑎᒃ ᓴᖅᑭᔮᖅᑎᑦᑎᓂᒥᒃ ᓄᓇᓕᓐᓂᒃ ᓄᓇᓖᑦ ᑐᓴᐅᒪᒃᑲᐃᓲᖏᓐᓂᒃ, ᐊᒥᓯᓂᒃ ᑭᓇᒥ-ᑭᓇᒎᑦ ᑲᑎᒪᖃᑎᖃᖅᓯᒪᓪᓗᑎᒃ ᓄᓇᓕᐅᔪᓂᒃ ᐊᒻᒪᑦᑕᐅᖅ ᐊᔪᓐᓇᖏᑦᑕᕌᖓᑦ ᓄᓘᔮᓄᑦ ᑕᑯᔪᖅᑐᖅᑎᑦᑎᓪᓗᑎᒃ. ᑕᐃᒪᓕ ᐅᖃᐅᓯᓪᓗᐊᑕᓇᔭᐅᒪᑦ ᕿᑭᖅᑖᓗᑉ ᐅᐊᖕᓇᖓᓂᑦ ᐃᓄᒃᑎᑐᑦ, ᐊᔾᔩᓐᖏᐊᔾᔪᑦᑐᓂᓪᓗ ᐅᖃᐅᓯᖅᑕᖅᑲᐅᖅᓱᑎᒃ ᓄᓇᓕᖏᑦ ᕿᑭᖅᑖᓗᒥ, ᑕᒪᒃᑯᐊ ᐃᓄᒃᑎᑑᓕᓇᔾᑦ ᓄᓇᓕᓐᓂ ᐊᑐᖅᓯᒪᔪᙵᑦ ᐃᑲᔪᐃᓇᓯᐊᖅᓱᑕ ᑐᓴᐅᒪᖃᑎᓖᑦᑎᐊᓐᓂᒻᒥᒃ ᐊᑯᓐᓂᐊᒍᑦ ᓄᓇᓖᑦ ᐱᓕᓇᔾᑎᓐᓄᓪᓗ. ᑕᐃᒪᐃᓂᓕᒫᖅ, ᑲᑎᒪᔪᑦ ᓂᐱᓕᐅᖅᓯᒪᙵᑦ ᐸᓐᓇᐃᔾᔪᑎᕆᓪᓗᑎᒍ ᐱᓕᓇᐊᔅᓴᐅᔪᓂᒃ ᐅᓂᒃᑳᓇᓂᐊᖅᑕᑦᑎᓐᓂᓪᓗ ᐊᓯᖏᓂᓪᓗ ᐱᓕᓇᕐᓂᒃ ᐅᖅᑲᖅᑎᖅᑳᓂᒃᑯᑦ.

ᑐᕌᖓᔭᖅᑲᓪᓚᓇᑦᑐᓂᒃ ᐱᓕᓇᐊᖅᑲᖅᓯᒪᙵᒍᑦ ᑲᑎᖅᓯᐃᓇᓱᒃᑯᑕ, ᓂᐱᓕᐅᓇᔭᖅᑲᖅᑯᑕ ᐅᐃᒍᓯᓇᓱᒃᑯᑕᓗ ᐃᓄᐃᑦ ᖃᐅᔨᒪᔭᖏᓐᓂᒃ ᓴᓇᔭᐅᔪᒪᔫᑉ ᓴᓇᓯᒪᓂᖏᓄᑦ ᐊᖅᑭᔅᓯᖅᐸᓪᓕᐊᔭᑎᓐᓄᑦ. ᐃᓄᐃᑦ ᖃᐅᔨᒪᓂᖏᑦ ᓄᓇᖏᓐᓂᒃ ᐊᖏᔫᙵᖅ ᐋᑎᖅᑲᖅᓯᒪᒻᒪᓇᒃᑯᓂᓗ ᓄᓇᒥᒃ ᖃᐅᔨᒪᓂᖏᑦ ᐱᓗᐊᖅᑐᒥᒃ ᐃᓚᔭᐅᑎᓪᓗᒋᑦ ᖃᐅᔨᒪᔨᑕᑦ ᖃᐅᔨᓴᕈᑎᖏᓄᑦ ᑐᑭᓯᐅᒪᓂᖏᓄᓪᓗ.

ᖄᒃᑲᓐᓂᐊᒍᑦ, ᓄᓇᓕᐅᑉ ᐊᖏᖅᓯᒪᓂᖏᑦ ᓂᕈᐊᖅᓯᒪᓂᖏᓪᓗ ᐋᑐᑎᖅᑲᓪᓚᓇᒃᑭᓪᓗᑎᒃ ᓂᕈᐊᓇᓕᖅᑎᓪᓗᑎᒍᑦ ᐅᔾᕋᓐᓂᐊᙳᐊᔅᓴᐅᑉ ᐊᑐᕋᔭᖅᑕᖏᑕ ᕿᒥᕐᕈᔭᐅᓂᖏᓐᓄᑦ ᓯᓪᓗ ᕿᓐᖑᐊᑉ ᑕᕿᐊᖓ ᐊᑐᖅᑕᐅᓂᖓ, ᐃᓂᒋᓂᐊᖅᑕᖓ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓕᖅᓯᐃᙳᐊᔅᓴᖓ, ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᑎᔅᓴᖓ ᐃᒡᓗᓕᐅᑉ ᐃᑭᖓᓂ ᐃᖅᑲᓇᐃᔭᖅᑎᓪᓗ ᐅᓪᓗᕐᑯᑎᔅᓴᖏᒍᑦ.

ᑭᖑᓂᐊᒍᑦ ᑐᓐᓂᕆᓚᐅᖅᑐᑎᒍᑦ ᓯᕗᓪᓕᖅᐸᖅ ᐊᕙᑎᒍᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ, ᐊᒥᓱᓂᒃ ᐱᓕᕆᖃᑎᖃᖅᓯᒪᕗᒍᑦ ᑎᒥᐅᔪᓂᒃ ᒐᕙᒪᓄᑦ ᑕᒪᐃᑦ ᒐᕙᒪᑐᖃᒃᑯᑦ ᓄᓇᕘᓪᓗ ᒐᕙᒪᖏᓄᑦ, ᐊᒡᒍᖅᓯᒪᔪᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ (ᕿᑭᖅᑕᓂᒃᑯᑦ) ᐊᓯᖏᓪᓗ ᐃᓚᐅᖃᑕᐅᔪᑦ ᑎᒥᖏᓄᑦ ᐃᓚᖅᑲᖅᑐᑎᒃ ᑮᑯᓕᒫᓄᑦ ᑲᑎᒪᑎᑦᑎᓃᑦ, ᑐᓴᐅᒪᔾᔪᑎᓄᑦ ᑲᑎᒪᑎᑦᑎᓃᑦ ᑎᑎᖅᑲᑎᒍᓪᓗ ᑐᓐᓂᕆᔭᑦ ᓴᓇᔭᐅᔪᒪᔫᖓᔪᑦ. ᑕᒪᒃᑯᓅᓇ ᐱᓕᕆᓂᑦᑎᒍᑦ ᐅᔭᕋᓐᓂᐊᕐᕕᓕᐅᕈᒪᔭᕗᑦ ᑐᓴᐅᒪᔭᖅᓴᐅᓂᖅᓴᐅᓕᖅᑐᖅ ᑕᒪᒃᑯᐊᓗ ᓴᖅᑭᑦᑐᓐᓇᖅᑐᑦ ᐊᑦᑐᐃᓃᑦ ᑐᑭᓯᐅᒪᔭᐅᓂᖅᓴᐅᓕᖅᑐᑎᒃ ᐅᖃᐅᓯᕆᔭᐅᔪᓪᓗ ᐃᓚᐅᖅᓯᒪᓕᖅᑐᑎᒃ ᓴᓇᔭᐅᒪᓂᔅᓴᖓᓄᑦ. ᑖᒃᑯᐊ ᐃᓗᓕᖓᔪᖏᑦ ᑭᖑᓪᓕᖅᐸᖅ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᑦᑕ ᑕᕝᕕᓯᒪᔪᑦ ᐅᖃᐅᓯᐅᔪᓄᑦ ᐃᓄᓐᓄᑦ ᑎᒥᓄᓪᓗ ᕿᒥᕐᕈᐃᔪᓪᓗ ᓴᖅᑭᑕᖏ ᓴᓇᔭᐅᒪᓂᔅᓴᖓᑕ ᑎᑎᕋᐅᔭᖅᓯᒪᓂᐊ ᓅᑦᑐᓐᓇᖅᓯᓪᓗᓂ ᑭᖑᓪᓕᒻᒧᑦ ᐱᓕᕆᓂᐅᔪᒧᑦ.

SECTION 3.0 - ᓴᓇᔭᐅᔪᒪᔫᑉ ᓇᒦᓐᓂᕆᔭᖓ

3.1 ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᕆᔭᖓ

ᓄᓇᐅᑉ ᑕᑯᔅᓴᕈᖅᓯᒪᓂᖓ ᓴᕙᕋᔭᔅᓴᖃᓐᓂᖏᑕᓗ ᓄᓇᖏᑦ ᓄᓘᔮᑉ ᐊᕙᑎᖏᒍᑦ ᐊᑦᑐᐊᔪᑦ ᐅᐊᑦᑎᐊᕈ ᓯᒻᒥᖅᑲᖅᑕᓐᓂᕙᓂᐊ ᐅᓪᓗᒥᒧᑦ ᓯᒻᒥᖅᑲᓐᓂᕆᔭᖓᓄᓪᓗ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖓ. ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖅᑲᓚᔪᑦᑐᑦ ᐃᖅᑲᒻᒥᐅᑕᕙᓂᐅᓂᖏᓂᒃ ᓯᒻᒥᐅᑉ ᐊᓂᐊᔭᖏᑦ ᑰᖏᑕ. ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖓᑕ ᐅᔭᕋᖏᑦ ᐃᓚᖅᑲᖅᑐᑦ ᓄᓘᔮᑉ ᓄᓇᖏᓐᓂᒃ ᐊᓂᐊᓂᑯᑦ ᓄᓇᐅᑉ ᖃᕿᑎᓂᕙᓂᐊᑕ ᐅᔭᕋᕿᓂᕙᓂᐊᓂᒃ ᖃᓪᓗᓈᑎᑐᑦ ᑕᐃᒍᖅᑕᖅ ᑲᒥᑎᐅᑉ ᑎᓇᔅᓯᐅᑎᖓ, ᐅᔭᕋᖏᑦ ᐊᔾᔨᐅᓐᖏᑦᑐᑦ ᐃᓚᖏᑦ ᑲᑕᓐᓂᒃᑯᑦ ᕿᖅᓯᖅᑲᑦ ᐊᒻᒪᓗ ᓄᓇᒦᓐᖓᓛᓐᓂᒃᑯᑦ ᐊᐅᒪᓪᓗᑎᒃ. ᐊᑯᓐᓂᖅᓯᖅᑐᓂᒃ ᖃᐃᖅᓯᖅᑲᖅᐸᒃᖢᑎᒃ ᐅᔭᕋᐃᓐᓇᓂᒃ ᕿᖅᓯᖅᑲᓐᓂᑯᓂᓪᓗ. ᑕᒪᒃᑯᐊ ᖃᖅᑲᖏᑦ ᑲᓇᓐᓇᖕᒐᓃᑦᑐᑦ ᐃᑦᑕᓐᓂᒑᑦᑑᕗᑦ 540 ᒥᓕᐊᓐ ᐊᕐᕌᒍᓄᑦ ᓇᐸᓇᓯᕆᔭᐅᔪᑦ, ᑕᒪᒃᑯᐊ ᓇᑎᓐᓇᐅᓂᖏᑦ ᐱᖓᓐᓇᖓᒍᑦ ᐃᒻᒪᖄ 240-540 ᒥᓕᐊᓐ ᐊᕐᕌᒍᓄᑦ ᓴᖅᑮᔭᕋᓯᕆᓪᓗᓂᕆᑦ.

ᑖᓇ ᐅᔭᕋᓐᓂᐊᕝᕕᕆᔪᒪᔭᖓ ᐃᓂᓪᓚᖓᔪᖅ ᐅᑭᐅᖅᑕᖅᑑᑉ ᐊᒡᒍᖅᓯᒪᓂᐊᒍᑦ. ᓯᓚᖓ ᐸᓂᐅᔭᖅᑐᖅ ᒪᖅᑯᖓᔪᑦᑐᐊᕋᓂ ᓄᓇᖏᑕ ᖁᐊᖑᐃᓐᓇᓐᓂᖓ ᑲᔪᔫᓐᓇᖅᓯᒪᓪᓗᓂ ᑎᑭᐅᒪᔪᖅ ᐊᒻᒧᑦ 500 ᒦᑕᒥᒃ, ᐊᐅᒃᐸᓐᓂᖓᓐᓂᑕ ᖃᐹᖓ 2 ᒦᑕᓪᓗᐊᖅ ᐱᕈᖅᑐᖃᐅᓐᓂᐅᓪᓗᓂ. ᓯᓚᐅᑉ ᓂᒡᓚᓯᕙᔪᓐᓂᖓ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖓᓂ, ᑲᑎᖅᑲᓯᐅᑎᓪᓗᒍ ᓄᓇᐅᑉ ᖁᐊᖑᐃᓐᓇᓐᓂᖓ, ᑕᑯᔅᓴᕈᐃᓲᖅ ᓄᓇ ᒪᖑᑦᑎᓪᓗᒍ ᑰᑲᐃᓐᓇᓐᓂᒻᒥᒃ ᔫᓂᒥᒃ ᓯᑎᐱᕆᒍᑦ. ᑕᒪᒻᒥᒃ ᑯᑦ ᑯᕈᖏᓪᓗ, ᐊᖏᑖᓪᓚᓃᑦ ᐃᓚᐅᓇᑎᒃ, ᖁᐊᓲᑦ ᐃᒪᖅᑲᕈᓐᓂᖅᓴᓐᓂᒃ ᐅᑭᐅᓪᓚᖓᓐᓂᖅᑯᑦ. ᐅᖅᑰᓯᓚᔪᖕᖏᓐᓂᖓ ᒪᓕᒃᖢᒍ ᐃᔾᔪᕙᑕ ᐸᓂᖅᓴᕋᐃᓂᖓᓄᑦ, ᐱᕈᖅᑐᖏᑦ ᐊᖏᑐᐊᓐᖏᓚᑦ ᓄᓇᐅᑦᑐ ᐃᒪᖅᓯᖏᑦ ᐊᖏᔫᑦᑐᑎᒃ. ᑕᒪᓐᓇ ᓄᓇᖓ ᐊᕙᑖᓂᑦ ᐊᒥᓲᔪᓄᑦ ᑕᓯᓐᓄᑦ ᑰᓐᓄᑦ ᑯᕈᓄᓪᓗ ᓴᖅᑭᔮᖅᑎᑦᑎᕗᖅ.

ᓄᓇᖓ ᐅᑭᐅᖓᒍᑦ ᑕᐅᕙᔾᔭᐊᖅᑎᓪᓗᒍ ᐅᓪᓗᓕᒫᐸᓗᒃ ᑖᓲᖅ ᑎᑭᐅᒪᑲᓴᒃᑐᓂ 24-ᓄᑦ ᐃᑲᕐᕋᓄᑦ ᓄᕙᐱᕆᒥᑦ ᔮᓄᐊᕆᒧᑦ ᒪᕐᑮᓐᓄᑦ ᐃᑲᕐᕋᑦᑐᐊᓄᑦ ᑖᓐᖏᑲᐃᓐᓴᖅᓯᒪᓂ. ᐅᑭᐅᑦᓚᓇᒃᑯᑦ ᓇᐹᖅᑐᖅᑲᖕᒋᓐᓂᑯᐊᓄᑦ ᓄᓇᖓ ᐊᐳᑖᓗ ᐸᓐᓇᑰᓂᖅᓴᐅᓂᖏᓐᓄᑦ ᐱᖅᓯᒪᔪᑦᑐᖅ, ᐃᓚᖓ ᑕᑯᔅᓴᐅᖕᒋᑦᑎᐊᓯᒍᑦᑐᓂ. ᐊᐃᑉᐸᖕᒫᖑᒍᑦ ᒪᐃᒥᑦ ᐋᒡᒐᓯᒧᑦ ᖃᐅᒪᐃᓇᖅᐸᒃᑐᓂ ᖁᐊᖅᑲᑦᑕᕈᓐᓃᖅᑐᓂ ᓯᓚᖓ ᔪᓂᒥᑦ ᐊᒡᒐᓯᐅᑉ ᓄᓇᖑᐊᓄᑦ. ᑕᖅᑭᖏᑦ ᔪᓚᐃ ᐊᒡᒐᓯᐅᓪᓗ ᒪᕐᑯᒐᔮᖑᒧᑦᑐᑎᒃ. ᓯᑎᐱᕆᒥᑦ ᓄᕙᐱᕆᒧᑦ, ᖃᐅᒪᓂᖓ ᓂᒡᓚᓯᓐᓂᖓᓗ ᐊᖅᐸᓯᓕᖅᐸᓪᓕᐊᑦᑐᓂ, ᐅᒃᑐᐱᕆᐅᑉ ᕿᑎᖅᐸᓯᐊᒍᑦ ᖃᐊᖅᐸᓯᓕᖅᐸᓪᓕᐊᓕᖅᑐᓂ. ᑕᒪᓐᓇ ᐊᐱᓯᐊᓐᓂᖓ ᑕᒪᑐᒪᓂ ᓴᖅᑭᒐᔪᒃᑐᓂ ᑕᖅᑭᖑᓇᓂᒃ.

ᓯᓚᐅᑉ ᐱᐅᓂᖓ ᓈᒻᒪᑦᑎᐊᖅᑐᑦ ᓂᐱᑭᑦᑑᑦᓗᓂᓗ ᐅᔭᕋᓐᓂᐊᕐᕕᔅᓴᐅᑉ ᓄᓇᖓ ᐊᔾᔨᑐᐃᓐᓇᖓ ᐃᓄᑭᑦᑑᑉ ᓄᓇᖏᑎᑦᑐᑦ. ᑕᒃᑯᐊ ᐃᒪᖏᑦ ᑰᖏᑦᑐ ᓄᓘᔮᑉ ᐊᕙᑖᓂ ᓇᓗᓇᐃᓯᕗᑦ ᐃᒪᖓ ᐃᓚᖃᓐᓂᖓᓐᓂᒃ ᐊᒃᓯᔭᓐᒥᒃ, ᐊᓘᒥᓇᒥᒃ ᓴᕙᕋᔅᓴᒥᑦᑐ. ᖃᒃᑲᓐᓂᐊᒍᑦ, ᐊᖏᔪᓂᒃ ᓄᖑᓴᖅᓯᒪᔪᑦ ᓄᓇᕚᓂᑦ ᐃᓱᖅᑎᑦᑎᐸᑐᒃᑯᑎᒃ ᐃᒪᖓᓐᓂᒃ. ᑕᒃᑯᐊ ᐃᓚᖏᑦ ᖃᐅᔨᓴᖅᑕᑦᑕ ᐃᒥᖏᑦ ᐃᓚᖃᖅᑯᑎᒃ ᒪᒪᖏᔾᔪᑎᐊᓂᒃ, ᐊᒻᒪᑦᑕᐅᖅ ᐅᖁᒪᐃᑦᑐᑦ ᓴᕙᕋᔭᑦ ᓱᑦᑐ ᑳᑦᒥᐊᒻ ᒨᑯᓇᓗ ᐱᑕᖃᓐᓂᖓᓐᓂᒃ ᐃᓚᖓᒍᑦ ᖁᕙᓯᓐᓂᖅᓴᐃᑦ ᑲᓇᑕᐅᑉ ᖃᓂᒪᖃᑦᑕᐃᓕᒪᔪᓕᕆᔾᔨᖏᑦᑕ ᓇᓗᓇᐃᖅᓯᒪᔭᖏᓐᓂᒃ.

3.2 ᐆᒪᔪᑦ ᖃᓄᐃᑦᑑᓂᕆᔭᖏᑦ

ᐱᕈᖅᑐᖏᑦ ᐅᓄᐊᕐᕈᓐᖏᓚᑦ ᑕᑉᐸᐅᓇ ᐅᔭᕋᓐᓂᐊᕐᕕᒋᔪᒪᔭᑦᑕ ᓄᓇᕐᑯᑎᖏᑦ ᐊᔾᔨᖅᑐᐃᓐᓇᖅᑯᑎᓪᓗ ᑕᒃᑯᓂᖓ ᐱᕈᖅᑐᓂᒃ ᑕᑯᔅᓴᐅᓰᖑᔪᓂᒃ ᐅᑭᐅᖅᑕᖅᑑᑉ ᓄᓇᕐᑯᑎᖏᓐᓂᒃ. ᓄᓇᕐᑯᑎᖏᓐᓂᒃ ᑲᓇᑕᒥ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᓂᒃ "ᓄᖑᓕᖅᑐᑦ" ᓇᓂᓯᔪᖃᓚᐅᙱᓚᖅ ᐊᕕᐊᕈᑎᐅᕙᔭᖅᑐᒥᒃ.

ᓄᓇᒥᐅᑕᑦ ᐆᒪᔪᑦ ᒥᖅᑯᓖᑦ ᓄᓇᖏᓂᑦ ᐃᓚᖅᑲᖅᑐᑦ ᑐᑦᑐᖏᑦᑕ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒋᑕ, ᐊᒪᕈᑦ, ᑎᕆᒐᓂᐊᑦ ᑲᔪᖅᑐᓪᓗ, ᑎᕆᐊᑦ, ᐅᑲᓖᑦ ᐊᕙᓐᖓᐃᓪᓗ. ᑕᕆᐅᑉ ᐳᐃᔨᖏᑦ ᐅᓄᓐᓂᖅᓴᒪᓃᑦ ᑕᕆᐅᖓᒍᑦ, ᐃᓚᖅᑲᖅᑐᑎᒃ ᓇᓄᓐᓂᒃ, ᑐᒑᓖᑦ ᕿᓚᓗᒐᑦ, ᖃᐅᑦᑐᖅᑖᑦ, ᐊᕐᕕᑦ, ᐊᔾᔨᒌᖏᑦᑐᑦ ᓇᑦᑏᑦ, ᐊᐃᕖᓪᓗ. ᐋᓪᓗᖃᑕᐅᓰᖅ ᐊᒻᒪ ᐊᓯᖏᓐᓂᒃ ᐊᕕᓂᒃ ᓲᓪᓗ ᑎᑳᒡᒍᑦ.

ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒋᑕ ᑐᒃᑐᖏᑦ ᒪᓕᒃᑲᒥᒃ ᐊᕿᒍᓄᑦ ᑲᐃᕙᑕᒥᓂᒃ ᐅᑦᑐᒥᐅᔭᖅ ᕿᒪᖄᑎᓯᒪᓂᖅᓴᐃᑦ ᓄᓇᖏᓐᓂᒃ ᐅᓄᓐᓂᖏᑦ ᒪᓕᒃᑯᑎᒃ ᑲᐃᕙᑕᖏᓄᑦ ᓄᓇᖏᓐᓂᒃ ᐃᑐᐊᒍᑦ 60- 70-ᐊᕿᒍᓄᑦ ᐅᑎᖅᑕᖅᑯᑎᒃ. ᑭᖑᓪᓕᖅᐹᖅ ᑐᒃᑐᖃᑦᓚᓐᓂᕙᓂᖓ ᐊᕿᒍᖏᒍᑦ 1980 – 2000-ᒧᑦ, ᕿᒪᖄᑎᓯᒪᓂᑰᓪᓗᑎᒃ ᓄᓇᖏᓐᓂᒃ ᑕᐃᓯᒪᓂ 1940 ᐊᕿᒍᖅᑯᑎᖏᓐᓂᒃ. ᓂᕆᐅᑎᔭᐅᕙᑦ ᒪᓕᒃᑯᑎᑦ ᐊᑐᖅᓯᒪᓂᑯᖏᑦ ᑐᒃᑐᐃᑦ ᐊᕿᒍᒐᓴᓄᑦ ᐅᑎᖅᔭᕋᓯᕆᔭᐅᓐᖏᑦᑐᑦ ᓄᓘᔮᓄᑦ. ᑭᓯᐊᓂᓕ, ᑕᑯᔅᓴᖅᓯᒪᔪᑦ ᓇᓗᓇᐃᕈᑎᑦ ᓄᓇᓕᒫᖏᑦᒍᑦ ᑐᑦᑐᒃᓱᖑᓂᖓᓂᒃ ᓇᒥᑐᐃᓐᓇᖅ. ᐃᓚᖏᑦ ᑐᒃᑐᖏᑦ ᓅᑦᑕᕋᓱᐊᖅᑯᑎᒃ ᐊᐅᔭᒃᑯᑦ ᐅᑭᐅᒃᑯᓪᓗ, ᕿᑭᖅᑖᓘᑉ ᑐᒃᑐᖏᑦ ᐅᐊᖕᓇᖕᒋᓂ ᓅᑦᑕᖅᑎᐅᓐᖏᑦᑐᑦ ᐊᑐᖅᑕᒥᑕ ᓄᓇᖏᓐᓂᒃ ᓇᓂᔭᔅᓴᐅᓰᖑᓪᓗᑎᒃ ᐊᑐᖅᑕᐅᔪᒪᔪᑦ ᓄᓇᖏᑎᒍᑦ ᑖᔅᓯᒪᐅᑉ ᐅᔭᕋᓐᓂᐊᖅᑕᐅᔪᒪᔪᖅ ᓄᓇᖏᑎᒍᑦ.

ᑎᑭᑦᑕᖅᑐᑦ ᑎᖕᒥᐊᑦ ᑕᑯᔭᐅᑦᑕᖅᑐᑦ ᓄᓘᔮᑉ ᓄᓇᖕᒋᓐᓂᒃ ᐃᓚᖅᑲᖅᑐᑦ ᑲᖑᓐᓂᒃ, ᒥᑎᓐᓂᒃ, ᖃᖅᓴᐅᓂᒃ, ᐊᒻᒪᓗ ᑲᔾᔮᖅᑑᑦ. ᓂᕿᑐᖅᑑᐃᑦ ᑎᖕᒥᐊᑦ ᐃᓚᖅᑲᖅᑐᑦ ᑳᔫᓂᒃ, ᑭᓪᓚᕙᐊᔾᔪᑦ, ᖃᐅᑦᑐᖅᑕᑦ ᑭᓪᓚᕚᑦ, ᐅᒃᐱᒃᔪᐊᓪᓗ. ᐅᓄᑐᐊᕿᑎᒃ ᓴᖅᑮᔭᖅᑎᕐᓇᖅᑐᑦ ᖁᐸᓄᐊᑦ ᐊᒻᒪ ᓯᒃᓯᕆᐊᑦ ᐅᔾᔨᕆᓇᔭᐅᕙᒃᑭᓪᓗᑎᒃ. ᑕᒪᑐᒨᓇ ᐃᒪᖏᒍᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᒥᒃ ᑎᖕᒥᐊᖏᑦ ᑕᓇᐅᒻᒥᐅᑕᑦ ᐊᒥᓱᒐᑦ ᐃᓚᖅᑲᖅᑐᑎᒃ ᐊᒃᐸᓂᒃ ᐊᔾᔨᒌᖏᑦᑐᓂᓪᓗ ᓇᐅᔭᐃᑦ ᑎᖕᒥᐊᖅᑯᑎᖏᓐᓂᒃ.

ᒪᕐᕉᓪᓗᐊᑖᒃ ᐃᖃᓗᖅᑯᑎᖏᑦ ᐃᒥᖏᒍᑦ ᓄᓇᐅᑉ: ᐃᖃᓗᑦ ᐃᖃᓗᐱᑦᑖᓪᓗ ᐃᓄᒃᑎᑐᑦ ᓄᑎᓪᓗᐊᔾᔭᐃᑦ. ᑕᒃᑯᐊ ᑕᓯᑦ ᖃᓂᕿᔾᔪᑦ ᓄᓘᔮᑉ ᓄᓇᖕᒋᑕ ᐃᖃᓗᖃᖅᐳᑦ ᑎᓯᔭᐃᑦᑐᓂᒃ, ᑭᓯᐊᓂ ᐃᓚᖏᑦ ᑕᓯᑦ ᐃᖃᓗᖃᖅᐳᑦ ᐅᑎᖅᑕᖃᖅᑐᓂᒃ ᐱᑐᐊᖅᑐᒥᒃ ᐃᒃᐱᑭᑦᑐᔪᐊᑉ ᓄᓇᖕᒋᓐᓂᒃ ᐊᒻᒪᑦᑕᐅᖅ ᑕᓯᑯᑖᑉ ᐃᖃᓗᖅᑐᑦ ᖃᓐᓂᖅᓱᖅᑐᑦ ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᖅᑯᑎᖅᓯᓄᑦ. ᑕᒃᑯᐊ ᑕᓇᐅᑉ ᐃᖃᓗᖏᑦ ᐊᔾᔨᒌᖏᑦᑐᑦ ᖃᐅᔨᓴᐅᓯᒪᔪᑦ ᐃᖃᓗᐃᑦ, ᑲᓇᔪᑦ, ᐃᖅᑲᒥᐅᑕᓪᓗ ᐃᖃᓗᖏᑦ ᐃᒃᐱᑭᑦᑐᔪᐊᒥᑦ, ᐊᒻᒪᓗ ᐃᖃᓗᐃᑦ, ᑲᓇᔪᑦ, ᐆᒪᑦᑐ ᖁᓐᖑᐊᑉ ᑕᓇᐅᖅᑯᑎᖏᓐᓂᒃ.

3.3 ᐃᓅᖃᑎᒌᑦ-ᑮᓇᐅᔭᓕᐅᕈᑎᑦ ᐃᓕᖅᑯᓯᖏᑦ

ᕿᑭᖅᑖᓘᑉ ᐊᒡᒍᖅᓯᒪᓂᐊ ᓄᓇᕗᒥᑦ ᐊᕐᕿᔪᒥᒃ ᑕᑯᔅᓴᐅᑦᑎᐊᖅᑐᒥᓪᓗ ᐃᑦᑕᓐᓂᓴᕕᓂᓐᓂᒃ ᓱᓇᒃᑯᑖᖃᖅᐳᖅ ᐃᓕᖏᑦ ᐃᒪᓗᖃᓗᒃ ᐊᑐᖅᑕᐅᓂᑯᑦ. ᐅᓄᖅᑑᕗᑦ ᐃᑦᑕᓐᓂᓴᖃᖏᕖᑦ ᑕᒪᐃᓐᓂᒃ ᒥᑭᑦᑐᑦ ᐊᕐᕿᔫᔪᓪᓗ, ᐱᓗᐊᖅᑐᒥᒃ ᓄᓇᖏᑕ ᐊᕙᑖᒍᑦ ᕿᓐᖑᐊᑉ ᐊᒻᒪᓗ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᖅ ᑐᓕᑦᑕᕗᕕᔅᓴᖏᑕ ᓄᓇᖏᒍᑦ ᑭᓯᐊᓂᑦᑕᐅᖅ ᐃᓕᖏᑕ ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᖅᑯᑎᔅᓴᖏᒍᑦ ᐱᑕᖃᐅᓇᓪᓗᑎᒃ ᐃᓄᓐᓄᑦ ᐊᑐᖅᑕᐅᓂᑰᔪᑦ.

ᑖᒃᑯᐊ ᑕᓪᓚᒪᑦ ᓄᓇᓖᑦ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒐᓂᑦ ᖃᓂᓯᓛᖑᔪᑦ ᓄᓘᔮᓐᓂᑦ ᐅᔾᕋᓐᓂᐊᖅᑕᐅᔪᒪᔪᒧᑦ, ᑎᑎᖅᓯᒪᓪᓗᑎᒃ ᒪᓕᒃᑲᒍ ᖃᓪᓗᓈᑦ ᑕᐃᒎᓯᖏᑦ, ᐃᓚᖃᖅᑐᑦ ᐃᒃᐱᐊᔾᔪᒥᑦ (280 km), ᑲᖏᖅᑐᓗᐱᒃ (415 km), ᓴᓂᕋᔭᒃ (192 km), ᐃᒡᓗᓕᒃ (155 km), ᒥᑦᑎᒪᑕᓕᓪᓗ (160 km). ᐊᑐᓂᑦ ᓄᓇᓖᑦ ᐅᖓᓯᑦᑐᒃᑯᑦ ᐃᓅᖃᑎᒌᒥᒎᑦ, ᑮᓇᐅᔭᓕᐅᕈᑎᒥᒎᑦ ᐊᕙᑎᖓᓄᓪᓗ ᐊᑦᑐᐊᓂᓖᑦ ᓄᓘᔭ ᓄᓇᖁᑎᖏᔭᖏᓐᓄᑦ. ᐊᒥᓰᔪᓄᑦ ᓄᓇᓕᓐᓂᑦ ᐃᒡᓗᖃᑎᒌᖑᔪᓄᑦ, ᓂᕿᑐᖃᒥᓂᒃ ᐊᖑᓇᓱᓐᓂᖏᑦ ᓱᓕ ᐅᓪᓗᒥᒧᑦ ᐊᑐᖅᑕᖅ ᐃᑲᔫᑎᓪᓗᑎᓪᓗ ᐃᓅᓯᖏᓐᓄᑦ, ᑎᒥᖓᒍᑦ ᐃᓅᖃᑎᖃᐅᓯᖏᒍᓪᓗ. ᑕᒪᐃᓐᓂᒃ ᓄᓇᓕᐅᔪᓂᒃ, ᑐᒃᑐᑦ, ᓇᑦᓰᑦ ᐃᖃᓗᐃᓪᓗ ᓂᕿᓪᓗᐊᑕᕆᔭᐅᕗᑦ. ᖄᒃᑲᓐᓂᐊᒍᑦ, ᐊᐃᕖᑦ ᓂᑭᓪᓗᐊᑕᕆᔭᐅᕗᑦ ᓴᓂᕋᔭᒻᒥᑦ ᐃᒡᓗᓕᒻᒥᓪᓗ, ᑐᒑᓖᑦ ᕿᓚᓗᒐᑦ ᓂᕿᓪᓗᐊᑕᕆᔭᐅᓪᓗᑎᒃ ᐃᑉᐱᐊᔾᔪᒻᒥᐅᓄᑦ, ᒥᑦᑎᒪᑕᓕᒻᒥᐅᓄᓪᓗ, ᐃᓚᖓᒍᓪᓗᑦᑕᐅᖅ, ᑲᖏᖅᑐᓗᐱᒻᒥᑦ.

ᑖᓐᓇ ᓄᓇᒧᑦ-ᑐᓐᖓᕕᖅ ᑮᓇᐅᔭᓕᐅᕈᓯᖅ ᐊᕐᕿᓛᖑᖅᑲᑕᐅᔪᖅ ᐃᓅᓯᖃᐅᑎᕆᔭᐅᔪᓂᒃ ᐊᓐᓇᐅᒪᔾᔪᑎᔅᓴᕆᓄᑦ ᐃᓄᖏᑕ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖅᓴᖕᒐᓂ. ᐊᖑᓇᓱᓐᓂᖅ ᓄᓇᖕᒐᓂᒃ ᑕᕆᐅᖕᒐᓂᓪᓗ ᑕᐅᑐᙵᐊᖅᑕᒃᑯᑦ ᐃᓱᒪᕆᔭᐅᓯᒪᕗᖅ ᐃᒻᒪᖄ ᓂᕿᓂᒃ ᐊᑭᖃᓪᓗᐊᕋᔭᓐᖑᐊᖅᑐᑦ ᐊᑯᓐᓂᐊᒍᑦ $12 ᐊᒻᒪᓗ $20 ᒥᓕᐊᓐ ᑖᓚᓂᒃ ᐅᐊᖕᓇᐃᓐᓇᖕᒐᓄᑦ. ᑕᒪᓇ ᐱᓕᕆᐊᖑᔪᓄᑦ ᐊᑦᑎᒋᓂᓪᓗᐊᖕᒐ ᐃᓱᒪᕆᔭᐅᓯᒪᓪᓗᓂ ᐊᑕᐅᑦᑎᒧᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᑕᐅᒍᑎᒃ 350-ᓗᐊᓂᒃ ᐃᖅᑲᓇᐃᔮᓪᓚᕆᓂᒃ ᐅᓪᓗᓕᒫᒧᑦ ᐊᖑᓇᓱᑉᐸᑦᑐᑦ ᐱᓕᕆᔭᖏᓄᑦ.

ᖁᒃᑲᓐᓂᐊᒍᑦ, ᐃᓄᖏᑦ ᐊᒡᒍᖅᓯᒪᓂᐊᑕ ᑮᓇᐅᔭᓕᐅᖃᓯᐅᑎᓲᑦ ᓂᐅᕈᑎᖃᖅᑲᓗᑎᒃ ᓴᓇᐅᒐᒥᓂᒃ ᒥᖅᓱᖅᑕᒥᓂᓪᓗ, ᐃᖅᑲᓇᐃᔮᒃᑯᑦ, ᐊᔾᔨᒌᖏᑦᑐᒃᑯᓪᓗ ᒐᕙᒪᒃᑯᓐᓂᒃ ᐊᑐᐃᓐᓇᐅᑎᑕᐅᔪᓂᒃ ᐊᔪᖅᓴᖅᑐᓕᕆᔾᔪᑏᑦ. ᑕᒪᒃᑯᐊ ᐃᒻᒥᒃᑯᑦ ᑮᓇᐅᔭᓕᐊᖏᑦ ᐃᓄᖏᑕ ᑕᓪᓚᒪᑦ ᓄᓇᓖᑦ ᑎᑭᐅᒪᐸᓗᖃᑦᑕᖅᑐᖅ $83 ᒥᓕᐊᓐ ᑖᓚᒧᑦ ᐊᕙᑐᑕᒫᖅ.

ᐃᓄᖏᑦ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒐᓂᑦ ᐊᕐᕿᔪᒪᓇᒻᒥᒃ ᐃᓅᓯᒥᒎᑦ ᐃᓕᖅᑯᓯᒥᒎᓪᓗ ᐊᓯᑦᔨᑦᓚᓇᒃᓯᒪᔪᖅ ᖁᓕᐅᑦᑕᖅᑐᑦ ᐊᕙᒎᐃᑦ ᑕᑯᓪᓗᒋᑦ. ᐱᓗᐊᖅᑐᒥᓪᓗ, ᐱᒋᐊᖅᑎᑕᐅᓂᑯᑦ ᓲᓪᓗ ᐃᓕᓐᓂᐊᕆᐊᖅᑎᑕᐅᓂᕕᓂᖏᑦ ᓯᕈᓯᑦ, ᐊᑦᑐᐃᓯᒪᒻᒪᑕ ᐃᓚᕿᑦ ᐃᓚᕿᑦᑎᐊᕈᓯᖏᓐᓂᒃ ᑕᒪᓇᓗ ᐱᖃᓯᐅᑎᓪᓗᓂᐅᒃ, ᐃᓅᖃᑎᒌᑦᑎᐊᖅᑐᑦ ᑲᑎᙵᑦᑎᐊᓐᓂᖓ. ᐃᓐᓇᑐᖃᐃᑦ ᐃᓚᐅᕙᓪᓕᐊᕗᑦ ᓄᓇᓕᐅᑉ ᐊᐅᓚᓂᖏᒧᑦ ᐊᔭᐅᕆᓂᒻᒥᓪᓗ ᐃᓄᓪᓚᕇᑦ ᐃᓕᖅᑯᓯᕕᓂᖏᓐᓂᒃ ᐃᓕᓴᐃᕙᓪᓕᐊᓕᖅᐸᒋᑦ ᒪᒃᑯᓐᓂᖅᓴᐅᔪᓂᒃ. ᐊᑕᐅᑦᑎᒃᑯᑦᑕᐅᖅ, ᒪᑯᓐᓂᖅᓴᐃᑦ ᐃᓄᐃᑦ ᓵᓐᓂᖅᓴᐅᕙᓪᓕᐊᓪᓗᑎᒃ ᖃᓪᓗᓈᑦ ᐱᖁᑎᖏᓐᓄᑦ ᐃᓅᓯᖏᓐᓄᓪᓗ ᑮᓇᐅᔭᓕᐅᖅᑎᓄᑦ ᓂᕆᐅᒋᔭᖃᓕᖅᐸᑎᒃ ᐊᒃᐸᐃᑦᑑᓂᒻᒥᒃ. ᓄᓇᓖᑦ ᑖᒃᑯᐊ ᓱᒃᑲᔪᒻᒪᕆᒻᒥᒃ ᐱᕈᖅᓯᒪᕗᑦ ᐊᕐᕌᒍᑦ ᐊᕙᑎᑦ ᑕᑯᓪᓗᒋᑦ. ᐅᓄᓐᓂᖅᓴᑦ ᐃᓄᖏᑦ ᒪᒃᑯᑦᑑᔪᑦ ᐃᓚᖏᑦ 70%-ᒧᑦ ᑎᑭᐅᒪᓪᓗᑎᒃ ᓄᑲᖅᑳᑦ 25 ᐊᑖᓃᑦᑐᑦ. ᐃᖅᑲᓇᐃᔮᔅᓴᖃᖕᒋᓐᓂᖅ ᒪᑐᐃᖕᒐᔪᖃᖏᓂᐊᓗ ᓴᖅᑮᕙᓪᓕᐊᔪᖅ ᐃᓅᖃᑎᒌᑦ ᐊᔅᓯᕈᖅᑐᒦᑉᐸᓪᓕᐊᓕᖅᐸᑎᒃ.

ᓄᓇᓕᓐᓂᒥᐅᖑᔪᑦ ᐃᖅᑲᓇᐃᔮᔅᓴᓂᒃ ᕿᓂᓪᓚᕆᑦᑐᑦ. ᐃᓄᖏᑦ ᐃᖅᑲᓇᐃᔭᕈᒪᔪᑦ, ᑕᒪᓇ ᐃᖅᑲᓇᐃᔮᖑᑦ ᐅᖓᓯᒃᑲᓗᐊᕈᓂ ᖃᖑᑕᔭᕆᐊᖃᓪᓗᑎᒃ ᓄᓇᓕᖑᓂᑦ ᐃᓄᖃᓐᖏᑦᑐᒧᑦ. ᑭᓯᐊᓂᓕ, ᐃᖅᑲᓇᐃᔮᔅᓴᑦ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒐᓂ ᐊᒥᓲᓐᖏᓚᑦ.

ᐃᓄᐃᑦ ᐃᖅᑲᓇᐃᔭᖅᑐᑦ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒪᓂᑦ ᑕᑯᔅᓴᕈᐃᒐᔪᑦᑐᑦ ᐅᓄᓐᓂᖅᓴᑦ ᐃᓄᖕᒋᑦ ᒥᑭᑦᑐᒥᒃ ᑮᓇᐅᔭᓕᐅᖅᑐᑎᒃ, ᐃᖅᑲᓇᐃᔮᑦᓚᑎᐅᑉ ᑐᖕᒐᐅᑕᖕᒋᓐᓂᒃ, ᐃᓚᐃᓐᓇᖕᒋᑦ ᐃᓄᐃᑦ ᐃᖅᑲᓇᐃᔮᖅᑲᖅᑐᑎᒃ ᓄᓇᓕᖕᒋᓐᓂᒃ. ᐅᓄᓐᓂᖅᓴᑦ ᐃᖃᓗᓐᓂ ᐃᓄᖕᒋᑦ ᐃᖅᑲᓇᐃᔮᖅᑲᓱᑦ ᐊᖅᖀᒍᓕᒫᒍᑦ. ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒪᓂᑦᑐ, ᐅᓄᓐᓂᖅᓴᐃᑦ ᐃᖅᑲᓇᐃᔭᖅᑏᑦ ᐊᑯᓂᐅᓐᖕᒋᑦᑐᖅ ᐊᖅᖀᒎᑉ ᐃᓗᐊᒍᑦ ᐃᖅᑲᓇᐃᔭᑲᐃᓐᓇᖅᐸᒃᑐᑎᒃ. ᐊᓐᓇᖕᒋᑦ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒪᓂ ᐃᖅᑲᓇᐃᔭᒐᔪᓐᓂᖅᓴᐅᔪᑦ ᐊᖑᑎᓂᒃ.

ᑭᓯᐊᓂᓕᑦᑕᐅᖅ, ᐊᒥᓱᒐᓐᓂᒃ ᑮᓇᐅᔭᓕᐅᑦᑎᐊᖅᑐᓂᒃ, ᐊᖅᖀᒎᓕᒫᒍᑦ ᐃᖅᑲᓇᐃᔮᔅᓴᖅᑲᖅᑐᖅᑕᓕᒃ ᓄᓇᓕᓐᓂᑦ. ᑭᓯᐊᓂᓕ ᑕᒪᒃᑯᐊ ᐅᓄᓐᓂᖅᓴᑦ ᒪᕐᒪᒃᑯ ᐃᖅᑲᓇᐃᔮᔅᓴᖕᒋᑦ ᐅᕝᕙᓘᓐᓃᑦ ᓄᓇᓕᐅᑉ ᒪᕐᒪᖕᒋᓐᓄᑦ ᐃᓕᓐᓂᐊᖅᓯᒪᔭᕆᐊᓕᖕᒋᑦ ᐊᑐᖅᓯᒪᓂᖕᒋᑦᑐ ᐊᖅᐸᓯᑐᐊᖅᑲᑦᑕᒻᒪᑕ ᐃᓄᖕᒋᑦ ᐃᖅᑲᓇᐃᔮᔅᓴᓄᑦ ᓂᕈᐊᖅᑕᐅᒐᔪᓐᖕᒋᓚᑦ. ᓄᓇᓕᓐᓂᑦ ᐃᓐᓇᑐᖅᑲᐃᑦ ᐃᓕᓴᖅᓯᐅᒪᔪᑦ ᑕᒪᒃᑯᐊ ᐃᓄᕐᑯᑎᖕᒋᑦ ᓄᓇᓕᓐᓂᑦ ᐱᓕᒻᒪᔅᓴᑦᑎᐊᕆᐊᖅᑲᓐᓂᖕᒋᓐᓂᒃ ᐃᖅᑲᓇᐃᔮᖅᑭᒪᓂᐊᕈᑎᒃ.

ᐊᓐᓇᓄᑦ ᐃᖅᑲᓇᐃᔮᓕᓐᓄᑦ ᐊᒥᓲᓂᖕᒋᑦ ᐅᓄᖅᓯᕙᓪᓕᐊᓂᖅᓴᐅᕗᑦ ᐃᖅᑲᓇᐃᔮᖅᑲᖅᑐᓂᒃ ᐊᖑᑎᓂᒃ. ᑭᓯᐊᓂᓕ, ᐊᓐᓇᐃᑦ ᐃᖅᑲᓇᐃᔮᓖᑦ ᒪᕐᒪᒃᑯᓐᓄᑦ ᐃᖅᑲᓇᐃᔭᒐᔭᒃᐳᑦ. ᑭᖑᓂᐊᓂ ᒪᕐᒪᐃᑦ ᐃᖅᑲᓇᐃᔮᔅᓴᖕᒋᑦ ᐊᖕᒋᓕᒋᐊᓗᐊᔾᔭᕿᓯᒋᔭᐅᓐᖕᒋᑦᑐᑦ ᑕᒪᓐᓇᓗ ᑕᑯᔅᓴᕈᐃᒐᔭᖅᓗᓂ ᐊᓐᓇᐃᑦ ᐃᖅᑲᓇᐃᔮᔅᓴᓂᒃ ᕿᓂᖅᓴᓕᕈᑎᒃ ᕿᓂᓇᐊᖅᑲᓐᓂᐊᕿᓯᒋᔭᐅᔪᑦ ᐃᖅᑲᓇᐃᔮᓂᒃ ᐊᓐᓇᓄᑦ ᐃᖅᑲᓇᐃᔮᒋᔭᐅᒐᔪᓐᖕᒋᑦᑐᓂᒃ.

ᓇᓚᐅᑦᑖᖅᑐᒍ ᐊᑕᐅᓯᖅ ᐃᖅᑲᓇᐃᔮᖅ ᑕᑦᓕᒪᐅᒍᑎᒃ ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒪᓂ ᐃᖃᓗᓐᓂᓗ ᐃᓕᓐᓂᐊᖅᓯᒪᔪᖅᑯᔨᕗᑦ ᓯᓚᑦᑐᖅᓴᕝᕙᔾᔪᐊᒥᑦ ᐸᐃᑉᐹᖅᑲᖅᑐᓄᑦ. ¼ ᐊᒻᒪᓘᓐᓃᑦ 1/3 ᐃᖅᑲᓇᐃᔮᑦ ᓯᓚᑦᑐᖅᓴᓴᕝᕙᒻᒧᑦ ᐸᐃᑉᐹᖅᑲᓇᐊᖅᑲᖅᑐᑎᒃ ᐊᓯᖕᒋᓂᑦᑐ ᐸᐃᑉᐹᑎᒍᑦ ᐃᓕᓴᓇᐅᒪᔭᐅᔪᒃᑯᑦ ᐱᓕᒪᑦᑎᐊᑦᑐᑎᒃ. ᐊᔾᔨᑦᑐᐊᐸᑐᖕᒋᑦ ᐃᓕᓐᓂᐊᖅᓯᒪᓂᖅᑲᕆᐊᓖᑦ ᒍᕿᐃᑦ 12-ᒥ ᐃᓱᓕᓯᒪᑐᑎᒃ ᐊᒻᒪ/ᐅᕝᕙᓘᓐᓃᑦ ᐃᖅᑲᓇᐃᔮᖕᒪᓄᑦ ᑐᕌᖕᒐᔪᒥᒃ ᐱᓕᒻᒪᔅᓴᐅᑎᓂᒃ. ᐊᒥᐊᒃᑯᖕᒋᑦ ᐃᖅᑲᓇᐃᔮᖑᔪᓐᓇᖅᑐᑎᒃ ᐱᔪᓐᓇᓐᓂᑭᑦᑐᓄᑦ ᐃᓕᓐᓂᐊᖅᓯᒪᑦᑎᐊᓐᖕᒋᑦᑐᓄᑦ ᐃᖅᑲᓇᐃᔮᔅᓴᖕᒪᓄᑦ ᐅᑐᓇᐊᓇᔾᔭᐃᒃᑯᑎᒥᒃ ᐱᓕᒻᒪᑐᐊᕈᑎᒃ. ᓇᑐᓇᓐᖕᒋᑦᓚᓇᑦᑐᖅ ᒪᑐᐃᕈᑎᔪᑦ ᐃᖅᑲᓇᐃᔮᓄᑦ ᑭᓪᓕᖅᑲᑦᓚᓇᓪᒪᑕ ᐃᓄᓐᓄᑦ ᐃᓕᓐᓂᐊᖅᓯᒪᑦᑎᐊᓐᖕᒋᑦᑐᓄᑦ ᐱᓕᒻᒪᔅᓴᐅᑎᖅᑲᑦᑎᐊᕐᒋᑦᑐᓄᑦᑐ.

ᓄᓇᕘᑉ ᒐᕙᒪᒃᑯᖕᒋᑦ ᑐᓐᖕᒐᕕᖅᑲᑦᓚᓇᑦᑐᑦ ᑲᓇᑕᐅᑉ ᒐᕙᒪᑐᖅᑲᒃᑯᖕᒋᓐᓂᒃ ᑮᓇᐅᔭᓂᒃ ᐃᒻᒪᖅ 90%-ᖕᒋᓄᑦ ᑮᓇᐅᔭᖅᑯᑎᖕᒋᑕ. ᒐᕙᒪᒃᑯᓐᓂᑦ ᐃᖅᑲᓇᐃᔭᖅᑏᑦ ᑐᓐᖕᒐᕕᒋᔭᐅᑦᑐᑎᒃ ᑮᓇᐅᔭᓕᐅᖅᑎᐅᔪᓂᒃ ᐊᒥᓱᔪᓂᒃ ᓄᓇᕘᑉ ᐱᔾᓇᓯᒋᔭᖕᒋᓐᓂᒃ ᓂᐅᖅᕈᑎᓕᑦᑐ ᐱᓕᕆᕝᕕᖕᒋᑦ ᓴᖅᑭᑕᐅᓂᑰᔪᑦ ᐃᑲᔪᐃᓇᓯᐊᖅᑐᑎᒃ ᒐᕙᒪᒃᑯᑦ ᐱᓕᕆᐊᖕᒋᓐᓂᒃ, ᐅᕝᕙᓘᓐᓃᑦ ᒐᕙᒪᒃᑯᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖕᒋᓐᓂᒃ. ᒐᕙᒪᒃᑯᓐᓂᒃ ᐃᖅᑲᓇᐃᔮᑦ ᐊᐅᓚᑦᑎᓂᓪᒧᑦ, ᐃᓕᓐᓂᐊᖅᑐᓕᕆᓂᒃᑯᑦ, ᐋᓐᓂᐊᖅᑕᐃᓕᒪᔪᓕᕆᔾᑯᑎᒍᑦᑐ ᐃᒻᒪᖅ ᖃᑎᖕᒪᓄᑦ ᑮᓇᐅᔭᓕᐅᖅᑕᐅᓯᒃ ᑎᑭᐅᒪᐸᒃᑐᖅ ᓄᓇᕘᑉ ᐃᓗᐊᒍᑦ. ᓴᓇᔾᑦ ᐃᖅᑲᓇᐃᔭᓐᓂᖕᒋᑦ ᐱᕈᖅᐸᓪᓕᐊᖕᒋᓐᓇᖅᑐᑎᒃ ᐱᕚᓪᓕᐊᓂᖕᒪ ᒐᕙᒪᖕᒋᑦ ᐱᕈᖅᐸᓪᓕᐊᑎᓪᓗᒋᑦ ᒪᓕᒃᑭᓪᓗᓂ.

SECTION 4.0 - ᓴᓇᔭᐅᔪᒪᔫᑉ ᐃᓚᒋᔭᐅᖅᑕᐅᓂᖓ ᐊᑦᑐᐃᓂᖕᒋᑦᑐ ᐊᓐᓂᕆᔭᓄᑦ ᐊᕙᑎᒧᑦ ᐃᓅᖅᑎᒌᓄᑦᑐ

ᑭᒃᑯᓕᒫᓄᑦ ᑐᓴᕋᓯᐊᖅᓯᒪᕗᑦ ᑖᒃᑯᐊ ᓴᕝᕿᔭᔅᓴᓚᓇᔾᑯᑦ ᓇᓗᓇᐃᖅᑕᐅᓇᓱᒃᑐᑎᒃ ᐊᑐᓛᖑᔪᑦ ᐃᓯᒪᒋᔭᕆᐊᓕᖕᒋᑦ ᑕᒪᒃᑯᐊᓗ ᐃᓄᖕᒋᓄᑦ ᐃᓯᒫᓗᒋᔭᐅᔪᑦ ᓄᓇᓕᖕᒋᓐᓂᑦ ᓇᒻᒥᓂᖅᑲᖅᑎᐅᔪᓂᑦᑐ ᓄᓇᖕᒪᓂᒃ ᐅᔾᕿᓐᓂᐊᕝᕕᒋᔪᒪᔪᖕᒪᒍᑦ. ᖄᒃᑲᓐᓂᐊᒍᑦ, ᐊᖕᒋᔪᓪᓚᓇᓐᓂᒃ ᖃᐅᔨᓴᖅᑎᓄᑦ ᑐᓐᖕᒐᕕᔅᓴᓂᒃ ᖃᐅᔨᓴᖅᑎᑦᑎᓚᐅᓇᕗᒍᑦ ᐅᑦᑐᒥᐅᔪᖅ ᐃᓚᖅᑯᓯᖕᒋᓐᓂᒃ ᑐᓐᖕᒐᕕᓚᐅᖅᑐᑎᒃ. ᐊᐱᖅᓱᖅᑕᐅᑦᑐᑎᒃ ᐃᓐᓇᑐᖅᑲᑦ ᖃᐅᔨᒪᔭᑐᖅᑲᖕᒋᑦᑐᑦ ᐊᖕᒋᔪᓪᓚᓇᓪᒥᒃ ᓴᖅᑮᓚᐅᖅᑐᑦ ᐊᑐᖅᓯᒪᓂᑯᑐᖅᑲᓐᓂᑦᑐ. ᑕᒪᒃᑯᐊ ᖃᐅᔨᓴᕈᑎᑦ ᐊᖅᑯᑎᒋᑦᑐᒋ ᑐᓴᕋᓯᐊᕈᑎᑎᒍᑦᑐ ᐅᔾᕿᓐᓂᐊᕝᕕᓱᑦᑕᐅᕈᒪᔪᑦ ᐱᑕᕆᐊᖕᒋᑦ ᓇᓗᓇᖕᒋᑦᑐᒥᒃ ᓇᓗᓇᐃᖅᓯᑦᑐᑎᒃ

ᐊᑐᓛᕐᔪᓂᒃ ᕿᒥᕐᕈᔭᐅᔭᕆᐊᓕᓐᓂᒃ ᑕᑯᓇᑦᑕᐅᑦᑎᐊᕆᐊᓕᓐᓂᓪᓗ. ᑖᒃᑯᐊ ᓵᓐᖓᔭᐅᔫᔅᐃᑦ ᓇᓗᓇᐃᖅᓯᒪᔪᑦ ᐃᓗᐊᒍᑦ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᑦᑎᒍᑦ ᐅᖃᐅᓯᐅᓪᓗᑎᒃ "ᐊᓐᓂᕆᔭᑦ ᐊᕙᑎᐅᑉ ᐃᓗᓕᕐᕿᑦ (VECs)" ᐊᒻᒪᓗ "ᐊᓐᓂᕆᔭᑦ ᐃᓅᖃᑎᒌᑦ-ᕿᓇᐅᔭᓕᐅᕈᓯᑦ ᐃᓗᓕᕆᔭᕐᕿᑦ (VSECs)" ᑖᔅᓱᒪᐅᑉ ᐅᔭᕆᓐᓂᐊᕝᕕᔅᓴᓕᐊᕐᔫᔪᒫᑉ ᓄᓇᕐᕕᒍᑦ.

4.1 ᐊᓐᓂᕆᔭᑦ ᐊᕙᑎᐅᑉ ᐃᓗᓕᕐᕿᑦ

ᑖᒃᑯᐊ VEC-ᖑᓂᕋᖅᑕᑦ ᑕᒪᐃᓐᓂᒃ ᐃᓗᓕᖅᑲᖅᑐᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓂᒃ ᐆᒪᔪᕐᕿᓂᓪᓗ ᓄᓇᕐᕿᑕ ᖃᓄᐃᕐᕿᑦᑎᐊᓐᓂᕐᒐᓄᑦ ᑐᓐᖓᕕᓖᑦ ᐊᕙᑎᐊᒍᑦ. ᑖᒃᑯᐊ VEC-ᖑᒧᑦ ᐊᒡᒎᖅᑕᐅᓯᒪᔫᓐᓇᖅᑐᑦ ᐊᔾᔨᕐᒋᓄᑦ ᐃᓱᒪᓕᐅᓐᓂᓐᓄᑦ ᐊᑐᓛᕐᔪᓄᑦ ᐊᕙᑎᐅᑉ

ᐃᓗᓕᕐᕿᓐᓄᑦ. ᐊᕐᕿᔩᑎᑦ ᓂᔾᔪᑏᑦ ᓱᕋᕚᔪᒧᑦ ᖃᐅᔨᓴᕈᑏᑦ ᓇᓗᓇᐃᖅᑕᐅᓪᓗᑎᒃ ᑕᒪᒃᑯᐊᓗ ᓵᓐᖓᔭᐅᔾᔭᓐᓇᖅᓯᓪᓗᑎᒃ ᖃᐅᔨᓴᖅᑎᑦ ᖃᐅᔨᓴᓐᓂᕐᕿᓐᓄᑦ ᑐᓐᖓᕕᔅᓴᕐᕿᓐᓄᑦ.

ᓯᓚᐃᓐᓇᐅᑉ ᐊᕙᑎᖓ - ᓯᓚᐅᑉ ᐊᓱᐃᖅᐸᓪᓕᐊᓂᖓ, ᓯᓚᐅᑉ ᓴᓗᒪᓂᖓ, ᓂᐱᖃᓐᓃᑦ ᐃᑦᑑᖅᑐᓪᓗ

ᓄᓇᐅᑉ ᐊᕙᑎᖓ - ᓄᓇᐅᑉ ᐋᖅᑭᔅᓯᒪᓂᕐᕿᑦ, ᐃᔾᔪᕐᕿᑦ ᓄᓇᐅᓪᓗ ᖁᐊᖑᐃᓐᓇᓐᓂᖓ; ᐱᕈᖅᑐᑦ; ᓄᓇᐅᑉ ᓂᔾᔪᑎᕐᕿᑦ ᓇᔪᖅᑕᕐᕿᓪᓗ; ᑎᕐᒥᐊᑦ

ᓄᓇᐅᑉ ᐃᒪᖃᕐᕿᑦ – ᓄᓇᒦᑦᑐᑦ ᐃᒥᕐᕿᑦ ᐃᓱᓐᓂᕐᕿᓪᓗ; ᐃᒥᑦᑎᐊᕙᐅᓂᖓ; ᐃᖃᓗᕐᕿᑦ, ᐃᖃᓗᐃᑦ ᓇᔪᖅᑕᕐᕿᑦ ᐊᓯᕐᕿᓪᓗ ᐃᒪᒻᒥᐅᑕᑦ ᐆᒪᔪᑦ

ᑕᕆᐅᑉ ᐊᕙᑎᖓ – ᑐᕙᖅ; ᑕᕆᐅᖅ ᐃᓱᓐᓂᕐᕆᑕᓗ ᐃᓚᖅᑯᓯᕐᕿᑦ; ᑕᕆᐅᑉ ᓇᔪᖅᑕᐅᓂᖓ ᐆᒪᔪᖁᑎᕐᕿᓪᓗ; ᐳᐃᔩᑦ

4.2 ᐊᓐᓂᕆᔭᐅᔪᑦ ᐃᓅᖃᑎᒌᑦ-ᕿᓇᐅᔭᓕᐅᕈᑎᑦ ᐃᓗᓕᕐᕿᑦ

ᐅᑯᐊ VSEC-ᖑᔪᑦ ᐊᑦᑐᐅᔪᑦ ᐃᓅᕐᕿᑕ ᐃᓅᓯᖃᑦᑎᐊᓐᓂᕐᕿᓐᓄᑦ, ᓄᓇᓕᕐᕿᑕ ᑕᒪᐃᓐᓄᓪᓗ ᑕᑯᓗᕿᑦ ᐃᓅᖃᑎᒌᖑᔪᑦ ᕿᓇᐅᔭᓕᐅᕈᓯᕐᕿᑕᓗ ᖃᓄᐃᕐᕿᑦᑎᐊᓐᓂᕐᕿᑕ ᓄᓇᒥᒃ ᐊᑐᖅᑎᐅᔪᑦ.

ᐃᓅᕐᕿᑦ: ᐃᓅᖃᑎᕐᕿᑕ ᖃᓄᐃᑦᑑᓂᕐᕿᑦ; ᐃᓕᓐᓂᐊᖅᓯᒪᓃᑦ ᐱᓕᒻᒪᔅᓴᐃᔾᔪᑏᓪᓗ; ᐃᓅᕐᕿᑕ ᖃᓂᒪᕐᕿᓐᓂᕐᕿᑦ ᐃᓅᓯᖃᑦᑎᐊᓐᓂᕐᕿᓪᓗ

ᓄᓇᓕᕐᕿᑦ: ᓄᓇᓕᓐᓂᑦ ᐱᖃᑎᔾᔪᐊᕐᕿᑦ ᓄᓇᓕᐅᓪᓗ ᒐᕙᒪᖃᑎᕐᕿᑕ ᐱᔾᔪᑎᐅᑎᕐᕿᑦ; ᐃᓅᖃᑎᕐᕿᑕ ᓱᓇᒃᑳᕐᕿᑦ; ᓄᓇᒦᑦᑐᑦ ᓄᓇᐅᓪᓗ ᐊᑐᖅᑕᐅᕙᓐᓂᖓ; ᒐᕙᒪᖃᓐᓂᖅ ᓯᕗᓕᐅᓇᓂᓪᓗ; ᐃᓅᓯᖃᓐᓂᖅ ᓂᕈᐊᖅᑕᒥᓐᓂᒃ ᐃᖅᑲᓇᐃᔮᔅᓴᓪᓗ

ᕿᓇᐅᔭᓕᐅᕈᓯᕐᕿᑦ: ᕿᓇᐅᔭᓕᐅᓐᓂᒃᑯᑦ ᐱᕙᓪᓕᐊᓂᖅ ᐃᒻᒥᒃᑯᓪᓗ ᓇᐸᖕᖓᔪᓐᓇᓐᓂᖅ; ᑳᓐᑐᕌᔅᓴᐃᑦ ᐱᓴᓇᓯᓄᓪᓗ ᒪᑐᐃᖅᑐᑦ; ᐃᑲᔫᑎᔅᓴᐃᑦ, ᑖᒡᔫᔭᐅᑏᑦ ᓂᕐᕿᖅᑕᐅᑏᓪᓗ ᓄᓇᒧᑦ ᐊᑐᕈᑎᕐᕿᓄᑦ

4.3 VEC-ᓗ VSEC-ᓗ ᐊᑦᑐᐊᖅᑲᑎᒌᓐᓂᕐᕿᑦ ᐅᔭᕆᓐᓂᐊᕝᕕᓕᐊᕐᔪᒪᔪᒧᑦ

ᕿᒥᕐᕈᔭᐅᕙᓪᓕᐊᑎᓪᓗᒍ ᓴᖅᑭᑦᑐᒪᔭᖕᖓ ᐅᔭᕆᓐᓂᐊᕝᕕᔅᓴᖅ ᐊᑦᑐᐊᖅᑲᑎᒌᓐᓂᕐᕿ ᐅᔭᕆᓐᓂᐊᕝᕕᓕᐊᕐᔪᒪᔫᑉ ᑕᒪᒃᑯᐊᓗ ᐊᔾᔨᒌᓐᖏᑦᑐᑦ VEC VSEC-ᖑᔪᓪᓗ ᓇᓗᓇᐃᖅᑕᐅᓚᐅᖅᑐᑦ ᓇᐅᒃᑯᓕᒫᓪᓗ ᐊᑐᓛᕐᔪᑦ ᓇᓗᓇᐃᒃᑎᔅᓴᐃᑦ ᓂᔾᔪᑏᑦ ᓇᓗᓇᐃᖅᑕᐅᓪᓗᑎᒃ ᕿᒥᕐᕈᔭᐅᓂᖅᑲᑎᐊᖅᓱᑎᓪᓗ. ᐊᕐᕿᔪᓂᒃ ᖃᐅᔨᓴᐃᓂᖅᑲᖅᓱᑕ ᐃᓚᐅᖅᑕᐅᕙᓪᓕᐊᓪᓗᑎᒃ ᐃᓄᐃᑦ ᖃᐅᔨᒪᔭᕐᕿᓐᓄᑦ ᓴᖅᕿᓇᓯᐊᖅᓱᑕ ᓯᕗᓂᐊᑕ-ᐅᔭᕆᓐᓂᐊᕝᕕᔅᓴᐅᑉ ᐃᓕᖅᑯᓯᓇᔭᕐᕿᓐᓄᑦ ᓄᓇᕐᕿᑕ. ᐊᑐᖅᓱᕿᑦ ᖃᐅᔨᓴᖅᑏᑦ ᖃᐅᔨᓴᕈᑎᕐᕿᔭᕐᕿᒧᑦ ᑐᑭᓯᐅᒪᔭᐅᓕᖅᑐᑦ ᓯᕗᓂᐊᒧᑦ ᓴᓇᔭᐅᓯᒪᔪᓄᑦ ᐱᕙᓪᓕᐊᔾᔪᑎᓄᑦ ᐃᓅᐃᓪᓗ ᖃᐅᔨᒪᔭᑐᖅᑲᕐᕿᒧᑦ ᓇᓚᐅᑦᑖᕈᑎᕐᕿᓐᓂᒃ ᓴᖅᕿᓚᐅᖅᐳᒧᑦ ᖃᓄᑎᒋ ᐊᑦᑐᐃᓂᖅᑲᔭᒻᒪᕐᓘᕐᕿᑕ ᐊᔾᔨᒋᕐᕿᑦᑐᑦ ᐱᓕᕆᐊᕐᒍᒐᔭᖅᑐᑦ ᐅᔭᕆᓐᓂᐊᕝᕕᒥᑦ. ᓇᐅᒃᑯᑐᐃᓐᓇᖅ ᐱᐅᓐᖏᑦᑐᑦ ᐅᔭᕆᓐᓂᐊᕝᕕᒻᒧᑦ ᓴᖅᑭᑕᐅᔪᑦ ᓴᓂᖅᑯᒐᔅᓴᐅᓐᖏᑎᓪᓗᕐᕿᑦ, ᐸᓐᓇᐅᑎᓂᒃ ᑎᑎᕋᐃᓯᒪᔪᑦ ᒥᑭᓕᓴᔾᔪᑎᓄᑦ ᐅᕙᓘᓐᓃᑦ ᐊᑦᑐᐃᓂᐅᔪᓄᑦ ᑭᖑᕝᕕᐅᑎᔅᓴᐅᔪᓄᑦ.

ᐃᓱᒪᕐᕿᖅᓯᐅᑎᓗᒍ ᑕᒪᒃᑯᐊ ᐋᖅᑭᕆᐊᕈᑎᐅᔪᑦ ᒥᑭᓕᓴᔾᔪᑎᓄᓪᓗ ᐱᓕᓴᔾᔪᑎᐅᔪᑦ ᐃᓗᐊᒎᑦ ᐅᔭᕆᓐᓂᐊᕝᕕᓕᐊᔅᓴᐅᑉ ᐸᓐᓇᑦᑕᕐᕿᑕ ᒥᑭᓕᓴᓇᓱᓐᓂᒻᒧᑦ ᐱᐅᓐᖏᑦᑐᓂᒃ ᐊᑦᑐᐃᓂᐅᔪᓂᒃ, ᑕᒪᒃᑯᐊ ᕿᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᐅᔪᑦ ᐅᔭᕆᓐᓂᐊᕝᕕᐅᑉ ᑭᖑᓂᐊᒍᑦ ᖃᓄᐃᓐᓂᕐᕿ

ᕿᒥᕐᕈᔭᐅᒋᓪᓗᑎᒃ ᐊᑦᑎᒋᓂᖏᓄᑦ ᐊᑦᑐᐃᓂᕆᔭᖏᑦ ᐆᒪᔪᑦ ᓇᔪᖅᑕᖏᓄᑦ ᐃᓅᖃᑎᒌᓪᓗ-ᑮᓇᐅᔭᓕᐅᕈᓯᖏᑕ ᐊᑫᑎᒋᔭᖏᑦ. ᑖᓐᓇ ᐊᑫᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ ᓴᖅᑮᓯᒪᔪᑦ ᑎᑎᖅᑲᑎᒍᑦ ᕿᒥᕐᕈᐃᓂᐅᔪᓄᑦ ᑕᑯᔅᓴᕈᖅᑕᖏᓐᓂᒃ. ᐊᑐᓃᖓᓪᓗᑎᒃ ᐅᓂᒃᑳᕆᔭᑦ.

4.3.1 ᐅᔾᕋᓐᓂᐊᕝᕕᔅᓴᐅᑉ ᐊᑦᑐᐃᔭᖏᑦ ᑕᒪᒃᑯᓄᖓ VEC-ᓄᑦ

ᓇᑭᓐᖓᓖᓐᓂᖓ

ᑖᓐᓇ ᐅᔾᕋᓐᓂᐊᕝᕕᒋᔪᒪᔭᖓᑕ ᓴᓇᔭᐅᒪᓂᖓᓄᑦ ᑎᑎᕋᐅᔭᖏᑦ ᒥᑭᓕᖑᔫᒃᑯᑦ ᐊᑦᑐᐃᒐᔭᖅᑐᓂᒃ ᓴᓇᔭᐅᓇᓱᐊᖅᓯᒪᔪᖅ ᐅᔾᕋᓐᓂᐊᕝᕕᔅᓴᖅ ᓄᓇᐅᑉ ᐊᕙᑎᐊᑕ ᐃᓕᖅᑯᓯᖏᓐᓄᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᐳᑎᓪᓗ ᐱᓕᕆᓂᐅᔪᑦ ᐊᑦᑐᐃᓂᐅᔪᓂᒃ ᐱᐅᖏᑦᑐᓂᒃ ᒥᑭᓖᖑᔪᓐᓇᖅᑐᒃᑯᑦ ᓴᖅᑮᓇᓯᓪᓗᑕ ᑕᒪᒃᑯᐊ ᓴᓂᖅᑯᑕᔅᓴᐅᖏᒃᑯᑎᒃ. ᐱᓕᕆᔾᔪᑎᒍᑦ ᐊᑐᐃᓐᓇᐅᓕᕈᑎᒃ, ᐊᑐᐃᓐᓂᕆᔭᖏᑦ ᑖᔅᓯᒪᐅᑉ ᐅᔾᕋᓐᓂᐊᕝᕕᓕᐊᕆᔪᒪᔭᑦᑕ ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖏᓐᓄᑦ ᑕᐅᑐᒃᑕᐅᓕᓚᐅᖅᐸᖅ ᐊᑦᑐᐃᓗᐊᔾᔭᓇᓯᒋᔭᐅᓇᓂ. ᐅᑯᐊ ᑎᑎᕋᖅᓯᒪᔪᑦ ᑎᒥᐅᔪᒧᑦ ᓇᓗᓇᐃᕆᓇᓱᒃᐳᑎᒃ ᐊᑐᓛᖑᔪᓂᒃ ᐅᔾᕋᓐᓂᐊᕝᕕᔅᓴᐅᑉ ᐊᑦᑐᐃᓂᐅᓴᔾᔪᑎᖓᓂᒃ ᑕᒪᒃᑯᓂᖓᓗ ᐊᑦᑐᐃᓂᐅᔪᓄᑦ ᒥᑭᓕᕆᔾᔪᑎᔅᓴᐅᔪᓂᒃ. .

ᓯᓚᐅᑉ ᐊᕙᑎᖓ - ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓ; ᓯᓚᐅᑉ ᓯᓚᕿᑎᐊᕙᐅᓂᖓ; ᓂᐱᖅᑯᖅᑐᔪᑦ ᐃᒃᑐᑑᖅᑐᓪᓗ

ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓ ᓂᕆᐅᒋᔭᐅᓐᖏᓚᖅ ᐊᖏᔪᒥᒃ ᐊᑦᑐᐃᓂᖃᓐᓂᐊᓐᓂᖓᓐᓂᒃ ᓂᒡᓚᓱᒃᑲᐅᑎᓪᓗᒍ ᐊᒻᒨᓪᓗ ᐃᑎᕝᕕᑎᓪᓗᒍ ᓄᓇᐅᑉ ᖁᐊᖑᐃᓐᓇᓐᓂᖓ ᐸᓐᓇᑦᑕᐅᓯᒪᔪᓄᑦ ᐊᕐᕚᒍᓄᑦ ᐅᔾᕋᓐᓂᐊᕈᒪᒐᔭᖅᑕᑦᑎᓐᓄᑦ. ᑖᓐᓇ ᐅᔾᕋᓐᓂᐊᕝᕕᓴᐅᑉ ᐱᖁᑎᔾᔪᐊᖏᑦ ᓴᓇᔭᐅᒪᓂᖏᑦ ᐋᖅᑭᔅᓯᒪᓂᐊᖅᑐᑦ ᑲᒪᒋᔭᐅᔪᓐᓇᓪᓗᑎᒃ ᓄᓇᖓ ᐊᓯᔾᔨᖅᑕᐅᓕᓐᓂᕈᓂ ᓯᓚᐅᑉ ᐊᓯᔾᔨᓐᓂᖓᓄᑦ. ᑭᓯᐊᓂᓕᑦᑕᐅᖅ, ᐅᔾᕋᓐᓂᐊᓐᓃᑦ ᑕᒪᐃᓐᓂᒃ ᓴᖅᑮᕙᒪᑕ ᓯᓚᐃᓐᓇᒧᑦ ᐳᔪᓪᓗᓐᓂᒃ ᑕᒪᒃᑯᐊ ᐊᓂᐊᑎᑦᑎᔪᑦ ᒥᑭᓕᕐᔪᑎᓂᒃ ᐊᑐᓐᓂᐊᕋᓗᐊᖅᑎᓪᓗᒋᑦ. ᑕᒪᐃᓕ ᑕᒪᒃᑯᐊ ᓯᓚᐃᓐᓇᒧᑦ ᐳᔪᓪᓗᐃᑦ ᐊᖏᔫᓂᖅᓴᐅᑎᓪᓗᒋᑦ ᓄᓇᕗᑦ ᐊᓂᐊᑎᑉᐸᑦᑕᖏᓐᓄᑦ, ᑲᓇᑕᓕᒫᖅ ᑕᑯᓗᒍ ᒥᑭᑦᑑᒐᓗᐊᑦ ᑲᓇᑕᐅᑉ ᐊᓂᐊᑎᑕᖏᓐᓄᑦ ᑲᑎᑕᐅᒍᑎᒃ ᒥᑭᑦᑐᒻᒪᕆᐅᓪᓗᑎᒃ.

ᓴᕕᕋᔅᓴᓕᕆᓂᖅ ᑲᒪᒋᔭᖅᑲᓐᓂᓪᓗ, ᐃᓚᖃᖅᓱᓂ ᐅᓯᒃᑕᐃᔪᑦ ᐊᖅᑯᑎᖏᒍᑦ, ᑕᒪᒃᑯᐊᓗ ᐊᓂᐊᔪᑦ ᐳᔪᓪᓗᐃᑦ ᐆᒪᖅᑯᑎᓂᒃ, ᓄᓇᓯᐅᑎᔾᔪᐊᓂᒃ ᑖᒫᕖᓪᓗ ᐃᑯᐊᓚᑦᑎᔾᔪᑎᖏᑦ ᒥᑭᓕᑎᑦᑎᓂᐊᖅᑐᑦ ᓯᓚᐅᑉ ᓯᓚᑦᑎᐊᕙᐅᓂᖓᓐᓂᒃ ᐳᔪᒥᒃ ᓴᖅᑮᓂᖏᓄᑦ ᐊᓯᖏᓐᓪᓗ ᐊᐅᓚᐅᑎᓐᖓᓖᖅᑐᓂᒃ ᐳᔫᖅᑕᖏᓐᓂᒃ. ᐊᑐᖅᑕᐅᓂᖏᑦ ᐳᔪᓪᓗᖏᓐᓂᖅᓴᑦ ᐅᑭᐅᖅᑕᖅᑐᒧᑦ ᐃᒐᓯᐅᑏᑦ ᑕᒪᒃᑯᐊᓗ ᓴᓇᔪᓕᕐᔪᑎᑦᑕ ᐳᔩᓐᓂᖏᓐᓄᑦ ᒥᑭᓕᕐᔪᑏᑦ ᐊᖅᐸᓯᒃᑲᓐᓂᖅᑎᑦᑎᓂᐊᖅᑑᒐᓗᐊᑦ. ᐊᒻᒪᓗᑦᑕᐅᖅ, ᓯᓚᐃᓐᓇᒧᑦ ᐳᔪᓪᓗᓄᑦ ᑲᒪᒋᔭᐅᔾᔪᑏᑦ ᓲᓪᓗ ᐊᖅᑯᑎᒧᑦ ᒪᓴᑦᑎᕈᑏᑦ, ᐊᕙᓗᓕᐊᖑᔪᑦ ᐱᖁᑎᔾᔨᒧᐊᑦ ᐊᑐᖅᑕᐅᓂᖏᑕᓗ ᒥᓪᓗᐊᕈᑏᑦ ᐳᔩᖅᑐᓂᒃ ᐃᑲᔪᐃᓂᐊᖅᑐᑦ ᐊᖅᐸᓯᑉᐹᓪᓕᖅᑎᑦᑎᓂᕐᒥᒃ ᓯᓚᐃᓐᓇᒧᑦ ᐳᔪᓘᔪᓂᒃ.

ᐅᔾᕋᓐᓂᐊᕝᕕᐅᑉ ᐊᐅᓚᑕᖏᑦ ᑕᑯᔅᓴᐃᓂᐊᖅᑐᑦ ᓂᐱᖅᑯᖅᑐᓂᐅᔪᓂᒃ ᑭᓯᐊᓂᓕ ᑕᒪᒃᑯᐊ ᓂᐱᖅᑯᖅᑐᓂᖏᑦ ᐱᓕᕆᕝᕕᖓᓄᑦ ᖃᓂᑦᑑᒐᔪᒪᓚᑕ ᐊᑫᑎᐊᓄᑦ ᓯᐊᒻᒪᓗᐊᕋᔭᕋᓯᒋᓇᑎᒍᑦ. ᖂᒃᑲᓐᓂᐊᒍᑦ, ᑐᑯᑐᕝᕕᓐᓂᒃ ᐊᑐᓐᓂᒍᑦ ᑲᒪᒋᔭᐅᑦᑎᐊᓐᓂᖏᓪᓗ ᐊᐅᓚᐅᑏᑦ ᓴᓇᔾᔩᓪᓗ ᑲᒪᒋᔭᐅᓂᖏᓄᑦ ᓂᐱᖅᑯᖅᑐᓗᐊᔾᔮᖏᓐᓂᖏᓐᓄᑦ.

ᓄᓇᐅᑉ ᐊᕙᑎᖏᑦ: ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖏᑦ, ᐃᔾᔪᖏᑦ ᓄᓇᐅᓪᓗ ᖁᐊᖑᐃᓐᓇᓐᓂᖓ; ᐱᕈᖅᑐᑦ; ᓄᓇᐅᑉ ᓂᔾᔪᑎᖏᑦ ᓇᔪᖅᑕᖏᓪᓗ; ᑎᖕᒥᐊᑦ

ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖏᑦ ᐃᓚᖏᑦ ᐃᐸᐱᓐᓂᖅᓴᕋᐃᑦᑐᑦ ᐅᔾᕋᓐᓂᐊᕝᕕᒋᔪᒪᔭᑦᑕ ᓄᓇᖏᑦ ᐃᓚᕐᑲᐅᒻᒪᑕ ᖁᐊᖅᓯᒪᔪᓂᒃ ᐃᔾᔪᓐᓂᒃ ᐃᓚᕐᑲᑐᐃᓐᓇᓇᐊᓖᑦ ᐃᑭᐊᖅᑖᖓᒍᑦ ᓂᓚᓐᓂᒃ ᐅᕝᕙᓘᓐᓃᑦ ᓄᓇᖏᑦ ᓅᑦᑐᓐᓇᖅᑐᑦ ᐅᕐᑯᒪᐃᑦᑐᒧᑦ ᖃᖅᑯᑕᐅᒍᑎᒃ. ᑕᒪᒃᑯᐊ ᓄᓇᐃᑦ ᐃᐸᐱᓐᓂᖅᓴᕋᐃᑦᑐᑦ ᓂᒍᖅᑕᐅᖃᑦᑕᓐᓂᐊᖅᐳᑎᒃ ᐊᓯᖃᖏᑦᑕᖏᓪᓚᑕ ᓴᓇᔪᓕᕆᔨᓄᑦ ᑲᒪᒋᔭᐅᕙᓪᓗᑎᒃ ᓄᓇᖏᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ ᓴᐳᒥᕈᓐᓇᓐᓂᓕᒫᖏᒍᑦ ᓴᐳᒥᓗᑎᒍᑦ ᐊᑐᓪᓚᕆᐊᖅᑐᐊᕈᑎᒃ. ᖁᒃᑲᓐᓂᐊᒍᑦ, ᓄᓇᐅᑉ ᐊᑐᖅᑕᐅᔪᔅᓴᐅᑉ ᐸᓐᓇᑦᑕᐅᕙᓪᓕᐊᓂᖓ ᐋᖅᑭᔅᓯᒪᓂᖅᑲᕋᔭᖅᓱᓂ ᑰᕝᕕᖅᑲᐅᓪᓗᑎᒃ ᓄᓇᖏᑦ ᐃᒪᖅᓱᖕᖑᖅᑯᓇᒋᑦ ᓴᓇᐅᔭᐅᑎᓪᓗᒋᑦ ᒪᖑᓕᕈᓂ.

ᓴᓇᔪᐅᒪᓂᔅᓵᕆᑦ ᑕᒪᐃᑕ ᐅᔾᕋᓐᓂᐊᕝᕕᐅᑉ ᐱᖁᑎᔾᕙᐊᕆᑦ ᑎᑎᕋᐅᔾᖅᓯᒪᓂᕐᒐᒍᑦ ᑕᑯᔅᓴᐅᑎᑦᑎᕗᖅ ᒥᑭᓛᖑᕙᒥᒃ ᓄᓇᒥᒃ ᐊᑦᑐᖅᑕᐅᒐᔾᖅᑐᒥᒃ ᐅᔾᕋᓐᓂᐊᕝᕙᓚᐊᑦᑎᓐᓄᑦ ᐊᑦᑐᖅᑕᐅᓂᓛᑦ. ᑕᐃᒪᐃᓐᓂᑯᐊᓄᑦ ᐱᕈᖅᑐᑦ ᐊᑦᑐᖅᑕᐅᕙᑦ ᐱᓕᕆᔾᑦᑎᓐᓄᑦ ᒥᑭᓐᓂᖅᓴᐅᒐᔾᖅᑐᖅ ᑕᑯᓪᓗᒍ ᐱᕈᖅᑐᖅᑲᓐᓂᖖ ᓄᓇᖕᒥᑕ ᖃᑭᖅᑖᓗᑉ ᐅᐊᖕᓇᖖᒐᒍᑦ. ᓈᓴᐅᑎᒃᑯᑦ ᖃᕋᓴᐅᔭᑎᒍᑦ ᖃᐅᔨᓴᕈᑎᑦ ᐊᑐᖅᐳᑎᒍᑦ ᖃᓄᑎᒋ ᐳᕙᓪᓗᒻᒥᒃ ᓴᖅᑮᒐᔾᒪᖔᑦᑕ ᖃᐅᔨᓴᕈᑎᒋᓪᓗᑎᑦ ᖃᓄᑎᒋ ᐱᕈᖅᑐᑦ ᐳᕙᒻᒧᑦ ᓴᕿᔭᐅᒐᔾᒪᖔᕆᑕ ᑕᒪᒃᑯᐊᓗ ᓇᓗᓇᐃᓯᓯᒪᓪᓗᑎᒃ ᒪᓴᑎᓯᒪᑦᑎᐊᕈᓂ ᐊᖅᑯᑖ ᓴᓂᕋᓃᑦᑐᑦ ᐱᕈᖅᑐᑦ ᐳᕙᒻᒧᑦ ᓴᐅᔭᐅᓗᐊᕋᔾᓐᖏᓐᓂᖏᓂᒃ.

ᑐᒃᑐᐃᑦ ᐊᑐᓪᓚᕆᑦᑕᕗᑦ ᓂᔾᕙᑎᓂᒃ ᓱᕐᕋᓂᖏᓐᓄᑦ ᓇᓗᓇᐃᖅᓯᔾᕙᑎᒋᓪᓗᑎᒍᑦ ᖃᓄᑎᒋ ᐊᑦᑐᐃᓂᖅᑲᓂᔅᖔᓄᑦ ᓄᓇᒥᐅᑕᓄᑦ ᓂᔾᕙᑎᓄᑦ. ᐅᔾᕋᓐᓂᐊᕝᕕᔅᓴᐅᑉ ᐊᑦᑐᐊᓂᖅᑲᕝᕕᖖ ᑐᒃᑐᓂᒃ ᑕᒪᒃᑯᐊ ᑐᒃᑐᐃᑦ ᐃᑳᕋᖖᒐᑕ ᓄᓇᓯᐅᑎᑰᑉ ᐊᖅᑯᑖᓂᒃ ᐅᕝᕚᓘᓐᓃᑦ ᕿᓐᖑᐊᓂᑦ ᐊᖅᑯᑖᒍᑦ. ᑕᐃᒪᐃᓛᒃ ᐱᕿᑦᑐᖅᑲᓚᐅᖅᑳᑦᑕᓐᓂᐊᖅᑐᑦ ᑐᒃᑐᓂᒃ ᐃᓄᑐᐊᖑᔪᓂᒃ ᑐᓗᖅᑕᐅᔪᖅᑲᓚᐅᖅᐸᓪᓗᒃ ᓄᓇᓯᐅᑎᑰᒧᑦ ᓄᓇᒃᑰᕈᑎᔾᕙᐊᒧᓪᓘᓐᓃᑦ ᑭᓯᐊᓂ ᐅᓄᔾᔭᕋᓯᕆᔭᐅᓐᖏᑦᑐᑦ ᒪᓕᒃᓗᕆᑦ ᐊᑐᖅᓯᒪᕙᑦ ᐊᓯᖕᒋᓂᑦ ᕿᒥᕿᐸᓪᓗᕆᓪᓗ ᑐᒃᑐᖕᒋᑕ ᐊᒥᓲᓂᖕᒋᑦ ᓄᓴᖕᒋᓐᓂᒃ. ᖃᔅᓯᐅᓚᓐᓂᒃ ᐱᓕᕆᐊᔅᓴᓂᒃ ᓇᓗᓇᐃᖅᓯᓯᒪᕙᒍᑦ ᐊᑐᖅᑕᐅᕙᔅᓴᑦ ᑐᒃᑐᐃᑦ ᑐᓗᖅᑕᐅᖁᓇᕆᑦ. ᒪᓕᑦᑎᐊᕆᐊᓖᑦ ᓱᒃᑲᓴᓐᓂᐅᑉ ᐃᓱᖕᒋᑦ ᐊᑐᖅᑕᐅᓗᑎᒃ ᑕᒪᐃᓐᓄᑦ ᓄᓇᓯᐅᑎᓄᑦ ᓄᓇᓯᐅᑎᑰᓐᓄᑦᓗ, ᓱᒃᑲᓴᓗᐊᓐᖏᒃᑯᑎᒃ ᑐᒃᑐᓄᑦ ᕿᒫᔭᐅᕙᓐᓇᕋᔾᒪᑕ. ᓄᓇᓯᐅᑏᑦ ᓄᖅᑲᓇᐊᖃᖅᑎᑕᐅᓪᓗᑎᒃ ᐆᒪᕙᓂᒃ ᐊᖅᑯᑎᒦᑦᑐᖃᕈᓂ ᓴᓂᕋᓂᓪᓗᓐᓃᑦ. ᓄᓇᓯᐅᑎᑖᑦ ᓄᖅᑲᒃᑲᐅᑎᕆᕙᓐᓇᖕᒥᒪᑕ ᑕᐃᒪᐃᓐᓂᑯᐊᓄᑦ, ᑐᒃᑐᑦ ᑲᑎᓐᖓᕙᑦ ᐊᖅᑯᓴᓕᕌᖓᑕ, ᓄᓇᓯᐅᑎᑖᖅ ᑲᑦᑐᖅᓯᓗᓂ ᓄᖅᑲᖃᑦᑕᕋᔾᖅᑐᖅ ᐊᓂᒍᕋᓱᓐᓂᖕᒋᓐᓂᒃ ᐃᑳᓂᓇᔭᒥᓂᒃ. ᑕᒪᒃᑯᐊ ᐃᑳᕝᕙᓚᐊᖑᕙᒪᕙᑦ ᓂᕈᐊᖅᑕᐅᓯᒪᕙᑦ ᑐᒃᑐᑦ ᐃᑳᕈᓐᓇᓪᓗᑎᒃ ᒪᓂᕋᐅᓂᒃᑯᑦ ᑕᒪᒃᑯᐊᓗ ᐅᖃᓗᕋᐅᔾᑦ ᐊᖅᑯᑎᒍᑦ ᓵᖅᑭᑕᐅᕙᑦ ᐲᔭᖅᑕᐅᕙᓪᓗᑎᒃ ᑐᒃᑐᖕᒋᑦ ᐃᑳᕈᓐᓇᑦᑎᐊᖁᓪᓗᒋᑦ.

ᐅᓄᖅᑐᒻᒪᑎᐅᕗᑦ ᑎᖕᒥᐊᖕᒋᑦ ᓄᓇᖕᒋᑕ ᐊᒻᒪᓗ ᒥᑭᑦᑑᓚᐅᐊᒥᒃ, ᐊᖕᒋᔪᓐᖕᒋᑦᑐᒥᒃ, ᐊᓯᐅᔨᑎᑦᑎᓂᐊᖅᑐᒍᑦ ᓄᓇᓂᒃ ᓇᕙᖅᑕᐅᓲᓂᒃ ᑎᖕᒥᐊᓄᑦ ᐱᓪᓗᒍ ᐃᓚᖕᒋᑦ ᓄᓇᐃᑦ ᐊᑐᖅᐸᑦᑕᖕᒋᑦ ᐅᔾᕋᓐᓂᐊᕝᕕᐅᓚᕋᔾᒪᓚᑦ. ᑕᒪᒃᑯᐊ ᐊᑦᑐᐃᓗᐊᕌᓗᔾᔭᕋᓱᕆᔭᐅᓐᖕᒋᑦᑐᑦ ᑕᒪᒃᑯᓄᖖ ᑎᖕᒥᐊᓄᑦ ᑕᑯᔭᐅᕙᓖᓐᓄᑦ ᓲᑦᑐ ᑭᒻᒪᕝᕙᔾᕙᐃᑦ, ᑲᖑᐃᑦ, ᒥᑏᑦ ᖃᖅᓴᐅᑦᑐ. ᓯᕗᓂᐊᑕ ᐱᕆᐊᖅᑕᐅᓐᖕᒋᑎᑦᑐᕆᑦ ᓴᓇᕙᓪᓚᐊᓂᖕᒋᑦ ᐅᔾᕋᓐᓂᐊᕈᑎᔅᓴᓄᑦ, ᐃᕙᕝᕚᑦ ᓄᓇᐃᑦᑐ ᐃᕙᕝᕕᖃᐅᖅᑐᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓂᐊᖅᑐᑦ ᕿᒪᕉᑎᖕᒋᓐᖕᒋᖕᒋᓄᑦ ᑎᑭᑦᑐᒍ ᐸᒡᕕᔅᑲᐅᔭᕆᐊᖃᕋᔭᓐᖕᒋᑦᑐᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᑦᑎᓐᓄᑦ.

ᑕᐃᒪᓕ ᐃᖅᑲᓇᐃᔭᖅᑎᕗᑦ ᐱᓕᕆᑎᑦᑐᕆᑦ ᐊᖑᓇᓯᕆᐊᖃᓐᖕᒋᓪᓚᑕ ᐅᔾᕋᓐᓂᐊᕝᕕᒻᒥᒃ ᐆᒪᕙᑦ ᓂᕿᔅᓴᓂᔭᐅᕙᑦᑐ ᓂᔾᕙᑏᑦ ᑎᖕᒥᐊᑦᑐ ᐅᓄᓐᓂᖕᒋᑦ ᐊᖑᓇᓯᑦᑕᐅᒃᑲᓐᓂᓕᕋᔭᕋᑎᒃ.

ᓄᓇᐅᑉ ᐃᒪᖃᕝᕕᖕᒋᑦ - ᓄᓇᐅᑉ ᐃᒪᖅᓱᖓ ᐃᓱᓐᓂᖕᒋᑦᑐ; ᐃᒥᑦᑎᐊᕙᐅᓂᖓ; ᐃᖃᓗᐃᑦ, ᐃᖃᓗᑦᑐ ᓇᕙᖅᑕᖕᒋᑦ ᐊᓯᖕᒋᑦᑐ ᐃᒪᒥᐅᑕᑦ

ᖃᔅᓯᐅᓚᐃᑦ ᐊᑐᖅᓯᒪᔭᐅᕙᖄᖅᑐᑦ ᐊᓯᖕᒋᓄᑦ ᒥᑭᓕᓐᓂᔾᕙᑏᑦ ᐱᓕᕆᔾᕙᑎᖕᒋᑦ ᐃᓚᓕᐅᑎᔭᐅᓯᒪᕗᑦ ᑖᔅᓱᒧᖓ ᐅᔾᕋᓐᓂᐊᕝᕕᐅᑉ ᓴᓇᐅᔭᒪᓂᔅᓵᖓᓐᓄᑦ ᒥᑭᓛᒥᒃ ᐊᑦᑐᐃᓂᖅᑯᑦᑐᒍ ᐃᒪᐅᑉ ᐃᓕᖅᑯᓯᖕᒋᓄᑦ, ᐃᖃᓗᖕᒋᓐᓄᑦ, ᐃᖃᓗᐃᑦ ᓇᕙᖅᑕᖕᒋᓐᓄᑦ, ᐊᓯᖕᒋᑕᓗ ᐃᒪᒥᐅᑕᐅᕙᓄᑦ. ᓇᓗᓇᐃᖅᓯᒪᑦᑕᓚᑦᑐᑦ ᑕᒪᒃᑯᓄᖖ ᐊᐅᓚᑦᑎᓂᒻᒧᑦ ᐸᓐᓇᐅᑏᑦ ᑎᑎᕋᖅᑕᐅᕙᑦᑕᐊᕙᑦ ᖃᓄᖅ ᑕᒪᓐᓇ ᐃᒪᕐᑯᑖ ᓴᐳᒥᔭᐅᑦᑎᐊᕈᓐᓇᒪᖔᑦ.

ᐃᒥᒻᒥᒃ ᐊᑐᓐᓂᕗᑦ ᒥᑭᓛᖑᕙᓐᓇᓐᓂᐊᓄᑦ ᐃᓱᖅᑲᓐᓂᐊᖅᑐᖅ ᑕᒪᐃᓐᓂᑦᑐ ᐊᑐᖅᓯᒪᕙᓚᒫᑦ ᐃᒥᕝᕕᓃᑦ ᖃᐅᔾᔅᖅᑕᐅᒍᑎᒃ ᓴᓗᒻᒪᖅᓴᖅᑕᐅᒍᑎᑦᑐ ᒪᓕᑦᑐᕆᑦ ᒪᓕᒐᕋᓛᑦ ᐊᕙᑎᐊᓄᑦ ᓯᐊᒻᒪᑦᑎᑕᐅᓚᐅᓐᖕᒋᓐᓂᖕᒋᓂᒃ. ᐅᑦᑐᒥᐅᕙᒍᑦ ᐊᑐᖅᑕᐅᓱᖑᒍᑦ ᐊᓇᑦᑐᓚᓐᔾᕙᐃᑦ ᓴᑐᒻᒪᖅᓴᐃᔾᕙᑎᖕᒋᑦᑐ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ ᑕᒪᐃᓐᓂᒃ ᐃᒥᕝᕕᓂᖅ ᐊᑐᖅᑕᐅᓂᑯ ᓴᓗᒪᓚᑦᑐᓂ ᑯᕝᕙᔭᐅᕙᑦᑐᓂ ᖁᕝᕙᓯᓐᓂᖅᓴᐅᑐᑎᒃ ᓇᑐᓇᐃᖅᑕᐅᓯᒪᕙᓄᑦ ᒪᓕᒐᐅᕙᓄᑦ. ᑰᒐᓛᑦᑐᑦ ᒪᖁᑦᑐᒧᑦ ᐅᖅᓱᐊᑐᖃᐅᑎᒃᑯᕝᕙᓐᓂᑦ ᓄᓇᓯᐅᑎᓄᑦᑐ ᐊᐅᓚᐅᓯᓇᕝᕙᖕᒋᓐᓂᒃ ᓴᐳᑐᑕᖃᓐᓂᐊᖅᑐᖅ ᑕᒪᒃᑯᐊᑐ ᐃᒥᑦ ᐅᐊᓴᕈᑎᕙᑦ ᐱᖁᑎᖕᒋᓐᓂᒃ ᖄᖅᑎᓇᔾᕙᑎᖕᒋᓂᑦᑐ ᑲᒪᒋᔭᐅᑐᑎᒃ ᒪᓕᒐᖅᑎᒍᑦ ᐃᓱᖃᕝᕙᐊᓄᑦ ᑯᕙᔭᐅᓚᐅᖅᑎᓇᕆᑦ ᓄᓇᐃᓐᓇᓗᑦ. ᑐᐊᕝᕙᖅᑐᓚᓐᓄᑦ ᑯᕙᕙᖃᖅᑐᒍᑦᑐ ᓴᑐᒻᒪᖅᓴᐃᓂᓗᑦ ᐸᓐᓇᐅᑎᖕᒋᑦ ᐊᑐᐃᓐᓇᐅᓂᐊᖅᑐᑎᒃ ᑕᒪᒃᑯᐊᑐ ᒪᓕᑦᑕᐅᑐᐊᕈᑎᒃ ᑕᕝᕙᖓᑲᐅᑎᕆ ᓈᒻᒪᒌᖑᔾᕙᒥᑦᑐ ᓴᑐᒻᒪᖅᓴᖅᑕᐅᒍᑎᒃ ᑯᕙᔾᖃᑲᓪᓚᓐᓂᕈᓂ ᐅᔾᕋᓐᓂᐊᕝᕙᒥ.

ᐱᑕᖃᑐᐃᓐᓇᕆᐊᖃᓐᓂᖓ ᐅᔭᕋᑦᑕᖅᑕᐅᔪᑦ ᓯᓚᐃᓐᓇᒧᑦ ᓴᖅᑭᓐᓂᖏᓐᓄᑦ ᓄᖑᓴᐃᔭᑦᑐᖅ ᐃᒥᖅ ᐅᐊᓴᐅᑎᓐᓂᕈᓂ ᐅᔭᕋᖏᓂᒃ, ᓴᕗᕋᔅᓴᐅᔪᓂᑦ ᐅᕝᕙᓘᓐᓃᑦ ᓯᐅᕋᖅᑕᕝᕕᑦ ᐅᔭᕋᑦᑕᕝᕕᑦ ᑰᑦᑕᖏᑦ ᑲᒪᒋᔭᐅᑦᑎᐊᓪᓗᑎᒃ, ᓴᓗᒪᖅᓴᓪᓗᑎᒍᑦ ᐱᔭᕆᐊᖅᑲᕈᑎᒃ ᐊᒻᒪᑦᑕᐅᖅ ᐊᐅᓚᓂᓚᒫᖓᒍᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᐅᑉ ᑕᒪᒃᑯᐊ ᑲᒪᒋᔭᐅᖏᓐᓇᕋᔭᖅᖢᑎᒃ.

ᐊᖅᑯᑎᖏᑦ ᓄᓇᓯᐅᑎᐅᓪᓗ ᐊᖅᑯᑎᔅᓴᖓ ᐃᑳᕈᑎᖅᑲᓇᐊᖅᑲᒪᑕ ᐊᒥᓱᒃᓚᓐᓄᑦ ᐃᒪᖅᑲᓐᓂᐅᔪᓄᑦ ᐃᓚᖏᓪᓗ ᐃᑳᓇᐊᓕᕗᑦ ᐃᖅᑲᓗᖅᑲᖅᖢᑎᒃ ᓇᔪᖅᑕᐅᓪᓗᑎᒃ ᐃᒪᖏᑦ. ᑰᕝᕕᖅᑲᖅᑐᑦ ᐃᑳᕈᑏᓪᓗ ᓇᐸᔪᑦ ᑰᕈᓐᓄᑦ ᑰᓐᓄᓪᓗ ᓴᓇᔭᐅᓯᒪᓂᐊᖅᑐᑦ ᐃᓕᖅᑯᓯᖏᑦ ᐋᓚᒋᔭᐅᓐᖏᓪᓗᑎᒃ ᐃᖅᑲᓗᓐᓄᑦ ᐊᔭᖏᑦᑕᖅᑯᓇᖏᑦ ᑕᒃᑯᓄᖓ ᓴᓇᔭᐅᕙᓄᑦ. ᑕᐃᒪᓕ ᓄᓇᓯᐅᑎᑯᑖᑦ ᓴᓐᖑᐊᓪᓚᒍᓐᓇᖏᓐᓂᖏᑦ ᐱᓗᐊᖅᑐᒥᒃ ᓱᒃᑲᔅᓪᓗᑎᒃ, ᓴᓇᔭᐅᓂᖏᑦ ᐃᓚᖏᑕ ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᖅᑯᑎᔅᓚᑕ ᓇᓗᓇᐃᕆᕙᖅ ᐃᓚᖏᑕ ᑕᓲᑦ ᓱᓪᔭᖏᑦ ᐊᑐᐊᕆᐊᖅᑲᖅᔭᖅᑎᒍᑦ. ᑕᐃᒪᓕ ᐃᓚᖏᑦ ᐃᖅᑲᓗᖅᑲᓐᓂᖏᑦ ᓇᔪᖅᑕᐅᔪᑦ ᐃᒥᖏᑦ ᐊᓯᐅᔾᔭᐅᕙᔭᕋᓗᐊᖅᑎᓪᓗᒍ, ᑕᒃᑯᐊ ᐊᓯᐅᔾᔭᐅᔪᑦ ᑭᖑᕝᕕᐅᑎᓯᖏᓐᓄᑦ ᓇᓗᓇᐃᒃᑯᑕᖅᑲᓚᑕ ᑕᒃᑯᓄᖓ ᓴᓂᖅᑯᕝᕕᖅᑲᖏᑦᑐᓄᑦ ᐊᓯᐅᔾᔭᐅᔪᓄᑦ ᐆᒪᔪᓄᑦ ᓂᕿᓯᐅᕙᔭᖅᑑᕙᓗᐊᓄᑦ. ᑖᓐᓇ ᐸᓐᓇᐅᑎᓯᖅ ᑕᒃᑯᓐᖓ ᑲᑐᑎᔭᕗᑦ ᑎᑎᕋᖅᐸᓪᓕᐊᓪᓗᑎᒍᑦ ᐱᓕᕆᖃᑎᒋᓪᓗᑎᒍᑦ ᑲᓇᑕᐅᑉ ᐃᒪᓖᑦ ᐅᑕᑦᑎᓇᐅᒃᑯᖏᑦ ᐊᒻᒪᑦᑕᐅᖅ ᕿᑭᖅᑕᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ ᐱᓕᕆᐅᖏᑦ ᑕᒃᑯᓄᖓ.

ᑕᕆᐅᑉ ᐊᕙᑎᖓ - ᑐᕙᖅ; ᑕᕆᐅᖅ ᐃᓱᓐᓂᖓᑕᓗ ᐃᓕᖅᑯᓯᖏᑦ; ᑕᕆᐅᑉ ᐃᒪᖏᑦ ᓇᔪᖅᑕᐅᔪᑦ ᐆᒪᔪᖃᖅᑐᓪᓗ; ᐳᐃᔩᑦ

ᓱᕐᔭᖅᐸᓯᑦᑐᓂᒃ ᐃᓚᒋᓪᓗᒋᑦ ᑐᓚᑦᑕᕝᕕᐅᑉ ᐅᓯᓕᖅᓯᐃᕝᕕᐅᓪᓗ ᐱᓕᕆᐊᕐᒋᑦ ᑲᒪᒋᔭᐅᑎᐊᓐᓂᐊᕆᐊᖑᑦ ᑕᕆᐅᖓ ᓴᐳᒥᖅᑯᓪᓗᒍ. ᑕᒪᐃᓐᓂᒃ ᐊᓇᓪᓗᕕᓃᑦ ᐊᑐᖅᓯᒪᔪᓪᓗ ᐃᒦᑦ ᓴᓇᔪᓕᕐᔪᑎᒃᑯᕕᓐᓂᑦ ᖄᖅᑎᓇᕝᕕᓂᓪᓗ ᓴᓗᒪᖅᓴᖅᑕᐅᖅᑕᑦᑕᓐᓂᐊᖅᑐᑦ ᓯᕗᓂᐊᑕ ᑯᕕᔭᐅᓂᔅᓴᕐᑕ ᑕᒃᑯᐊᓗ ᓯᓚᕈᔪᓪᒧᑦ ᑰᒡᓚᑦᑐᑦ ᐅᔭᕋᓐᓂᐊᖅᑐᑦ ᓄᓇᖓᓂᒃ ᐊᔭᕆᕝᕕᖅᑲᓗᑎᒃ, ᖃᐅᔨᓴᖅᑕᐅᓗᑎᒃ ᓴᓗᒪᖅᓴᖅᑕᐅᓪᓗ ᑲᓇᑕᐅᑉ ᐃᒥᕙᓂᓐᓄᑦ ᐱᖁᔭᕆᑦ ᒪᓕᑦᑕᐅᓗᑎᒃ. ᐅᖅᓯᐊᓗᒻᒥᒃ ᐅᖅᓴᔅᓴᐃᔾᔨᑎᕆᑦ ᐱᓗᐊᖅᑐᒥᒃ ᐅᒥᐊᔾᔪᐊᒥᒃ ᓄᓇᒧᑦ ᒪᓕᓐᓂᐊᖅᑐᑦ ᐱᖁᔭᕆᑕ ᑲᓇᑕᐅᑉ ᑕᐃᒨᓯᓕᒃ *ᑲᓇᑕᒥ ᐅᒥᐊᔾᔪᐊᒃᑯᑦ ᐅᓯᓕᖅᓯᐃᔾᔨᑎᓄᑦ ᐱᖁᔭᖅ*.

ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᑎᔅᓵᕆᑦ ᓂᕈᐊᖅᑕᐅᓯᒪᔪᑦ ᒥᑭᓛᒥᒃ ᐊᑦᑐᐃᓂᖅᑲᖅᑐᖅᑲᖅᑐᑦ ᓯᑰᑉ ᐊᐅᓚᓂᕆᓐᓄᑦ ᑕᒪᐃᓐᓂᓪᓗ ᐅᒥᐊᔾᔪᐊᑦ ᑰᕙᓯᒪᔪᖅᑲᖅᑎᑦ ᐃᒪᖅᑲᒥᒃ ᐃᒃᑕᖅᑯᑎᖅᑲᖅᑲᑦᑕᕐᓂᐊᕐᑐᑦ ᐃᖕᕋᓕᕋᓚᖏᒥᒃ ᐃᒃᐱᑭᑦᑐᕐᔪᐊᓗᑦ. ᐱᒃᑕᖅᑎᖅᑲᓇᐊᖅᑲᖅᑲᑦᑕᕐᑐᑦ ᐅᒥᐊᕐᔪᐊᖅ ᐳᒃᑕᓐᓂᖓ ᐊᕿᑎᐊᕐᓯᒪᓇᓯᐊᕐᓗᒍ. ᑕᒪᓇ ᐃᒃᑕᕐᑯᑕᐅᔪᖅ ᑯᕕᔭᐅᖅᑲᕐᓂᐊᕐᑐᖅ ᐃᒃᐱᑭᑦᑐᕐᔪᐊᓗᑦ ᑎᑭᓵᕐᓂᐊᖅᑲᕐᑲᓯᖏᓐᓂᖓᓂᒃ. ᑕᒪ ᐃᒪᖅ ᐊᓪᔨᕆᑎᐊᖅᑲᑕᔭᖏᑦᑕᓪ (ᐃᑭᖑᓂᖓᓄᑦ ᐊᒪᓗ ᖃᓄᐃᑐᓐᓂᖓᓄᑦ) ᑕᒪᑐᒪ ᐃᒪᖓᓐᓂᒃ. ᕿᐅᔮᓴᕐᑕᐅᖅᑲᓯᒪᔪᖅ ᐊᒪᓗ ᖃᐅᔮᔭᐅᓯᒪᓗᓐᓂ ᐃᒃᐱᑭᑦᑐᕐᔪᐊᑉ ᐃᒻᒪᖓᓐᓂᑦ ᖃᓄᐃᓕᑎᑎᓗᐊᔭᑐᖅ. ᐃᓯᒪᓗᑎᔭᐅᓯᒪᔪᖅ ᑕᒪ ᐃᒪᖅ ᐃᑦᑕᕐᑎᒋᔭᐅᔪᖅ ᕐᑯᐱᕈᕐᑕᑎᑎᑐᐃᓇᓇᐊᖅᑲᖓᓂᖓᓐᓂᒃ ᑕᒪᑐᒪ ᕐᑯᐱᕈᓇᖓᑕᖓᓂᒃ. ᐊᑐᕐᑕᐅᓚᓇᐊᖅᑐᓐᓂᒃ ᐊᕐᑭᔨᓯᒪᔭᖅᑐᖅ ᐊᑐᐊᖓᓕᓇᐹᓐᓂᑦ ᑕᒪᒥᖓ ᓴᐳᔩᓯᒪᓂᐊᕐᑐᒥᒃ, ᐃᓚᖅᑯᓐᓂ ᑕᒪ ᐃᒪᖅ ᐃᑦᑕᕐᑎᒋᔭᐅᔪᖅ ᓴᓗᒪ,ᓴᕐᑕᐅᖅᑲᕐᓂᐊᕐᑐᖅ ᑯᕕᔭᐅᓚᓂᖓᓂ. ᐅᒥᐊᔾᔪᐊᑦ ᑕᒪᐃᓄᑦ ᐱᖁᔭᖅᑎᒍᑦ ᒪᓕᒐᓕᐊᖑᔪᓂᒃ ᒪᓕᑦᑎᐊᓐᓂᐊᖅᑐᑦ ᐱᓗᐊᖅᑐᒥᒃ ᑲᒪᒋᔭᐅᓂᖏᓄᑦ ᐃᑦᑕᖅᑯᑎᑦ ᐃᒥᓇᕙᑦᑕᖏᑦ ᐊᑐᖅᑕᐅᓗᑎᒃ ᓴᓗᒪᖅᓴᐅᑏᑦ ᐊᑐᕐᑯᔭᐅᓯᒪᔪᑦ ᐃᖏᕋᔪᓕᓂᐹᑯᑦ ᑲᓇᑕᒥ ᐱᖁᔭᖏᑎᒍᑦ. ᐊᑐᓚᖑᔪᑦ ᐳᐃᔩᑦ ᓂᔾᔪᑎᖏᑦ ᐃᓚᖅᑲᖅᐳᑦ ᓇᑦᑏᑦ, ᐅᒡᔪᐃᑦ, ᐊᐃᕖᑦ, ᑐᓗᓀᑦ ᖃᐅᑦᑐᖅᑖᑦᑐ ᕿᓚᓗᒐᖏᑦ, ᐊᕐᕕᑦᑐ.

ᓇᑦᑏᑦ ᑕᐃᒪᓐᖓᓕᒫᖅ ᐊᕐᕌᒍᑉ ᐃᓗᐊᓄᑦ ᓇᔪᖅᐸᑉᐳᑦ ᑕᒪᐃᓐᓂᒃ ᐅᐊᖕᓇᖓᓄᑦ ᓂᒋᐊᒍᑦᑐ ᐅᒥᐊᔾᔪᐊᑦ ᐊᖅᑯᑎᒋᕙᑦᑕᖏᑦ. ᑐᕙᖅ ᐱᐅᓛᓂᔭᐅᕗᖅ ᓇᑦᑎᓐᓄᑦ ᓄᓇᔅᓴᓕᐅᕋᓱᒃᖢᑎᒃ ᐊᒪᓗ ᐊᒡᓗᖏᓐᓂᒃ. ᐊᓇᑦᑐᐃᑦ ᓄᓇᔅᔭᒃᑯᑦ ᓇᑦᑎᐊᖃᓯᑦ ᒫᔅᓯ ᐃᐳᕆᒥᑦᑐ ᓇᑦᑎᐊᖅᑲᖅᐸᒃᖢᑎᒃ ᐃᒪᕐᖃ ᑦᑕᓚᒪᓄᑦ ᐱᓇᓯᐊᕈᓯᓐᓄᑦ ᑎᓴᒪᐅᔪᖅᑐᓄᑦ ᐱᓇᓯᐊᕈᓯᓐᓄᑦ. ᓇᑦᑏᑦ ᖃᓄᐃᓴᓗᐊᕋᑎᒃ ᓯᑯᒥᑦ ᐱᑎᓇᔪᓄᑦ ᓴᓇᔪᑎᓇᔪᓂᑦᑐ ᐅᒥᐊᔾᔪᐊᓂᑦᑐ ᓯᑯᒃᑰᖅᑐᓂᒃ. ᕿᓯᐊᓂᑦ, ᓇᑦᑏᑦ ᐃᓯᒪᒋᔭᐅᒪᑕ ᓇᑦᑎᐊᖅᑲᓯᒋᐊᖅᑎᑦᑐᑦ ᐸᕝᕙᓴᖅᑕᐅᓴᕋᐃᓐᓂᖏᓐᓂᒃ ᓇᑦᑎᐊᒥᓂᑦᑐ ᐃᒧᑦᑐᖅᑎᑦᑎᑦᑐᑦ. ᓯᑯᓯᐅᑏᑦ ᐃᒪᖓᑕ ᑐᕙᐅᑉ ᐃᓕᖅᑯᓯᖏᓐᓂᒃ ᐊᑦᑐᐃᕙᔭᖅᑐᖅ ᐃᑭᐱᑦᑐᔾᔪᐊᑉ ᑐᕙᖓᓄᑦ ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᑖᑕ ᐃᓂᖓᓄᑦ ᑐᓚᑦᑕᕝᕕᐅᔪᒥᑦᑐ. ᐅᓄᖅᑎᑦᑐᓂᒃ ᓇᑦᑎᓂᒃ ᑐᖅᑯᖅᑕᐅᑐᐃᓐᓇᓇᐊᕐᒃ ᐱᑦᑐᒍ ᐅᒥᐊᔾᔪᐊᑦ ᓯᑯᓯᐅᓐᓂᖏᑦ. ᕿᓯᐊᓂᑦ, ᐊᑦᑐᐃᓂᕆᔪᖓ ᐅᔭᕋᓐᓂᐊᕝᕕᐅᑉ ᓇᑦᑎᓐᓃᖓᔪᑦ ᑐᕌᖓᑐᐃᓐᓇᓪᓚᑕ ᑐᕙᖓᓄᑦ ᐊᖅᑯᑎᒋᔭᐅᖅᓯᒪᔫᑉ ᓯᑯᓯᐅᖅᑎᓄᑦ ᐊᓯᖏᓐᓂᑦ ᐊᕙᑖᓂᑦᑐᓂᑦ ᐊᑦᑐᐃᓗᐊᕋᔭᕐᓂᒃ.

ᐊᐃᕖᑦ ᓇᔪᖅᑕᖃᑦᑕᖅᐸᑦ ᑕᕆᐅᖓᓂᒃ ᐊᕐᕌᒍᓕᒫᑉ ᐃᓗᐊᓄᑦ ᓵᓐᖓᒍᑦ ᑕᕆᐅᖓᑕ ᐃᓗᓕᐅᑉ ᐃᑭᕋᔅᖓᒍᑦ. ᐃᓄᐃᑦ ᖃᐅᔨᒪᓂᖏᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᕗᑦ ᐊᐃᕖᑦ ᐃᑭᐱᑦᑐᔾᔪᐊᑉ ᐃᒪᖓᓂᑦ ᓇᑦᑐᓕᐅᖏᓐᓂᖏᓐᓂᒃ ᐅᓄᓗᐊᕋᑎᒃ. ᐊᐃᕖᑦᑕᐅᖅ ᓇᔪᖓᑦ ᑕᕆᐅᖏᓐᓂᒃ ᕿᑭᖅᑖᓗᒃ ᓄᓇᕕᐅᑉ ᐃᑭᕋᔅᖓᓐᓂᒃ. ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᑖᑕ ᑕᐱᑲᓐᖓᑦ ᐃᑭᐱᑦᑐᔾᔪᐊᒥ, ᐊᐃᕖᑦ ᐊᖅᑲᐅᒪᔪᑦ

ᐅᕝᕙᓘᓐᓃᑦ ᐆᑦᑐᔾᔪᐊᖑᔪᑦ ᑑᓵᒐᔭᖅᓱᑎᒃ ᐅᒥᐊᔾᔪᐊᑉ ᓂᐱᖓᓐᓂᒃ ᐅᖓᓯᑦᑑᑎᓪᓗᒋᑦ ᑭᓯᐊᓂ ᐸᒡᕕᓴᓗᐊᖅᑕᐅᒐᔭᕋᓱᒋᓐᖏᑦᑕᕗᑦ. ᐊᓯᖏᒍᑦ ᓴᖅᑭᓐᓂᑯᑎᒎᑦ ᕿᒥᕐᕿᕈᔭᐅᓪᓗᑎᒃ ᐃᓕᖅᑯᓯᕆᔭᖏᑦ, ᐊᐃᕙᑦ ᐅᒡᓕᓃᑦᑐᑦ ᐊᖅᑯᓵᖅᑕᐅᒐᔭᓐᓇᑎᒃ ᐅᒥᐊᔾᔪᐊᓄᑦ ᐅᔭᕋᓐᓂᐊᖅᑐᑦ ᐊᑐᖅᑕᖏᓐᓄᑦ. ᑕᒪᒃᑯᐊ ᓴᖅᑭᑐᐃᓐᓇᓇᐊᓖᑦ ᐊᑦᑐᐃᓂᐅᔪᑦ ᐅᒥᐊᔾᔪᐊᑉ ᓴᖅᑭᑕᖏᑦ ᐅᔭᕋᓐᓂᐊᖅᑐᒧᑦ ᐊᐃᕙᓐᓄᑦ ᑭᒡᓕᖅᑲᕋᔭᓇᑦᑐᑎᒃ ᐃᒪᖏᓐᓄᑦ ᓴᓂᕌᒍᑦ ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᑎᓭᓇᔭᖓᑕ ᑕᒪᓐᓇᓗ ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᑎᓭᓇᔭᖓᑦ ᓂᕈᐊᖅᓯᒪᔭᖅ ᒪᓕᒃᑯᒋᑦ ᐊᖑᓇᓯᑦᑏᑦ ᖃᐅᔨᒪᓂᖏᑦ ᐅᓄᓛᖑᔪᑦ ᐊᐃᕙᖅᑲᓐᓂᖏᑦ ᑕᑎᐅᑦ ᐱᖓᓐᓇᖓᒍᑦ ᕿᑭᖅᑖᔾᔮᑉ ᓴᓂᖅᑯᑕᐅᓗᔭᖅᑐᑎᒃ. ᑕᒪᒃᑯᐊ ᑲᔪᓰᓐᓇᖅᑐᒃᑯᑦ ᐊᐃᕙᑦ ᖃᐅᔨᓴᖅᑕᐅᖏᓐᓇᓇᐊᖅᑲᖅᑐᑎᒃ ᓂᕆᐅᕋᔭᐅᓐᖏᑦᑐᒥᒃ ᐊᑦᑐᖅᑕᐅᓂᖅᑲᓐᓂᖏᓐᓄᑦ ᐊᐃᕙᑦ ᐊᑐᓕᖅᑎᑦᑎᓂᓪᒥᑦᓗ ᖄᒃᑲᓐᓂᐊᒍᑦ ᐊᑐᖅᑕᐅᔭᕆᐊᓕᓐᓂᒃ ᒥᑭᓕᕆᔾᔪᑎᓯᓂᒃ ᐊᑦᑐᐃᓂᖏᓐᓄᑦ.

ᐅᒡᔪᐃᑦ ᑕᑎᐅᖓᓂᒃ ᓇᔪᒪᔪᒃᑭᕗᑦ ᐊᕙᑖᒍᑦ ᐊᕿᒎᑉ ᐃᓗᐊᒍᑦ ᑭᓯᐊᓂ ᐃᒃᑲᓐᓂᖅᓴᐅᔪᓂᑦ ᓇᔪᖅᑐᑎᒃ ᐊᐅᓚᔪᖅᑲᖅᑐᒥᑦᑐ ᑕᒪᒃᑯᐊ ᐆᑦᑐᔾᔪᐊᖑᕝᕕᕆᔪᓐᓇᕈᓂᕆᑦ. ᐅᒡᔪᐃᑦ ᓇᑦᑎᐊᖅᑲᓕᔫᑦ ᒪᔾᔮᐅᑉ ᕿᑎᖓᓂᑦ ᒪᐃ ᐱᕆᐊᓐᓂᖓᓐᓄᑦ. ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᑖ ᐊᐅᓚᔾᔪᒃᑯᑦ ᓯᑯᒃᑯᑦ ᕿᓚᒥᐊᓐᓄᒃ ᐊᓯᐅᕙᔭᖅᑐᓂ ᓯᑯ ᐊᐅᓚᔭᓐᓂᖓᓐᓄᑦ ᐊᓄᓇᒧᑦ ᐃᖏᕋᓂᓪᒧᑦᑐ ᑕᒪᒃᑯᐊ ᐅᒡᔪᐃᑦ ᕿᓚᒥᐊᓐᓄᑦ ᐅᑎᓐᓂᐊᕋᓯᕆᔭᐅᓯᒪᕗᑦ ᐊᖅᑯᓵᓅᑐᐊᕈᑎᒃ ᐅᒥᐊᔾᔪᐊᑦ ᓇᓕᐊᓐᓄᑐᐃᓐᓇᖅ. ᑕᒪᐃᓐᓅᖓᔪᑦ ᐅᒡᔪᓄᑦ ᑕᑯᑦᑐᕆᑦ, ᐊᑦᑐᐃᓂᖃᔭᖏᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᐅᑉ ᐅᒡᔪᓄᑦ ᑭᒡᓕᖅᑲᑦᓚᖃᒃᑲᔭᖅᑐᖅ ᐃᓱᖅᑲᑦᑐᑎᑦᑐ.

ᑐᓛᓖᑦ ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᑖᒍᑦ ᐊᕝᕙᐊᕈᑎᔭᑦᑐᑦ ᖃᓐᖑᐊᑕ ᑲᖏᖅᓱᐊᒍᑦ ᐊᐅᔭᐅᑎᑦᑐᒍ ᕿᓚᓗᒐᑦ ᐊᒥᓲᓂᖅᑲᖅᑐᑦ ᐃᒻᒪᖅ 20,000-ᖑᔪᑦ ᑐᓛᓖᑦ ᐊᐅᓵᖅᑲᑦᑕᒻᒪᑕ ᑕᓯᐅᔭᔾᔪᐊᑉ ᑕᑎᐅᖓᓂᒃ ᖃᓐᖑᐊᑕᒍ ᑲᖏᖅᓱᖓᓐᓂᒃ. ᑐᓛᓖᑦ ᐃᓯᒪᑎᔭᐅᕙᑦ ᐅᑭᐊᖅᑲᑦᑕᓐᓂᖏᓐᓂᒃ ᑖᒥᓂᒃ ᑕᑎᐅᖓᓂᒃ ᓂᖅᑭᓴᖅᓯᐅᖅᑐᑎᑦᑐ ᑕᑎᐅᖓᓐᓂᒃ ᐊᐅᔭᓂᖓᒍᑦ. ᐃᓛᓐᓂᓚᐅᓯᖓᖅ ᑐᓛᓖᑦ ᐃᑉᐳᑕᐅᑉ ᑕᑎᐅᖏᓐᓄᑦ ᑎᑭᐅᑎᓚᐅᕐᔪᑦ ᑭᓯᐊᓂ ᐃᓯᒪᑎᔭᐅᓯᒪᓪᓗᑎᒃ ᑐᓛᓖᑦ ᐅᑳᖅᑲᑦᑕᓐᓂᖏᑦ ᐃᒪᕙᒻᒥᑦ ᐊᑯᓐᓂᐊᒍᑦ ᕿᑭᖅᑖᔾᔮᑉ ᑲᓛᑦᓯᑦ ᓄᓇᖏᑦ ᐊᒻᒪ ᓄᓇᕙᐅᑉ. ᑭᒡᓕᖅᑲᓪᓚᓇᑦᑐᓂᒃ ᑕᑯᓇᑦᑕᐅᓯᒪᔫᓗᐊᑦ ᑐᓛᓖᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᐅᑉ ᐊᕝᕙᑎᖏᒍᑦ ᖃᓐᖑᓛᑦ ᖃᒪᐹᑎᒍᐊᖕᖏᓪᒪᑕ ᐅᒥᐊᔾᔪᐊᑦ ᐊᖅᑯᓴᒍᐊᖅᑎᓪᓗᒋᑦ (ᐃᓚᒋᑦᑐᒍ ᐅᓯᑲᖅᑕᖅᑑᑉ ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᓵᓐᓂᓇᔭᖕ). ᐊᑦᑐᐃᓂᕆᔭᖏᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᐅᑉ ᑐᓛᓖᑦ ᖃᓐᖑᓚᖏᓐᓄᑦ ᐃᓱᖅᑲᓐᓂᐊᖅᑐᖅ ᖃᓐᖑᐊᒍᑦ ᐅᒥᐊᔾᔪᐊᓄᑦ ᐊᑐᓐᓂᖏᓐᓄᑦ ᐊᐅᔭᒃᑯᑦ. ᑕᒪᒃᑯᐊ ᐅᒥᐊᔾᔪᐊᒃᑯᑦ ᓇᑐᓇᐃᖅᓯᒪᔪᑦ ᐊᑐᕋᔭᖅᑐᑦ ᐊᖏᔫᖏᓪᒪᑕ ᓴᓇᔭᐅᕝᕙᓕᐊᓂᐊᒍᑐᐊᖅ ᐅᒥᐊᔾᔪᐊᖅᑲᑲᐃᓐᓇᕋᔭᓪᒪᑦ ᑎᑭᑦᑕᖅᑐᓂᒃ ᑭᖑᓂᐊᒍᑦ ᐱᑦᑲᓚᐅᓯᖕᖢᒃᑲᑦᑕᕋᔭᖅᑐᑎᒃ ᐅᒥᐊᔾᔪᐊᑦ.

ᖃᐅᑦᑐᖅᑖᑦ ᕿᓚᓗᒐᑦ ᑕᑎᐅᖏᒍᑦ ᑕᑯᔅᓴᕈᓯᖑᔪᑦ ᑭᓯᐊᓂᓕ ᐅᓄᓐᖏᑦᑐᒻᒪᓕᑎᓐᓂᒃ ᐱᑦᑲᓱᖑᑦᑐᑎᒃ ᑕᓯᐅᔭᔾᔪᐊᑉ ᐃᒪᖓ ᖃᓐᖑᐊᑕᒍ ᑲᖏᖅᓱᖓ ᐊᐅᔭᒃᑯᑦ. ᕿᑭᖅᑖᔾᔮᑉ ᓄᓇᕙᐅᑉ ᐃᑭᕋᓴᖓᔪᑦ ᐅᑮᕝᕙᖓᑎᒃ ᖃᐅᑦᑐᖅᑖᑦ. ᐃᑉᐳᑕᐅᑉ ᐃᑭᖓᓂ, ᖃᐅᑦᑐᖅᑖᑦ ᐊᒥᓲᓐᖏᑦᑐᑦ ᐃᒪᖏᑏᓯᑦ ᐃᑉᐳᑕᐅᑉ, ᓴᓂᕋᔭᐅᑉ ᐊᒻᒪᓗᑦᑕᐅᖅ ᑕᑎᐅᖏᒍᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᔪᓚᐃᒥᑦ ᓯᑎᐱᕆᒧᑦ. ᖃᐅᔨᓴᕈᑎᑎᒍᑦ ᓇᓄᓇᐃᓇᓂᑯᑦ ᖃᐅᑦᑐᖅᑖᑦ ᕿᓕᔭᓪᒪᑕ ᓯᑯᓯᐅᖅᑎᓂᒃ ᐅᒥᐊᔾᔪᐊᓂᑦ ᓯᑯᒃᑯᖅᑐᓂᒃ ᐊᐅᔭᒃᑯᑦ ᕿᓕᓂᖓᑕ ᐅᖅᓚᑖᓄᑦ. ᑭᓯᐊᓂᓕ ᖃᐅᑦᑐᖅᑖᑦ ᓱᖏᐅᑎᔪᓇᕋᓯᕆᔭᐅᕙᑦ ᐅᒥᐊᔾᔪᐊᑦ ᐃᓕᖅᑯᓯᖅᑲᓕᕈᑎᒃ ᐊᖅᑯᓵᖅᐸᓪᓗᑎᒃ ᖃᑯᑎᒃᑯᑦ, ᐃᓚᖅᑲᕋᓗᐊᖅᑎᓪᓗᒋᑦ ᓯᑯᓯᐅᑎᓂᒻᒥᒃ.

ᐊᕝᕚᑦ ᑕᑎᐅᖏᓃᓯᑦ ᓂᕈᐊᖅᑕᐅᓯᒪᔫᑉ ᐊᖅᑯᑎᓭᖓᔪᑦ ᐅᒥᐊᔾᔪᐊᑉ ᑕᒪᐃᑕ ᐊᐅᔭᒃᑯᑦ ᐅᑭᐊᒃᑯᑦ. ᐊᕝᕙᓐᓄᑦ ᐊᕝᕙᐊᓖᖅᑲᕝᕙᒃ ᖃᐅᔭᐅᓯᒪᓪᓗᓂ ᐃᓚᖏᑕ ᑕᑎᐅᖏᓐᓂᒃ ᐃᑉᐳᑕᐅᑉ ᐃᑭᖓᒍᑦ. ᑕᒪᓐᓇ ᐃᑭᕋᓴᖓ ᐊᑯᓐᓂᐊᒍᑦ ᖃᐅᔨᓴᕈᑎᑎᒍᑦ ᓄᓇᕙᐅᑉ ᐅᑭᐅᕝᕙᕆᒐᔪᒃᑕᖓᖑᑦ. ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓂᖏᓐᓂᑦ ᐊᕝᕚᑦ ᖃᓄᐃᓕᑦᑕᓐᓂᖏᓐᓂᑦ ᐅᒥᐊᔾᔪᐊᓄᑦ ᓯᑯᓯᐅᖅᑎᓄᑦ, ᐊᕝᕚᑦ ᓴᓂᐊᒍᑦ ᐅᒥᐊᔾᔪᐊᑉ ᐸᐃᒐᔭᕋᓯᕆᔭᐅᖕᖏᓚᑦ ᖃᓂᕆᔭᑯᓗᐊᒍᑦ ᑭᓯᐊᓂᓕ ᓂᑎᐅᑭᔭᐅᕗᖅ ᐊᑦᑐᐃᓂᕆᔭᖏᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᐅᑉ ᐊᕝᕙᓐᓄᑦ ᒥᑭᑦᑐᒻᒪᕆᐅᓂᐊᕋᓯᕆᔭᐅᑦᑐᓂ.

ᓇᓄᐃᑦ ᓇᒥᓕᒫᖅ ᓇᔪᖅᐸᑉᐸᑦ ᐊᖅᑮᒍᒃᑯᑦ ᐊᒻᒪᓗ ᐅᓄᖅᑐᑎᒃ ᐃᑉᐳᑕᐅᑉ ᐃᑭᖓᓂ, ᐃᓚᖅᑲᖅᑐᑎᒃ ᓯᓪᔭᖓᑕ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐊᒻᒪᓗ ᕿᑭᖅᑕᖅᑎᒍᑦ ᖃᓪᓗᓈᑎᑐᑦ ᐊᑎᖅᑲᖅᑐᑦ ᑳᒃ, ᕋᐅᓕ, ᐊᒻᒪᓗ ᐸᕋᐃ ᕿᑭᖅᑕᖅᑎᒍᑦ. ᐃᓐᓇᑐᖅᑲᐃᑦ ᐅᔾᐱᓇᓴᖅᑲᖅᑐᑎᒃ ᑕᒪᓐᓇ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᓄᓇᖕᖏᑦ ᐃᓚᖕᖓᑦ ᑎᓯᓕᐅᕝᕕᐅᔾᔪᒻᒪᑦ ᓇᓄᓐᓄᑦ. ᓇᓄᐃᑦᑕᐅᖅ ᐅᑭᐅᒃᑭᕙᑦ ᕿᑭᖅᑕᖅᑎᒍᑦ ᐃᑭᕋᓴᖕᓂ. ᓇᓄᐃᑦ ᓂᑎᐅᑭᔭᐅᔪᑦ ᐅᐃᕝᕙᖅᑲᑦᑕᕋᓯᓐᓂᖏᓐᓂᒃ ᐃᓄᖅᑲᓂᐅᔪᓂᒃ ᐅᒥᐊᔾᔪᐊᓂᒃ ᑐᓚᑦᑕᕝᕕᐅᔪᓂᑦᑐ ᑭᓯᐊᓂ ᐃᓚᖏᑦ ᐅᐸᒍᑎᓲᖑᔪᕗᑦ ᐱᓕᕆᔪᓂᒃ ᖃᐅᔨᓴᕐᖓᒥᒃ ᓂᕿᐦᖃᕋᓯᕆᒍᓂᐅᑦᑐ. ᐃᖅᑲᓇᐃᔭᖅᑏᑦ ᑕᒪᐃᑕ ᐃᓕᓐᓂᐊᖅᑎᑕᐅᓂᐊᖅᑐᑦ

ᓇᓄᐃᑦ ᐅᓗᕆᐊᓇᐅᑎᖏᓐᓄᑦ ᖃᓄᓪᓗ ᑲᒪᒋᔭᐅᑦᑎᐊᙵᖏᒃᑯᑎᒃ ᓴᓗᒪᑎᑦᑎᓂᑦ ᑖᒥᓂᖏᓐᓂᒃ ᐊᖅᐸᓯᒋᐊᕆᔪᓐᓇᒻᒪᑦ ᓇᕆᐊᖅᑐᖃᑲᔾᔭᓐᓂᖓᓐᓂᒃ ᓇᓄᒻᒥᒃ ᓂᕿᔅᓴᖅᓯᐅᖅᑐᒥᒃ. ᓇᓄᓕᕆᔨᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᖃᑲᔭᖅᑰᑕ ᓇᓄᖃᒐᔪᑦᑐᒃᑯᑦ ᐱᓗᐊᖅᑐᒥᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᕗᑦ ᐅᓗᕆᐊᓇᖅᑐᒦᖁᓇᒋᑦ.

4.3.2 ᐅᔭᕐᓂᐊᕝᕕᔅᓴᐅᑉ ᐊᑐᐃᓂᕆᔭᕆᑦ ᑕᒪᒃᑯᓄᖓ VSEC-ᖑᓂᖃᖅᑕᓄᑦ

ᓇᑭᖕᖔᓂᖓ

ᑖᓇ ᐅᔭᕐᓂᐊᕝᕕᒋᔪᒪᔭᖓ ᐊᒥᕐᔪᓂᒃ ᓴᖅᑮᔪᓇᖅᑐᖅ ᐃᓅᖃᑎᒌᓄᑦ ᑮᓇᐅᔭᓕᐅᕈᓯᕆᓄᑦᓗ ᓄᓇᖃᖅᑎᕆᑕ ᕿᑭᖅᑖᕗᑉ ᐅᐊᖕᓇᖓᓂᒻᒥᐅᖑᔪᓄᑦ. ᑕᒪᒃᑯᐊ ᓴᖅᑭᑎᖅᑐᑦ ᑕᑯᔅᓴᕈᓗᑎᒃ ᐃᖅᑲᓇᐃᔮᔅᓴᓂᒃ ᐱᓕᒪᔅᓴᐅᑎᓄᓪᓗ ᐃᓕᓐᓂᐊᕈᑎᓄᑦ ᑕᒪᑯᐊᓗ ᒪᑐᐃᕈᑎᓂᕆᓄᑦ ᐱᖃᓯᖅᑭᑎᐅᔪᓄᑦ ᐊᑭᓕᖅᓱᐃᓂᕆᓄᓪᓗ ᓴᓇᔪᑦ ᓂᕆᖅᑕᐅᑎᓂᒃ ᒐᕙᒪᒃᑯᓐᓄᑦ ᐃᓄᐃᓪᓗ ᑎᒥᕆᓐᓄᑦ. ᑕᒪᓇ ᐸᓐᓇᑦᑕᐅᑦᑎᐊᕆᐊᓕᒃ ᐱᓗᐊᖅᑐᒥᒃ ᐃᓄᖁᑎᕆᑦ ᐱᕚᓪᓕᖅᑎᑕᐅᓇᓯᓐᓂᐊᕈᑎᒃ ᒪᑐᐃᕈᑎᔪᓄᑦ ᐱᓕᕆᔪᓐᓇᓪᓗᑎᒃ. ᐃᓄᐃᑦ ᐃᓚᒌᖑᔪᓪᓗ ᐃᑲᔪᖅᓯᖅᑕᐅᔭᕆᐊᖃᕆᕗᑦ ᐱᔭᕆᑐᔪᒃᑰᖅᑎᓪᓗᒋᑦ ᐊᑐᐊᔪᑦ ᖃᖓᑕᓲᒃᑯᑦ-ᑎᑭᑦᑕᖅᑐᑦ-ᐊᐅᓚᖅᑕᖅᑐᑦ ᐃᓅᓯᕆᕙᑦᑕᕆᓐᓄᑦ ᐊᒻᒪᑦᑕᐅᖅ ᕿᓇᐅᔭᓚᐊᕆᓐᓄᑦ ᐊᒃᓗᐃᑦᑑᓚᓐᓂᕆᓄᓪᓗ ᑲᒪᒋᔾᔪᑎᔅᓴᖅᑕᐅᕆᓐᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑲᓲᑦ. ᑕᒪᒃᑯᐊ ᕿᒥᕐᕈᔭᐅᓂᕆᑦ ᐃᓅᖅᑲᑎᒌᒃᑯᑦ-ᑮᓇᐅᔭᓕᐅᕈᑎᒃᑯᓪᓗ ᐃᓗᓕᕆᑦ ᕿᒥᕐᕈᔭᐅᔪᑦ ᓇᓗᓇᐃᖅᓯᕗᑦ ᑕᒪᓇ ᐱᐅᓛᖑᒻᒪᑦ ᓴᖅᑮᓇᓯᕆᐊᒥᒃ ᐃᓯᒪᕆᔭᐅᔭᕆᐊᓕᓐᓂᒃ ᖃᓄᐃᑦᑑᔪᓂᓪᓗ ᒥᑭᓕᕐᔪᑎᔅᓴᕆᓐᓂᒃ ᓴᖅᑮᒐᔭᓐᓂᕆᔭᕆᓄᑦ ᑕᒪᒃᑯᐊ ᐅᖃᐅᓯᐅᔪᓄᑦ. ᑕᒪᐃᓐᓃᖕᒐᔪᒥᒃ ᑕᑯᓇᒃᑰᒍ ᓄᓘᔾᓐᓂᑦ ᐅᔭᕐᓂᐊᖅᑕᐅᔪᒪᔪᖅ ᑭᒡᒐᖅᑐᐃᕗᑦ ᐊᑑᑎᖃᑦᑕᕆᑦᑐᒥᒃ ᐊᕆᔩᑦᑕᕆᑦᑐᒥᓪᓗ ᐱᕚᓪᓚᕈᑎᔅᖃᓐᓂᖕᒐᓂᒃ ᐃᓅᖃᑎᕐᑎᒍᑦ-ᑮᓇᐅᔭᓕᐅᕋᓯᐊᕈᑎᕆᒍᓪᓗ ᐃᓄᖁᑎᕆᓐᓄᑦ ᓄᓇᖃᖅᑎᕆᓄᓪᓗ ᓄᓇᕗᑦ.

ᐃᓄᕆᑦ: ᐃᓄᖁᑎᕆᑕ ᖃᓄᐃᑦᑑᓂᕆᔭᕆᑦ; ᐃᓕᓐᓂᐊᖅᓯᒪᓃᑦ ᐱᓕᒻᒪᔅᓴᐅᑏᓪᓗ; ᐃᓄᐃᑦ ᖃᓂᒪᖃᖅᑕᐃᓕᒪᓂᕆᑦ ᐃᓅᓯᖃᑦᑎᐊᕈᓐᓇᓂᕆᓪᓗ

ᓴᖅᑮᑐᐃᓐᓇᕆᐊᖃᓐᓂᖓ ᐅᔭᕐᓂᐊᕝᕕᔅᓴᐅᑉ ᐊᓯᕆᓂᒃ ᐃᓅᓐᖏᑦᑐᓂᒃ ᓄᒃᑕᖃᔭᖅᑐᓂᒃ ᓄᓇᓕᓐᓄᑦ ᐃᖅᑲᓇᐃᔭᕆᐊᓪᓗᑎᒃ, ᑕᒪᒃᑯᓄᖓᑦᑕᐅᖅ ᐃᓄᓐᓄᑦ ᓴᖅᑮᔪᓇᖃᔭᕆᕗᑦ ᐊᓯᕆᓐᓄᑦ ᓄᓇᓕᓅᓪᓗᑎᒃ ᐃᖅᑲᓇᐃᔮᔅᓯᕆᓐᓄᑦ ᐅᔭᕐᓂᐊᕝᕕᓴᐅᑉ ᑕᒪᐃᓐᓂᒃ ᕿᒥᕐᕈᔭᐅᓂᑰᕗᑦ. ᓇᓪᓚᐊᑐᐃᓇᐃᑦ ᓴᖅᑭᒃᑲᔭᖅᑐᑦ ᑕᒪᒃᑰᓇ ᓄᒃᑖᓂᐅᔪᓄᑦ ᓄᓇᓖᓐᓄᑦ ᐊᕆᔫᔾᔭᖃᓯᕆᓐᖏᓚᕗᑦ ᑕᑯᓇᒃᑯᑦ ᐋᖅᑭᔅᓯᖅᓯᒪᓂᕆᑦ ᓈᓴᐅᑎᕆᓪᓗ ᕿᑭᖅᑖᕗᑉ ᐅᐊᖕᓇᖕᓂᑦ ᓄᓇᖅᑎᐅᔪᓂᒃ ᐊᒻᒪᓘᓐᓃᑦ ᓄᓇᓕᐅᑉ ᐃᓄᖁᑎᕆᑕ ᐃᓕᖅᑯᓯᕆᔭᕆᓐᓄᑦ.

ᓴᕝᕿᔭᔅᓴᓕᕆᔨᒃᑯᑦ ᐃᓕᓐᓂᐊᕐᓴᓄᑦ ᐱᓕᒻᒪᔅᓴᐅᑎᓴᓄᓪᓗ ᐊᑐᓐᓂᐊᓐᓂᖃᖅᑕᕆᑦ ᐃᑲᔪᐃᓪᓚᔭᖅᑐᖅ ᕿᑭᖅᑖᕗᑉ ᐅᐊᖕᓇᖕᓚᑦ ᐃᓄᖁᑎᕆᓐᓄᑦ. ᓴᕝᕿᔭᔅᓴᓕᕆᔨᒃᑯᑦ ᐊᑐᕈᒪᓯᒪᔪᑦ ᐱᓕᒻᒪᔅᓴᐃᔾᔪᑎᓄᑦ ᓴᖅᑭᑕᐅᔪᓐᓇᖅᑐᑦ ᓄᓇᓕᕆᓐᓂᒃ ᐃᓄᖁᑎᕆᑦ ᐱᔪᓐᓇᓯᑦᑎᐊᕈᓐᓇᖁᓪᓗᑎᑦ ᐊᔪᙱᑦᑕᕆᐊᓕᕆᑦ ᐱᓯᒪᔪᓐᓇᖁᓪᓗᑎᑦ ᐃᖅᑲᓇᐃᔮᖑᔪᓄᑦ ᑲᒪᒋᔭᖅᑲᓂᕆᓂᓪᓗ ᓴᓇᔾᔪᑎᓄᑦ ᑕᐃᒪᓄᑦ ᐱᓕᕆᐊᕆᔭᕆᓐᓄᑦ ᐅᔭᕐᓂᐊᕝᕕᔅᓴᐅᑉ ᐊᐅᓚᑕᕆᔭᕆᒍᑦ. ᓴᕝᕿᔭᔅᓴᓕᕆᔨᒃᑯᑦ ᐱᓕᕆᐊᖃᓪᓚᕆᔅᓯᒪᒐᑦ ᓴᖅᑮᓂᓗᑦ ᑲᑐᔾᔨᖃᑎᕐᔅᓴᒥᓂᒃ ᐃᓕᓐᓂᐊᕐᓴᓄᑦ ᐱᓕᒻᒪᔅᓴᐅᑎᓴᓄᓪᓗ ᐱᕆᐊᖅᑕᐅᔪᔅᓴᓄᑦ. ᐱᓗᐊᖅᑐᒥᓪᓗ, ᓴᕝᕿᔭᔅᓴᓕᕆᔨᒃᑯᑦ, ᕿᑭᖅᑕᓂᒃᑯᑦ, ᕿᑭᖅᑖᓗᒃ ᑯᐊᐳᕆᓴᓐ, ᑲᑭᕙᒃ ᑯᐊᐳᕆᓴᓪᓗ ᐊᕆᖃᑎᕌᔅᓯᒪᒐᑦ ᓴᖅᑮᓂᓗᑦ ᐱᔩᒥᓴᐃᓂᓕᒻᒧᓪᓗ ᑕᑯᓐᓇᕈᐃᔪᓄᑦ ᐅᔭᕐᓂᐊᓂᓗᑦ-ᐊᑦᑐᐊᔪᓄᑦ ᐱᓕᒻᒪᔅᓴᐃᓂᓗᑦ, ᐊᑦᑐᐊᔪᑦ ᐱᓕᒻᒪᔅᓴᐅᑏᑦ ᐱᕙᓪᓕᐊᔪᓕᕆᔾᔨᓄᑦ ᓄᓇᓕᐅᓪᓗ ᓴᖅᑭᑕᕆᑦ, ᐃᖅᑲᓇᐃᔭᖅᑎᔅᓴᓄᑦ ᖃᐅᔨᓴᐃᔾᔪᑎᓄᑦ, ᐃᓕᓐᓂᐊᕐᓴᓂᒃ ᓴᓇᕙᓪᓚᐊᔪᓄᑦ, ᐃᖅᑲᓇᐃᔮᔅᓴᓗᑦ ᐊᔪᕈᓐᓃᖅᓴᐅᑏᑦ, ᐊᓯᕆᓪᓗ ᐊᑦᑐᐊᓂᓖᑦ ᐱᓕᕆᐊᕈᔪᓄᑦ ᐃᑲᔪᐃᓇᓯᐊᖅᑐᑦ ᐃᓄᕆᓐᓂᒃ ᓄᓇᓕᓐᓄᑦ ᐊᑦᑐᐊᓂᖅᑲᖅᑐᑦ ᐅᔭᕐᓂᐊᕝᕕᔅᓴᓗᑦ. ᐊᔾᔨᖕᒐᓂᒃ ᐊᕆᕈᑎᒥᒃ ᐊᑎᓕᐅᕆᓯᒪᓕᖅᑐᒍᑦ ᓄᓇᕘᑉ ᒐᕙᒪᒃᑯᕆᓐᓂᒃ ᓯᓚᑦᑐᖅᓴᕝᕕᖓᓂᓪᓗ. ᐊᒻᒪᑦᑕᐅᖅ, ᐃᓕᓐᓂᐊᖅᐱᑦ ᐱᔭᕇᖁᓪᓗᑎᑦ ᐅᔭᕐᓂᐊᕝᕕᔅᓯᒥᑦ ᐃᖅᑲᓇᐃᔭᕈᓐᓇᖅᑐᑦ 18 ᑐᕐᖄᓂᑦᑕᓇᖅᑲᕐᕆᑦᑐᑦ. ᐃᖅᑲᓇᐃᔾᔭᒥᒃ ᐊᑐᖅᓯᒪᓂᐊᓄᑦ ᐅᔭᕐᓂᐊᕝᕕᒻᒥ ᐃᑲᔪᐃᓗᔾᔪᒥᔪᖅ ᐃᓅᓯᖕᒐᓂᒃ ᐱᓕᒪᔾᔪᑎᔅᖃᓕᓪᓗᑎᒃ.

ᑕᒪᒃᑯᐊ ᐱᑐᐃᓐᓇᐅᕆᑦᑎᑦᑎᔪᑦ ᐊᑦᑐᐊᓂᓖᑦ ᖃᕐᒪᑕᓲᒃᑯᑦ ᑎᒃᑯᑦᑕᓐᓂᑦ/ᐊᐅᓛᓐᓃᑦ ᐃᓕᓴᓇᔭᐅᓯᒪᕗᑦ. ᐃᖅᑲᓇᐃᔭᖅᑎᑦ ᐃᑲᔪᖅᑕᐅᓇᓲᒃᑲᔭᖅᑐᑦ ᐃᓚᒋᔭᕆᓪᓗ ᓱᕐᖁᐃᑎᔪᓇᖅᑯᓪᓗᑎᑦ ᑕᐃᒪᐃᑦᑐᒥᒃ ᐃᖅᑲᓇᐃᔭᖅᑲᓂᕆᓄᑦ. ᑐᑭᓯᒋᐊᕈᑎᔅᑦ

ᐱᓕᒻᒪᕝᓴᐅᑎᓪᓗ ᐃᖅᑲᓇᐃᔭᖅᑎᓄᑦ ᐃᓚᖏᓄᓪᓗ ᓴᖅᑭᑕᐅᕙᔭᖅᑐᑦ ᓱᖏᐅᑎᔪᓐᓇᖅᑯᓪᓗᒋᑦ ᐃᖅᑲᓇᐃᔮᒥᓄᑦ ᐊᐅᓪᓚᖅᓯᒪᓂᖓ ᐊᒻᒪᓗ ᐋᖅᑭᒋᐊᕋᓱᓪᓗᒋᑦ ᑮᓇᐅᔭᒃᑯᑦ ᐊᐅᓚᑦᑎᔾᔪᓯᖏᑦ. ᓇᐃᓐᓂᖅᓴᖅ ᒪᕐᕉᓐᓄᑦ ᐱᓇᓱᐊᕈᓰᓐᓄᑦ ᐃᖅᑲᓇᐃᔭᓐᓂᑦ ᐊᑯᓂᐅᓗᐊᓐᖏᑦᑐᒥᒃ ᐊᐅᓪᓚᖅᓯᒪᑎᑦᑎᕙᓪᓗᑎᒃ ᐃᓚᒋᔭᒥᓂᒃ ᓄᓇᓕᖓᓂᓪᓗ ᒪᑐᐃᕈᔾᔪᓗᑎᓪᓗ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᓂᒃ ᐊᖑᓇᓱᒍᓇᕐᑲᑦᑕᓪᓗᑎᒃ ᓄᖅᑲᖓᓂᒻᒥᒃ ᓴᓇᔭᖓᓐᓂᒃ.

ᐃᓱᒫᓘᑎᑦ ᓴᖅᑭᑕᐅᕐᑲᑦᑕᓚᐅᕆᕗᑦ ᑕᑯᓐᓇᕈᑐᐃᓐᓇᓂᐊᓕᓐᓄᑦ ᐋᖓᔮᓐᓇᖅᑐᑦ ᐅᔾᕋᓐᓂᐊᕝᕕᓴᐅᑉ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᓄᑦ ᓇᓴᖅᑕᐅᔪᑦ ᐅᔾᕋᓐᓂᐊᕝᕕᐅᑉ ᓄᓇᕐᑯᑎᖏᒍᑦ ᑕᒪᒃᑯᐊᓗ ᓂᐅᕖᖅᑕᐅᔪᓐᓇᓐᓂᖏᑦ. ᑕᒪᒃᑯᐊ ᓵᓐᖓᓇᓱᒃᑕᕗᑦ ᓄᖅᑲᖓᓂᒃᑯᑦ ᐋᖓᔮᓐᓇᖅᑐᓂᒃ ᑲᒻᐸᓂᐅᔪᑦ ᑕᒪᐃᓐᓄᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᓄᑦ ᐊᑐᐊᒐᕐᑲᖅᑐᑦ ᐋᖓᔮᓐᓇᖅᑐᑦ ᐃᒥᐊᓗᓪᓗ ᐱᑕᕐᑲᕐᑯᔭᐅᖏᓐᓂᖏᓂᒃ. ᐊᔫᖅᑭᓯᒪᔪᓄᑦ ᐅᕐᑲᕐᑲᑎᕐᑲᕈᑏᑦ ᐊᑐᐃᓐᓇᐅᑎᑕᐅᓂᐊᕆᕗᑦ.

ᓄᓇᓖᑦ: ᓄᓇᓕᐅᑉ ᐱᕐᑯᑎᔾᔪᐊᖏᑦ ᒐᕙᒪᒃᑯᓪᓗ ᐱᔾᔪᑎᐅᑎᖏᑦ; ᐃᓅᖅᑲᑎᒌᑦ ᓱᓇᒃᑯᑖᖏᑦ; ᓄᓇᒦᓐᖓᓖᖅᑐᑦ ᓄᓇᐅᓪᓗ ᐊᑐᖅᑕᐅᓂᖓᑕ ᐸᓐᓇᐅᑎᑦ; ᒐᕙᒪᓕᕆᓂᖅ ᓯᕗᓕᐊᕆᓂᓪᓗ; ᐃᓅᓯᒃᑭᓯᑦ ᐃᖅᑲᓇᐃᔮᕝᓴᐃᓪᓗ

ᑖᓐᓇ ᐅᔾᕋᓐᓂᐊᕝᕕᕆᔪᒪᔭᖓ ᓴᖅᑭᒃᑯᓂ ᐱᓕᒪᔪᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᓂᒃ ᐱᓇᓱᐊᕝᕕᐅᕙᔾᒪᑦ. Hᐋᒻᓚᐃᑦ ᐃᓱᒫᓗᒍᑎᕐᑲᖅᓯᒪᔪᑦ ᑕᒪᒃᑯᐊ ᐊᔪᖏᓐᓂᖏᑦ ᐃᖅᑲᓇᐃᔭᓕᕈᑎᒃ ᓄᓇᓕᐊᓂᒃ ᐱᔾᔪᑎᓐᓂᐊᖅᑐᕝᓴᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᑭᑐᐃᓐᓇᓇᐊᕐᑲᓐᓂᖏᓐᓂᒃ. ᑭᓯᐊᓂᓕ, ᐃᖅᑲᓇᐃᔭᓕᒪᓂᖅ ᑲᔪᓰᓐᓇᖅᑐᓪᓗ ᐱᓕᒻᒪᕝᓴᐅᑏᑦ ᐊᖏᔪᒥᒃ ᐃᑲᔪᐃᓂᐊᕋᓱᒋᔭᕗᑦ ᐃᖅᑲᓇᐃᔭᕈᓐᓇᖅᑐᓂᒃ ᐱᓕᒻᒪᕝᓴᐃᓂᖏᓄᑦ ᓄᓇᓕᓐᓂᒥᐅᑕᑦ ᐱᔪᓐᓇᖅᓯᓗᑎᒃ ᐊᔪᕈᓐᓃᓪᓗᑎᓪᓗ. ᑕᐃᒪᐃᓐᓂᒃᑯᐊᓄᑦ, ᐃᖅᑲᓇᐃᔭᖅᑎᓂᒃ ᐊᖅᓵᖅᓯᓂᖅ ᐊᑭᓕᖅᑲᓐᓂᐊᖅᑐᖅ ᐊᖏᓕᕙᓪᓕᐊᔪᒥᒃ ᐊᔪᙱᓐᓂᓕᓐᓂᒃ ᐃᓄᖏᑦ ᓄᓇᓕᖏᓐᓄᑦ.

ᑖᓐᓇ ᐅᔾᕋᓐᓂᐊᕝᕕᕝᓴᓕᓇᔪᒪᔾᔭ ᐃᖃᓗᐃᑦ ᒥᑦᑕᕝᕕᐊᓂᒃ ᓄᓇᓖᓪᓗ ᒥᑦᑕᕝᕕᖏᓐᓂᒃ ᑕᓪᓕᒪᐅᔪᓂᒃ ᐊᑐᕋᔭᖅᑐᑦ ᐃᖅᑲᓇᐃᔭᖅᑏᑦ ᖃᖓᑕᔫᒃᑯᑦ ᐅᑎᖅᑕᕋᖅᑎᑕᐅᕙᓪᓗᑎᒃ. ᐅᔾᕋᓐᓂᐊᕝᕕᕝᓴᐅᑉ ᐸᓐᓇᕝᓯᒪᔪᖏᑦ ᐃᖏᕋᔪᓕᕆᓂᒻᒧᑦ ᓴᓇᔭᐅᓯᒪᕗᑦ ᐅᖓᑖᓄᑦ ᐱᓕᕆᔪᓐᓇᓐᓂᖏᑕ ᒥᑦᑕᕝᕚᑦ ᐱᔾᔪᑎᖅᑎᖏᑦ ᐅᖓᑕᐅᔾᔨᑦᑕᐃᓚᒪᑎᓪᓗᒋᑦ ᑲᒪᒋᔪᓐᓇᖅᑕᖏᑦ. ᐃᓚᖓᒍᑦ ᐊᑐᕆᐊᕐᑲᖅᑕᖏᓐᓂᒃ ᓴᖅᑮᕐᑯᔨᑐᐃᓐᓇᓇᐊᓖᑦ ᑎᑭᕐᑲᑦᑕᐃᓐᓇᓕᕈᑎᒃ ᐅᔾᕋᓐᓂᐊᕝᕕᓕᓇᓗᑎᒃ. ᑐᑭᓕᐅᑎᓗᒍ, ᑕᒪᒃᑯᐊ ᐃᓄᐃᑦ ᐃᖅᑲᓇᐃᔭᓐᓂᖏᓐᓄᑦ ᐊᒥᓲᓂᖅᓴᓂᒃ ᓄᓇᓯᐅᑎᑖᕋᔾᒪᑕ ᐃᒪᕐᑲ ᐊᖅᑯᑎᖏᑦ ᐋᖅᑭᒋᐊᓇᐊᕐᑲᕋᔭᖅᑐᑦ.

ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔾᔪᑎᑦ ᐱᓕᒻᒪᕝᓴᐅᑎᓪᓗ ᐃᓚᕐᑲᓪᓗᑎᒃ ᐃᖅᑲᓇᐃᔭᖅᑐᑦ ᐱᓕᒻᒪᕝᓴᐅᑎᖏᑦ ᐱᓕᕆᐊᖏᓐᓄᑦ ᐅᕐᑲᐅᔾᔨᔨᓄᓪᓗ ᐃᑲᔪᖅᑕᐅᓂᖏᑦ ᓴᖅᑮᓂᐅᓴᕗᑦ ᓯᕗᓕᐅᕆᓂᒻᒧᑦ ᐱᔪᓇᓐᓂᓐᓂᒃ ᑕᓐᓇ ᓄᓇᓕᓐᓂᑦ ᓴᖅᑮᒐᔭᖅᑐᖅ ᐊᖏᓂᖅᓴᒥᒃ ᒐᕙᒪᑦᑎᐊᕙᕐᑲᓐᓂᒻᒥᒃ. ᐃᓚᐅᕐᑲᑕᐅᓂᖏᑦ ᓄᓇᓕᐅᑉ ᐃᓄᕐᑯᑎᖏᑦ ᓯᕗᓕᖅᑎᖏᓪᓗ ᐊᖏᕐᑲᑎᒋᒍᑎᒧᑦ ᐋᔾᔨᕈᑎᒃᑯᑦ ᑖᒃᑯᓂᖓ ᓴᕝᕋᔾᔭᓕᓇᔾᒃᑯᓐᓄᑦ ᓴᖅᑭᑎᖅᑕᖏᓄᓪᓗ ᓇᓗᓇᐃᖅᓯᓇᓱᐊᓪᓗᑎᒃ ᐊᑐᓛᓂᒃ ᓇᓗᓇᐃᖅᓯᔾᔪᑎᓂᒃ ᐊᒡᒍᖅᓯᒪᔪᓄᑦ ᖃᐅᔨᓴᕈᑎ ᐱᓕᓇᐊᓇᔭᖏᓐᓄᑦ ᐅᓪᓗᒥᒧᑦ ᑲᔪᓯᕗᕐᑲᖅᓯᒪᕗᖅ ᓴᖅᑮᓇᓱᐊᓐᓂᒻᒥᒃ ᓄᓇᓕᓐᓂᑦ ᓯᕗᓕᖅᑎᐅᓂᒻᒧᑦ.

ᐱᓕᕆᔾᔪᐃᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ ᐃᑉᐱᕆᔭᐅᑦᑎᐊᕆᐊᑦᑐᑎᒃ ᒥᐊᓂᕆᔭᐅᓗᑎᓪᓗ ᐃᓄᐃᑦ ᐃᓕᖅᑯᓯᖏᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᑦᑐᑦ. ᐊᑐᐊᒐᐃᑦ ᑐᓐᖓᓴᐃᔪᑦ ᐃᑉᐱᕆᔭᒃᑦᑎᐊᕐᓂᒥᒃ ᐊᓯᒥᑕ ᐃᓕᖅᑯᓯᖏᓐᓂᒃ ᐊᔾᔨᒃᑲᖏᓐᓂᑦᑕᓗ ᓇᒥᕈᓘᔭᖅ ᐊᑭᓐᖓᓂᑦ ᐊᑐᐃᓐᓇᐅᕗᑦ. ᓴᕙᕋᔭᕝᓴᓕᓇᔾᒃᑯᑦ ᐃᑲᔪᖅᓱᐃᔪᑦ ᐃᓄᒃᑎᑐᑦ ᐅᖃᐅᓯᖏᓐᓂᒃ ᐅᔾᕋᓐᓂᐊᕝᕙᖓᓂ, ᐅᖃᓕᒫᕐᖓᖏᓐᓄᑦ ᐊᒻᒪᑦᑕᐅᖅ ᐃᖅᑲᓇᐃᔭᖅᑐᑦ ᑲᑎᙵᔪᖏᓐᓄᑦ. ᐊᑐᐊᒐᐃᑦ ᐱᔫᒥᓴᐃᔪᑦ ᐅᓄᓇᐊᓇᖅᑕᐃᓕᒪᓂᓪᒥᒃ, ᐃᖅᑲᓇᐃᔭᖅᑎᑦ ᓇᓕᒧᕆᓐᓂᖏᓐᓂᒃ, ᐊᒻᒪ ᐸᒡᕙᓴᐃᑎᑦᑎᑦᑕᐃᓕᒪᓃᑦ ᒪᓕᑦᑕᐅᑦᑎᐊᓐᓂᐊᖅᐳᑎᒃ.

ᐃᑦᑕᓐᓂᓴᖅᑲᕝᕖᑦ ᓄᓇᖏᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔾᔪᑦ ᐅᔾᕋᓐᓂᐊᕝᕕᕝᓴᐅᑉ ᓄᓇᖏᒍᑦ ᐃᓚᖏᑦ ᐃᓕᖅᑯᓯᖅᑲᖅᐳᑎᒃ ᐃᑦᑕᓐᓂᓴᓂᓪᓗ ᑭᒻᒪᖅᑐᐃᔪᑦ ᓄᓇᖏᑕ ᐊᑐᖅᑕᐅᓪᓚᕐᓯᒪᓂᖏᓐᓂᒃ ᐃᓄᖏᓄᑦ ᑕᐅᕙᓐᖓᑐᖄᓗᒃ ᐅᓪᓗᒥᒧᑦ. ᖃᔅᓯᒐᓚᐃᑦ ᐋᑐᑎᖃᓪᓚᓂᑦᑐᑦ ᐃᑦᑕᓐᓂᓴᖅᑲᕝᕕᓖᑦ ᓄᓇᖏᑦ ᐅᐃᕙᖅᑕᐅᓂᐊᖅᐳᑎᒃ ᐅᔾᕋᓐᓂᐊᕝᕕᓴᐅᑉ ᓱᓇᒃᑲᖅᑐᑦ ᓅᑕᐅᓗᑎᒃ, ᐃᓚᖏᑦ ᐲᖅᑕᐅᓗᑎᒃ ᐃᑦᑕᓐᓂᓴᓕᕈᓐᓄᑦ ᐊᓯᖏᓪᓗ ᓴᐳᒥᕈᔭᐅᓗᑎᒃ ᓄᓐᖑᐊᓕᐊᕈᔭᐅᓗᑎᒃ ᐃᑦᑕᓐᓂᓴᓖᑦ, ᐊᒻᒪᑦᑕᐅᖅ ᐃᑦᑕᓐᓂᓴᓕᕈᓐᓄᑦ ᖃᐅᔨᓴᖅᑕᐅᓪᓚᓗᑎᒃ ᐃᓕᓴᕈᔭᐅᓯᒪᔪᓐᓄᑦ. ᓴᕙᕋᔭᕝᓴᓕᓇᔾᒃᑯᑦ ᐃᓕᖅᑯᓯᓄᑦ ᐊᑐᖅᓯᒪᔪᓄᓪᓗ ᓱᓇᒃᑖᓄᑦ ᓴᐳᒥᕈᔾᔪᑎᓄᑦ ᐊᐅᓚᑦᑎᔾᔪᑎᖓ ᐸᓐᓇᐅᑎ ᓇᓗᓇᐃᕈᓯᒪᔪᖅ ᐊᑐᐊᒐᕝᓴᓂᒃ ᒪᓕᑦᑕᐅᔪᕝᓴᓂᓪᓗ ᑲᒪᒋᔭᐅᓂᖏᓄᑦ ᐃᑦᑕᓐᓂᓴᖅᖄᑦ.

ᑖᓐᓇ ᐅᓯᕐᓂᐊᕚᒋᔪᒪᔭᖓ ᐱᓕᕆᕐᑎᕐᑲᓐᓂᐊᖅᑐᖅ ᓄᓇᒥᒃ ᐊᑐᖅᑎᐅᔪᓂᒃ ᐃᓄᖏᓐᓂᒃ. ᑲᒪᒋᔭᐅᔾᔪᑏᑦ ᐃᑲᔪᐃᔾᔪᑎᔅᓴᑦ ᑕᒪᒃᑯᓄᖓ ᐱᓕᕆᓂᐅᔪᓄᑦ ᐃᓚᕐᑲᓐᓂᐊᖅᑐᑦ ᐊᖑᓇᓱᑦᑏᑦ ᐊᑎᓕᐅᕆᓴᕆᐊᕐᑲᓐᓂᖏᓄᑦ ᐅᓯᕐᓂᐊᕚᐅᑉ ᓄᓇᖏᒍᑦ ᐊᒻᒪᓗ ᓵᓐᖕᒐᔭᖅᑲᓗᐊᖅᒍᑎᒃ ᑭᒃᑯᓕᒫᓄᑦ ᐅᓗᕆᐊᓇᖅᑕᐃᓕᒪᔾᔪᑎᓄᑦ ᐱᓗᐊᖅᑐᒥᒃ ᕿᓐᖑᐊᓂᑦ ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᖅᑯᑖᓄᑦᑐ. ᑖᓐᓇ ᐅᒥᐊᔾᔪᐊᐊᑉ ᐊᖅᑯᑖ ᑐᕚᖅᑎᒍᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᒥᑦ ᓂᕈᐅᕆᔭᐅᕗᖅ ᐊᑦᑐᐃᓂᐊᓐᓂᖏᓐᓂᒃ ᑐᕞᒃᑯᑦ ᓇᕈᓲᓂᒃ ᐃᓄᓐᓂᒃ ᐱᓗᐊᖅᑐᑦ ᐅᑎᕋᖅᑐᑦ ᐃᒡᓗᓕᒻᒧᑦ ᓄᓇᖏᓄᑦᑐ ᐃᒃᐲᑦ ᒥᔅᓵᓄᑦ. ᒥᑭᓕᕆᔾᓇᕐᑯᑦᑐᒍ ᑕᒪᓐᓇ, ᓴᕙᕋᔭᔅᓴᓕᕆᓇᔾᒃᑯᑦ ᐊᑐᕈᒪᓂᖅᑲᖅᐳᑦ ᓇᓗᓇᐃᖅᓯᒪᑦᑎᐊᖅᑐᒥᒃ ᐅᓗᕆᐊᓇᖅᑦᑐᒥᓪᓗ ᓂᒍᕚᔅᓴᖓᓂᒃ ᐊᖑᓇᓱᑦᑏᑦ ᖃᓂᒋᔭᖓᒍᑦ ᐅᓯᑦᑎᖅᓯᕚᐅᑉ ᓄᓇᓕᒋᔭᖏᑦ. ᓴᕙᕋᔭᔅᓴᓕᕆᓇᔾᒃᑯᑦ ᐊᖅᑯᓵᖅᑐᓂᒃ ᐃᓂᖃᖅᑎᑦᑎᑎᓐᓇᖅᑐᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᑦᑎᖅᓯᐃᕚᖓᓂ ᓂᕆᔭᔅᓴᓂᒃ ᐅᖅᓯᐊᑐᔅᓴᒥᓪᓗ ᓂᑐᕆᐊᖅᑲᓐᓂᖏᓄᑦ ᑭᖑᕚᐅᑎᔪᓂᒃ ᐊᑐᐃᓐᓇᐅᑎᑦᑎᑐᑎᒃ. ᓴᕙᕋᔭᔅᓴᓕᕆᓇᔾᒃᑯᑦ ᐱᓕᕆᖅᑎᖅᑲᐃᓐᓇᖁᒪᔪᑦ ᓄᓇᓕᐅᔪᓂᒃ ᐱᑐᐊᖅᑐᒥᒃ ᐃᓱᒪᒋᔭᐅᔪᔅᓴᐃᑦ ᕿᒥᕿᕈᔭᐅᑎᑦᑐᒋᑦ ᐅᑐᕆᐊᓇᔾᔭᐃᒃᑯᑎᓄᑦ ᐱᓕᕆᐊᔅᓴᓂᒃ ᑲᒪᒋᔭᖃᓯᑦᑎᑦᑐᒋᑦ.

ᕿᓇᐅᔭᓕᐅᕈᓯᖏᑦ: ᕿᓇᐅᔭᓕᐅᓐᓂᒃᑯᑦ ᐱᕙᑦᓕᐊᓂᖅ ᐃᒻᒥᒃᑯᑦᑐ ᓇᐸᖓᔪᓐᓇᓐᓂᖅ; ᑳᓐᑐᕌᔅᓴᐃᑦ ᐱᓇᓯᓄᑦᑐ ᒪᑐᐃᖅᑐᑦ; ᐃᑲᔫᑎᔅᓴᐃᑦ, ᑖᒃᓰᔭᐅᑏᑦ ᓂᕆᖅᑕᐅᑏᑦᑐ ᓄᓇᒍᑦ ᐊᑐᕈᑎᖏᓄᑦ

ᐃᓄᒻᔫᖓᑦᓚᓐᓇᑦᑐᑦ ᓴᓂᕚᒍᑦᑐ ᕿᓇᐅᔭᖃᐅᑎᓕᐅᕈᑎᒃᑯᑦ ᐱᕈᖅᑐᑦ ᓴᖅᑭᑕᐅᔪᑦ ᐅᓯᕐᓂᐊᕚᔅᓴᐅᑉ ᓄᑖᓂᒃ ᒪᑐᐃᖅᓯᓂᐊᓪᒪᑦ ᐃᖅᑲᓇᐃᔮᔅᓴᓂᒃ ᐱᓇᓯᖃᖅᑎᐅᔪᓄᑦᑐ. ᑖᓐᓇ ᐅᓯᕐᓂᐊᕚᒋᔪᒪᔭᖓ ᐊᖏᓕᒋᐊᓇᓂᐊᖅᑐᖅ ᐃᖅᑲᓇᐃᔭᕈᓐᓇᖅᑐᑦ ᐱᔪᓐᓇᓂᖏᑦ ᐊᖏᓕᒋᐊᓇᑐᓂᑐ ᐃᓄᐃᑦ ᐱᓇᓯᖏᓐᓄᑦ ᐱᓕᕆᔪᓐᓇᓂᖏᓐᓂᒃ. ᐱᓇᓯᐅᔪᑦ ᒪᑐᐃᕈᔾᔭᐅᑐᐃᓐᓇᕆᐊᓖᑦ ᓂᐅᕿᑎᖅᑲᕈᓐᓇᖅᓯᑐᑎᒃ ᐱᓇᓯᖏᑦ ᐱᔮᑎᕈᑎᖏᑦᑐ ᐅᓯᕐᓂᐊᕚᔅᓱᑦ ᐊᒻᒪᑦᑕᐅᖅ ᓴᓂᕚᑦ ᐊᖏᓂᖅᓴᒥᒃ ᓂᐅᕚᕋᕈᑎᓂᒃ ᓂᐅᕚᖅᑕᐅᓲᑦ ᐱᔮᑎᕈᑕᐅᓲᑦᑐ ᐃᓄᖏᓐᓄᑦ. ᓴᕙᕋᔭᔅᓴᓕᕆᓇᔾᒃᑯᑦ ᐃᑲᔪᓐᓂᐊᖅᑐᑦ ᐃᓄᐃᑦ ᐱᓇᓯᕐᑯᑎᖏᓐᓂᒃ, ᐱᑐᐊᖅᑐᒥᒃ ᒥᑭᓂᖅᓴᐃᑦ ᐃᓄᐃᑦ ᐱᓇᓯᖏᑦ ᓄᓇᓕᓐᓃᑦᑐᑦ ᕿᑭᖅᑖᑐᒥ ᐱᔪᓐᓇᖅᓯᕐᑯᑦᑐᑦ ᑑᒃᑐᕋᐅᑎᒃᑯᑦ ᐊᒻᒪᑦᑕᐅᖅ ᑳᓐᑐᕋᒃᑯᑦ ᐱᓕᕆᔪᓐᓇᖅᓯᑐᑎᒃ ᐅᓯᕐᓂᐊᕚᒧᑦ.

ᐅᓯᕐᓂᐊᕚᒋᓯᐅᔪᒪᔪᖅ ᐊᐅᓚᓕᕈᓂ ᐊᖏᔪᒪᓇᓐᓂᒃ ᕿᓇᐅᔭᓂᒃ ᐊᑭᓕᖅᓱᐃᓂᐊᖅᑐᑦ ᐃᓄᐃᑦ ᑎᒥᖁᑎᖏᓐᓄᑦ ᐅᑲᒪᒃᑯᓄᑦᑐ. ᑕᒪᒃᑯᐊ ᐃᓄᓐᓅᖓᔪᑦ ᐊᖅᑯᓵᖅᓯᒪᔪᑦ ᐃᓄᐃᑦ ᐊᑦᑐᖅᑕᐅᓂᖏᓄᑦ ᐱᕚᓪᓕᕈᑎᖏᓄᑦᑐ ᐊᖏᕈᑎᐊᒍᑦ ᕿᑭᖅᑕᓂᒃᑯᓐᓂᒃ ᐊᖏᖃᑎᒌᒍᑕᐅᔪᖅ ᐊᓐᓚᑦᑕᐅᖅ ᓂᕆᖅᑖᓐᓂᖏᓐᓄᑦ ᓴᕙᕋᔭᔅᓱᑦ ᑐᓐᖓᕙᒃᑯᑦ ᑎᒥᖏᑦ. ᐊᑭᓕᖅᓱᐃᓃᑦ ᓄᓇᕘᑉ ᐅᑲᒪᒃᑯᖏᓐᓄᑦ ᓴᖅᑭᒃᑲᔭᖅᑐᑦ ᐅᖅᓱᐊᓗᓪᓗᑦ ᑖᒃᓯᑎᑦ, ᓄᓇᒥᒃ ᓴᓇᔭᐅᓂᖏᓄᑦ ᑖᒃᓰᔭᐅᑎᓂᒃ, ᐊᓪᓚ ᕿᓇᐅᔭᓕᐊᖏᑦ ᑖᒃᓯᖏᑎᒍᑦ. ᐃᓚᖏᑦ ᐊᑭᓕᖅᓱᐃᓃᑦ ᐱᕆᐊᓯᑲᐅᑎᕆᕚᔭᖅᑐᑦ ᓴᓇᔭᐅᕙᓪᓕᐊᓕᖅᑎᓪᓗᒍ ᐅᓯᕐᓂᐊᕚᒃ, ᐊᓯᖏᑦ ᐊᑭᓕᖅᓱᐃᑦ ᑭᖑᓂᖓᕕᖓᒍᑦ ᐊᐅᓚᓕᕈᓂ ᐅᓯᕐᓂᐊᕚᖓ.

ᐃᑲᔪᖅᓱᐃᓂᖏᓐᓄᑦ ᐃᓄᐃᑦ ᐱᓪᓚᒃᓴᐅᑎᖏᓐᓄᑦ, ᐃᒡᓗᒥᐅᖅᑎᑦᑏᑦ ᐋᕐᔪᐃᓂᖏᓐᓄᑦ ᕿᓇᐅᔭᓕᐅᕈᑎᔅᓴᑎᒍᑦ ᐱᖅᑯᓂᖏᓐᓄᑦ, ᐅᓯᕐᓂᐊᕚᔅᓴᖅ ᐃᑲᔪᐃᕙᔭᖅᑐᖅ ᑎᑭᑕᐅᓂᖏᓄᑦ ᑕᒪᐃᓐᓄᓐᖓᔪᓄᑦ ᕿᓇᐅᔭᓕᐅᕈᓯᒃᑯᑦ ᐱᕙᑦᓕᐊᔾᔪᑎᓄᑦ ᑎᑭᓐᓇᓯᐊᕙᖏᑦ, ᐃᓚᖅᑲᖅᑐᑎᒃ ᖃᓄᑎᒋ ᐱᕚᓪᓕᕈᑎᓯᒪᓪᓚᖓᓕᖏᑦ ᐱᐅᓯᕆᐊᓇᓂᓪᒥᒃ ᐃᒻᒥᒃᑯᑦ-ᓇᐸᔪᓐᓇᓐᓂᖏᓐᓄᑦ ᐃᓄᖏᑦ, ᓄᓇᓕᖏᑦ, ᓄᓇᕗᑦᑐ.

SECTION 5.0 – ᐊᕙᑎᓕᕆᔪᑦ, ᑲᓂᒪᖅᑲᖅᑐᓕᕆᔪᑦ, ᐅᑐᕆᐊᓇᖅᑕᐃᓕᒪᔪᓕᕆᔪᓄᑦ ᐊᐅᓚᑦᑎᔾᔪᑎᖏᑦ

ᓴᕙᕋᔭᔅᓴᓕᕆᓇᔾᒃᑯᑦ ᐊᔅᓯᕈᐊᖅᑲᖅᐳᑦ ᓴᐳᒻᒥᕆᔪᒪᓂᒻᒥᒃ ᖃᓂᒪᖅᑲᖅᑕᐃᓕᒪᓂᖏᓄᑦ ᐅᑐᕆᐊᓇᖅᑕᐃᓕᒪᓂᖏᓂᑦᑐ ᑕᒪᐃᑕ ᐊᕙᑎᐅᑉ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᑕᑐ, ᐊᒻᒪᑦᑕᐅᖅ ᑲᔪᓱᓐᓇᖅᑐᒃᑯᑦ ᓄᓇᓖᑦ ᐃᓚᐅᖅᑲᑕᐅᓂᖏᑦ ᐱᓕᕆᖅᑕᐅᓂᖏᓄᑦᑐ ᓴᖅᑭᑕᖏᓄᑦ ᐅᓯᕐᓂᐊᕚᐅᑉ. ᑖᓐᓇ ᐅᓯᕐᓂᐊᕚᒋᔪᒪᔭᖓ ᑎᑭᐅᔾᔨᓂᐊᖅᑐᖅ ᐅᖓᑕᐅᔾᔨᑐᓂᔫᓐᓃᑦ ᑕᒪᐃᓐᓂᒃ ᐊᑐᕆᐊᓕᓐᓂᒃ ᓄᓇᕗᑉ ᑲᓇᑕᐅᑦᑐ ᒐᕙᒪᖏᑦ ᐱᖁᔭᖏᓐᓂᒃ ᒪᓕᒐᖏᓐᓂᑦᑐ, ᒪᓕᒐᕋᓛᑎᒍᑦ ᐊᑐᖁᔭᐅᔪᓂᒃ, ᐱᔪᓇᐅᑎᓄᑦ, ᓚᐃᓴᓐᓯᓄᑦᑐ. ᖁᒃᑲᓐᓂᐊᒍᑦ, ᑕᒪᓐᓇ ᐱᔭᕇᖅᑕᐅᑐᐊᕈᓂ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᔅᓴᓄᑦ ᐊᐅᓚᓂᓇᔭᖓ, ᓴᕙᕋᔭᔅᓴᓕᕆᓇᔾᒃᑯᑦ ᐱᔭᕇᖅᓯᓂᐊᖅᑐᑦ ᐃᓄᐃᑦ ᐊᑦᑐᖅᑕᐅᓂᖏᓄᑦ ᐱᕚᓪᓕᕈᑎᖏᓄᑦᑐ ᐊᖏᕈᑎᒥᒃ (ᐊᖏᕈᑎᐊ) ᐅᑦᑐᒥ ᐋᔩᕈᑕᐅᔪᖅ ᕿᑭᖅᑕᓂᒃᑯᓐᓄᑦ.

ᓴᕙᕋᔭᔅᓴᓚᓇᕐᒃᑯᑦ ᐊᕙᑎᒧᑦ, ᖃᓂᒪᖃᖅᑕᐃᓚᒪᓂᒻᒧᑦ, ᐅᑐᓇᐊᓇᖅᑕᐃᓚᒪᓂᒻᒧᓪᓗ ᐊᐅᓚᑦᑎᔾᔪᑎᖏᑦ (EHS) ᑐᓐᖓᕙᐅᕗᖅ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ ᐋᖅᑭᑎᐊᕈᓐᓇᖅᑐᓄᑦ ᐊᐅᓚᑦᑎᓃᑦ ᒪᓕᒃᓱᒋᑦ ᓄᓇᕐᔪᐊᒥᑦ ᐱᐅᓛᖑᔪᑦ ᐱᓕᕆᔾᔪᑎᐅᓛᑦ. ᑖᓐᓇ EHS-ᖓ ᑎᒍᓯᓯᒪᔪᖅ ᓯᕘᕋᓂᒃᑯᑦ ᑐᓐᖓᕙᖅᑲᓐᓂᒻᒧᑦ ᑲᔪᓯᑦᑎᐊᖅᑐᒥᓪᓗ ᐱᕙᓪᓚᐊᑎᑦᑎᓂᐅᔪᓂᒃ. ᐃᓗᐊᒍᑦ ᑐᓐᖓᕙᔅᓴᐅᑉ ᐊᑐᓂᖓᔪᑦ ᐸᓐᓇᐅᑏᑦ ᓴᖅᑭᑕᐅᓯᒪᔪᑦ ᑕᒪᐃᓐᓄᑦ ᑲᒻᐸᓂᐅᑉ ᐱᓕᕆᐊᖏᓐᓄᑦ ᐃᓚᖅᑲᐅᖅᓱᑎᓪᓗ ᓇᐅᓇᐃᖅᓯᒪᑦᑎᐊᖅᑐᓂᒃ ᒥᑭᓕᕆᓂᒻᒧᑦ ᐸᓐᓇᐅᑎᒃᑯᑦ ᐱᓕᕆᐊᔅᓴᖏᓐᓂᒃ ᖃᐅᔨᓴᖅᑕᐅᓂᐊᖅᑐᓂᓪᓗ ᐊᐅᓚᓂᓕᒫᖓᒍᑦ ᐅᔭᕋᓐᓂᐊᕝᕙᐅᑉ ᑲᒪᒋᔭᓐᓇᕐᑯᓪᓗᒋᑦ ᑕᒪᒃᑯᐊ ᓴᖅᑭᑦᑐᑦ ᓄᖑᑕᐅᓗᑎᒃ, ᑭᓪᓕᕐᑲᖅᑎᑕᐅᓗᑎᒃ ᐅᕝᕙᓘᓐᓃᑦ ᒥᑭᓛᒥᒃ ᐊᑦᑐᐃᓂᕐᑲᓕᖅᑎᓪᓗᒋᑦ ᐱᐅᓐᖏᓂᓴᖏᑦ. ᑕᒪᒥᒃ ᓴᕙᕋᔭᔅᓴᓚᓇᕐᒃᑯᑦ ᐃᖅᑲᓇᐃᔭᖅᖏᑦ ᑳᓐᑐᕌᑦᑎᖏᓪᓗ ᐊᑐᓇᐊᖅᑲᖅᑎᑕᐅᔪᑦ ᑖᒃᑯᓂᖓ ᐊᐅᓚᑦᑎᓂᒻᒧᑦ ᐸᓐᓇᐅᑎᖏᓐᓂᒃ. ᑕᒪᓇ ᐅᓂᒃᑳᓇᐊᖅᑲᓐᓂᖓ ᑎᑎᖅᑲᑎᒍᓪᓗ ᓇᐅᓇᐃᖅᓯᔭᓇᐊᖅᑲᓐᓂᖏᑦ ᐊᐅᓚᑦᑎᓂᒻᒧᑦ ᐸᓐᓇᐅᑎᖏᑦ, ᐊᑐᑦᑎᐊᖅᑐᓕᓂᒻᒧᑦ ᖃᐅᔨᓴᖅᑎᑦ, ᐊᒻᒪᓗ ᐊᐅᓚᓂᖓᓄᑦ ᐊᐅᓚᑦᑎᔩᑦ ᕿᒥᕐᕈᐃᓂᖏᑦ ᐋᖅᑭᒋᐊᕈᑎᖏᓪᓗ ᓇᐅᓇᐃᖅᑕᐅᓯᒪᔪᐃᓐᓇᐅᓗᑎᒃ ᐃᓗᐊᒍᑦ.

ᑕᒪᒃᑯᐊ ᑕᑎᕐᑲᕈᓯᐅᔪᑦ ᐅᑐᓇᐊᓇᖅᑕᐃᓚᒪᓂᒻᒧᑦ ᐊᕙᑎᒧᓪᓗ ᓴᐳᒻᒥᔾᔪᑎᖏᓄᑦ ᑕᒪᐃᓐᓄᑦ ᑲᒪᒋᔭᐅᔪᖅ ᐃᖅᑲᓇᐃᔭᖅᑎᓕᒫᓄᑦ ᑲᓐᑐᕌᑦᑎᐅᔪᓄᓪᓗ ᑖᒃᑯᐊᓗ ᓴᕙᕋᔭᔅᓴᓚᓇᕐᒃᑯᑦ ᐊᑐᕈᒪᓂᖅᑲᖅᑐᑎᒃ ᐊᑐᐃᓐᓇᐅᑎᑦᑎᓂᒻᒥᒃ ᐱᓯᒪᔭᓇᐊᓕᖓᓄᑦ ᐱᓕᒻᒪᔅᓴᐅᑎᓂᒃ ᑐᑭᓯᐅᒪᑦᑎᐊᕈᑎᓄᓪᓗ ᓇᐅᓇᐃᖅᓯᔾᔪᑎᓄᑦ ᐊᑦᑎᐊᕐᑯᓪᓗᒋᑦ ᑕᒪᐃᓐᓂᒃ ᐊᑐᐊᒍᖏᑦ ᐊᐅᓚᑦᑎᓂᒻᒧᓪᓗ ᐸᓐᓇᐅᑎᕆᔭᖏᑦ. ᑕᒪᒃᑯᐊ ᐱᓕᒻᒪᔅᓴᐅᑎᒍᑦ ᐱᓕᕆᓃᑦ ᑎᑎᕋᖅᑕᐅᓗᑎᒃ, ᐱᕙᓪᓕᐊᓂᖏᓐᓄᑦ ᐊᑐᕋᔅᓴᖏᓐᓄᑦ ᑎᑎᕋᖅᓯᒪᔪᑦ ᐱᓯᒪᔭᐅᓗᑎᒃ, ᐊᒻᒪᓗ ᐱᓕᒻᒪᔅᓴᐃᔾᔪᑎᔅᓴᒃᑲᓐᓂᖏᓐᓄᑦ ᐅᓪᓗᕐᑯᑎᖏᑦ ᐋᖅᑭᑦᑕᐅᓗᑎᒃ. ᓴᕙᕋᔭᔅᓴᓚᓇᕐᒃᑯᑦ ᐃᖅᑲᓇᐃᔭᖅᑐᓕᓂᒻᒧᑦ ᓱᓇᒃᑯᑖᖏᓐᓄᓪᓗ ᐊᐅᓚᑦᑎᓂᒻᒧᑦ ᐸᓐᓇᐅᑎᖓ ᓇᐅᓇᐃᑎᔪᖅ ᐊᑐᓐᓂᐊᓐᓂᕋᖅᓯᒪᔭᖏᓐᓂᒃ.

ᐊᑐᓛᖑᖅᑲᑕᐅᔪᖅ ᐊᑕᐅᓯᖅ ᐊᐅᓚᑦᑎᓂᒻᒧᑦ ᐸᓐᓇᐅᑎᖏᓐᓂᒃ ᓵᓐᖓᔭᖅᑲᖅᑐᖅ ᑐᐊᕙᓐᓇᖅᑐᓕᓂᒻᒧᑦ ᐸᓐᓇᔾᔨᒪᓂᖅ ᐱᓕᕆᓂᓪᓗ. ᑕᐃᒪᓕ ᓴᖅᑭᔾᔭᕋᓱᒋᓐᖏᑦᑕᕋᓗᐊᕗᑦ ᑭᓯᐊᓂᓕ ᐊᖏᔪᒥᒃ ᐃᒐᓯᐅᑎᒥᒃ ᑯᕙᔪᖅᑲᓐᓂᕈᓂ ᐅᒥᐊᔾᔪᐊᐸ ᐊᖅᑯᑖᒍᑦ, ᑕᒪᓐᓇ ᑯᕙᓂᓇᔭᖓ ᐊᖏᔪᓪᓚᓇᓪᒥᒃ ᐊᕙᑎᒧᑦ ᐊᑦᑐᐃᓂᖅᑲᕋᔭᖅᑐᖅ. ᑭᓯᐊᓂᓕ, ᐅᓪᓗᒥᐅᔪᖅ ᐅᖅᓴᔅᓴᐃᓂᖏᑦ ᐅᖅᓯᐊᓗᖅᑲᐅᑏᑦ ᐊᑐᖅᑕᐅᓚᒪᑦᑎᐊᖅᑐᒃ ᐅᑭᐅᖅᑕᖅᑑᑉ ᓄᓇᓚᖏᓐᓂᒃ. ᖄᒃᑲᓐᓂᐊᒍᓪᓗ, ᓴᕙᕋᔭᔅᓴᓚᓇᕐᒃᑯᑦ ᐊᐅᔭᐃᓐᓇᒃᑯᑦ ᐅᖅᓯᐊᓗᔅᓴᒥᒃ ᑎᑭᑎᑦᑎᖅᑲᑦᑕᓐᓂᐊᖅᑐᑦ. ᖃᐅᔨᓴᐃᔾᔪᑎᕙᓂᖓ ᖃᖓᑦᑎᐊᒃᑯᑦ ᑎᑎᕋᐅᓯᐅᓂᑯ ᑲᓇᑕᐅᑉ ᐆᒪᖅᑯᑎᓚᓇᓂᒧᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᕿᒥᕐᕈᐃᓚᐅᓪᓚᑦ ᑲᔪᓯᔪᓐᓇᓂᖏᓐᓄᑦ ᐅᖅᓯᐊᓗᒥᒃ ᑯᕙᔪᒧᑦ ᓴᓗᒪᖅᓴᐃᔾᔪᑎᖏᓐᓄᑦ ᐅᐊᓚᐅᑉ ᑕᓇᐅᖓᓐᓄᑦ ᐊᒪᑦᑕᐅᖅ ᐊᑯᓐᓂᐊᑕ ᕿᕿᖅᑖᓗᐊᑉ ᑲᓛᕐᓗᓪᓗ ᐃᑭᕋᔭᖓᑕ ᐅᑭᐅᖑᑎᓪᓗᒍ. ᖃᐅᔨᓴᐃᓂᖓ ᑕᑯᔅᓴᐃᓚᐅᖅᑐᖅ ᐃᑭᕋᔅᖓᓄᑦ ᓄᓇᕗᑉ ᐊᑯᓐᓂᐊᑕ ᑲᑦᑕᐃᑎᖏᓐᓂᒃ ᓄᓘᔮᓐᓂᑦ ᐅᔭᕋᓐᓂᐊᕈᒪᔭᖓᓐᓇᓄᑦ, ᐱᐅᓛᖑᓗᔭᓐᓂᖏᑦ ᐅᓯᖅᑕᐃᑎᑦᑎᕆᐊᒥᒃ ᔪᓚᐃᒥᑦ ᓯᑎᐱᓇᒧᑦ ᑐᕚᖅᑲᖏᓐᓂᐊᑕ ᐃᒡᒍᓚᐅᑉ ᐃᑭᖓᓄᑦ.

SECTION 6.0 - ᓯᓚᑖᓅᖓᔪᑦ ᑲᑎᖅᓱᖅᓱᕆᓪᓗ ᐊᑦᑐᐃᓂᕆᔭᖓ

ᐃᓱᒪᒋᔭᐅᖅᑲᓯᐅᑎᓯᒪᕗᑦ ᑕᒪᒃᑯᐊ ᑲᑎᖅᓱᖅᓱᕆᑦ ᐊᑦᑐᐃᓂᕆᔭᐅᕙᓚᔭᖅᑐᑦ ᓂᕆᐅᒋᔭᐅᔪᓄᑦ ᓯᕗᓂᔅᓴᒥᒃ ᓴᖅᑭᑦᑐᓐᓇᖅᑐᓄᑦ, ᑕᒪᒃᑯᐊᓗ ᐊᖏᓛᖑᔪᑦ ᓴᖅᑭᑦᑐᓐᓇᖅᑐᑦ ᑲᑎᖅᓱᖅᓱᕆᑦ ᐊᑦᑐᐃᓂᖏᑦ ᓴᖅᑭᒃᑲᔭᖅᑐᑦ ᑕᒪᓐᓇ ᐱᒋᐊᖅᑎᑕᐅᓂᖓ ᓄᓘᔮᓐᓂᑦ ᐅᔭᕋᓐᓂᐊᕝᕙᖓ ᐃᒻᒪᖄ ᓴᖅᑮᑐᐃᓐᓇᓇᐊᖅᑲᒪᑦ ᖄᒃᑲᓐᓂᐊᒍᑦ ᓴᕙᕋᔭᔅᓴᓚᓇᔪᓂᒃ ᐃᒻᒪᖄ ᒪᕈᐃᖅᓱᓪᓗᐊᖅᑐᒥᒃ ᓴᕙᕋᔭᔅᓴᒥᒃ ᐅᔭᕋᓐᓂᐊᓕᓪᓗᒋᑦ. ᐊᓯᖏᓐᓂᑦ ᐅᔭᕋᓐᓂᐊᕈᒪᔪᑦ ᐊᕙᑎᐊᒍᑦ ᒥᑭᑦᑐᒥᒃ ᑲᑐᖅᓱᖅᓯᒪᔪᒥᒃ ᐊᑐᐃᓐᓇᖅᑲᖅᓯᒪᔪᑦ. ᒪᕐᕿᐊᖅᓯᓪᓗᒍ ᐅᔭᕋᓐᓂᐊᕈᒪᔭᖅᑕᑦ ᐊᑦᑎᒋᓂᖅᑲᖅᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᖃᔭᖅᑐᑦ ᐊᔾᔨᖏᓐᓂᒃ ᓴᕙᕋᔭᔅᓴᐅᔪᓄᑦ ᐊᖏᓂᖅᓴᓐᓂᒃ ᓴᖅᑮᑐᖅᑐᑦ ᐊᑦᑐᐃᓂᐅᔪᓂᒃ

ᐃᓚᖏᓐᓄᑦ ᐊᓐᓂᕆᔭᐅᔪᓄᑦ ᐊᕙᑎᒧᑦ ᐃᓅᖃᑎᒋᓪᓗ ᑮᓇᐅᔭᓕᐅᕈᓯᖏᑕ ᐃᓗᓕᕆᔭᖏᓐᓄᑦ, ᑭᓯᐊᓂᓕ ᑲᑎᓕᒫᓪᓗᒋᑦ ᑕᒪᒃᑯᐊ ᑲᑎᖅᓯᖅᓱᒋᑦ ᐊᑦᑐᐃᓂᐅᕙᔭᖅᑐᑦ ᐊᖏᔫᔾᔭᕋᓯᒋᔭᐅᓐᖏᓚᑦ ᑕᐃᒪᐃᒃᑲᔭᕋᓗᐊᕈᑎᒃ.

ᓄᓇᕗᑉ ᓯᓚᑖᓄᑦ ᐊᑦᑐᐃᓂᖏᑦ ᑕᕆᐅᑉ ᐳᐃᔾᔨᖏᓐᓄᑦ ᓴᖅᑭᒃᑲᔭᖅᑐᑦ ᐅᒥᐊᔾᔭᐊᒃᑯ ᐅᓯᒃᖃᑕᐃᓂᑦᑎᓐᓂᒃ ᑕᕆᐅᑉ ᐊᑭᐊᓄᑦ, ᑭᓯᐊᓂᓕ, ᑕᒪᒃᑯᐊ ᐊᑦᑐᐃᓂᕆᔭᖏᑦ ᐳᐃᔾᔪᑦ ᖃᐅᔾᓴᐃᔾᔭᑎᑦᑎᓐᓄᑦ ᐊᖏᔫᓐᖏᒻᒪᑕ, ᑕᒪᒃᑯᐊ ᑕᕆᐅᖏᓐᓇᒃᑯᑦ ᐊᑦᑐᐃᓃᑦ ᐊᖏᓗᐊᕋᔭᓐᖏᑦᑐᑦ. ᐃᓅᖃᑎᒋᑦ-ᑮᓇᐅᔭᓕᐅᕈᓯᖏᓐᓄᑦ ᐊᑦᑐᐃᓃᑦ ᐊᓯᖏᒍᑦ ᑲᓇᑕᐅᑉ ᒐᕙᒪᖃᑦᕕᐊᒍᑦ ᐊᑦᑐᐃᒐᕙᖅᑐᑦ ᐱᓪᓗᒍ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᑦ ᓄᓇᕘᒧᑦ ᐃᖅᑲᓇᐃᔭᓇᐊᖃᑦᑕᓐᓂᖏᓐᓄᑦ.

SECTION 7.0 - ᓄᓇᓕᓐᓄᑦ ᐃᓱᒫᓗᒋᔭᐅᔪᑦ

ᐊᕐᕋᒍᒐᓴᓄᑦ ᖃᐟᓯᒐᓚᐃᑦ ᓄᓇᓕᓐᓂᑦ ᐃᓱᒫᓗᒋᔭᐅᓂᖁᔪᑦ ᓴᖅᑭᑕᐅᓯᒪᕗᑦ ᕿᒥᕐᕈᔭᐅᓪᓗᑎᒃ ᓵᓐᖓᔭᐅᓂᖁᔪᑦ. ᑕᒪᒃᑯᐊ ᐃᓚᖏᑦ ᐊᑐᕆᖑᔪᑦ ᐃᓱᒪᒋᔭᖕᓴᐅᔪᑦ ᑐᕋᖓᔭᖃᒪᑕ ᓇᓖᕋᐳᑎᖏᓐᓄᑦ ᐃᓄᖏᑕ ᓇᓪᓕᐊᓐᓄᑦ ᐃᖅᑲᓇᐃᔮᓂᒻᒧᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐊᖑᓇᓱᓐᓂᒻᒧᑦ.

ᐃᓅᕐᑲᑎᒌᑦ ᐃᓕᖅᑯᓯᖏᒍᓪᓗ ᐊᓯᔾᔨᐅᑎᔪᑦ

ᑕᒪᒃᑯᐊ ᐃᓅᕐᑲᑎᒌᓄᑦ ᑮᓇᐅᔭᓕᐅᕈᓯᖏᒍᓪᓗ ᐃᑲᔫᑎᔅᓴᑦ ᓴᖅᑭᑕᐅᔪᑦ ᐅᔾᕋᓐᓂᐊᕗᓕᓇᔪᒪᔪᒧᑦ ᓴᖅᑮᓂᐊᓪᓚᓇᑦᑐᑦ ᐃᓅᕐᑲᑎᒋ ᐊᓯᔾᔨᕈᑎᖏᓐᓂᒃ ᐃᓄᖏᓐᓄᑦ ᓄᓇᓖᒥᐅᑕᑦ ᐊᕙᑖᓂᑦ ᓄᓇᕗᓚᒫᒧᓪᓗ ᐊᑦᑐᐃᒐᔭᓇᓪᓗᓂ. ᑕᒪᒃᑯᐊ ᐊᖏᓕᒋᐊᓐᓂᖏᑦ ᐃᖅᑲᓇᐃᔭᖅᑐᑦ ᓂᐅᕖᕈᓐᓇᓐᓂᖏᑦ ᐊᒻᒪᑦᑕᐅᖅ ᐊᓯᖏᓐᓄᑦ ᐊᒃᓗᐃᑦᑐᓂᒃ ᓴᖅᑭᑦᑐᖅᑳᓐᓂᖏᓐᓄᑦ ᓴᖅᑮᑐᐃᓐᓇᓇᐊᓕᒃ ᐊᓯᔾᔨᕈᑎᓂᒃ ᐃᓅᕐᑲᑎᒌᓄᑦ ᐃᓚᒌᖑᔪᓄᑦ. ᑕᒪᒃᑯᐊ ᐊᓯᔾᔨᐅᑎᔪᑦ ᓴᖅᑭᓐᓂᐅᓴᑐᐃᓐᓇᒻᒪᑕ ᐊᒻᒪᓗ ᑲᔪᓰᓐᓇᓐᓂᐊᖅᓱᑎᒃ, ᑖᓐᓇ ᐅᔾᕋᓐᓂᐊᕗᖕᓴᖅ ᓴᖅᑭᒃᑯᓂ ᓴᖅᑭᖏᒃᑲᓗᐊᕈᓂᓘᓐᓃᑦ, ᑕᒪᒃᑯᐊ ᐊᑦᑎᒋᓂᖏᑦ ᓇᒧᓐᖓᖓᓂᖏᓪᓗ ᐊᓯᔾᔨᐅᑎᔪᑦ ᐃᓄᐃᑦ ᐃᓅᓯᖏᓐᓄᑦ ᓯᓚᔪᒥᒃ ᐃᓱᒫᓗᒍᑕᐅᓯᒪᕗᑦ.

ᐃᓱᒫᓗᒍᑎᖃᓚᐅᑎᒍᑦ ᐅᖃᐅᓯᓪᓗᑎᒃ ᑲᑎᓕᒫᓪᓗᒍ ᐊᑦᑐᐃᓂᑎᒐᔭᖅᑕᖏᑕ ᐅᔾᕋᓐᓂᐊᕝᕕᖕᓴᐅᑉ ᐃᓄᐃᑦ ᐊᖑᓇᓯᑎᖏᓐᓄᑦ ᓄᓇᒥᓪᓗ ᐊᑐᕈᓯᖏᓐᓄᑦ ᐃᓚᖏᓐᓄᑦ ᓴᖅᑭᑐᐃᓐᓇᓇᐊᓖᑦ ᑲᑐᔾᔭᐅᓂᖏᓄᑦ ᐊᑦᑐᐊᓂᖅᓐᓂᖏᑕᓗ ᐅᔾᕋᓐᓂᐊᕝᕕᐅᑉ ᖃᐟᓯᒐᓚᓐᓄᑦ ᕿᒥᕐᕈᔭᔅᓴᓄᑦ ᑐᓐᖓᕕᖅᖠᓗᒋᑦ. ᑕᒪᒃᑯᐊ ᐊᑦᑐᐊᖅᑎᓖᓐᓂᖏᑦ ᐊᑦᑐᐃᓃᑦ ᕿᒥᕐᕈᔭᐅᓯᒪᑦᑎᐊᖅᑐᑦ ᑕᑯᔅᓴᕈᑐᐃᓐᓇᓇᐊᓖᓪᓗ ᐱᐅᓂᖅᓴᒧᑦ ᐊᖑᓇᓯᓐᓂᐅᔪᒧᑦ ᐊᒥᓲᓂᖅᓴᐅᔪᒥᓇᒻᒪᑕ ᐃᑲᔪᐃᔾᔪᑎᖏᑦ ᐱᐅᓐᖏᕐᔪᑎᖏᓐᓄᑦ ᐊᑦᑐᐃᓂᐅᔫᑉ ᐊᖑᓇᓯᑦᑏᑦ ᐱᓕᕆᔾᔪᑎᖏᓐᓄᑦ. ᓴᕙᕋᔾᔮᓕᕆᔨᒃᑯᑦ ᐱᓕᕆᖅᑎᖅᑲᐃᓐᓇᓂᐊᖅᑐᑦ ᓄᓇᓕᐅᔪᓂᒃ ᑲᑐᔾᔨᓂᒃᑯᑦ ᖃᐅᔨᓴᐃᔾᔪᑎᔅᓴᓄᑦ ᐃᓱᒪᒋᔭᔅᓴᐅᔪᑦ ᑲᒪᒋᔭᐅᖅᑳᑦᑕᑦᓗᑎᒃ ᓴᖅᑭᑦᑕᕿᖓᒥᒃ.

ᐊᕐᕿᒎᑉ ᐃᓗᓕᒫᖓᒍᑦ ᐅᒥᐊᔾᔪᐊᒃᑯᑦ ᐅᓯᒃᖅᑕᐃᓂᖅ

ᑕᐃᒪᓕ ᓄᓇᔾᔪᐊᒥᑦ ᐅᒥᐊᔾᔪᐊᒃᑯᑦ ᓯᑯᓯᐅᖅᑐᖅᑲᖅᑲᑦᑕᕋᓗᐊᖅᑎᓪᓗᒍ ᐊᑐᐊᖅᓱᑎᒃ ᑕᕆᐅᒥᒃ ᐊᕐᕿᒍᓕᒫᒧᑦ ᑕᒪᓐᓇ ᐊᑐᓚᐅᖅᓯᒪᖏᓪᓚᑦ ᓄᓇᕗᒥᑦ ᑕᒪᓐᓇᓗ ᐅᒥᐊᔾᔪᐊᑉ ᐃᓂᔅᓴᖓ ᓄᑖᓪᓚᑎᐅᓪᓗᓂ. ᓄᓇᓕᓐᓂᑦ ᑐᓴᕈᑕᐅᔪᑦ ᓇᐅᒃᑯᑦ ᐃᓂᖃᑎᐊᖃᓐᓂᖓᓄᑦ ᐊᑐᖅᑕᐅᔪᒪᔪᖅ ᐅᒥᐊᔾᔪᐊᑦ ᐊᖅᑯᑎᔅᓴᖓᓐᓄᑦ ᐃᒡᓗᓕᐅᑉ ᐃᑭᖓᓄᑦ ᕿᑭᖅᑖᓗᓪᓗ ᐃᑭᕋᓴᖓᓄᑦ ᐃᓱᒪᒋᔭᐅᖃᑕᐅᓯᒪᓪᓗᑎᒃ. ᑖᓐᓇ ᐅᒥᐊᔾᔪᐊᑉ ᐊᖅᑯᑎᔅᓴᖓ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᖅ ᐃᒪᖏᑦ ᐳᐃᔾᔪᑖᑦ ᓴᓂᖅᑯᑕᐅᔪᓐᓇᓪᓗᑎᒃ ᐊᒻᒪᓗ ᓄᓇᑖᑦ ᐊᑐᖅᐸᑦᑕᖏᑦ ᑐᕙᖏᑦ ᕿᒪᐲᑎᓯᒪᔭᐅᓗᑎᒃ. ᑕᐃᒪᓕ ᐃᓚᓴᓇᔭᐅᓯᒪᔪᒥᒃ ᐊᔭᖏᖅᔪᑎᒥᒃ ᐱᑕᖃᕈᓂ ᑐᕙᒃᑯᑦ

ᓱᑦᑐᓕ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᑐᕌᖓᒍᑦ, ᓴᕕᕋᔾᔅᓴᓕᕆᔨᒃᑯᑦ ᐱᓕᕆᖃᑎᖃᐃᓐᓇᓐᓂᐊᖅᑐᑦ ᐃᓄᓐᓂᒃ ᐅᑐᕆᐊᓇᖕᒋᑦᑐᓂᒃ ᐅᒥᐊᔾᔪᐊᑦ ᐊᖅᑯᑎᖃᕈᓐᓇᖁᑦᑐᖕᒋᑦ.

SECTION 8.0 - ᐋᖅᑭᒍᑕᐅᔪᑦ ᐃᓗᐊᒍᑦ ᑖᔅᓯᒪ ᐊᕙᑎᒧᑦ ᐊᑦᑐᐃᓂᐊᓐᓂᒻᒧᑦ ᐅᓂᒃᑲᖕᒋᑕ

ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕚᑦ ᑖᔅᓯᒧᖓ ᓄᓘᔾᓐᓂᑦ ᐅᔭᕋᓐᓂᐊᖅᑕᐅᔪᒪᔪᒧᑦ ᐃᓗᓕᖅᑲᖅᑐᖅ ᐃᓗᐃᑦᑑᔪᒥᒃ ᐊᕙᑎᒧᑦ ᐊᑦᑐᐃᓂᒻᒧᑦ ᕿᒥᕐᕈᓂᐅᔪᒥᒃ ᑕᒪᐃᓐᓂᒃ ᓴᖃᔭᐅᔪᒪᔪᒧᑦ ᐸᓐᓇᑦᑕᐅᓯᒪᔪᓂᒃ. ᑖᓐᓇ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕚᑦ ᑐᓐᖓᕕᖃᖅᑐᖅ ᐅᓄᖅᑐᒻᒪᕆᓐᓄᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᓐᓄᑦ ᐆᒪᔪᑦ ᐃᓕᖅᑯᓯᖏᑦᑕ ᐃᓅᖃᑎᒌᑦ-ᕿᓇᐅᔭᓕᐅᕈᑎᖏᑕᑐ ᐊᕙᑎᖏᑦ. ᐅᓄᖅᑐᒻᒪᕆᓐᓂᒃ ᑐᓴᕋᓱᔅᓯᒪᕗᒍᑦ ᑐᑭᓯᓇᓱᐊᖅᖢᑕ ᓇᓗᓇᐃᖅᓯᓇᓱᒃᖢᑕ ᐃᓱᒪᓗᕆᔭᐅᔪᓪᓗ ᐱᔪᒪᔭᐅᔪᓪᓗ ᑭᐅᔭᐅᔪᓐᓇᖁᑦᑐᖕᒋᑦ, ᑎᒥᐅᔪᓄᑦ ᒪᓕᒐᖅᑎᒍᑦ ᐊᖏᖅᑎᐅᔪᓂᒃ, ᐊᓯᖏᓂᓪᓗ ᑐᓴᕈᒪᓂᓕᓐᓂᒃ ᐃᓚᒋᔭᐅᖃᑕᐅᔪᓂᒃ ᐊᒻᒪᑦᑕᐅᖅ ᐱᕚᓪᓕᕈᑎᖃᖅᖢᑎᒃ ᖃᐅᔨᒪᔭᐅᓂᖏᓐᓄᑦ ᓄᓇᖏᑦ ᑕᑎᐅᖏᓪᓗ ᐃᓐᓇᑐᖃᖏᓐᓄᑦ. ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕚᑦ ᓵᓐᖓᔭᖃᖅᓯᒪᔪᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᓂᒃ ᑭᐅᔾᔪᓂᒃ ᓄᓇᕘᑉ ᐊᕙᑎᓕᕆᓂᒻᒧᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᑐᑭᒧᐊᒍᑎᖏᒍᑦ ᑖᒃᑯᓄᖓ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᒧᑦ.

ᑖᓐᓇ ᐅᔭᕋᓐᓂᐊᕝᕕᒋᔭᐅᔪᒪᔪᖅ ᓴᓇᔭᐅᒪᓂᐊᒍᑦ ᓴᖅᑭᑕᐅᓯᒪᔪᖅ ᑕᒪᐃᓐᓂᒃ ᐊᑐᓇᐊᓕᓕᒫᖏᑦ ᒪᓕᒐᖅᑎᒍᑦ ᐊᑐᕋᓱᑦᑐᓂᖏᑦ ᐊᒻᒪᓗᑦᑕᐅᖅ ᓴᓂᖅᑯᑦᑎᑦᑐᑎᒃ, ᑭᓪᓕᖅᑲᖅᑎᑦᑎᑐᑎᒃ, ᐊᒻᒪᓗ, ᒥᑭᓛᒥᒃ ᐊᑦᑐᐃᓂᖅᑲᖅᑎᑦᑐᕆᑦ ᐊᔪᓐᖏᒃᑯᑎᒃ ᐱᐅᓐᖏᑦᑐᑦ ᐊᑦᑐᐃᓂᖏᑦ ᐊᖏᓕᒋᐊᕋᓱᑦᑐᕆᑦᑐ ᐃᓅᖃᑎᒌᑦ-ᕿᓇᐅᔭᓕᐅᕈᓯᑦ ᐱᕚᓪᓕᕈᑎᔅᓇᔾᔪᕆᓄᑦ. ᑖᒃᑯᐊ ᓴᕕᕋᔾᔅᓴᓕᕆᔨᒃᑯᑦ ᐃᓱᒪᒋᔭᔅᖃᖅᐳᑦ ᑖᓐᓇ ᓴᓇᔪᒪᓯᒪᔪᖓ ᐆᒃᑐᕋᑎᒋᔪᖕᒐᑦ ᐱᐅᔪᓂᒃ ᕿᓇᐅᔭᑎᒍᑦ ᐅᑎᖅᑎᑦᑎᓂᐊᓐᓂᖏᓐᓂᒃ ᑐᖅᑯᐃᓯᒪᔪᓄᑦ ᐃᑲᔪᐃᔾᔪᑎᖏᒍᓪᓗ ᐃᓄᖏᓄᑦ, ᓄᓇᕘᑉ ᒐᕙᒪᒃᑯᖏᓄᑦ, ᐃᓄᐃᓪᓗ ᑎᒥᖁᑎᖏᓐᓄᑦ. ᐃᓗᐃᑦᑑᔪᒥᒃ ᐊᐅᓚᑦᑎᓂᒻᒧᑦ ᖃᐅᔨᓴᐃᓂᒻᒧᓪᓗ ᐊᐅᓚᓂᔅᓴᒥᒃ ᓴᖅᕿᓯᒪᔪᒍᑦ ᑖᒃᑯᐊ ᐊᑐᓐᓂᐊᓐᓂᕋᖅᓯᒪᔭᕗᑦ ᐃᓗᐊᒍᑦ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᑦᑕ ᐃᑉᐱᕆᔭᐅᖁᑦᑐᕆᑦ. ᓴᕕᕋᔾᔅᓴᓕᕆᔨᒃᑯᑦ ᐊᑐᐃᓐᓇᕈᒪᔪᑦ ᑲᔪᓰᓐᓇᖅᑐᓂᒃ ᑐᓴᕋᐊᓐᓂᖅᑲᖅᑐᑎᒃ ᐱᖅᑲᖅᑕᐅᔪᓂᒃ ᐊᒻᒪᑦᑕᐅᖅ ᑭᒃᑯᓕᒫᓄᑦ ᐃᓱᒫᓗᒍᑎᕆᔭᐅᔪᑦ ᑭᐅᓇᓱᐊᖅᐸᓪᓗᓂᕆᑦ ᐊᐅᓚᓂᓕᒪᖓᒍᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᓕᐊᑦ.

ᐱᑕᖅᑲᕆᑦᑐᖅ ᐊᖏᔪᓂᒃ ᐱᐅᓐᖏᑦᑐᓂᒃ ᐊᑦᑐᐃᓐᓂᓐᓂᒃ ᐆᒪᔪᑦ ᐊᕙᑎᒻᒥᐅᑕᖏᓐᓄᑦ

ᐊᕙᑎᒥᒃ ᕿᒥᕐᕈᐃᓂᖏᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᔪᑦ ᑕᒪᒃᑯᐊ ᕿᒻᒪᒌᒧᑦ ᐊᑦᑐᐃᓂᐅᔪᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᓕᐊᖑᔪᒪᔫᑉ ᑕᒪᒃᑯᓄᖓ ᐊᓂᕆᔭᐅᔪᓄᑦ ᐊᕙᑎᐅᑉ ᐃᓗᓕᖕᒋᓄᑦ (VECs) ᐆᒪᔪᑦ ᐊᕙᑎᒻᒥᐅᑕᖕᒋᓄᑦ ᐊᖏᔫᔾᔪᖏᓂᖏᓂᒃ.

ᐱᐅᔪᑦ ᐃᓅᖃᑎᒌᑦ-ᕿᓇᐅᔭᓕᐅᕈᓯᓄᑦ ᐊᑦᑐᐃᓂᐅᔪᑦ

ᖃᐅᔨᓴᔭᐅᓂᖏᑦ ᐱᐅᔪᑦ ᐊᑦᑐᐃᓂᐅᒧᑦ ᐃᓅᖃᑎᒌᑦ-ᕿᓇᐅᔭᓕᐅᕈᓰᑦ ᐊᕙᑎᖏᓄᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᕗᑦ ᑕᕝᕗᓇ ᐊᖏᔪᒥᒃ ᐱᐅᔪᒥᒃ ᓴᖅᕿᓂᐊᓐᓂᖏᓐᓄᑦ ᓄᓇᓕᓐᓂᑦ ᐃᖅᑲᓇᐃᔭᖅᐸᑦᑐᓄᑦ ᐱᓕᒻᒪᓴᐃᔾᔪᑎᓄᓪᓗ ᓴᖅᕿᕚᓪᓕᐊᓂᒻᒧᑦ ᐊᖏᓪᓕᒪᓕᓪᓗ ᕿᓇᐅᔭᑖᓕᔭᐅᓂᐊᖅᑐᓂ ᓄᓇᕗᑉ ᒐᕙᒪᒃᑯᖏᓄᑦ. ᑖᓐᓇ ᐊᖏᕈᑎᓕᐊᕗᑦ, ᐅᑦᑐᒥ ᐋᓰᕈᑕᐅᔪᖅ ᐊᑯᓐᓂᐊᒍᑦ ᓴᕕᕋᔾᔅᓴᓕᕆᔨᒃᑯᑦ ᕿᑭᖅᑕᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᑕᑐ, ᓴᓇᓯᒪᓂᖅᑲᖅᑐᖅ ᑕᒪᒃᑯᐊ ᐱᕚᓪᓕᕈᑎᔅᓴᐃᑦ ᓴᖅᑭᑎᖅᑐᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᓕᐊᒧᑦ ᐃᓄᐃᑦ ᓄᓇᓕᖕᒋᓄᑦ ᓯᐊᒻᒪᖅᑲᓯᐅᑎᑐᑎᒃ ᐊᒻᒪᑦᑕᐅᖅ ᖃᐅᔨᖅᑖᕈᑉ ᐊᒡᒍᖅᓯᒪᓂᐊᓄᑦ ᓄᓇᕗᒥᑦ. ᐊᖏᔪᒥᒃ ᓴᓇᔪᖅᑲᓐᓂᖓ ᐱᕚᓪᓕᐊᔪᒥᒃ ᓄᓇᕗᑉ ᕿᓇᐅᔭᓕᐅᕈᑎᖏᓐᓂᒃ ᐃᑲᔪᐃᒐᔭᖅᑐᖅ ᓄᓇᕗᑉ ᕿᓇᐅᔭᓕᐅᕈᑎᖏᑕ ᐋᓴᐅᑎᒋᕚᑦᑕᖕᒋᓄᑦ. ᐅᓄᖅᓯᕆᐊᓇᒍᑎᒃ ᐅᔭᕋᓐᓂᐊᕝᕕᐅᓂᖓ ᓄᓇᕗᒥᑦ ᐃᑲᔪᐃᒐᔭᖅᑐᖅ ᓄᓇᕗᑉ ᐊᒡᒍᖅᓯᒪᓂᐊᒍᑦ ᕿᓇᐅᔭᓕᐅᕈᑎᖏᓐᓂᒃ.

ᐊᕐᖀᒍᒐᓴᑦ ᑕᑯᓗᒋᑦ, ᐊᖅᑯᑖ, ᓄᓇᓯᐅᑎᑯᑖᓪᓗ ᐊᖅᑯᑖ, ᑐᓚᑦᑕᕝᕕᑦ ᐅᓯᓚᖅᓯᐃᕝᕚᓪᓗ ᓴᓇᔭᐅᔪᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᒻᒧᑦ ᓴᖅᑮᒐᔭᖅᑐᑦ ᒪᓗᐃᕈᑎᓗᓂᒋᑦ ᐊᓯᖏᑦ ᓴᕕᕋᔭᔅᓴᐃᑦ ᓇᓂᔭᐅᓯᒪᔪᑦ ᐊᑐᐃᓐᓇᐅᓕᓪᓗᑎᒃ ᕿᑭᖅᑖᓗᒃ ᐅᐊᖕᓇᖕᒐᑕ ᓄᓴᖏᒍᑦ ᐊᒻᒪᑦᑕᐅᖅ ᐅᐸᒍᓐᓇᓐᓂᖏᑦ ᐃᓄᐃᑦ ᐳᓚᕋᑎᓪᓗ ᐃᓚᖏᓄᑦ ᓄᓇᓄᑦ ᐊᑐᐃᓐᓇᐅᓂᖅᓴᐅᓗᑎᒃ. ᑖᒃᑯᐊ ᒪᕐᕉᒃ ᐅᒥᐊᔾᔪᐊᓄᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑑᒃ ᒪᓗᐃᖅᓯᒐᔭᕆᕚᑦ ᐊᓯᖏᓄᑦ ᕿᓇᐅᔭᓚᐅᕋᓱᐊᕈᑎᓄᑦ ᒪᓗᐃᕈᑎᔪᓂᒃ ᐊᒻᒪᑦᑕᐅᖅ ᐃᖅᑲᖓᑕ ᐃᑎᓂᖓᓄᑦ ᖃᐅᔨᓴᕈᑎᒋᓯᒪᔭᖏᑦ ᐃᑲᔪᐃᖃᓯᐅᑎᒐᔭᓪᓗᑎᒃ ᐅᒥᐊᔾᔪᐊᓂᒃ ᐊᖅᑰᓴᖅᐸᑦᑐᓄᑦ ᐅᐸᒍᑎᓇᓱᒃᑲᑎᒃ ᓴᓂᕋᔭᒻᒧᑦ ᐃᒡᓗᓕᒻᒧᓪᓗ.

SECTION 9.0 - ᑎᑎᕋᖅᑕᐅᓯᒪᓂᖓ ᐊᕙᑎᒧᑦ ᐊᑦᑐᐃᓂᐊᓐᓂᕋᐃᔪᓄᑦ ᐅᓂᒃᑳᑉ

ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ ᐃᓚᒋᔭᐅᖃᑕᐅᕚᖅ ᐊᕙᑎᒧᑦ ᕿᒥᕐᕈᐃᔾᔪᑎᖏᑕ ᐊᐅᓚᓂᖏᓐᓄᑦ ᐊᖏᕈᑕᐅᓯᒪᔪᑦ ᓄᓇᕗᑉ ᓄᓇᑖᕈᑎᒧᑦ ᐊᖏᕈᑎᓪᓚᓇᐊᒍᑦ. ᖃᔅᓯᒐᓚᐅᑦ ᒪᓕᒐᖅᑎᒍᑦ ᐊᑐᓇᐊᓕᖏᑦ ᑐᕌᖓᔭᖅᑲᖅᑐᑦ ᓴᓇᔭᐅᔪᒪᔪᒧᑦ, ᐃᓚᖅᑲᖅᑐᑎᒃ ᒪᓕᑦᑎᐊᓐᓂᖏᑦ ᕿᑭᖅᑖᓗᒃ ᐅᐊᖕᓇᖕᒐᑕ ᓄᓇᒧᑦ ᐊᑐᖅᑕᐅᓂᖏᓄᑦ ᐸᓐᓇᐅᑖᑕ, ᐊᕙᑎᒥᒃ ᐊᑦᑐᐃᓂᓪᓗ ᕿᒥᕐᕈᐃᓂᖏᑦ ᓄᓇᕗᑉ ᐊᕙᑎᓕᕆᓂᓪᓗᑦ ᑲᑎᒪᔩᖏᓄᑦ ᐊᒻᒪᑦᑕᐅᖅ ᐊᕙᑎᒧᑦ ᕿᒥᕐᕈᐃᓂᖅ ᑲᓇᑕᐅᑉ ᒐᕙᒪᑐᖅᑲᖏᑕ ᐱᖅᑯᔭᖕᒐᑕ ᐊᕚᒍᑦ *ᑲᓇᑕᒥ ᐃᖕᕆᕐᕋᔪᓚᕆᓂᓪᒧᑦ* ᐱᔅᑯᔭᖓ. ᓄᓇᕗᑉ ᐊᕙᑎᓕᕆᔨᖏᑦ ᑐᑭᒧᐊᓇᑎᑦᑎᔩᑦ ᕿᒥᕐᕈᐃᓂᐅᔪᓂᒃ, ᐊᒻᒪᑦᑕᐅᖅ ᑭᒃᑯᓕᒫᓄᑦ ᒪᓗᐃᖓᔪᒥᒃ ᕿᒥᕐᕈᓂᓪᒥᒃ ᓄᓇᐅᑉ ᐊᑐᖅᑕᐅᓂᖏᓄᑦ ᐸᓐᓇᐅᑎᖓ ᐊᓯᔾᔨᖅᑕᐅᓂᖓᓄᑦ ᑲᔪᓯᑯᔭᐅᒍᓂ ᐅᔭᕋᓐᓂᐊᕝᕕᓴᕆᓂᔭᖓ. ᖁᒃᑲᓐᓂᐊᒍᑦ, ᐅᔭᕋᓐᓂᐊᕝᕕᓴᓚᐅᕈᒪᔪᑦ ᑕᒪᐃᓐᓂᒃ ᐊᑐᖅᑯᔭᐅᔪᓂᒃ ᓇᓪᓚᖅᓯᓂᐊᖅᑐᑦ ᒐᕙᒪᑐᖅᑲᒃᑯᑦ ᓄᓇᕗᒻᒧ ᑎᒥᖅᑯᑎᖏᓐᓂᒃ ᐃᓚᖏᑦ ᐱᓕᕆᔭᔅᓴᖏᑦ ᐱᔪᓐᓇᐅᑎᖅᑲᖅᑯᓗᒋᑦ ᒪᓕᒋᐊᖅᑲᖅᑎᑕᐅᓪᓗᑎᒃ ᑕᒪᐃᓐᓂᒃ ᐊᑐᖅᑐᓂᒃ ᐱᔅᑯᔭᓂᒃ ᒪᓕᒐᓂᒃ ᒪᓕᒐᕋᓖᓂᓪᓗ.

ᑭᖑᓪᓕᖅᐹᖅ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ ᒪᓕᒃᓯᒪᔪᖅ ᐊᑐᖅᑯᔭᖏᓐᓄᑦ ᓄᓇᕗᑉ ᐊᕙᑎᓕᕆᓂᒻᒧᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᑐᑭᒧᐊᒍᑎᑦ ᐸᓐᓇᐃᓂᖏᓐᓄᑦ ᑖᓯᒥᖓ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᑦᑕ ᑐᓂᔭᐅᓚᐅᖅᑐᑎᒃ ᓄᕝᕙᐱᓇ 16, 2009-ᒥ ᑭᖑᓂᐊᒍᓪᓗ ᐋᖅᑭᒋᐊᖅᑕᐅᓪᓗᓂ ᓄᕝᕙᐱᓇ 3, 2010-ᒥ ᑭᐅᓇᓱᐊᖅᓯᒪᓪᓗᓂᓗ ᐅᖃᖅᑐᓄᑦ ᐃᓱᒪᓕᐅᕈᑎᔅᓴᓄᑦ ᓴᖅᑭᑕᐅᓂᑯᑦ ᓯᕗᓪᓕᖅᐹᒥ ᕿᒥᕐᕈᔭᐅᓂᖓᑕ ᐅᓪᓗᖅᑯᑎᖏᒍᑦ. ᑖᓐᓇ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ ᐃᓗᓕᖅᑲᖅᑐᖅ ᑖᒃᑯᓂᖓᑦᑕᐃᓐᓇᖅ ᖁᓕᓂᒃ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ ᐃᓗᐊᓃᓐᓂᑯᑦ ᓯᕗᓪᓕᖅᐹᖅ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᑦᑎᒍᑦ, ᐃᒪᐃᑦᑐᔪᑦ:

ᑎᑎᕋᖅᓯᒪᓂᐊ 1: ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᕗᑦ ᑎᑎᕋᖅᓯᒪᓂᓪᓗᐊᖏᑦ - ᑕᑯᔅᓴᐅᑎᑦᑎᕗᖅ ᓲᓪᓗ ᖁᑦᑎᓂᑦ ᕿᒥᕐᕈᓪᓗᒍ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᓇᔭᕗᑦ, ᐃᓚᖅᑲᖅᑐᑎᒃ ᓇᐃᓚᒋᐊᖅᓯᒪᔪᑦ ᐅᓂᒃᑳᖏᑦ ᐅᔭᕋᓐᓂᐊᖅᑕᐅᔪᒫᑉ, ᓇᑭᓐᓖᓐᓂᖓ ᐊᑐᕈᒪᓂᖏᓪᓗ ᑖᓯᒥᖓ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᒧᑦ, ᓄᓇᐅᑉ ᐃᓚᖅᑯᓯᖏᓄᑦ ᖃᐅᔨᓴᕐᓂᑦ, ᐊᑦᑐᐃᓂᓪᒧᑦ ᕿᒥᕐᕈᐃᔾᔪᑎᖏᑦ ᐊᒻᒪ ᓴᖅᑭᑎᖅᑕᖏᑦ, ᐃᓚᒋᓪᓗᒋᑦ ᐊᐅᓚᑦᑎᓂᓪᒧᑦ ᒥᑭᓕᓴᓂᓪᒧᓪᓗ ᐸᓐᓇᐅᑎᖏᑦ ᐊᑐᓐᓂᐊᓐᓂᕋᖅᑕᒥᓂᒃ ᓇᓪᓚᖅᓯᑯᓪᓗᒍ ᐃᓗᐊᒍᑦ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓕᐊᑦᑕ.

ᑎᑎᕋᖅᓯᒪᓂᐊ 2: ᑐᓴᕋᓱᐊᓐᓂᖅ, ᒪᓕᒐᖅᑎᒍᑦ ᓇᒦᓐᓂᖓ, ᕿᒥᕐᕈᐃᓂᓪᒧᓪᓗ ᖃᐅᔨᓴᕈᑕᐅᓲᑦ - ᑕᑯᔅᓴᕈᐃᔪᖅ ᓴᖅᑭᑦᑐᓄᑦ ᐊᒥᓱᑦᓚᓇᓐᓄᑦ ᑐᓴᕋᓱᐊᕈᑎᓄᑦ, ᐅᓂᒃᑳᖅᑲᖅᑐᖅ ᒪᓕᒐᖅᑎᒍᑦ ᒪᓕᒋᐊᓕᖕᒋᓐᓂᒃ, ᓴᖅᑮᓪᓗᑎᓪᓗ ᐊᑐᖅᑕᐅᓂᑰᔪᓂᒃ ᖃᐅᔨᓇᓱᐊᖅᓱᑎᒃ ᐊᑦᑐᐃᓂᐅᔫᑉ ᐊᑦᑎᒋᓂᖓᓐᓂᒃ ᐆᒪᔪᑦ ᐊᕙᑎᖏᓄᑦ ᐃᓅᖃᑎᒌᑦ-ᕿᓇᐅᔭᓕᐅᕈᑎᖏᑕ ᐃᓗᓕᓴᖏᓄᑦ.

ᑎᑎᕋᖅᓯᒪᓂᐊ 3: ᓴᓇᔭᐅᔪᒪᔫᑉ ᐅᓂᒃᑳᖏᑦ - ᐅᓂᒃᑲᓚᒃ ᐊᑐᖅᑕᐅᔪᒪᔪᒥᒃ ᓴᓇᔭᔅᓴᐅᔪᒥᒃ, ᐃᓚᖅᑲᖅᑐᑎᒃ ᓇᓚᐅᑦᑖᖓᖏᑦ ᐊᕐᖀᒍᖅᑐᔫᑎᔅᓴᑦ, ᐱᔅᑯᑎᔾᔪᐊᑦ ᓯᓇᒃᑯᑖᖏᓪᓗ ᓴᓇᔭᐅᕙᓪᓕᐊᓂᖏᓄᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᔅᓴᒥᑦ, ᓴᓇᔭᐅᓂᔅᓴᖏᓄᑦ, ᐊᐅᓚᓂᖓᓄᑦ,

ᒪᑐᔾᐅᓂᕐᓴᖓ ᐊᒻᒪᓗ ᑭᖑᓂᐊᒍᑦ/ᒪᑐᔾᐅᓂᐊᑕ ᐱᓕᕆᔾᔪᓯᖏᑦ, ᐃᖅᑲᓇᐃᔾᔪᑏᑦ ᐱᓕᕆᔪᓯᑦ ᐅᓄᓐᓂᖏᑦ, ᐊᒻᒪᓗ ᐊᓯᔪᖏᑦ ᐃᓱᒪᒋᔾᐅᓂᑰᔪᑦ ᑖᓯᒨᖓ ᐅᔾᕋᓐᓂᐊᙯᓯᒨᑦ ᐃᓗᐊᒍᑦᓗ ᓄᓇᖏᑕ ᐅᔾᕋᓐᓂᐊᙯᐅᔪᒪᔫᑉ.

ᑎᑎᕋᖅᓯᒪᓂᐊ 4: ᐃᓅᓐᓄᑦ ᐊᑦᑐᐃᓂᕆᔾᔪᖏᑦ - ᓴᖅᑮᔪᑦ ᑕᑯᓯᔨᖅᓯᒪᔪᓂᒃ ᐃᓅᖃᑎᒌᑦ-ᑮᓇᐅᔾᔭᐅᕈᓯᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᓄᑦ ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓛᓐᓂᓪᓗ ᐊᑦᑐᐃᓂᐅᔪᓂᒃ ᓄᓇᓖᓐᓄᑦ ᖃᓂᓯᖅᑐᓄᑦ ᐅᔾᕋᓐᓂᐊᙯᓚᐊᖑᔪᒪᔪᒍᑦ ᐃᓄᖁᑎᒋᔾᔪᖏᓄᑦᓗ.

ᑎᑎᕋᖅᓯᒪᓂᐊ 5: ᓯᓚᐃᓐᓇᒻᒧᑦ ᐊᑦᑐᐃᓂᖏᑦ - ᐃᓚᖃᐅᖅᑐᖅ ᓴᖅᑭᓯᒪᔪᓂᒃ ᓇᕿᙱᓐᓂᖏᓄᑦ ᓯᓚᐅᑉ ᖃᐅᔨᓴᖅᑕᐅᔾᔪᑎᖏᑦ ᐊᑐᖅᑕᐅᔪᑦ, ᕿᒥᕈᐃᓂᖏᑦ ᐅᔾᕋᓐᓂᐊᙯᓴᐅᑉ ᓯᓚᐃᓐᓇᒻᒧᑦ ᐳᔪᓪᓚᒥᒃ ᐊᓂᐊᑎᑕᖏᑦ ᐅᖅᑯᓯᕚᓪᓚᕈᑎᐅᔪᑦ ᑕᑯᓪᓗᒍ ᓄᓇᕘᑉ ᐊᓂᐊᔾᔪᖏᑦ ᐊᕿᒍᓪᓗᐊᒧᑦ, ᑲᓇᑕᒧᑦ ᓄᓇᔾᔪᐊᒧᓪᓗ, ᖃᓄᐃᑦᑐᓂᓪᓗ ᐊᑦᑐᐃᑐᐃᓐᓇᕆᐊᖃᒻᒪᖔ ᓯᓚᖓᒍᑦ ᓂᐱᖃᓐᓂᖏᒍᓪᓗ.

ᑎᑎᕋᖅᓯᒪᓂᐊ 6: ᓄᓇᐅᑉ ᐊᕙᑎᖏᑦ - ᐅᓂᒃᑳᖃᖅᑐᖅ ᓴᖅᑭᓯᒪᔪᓂᒃ ᓇᕿᙱᓐᓂᖏᓐᓄᑦ ᑐᙵᕕᓴᕆᔾᔭᐅᔪᑦ ᖃᐅᔨᓴᕈᑎᑦ ᐊᒻᒪᑦᑕᐅ ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓖᑦ ᐊᑦᑐᐃᓂᐅᔪᑦ ᐅᔾᕋᓐᓂᐊᙯᓴᒧᑦ ᓄᓇᐅᑉ ᐊᕙᑎᖏᓐᓄᑦ, ᐃᓚᖃᖅᑰᑎᒃ ᐃᑉᐱᓐᓂᖅᓴᕋᐃᑦᑐᑦ ᓄᓇᐃᑦ, ᐱᕈᖅᑐᑦ, ᑎᖕᒥᐊᑦ, ᑐᒃᑐᐃᓪᓗ.

ᑎᑎᕋᖅᓯᒪᓂᐊ 7: ᓄᓇᐅᑉ ᐃᒪᖏᑕ ᐊᕙᑎᖏᑦ - ᐅᓂᒃᑳᓖᑦ ᓴᖅᑭᑕᐅᔪᓄᑦ ᓇᕿᙱᓐᓂᖏᓄᑦ ᑐᙵᕕᒋᔾᐅᒧᑦ ᖃᐅᔨᓴᐱᑦ ᑕᑯᓯᔨᑐᐃᓐᓇᕆᐊᓖᓪᓗ ᐊᑦᑐᐃᓂᖏᑦ ᓄᓇᐅᑉ ᐃᒪᖏᑕ ᐊᕙᑎᖏᓄᑦ, ᐃᓚᖃᖅᑰᑎᒃ ᑰᓐᓂᖏᑕ ᐃᒥᑦᑎᐊᕙᐅᓂᖓᑕᓗ ᓱᕿᑦᑕᐃᓚᒪᓂᖏᓄᑦ, ᐊᑦᑐᐃᓂᖏᓪᓗ ᐃᖃᓗᓐᓂᒃ ᐃᖃᓗᐃᓪᓗ ᓇᔪᖅᑕᖏᓐᓄᑦ.

ᑎᑎᕋᖅᓯᒪᓂᐊ 8: ᑕᕆᐅᑉ ᐊᕙᑎᖓ - ᑑᓐᖓᔾᔭᖃᖅᑐᖅ ᓴᖅᑭᑕᐅᓯᒪᔪᓂᒃ ᖃᐅᔨᓴᕈᑎᖏᓐᓄᑦ ᑐᓐᖓᕕᒋᔾᐅᓇᓯᑦᑐᓄᑦ ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓖᓪᓗ ᐊᑦᑐᐃᓂᐅᔪᑦ ᑕᕆᐅᑉ ᐊᕙᑎᖏᓐᓄᑦ, ᐃᓚᖃᖅᑰᑎᒃ ᓯᑯᒧᑦ ᑐᕙᒧᓪᓗ, ᑕᕆᐅᒧᑦ ᐃᓱᓐᓂᐊᓄᓪᓗ, ᐃᖃᓗᖏᓄᑦ ᐳᐃᔾᔨᖏᓄᓪᓗ.

ᑎᑎᕋᖅᓯᒪᓂᐊ 9: ᑲᑐᖅᓱᖅᑰᖏᑦ ᐊᑦᑐᐃᓂᕆᔾᔪᖏᑦ ᐊᓯᖏᓪᓗ ᕿᒥᕐᕈᐃᓂᕖᑦ – ᕿᒥᕐᕈᐃᔪᑦ ᑲᑎᖅᓱᖅᓯᒪᔪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ ᑖᓯᒨᖓ ᐅᔾᕋᓐᓂᐊᙯᓴᐅᔪᒧᑦ ᐃᓱᒪᒋᔾᔭᖅᓯᒪᖠᑦ ᐊᓂᒍᖅᓯᒪᕚᕌᑦᑐᓄᑦ, ᐅᑦᓗᒥ ᐊᑐᖅᑕᐅᔪᓄᑦ, ᓯᕗᓂᓯᒥᓪᓗ ᑕᑯᓐᓇᕈᕈᓐᓇᖅᑐᑦ ᓴᓇᔾᔭᐅᔪᒪᓯᒪᔪᑦ ᐱᓕᕆᓂᐅᔪᓪᓗ ᐊᒡᒍᖅᓯᒪᓂᐊᒍᑦ ᐊᑦᑐᐃᖃᓯᐅᑎᔪᓐᓇᖅᑐᖅ ᑕᒪᒃᑯᓂᖓ ᐊᓐᓂᕆᔾᔭᐅᔪᑦ ᐃᓗᓕᕆᔾᔪᕐᓂᒃ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑦ ᐃᓗᐊᒍᑦ ᐊᕙᑎᒧᑦ ᐅᓂᒃᑳᓚᐊᑦᑎᒍᑦ. ᐊᓯᖏᑦ ᕿᒥᕐᕈᐃᓃᑦ ᐃᓚᖅᑲᖅᓯᒪᕗᑦ ᕿᒥᕐᕈᔾᔭᐅᓃᑦ ᓄᓇᖏᒍᑦ ᐱᕈᓗᕝᕙᐅᑐᐃᓐᓇᕆᐊᓖᑦ, ᐱᕈᓗᐊᕿᔪᖃᕈᓂ ᐊᑦᑐᐃᓂᕆᐊᖃᖅᑕᖏᑦ, ᖃᓄᑎᒋᓗ ᓴᖅᑭᒃᑲᔾᔪᓐᓂᖏᑕ ᐱᔪᒥᓇᓐᓂᖏᓐᓄᑦ, ᐊᑦᑐᐃᓂᖏᓐᓄᑦ ᐊᕙᑎᒧᑦ ᐅᔾᕋᓐᓂᐊᙯᓚᐊᖑᔪᒪᔫᑉ (ᓱᓪᓗ, ᓯᓚᕈᔪᒻᒧᑦ, ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓᓱ, ᐊᑦᑐᐃᓂᖏᓪᓗ ᓄᓇᕗᑉ ᓯᓚᑎᓛᖏᓐᓄᑦ (ᓄᓇᕗᑉ ᓯᓚᑖᓄᑦ ᐊᑦᑐᐃᔪᑦ).

ᑎᑎᕋᖅᓯᒪᓂᐊ 10: EHS-ᑯᑦ ᐊᐅᓚᑦᑎᔾᔪᑎᖓ ᐱᓕᕆᕐᓄᑦ - ᐅᓂᒃᑳᖃᖅᑕᖅ ᓴᕕᕋᔾᔪᓯᓕᕆᕝᑯᑦ ᐃᓗᐃᑦᑑᔪᒥᒃ ᐊᐅᓚᑦᑎᓂᒻᒧᑦ ᑲᒪᒋᔾᔪᑎᓯᖏᓐᓂᒃ ᐊᑦᑐᐊᔪᓄᑦᓗ ᐊᐅᓚᑦᑎᓂᒻᒧᑦ ᐸᓐᓇᐅᑎᒋᔭᖏᓐᓂᒃ ᑎᑎᕋᖅᑕᐅᓗᑎᒃ ᐊᑐᓕᖅᑕᐅᒍᑎᒃ ᑭᓪᓕᖅᑲᖅᑎᑦᑎᒐᔭᖅᑐᑦ ᒥᑭᓕᕆᑎᑦᑎᓗᑎᓪᓗ ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᓐᓄᑦ ᐱᐅᓐᖏᑦᑐᓄᑦ ᐊᑦᑐᐃᓐᓄᑦ ᐱᐅᓯᒋᐊᓪᓗᕆᓪᓗ ᐃᑲᔫᑎᓯᖏᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᓐᓄᑦ, ᑳᓐᑐᕌᑦᑎᖏᓄᑦ, ᓄᓇᕗᒥᐅᑕᐅᔪᓄᑦ, ᐊᒻᒪᑦᑕᐅᖅ ᓄᓇᕗᑉ ᓄᓇᖏᑕ ᐃᓕᖅᑯᓯᕆᔾᔪᖏᓄᑦ.

ᕿᒥᕐᕈᔭᖕᖏᖅ 1-12.1 ᐅᓂᒃᑳᖅᑎᑦ ᕿᒪᒃᑯᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᖅᑎᓐᓄᑦ

ᓯᓚᐃᓐᓇᐅᑉ ᐊᕙᑎᖓ					
VEC	ᐊᑐᕈᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑦ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔾᖕᑦ	ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᓯᓚᐅᑉ ᐊᓯᔾᔨᓂᖓ	ᐳᔪᓪᓗᐃᑦ ᐅᖅᑰᓯᑎᑦᑎᔾᑐᑦ (GHG)	• ᕿᑯᕚᓯᒋᐊᖅᑐᖅ ᐳᔪᓪᓗᒃ GHG ᐊᓂᐊᔾᐅᔪᑦ • ᓯᓚᐅᑉ ᐊᓯᔾᔨᓂᖓ	• ᐅᑭᐅᖅᑕᖅᑐᒧᑦ ᓴᓇᓯᒪᔪᖅ ᐃᒐᓯᐅᑎ • ᓄᓇᓯᐅᑎᑯᑖᑯ ᐅᓯᑲᖅᑕᐃᓂᖅ ᓴᕕᕋᔾᖕᓯᒃ	• ᕿᑯᕚᓯᒋᐊᖅᑐᖅ ᐳᔪᓪᓗᒃ GHG ᐊᓂᐊᔾᐅᔪᑦ	ᐊᖏᔫᓐᖏᑦᑐᖅ
ᓯᓚᖓ	ᓯᓚᑦᑎᐊᕙᐅᓂᖓ	• ᐅᓄᖅᓯᒋᐊᓐᓂᖏᑦ ᑕᒪᒃᑯᐊ: o ᑲᑎᑕᑦ ᐳᒃᑕᔪᑦ ᐃᑭᐊᖓᒍᑦ (TSP), ᐆᓐᓇᖅᑐᖅ ᐳᔪᖅ (SO_2), ᐃᐱᓂᐊᓐᓇᖅᑐᖅ ᐳᔪᖅ (NO_2), ᐊᓂᖅᓵᓐᓇᖏᑦᑐᖅ ᐳᔪᖅ (CO). • ᐊᖏᓂᖅᓴᒥᒃ ᑲᑉᐸᓪᓚᐊᔪᑦ ᒪᒃᑯᐊ: o ᓯᐅᕋᐅᑉ ᐳᔪᖓ, ᐱᑕᕐᑲᑐᐃᓐᓇᓇᐊᓪᓚᒃ ᓄᖑᓴᐃᔾᑦᑐᒥᒃ (PAI).	• ᐱᐅᓛᖑᔪᓂᒃ ᐊᐅᓚᑦᑎᓂᒨᑦ ᐊᑐᖅᑕᐅᓰᓂᒃ ᐊᑐᖅᑎᑦᑎᓗᑕ ᓯᓚᐃᓐᓇᒧᑦ ᐳᔪᓪᓗᒦᒃ ᐊᓂᐊᕐᑯᓇᒋᑦ • ᐊᑐᓐᓂᕗᑦ ᐳᔪᓪᓗᓕᐅᓐᖏᑦᑐᖅ ᐅᑭᐅᖅᑕᖅᑐᒧ ᐃᒐᓯᐅᑎ • ᐊᖅᑯᑎᒃᑯᑦ ᓱᒃᑲᓴᕈᓐᓇᓐᓂᖏᑕ ᐃᓱᖏᑦ • ᓴᕕᕋᔾᖕᓗᑦ ᓯᖃᓕᓇᕚᑦ ᐃᒡᓗᕐᑯᑎᖏᑦ ᓯᓚᔫᖓᖏᖏᑦᑐᑦ, ᓯᓚᒥᒃ ᒥᓪᓗᐊᖅᑐ ᐱᓕᕆᔾᔪᑎᖏᓪᓗ ᒥᓪᓗᐊᕈᑎᕐᑲᖕᓗᑎᒃ ᐳᔪᖏᓐᓄᑦ • ᐳᔫᖅᑎᑦᑎᑦᑕᐃᓕᒫᔪᑎᒥᒃ ᒪᓴᓪᓗᒍ ᐊᖅᑯᑖ ᓄᓇᓯᐅᑎᓄᑦ ᐊᑐᖅᑕᐅᓗᐊᓐᓂᖏᑦ ᐊᒻᒪᓗ ᑐᖅᑯᐃᕝᕕᒋᔭᕗᑦ • ᓂᐅᕕᕋᓐᓂᒻᒧᑦ ᐊᑐᐊᒐᖅ ᐊᓂᐊᔾᖏᓄᑦ ᐳᔪᓐᓄᑦ ᐱᕐᑯᑎᒋᔭᒥᓄᑦ (ᐃᑯᐊᓪᓚᐅᑎ, ᐆᒪᖅᑯᑎᖏᑦ, ᓄᓇᓯᐅᑎᖏᑦ) • ᐃᒋᑕᐅᔪᑦ ᐊᕕᑦᑐᓐᓂᖏᑦ (ᐃᑯᐊᓪᒪᐅᑎ) • ᐊᔪᓐᓇᖏᑦᑕᕌᖓ, ᑐᐊᐸᓂᒃ ᐊᑐᓪᓗᑕ ᐊᖅᑯᓯᐅᓐᓂᒧᑦ • ᓴᓇᔾᔪᑎᓕᒫᖏᑦ ᓄᓇᓯᐅᑎᖏᓪᓗ ᑲᒪᒋᔭᐅᓂᓐᓇᓪᓗᑎᒃ	• ᐅᓄᖅᓯᒋᐊᓐᓂᖏᑦ ᑕᒪᒃᑯᐊ: o ᑲᑎᑕᑦ ᐳᒃᑕᔪᑦ ᐃᑭᐊᖓᒍᑦ (TSP), ᐆᓐᓇᖅᑐᖅ ᐳᔪᖅ (SO_2), ᐃᐱᓂᐊᓐᓇᖅᑐᖅ ᐳᔪᖅ (NO_2), ᐊᓂᖅᓵᓐᓇᖏᑦᑐᖅ ᐳᔪᖅ (CO). • ᐊᖏᓂᖅᓴᒥᒃ ᑲᑉᐸᓪᓚᐊᔪᑦ ᒪᒃᑯᐊ: o ᓯᐅᕋᐅᑉ ᐳᔪᖓ, ᐱᑕᕐᑲᑐᐃᓐᓇᓇ ᐊᓪᓚᒃ ᓄᖑᓴᐃᔾᑦᑐᒥᒃ (PAI).	ᐊᖏᔫᓐᖏᑦᑐᖅ

ᕿᒥᕐᕈᔭᐢᓴᖅ 1-12.1 ᐅᓂᒃᑳᖏᑦ ᕿᒻᒪᑰᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᖏᓐᓄᑦ

ᓱᓚᐃᓐᓇᐅᑉ ᐊᕙᑎᖓ					
VEC	ᐊᑐᕌᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑮᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑫ(ᓅᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔾᔪᑏᑦ	ᕿᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓅᑦ)	ᐊᑦᑎᒥᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᓂᐱᕐᑲᓂᖅ ᐃᑦᑐᑑᖅᑐᓪᓗ	ᓂᐱᕐᑲᓂᖅ ᐃᑦᑐᑑᖅᑐᓪᓗ ᖁᕝᕙᓯᓂᖏᑦ	• ᐅᔾᔨᕆᔭᖏᒍᑦ ᐃᐸᓐᓂᖅᑐᑦ ᓂᔾᔭᑏᑦ	• ᓂᐅᕕᕋᓂᒻᒧᑦ ᐊᑐᐊᒐᖅ ᓂᐱᕐᑲᓂᖏᓄᑦ ᓴᓇᔾᔭᑎᓕᒫᖏᑦ ᓄᓇᓯᐅᑎᖏᓪᓗ • ᑐᑯᑦᕕᓂᒃ ᐊᑐᓐᓂᖅ– ᑲᒪᒋᔭᐅᖏᓐᓇᓂᖏᑦ ᓄᓇᓯᐅᑎᑦ ᐊᐅᓚᑎᓪᓗ	• ᐅᔾᔨᕆᔭᖏᒍᑦ ᐃᐸᓐᓂᖅᑐᑦ ᓂᔾᔭᑏᑦ	ᐊᖏᔫᓐᖏᑦᑐᖅ
ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖏᑦ, ᐃᔾᔪᑦ ᖁᐊᖑᐃᓐᓇᖅᑐᓪᓗ	ᓱᕋᔅᓴᐃᑦᑐᑦ ᓄᓇᐃᑦ	• ᓄᓇᖓ ᓱᕈᖅᑎᖅᑕᐅᔪᖅ • ᓄᓇᖓᑕ ᐃᓕᖅᑯᓯᖏ ᐊᓯᔾᔨᖅᑕᐅᓂᖏᑦ • ᓄᓇᐅᑉ ᐊᕿᓪᓕᓂᖓ ᓄᖑᓴᔭᓂᖏᓪᓗ • ᐊᐅᒃᐸᓪᓕᐊᓂᖓᓄ ᐊᕿᓪᓕᔪᖅ ᑲᑕᓐᓃᓪᓗ • ᓄᓇᖓ ᓈᑦᑕᖅᑐᖅ	• ᐃᓂᕐᑲᖅᑎᑕᐅᓂᖏᑦ ᐃᒡᓗᕐᑯᑎᔅᓴᑦ ᐊᖅᑯᑏᓪᓗ ᐃᓂᖏᑦ ᑐᑭᒧᐊᖓᓂᖏᓪᓗ ᑲᒪᒋᔭᐅᓂᖏᒍᑦ • ᑐᓐᖓᕕᖏᑦ ᓴᓇᓯᒪᓗᑎᒃ ᓄᖏᑕ ᐃᓕᖅᑯᓯᖏᓄᑦ • ᓴᓇᔭᐅᒪᓂᖏᒍᑦ ᑰᓐᓄᑦ ᐃᑳᕈᑏᑦ ᐃᒪᐅᔾᔨᒍᑎᒃ ᑰᒃᑕᖓᓘᓐᓃᑦ ᖃᒥᑦᑎᒍᓂ ᑰᐸ ᓯᓇᔾᔪᖏᓐᓂᒃ • ᑰᒍᓐᓇᖅᑎᓪᓗᒍ ᓄᓇᖓ ᐃᒪᓱᖅᑲᖁᓇᒍ ᓇᐅᒃᑯᓕᒫᖅ	• ᕿᒻᒪᒃᑯᒥᒃ ᐊᑦᑐᐃᓂᖅᑳᖏᑦᑐᖅ (ᓱᕋᑎᕆᔪᑦ ᐃᐸᓐᓂᖅᓴᕋᐃᑦᑐ ᓄᓇᖏᒥᓂᒃ) ᑭᖑᓂᐊᒍᑦ ᒥᑭᓕᕐᔪᑎᓕᕆᓂᐅᑉ	ᐊᖏᔫᓐᖏᑦᑐᖅ
ᐱᕈᖅᑐᑦ	ᐱᕈᖅᑐᖏᑦ	• ᐱᕈᖅᑐᑦ ᓄᖑᓐᓂᖏᑦ ᐊᔾᔨᒌᖏᓐᓂᖏᑕᓗ ᐊᓯᐅᓂᖏᑦ	• ᑭᒡᓕᕐᑲᖅᑎᓪᓗᒍ ᐊᑐᓐᓂᐊᖅᑕᑦᑕ ᓄᓇᒃᑰᖓᓂᖓ • ᑭᒡᓕᕐᑲᖅᑎᓪᓗᒋᑦ ᓄᓇᓯᐅᑎᑦ ᐃᓯᕈᓐᓇᖅᑕᖏᑦ • ᑲᔪᔫᓐᓇᖅᑐᒥᒃ ᓄᓇᖓ ᓴᓇᔭᐅᓗᓂ/ᒪᑐᔭᐅᓂᖕᖓ	• ᐱᕈᖅᑐᑦ ᑐᕐᑯᕋᓂᖏᑦ ᐲᖅᑕᐅᔪᓪᓗ ᓄᓇᖏᒍᑦ ᐅᔭᕋᓂᐊᕝᕕᐅᑉ (PDA)	ᐊᖏᔫᓐᖏᑦᑐᖅ

ᕿᒥᕐᕈᔭᖅᓴᖅ 1-12.1 ᐅᓂᒃᑳᖅᑎᑦ ᕿᒪᒎᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᖅᑎᓐᓄᑦ

ᓄᓇᐅᑉ ᐊᕙᑎᖓ					
ᐊᓐᓂᕆᔭᖅ ᓄᓇᐅᑉ ᐃᓚᖅᑯᓯᖓ ᐊᓐᓂᕆᔭᖅ	ᐊᑐᓛᑦ ᓇᓗᓇᐃᕈᑕ (ᐅᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑦ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔭᒃᓴᑦ	ᕿᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᑎᕆᐊᑦ	ᑭᒑᕕᐊᔾᔪᑦ ᑲᖑᐃᑦ ᒥᑏᑦ ᕿᖓᓖᑦᑐ ᖃᖅᓴᐅᑦ ᐊᒃᐸᐃᑦ ᕿᓂᖅᑖᖅ ᖁᐸᓄᐊᑦ	• ᑎᕆᐊ ᐃᕙᕝᕕᖏᑦ ᓴᕋᑦᑎᖅᑕᑦ • ᓇᔪᖓᖏᑦ ᐊᑐᕋᔅᓴᐅᖏᑦᑐᑦ • ᑐᖁᕋᓐᓂᖏᑦ • ᖃᓄᐃᖏᓐᓂᖏᓐᓂᒃ ᐊᑦᑐᐃᓂᖅ • ᐃᑉᐱᒋᔭᖏᒍᑦ ᐸᖅᕕᓴᐃᔪᑦ	• ᐃᖅᑲᓇᐃᔭᖅᑎᑦ ᑐᑭᓯᐅᒪᓂᖏᑦ / ᓄᓇᒥᒃ ᓴᐳᒻᒥᓇᓂᑦ ᐱᓕᕆᐊᕆᔭᔅᓴᑦ • ᑭᒡᓕᖃᖅᑎᑦᑐᒍ ᐊᑐᓐᓂᐊᖅᑕᑦᑕ ᓄᓇᒃᑰᖓᓂᖓ • ᖃᐅᔫᓴᐃᓗᑎᒃ ᐃᕙᕝᕕᖃᐅᒻᒪᖖᑦ ᓯᕗᓂᐊᒍᑦ ᐱᓕᕆᕿᐊᓚᐅᖏᓐᓂᖏᓂᒃ • ᐊᖑᓇᓱᒋᐊᖃᓐᖏᑦᑐᑦ ᐊᑐᐊᖓᖓ • ᓄᓇᖏᑦ ᑎᕆᐊᖃᑦᓚᕆᑦᑐᑦ ᐋᒪᓘᓐᓃᑦ ᐃᓴᐅᔪᓂᒃ ᑎᕆᐊᓄᑦ ᓇᔪᖅᑕᐅᔪᑦ ᐊᑐᖅᑕᐅᑦᑕᐃᓚᑲᐃᓐᓇᑦᑐᑎᒃ • ᓴᓂᖅᑯᑕᐅᓂᖏᑦ ᖃᐅᔮᒪᔭᐅᔪᑦ ᐃᕙᕝᕕᐅᓱᑦ ᓄᓇᐃᑦ • ᐱᔪᓐᓇᓐᓂᓕᒫᒥᓄᑦ, ᐊᑐᖅᑕᐅᑎᑦᑐᓂᖏᑦ ᒪᑐᓯᒪᓂᖓ ᓄᓇᐅᑉ ᐃᓱᖃᑦᑐᒍ 500 ᒦᑕᒥᒃ ᐋᒪᓗᖓᔪᒥᒃ ᑖᒃᑯᓇᓐᖓᑦ ᐃᕙᕝᕕᐊᑕ ᕿᒪᑺᑎᓚᐅᖏᓐᓂᖏᓂᒃ • ᑎᕆᐊᖃᕝᕕᓄᑦ ᑐᕌᖓᔪᓄᑦ ᐊᐅᓚᑦᑎᔾᔪᑎᔅ • ᐱᔪᓐᓇᓂᓕᒫᒥᓄᑦ, ᓴᖅᕿᑐᑎᒃ ᐱᐅᓛᖑᔪᓂᒃ ᖃᖓᑕᓲᑦ ᒥᑦᑕᖅᑐᕝᕕᔅᓴᖏᑕ ᐊᖅᑯᑎᖏᓂᒃ ᖃᖓᑦᑕᓇᐊᕈᑎᑐ • ᕿᒥᕐᕈᔭᐅᑐᑎᒃ ᒥᑭᓕᓇᔾᔪᑎᑦ ᐊᑐᓐᓂᐊᓐᓂᕋᖅᓯᒪᔭᖏᑦ ᐅᐃᒍᖓᓂ 10b-11 ᓄᓇᐅᑉ ᐊᕙᑎᐊᓄᑦ ᐊᐅᓚᑦᑎᔾᔪᑎ ᐸᓐᓇᐅᑎᖓ	• ᓇᔪᖓᖏᑦ ᐊᑐᕋᔅᓴᐅᖏᑦᑐᑦ • ᑐᖁᕋᓐᓂᖏᑦ • ᖃᓄᐃᖏᓐᓂᖏᓐᓂᒃ ᐊᑦᑐᐃᓂᖅ	ᐊᖏᔫᓐᖏᑦᑐᖅ

ᕿᒥᕐᕈᔭᔅᓴᖅ 1-12.1 ᐅᓂᒃᑳᖏᑦ ᕿᒪᑯᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᖏᓐᓄᑦ

ᓄᓇᐅᑉ ᐊᕙᑎᖓ					
ᐊᓐᓂᕆᔭᖅ ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖓ ᐊᓐᓂᕆᔭᖅ	ᐊᑐᓛᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑦ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒧᑦ ᐱᓕᕆᔭᔅᓴᑦ	ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᓄᓇᐅᑉ ᓂᔾᔪᑎᖏᑦ ᓇᔪᖅᐸᑦᑕᖏᓪᓗ	ᑐᒃᑐᑦ	• ᓇᔪᖅᑕᖏᑦ ᐊᓱᐅᔮᔭᖏᑦ • ᓇᕈᕙᖃᕈᓐᓃᓐᓂᖏᑦ • ᑐᖁᑕᐅᓂᖏᑦ	• ᕿᓐᖑᐊᓂᑦ ᓄᓘᔾᔪᓐᓄᑦ ᒪᓴᖅᑎᕈᑎᒥᒃ ᐊᖅᑯᑖᓄᑦ ᐊᑐᓪᓗᑎᒃ ᐱᓗᐊᖅᑐᒥᒃ ᐱᕈᖅᑐᑦ ᐱᕈᓪᓚᕆᓯᑎᓪᓗᒋᑦ • ᐃᓱᖃᓐᓃᑦ ᓱᒃᑲᔪᓐᓇᓐᓂᖏᓐᓄᑦ ᓄᓇᓯᐅᑎᑦ ᑖᒃᑯᐊᓗ ᓄᓇᓯᐅᑎᑯᑖᑦ ᑐᒃᑐᓄᑦ ᐱᕙᖃᕈᓐᓇᕈᑎᔅᓴᑦ ᕿᒪᔅᓯᓗᑎᒃ ᐋᐳᓪᓚᑎᔨᐅᓚᐅᕐᒋᓐᓂᓪᒥᓂᒃ, ᐊᒻᒪᑦᑕᐅᖅ ᓂᔾᔪᑎᖃᓐᓂᐊ ᓱᒃᑲᐃᓐᓂᖅᓴᓄᑦ ᓄᖅᑲᕈᓐᓇᖅᑎᑦᑎᓂᖅᓴᐅᒻᒪᑦ. • ᓄᓇᓯᐅᑎᑯᑖᖑᔪᑦ ᓂᕈᐅᒋᔭᐅᕗᑦ ᐊᐅᓚᖃᑦᑕᕋᔭᓐᓂᖏᑦ 300 ᐅᓪᓗᓄᑦ, ᐊᖅᑰᓴᖅᑕᓗᐊᖅᑎᓪᓗᒋᑦ ᓄᖅᑲᖓᓂᖓ ᐱᔭᕇᑐᓗᐊᕋᔭᕐᒋᑦᑐᖅ ᐱᓗᐊᖅᑐᒥᒃ ᐅᑎᖅᐸᓪᓕᐊᒍᑎᒃ ᑐᒃᑐᖏᑦ ᖁᑦᑎᓐᓂᖅᓴᒧᑦ ᓄᓇᖏᓄᑦ ᕿᑭᖅᑖᕈᑉ. • ᓴᕙᕋᔭᔅᓴᓕᕆᐆᒃᑯᑦ ᐊᖑᓇᖁᐋᕐᒋᓐᓂᒧᑦ ᐊᑐᐊᒐᓖᑦ ᑕᒪᐃᓐᓄᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᒋᔭᕐᒋᓐᓄᑦ ᐱᓕᕆᑎᓪᓗᒋᑦ. • ᐊᐳᑏᔭᐃᓂᖅ ᒪᓂᖅᑭᔅᓴᐃᓂᓪᓗ ᓯᕗᖓᓗᐊᖁᓇᒋᑦ ᐊᖅᑯᑎᐅᑉ ᓴᓂᕋᕐᒋᑕ ᐊᐱᒐᔪᓐᓂᕐᒋᑦ ᑕᒪᐃᓐᓄᑦ ᓄᓇᓯᐅᑎᑯᑖᑉ ᓄᓇᓯᐅᑎᐅᓪᓗ ᐊᖅᑯᑖᒍᑦ ᑐᒃᑐᐃᑦ ᕿᒫᔪᓐᓇᖁᓪᓗᒋᑦ ᐅᑎᖅᑕᕋᕈᓐᓇᖁᓪᓗᒋᓪᓗ ᓇᓚᕌᓪᓗᑎᒃ. • ᓄᓇᓯᐅᑎᑯᑖᑉ ᐊᖅᑯᑖᑕ ᑎᓐᖓᕕᖓ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᒃᑯᑦ ᑕᓪᓕᒪᐃᑦ ᓄᓇᖏᒍᑦ ᖃᒥᑎᖅᓯᒪᓂᐊᖅᑐᑦ ᓯᐅᕋᐅᓂᖅᓴᓕᒥᒃ ᑐᒃᑐᑦ ᐊᖅᑰᓴᓕᕈᑎ ᖁᐊᐃᔭᕿᖁᓇᒋᑦ. ᑕᒪᓐᓇ ᖃᒥᑕᐅᔾᔪᑎᖓᑕ ᐃᓕᖅᑯᓯᖓ ᐊᔾᕚᖃᕋᓱᑦᑐᖅ ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖏᓐᓂᒃ. • ᐊᔭᖏᔭᑎᑦᑎᔭᓐᓂᖏᓐᓄᑦ ᑕᑯᔩᓂᖏᑦ ᓄᓇᓯᐅᑎᑯᑖᖑᔪᑦ ᐃᓱᖃᑦᑐᑎᒃ ᐊᖅᑰᓴᕈᓐᓇᖅᑎᑕᐅᓂᖏᑦ ᑎᓴᒪᐃᖅᓱᓪᓗᑎᒃ ᖃᐅᑕᒫᑦ.	• ᓇᔪᖅᑕᖏᑦ ᐊᓱᐅᔮᔭᖏᑦ • ᓇᕈᕙᖃᕈᓐᓃᓐᓂᖏᑦ • ᑐᖁᑕᐅᓂᖏᑦ	ᐊᖏᔫᓐᖏᑦᑐᖅ

ᕿᒥᕐᕈᔾᔭᖅ 1-12.1 ᐅᓂᒃᑳᖅᑎᑦ ᕿᒪᑰᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᖅᑎᓐᓄᑦ

ᓄᓇᐅᑉ ᐃᒥᖅᑎᑕ ᐊᕙᑎᐊᓗ					
ᐊᓐᓂᕆᔭᖅ ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖓ ᐊᓐᓂᕆᔭᖅ	ᐊᑐᓛᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑦ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔾᔭᑦ	ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᐃᒪᖅᑐᓂᐅᔪᖅ ᑰᑦᑐᖅ ᑕᓯᒥᓘᓐᓃᑦ	ᐃᒪᖅᑐᓐᓂᖅᑎᑕ ᐊᑦᑎᒋᓂᖓ	• ᐃᒪᑭᓪᓚᓂᖅᑎᑦ ᐃᒥᑦᑕᕝᕖᑦ ᐃᒪᐃᔭᖅᑕᐅᓂᖅᑎᓄᑦ ᐊᑐᖅᑕᐅᔪᒥᒃ • ᐊᖅᑎᓕᑎᐊᓐᓂᖅᑎᑦ ᐃᒪᖅᑐᓂᖅᑎᑕ ᐱᓪᓗᒍ ᐊᕼᓄᕐᑲᕝᕕᕕᓂᐊᑕ ᓴᓗᒪᓕᖅᑑᑉ ᐃᒪᖅᑎᓄᑦ • ᑰᓐᓂᖅᑎᑕ ᐊᓯᔾᔨᓐᓂᖅᑎᑦ ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖅᑎᒍᑦ ᐱᓪᓗᒍ ᓴᕿᔾᔭᑎᖅᑎᑕ ᐃᒥᐅᑉ	• ᐱᔪᓐᓇᐅᑎᕐᑲᓇᐊᓖᑦ ᓇᒥᑐᐃᓐᓇᖅ ᐃᒪᖅᑕᓐᓂᒪᒧᑦ ᑐᕌᖓᔪᒥᒃ • ᒪᓕᒃᓱᒍ ᐃᒥᒧᑦ ᓚᐃᓴᓐᓯᖓ ᐃᒥᖅᑐᓐᓂᖅᑎᓄᑦ ᓇᓗᓇᐃᕆᑎᑦ ᓈᓴᐅᑎᒃᑯᑦ • ᐊᑐᓕᖅᑎᑕᐅᓗᑎᒃ ᐃᓕᖅᑯᓯᕆᔭᖕᖔᑦ ᐃᒥᖅᑐᓗᐊᓐᓂᖅᔪᑏᑦ	• ᑰᓐᓂᖅᑎᑕ ᐊᓯᔾᔨᓐᓂᖅᑎᑦ ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖅᑎᒍᑦ ᐱᓪᓗᒍ ᐅᔾᕋᓐᓂᐊᖅᑐᑦ ᐱᓕᕆᓂᖅᑎᓄᑦ	ᐊᖅᑭᔫᓐᖅᑎᑦᑐᖅ
ᓄᓇᒦᑦᑑᑉ ᐃᒪᖅᑎᑦ ᐃᓱᓐᓂᕐᑲᓐᓂᐊᓗ	ᓄᓇᐅᑉ ᐃᒪᖅᑎᑦ ᐃᓱᓐᓂᕐᑲᓐᓂᖅᑎᓗ	• ᐱᔾᔪᑎᑎᓪᓗᑎᑦ ᐊᑐᖅᑕᓄᑦ, ᐊᓱᖅᑎᓐᓄᑦ ᓴᖅᑭᑕᑦ ᓄᓇᓕᔾᔪᐊᓪᓗ ᐊᓱᖅᑎᓂᒃ ᑎᑭᕚᖅᑐᑦ ᐊᓄᓇᒧᑦ ᐃᒥᒻᒥᒃ ᐊᓯᔾᔨᑎᑦᑎᔾᔪᑦ • ᐱᔾᔪᑎᑎᓪᓗᑎᑦ ᐊᑐᖅᑕᓄᑦ, ᐊᓱᖅᑎᓐᓄᑦ ᓴᖅᑭᑕᓄᑦ ᓄᓇᓕᔾᔪᐊᓪᓗ ᐊᓱᖅᑎᓂᒃ ᑎᑭᕚᖅᑐᑦ ᐊᓄᓇᒧᑦ ᐃᒥᐅᑉ ᐃᓱᓐᓂᓇᓲᖅᑎᑕ	• ᐃᓂᕐᑲᖅᑎᑕᐅᓂᖅᑎᑦ ᐱᕐᑯᑎᔾᔪᐊᑦ/ᐅᔾᕋᑦᑕᕝᕕᑦ ᓯᐅᕋᖅᑕᕝᕕᓪᓗ 30 ᒦᑕᒥᒃ ᐅᖓᓯᓐᓂᕐᑲᓪᓗᑎᒃ ᐃᒪᕐᑲᖅᑐᓛᓂᒃ • ᐊᔾᔨᒌᖅᑎᑦᑐᓂᒃ ᐃᓕᐅᕋᐃᓗᑎᒃ ᓴᓇᔭᐅᔪᖅ ᓄᓇᖓ ᐲᔭᕐᑯᓇᒍ ᐃᒥᒧᓪᓗ ᓯᓚᕈᔪᒧᑦ ᓄᖑᓴᖅᑕᐅᔾᔭᐃᒃᑯᑎᖅᑎᓂᒃ • ᐃᓕᐅᕋᐃᓗᑎᒃ ᓴᕿᑦᑎᔾᔪᑎᓂᒃ/ᑯᕝᕕᐅᔪᓐᓇᖅᑐᒥᓪᓗᓐᓃᑦ ᐊᒻᒪᓗ ᐃᒪᕐᑲᕝᕕᐅᔪᓐᓇᑲᐃᓐᓇᖅᑐᓂᒃ ᐃᑭᐊᖅᑖᓕᖅᓯᒪᔪᓄᑦ • ᓇᓗᓇᐃᖅᓯᒪᔪᑦ ᐅᓪᓗᖅᑎᒍᑦ ᕿᒥᕐᕈᐃᓃᑦ ᑲᒪᒋᔭᐅᓂᖅᑎᓪᓗ • ᓯᑯᓕᕆᓂᖅ ᐊᑯᐊᖅᑕᓗ ᑰᑉ ᑲᒪᒋᔭᐅᔾᔪᑎᖅᑎᑦ • ᐊᑐᖅᑕᐅᓂᖅᑎᑦ ᑕᒪᒃᑯᐊ BMP-ᖑᔪᑦ ᓄᓇᐅᑉ ᖃᑮᖅᑎᓃᑦᑐᓄᑦ ᐊᐅᓚᑦᑎᓇᓱᐊᕈᑎᖅᑎᓄᑦ • ᐊᓈᓗᖃᐅᑎᓕᕆᔾᔪᑎᑦ ᓴᓗᒻᒪᖅᓴᐅᑎᖅᑎᑦ • ᓴᓇᔪᓄᑦ ᐃᒥᖅᑐᕈᑎᕝᕕᓂᖅᑎᑕ ᓴᓗᒻᒪᖅᓴᐃᕝᕕᖓ (ᑭᓂᖅᑐᓕᒃ, ᓄᓇᓯᐅᑎᒧᑦ ᐅᐊᓴᕈᑎᖅᑎᑦ, ᓴᓗᒻᒪᖅᓴᐅᑎᑦ ᑲᒪᕝᕕᖅᑎᓂᒃ, ᖃᖅᑎᓕᔾᔪᑎᓄᑦ ᐅᐊᓴᐃᔾᔪᑎᖅᑎᑦ) • ᑲᒪᒋᔭᐅᓂᖅᑎᑦ ᐅᔾᕋᑐᐃᓐᓇᐃᑦ ᓴᕙᕋᔾᔭᖃᓐᖅᑎᑦᑐᑦ ᐃᑭᐊᖅᑎᑕ ᓯᓚᐃᓐᓇᒧᑦ ᓴᖅᑭᓐᓂᖅᑎᓄᑦ ᓄᖑᓴᐃᔭᑦᑐᒥᒃ ᐃᒥᒻᒥᒃ ᑕᑯᔅᓴᕈᑐᐃᓐᓇᓕᕐᑲᓐᓂᖅᑎᓂᒃ, ᓴᕙᕋᔾᔭᖅᑎᑕ ᑐᖅᑯᐃᕝᕕᖅᑎᓐᓂᒃ ᐅᔾᕋᓐᓂᐊᖅᑕᐅᕝᕕᐊᓂᓪᓗ	• ᐱᔾᔪᑎᑎᓪᓗᑎᑦ ᐊᑐᖅᑕᓄᑦ, ᐊᓱᖅᑎᓐᓄᑦ ᓴᖅᑭᑕᑦ ᓄᓇᓕᔾᔪᐊᓪᓗ ᐊᓱᖅᑎᓂᒃ ᑎᑭᕚᖅᑐᑦ ᐊᓄᓇᒧᑦ ᐃᒥᒻᒥᒃ ᐊᓯᔾᔨᑎᑦᑎᔾᔪᑦ • ᐱᔾᔪᑎᑎᓪᓗᑎᑦ ᐊᑐᖅᑕᓄᑦ, ᐊᓱᖅᑎᓐᓄᑦ ᓴᖅᑭᑕᓄᑦ ᓄᓇᓕᔾᔪᐊᓪᓗ ᐊᓱᖅᑎᓂᒃ ᑎᑭᕚᖅᑐᑦ ᐊᓄᓇᒧᑦ ᐃᒥᐅᑉ ᐃᓱᓐᓂᓇᓲᖅᑎᑕ	ᐊᖅᑭᔫᓐᖅᑎᑦᑐᖅ

ᕿᒥᕐᕈᔭᖕᓭᖅ 1-12.1 ᐅᓂᒃᑳᖅᑎᑦ ᕿᒻᒪᑯᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᖅᑎᓐᓄᑦ

ᓄᓇᐅᑉ ᐃᒥᖅᑎᑕ ᐊᕙᑎᐊᓗ					
ᐊᓐᓂᕆᔭᖅ ᓄᓇᐅᑉ ᐃᓚᖅᑯᓯᖕᒐ ᐊᓐᓂᕆᔭᖅ	ᐊᑐᓛᑦ ᓇᓗᓇᐃᕈᑕ (ᑌᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓚᑦ ᐊᑦᑐᐃᓂᑦ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔭᖕᓴᑦ	ᕿᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓅᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
			• ᐃᑳᕗᓚᐊᖅᑎᑕ ᑐᓐᖓᕕᖅᑎᑦ ᒥᑭᓵᖑᔪᓐᓇᖅᑐᒥᒃ ᓄᓇᖅᑲᓗᑎᒃ • ᑭᖑᕗᕚᔾᔪᑎᔅᓴᑦ ᐊᓯᐅᔨᔭᐅᔪᓄᑦ ᐊᑖᒍᑦ HADD • ᓈᒻᒪᓛᒥᒃ ᓴᓇᓯᒪᓂᖅᑎᑦ ᑕᒪᐃᓐᓄᑦ ᐃᑳᕈᑎᑦ ᑰᕈᓄᑦ/ᑰᓐᓄᑦ (ᑰᕗᓚᓖᑦ, ᐃᑳᕈᑎᑐᐃᓐᓇᕐ, ᐊᓯᖅᑎᓪᓗ) • ᐊᔭᖅᑎᕗᕚᖅᑲᓪᓗᑎᒃ ᓇᒨᖓᕈᓐᓇᓂᖅᑎᑦ ᓄᓇᓯᐅᑎᑦ ᓄᓇᖅᑎᓄᑦ ᒪᓕᓪᓗᒍ ᑰᕗᕚᖅᑲᖅᑐᓄᑦ ᐅᔭᕋᓱᔾᔪᓐᓄᑦ (ᐊᑐᕆᐊᖅᑲᕈᑎᒃ) • ᑰᕈᖅᑎᑦ ᐱᐅᓯᒋᐊᖅᑕᐅᔭᕆᐊᖅᑲᕈᑎᒃ ᑲᒪᒋᔭᐅᓗᑎᒃ • ᐊᑦᑐᖅᑕᐅᓂᓖᑦ ᑰᕈᑦ ᑰᓐᖏᓐᓇᖅᑎᓪᓗᒋᑦ ᐊᔾᔪᓐᓇᖅᑭᒃᑯᓂ • ᐅᔫᖅᓴᖅᑕᐅᓗᑎᒃ ᑰᑭᓪᓕᑎᓪᓗᒋᑦ, ᐃᖅᑲᓗᖅᑎᑦ ᓴᐳᑎᓗᒋᑦ ᐃᒪᐃᕈᑎᓕᒫᒍᓂ • ᖃᖅᑕᔫᓂᒃ ᐊᑐᓐᓂᐊᕈᑎᒃ ᒪᓕᑦᑕᐅᓗᑎᒃ ᑐᑭᒧᐊᒍᑎᐅᔪᑦ ᖃᖅᑎᕆᓂᓪᓗᑦ ᐃᒪᒻᒥᐅᑕᓕᕆᔾᒃᑯᑦ ᓴᓇᐅᒐᖅᑎᑦ • ᓱᕈᐃᔭᑦᑐᓕᒫᑦ ᑰᒍᔾᔭᐅᑦᑕᐃᓕᒪᑎᓪᓗᒋᑦ • ᐅᓗᕆᐊᓇᖅᑐᓕᒫᑦ ᓴᓇᐅᔭᒪᔪᑦ ᑐᖅᑯᖅᑕᐅᓯᒪᓗᑎᒃ ᓄᓇᒥᒃ ᒪᓭᔮᓐᖏᑦᑐᒥᒃ/ᐃᑭᐊᖅᑯᖅᑲᖅᑐᒥᒃ ᑐᖅᑯᐃᕙᓚᐊᒥᑦ • ᐅᖅᓱᐊᓗᖃᐅᑎᖃᖅᕚᑦ ᐊᖏᔫᑎᓪᓗ ᖃᑦᑕᐅᔮᔪᐊᑦ ᓄᓇᒦᓪᓗᑎᒃ ᐃᑭᐊᖅᑯᖃᖅᑐᒥᑦ ᐊᕙᓗᖃᓪᓗᓂ (ᐃᑭᐊᖅᑯᑯᑦ ᑯᕙᔮᐃᓯᒪᔪᑦ) • ᒥᑭᓐᓂᖅᓴᑦ ᐅᖅᓱᖃᐅᑎᑦ - ᐃᑭᐊᖅᑯᓚᒃ ᒪᖁᓪᓗᑎᒃ ᐅᖅᓱᐊᓗᖃᐅᑏᑦ • ᐅᖅᓴᔅᓴᐃᖃᑦᑕᓪᓗᑎᒃ ᓄᓇᒥᒃ ᒪᓭᔮᓐᖏᑦᑐᒥᒃ ᑯᕙᓚᓲᑦᑐᑦ ᐊᕙᓗᖃᓪᓗᑎᒃ • ᑐᐊᕙᓐᓇᖅᑐᓕᕐᔪᑎᑦ ᑯᕙᔪᓕᕐᔪᑎᖅᑎᓪᓗ ᐸᓐᓇᐅᑎᑦ		

ᖃᐅᔨᓴᕐᓯᖅ 1-12.1 ᐅᓂᒃᑳᖅᑎᑦ ᖃᒻᒪᑯᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᖅᑎᓐᓄᑦ

ᓄᓇᐅᑉ ᐃᒥᖅᑎᑕ ᐊᕙᑎᐊᓗ					
ᐊᓐᓂᕆᔭᖅ ᓄᓇᐅᑉ ᐃᓚᖅᑯᓯᖕᒐ ᐊᓐᓂᕆᔭᖅ	ᐊᑐᓖᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑦ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔭᕐᓴᑦ	ᖃᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖕᒪᓄᑦ ᐊᑦᑐᐃᓂᖕᒐ
ᓄᓇᒦᑦᑐᑦ ᐃᖃᓗᑦ, ᐃᖃᓗᑦ ᓇᔪᒐᖅᑎᑦ, ᐊᓯᖅᑎᓪᓗ ᐆᒪᔪᑦ ᐃᒪᒥᐅᑕᑦ	ᐃᖃᓗᐃᑦ	• ᐊᑦᑐᐃᓂᖅ ᐃᖃᓗᐃᑦ ᖃᓄᐃᖅᑎᓐᓂᖅᑎᓂᒃ • ᐊᑦᑐᐃᓂᖅᑎᑦ ᐃᖃᓗᐃᑦ ᓅᑦᑕᓐᓂᖅᑎᓐᓂᒃ • ᐊᑦᑐᐃᓂᖅᑎᑦ ᐃᖃᓗᐃᑦ ᓇᔪᒐᖕᒐ ᓱᕈᖅᑕᐅᒍᓂ • ᐃᖃᓗᐃᑦ ᑐᖁᕐᓂᖅᑎᑦ	• ᐃᓂᖃᖅᑎᑕᐅᓂᖅᑎᑦ ᐱᖁᑎᔾᔪᐊᑦ/ᐅᔭᕋᑦᑕᕝᕕᑦ ᓯᐅᕋᖅᑕᕝᕕᓪᓗ 30 ᒥᑕᒥᒃ ᐅᖓᓯᓐᓂᖃᓪᓗᑎᒃ ᐃᒪᖃᖅᑐᓕᒫᓂᒃ • ᐊᔾᔨᖏᖅᑎᑦᑐᓂᒃ ᐃᓕᐅᕋᐃᓗᑎᒃ ᓴᓇᔭᐅᔪᖅ ᓄᓇᖓ ᐲᔭᖁᓇᒍ ᐃᒥᒻᒧᓪᓗ ᓯᓚᕈᔪᒻᒧᑦ ᓄᖑᓴᖅᑕᐅᔾᔭᐃᒃᑯᑎᖏᓂᒃ • ᐃᓕᐅᕋᐃᓗᑎᒃ ᓴᕿᑦᑎᔾᔪᑎᓂᒃ/ᑰᕝᕙᐅᔪᓇᖅᑐᒥᓪᓗᓐᓃᑦ ᐊᒪᓗ ᐃᒪᖃᕝᕙᐅᔪᓇᑲᐃᓇᖅᑐᓂᒃ ᐃᑭᐊᖅᑖᓕᖅᓯᒪᔪᓄᑦ • ᓇᓗᓇᐃᖅᓯᒪᔪᑦ ᐅᓪᓗᖏᑐᑦ ᖃᒥᖅᑭᐃᓃᑦ ᑲᒪᒋᔭᐅᓂᖏᓪᓗ • ᓯᑯᓕᕆᓂᖅ ᐊᑯᐊᖏᑕᓗ ᑰᑉ ᑲᒪᒋᔭᐅᔾᔪᑎᖏᑦ • ᐊᑐᖅᑕᐅᓂᖏᑦ ᑕᒪᒃᑯᐊ BMP-ᖑᔪᑦ ᓄᓇᐅᑉ ᖄᐹᖏᓃᑦᑐᓄᑦ ᐊᐅᓚᑦᑎᓇᓯᐊᕈᑎᖏᓄᑦ • ᐊᓈᓗᖃᐅᑎᓕᓇᔾᔪᑎᑦ ᓴᓗᒻᒪᖅᓴᐅᑎᖏᑦ • ᓴᓇᔪᓄᑦ ᐃᒥᖅᑐᕈᑎᕙᓂᖏᑕ ᓴᓗᒻᒪᖅᓴᐃᕝᕙᖓ (ᑭᓂᖅᑐᓕᒃ, ᓄᓇᓯᐅᑎᒧᑦ ᐅᐊᓴᕈᑎᖏᑦ, ᓴᓗᒻᒪᖅᓴᐅᑎᑦ ᑲᒪᕝᕙᖏᓂᒃ, ᖄᖅᑎᓇᔾᔪᑎᓄᑦ ᐅᐊᓴᐃᔾᔪᑎᖏᑦ) • ᑲᒪᒋᔭᐅᓂᖏᑦ ᐅᔭᕋᑐᐃᓐᓇᐃᑦ ᓴᕙᕋᔭᔅᓴᖃᖏᑦᑐᑦ ᐃᑭᐊᖏᑕ ᓯᓚᐃᓐᓇᓪᒧᑦ ᓴᖅᑭᓐᓂᖏᓄᑦ ᓄᖑᓴᐃᔭᑦᑐᒥᒃ ᐃᒥᒻᒥᒃ ᑕᑯᔅᓴᕈᑐᐃᓐᓇᓇᐊᖃᓐᓂᖏᓂᒃ, ᓴᕙᕋᔭᔅᓴᖏᑕ ᑐᖅᑯᐃᕝᕙᖏᓐᓂᒃ ᐅᔭᕋᓐᓂᐊᖅᑕᐅᕝᕙᐊᓂᓪᓗ • ᐃᑳᕝᕙᓕᐊᖏᑕ ᑐᓐᖓᕙᖏᑦ ᒥᑭᏖᖑᔪᓐᓇᖅᑐᒥᒃ ᓄᓇᖃᓪᓗᑎᒃ • ᑭᖑᕝᕚᔾᔪᑎᔅᓴᑦ ᐊᓯᐅᔾᔭᐅᔪᓄᑦ ᐊᑖᒍᑦ HADD • ᓈᒻᒪᏟᒥᒃ ᓴᓇᓯᒪᓂᖏᑦ ᑕᒪᐃᓐᓄᑦ ᐃᑳᕈᑎᑦ ᑰᕈᓄᑦ/ᑰᓐᓄᑦ (ᑰᕝᕙᓖᑦ, ᐃᑳᕈᑎᑐᐃᓐᓇᑦ, ᐊᓯᖏᓪᓗ) • ᐊᔭᖏᕝᕙᖅᑲᓗᑎᒃ ᓇᒧᓐᖓᕈᓐᓇᓂᖏᑦ ᓄᓇᓯᐅᑎᑦ ᓄᓇᖏᓄᑦ ᒪᓕᓪᓗᒍ ᑰᕝᕙᖅᑐᓄᑦ ᐅᔭᕋᓷᔪᓐᓄᑦ (ᐊᑐᓇᐊᖅᑲᕈᑎᒃ) • ᑰᕈᖏᑦ ᐱᐅᓯᒋᐊᖅᑕᐅᔭᓇᐊᖅᑲᕈᑎᒃ ᑲᒪᒋᔭᐅᓗᑎᒃ • ᐊᑦᑐᖅᑕᐅᓂᑏᑦ ᑰᕈᑦ ᑰᓐᖏᓐᓇᖅᑎᓪᓗᒋᑦ ᐊᔪᓐᓇᖏᒃᑯᓂ • ᐅᔾᔭᖅᓴᖅᑕᐅᓗᑎᒃ ᑰᑭᓪᓕᑎᓪᓗᒋᑦ, ᐃᖃᓗᖏᑦ ᓴᐳᑎᓗᒋᑦ ᐃᒪᐃᕈᑎᓕᒫᒍᓂ	• ᐊᑦᑐᐃᓂᖅ ᐃᖃᓗᐃᑦ ᖃᓄᐃᖅᑎᓐᓂᖅᑎᓂᒃ • ᐊᑦᑐᐃᓂᖅᑎᑦ ᐃᖃᓗᐃᑦ ᓅᑦᑕᓐᓂᖅᑎᓐᓂᒃ • ᐊᑦᑐᐃᓂᖅᑎᑦ ᐃᖃᓗᐃᑦ ᓇᔪᒐᖕᒐ ᓱᕈᖅᑕᐅᒍᓂ • ᐃᖃᓗᐃᑦ ᑐᖁᕐᓂᖅᑎᑦ	ᐊᖏᕚᖕᒋᑦᑐᖅ

ᕿᒥᕐᕈᔭᖅᓯᖅ 1-12.1 ᐅᓂᒃᑳᖏᑦ ᕿᒪᒃᑯᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᖏᓐᓄᑦ

ᓄᓇᐅᑉ ᐃᒥᖏᑕ ᐊᕙᑎᐊᓗ					
ᐊᓐᓂᕆᔭᖅ ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖓ ᐊᓐᓂᕆᔭᖅ	ᐊᑐᓖᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑦ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔭᓯᑦ	ᕿᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓐᖓᓄᑦ ᐊᑦᑐᐃᓐᖓ
			• ᖄᖅᑕᔫᓂᒃ ᐊᑐᓐᓂᐊᕈᑎᒃ ᒪᓕᑦᑕᐅᓗᑎᒃ ᑐᑭᒨᐊᒍᑎᐅᔪᑦ ᖄᖅᑎᕆᓂᒻᒧᑦ ᐃᒪᕐᒥᐅᑕᓕᕆᔾᑯᑦ ᓴᓇᐅᒐᖏᑦ • ᓱᕈᐃᔭᑦᑐᓕᒫᑦ ᑰᒍᔾᔭᐅᑦᑕᐃᓕᒪᑎᓪᓗᒋᑦ • ᐅᓗᕆᐊᓇᖅᑐᓕᒫᑦ ᓴᓇᐅᔭᒪᔪᑦ ᑐᖅᑯᖅᑕᐅᓯᒪᓗᑎᒃ ᓄᓇᒥᒃ ᒪᓭᔾᔪᓐᖏᑦᑐᒥᒃ/ᐃᑭᐊᖅᓵᖅᑲᖅᑐᒥᒃ ᑐᖅᑯᐃᕖᓕᐊᒥᑦ • ᐅᖅᓱᐊᓗᖃᐅᑎᖃᖅᕓᑦ ᐊᖏᔫᑎᓪᓗ ᖃᑦᑕᐅᔾᔭᔪᐊᑦ ᓄᓇᒦᓪᓗᑎᒃ ᐃᑭᐊᖅᓵᖃᖅᑐᒥᑦ ᐊᕙᓗᖃᓪᓗᓂ (ᐃᑭᐊᖅᓵᓃᑦ ᑯᕕᔾᔭᐃᓯᒪᔪᑦ) • ᒥᑭᓐᓂᖅᓴᑦ ᐅᖅᓱᖃᐅᑎᑦ - ᐃᑭᐊᖅᓵᓚᒃ ᒪᕿᓪᓗᑎᒃ ᐅᖅᓱᐊᓗᖃᐅᑏᑦ • ᐅᖅᓯᔅᓯᐃᖃᑦᑕᓪᓗᑎᒃ ᓄᓇᒥᒃ ᒪᓭᔾᔪᓐᖏᑦᑐᒥᒃ ᑯᕕᕚᓖᑦᑐᑦ ᐊᕙᓗᖃᓪᓗᑎᒃ • ᑐᐊᕕᓐᓇᖅᑐᓕᕝᔪᑎᑦ ᑯᕕᔪᓕᕝᔪᑎᖏᓪᓗ ᐸᓐᓇᐅᑎᑦ		
ᑕᕆᐅᑉ ᐊᕙᑎᖓ					
ᐊᓐᓂᕆᔭᖅ ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖓ ᐊᓐᓂᕆᔭᖅ	ᐊᑐᓖᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑦ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔭᓯᑦ	ᕿᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓐᖓᓄᑦ ᐊᑦᑐᐃᓐᖓ
ᑕᕆᐅᑉ ᓯᑯᖓ	ᑐᕙᖓ	• ᓱᕋᑎᖅᑕᐅᓂᖏᑕ ᑐᕙᐅᑉ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᓂᖓᒍᑦ • ᐊᓯᔾᔨᑐᐃᓐᓇᕆᐊᖃᓐᓂᖓ ᑐᕙᐃᔭᕆᐊᓐᓂᖓ ᓯᑯᓇᓯᐊᓐᓂᖓᓗ	• ᑐᐊᓖᖑᔪᓐᓇᓐᓂᖓᓄᑦ ᐃᓱᖃᖅᑎᓪᓗᒍ ᑐᕚᑰᓂᖏᑕ ᐅᒥᐊᔾᔪᑦ ᐊᔪᓐᓇᖏᓐᓂᓕᒫᖏᒍᑦ • ᐅᒥᐊᔾᔪᑦ ᐃᖏᕋᓂᖏᑦ ᑲᑐᖓᑎᓪᓗᒋᑦ ᑐᕚᑯᑦ	• ᓱᕋᑎᖅᑕᐅᓂᖏᑕ ᑐᕙᐅᑉ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᓂᖓᒍᑦ ᐅᒥᐊᔾᔪᐊᑉ ᐃᓂᖓᒍᑦ	ᐊᖏᔫᓐᖏᑦᑐᖅ

ᖃᒥᕿᕆᔭᓭᖅ 1-12.1 ᐅᓂᒃᑳᕐᕆᑦ ᕿᒻᒪᑰᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᕐᕆᓐᓄᑦ

ᑕᕆᐅᑉ ᐊᕙᑎᖓ					
ᐊᓐᓂᕆᔭᖅ ᓄᓇᐅᑉ ᐃᓕᖅᑯᓯᖓ ᐊᓐᓂᕆᔭᖅ	ᐊᑐᓖᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓭᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑦ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔭᕐᓭᑦ	ᕿᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᑕᕆᐅᑉ ᐃᒥᖓ ᐃᓱᓐᓂᖃᓐᓂᐊᓗ	ᑕᕆᐅᖅ ᐃᓱᓐᓂᕆᓲᕐᕆᓪᓗ	• ᐊᓯᔾᔨᐅᑎᓃᑦ ᐃᒥᕐᕆᒍᑦ ᐃᓱᓐᓂᕐᕆᓄᓪᓗ ᑰᑦᑐᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᒥ ᖃᓐᖑᐊᓂᓪᓗ • ᐱᕈᓗᐊᕿᔪᑦ ᐊᔪᓕᐅᔾᔨᔪᓪᓗ (ᓱᑦᓗ, ᐅᖅᓱᐊᓗᒻᒥᒃ ᑯᕙᔪᑦ)	• ᓄᓇᐅᑉ ᐊᑐᖅᑕᐅᔫᑉ ᓯᓚᕈᔪᒻᒧᑦ ᑯᒪᓐᓂᕐᕆᓄᑦ ᑲᒪᔨᔭᐅᓂᕐᕆᑦ ᒪᓕᒃᓘᒍ ᐊᐅᓚᑦᑎᔾᔪᑎᒧᑦ ᐸᓐᓇᐅᑎᕐᕆᑦ • ᐅᓗᕆᐊᓇᖅᑐᓕᒫᑦ ᓴᓇᔭᐅᒪᓲᑦ ᑐᖅᑯᖅᓯᒪᓗᕆᑦ ᓄᓇᑎᒍᑦ ᓇᓗᓇᐃᖅᓯᒪᔪᑦ ᑕᒪᒃᑯᓄᖓ ᐸᓐᓇᐅᑎᕐᕆᒍᑦ ᑲᒪᕐᔭᖃᓐᓂᒻᒧᑦ • ᐊᓈᓗᖃᐅᑎᓄᑦ ᓴᓇᔪᓄᓪᓗ ᐃᒥᖅᑐᕈᑎᕙᓂᕐᕆᑕ ᓴᓗᒻᒪᖅᓴᐃᕝᕙᖓ (ᑭᓂᖅᑐᓚᒃ, ᓄᓇᓯᐅᑎᒧᑦ ᐅᐊᓴᕈᑎᕐᕆᑦ, ᓴᓗᒻᒪᖅᓴᐅᑎᑦ ᑲᒪᕝᕙᕐᕆᓂᒃ, ᖄᖅᑎᕆᔾᔨᑎᓄᑦ ᐅᐊᓴᐃᔾᔨᑎᕐᕆᑦ) • ᑐᐊᕙᓐᓇᖅᑐᓚᕆᔾᔨᑎᑦ ᑯᕙᔪᓚᕆᔾᔨᑎᕐᕆᓪᓗ ᐸᓐᓇᐅᑎᕐᕆᑦ, ᖃᓐᖑᐊᑕ ᑐᓚᑦᑕᕝᕙᖓᓄᑦ OPEP-ᖓ ᐊᒻᒪ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᓯᓚᖅᓱᐃᕝᕙᖓᑕ OPEP-ᖓ; SOPEP ᐅᒥᐊᔾᔪᐊᓚᒫᓄᑦ • ᐅᒥᐊᔾᔪᐊᑦ ᐊᐅᓚᓂᕐᕆᒍᑦ ᐊᒃᑕᑯᓚᕆᔾᔨᑎᒧᑦ ᑲᒪᔾᔨᑎᕐᕆᑦ - ᑕᐃᒪᓐᖓᓚᒫᖅ ᑕᕆᐅᒧᑦ ᑯᕙᓯᔪᖃᕆᐊᖃᓐᖏᑦᑐᖅ	• ᐊᓯᔾᔨᐅᑎᓃᑦ ᐃᒥᕐᕆᒍᑦ ᐃᓱᓐᓂᕐᕆᓄᓪᓗ ᑰᑦᑐᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᒥ ᖃᓐᖑᐊᓂᓪᓗ • ᐱᕈᓗᐊᕿᔪᑦ ᐊᔪᓕᐅᔾᔨᔪᓪᓗ	ᐊᕐᕆᔫᓐᖏᑦᑐᖅ
ᑕᕆᐅᒥ ᓇᔪᒐᑦ ᐆᒪᔪᕐᕆᓪᓗ	ᑕᕆᐅᒻᒥ ᓇᔪᒐᑦ	• ᓴᐃᓚᔪᓐᓃᓐᓂᖓ ᓯᔾᔭᖅᐸᓯᐅᑉ ᑕᕆᐅᖓ ᓇᔪᒐᖅ	• ᒥᑭᓛᖑᔪᒥᒃ ᑐᓐᖓᕝᕙᖃᓐᓂᕐᕆᑦ ᓴᓇᓯᒪᓗᕆᑦ ᑕᕆᐅᕐᑦᑐᑦ	• ᐊᓯᐅᓂᖓ ᐆᒪᔪᓄᑦ ᓇᔪᒐᖅ ᓅᖓᒍᑦ ᐅᒥᐊᔾᔪᐊᓚᕆᕝᕙᑦᑕ ᑕᕆᐅᕐᕆᒍᑦ	ᐊᕐᕆᔫᓐᖏᑦᑐᖅ
	ᐃᖃᓗᑦ	• ᐊᒃᑐᐃᓃᑦ ᐃᖃᓗᐃᑦ ᐃᓚᖅᑯᓯᕐᕆᓂᒃ, ᓇᔪᒐᕐᕆᑕ ᐃᒪᑦᑎᐊᕙᐅᓂᖓᓂᒃ, ᑐᖅᑯᖅᑐᓪᓗ	• ᒥᑭᓛᖑᔪᒥᒃ ᑐᓐᖓᕝᕙᖃᓐᓂᕐᕆᑦ ᓴᓇᓯᒪᓗᕆᑦ ᑕᕆᐅᕐᑦᑐᑦ • ᑭᖑᕝᕚᔾᔪᑎᓭᑦ ᐊᓯᐅᔾᔭᐅᔪᓄᑦ ᐊᑖᒍᑦ HADD • ᓈᒻᒪᑦᑐᒥᒃ ᓴᓇᔭᐅᓯᒪᓂᕐᕆᑦ ᑕᕆᐅᒧᑦ ᑐᓐᖓᔪᑦ ᐱᖁᑎᔾᔪᐊᑦ	• ᐊᑦᑐᐃᓂᖅ ᐃᖃᓗᐃᑦ ᖃᓄᐃᕐᕆᓐᓂᕐᕆᑕ ᓇᔪᒐᕐᕆᓂᓪᓗ	ᐊᕐᕆᔫᓐᖏᑦᑐᖅ

ᕿᒥᕐᕈᔭᔅᓴᖅ 1-12.1 ᐅᓂᒃᑳᖅᑎᑦ ᕿᒪᒃᑯᔪᓄᑦ ᐆᒪᔪᓄᑦ ᐊᑦᑐᐃᓂᖅᑎᓐᓄᑦ

ᑕᑎᐅᑉ ᐊᑲᑎᖓ					
ᐊᓐᓂᑎᔭᖅ ᓄᓇᐅᑉ ᐃᓚᖅᑯᓯᖓ ᐊᓐᓂᑎᔭᖅ	ᐊᑐᓛᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᑎᐊᓚᑦ ᐊᑦᑐᐃᓂᖅ(ᓅᑦ)	ᒥᑭᓕᑎᐊᑎᓂᒻᒧᑦ ᐱᓕᑎᔭᔅᓴᑦ	ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓅᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᐳᐃᔩᑦ ᑕᑎᐅᒻᒥ	ᓇᑦᑏᑦ	• ᓇᔪᖅᑕᐅᔪᑦ ᐊᓯᔾᔨᓐᓂᖅᑎᑦ ᓯᑯᓯᐅᓐᓂᖅᑎᓐᓄᑦ ᐊᒻᒪ/ᐅᕝᕙᓗ ᓯᑯᓚᑎᓂᖅᑎᓐᓄᑦ • ᐸᒡᕕᓴᐃᓂᖅᑎᑦ ᐱᓪᓗᒍ ᖃᖓᑕᔪᓄᑦ ᐊᒻᒪ/ᐅᕝᕙᓗ ᐃᒪᒃᑯᑦ ᓂᐱᖃᓐᓂᖅ ᓴᓇᔪᓄᑦ, ᐅᒥᐊᔾᔪᐊᓄᑦ ᖃᖓᑕᓲᓄᓪᓗ • ᑑᓴᑎᐊᕈᓐᓅᓐᓂᖅᑎᑦ ᐊᒻᒫᓗᓐᓅᓪ ᓱᕋᐃᓂᖅᑎᑦ ᓂᐱᖅᑯᖅᑐᓂᐊᓄᑦ ᓴᓇᔪᑦ ᐱᓕᕆᐊᖅᑎᓐᓄᑦ • ᓂᐱᖃᖅᑎᑦᑎᖅᑎᓐᓂᖅ ᑐᓴᓇᐊᓚᖅᑎᓐᓂᒃ ᐆᒪᔪᑦ ᓂᐱᖅᑯᖅᑐᓂᖅᑎᓐᓄᑦ ᐅᒥᐊᔾᔪᐊᑦ ᓴᓇᔪᓪᓗ • ᑐᖁᖅᑐᑦ ᐊᐅᓪᓚᑎᔭᐅᔪᑦ ᓯᑯᓯᐅᖅᑎᒧᑦ ᖄᖅᑎᑕᓂᒧᓪᓗ ᓴᓇᑎᓪᓗᑎᑦ	• ᐅᒥᐊᔾᔪᐊᓚᓇᔾᔪᑏᑦ ᐱᖁᑎᔾᔪᐊᖅᒥᑦ ᓴᓇᐅᔭᓯᒪᓂᖅᒥᑦ ᐋᖅᑭᓯᒪᔪᑦ ᒥᑭᓛᒥᒃ ᑐᓐᖓᕕᖅᑯᖅᑯᑦᑐᑎᑦ ᑕᑎᐅᑉ ᐃᖅᑲᖓᒍᑦ • ᓱᖐᓗᐊᖅᑕᐃᓚᒪᓗᒍ ᑐᕙᖓ ᐅᓯᑕᖅᓯᐃᕝᕙᒻᒥ ᓴᕙᕋᔭᔅᓴᓄᑦ ᓴᓂᖑᒍᓪᓗ ᐅᒥᐊᔾᔪᐊᑉ ᐊᑐᕋᔅᓴᖓᒍᑦ • ᐅᒥᐊᔾᔪᐊᓚᓇᔾᔪᑏᑦ ᓴᓇᐅᔭᓂᖅᒥᑦ ᓴᓇᐅᔭᓂᖅᑲᑦᑐᑎᒃ ᐅᑦᑐᖅᑎᒍᑦ ᐳᐃᔩᑭᓛᖑᑎᓪᓗᒍ ᐊᔾᔨᐲᓐᓐᖅᑎᓛᓂᒃ - ᐃᐳᒥ ᔪᓂᒧᑦ (ᖄᖅᑎᓇᔪᑦ, ᓄᓇᐅᑉ ᐃᑭᐊᖓᔪᑦ ᑲᓯᐊᖅᑐᑦ, ᐃᖅᑲᖓ ᐃᑎᓯᐅᒥᓪᓗᒍ ᐳᐊᕐᓇᔭᐃᔾᔪᑎᓚᓐᓄᑦ ᐃᖅᑲᓚᑎᔾᔪᑏᑦ) • ᐊᑐᖅᑕᐅᓗᑎᒃ ᐊᓯᖅᑎᓐᓄᑦ ᐊᑐᖅᑕᐅᓂᑰᔪᑦ ᓱᓚᔪᒥᒃ ᓴᖅᑮᔪᑦ ᒥᑭᓕᑎᓂᒻᒧᑦ ᓂᐱᖅᑎᓐᓂᒃ ᓂᐱᓚᐅᑎᔪᓂᓪᓗ ᓴᓇᔪᓚᑎᔪᓄᑦ (ᒪᓚᒃᑯᒍ ᐃᒪᒥᐅᑕᓚᑎᔮᒃᑯᑦ ᐊᑐᖅᑯᔭᖓ 100 kPa ᐃᒃᑑᕈᑖ ᐃᓱᖓ, ᖄᖅᑎᑕᐅᓂᐊᖅᑑᑉ ᐊᕙᑖ ᐳᐊᐃᓛᖅᑐᒧᑦ ᓵᐳᑕᓚᒃ) • ᐊᑐᓇᐊᖅᑲᕈᑎᒃ ᓂᐱᖅᑲᐅᑎᒥᒃ ᐃᖅᑲᖓᒍᑦ ᐳᐃᔩᑦ ᑕᑎᐅᖓᓄᑦ ᐅᐸᔾᔭᐃᓪᓗᑎᑦ ᖄᖅᑎᓇᕝᕙᐅᓂᐊᖅᑑᑉ ᐃᒪᖏᓄᑦ • ᐅᒥᐊᔾᔪᐊᑦ ᓱᖐᖏᑦᑐᒥᒃ ᑐᕌᒐᖅᑲᐅᑎᒃ ᐃᖏᕐᕋᓂᖅᑲᐅᑎᓪᓗ ᐱᔪᓐᓇᑐᐊᕈᓐᖓᒥᒃ - ᑲᑦᑐᑎᐊᓪᓗᑎᒃ ᕿᓐᖑᐊᑕ ᑲᖏᖅᓘᖓᓄ ᐃᓯᕈᖓᒥᒃ • ᐅᒥᐊᔾᔪᐊᑦ ᐊᐅᓚᐅᑎᒥᓂᒃ ᓄᖅᑲᐃᔾᔪᓇᕈᖓᒥᒃ ᒥᑭᓛᒥᓪᓗ ᐊᐅᓚᑎᑦᑎᔾᔪᓇᓐᓂᖅᑐᓂᒃ ᐊᑐᓪᓗᑎᒃ ᐃᐱᖅᓯᒪᓚᕈᖓᒥᒃ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᒥ ᕿᓐᖑᐊᓂᓪᓗ ᐅᒥᐊᔾᔪᐊᓚᑎᕝᕙᖅᑎᓂᑦ • ᖃᖓᑕᓲᑦ ᑕᑎᐅᑉ ᖁᓛᒍᑦ ᖃᖓᑕᓂᐊᕈᑎᒃ ᐊᖅᐸᓯᓐᓂᐊ ᑐᖓᐅᑦᑎᔭᓇᐊᖃᓐᓐᖅᑎᑦᑐᖅ 450 ᒦᑕᒥᒃ, ᓯᓚᖓᓄᑦ ᒪᓕᓪᓗᑎᒃ ᐊᔪᓐᖏᑦᑕᕋᖓᒥᒃ • ᖃᖓᑕᓲᑦ ᐊᖅᐸᓯᓪᓗᑎᒃ ᖃᖓᑕᔭᓇᐊᖅᑎᑕᐅᓐᖏᑦᑐᑦ ᐊᔾᔨᓚᐅᑎᓇᓇᓯᓪᓗᑎᒃ ᕿᒥᕐᕈᓇᓪᓗᑎᓪᓗᓐᓃᑦ ᐳᐃᔩᓂᒃ • ᐊᑐᖅᑕᐅᓪᓗᐊᑕᓐᓂᖓ ᓄᓘᔾᔭᐅᑉ ᒥᑦᑕᕝᕙᖓ ᐱᓗᐊᖅᑐᒥᒃ ᐅᔭᕋᓐᓂᐊᕝᕕᒃ ᐊᐅᓚᔾᔭᒋᐊᖅᑎᓪᓗᒍ • ᐃᖅᑲᓇᐃᔭᖅᑎᓕᒫᑦ ᐃᓚᓭᓪᓗᑎᑦ ᓇᓅᑉ ᐅᓗᓇᐊᓇᐅᑎᖏᓄᑦ • ᐃᖅᑲᓇᐃᔭᕝᕕᓚᖀᑦ ᓴᓗᒪᑎᑕᐅᓗᑎᒃ ᓂᕿᓪᓗᓐᓂᒃ, ᓴᓐᓂᒃ, ᐊᒻᒪᑦᑕᐅᖅ ᑐᖁᓐᓇᖅᑐᓕᓐᓂᒃ ᓴᓇᔭᐅᒪᔪᓂᒃ • ᐊᑐᖃᑦᑕᓪᓗᑎᒃ ᓇᓄᓕᕆᔩᒥᒃ ᑕᒻᒫᕝᕕᒋᔭᖅᑎᓐᓂᒃ • ᐊᑐᖅᑕᐅᓗᑎᒃ ᕿᒫᑎᑦᑎᔾᔪᑏᑦ ᓇᓄᓐᓂᒃ ᑐᖁᓴᐃᔭᓐᖏᑦᑐᑦ	• ᓇᔪᖅᑕᐅᔪᑦ ᐊᓯᔾᔨᓐᓂᖅᑎᑦ ᓯᑯᓯᐅᓐᓂᖅᑎᓐᓄᑦ ᐊᒻᒪ/ᐅᕝᕙᓗ ᓯᑯᓚᑎᓂᖅᑎᓐᓄᑦ • ᐸᒡᕕᓴᐃᓂᖅᑎᑦ ᓂᐱᖃᓐᓂᖅᑯᓄᑦ ᓴᓇᔪᑦ, ᐅᒥᐊᔾᔪᐊᓄᑦ ᖃᖓᑕᓲᓄᓪᓗ • ᑐᖁᔅᓴᖅᑐᑦ ᐊᐅᓪᓚᑎᔭᐅᔪᑦ ᓯᑯᓯᐅᖅᑎᒧᑦ • ᐅᒥᐊᔾᔪᐊᑦ ᓂᐱᖓᑕ ᐊᑲᐅᓯᔾᔪᑎᖏᑦ	ᐊᖏᔫᓐᖏᑦᑐᖅ
	ᐅᒡᔪᐃᑦ				ᐊᖏᔫᓐᖏᑦᑐᖅ
	ᐊᐃᕖᑦ				ᐊᖏᔫᓐᖏᑦᑐᖅ
	ᖃᐅᓪᓗᖅᑖᑦ				ᐊᖏᔫᓐᖏᑦᑐᖅ
	ᑑᒑᓖᑦ ᕿᓚᓗᒐᑦ				ᐊᖏᔫᓐᖏᑦᑐᖅ
	ᐊᕐᕖᑦ				ᐊᖏᔫᓐᖏᑦᑐᖅ
	ᓇᓄᐃᑦ	• ᓇᔪᖅᑕᐅᔪᑦ ᐊᓯᔾᔨᓐᓂᖅᑎᑦ ᓯᑯᓯᐅᓐᓂᖅᑎᓐᓄᑦ ᐊᒻᒪ/ᐅᕝᕙᓗ ᓯᑯᓚᑎᓂᖅᑎᓐᓄᑦ • ᐸᒡᕕᓴᐃᓂᖅᑎᑦ ᓂᐱᖃᓐᓂᖅᑯᓄᑦ ᓴᓇᔪᑦ, ᐅᒥᐊᔾᔪᐊᓄᑦ ᖃᖓᑕᓲᓄᓪᓗ • ᑐᖃᔅᓴᖅᑕᑦ ᓇᓄᐃᑦ ᓴᓇᔪᓄᑦ ᐅᐸᒍᑎᓂᖅᑯᓄᑦ		• ᓇᔪᖅᑕᐅᔪᑦ ᐊᓯᔾᔨᓐᓂᖅᑎᑦ ᓯᑯᓯᐅᓐᓂᖅᑎᓐᓄᑦ ᐊᒻᒪ/ᐅᕝᕙᓗ ᓯᑯᓚᑎᓂᖅᑎᓐᓄᑦ • ᐸᒡᕕᓴᐃᓂᖅᑎᑦ ᓂᐱᖃᓐᓂᖅᑯᓄᑦ ᓴᓇᔪᑦ, ᐅᒥᐊᔾᔪᐊᓄᑦ ᖃᖓᑕᓲᓄᓪᓗ • ᑐᖁᔅᓴᖅᑕᐅᓗᓂ ᓇᓄᖅ ᐃᓅᓚᑎᐊᖅᑲᐅᑎᒃᑎᒃ	ᐊᖏᔫᓐᖏᑦᑐᖅ

ᕿᒥᕐᕈᔭᖅᓴᖅ 1-12.2 ᐅᓂᒃᑳᖅᑎᑦ ᕿᒪᒡᔪᓄᑦ ᐃᓅᖃᑎᒌᑦ-ᑮᓇᐅᔭᓕᐅᕈᓯᖅᑎᓄᑦ ᐊᑦᑐᐃᓃᑦ

ᐃᓄᖕᒋᑦ					
VSEC	ᐊᑐᑖᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᕐ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔭᔅᓴᑦ	ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᐃᓄᖃᓐᓂᖏᑕ ᖃᓄᐃᑦᑑᓂᖏᑦ	ᖃᓄᐃᑦᑑᓂᖏᑕ ᐃᓕᖅᑯᓯᕆᔭᖏᑦ	• ᓄᓇᓕᓐᓅᓐᓂᖏᑦ ᐅᓄᙱᑦᑐᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᑦ ᖃᑦᑐᓈᑦ ᓄᓇᖏᓐᓂᒃ ᐊᑦᑐᐃᓂᐊᖅᑐᑦ ᐃᓅᖃᑎᒌᖏᑕ ᐃᓕᖅᑯᓯᖏᓐᓂᒃ ᓄᓇᓕᐅᕙᓂᒃ • ᓅᑉᐸᑦᓕᐊᓂᖏᑦ ᐃᓄᐃᑦ ᐊᓯᖏᑦ ᐃᖅᑲᓇᐃᔭᖅᑐᑦ ᕿᑭᖅᑖᔪᐃ ᐅᐊᖕᓇᖓᑕ ᓴᓇᕝᕕᒋᓂᐊᖅᑕᖓᓄᑦ • ᓅᑉᐸᑦᓕᐊᓂᖏᑦ ᐃᓄᐃᑦ ᐊᓯᖏᑦ ᐃᖅᑲᓇᐃᔭᕆᐊᑦᑐᑎᒃ ᐊᓯᖏᓄᑦ ᓴᖅᑭᑦᑐᓄᑦ ᓄᓇᓕᓐᓂᑦ • ᐃᓄᐃᑦ ᓄᒃᑎᕋᓕᓐᓂᖏᑦ ᐊᑯᓐᓂᐊᒍᑦ ᓄᓇᓖᑦ ᕿᑭᖅᑖᔪᒻᒥ • ᐊᓯᖏᓄᑦ ᓅᑉᐸᑦᓕᐊᓂᖏᑦ ᐃᓄᖏᑕ ᕿᑭᖅᑖᔪᑉ ᐅᐊᖕᓇᒻᒥᐅᖏᑦ	• ᑎᒃᑯᐊᖅᑕᐅᓂᖏᑦ ᓄᓇᓕᖏᑕ ᕿᑭᖅᑖᔪᑉ ᐅᐊᖕᓇᖓᓂᑦ "ᐃᖅᑲᓇᐃᔭᖅᑎᑖᕝᕚᑦ" (ᐃᒃᐱᐊᔾᔪᒃ, ᑲᖏᖅᑐᒑᐱᒃ, ᓴᓂᕋᔭᒃ, ᐃᒡᓗᓕᒃ, ᒥᑦᑎᒪᑕᓕᓪᓗ) • ᐃᖃᓗᐃᓪᓗ ᐋᑐᕚᓗ ᑎᒃᑯᐊᖅᑕᐅᒻᒥᓗᑎᒃ "ᐃᖅᑲᓇᐃᔭᖅᑎᑖᕝᕚᒃ" • ᓇᑭᑐᐃᓐᓇᖅ ᓄᓇᓕᐊᓂᑦ ᐊᑭᖃᙱᑦᑐᖅ "ᐃᖅᑲᓇᐃᔭᖅᑎᑖᕝᕚᑦ" ᖃᖓᑦᑕᐅᑎᖏᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᒻᒧᑦ	• ᓄᓇᓕᓐᓅᓐᓂᖏᑦ ᐅᓄᙱᑦᑐᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᑦ ᓄᓇᓕᐅᖃᑎᖏᓐᓂᒃ ᐊᒪᓗ ᖃᑦᑐᓈᑦ ᓄᓇᖏᓐᓂᒃ ᐊᑦᑐᐃᓂᐊᖅᑐᑦ ᐃᓅᖃᑎᒌᖏᑕ ᐃᓕᖅᑯᓯᖏᓐᓂᒃ ᓄᓇᓕᐅᕙᓂᒃ	ᐊᖏᔫᖕᖏᑦᑐᖅ
ᐃᓕᓐᓂᐊᕈᑎᔅᑦ ᐱᓕᒻᒪᔅᓴᐅᑏᓪᓗ	ᐃᓅᓯᓕᕆᔾᔪᑏᑦ ᐱᓕᕆᔭᕆᐊᖃᕇᑦ	• ᐱᐅᓯᒋᐊᓐᓂᖏᑦ ᐃᓅᓯᖏᓐᓂᒃ ᐱᓕᕆᐊᕆᔪᓐᓇᐅᑎᖏᑦ ᒪᒃᑯᖏᒧᑦ	• ᐃᖅᑲᓇᐃᔭᕈᓐᓇᐅᑏᑦ ᐱᓕᒻᒪᔅᓴᐅᑎᖏᑦ • ᐃᑲᔪᐃᔪᒥᒃ ᓴᓇᕝᕕᖏᒧᑦ ᐃᓕᖅᑯᓯᑖᑦ • "ᑭᖑᓂᐊᑐᑦ ᐱᕕᖅᑲᒃᑲᓐᓂᖅᑎᑦᑎᔪᑦ" ᐊᑐᐊᒐᐃᑦ • "ᐱᑕᖅᑲᓕᐊᖅᑲᖏᑦᑐᑦ ᓯᕐᕋᒧᑏᑦ" ᐊᑐᐊᒐᖏᑦ	• ᐱᐅᓯᒋᐊᓐᓂᖏᑦ ᐃᓅᓯᖏᓐᓂᒃ ᐱᓕᕆᐊᕆᔪᓐᓇᐅᑎᖏᑦ ᐃᓄᖏᑕ ᓄᓇᖏᓐᓂᒃ ᐊᑐᖅᓯᒪᓂᑖᑦ	ᐊᖏᔫᔪᖅ - ᐱᐅᓂᖅᑲᖅᑐᖅ
	ᐃᓕᓐᓂᐊᕈᑏᑦ ᐊᔪᕈᓐᓃᖅᓴᐅᑎᑦᑐ	• ᐱᔫᒥᓴᐅᑏᑦ ᐃᓕᓐᓂᐊᖅᑎᐅᔪᓄᑦ ᐅᐸᑌᑎᑦᑎᐊᕈᑎᓄᑦ ᑐᕌᖓᔪᑦ ᑲᔪᓯᑎᑦᑎᐊᕈᑎᓄᑦᑐ • ᒪᑐᐃᕈᑎᓃᑦ ᐱᓕᒻᒪᔅᓴᐅᑎᓄᑦ ᐃᖅᑲᓇᐅᔭᕈᓇᕈᑎᓂᒃ	• 18-ᓂᒃ ᐊᕐᕌᒍᖅᑲᓇᐊᓕᒃ ᐃᖅᑲᓇᐃᔭᖅᑎ • ᐃᖅᑲᓇᐃᔫᔅᓱᑦ ᓯᕗᓕᐅᕆᔾᔪᑎᑦ ᐸᓐᓇᐃᔾᔪᑎᖏᑦ • ᓯᕗᓕᐅᕆᓂᖅ ᐃᓄᓐᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᓄᑦ • ᐃᓕᓐᓂᐊᖅᓯᒪᔭᖏᑦ ᖁᕝᕙᓯᒍᑎᖏᑦ	• ᐱᔫᒥᓴᐅᑏᑦ ᐃᓕᓐᓂᐊᖅᑎᐅᔪᓄᑦ ᐅᐸᑌᑎᑦᑎᐊᕈᑎᓄᑦ ᑐᕌᖓᔪᑦ ᑲᔪᓯᑎᑦᑎᐊᕈᑎᓄᑦᑐ • ᒪᑐᐃᕈᑎᓃᑦ ᐱᓕᒻᒪᔅᓴᐅᑎᓄᑦ ᐃᖅᑲᓇᐅᔭᕈᓇᕈᑎᓂᒃ	ᐊᖏᔫᔪᖅ - ᐱᐅᓂᖅᑲᖅᑐᖅ

ᕿᒥᕐᕈᔭᐅᓯᖅ 1-12.2 ᐅᓂᒃᑳᖕᒋᑦ ᕿᒪᒃᑰᔪᓄᑦ ᐃᓅᖃᑎᒌᑦ-ᑮᓇᐅᔭᓕᐅᕈᓯᖕᒋᓄᑦ ᐊᑦᑐᐃᓃᑦ

ᐃᓄᖕᒋᑦ					
VSEC	ᐊᑐᓛᑦ ᓇᓗᓇᐃᕈᑕ (ᓃᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᕐ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᖓᑦ ᐱᓕᕆᔭᔅᓴᑦ	ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
			• ᐊᐅᔭᒃᑯᑦ ᐊᔪᕈᓐᓂᖅᓴᐅᑏᑦ • ᐃᖅᑲᓇᐃᔮᔅᓴᓕᕆᓂᖅ • ᐱᓕᒻᒪᔅᓴᐃᔾᔪᑏᑦ		
ᐃᓅᓯᓕᕆᔾᔪᑏᑦ ᐃᖅᑲᓇᐃᔮᑦᑐ	ᑮᓇᐅᔭᓕᐅᖅᑐᑦ ᐃᖅᑲᓇᐃᔭᖅᑏᑦ	• ᓄᓇᖕᒋᒍᑦ ᓴᓇᕝᕕᐅᔫᑉ ᐃᖅᑲᓇᐃᔮᓕᐅᕐᓂᖅ • ᐃᖅᑲᓇᐃᔭᖅᑎᖃᕐᓂᖅ ᓄᓇᓕᓐᓂᒥᐅᑕᐅᔫᓂᒃ	• ᐊᖏᕈᑕᐅᔫᑉ ᐃᖅᑲᓇᐃᔭᖅᑏᑦᑕᕝᕕᖕᒋᑦ • ᐊᑐᕈᒪᔭᖕᒋᑦ ᐃᖅᑲᓇᐃᔭᖅᑏᑦᑖᕈᑎᔅᓴᑦ • ᐃᓄᓐᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᔅᓱᓄᑦ ᐊᑐᐊᒐᖅ • ᐊᐅᓚᑦᑎᔾᔭᑦ ᐊᑐᓐᓂᐊᓐᓂᖁᖅᑕᖕᒋᑦ	• ᓄᓇᖕᒋᒍᑦ ᓴᓇᕝᕕᐅᔫᑉ ᐃᖅᑲᓇᐃᔮᓕᐅᕐᓂᖅ • ᐃᖅᑲᓇᐃᔭᖅᑎᖃᕐᓂᖅ ᓄᓇᓕᓐᓂᒥᐅᑕᐅᔫᓂᒃ	ᐊᖏᔫᔪᖅ - ᐱᐅᓂᖁᖅᑐᖅ
	ᐃᖅᑲᓇᐃᔮᒥᓄᑦ ᐳᖅᑎᓂᖅᓴᒨᕈᑎᑦ ᐃᓕᓴᕐᓴᐅᔪᑦᑐ ᐊᖑᔪᖅᑳᕈᓐᓂᒧᑦ	• ᓄᑖᑦ ᐊᑐᕐᓯᑦ ᐃᓅᓯᒧᑦ ᐃᖅᑲᓇᐃᔮᓯᑦ	• ᐊᑐᓐᖓᔪᑦ ᐃᖅᑲᓇᐃᔭᑐᓕᕆᔾᔭᑦ ᐃᑲᔪᕈᑎ • ᐃᓄᓐᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᑦᑎᓂᖅ/ᖁᓪᓘᕆᓂᒧᑦ ᑐᕌᖓᔪᑦ ᐊᑐᐊᒐᑦ • ᐊᐅᓚᑦᑎᔾᔭᑦ ᐊᑐᓐᓂᐊᓐᓂᖁᖅᑕᖕᒋᑦ	• ᐊᖏᓂᖅᓴᒃ ᐃᖅᑲᓇᐃᔮᓯᒧᑦ ᐃᓅᓯᒥᑦᑐ ᐃᖅᑲᓇᐃᔭᕝᕕᓪᓗᑦ ᐱᓕᒻᒪᓴᐅᑎᒧᑦ ᐃᓱᒪᓕᐅᕈᑎᓯᑦ	ᐊᖏᔫᔪᖅ - ᐱᐅᓂᖁᖅᑐᖅ
ᑮᓇᐅᔭᓕᐅᕐᓂᒃᑯᑦ ᐱᕚᓪᓕᐊᔪᓄᑦ ᓴᖅᑮᓇᓱᐊᕐᓂᖅ ᐃᒻᒥᒃᑯᑦᑐ ᒪᑭᒪᔪᓐᓇᕐᓂᖅ	ᓄᓇᖓ	• ᓄᓇᒥᒃ ᐊᑐᕐᓂᖅᓴᐅᓕᕐᓂᖕᒋᑦ • ᐊᓯᔾᔨᕈᑎᔪᑦ ᐃᓄᐃᑦ ᐊᑦᑐᐊᓂᖕᒋᑦ ᓄᓇᒧᑦ ᐊᓐᓇᐅᒪᔾᔪᑎᓂᒃ	• ᐊᑐᖅᑐᐊᕈᑎᒧᑦ ᐊᖑᕈᑎ • VEC-ᒧᑦ ᐊᑦᑐᐊᔪᑦ ᐱᓕᕆᐊᓯᑦ • ᓄᓇᒥᓐᖓᖅᑐᓄᑦ ᓄᓇᐅᑉᑐ ᐊᑐᖅᑕᐅᓂᖕᒋᓄᑦ ᐱᓕᕆᐊᓯᑦ (ᑕᑯᓗᒋᑦ VSEC)	• ᐊᖏᓕᐊᖅᑐᑦ ᓴᓇᔪᓕᕆᔾᔪᐊᑦ ᐊᑐᓐᓂᖓ ᓄᓇᒥᒃ • VEC-ᒧᑦ ᐊᑦᑐᐊᔪᑦ ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓃᑦ • ᐊᖑᓇᓱᓐᓃᑦ ᓇᕈᓂᓪᒧᑦᑐ ᐊᑦᑐᐃᓃᑦ	ᐊᖏᔫᓐᖏᑦᑐᖅ, ᐱᐅᓐᖏᑦᑐᖅ

ᕿᒥᕿᔭᖕᖓᖅ 1-12.2 ᐅᓂᒃᑳᖅᑎᑦ ᕿᒻᒪᑰᔪᓄᑦ ᐃᓅᖅᑎᖠᑦ-ᑮᓇᐅᔾᓚᐅᑭᓯᖅᑎᓄᑦ ᐊᑦᑐᐃᓃᑦ

ᐃᓄᖅᑎᑦ					
VSEC	ᐊᑐᓖᑦ ᓇᓗᓇᐃᑭᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᑫ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔭᖕᖏᑦ	ᕿᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
	ᐃᓄᖅᑎᑦ	• ᒪᑐᐃᑭᑎᕚᓪᓕᖅᑐᑦ ᒪᒃᑯᑦᑐᓄᑦ • ᐱᐅᓂᖅᖏᑦ ᐃᓕᓐᓂᐊᑭᑏᑦ ᐱᓕᒻᒪᖕᖏᐅᑎᓪᓗ • ᐊᒃᓗᐃᓐᓂᖅᖏᑦ ᐃᓅᓯᖅᑎᑦᑎᐊᓐᓂᓗ	• ᐃᖅᑲᓇᐃᔭᖅᑎᏟᑭᓲᑎᑦ ᐃᓄᓐᓂᒃ • ᐃᓕᓐᓂᐊᑭᑎᑦ ᐱᓕᒻᒪᖕᖏᐅᑎᓪᓗ ᐱᓕᕆᐊᖕᖏᑦ • ᓄᓇᓕᓐᓄᑦ ᐃᑲᔫᑎᖕᖏᑦ ᑮᓇᐅᔭᖅᑎᑦ • ᐃᖅᑲᓇᐃᔭᖅᑎᑦ ᐃᓚᒋᔭᖅᑭᓄᓪᓗ ᐃᑲᔫᑎᖕᖏᐃᑦ ᐱᔾᑎᐅᑏᑦ	• ᐊᖏᓂᖅᖏᒃ ᐱᔪᓐᓇᓐᓂᖃᓐᓂᖅᑎᑦ ᐃᓄᖅᑎᑦ ᐃᓅᓯᖃᑦᑎᐊᓐᓂᖅᖏᐅᓂᖅᑕᓗ	ᐊᖏᔫᔪᖅ - ᐱᐅᓂᖃᖅᑐᖅ
	ᓄᓇᓕᓐᓂᑦ ᑮᓇᐅᔭᓕᐅᑭᓰᑦ	• ᐊᒃᓗᐃᓐᓂᖅᖏᑦ ᓄᓇᓖᑦ • ᓄᓇᓕᓐᓂᒥᐅᑕᑦ ᐊᑐᓃᖅᑕᖅᑐᒥᒃ ᐊᐅᓖᖅᓯᒪᑦᑕᓐᓂᖅᑎᑦ • ᐊᖏᓕᒋᐊᖅᑐᑦ ᐱᓴᓇᓯᓄᑦ ᒪᑐᐃᖅᑐᑦ	• ᑮᓇᐅᔭᓕᕆᔾᔪᑎᓄᑦ ᓇᓗᓇᐃᒃᑯᑏᑦ • ᓄᓇᓕᓐᓄᑦ ᑮᓇᐅᔭᕐᑯᑎᖕᖏᑦ • ᐅᔾᔨᖅᖏᐃᓂᖅ ᐋᖅᑭᑕᐅᔪᓄᑦ ᐃᑲᔪᐃᔾᔪᑎᖕᖏᐅᔪᓂᒃ	• ᐱᓕᕆᔪᓐᓇᓐᓂᖅᖏᐅᓕᓐᓂᖅᑎᑦ ᑕᒪᒃᑯᓂᖓ ᐊᑐᕋᖕᖏᓕᐊᖑᓯᓂᒃ ᓄᓇᓕᓐᓄᑦ ᓯᕗᓂᖅᑎᓄᑦ ᑎᑭᓐᓇᓯᐊᒐᕆᔭᒥᓂᒃ	ᐊᖏᔫᓐᖏᑦᑐᖅ, ᐱᐅᓂᖃᖅᑐᖅ
	ᓄᓇᕗᒥᑦ ᑮᓇᐅᔭᓕᐅᑭᓰᑦ	• ᐊᖏᓂᖅᖏᒃ ᑮᓇᐅᔭᓕᐅᑭᑎᓄᑦ ᓴᖅᑭᑎᖅᑐᑦ (GDP) • ᐊᓯᔾᔨᖅᑮᒥᓂᖓ ᓄᓇᕗᑉ ᑮᓇᐅᔭᓕᐅᑭᑎᖏᑦ	• ᑕᕝᕗᖓᑦᓚᕆᒃ ᓴᓂᕌᒍᓪᓗ ᑐᖅᑯᖅᑕᑦ ᑮᓇᐅᔾᑦ ᑮᓇᐅᔭᓕᐅᑭᑎᓄᑦ • ᑖᒃᓯᓂᒃ ᐊᑭᓕᖅᓯᐃᓂᖅ • ᐊᑭᓕᖅᓯᐃᓂᖅ ᓂᖏᖅᑕᑭᑎᓂᒃ	• ᐱᕈᖅᐸᓪᓕᐊᓂᖓ ᑮᓇᐅᔭᓕᐅᑭᓯᖅᑎᑦ ᐊᑦᑐᐊᔪᓪᓗ ᐃᖅᑲᓇᐃᔾᔪᓂᒃ ᓴᖅᑭᑎᕆᔪᑦ ᐱᓴᓇᓯᓂᓪᓗ ᐱᕈᖅᖕᐃᔾᔫᑏᑦ	ᐊᖏᔫᔪᖅ - ᐱᐅᓂᖃᖅᑐᖅ
ᐃᓄᖅᑎᑦ ᐃᓅᓯᖅᑎᒍᑦ ᖃᓄᐃᖅᑎᔾᔪᓯᖅᑎᑦ ᐃᓅᓯᖅᑎᑦᑎᐊᑭᑏᑦ	ᐊᑐᓐᓂᓪᓗᐃᓂᖅ ᐋᖓᔮᓐᓇᖅᑐᓂᒃ	• ᓯᕋᒍᑏᑦ ᐱᓯᒪᔭᐅᓂᖅᑎᑦ ᐊᖅᑯᔮᖅᑐᓄᑦ ᐅᔭᕋᓐᓂᐊᕝᕕᒻᒨᑦ • ᐊᑭᓕᕈᓐᓇᖅᓯᓂᖅᑎᑦ ᑕᒪᒃᑯᓄᖓ ᓯᕋᒍᑎᓄᑦ • ᐃᓯᒪᖃᐅᓯᖅᑎᑦ ᓯᕋᓐᓇᖅᑐᓄᑦ ᐋᔩᖅᑭᔾᔪᑎᓄᓪᓗ	• "ᐱᑕᖃᕆᐊᖃᖅᑎᑦᑐᑦ ᓯᕋᒍᑏᑦ" ᐊᑐᐊᒐᖅᑎᑦ • ᐱᓕᕆᐊᑦ ᓄᖅᑲᖓᑎᑦᑎᔾᔫᑏᑦ ᑕᒪᒃᑯᓂᖓ ᓇᖕᖏᑕᐅᖃᑦᑕᖃᓇᖅᑎᑦ • ᐃᖅᑲᓇᐃᔭᖅᑎᓄᑦ ᐃᓚᖅᑭᓄᓪᓗ ᐃᑲᔪᑎᖕᖏᖅ ᐱᔾᑎᐅᑎᖓ	• ᐱᐅᓐᖏᑦᑐᖅ - ᐊᑭᓕᖅᓯᐃᔪᓐᓇᖅᓯᓂᖅᑎᑦ ᑕᒪᒃᑯᓄᖓ ᓯᕋᓐᓇᖅᑐᓄᑦ ᐊᑦᑐᐃᓂᐊᖅᑐᖅ ᐃᓄᖅᑕ ᐋᖅᑭᑦᑕᓐᓂᖅᑭᓐᓄᑦ • ᐱᐅᓕᖅᑐᖅ – ᓵᓐᖓᓗᒋᑦ ᐃᓅᓯᒥᑦ ᖃᓂᒪᑦᑕᐃᓕᒪᓃᑦ ᐅᓗᕆᐊᓇᖅᑕᐃᓕᒪᓃᓪᓗ, ᐃᖅᑲᓇᐃᔭᖅᑎᓄᑦ ᐃᑲᔫᑏᑦ ᐅᖃᐅᔾᔭᖅᓯᑭᑎ ᑐᑭᓯᐅᒪᑎᑦᑎᕙᓪᓕᕋᔭᖅᑐᑦ	ᐊᖏᔫᓐᖏᑦᑐᖅ, ᐱᐅᓐᖏᑦᑐᖅ ᐱᐅᓂᖃᖅᑐᖅ

ᑮᒥᕿᔾᔭᖅ 1-12.2 ᐅᓂᒃᑳᖕᒋᑦ ᕿᒪᒍᔪᓄᑦ ᐃᓅᖃᑎᒌᑦ-ᑮᓇᐅᔭᓕᐅᕈᓯᖕᒋᓄᑦ ᐊᑦᑐᐃᓃᑦ

ᐃᓄᖕᒋᑦ					
VSEC	ᐊᑐᓛᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᓇᐊᓕᑦ ᐊᑦᑐᐃᓂᕐ(ᓃᑦ)	ᒥᑭᓕᓇᐊᓇᓂᒧᑦ ᐱᓕᓇᔾᔭᑦ	ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖕᒪᓄᑦ ᐊᑦᑐᐃᓂᖕᒐ
	ᕿᑐᙵᓇᔾᑦ ᐃᓅᓯᖃᑦᑎᐊᓐᓂᖕᒋᑦ	• ᐊᖕᒐᔪᖅᑳᖕᒋᑦ ᐊᐅᓚᖃᑦᑕᓐᓂᖕᒋᓄᑦ ᐊᓯᔾᔨᓐᓂᐅᔪᑦ • ᐊᖕᒋᓕᒋᐊᓐᓂᖅ ᐃᒡᒍᖃᑎᒌᑦ ᑮᓇᐅᔭᓕᐊᖕᒋᓂᒃ ᓂᕿᑖᕈᑎᖕᒋᓂᓪᓗ • ᓱᕈᓯᓇᔭᐅᔪᓄᑦ ᕿᒥᕿᐃᓂᖅ ᐊᑦᑐᐃᓂᓇᔭᐅᔪᓄᑦ	• ᑐᑭᓯᕚᓪᓕᕈᑎᑦ ᐱᓕᒪᔾᔭᐅᑎᓪᓗ ᑐᕌᖕᒐᔪᑦ ᖃᖕᒐᑕᓲᒃᑯᑦ ᐊᐅᓪᓛᖅᑕᖅᑐᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᓄᑦ, ᐃᓅᓯᒧᑦ, ᖃᓄᐃᖕᒋᑦᑎᐊᓐᓂᒧᓪᓗ • ᐃᖅᑲᓇᐃᔭᖅᑎᓄᑦ ᐃᓚᖕᒋᓄᓪᓗ ᐃᑲᔪᑎᔾᔭᖅ ᐱᔾᔪᑎᐅᑎᖕᒐ • ᑮᓇᐅᔭᓕᕆᔾᔪᑎᒧᑦ ᐱᓕᒪᔾᔭᐅᑏᑦ • ᓄᓇᓖᓐᓄᑦ ᐃᑲᔫᑎᔾᔭᑦ ᑮᓇᐅᔭᑦ	• ᖃᓄᐃᙱᑉᐹᓪᓕᓐᓂᖕᒋᑦ ᓱᕈᓯᕆᔭᐅᔪᑦ	ᐊᖕᒋᔫᔪᖅ - ᐱᐅᓂᖅᑲᖅᑐᖅ
	ᓄᓇᓕᓐᓂᑦ ᐃᓅᖅᑲᑎᒌᖕᒋᑦ ᐃᓅᖅᑲᑎᒌᑦᑎᐊᓂᖕᒋ	• ᓄᓇᓕᓅᙵᕆᑲᐃᓐᓇᓐᓂᖕᒋᑦ ᐃᓄᖕᒋᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᓪᓗᒋᑦ	• ᑐᑭᓯᕚᓪᓕᕈᑎᑦ ᐱᓕᒪᔾᔭᐅᑎᓪᓗ ᑐᕌᖕᒐᔪᑦ ᖃᖕᒐᑕᓲᒃᑯᑦ ᐊᐅᓪᓛᖅᑕᖅᑐᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᓄᑦ • ᐊᐅᓪᓚᖅᓯᒪᑲᐃᓐᓇᓐᓂᖅ (ᒪᕿᒃ ᐱᓇᓱᐊᕈᓰᒃ ᐅᑎᖅᑕᕋᖅᑐᑦ)	• ᓄᓇᖃᖅᑎᑦ ᐊᐅᓪᓛᖅᓯᒪᓂᖕᒋᑦ ᓄᓇᓕᓐᓂᑦ ᐊᑦᑐᐃᒐᔭᖅᑐᖅ ᐅᔾᕈᓐᓂᐊᕝᕕᒦᑎᓪᓗᒋᑦ ᐃᓅᖅᑲᑎᒌᖑᔪᓄᑦ	ᐊᖕᒋᔫᙵᕆᑦᑐᖅ
ᓄᓇᓕᐅᑉ ᐱᕐᑯᑎᔾᔪᐊᖕᒋᑦ ᐱᔨᑦᑎᑭᑎᖕᒋᓪᓗ	Hᐋᓪᓚᑦ ᑎᒍᓯᓂᖕᒋᑦ ᐱᓯᒪᓂᖕᒋᓪᓗ ᐃᖅᑲᓇᐃᔭᖅᑎᓂᒃ	• ᐃᖅᑲᓇᐃᔭᖅᑎᔅᓴᓂᒃ ᓇᓛᕋᓇᓂᖅ • ᐃᖅᑲᓇᐃᔭᕈᓐᓇᖅᑐᑦ ᐱᓕᕆᔪᓐᓇᓐᓂᖕᒋᑦ	• ᐱᓕᒻᒪᔅᓴᐃᓂᒧᑦ ᐱᒋᐊᖅᓵᓕᓂᖅ • ᑲᔪᓲᓐᓇᖅᑐᒥᒃ ᐱᓕᒻᒪᔅᓴᐃᓂᖅ • ᐃᖅᑲᓇᐃᔭᓐᓂᒃᑯᑦ ᐊᑐᓕᒪᓐᓂᖅ	• ᐃᖅᑲᓇᐃᔭᖅᑎᔅᓴᓂᒃ ᓇᓛᕋᓇᓂᖅ ᓄᓇᓕᐅᑉ ᐱᔾᔪᑎᐅᑎᖕᒋᓂᒃ ᐊᑦᑐᐃᔫᓐᓇᖅᑐ • ᐊᖅᕋᒍᒐᓴᑎᒍᑦ ᐱᐅᓯᒋᐊᖅᐸᓪᓕᐊᓂᖕᒐ ᐃᖅᑲᓇᐃᔭᕈᓐᓇᖅᑐᑦ ᐱᓕᕆᔫᓐᓇᓐᓂᖕᒋᑦ	ᐊᖕᒋᔫᙵᕆᑦᑐᖅ, ᐱᐅᙵᕆᑦᑐᖅ. ᐊᖕᒋᔫᔪᖅ - ᐱᐅᓂᖅᑲᖅᑐᖅ
ᑳᓐᑐᕋᔅᓴᐃᑦ ᐱᔅᓇᓯᓕᓐᓄᑦᑐ ᒪᑐᐃᕈᑎᔪᑦ	ᐱᔅᓇᓯᓄᑦ ᒪᑐᐃᕈᑎᔪᑦ	• ᐊᖕᒋᓕᒋᐊᖅᑐᖅ ᓂᐅᕕᕋᖅᑎᖕᒋᑦ - ᐱᔅᓇᓯᑦ ᐱᔾᔪᑎᕋᖅᑐᑦ ᓴᓇᔭᐅᔪᔅᓴᒧᑦ • ᐊᖕᒋᓕᒋᐊᖅᑐᖅ ᓂᐅᕕᖅᑲᖅᑎᖕᒋᑦ - ᐃᓄᐃᑦ ᓂᐅᕕᖅᐸᑦᑕᖕᒋᑦ ᐱᔾᔪᑎᐅᑎᓪᓗ • ᐊᖕᒋᓂᖅᓴᖅ ᐱᓕᕆᔪᓐᓇᓐᓂᖕᒋᑦ ᐱᔅᓇᓯᖃᖅᑏᑦ	• ᐃᓄᓐᓂᒃ ᑳᓐᑐᕋᒍᑎᓄᑦ ᐊᑐᕋᔅᓴᖅ • ᑲᑐᔾᔨᖃᑎᖃᓐᓂᖅ ᕿᑭᖅᑕᓂᒃᑯᓐᓂ ᐃᓄᐃᑦ ᐱᔅᓇᓯᖕᒋᑦ ᐱᓕᕆᔪᓐᓇᖅᓯᖃᓪᓗᒋᑦ • ᓴᖅᑮᓗᑕ ᑮᓇᐅᔭᓂᒃ ᐃᑲᔫᑎᔅᓴᓄᑦ ᐱᓕᒻᒪᔅᓴᐅᑎᓄᓪᓗ ᑲᒪᒋᔾᔪᑎᖕᒋᓂᒃ • ᐊᐅᓚᑦᑎᔾᔭᑦ ᐃᑲᔪᖅᓯᐃᓂᖕᒋᑦ ᐃᓄᐃᑦ ᑎᒃᑯᐊᖅᓯᒪᔭᖕᒋᓄᑦ ᑎᒥᐅᔪᓄᑦ • ᒪᑐᐃᕈᑎᔪᑦ ᓄᓇᓕᓐᓂᑦ ᐱᔅᓇᓯᓚᑦ ᐅᔾᕈᓐᓂᐊᕝᕕᒧᑦ ᐱᓕᕆᔪᓐᓇᕈᑎᓂᒃ	• ᐊᖕᒋᓕᒋᐊᖅᑐᖅ ᓂᐅᕕᕋᖅᑎᖕᒋᑦ - ᐱᔅᓇᓯᑦ ᐱᔾᔪᑎᕋᖅᑐᑦ ᓴᓇᔭᐅᔪᔅᓴᒧᑦ • ᐊᖕᒋᓕᒋᐊᖅᑐᖅ ᓂᐅᕕᖅᑲᖅᑎᖕᒋᑦ - ᐃᓄᐃᑦ ᓂᐅᕕᖅᐸᑦᑕᖕᒋᑦ ᐱᔾᔪᑎᐅᑎᓪᓗ • ᐊᖕᒋᓂᖅᓴᖅ ᐱᓕᕆᔪᓐᓇᓐᓂᖕᒋᑦ ᐱᔅᓇᓯᖃᖅᑏᑦ	ᐊᖕᒋᔫᔪᖅ - ᐱᐅᓂᖅᑲᖅᑐᖅ

ᕿᒥᕐᕈᔭᐅᓵᖅ 1-12.2 ᐅᓂᒃᑳᖏᑦ ᕿᒻᒪᑰᔪᓄᑦ ᐃᓅᖃᑎᒌᑦ-ᑮᓇᐅᔭᓕᐅᕈᓯᖏᓄᑦ ᐊᑦᑐᐃᓃᑦ

ᐃᓄᖏᑦ					
VSEC	ᐊᑐᓖᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᕐ(ᓃᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔾᓴᑦ	ᕿᒻᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖔᓄᑦ ᐊᑦᑐᐃᓂᖔ
ᐃᓄᐃᑦ ᓯᕗᓕᖏᑕ ᓱᓇᒃᑯᑖᕕᓂᖏᑦ	ᐃᑦᑕᓐᓂᓴᓖᑦ ᓄᓇᐃᑦ	• ᐸᕝᕙᓴᖅᑕᐅᓂᖏᑦ ᑎᒍᔭᐅᓂᖏᓪᓗ ᐃᑦᑕᓐᓂᓴᕐᑲᐅᑎᑦ ᓄᓇᖏᓐᓂᒃ • ᐸᐃᑉᐹᕐᑲᕋᑎᒃ ᑎᒍᓯᔪᑦ ᐃᑦᑕᓐᓂᓴᑦ ᕿᒻᒪᒃᑯᖏᓐᓂᒃ • ᐊᒡᒍᖅᓯᒪᓂᐊᑕ ᐊᓐᓂᓐᓇᕈᑎᖏᓂᒃ ᓄᓇᖏᓂᒃ ᐃᓄᓕᒦᖏᓐᓄᑦ ᐊᖏᖅᑕᐅᓯᒪᔫᒃᑯᑦ ᒥᑭᓕᕆᔾᔪᑎᒃᑯᑦ	• ᓯᕗᓂᐊᑕ ᓴᓇᔭᐅᓚᐅᖅᑎᓐᓇᒍ ᐅᔾᕙᓐᓂᐊᕝᕕᒃ ᓄᓇᖏᑦ ᕿᒥᕐᕈᓗᖏᑦ ᐃᑦᑕᓐᓂᓴᕐᑲᖅᑐᑦ ᓄᓇᐃᑦ ᓴᓂᖅᑯᑕᐅᔪᓐᓇᕐᑯᓪᓗᖏᑦ ᓴᐳᒥᓗᖏᑦ, ᑲᒪᒋᔭᐅᓂᐊᓪᓗᑎᒃ ᑖᒃᑯᓄᖓ SDR-ᒧ ᓯᕗᓂᐊᑕ ᓴᓇᔭᐅᒋᐊᓐᓂᖓᑕ, ᐊᑐᓕᖅᑎᑕᐅᓂᖏᑦ ᓂᕆᐅᓇᖏᑦᑐᒥᒃ ᓇᓂᓯᔪᕐᑲᑲᓪᓚᒃᑯᓂ • ᐃᓕᓴᐃᓂᖅ, ᓇᐸᑉᖅᑯᓯᕆᓂᖅ ᓄᓇᓪᓗ ᐅᐸᒋᐊᕐᑲᓐᖏᑦᑐᑦ, ᒪᕙᒪᑦ ᐊᑐᕐᑯᔭᖓᓐᓂᒃ ᒥᑭᓕᕆᔾᔪᑎᓂᒃ ᐊᑐᐊᖅᓯᓂᖅ, ᐃᓄᓐᓂᒃ ᓄᓇᖏᒍᑦ ᐃᓚᐅᑎᑦᑎᓂᖅ ᖃᐅᔨᒪᔪᓂᒃ, ᐸᓐᓇᐅᑎᖏᑦ ᐊᐅᓚᑦᑎᓂᒧᑦ, ᐊᑐᓕᖅᑎᑕᐅᓂᖏᑦ ᓂᕆᐅᓇᖏᑦᑐᒥᒃ ᓇᓂᓯᔪᕐᑲᑲᓪᓚᒃᑯᓂ	• ᓄᓇᐃᑦ ᐃᑦᑕᓐᓂᓴᕐᑲᖅᑐᑦ ᐱᔭᖅᑯᒻᒨᖏᑦᑐᖅ ᐊᒻᒪᓘᓐᓃᑦ ᐱᔭᕆᔪᒧᑦ ᐃᓚᖓᓂᒃ ᓄᓇᒥᒃ ᑕᒪᐃᓐᓂᓪᓘᓐᓃᑦ ᓱᕋᐃᔪᕐᑲᓐᓂᖓ • ᓇᓂᓯᑲᓪᓚᑐᐃᓐᓇᕆᐊᕐᑲᓐᓂᖅ ᓄᓇᖓᒍᑦ • ᐊᖏᓕᒋᐊᓐᓂᖓ ᐃᓄᕐᑲᓐᓂᖓ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᒥ ᐊᑦᑐᐃᔪᓐᓇᖅᑐᖅ ᓄᓇᖏᑕ ᐃᖅᑕᓐᓂᓴᕐᑲᕝᕙᖏᓐᓂᒃ	ᐊᖏᔫᙵᖏᑦᑐᖅ, ᐱᐅᙵᖏᑦᑐᖅ
ᓄᓇᒦᙳᖅᑐᑦ ᓄᓇᐅᓪᓗ ᐊᑐᖅᑕᐅᓂᖏᑦ	ᐃᓄᐃᑦ ᓂᔾᔪᑎᓂᒃ ᐊᖑᓇᓱᓐᓂᖏᑦ	• ᐊᓯᔾᔨᕈᑎᔪᑦ ᑐᒃᑐᓚᓖᓯᖏᓄᑦ • ᐊᓯᔾᔮᐅᑎᔪᑦ ᐳᐃᔾᒪᓖᓯᖏᓄᑦ • ᐊᓯᔾᔮᐅᑎᔪᑦ ᐃᖃᓗᒐᓖᓯᖏᓄᑦ	• ᐃᖅᑲᓇᐃᔭᖅᑏᑦ ᑕᒪᐃᑕ ᐊᖑᓇᓯᒋᐊᖅᑲᖏᓐᓂᖏᑦ • ᐱᓕᕆᔾᔩᑦ ᑲᒪᒋᔾᔪᑎᓵᐅᔪᑦ ᑕᒪᒃᑯᓄᖓ ᐊᑐᐃᔪᓄᑦ VEC-ᖑᔪᓂᒃ (ᑕᑯᓗᒋᑦ VEC-ᒧᑦ ᕿᒥᕐᕈᐃᓃᑦ)	• ᐊᓯᔾᔨᕈᑎᔪᑦ ᑐᒃᑐᓚᓖᓯᖏᓄᑦ • ᐊᓯᔾᔮᐅᑎᔪᑦ ᐳᐃᔾᒪᓖᓯᖏᓄᑦ • ᐊᓯᔾᔮᐅᑎᔪᑦ ᐃᖃᓗᒐᓖᓯᖏᓄᑦ	ᐊᖏᔫᙵᖏᑦᑐᖅ, ᐱᐅᙵᖏᑦᑐᖅ

ᕿᒥᕐᕈᓯᔅᓴᖅ 1-12.2 ᐅᓂᒃᑳᕐᒋᑦ ᕿᒪᒃᑯᔪᓄᑦ ᐃᓅᖃᑎᒌᑦ-ᑮᓇᐅᔭᓕᐅᕈᓯᕐᒋᓄᑦ ᐊᑦᑐᐃᓃᑦ

ᐃᓄᖕᒋᑦ					
VSEC	ᐊᑐᓖᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑭᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑦᑐᐃᓂᕐ(ᓅᑦ)	ᒥᑭᓕᕆᐊᕆᓂᒻᒧᑦ ᐱᓕᕆᔾᔭᑦ	ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓅᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᓄᓇᒦᓐᖓᖅᑐᑦ ᓄᓇᐅᓪᓗ ᐊᑐᖅᑕᐅᓂᖏᑦ	ᐊᐅᓪᓖᓐᓅᑦ ᑕᖕᒫᕗᑐᖃᐃᓪᓗ	• ᐅᓗᕆᐊᓇᖏᑦᑐᒥᒃ ᓇᕈᓂᖅ ᑕᓯᐅᔾᔪᐊᒃᑯᑦ ᑐᖅᓯᑲᑦᑕᒃᑯᓪᓗ • ᐅᓗᕆᐊᓇᖏᑦᑐᒥᒃ ᓇᕈᓂᖅ ᑎᑭᓪᓗᒍ ᕿᓐᖑᐊᑉ ᐅᒥᐊᔾᔪᐊᓕᕆᕝᕕᖓ • ᐳᔪᓪᓗᖏᑦ ᓂᐱᖅᑯᖅᑐᓂᖏᓄᓪᓗ ᐸᒃᕕᓴᐃᔪᑦ • ᐃᐸᒋᓂᖏᒍᑦ ᐸᒃᕕᓴᐃᔪᑦ ᐆᒪᔪᓪᓗ ᐅᓗᕆᐊᓇᖅᑐᒦᔾᔪᑎᔅᓯᖏᑦ ᓄᓘᔮᑉ ᐊᖅᑯᑖᒍᑦ • ᐅᔭᕋᓐᓂᐊᕚᐅᑉ ᓴᓂᐅᓕᕆᔾᔪᑎᖏᑦ • ᐊᖑᓇᓯᑦᑎᑦ ᐃᒡᓗᕋᓛᖓᑦ ᒪᑐᔭᐅᓂᖓ • ᐱᔭᕆᑦᑑᑎᔪᑦ ᐃᑳᕈᑎᒃᑯᓪᓗ ᐊᑐᓪᓗᑎᒃ ᐅᓗᕆᐊᓇᐅᑎᔅᓴᐃᑦ • ᐅᐃᒍᕆᐊᖅᑲᓐᓂᖏᑦ ᐊᖑᓇᓯᑦᑎᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᒥᐊᔾᔪᐊᓕᕆᕝᕕᐊᓂᒃ • ᑕᖕᒫᕈᒪᔪᑦ ᖃᓂᔅᓴᓗᐊᕆᐊᖅᑲᖏᑦᑐᑦ ᓴᓇᔪᓄᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᒥᐊᔾᔪᐊᓕᕆᕝᕕᐊᓄᑦ	• ᐊᖅᑯᑎᓕᕆᓂᒻᒧᑦ ᐸᓐᓇᐅᑎᖏᑦ • ᐅᔭᕋᓐᓂᐊᕝᕕᐅᑉ ᒪᑐᔭᐅᓂᔅᓴᖓᓄᑦ ᐸᓐᓇᐅᑎᖏᑦ • ᐅᓗᕆᐊᓇᖅᑕᐃᓕᒪᓂᒻᒧᑦ ᐸᓐᓇᐅᑎᖏᑦ • ᕿᑭᖅᑕᓂᒃᑯᓐᓂᒃ ᐊᖏᖅᑲᑎᖅᑲᓐᓂᖅ ᓴᓇᔪᓐᓇᖅᓯᔾᔪᑎᔅᓴᒧᑦ ᐊᖏᕈᑎᒥᒃ • ᑎᒃᑯᐊᖅᑕᐅᓯᒪᔪᑦ ᓄᓇᓯᐅᑎᑯᑖᑉ ᐃᑲᕝᕕᒋᔪᓐᓇᕋᔭᖅᑕᖏᓐᓂᒃ ᓄᓇᓂᒃ	• ᐅᓗᕆᐊᓇᖏᑦᑐᒥᒃ ᓇᕈᓂᖅ ᑕᓯᐅᔾᔪᐊᒃᑯᑦ ᑐᖅᓯᑲᑦᑕᒃᑯᓪᓗ • ᐅᓗᕆᐊᓇᖏᑦᑐᒥᒃ ᓇᕈᓂᖅ ᑎᑭᓪᓗᒍ ᕿᓐᖑᐊᑉ ᐅᒥᐊᔾᔪᐊᓕᕆᕝᕕᖓ • ᐳᔪᓪᓗᖏᑦ ᓂᐱᖅᑯᖅᑐᓂᖏᓄᓪᓗ ᐸᒃᕕᓴᐃᔪᑦ • ᐃᐸᒋᓂᖏᒍᑦ ᐸᒃᕕᓴᐃᔪᑦ ᐆᒪᔪᓪᓗ ᐅᓗᕆᐊᓇᖅᑐᒦᔾᔪᑎᔅᓯᖏᑦ ᓄᓘᔮᑉ ᐊᖅᑯᑖᒍᑦ • ᐅᔭᕋᓐᓂᐊᕚᐅᑉ ᓴᓂᐅᓕᕆᔾᔪᑎᖏᑦ • ᐊᖑᓇᓯᑦᑎᑦ ᐃᒡᓗᕋᓛᖓᑦ ᒪᑐᔭᐅᓂᖓ • ᐱᔭᕆᑦᑑᑎᔪᑦ ᐃᑳᕈᑎᒃᑯᓪᓗ ᐊᑐᓪᓗᑎᒃ ᐅᓗᕆᐊᓇᐅᑎᔅᓴᐃᑦ • ᐅᐃᒍᕆᐊᖅᑲᓐᓂᖏᑦ ᐊᖑᓇᓯᑦᑎᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᒥᐊᔾᔪᐊᓕᕆᕝᕕᐊᓂᒃ • ᑕᖕᒫᕈᒪᔪᑦ ᖃᓂᔅᓴᓗᐊᕆᐊᖅᑲᖏᑦᑐᑦ ᓴᓇᔪᓄᑦ ᐃᒃᐱᑭᑦᑐᔾᔪᐊᑉ ᐅᒥᐊᔾᔪᐊᓕᕆᕝᕕᐊᓄᑦ	ᐊᖏᔫᓐᖏᑦᑐᖅ, ᐱᐅᓐᖏᑦᑐᖅ
ᐃᓅᖃᑎᒌᑦ ᐃᓕᖅᑯᓯᖅᓯᒥᓂᒃ ᐊᑐᑦᑎᐊᓐᓂᖏᑦ	ᐃᓅᖃᑎᒌᑦ ᐃᓕᖅᑯᓯᖅᓯᒥᓂᒃ ᐊᑐᑦᑎᐊᓐᓂᖏᑦ	• ᐱᔮᑦᓯᓐᓂᖅ - ᐱᔮᑦᑎᕆᓂᖅ ᐊᓯᒥᓪᓗ ᑲᒪᒋᔭᖅᑲᓐᓅᑦ... • ᐱᓕᒻᒪᒃᓴᐅᓐᓂᖅ - ᑐᓴᐅᖅᑎᑦᑎᓂᖅ ᖃᐅᔨᒪᔭᓂᒃ ᐱᔪᓇᕈᑎᓂᓪᓗ... • ᐊᕝᑎᒥᒃ ᑲᒪᑦᑎᐊᓐᓂᖅ - ᐊᕝᑎᒥᒃ ᑲᒪᒋᔭᖃᑦᑎᐊᕋᓱᐊᓐᓂᖅ	• ᐱᓕᕆᓅᑦ ᐃᑲᔪᐃᓂᐊᖅᑐᑦ ᐃᓄᐃᑦ ᐃᓕᖅᑯᓯᖕᒋᓐᓄᑦ ᓄᓇᖕᒋᒍᑦ, ᐃᓚᖃᒃᑲᓪᓗᑎᒃ ᐃᓄᒃᑎᑐᑦ ᐅᖃᐅᓯᓕᕆᔾᔪᑎᓄᑦ • ᐃᓄᐃᑦ ᓯᕗᓕᐅᕆᔭᐅᓗᑎᒃ ᐃᖅᑲᓇᐃᔮᓄᑦ • ᐃᓄᐃᑦ ᐃᓚᐅᖃᑕᐅᓗᑎᒃ ᓄᓇᐅᑉ ᑕᕆᐅᓪᓗ ᖃᐅᔨᓴᖅᑕᐅᓂᖕᒋᓐᓄᑦ	• ᐃᑲᔪᖅᓯᐃᓂᖅ ᐊᓐᓂᕈᓰᑎᖃᐅᓯᖕᒋᓐᓄᑦ ᐃᓄᐃᑦ ᐱᓗᐊᖅᑐᒥᒃ ᐃᓕᖅᑯᓯᖕᒋᓐᓄᑦ ᐊᑦᑐᐊᓪᓚᕆᑦᑐᑦ ᑭᖑᕚᒥᓄᓪᓗ ᕿᒪᐃᓂᖏᑦ	ᐊᖏᔫᓐᖏᑦᑐᖅ

ᕿᒥᕐᕈᔭᖅᓴᖅ 1-12.2 ᐅᓂᒃᑳᖅᑎᑦ ᕿᒪᒃᑯᔪᓄᑦ ᐃᓅᖃᑎᒌᑦ-ᐆᓇᐅᔭᓕᐅᕈᓯᖅᑎᓄᑦ ᐊᑦᑐᐃᓃᑦ

ᐃᓄᖅᑎᑦ					
VSEC	ᐊᑐᓛᑦ ᓇᓗᓇᐃᕈᑕ (ᑏᑦ)	ᓴᖅᑯᐃᓐᓇᑎᐊᓕᑦ ᐊᑦᑐᐃᓂᕐ(ᓃᑦ)	ᒥᑭᓕᑎᐊᑎᓂᓪᒧᑦ ᐱᓕᑎᔭᓯᑦ	ᕿᒪᒃᑯᑦ ᐊᑦᑐᐃᓂᑦ (ᓃᑦ)	ᐊᑦᑎᒋᓂᖓᓄᑦ ᐊᑦᑐᐃᓂᖓ
ᐃᑲᔫᑎᓯᑦ, ᑖᒃᓱᑦ ᓂᖏᕈᑎᐅᔪᓪᓗ	ᓄᓇᕘᑉ ᓄᓇᖏᓂᒃ ᒐᕙᒪᖏᑦ ᐆᓇᐅᓕᐅᕈᓐᓇᓪᓗᑎ	• ᐊᖏᓕᒋᐊᖅᑐᑦ ᑖᒃᓱ ᐃᓱᖅᐸᓪᓕᐊᔪᓪᓗ ᐆᓇᐅᔭᑦ ᓴᓂᕌᒍᑦ ᐊᐅᓚᓂᖓᓄᓪᓗ ᓴᖅᑭᑕᐅᓂᖏᓐᓄᑦ • ᐊᑭᓕᖅᓱᐃᓂᖏᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᑕ ᑲᓪᐸᓂᐅᓂᖓᑕᓗ ᑖᒃᓯᖏᓐᓂᒃ ᓄᓇᕘᑉ ᒐᕙᒪᒃᑯᖏᓐᓄᑦ	• ᐱᑕᖃᖏᑦᑐᖅ	• ᐊᖏᓕᒋᐊᖅᑐᑦ ᑖᒃᓱ ᐃᓱᖅᐸᓪᓕᐊᔪᓪᓗ ᐆᓇᐅᔭᑦ • ᐊᑭᓕᖅᓱᐃᓂᖏᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᑕ ᑲᓪᐸᓂᐅᓂᖓᑕᓗ ᑖᒃᓯᖏᓐᓂᒃ ᓄᓇᕘᑉ ᒐᕙᒪᒃᑯᖏᓐᓄᑦ	ᐊᖏᔫᔪᖅ - ᐱᐅᓂᖃᖅᑐᖅ
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Baffinland
Iron Mines Corporation

MARY RIVER PROJECT
ENVIRONMENTAL IMPACT STATEMENT

EXECUTIVE SUMMARY

SECTION 1.0 PROJECT SUMMARY

Baffinland Iron Mines Corporation (Baffinland) has prepared an Environmental Impact Statement (EIS) for the proposed development of its Mary River Project. The Project is located on northern Baffin Island, in the Nunavut Territory, in the Canadian Arctic. The Nunavut Impact Review Board (NIRB) issued guidelines for the preparation of this EIS on November 16, 2009 and an amendment to the guidelines on November 3, 2010. These guidelines outline the information that Baffinland should include in its EIS.

The EIS is part of the environmental assessment process established for a project under the Nunavut Land Claims Agreement. Under this environmental assessment process, the proponent of a project, such as the Mary River Project, describes the surrounding environment and the proposed development. Potential effects are then predicted and mitigation plans are developed. The severity or "significance" of residual effects (effects remaining after mitigation measures have been applied), are evaluated based on established criteria and expert opinion.

A draft EIS was submitted on January 23, 2011 and has been the subject of extensive review, technical meetings and numerous requests for additional information. The Final EIS responds to the issues and concerns raised through this year-long review period. The Final EIS will now be reviewed by the federal and territorial government agencies, Inuit organizations, local communities and other stakeholders. This Executive Summary provides the main highlights from the complete document.

1.1 THE PROPONENT

Baffinland Iron Mines Corporation ("Baffinland") is owned 70 % by ArcelorMittal and 30 % by Iron Ore Holdings LP. Baffinland's head office is located in Toronto, Ontario, Canada. In addition to its head office, Baffinland maintains a year-round presence at its exploration camp at the Mary River site, and community liaison offices in Iqaluit, Igloolik, and Pond Inlet. ArcelorMittal is one of Canada's leading suppliers of iron ore to steel markets around the world, generating some 40 per cent of Canada's total production. Recognized for the excellence of its products, the skills of its employees and its leadership in the industry, ArcelorMittal is one of the world's largest steel companies, operating in more than 60 countries. The Company's engineering and environmental teams have a wealth of Arctic development experience. Baffinland is also developing key partnerships with companies who have specific northern experience, for example, in shipping and ice-breaking. ArcelorMittal is putting in place all the ingredients necessary to ensure that the project is developed in a sustainable manner and will deliver a success story for Nunavut and all Canadians.

1.2 THE PROJECT

The Mary River Project (the Project) consists of mining iron ore from the reserve at Deposit No. 1 at a production rate of 18 Million tons per year (Mt/a). The Project includes the construction, operation, closure, and reclamation of an open-pit mine and associated infrastructure for extraction, transportation and shipment of iron ore. There are 3 main project locations – the mine site, Milne Port north of the mine site, and Steensby Port south of the mine site. Milne Port is connected to the mine site by an existing road. A railway of approximately 150 kilometers (km) will be constructed to connect the Mine Site to Steensby Port. For the construction period, supplies and equipment required for construction at the Mine Site and the northern portion of the railway will be received through Milne Port. Likewise, construction equipment and supplies for Steensby Port and the southern portion of the railway will be received at Steensby Port.

It is expected that Steensby Port facilities and the Railway will take four years to construct. During construction, supplies will be brought to both Milne Port and Steensby Port during the open water season. Once the Railway is operational, 18 Mt/a of iron ore will be transported by railway and shipped from Steensby Port. Shipping of iron ore will occur year round and will require vessels with icebreaking capabilities. When Steensby Port is operational, Milne Port will only be used occasionally for the delivery of oversized equipment for the Mine Site. The main destination for the iron ore is European steel makers.

1.3 NEED FOR THE PROJECT

The world needs iron ore to continue to build and develop the materials our society uses every day. Global iron ore demand is expected to increase as countries such as China, India, and other emerging areas continue to grow and develop while the economies of western countries continue to improve. Baffinland proposes to develop the Project to supply high quality iron ore to world markets and provide an acceptable profit for its investors.

For the people of Nunavut, the Project will contribute to the development of infrastructure, skills, jobs, business opportunities, and will provide increased revenues to the Government of Nunavut and the Inuit birthright corporation (Nunavut Tunngavik Inc.). The Project is expected to bring many benefits to local communities, by supporting both the traditional lifestyle of Inuit, as well, the generational shift occurring in the Inuit community as youth show an interest to participate in the wage-based lifestyle.

The Inuit Impact and Benefits Agreement (IIBA), presently being negotiated between Baffinland and the Qikiqtani Inuit Association (QIA), will ensure that benefits from the Project flow to nearby Inuit communities and the Qikiqtaaluk Region of Nunavut. The development of the Project is consistent with the Nunavut Planning Commission's broad planning principles, policies, and goals as well as the Government of Nunavut's strategy for mining development. The Project should help to attract additional investment to the region.

The Project also contributes to Canada's northern strategy for strengthening Canada's sovereignty in the North, protecting the country's environmental heritage, promoting economic and social development in the region, and improving Northern governance.

1.4 PROJECT DEVELOPMENT APPROACH

Baffinland will carry out the Project in an environmentally and socially responsible manner. The needs and values of others, particularly hunters and trappers, will be respected throughout development and operation of the Project. Baffinland will comply and, where it is economically and technically feasible, exceed Nunavut and federal regulatory requirements by applying technically proven and cost-effective environmental protection measures for each part of the Project. Baffinland's decision-making will be guided by sound management principles where the sequence of "Policy – Planning – Implementation and Operation – Checking and Corrective Actions – Management Review" are systematically followed. At each of these stages community involvement will be an important part of the process. An approach that emphasizes learning as you check the effects of actions will allow Baffinland to continuously improve and adapt quickly to changing conditions. Baffinland is committed to precaution to avoid and/or reduce potentially adverse effects of its operations to ensure the safety of its employees, the well-being of the residents of Nunavut, and the protection of the natural environment.

Baffinland has adopted progressive employment and business principles that will guide the Company through the life of the Project. Safety for employees is a cornerstone of all decisions. Baffinland will provide a work environment that will attract, develop, and retain qualified personnel and maximize Inuit

participation. To the extent possible, the company will hire employees from the five communities closest to the Project (Igloolik, Pond Inlet, Clyde River, Arctic Bay, and Hall Beach). Baffinland will work closely with the Qikiqtani Inuit Association (QIA) and others to deliver necessary training to employees and support community programs which will increase the benefits of the Project and provide local residents with skills that will continue to be important for them beyond the life of the Project.

The construction workforce will range in size from 1,700 to 2,700 persons. The estimated workforce during the operation phase is about 950 persons. Workers from Nunavut communities will work a rotation of two weeks at the site followed by two weeks off. Southern workers will likely work the common remote-site construction schedule of four weeks on and two weeks off.

All workers will be transported to and from Project sites by air. Baffinland will provide air transportation from the five closest communities in the North Baffin region as well as from Iqaluit and a southern location. Other locations may be considered in the future.

1.5 PROJECT CHALLENGES

The development of a major mining project in a remote location of Nunavut faces several important challenges:

- High costs associated with building and operating a mine operation and transportation infrastructure in the Arctic.
- Logistical challenges associated with the construction and operation due to the limited seasonal access to the site and lack of existing transportation infrastructure.
- Long winters and extreme cold affects efficiency of construction crews and operations.
- Difficult geotechnical conditions (permafrost, ice lenses) require specialized design and construction techniques.
- The competitive nature of the steel-making industry demands a steady, consistent, and secure supply of iron ore.

In order to satisfy these requirements, the Project must ensure a reliable and consistent shipping operation throughout the year. It is expected that one ship will load ore at Steensby Port on average every two days throughout the year including the ice covered period. Shipping frequency will increase during the open-water season when sea-lifts will provide annual re-supply and extra vessels may be chartered to ship additional ore. Winter shipping of ore is essential and the Project includes a fleet of ice breaking ore carriers capable of reliably meeting the shipping schedule.

There are also 2 additional important factors to consider:

- The Project must provide real and measurable benefits for Baffinland shareholders, as well as, for Inuit landowners, local communities and land users.
- Baffinland's revenues depend on the world commodity prices for iron ore.

Together these challenges and factors have shaped Project design and implementation strategy.

1.6 PROJECT SCHEDULE AND PROJECT LIFE

The Project is divided into a number of phases. First, the construction from start to beginning of operation will take an estimated four years. The operational phase, based on current ore reserves, would span 21 years at the production rate of 18 Mt/a. Closure of the facilities is expected to be carried out over a three to five year period and post-closure monitoring will follow for an additional five years. If closure objectives are not met, post closure would extend beyond five years.

1.7 HIGHLIGHTS OF THE PROJECT

The Mine Site, Milne Port, and Steensby Port are the three major Project sites. Each site will have all the facilities it needs to operate effectively including maintenance and administrative buildings, warehouses and laydown areas, ore stockpiles and associated runoff management facilities, camps, water supply, wastewater treatment plants, waste management facilities including landfills, power generation, fuel depots, telecommunication facilities, and airstrips.

In addition to these facilities, the Mine Site includes the open pit mine, the fleet of trucks to support the mining, facilities to prepare and store explosives, a waste rock pile, ore sizing facilities, ore loading facilities for both trucks and rail cars. Milne Inlet Port also includes a floating freight dock and truck maintenance facilities. Steensby Port will include a freight dock, a two berth ore loading dock with associated material handling/loading facilities, a rail car dumper and associated conveying equipment, an explosives storage/preparation facility, the main fuel depot, and a rail maintenance shop. .

Permanent and temporary camps of varying sizes will be built at each of these three sites as well as at several points along the rail line. The camps will include dormitories, cafeterias, medical and leisure facilities. During the operation phase the number of people that can be accommodated in camps will be reduced. These camps will be of modular construction and will be built at the beginning of the construction phase and later downsized for the operation phase.

The railway consists of a rail embankment, wooden ties, and steel rails. The railway construction will require the construction of a temporary access road and several quarries. About 30 bridges will be constructed for the railway, two tunnels, and extensive rock cuts along Cockburn Lake. Level crossings will be prepared at key areas along the railway's length to enable hunters and caribou to cross the tracks safely.

Once the railway and port facilities are complete, the Steensby Port will operate year-round and will be accessed by a specially built fleet of very large, ice breaking ore carriers.

1.8 ORE PRODUCTS

Since the Mary River iron ore is of a very high-grade, there is no need to have a process plant (or mill) on site, resulting in no tailing being generated. As such, no tailings pond will be required. This is accomplished by crushing and screening of the ore to produce two iron ore "products":

- a **lump ore** product in which the pieces of ore are between 6.3 mm and 31.5 mm in size (about golf ball size), and
- a **fine ore** product, in which the pieces of ore are less than 6.3 mm in size (about pea size).

Crushers and screens will be installed inside buildings, and conveyors will be covered and equipped with wind ventilation hoods to reduce wind exposure and the potential for dust generation. All ventilation ducts will be routed to dust collectors which will limit dust emissions.

1.9 CLOSURE AND POST-CLOSURE

Throughout all phases of the Project, Baffinland will plan and conduct operations in a manner designed to return the Project sites to a safe and environmentally stable condition. Baffinland will undertake ongoing reclamation activities throughout the mine life. Temporary facilities required for the construction camps will be decommissioned and removed at the end of their useful life. Borrow areas, quarries, temporary roads and other disturbed sites will be stabilized to limit erosion of ground surfaces and rehabilitated once they are no longer required. Environmental and safety monitoring will continue as long as necessary.

1.10 POTENTIAL FOR FUTURE DEVELOPMENT

The current Project has been designed for an estimated 18 Mt/a of iron ore. Annual production rates can vary with factors such as market conditions, ore grades and unanticipated events. To ensure that any peak activity levels remain safe and that some extra flexibility exists to handle unforeseen events, the Project infrastructures are designed for a capacity of 30 Mt/a. All Project sites are thus capable of accommodating additional stockpiles, material handling equipment and personnel.

As well, regional exploration over the past two years has enabled Baffinland to identify additional iron ore deposits that appear, based on surface sampling, to be of similar high-grade iron ore as Deposit No.1. While these other deposits have not yet been thoroughly evaluated, Baffinland's regional exploration program points to considerable potential for additional development. Having the mine and associated shipping, road, and railway infrastructure in place will facilitate such future development in the region. A significant expansion of the Project would trigger additional review processes.

SECTION 2.0 COMMUNITY INVOLVEMENT

There has been ongoing and extensive consultation with many communities and organizations that have an interest in the Project. Engagement has included the public, local, and regional Inuit organizations, the Government of Nunavut, and federal agencies. There has been a particular focus on the Inuit communities near the Project sites.

Inuit of the Baffin Region enjoy a rich oral tradition. This tradition has influenced how Baffinland has engaged local communities. The company has focused on establishing a presence in the region through local Community Liaison Officers, held numerous face-to-face meetings with community members and arranged site tours where possible. Since the main language through the north Baffin region is Inuktitut, with a number of regional dialects across Baffin Island, translation using local interpreters has been an important element in supporting effective communication. In all instances, detailed records were prepared for the various meetings and other in-person discussions.

There have been specific efforts at assembling, recording and integrating traditional knowledge into project design decisions. Inuit knowledge of the area is extensive and extremely valuable especially when integrated into scientific studies and understanding.

In addition, community acceptance and preferences were important factors considered in the evaluation of project alternatives such as the use of Milne Inlet, the location of the Steensby Port, the shipping route in the Foxe Basin and the work rotation schedule.

Following the submission of the Draft EIS, there have been numerous interactions with many government agencies both federal and territorial, the regional Inuit Association (QIA) and other interested parties with many individual meetings, workshop sessions and written submissions. Through these efforts the overall understanding of the project and its potential effects are increasingly better understood and these efforts

feed into improvements in project design. The content of the Final EIS reflects the outcomes of these discussions and analysis and moves the project design forward to the next phase.

SECTION 3.0 PROJECT SETTING

3.1 PHYSICAL SETTING

The landforms and the iron ore deposits in the Mary River Project area are associated with widespread past and current glaciation on Baffin Island. Surface geology consists of locally abundant sediment deposits from glaciers and rivers. The North Baffin region containing the Mary River area lies within the Committee Belt, a granite-greenstone terrain mixed with sedimentary and volcanic rock. Occasional outcrops of granitic and sedimentary rock formations occur. The mountains to the east are older than 540 million years old, and the lowland plateaus to the west are about 250 to 540 million years old.

The Project is situated in the Northern Arctic Ecozone. The climate is semi-arid and permafrost coverage is continuous extending to a depth of 500 metres, with an active layer of up to 2 metres. The extremely cold temperatures of the region, combined with the permafrost, result in a short period of runoff that typically occurs from June to September. All rivers and creeks, with the exception of the very largest systems, freeze completely during the winter months. Due to the combination of low temperatures and the low capacity of the soil to hold moisture, vegetation is minimal and surface water is abundant. The region is dotted with thousands of small lakes and streams.

The region experiences near 24-hour darkness with less than two hours of twilight from November to January. During the winter months the treeless topography and fine powdery snow produce blowing snow conditions, resulting in restricted visibility. There is continuous daylight from May to August and frost-free conditions occur from late June to late August. The months of July and August usually experience the greatest precipitation. From September to November, temperature and the number of daylight hours decrease, and by mid-October the mean daily temperature is generally well below 0^{o}C. The highest snowfall typically occurs during this period.

Air quality is very good and noise levels are low in the Project area as is typical of a remote environment. Freshwater quality measurements in the Mary River area indicate naturally elevated concentrations of dissolved oxygen, aluminium, and iron. As well, significant dissolved solids lead to increased turbidity of the water. Some average values for pH, as well as cadmium and mercury in the fresh water environment are currently greater than levels recommended by the guidelines of Canadian Council of Ministers of the Environment.

3.2 BIOLOGICAL SETTING

Plant life is relatively sparse in much of the Project area and is generally consistent with the plants that usually occur in arctic regions. No plant species considered to be “rare” in Canada were found to occur in the survey locations.

Terrestrial mammals in the region include barren-ground caribou of the North Baffin herd, wolf, arctic and red fox, ermine, arctic hare, and lemmings. Marine mammals are found in abundance in the region, including polar bears, narwhals, beluga whales, bowhead whales, several species of seals, and walrus. Killer whales and northern bottlenose whales were found in small numbers.

North Baffin caribou are currently present at low densities and their numbers seem to vary in accordance with a 60- to 70-year cycle. The last period of caribou abundance in the area was 1980 to 2000, and the previous period of low abundance was in the 1940s. Caribou are expected to remain at low numbers for

the next couple of decades. However, there is evidence that caribou do occur throughout the entire region. While some populations of caribou migrate between preferred habitats in summer and winter, North Baffin caribou appear to be non-migratory and are likely to be found relatively equally in many locations throughout the Project area.

Migratory bird species observed in the Mary River area include snow geese, ducks, eiders, loons, and mergansers. Raptors found include rough-legged hawks, peregrine falcons, gyrfalcons, and snowy owls. Relatively low densities of songbirds and shorebirds were recorded throughout the region. There are also numerous sea birds in the area of the shipping route including thick billed murres and many types of gulls.

There are two fish species in the freshwater environment: arctic char and a minnow species named nine-spine stickleback. The inland waters near the Project mainly contain landlocked arctic char, though sea-run char are present in a lake next to Steensby Port and up the Cockburn River system next to a portion of the railway. Fish in the marine waters include arctic char, sculpin, and Atlantic lumpfish at Steensby Inlet, and Arctic char, sculpin and Greenland cod at Milne Inlet.

3.3 SOCIO-ECONOMIC SETTING

The Baffin Region of Nunavut has a rich and visible archaeological heritage dating many thousands of years. There are many archeological sites both small and more significant, particularly around Milne Port and Steensby Port but also along some sections of the rail line.

The five communities of northern Baffin Island in the immediate vicinity of the Mary River Project, listed alphabetically, include Arctic Bay (280 km), Clyde River (415 km), Hall Beach (192 km), Igloolik (155 km), and Pond Inlet (160 km). Each of these communities has long term social, economic and environmental ties to the Project area. For many of these North Baffin households, harvest of country food provides an important contribution to their overall well-being, both physical and cultural. In all five communities, caribou, ringed seal, and arctic char are of major importance. In addition, walrus is a significant species in Hall Beach and Igloolik, while narwhal is a key component of the harvest among households in Arctic Bay, Pond Inlet, and to a lesser degree, Clyde River.

The land-based economy is a major part of the livelihoods of many residents of the North Baffin. Harvesting from the land and sea is estimated to produce food worth between $12 million and $20 million per year in this region. The amount of work to harvest this food is estimated to be 350 full-time jobs.

In addition, residents of the region earn money through sales of arts and crafts, through employment, and from various government social programs such as Income Support. The personal income reported by residents of the five North Baffin communities amounted to $83 million per year.

The Inuit of the North Baffin region have experienced tremendous social and cultural change over the course of a few decades. In particular, initiatives such as residential schools, have affected family integrity and by implication, social cohesion. Elders are becoming increasingly engaged in community life and in promoting the learning of traditional culture for the younger generation. At the same time, a shift toward western middle-class expectations appears to be taking place among Inuit youth. These communities have experienced dramatic population growth over the last 20 years. Over 70 % of the population is under the age of 25. Underemployment and lack of opportunities are contributing to social stress.

Demand amongst residents for wage employment is very high. People want to work, even when this work requires flying to remote locations away from the community. However, job opportunities in the

North Baffin are limited. Inuit employment in North Baffin is characterized by many individuals earning small levels of income, well under what full-time work would pay, and a small number earning full-time, year-round incomes. Most residents working in full-time jobs in Iqaluit do so year-round. In North Baffin, many more full-time workers are engaged in these jobs for only short periods. Women who work full-time jobs in North Baffin are more likely to work year-round than are men.

Still, there are good-paying, full-time, year-round employment opportunities available. These are often in government and the "public sector" and require levels of education and kinds of experience that many residents do not have. Community Elders recognize that the communities need to position themselves to enter the wage economy.

The number of jobs occupied by women has generally increased at a greater pace than those occupied by men. However, women in the region are working mostly in the public sector. The past public sector growth is not likely to continue and this suggests that as young women start to look for employment, they may need to find work in sectors not traditionally filled by women.

Approximately one-in-five jobs in North Baffin and in Iqaluit require a university education. One-quarter to one-third of jobs in the region require college or apprenticeship levels of training and skills. A similar number require high school education and/or occupation-specific training. The remainder can be accessed by unskilled workers with on-the-job training. Clearly the opportunities for employment are much more limited for those who do not have good education or training.

The Government of Nunavut relies on federal transfer payments for at least 90 % of its revenue. Government employment is a mainstay of the wage economy with many of Nunavut's small businesses and retail outlets established to support government needs, or those of public servants. Government jobs in administration, education, and health areas account for about half of all employment earnings in the territory. Construction employment has also been growing to support the development of government infrastructure.

SECTION 4.0 PROJECT INTERACTIONS AND EFFECTS ON VECS AND VSECS

Public consultations have enabled Baffinland to identify the key interests and concerns of the communities and stakeholders of the Project. As well, extensive scientific baseline studies were carried out to establish current conditions. Interviews with many Inuit Elders provided valuable insight into their traditional knowledge of the region. Through these studies and consultations the Project team was able to clearly identify the key areas for assessment and review. These areas of focus are identified in the EIS as the "valued ecosystem components (VECs)" and "valued socio-economic components (VSECs)" of the Project.

4.1 Valued Ecosystem Components

The VECs include both the natural environment and the wildlife that depends on the health of that environment. The VECs can be grouped in theme areas related to key components of the environment. Significant indicator species were identified and provided a focus for the assessments.

Atmospheric Environment – Climate change; Air quality; Noise and vibration.

Land Environment – Landforms, soil and permafrost; Vegetation; Terrestrial wildlife and habitat; Birds.

Freshwater Environment – Surface water and sediment quality; Water quantity; Freshwater fish, fish habitats and other aquatic organisms.

Marine Environment – Sea ice; Marine water and sediment quality; Marine habitat and biota; Marine mammals.

4.2 Valued Socio-economic Components

The VSECs are related to the well-being of the people, their communities and the overall social and economic health of the area.

People: Population demographics; Education and training; Human health and well-being.

Community: Community infrastructure and public service; Cultural Resources; Resources and land use; Governance and leadership: Livelihood and employment; Cultural well-being.

Economy: Economic development and self-reliance; Contracting and business opportunities; Benefits, taxes and royalties.

4.3 VECs and VSECs Interaction with the Project

Through the review process the interactions of the Project with the various VECs and VSECs were identified and where appropriate, key indicator species were identified and analyzed. Extensive studies combined with traditional knowledge were used to establish the pre-Project conditions. Using scientific understanding, experience from past developments and traditional knowledge predictions are made on the effects of various interactions. Where negative Project interactions could not be avoided, plans were developed to minimize or offset these effects.

Taking into account the adjustments and mitigation measures included in the Project to limit negative effects, residual effects of the Project were then assessed for their significance on the biophysical and socio-economic environments. The EIS presents the outcomes of these assessments. A summary by theme area follows.

4.3.1 Project Effects on VECs

Introduction

The Project design sought to minimize the interactions of the Project with the natural environment and to implement measures to minimize the potential negative effects of interactions. With these measures in place, the effects of the Project on the natural environment overall was assessed as not significant. The following sections summarize key project interactions and mitigation measures that will be implemented.

Atmospheric Environment - Climate change; Air quality; Noise and vibration

Climate change is predicted to have little effect on the very cold and deep permafrost conditions in area over the planned life of the Project. The Project facilities will also be designed to account for any changes in site conditions induced by climate change. On the other hand, project activities will produce Greenhouse gases even though many project design elements will minimize their levels. Although these GHG emissions are a significant increase compared to current Nunavut levels, these emissions are very small compared to those on a national scale and add very little to overall GHG emissions for Canada.

Ore handling, as well as driving on access roads, and emissions from power plants, trucks, and camp incinerators will reduce air quality through the generation of dust and other emissions. The use of low-sulphur arctic diesel fuels and ensuring modern emission controls on equipment will reduce these emissions. As well, air pollution controls such as dust suppressants, enclosing facilities and the use of dust-collection equipment will prevent significant effects on air quality.

Project activities will increase noise levels but these will be limited to areas close to the activities. As well, the use of mufflers and regular maintenance of engines and equipment will prevent significant noise effects.

Land Environment: Landforms, soil and permafrost; Vegetation; Terrestrial wildlife and habitat; Birds

Sensitive landforms in the Project area include frozen soils that contain ice lenses or areas that could shift under pressure. Sensitive landforms will be mostly avoided and appropriate engineering designs will be used to protect the sensitive areas in situations where such landforms cannot be avoided. In addition, site preparation will include adequate drainage to prevent water pooling during thaw periods.

The design of all Project facilities minimizes the amount of land that the Project needs to disturb. Thus the amount of vegetation that is affected is minimal compared to the amount of vegetation cover in the region. Numerical modelling was done to predict the amount of dust that could settle on the vegetation in the area and these studies concluded that the dust suppression actions would prevent significant dusting of plants.

Caribou are the main indicator species used to assess potential effects on terrestrial animals. The main project interaction with caribou would be when caribou cross the road or rail line. Although it is possible that individual caribou could be involved in collisions with trains or trucks these numbers are expected to be limited and will not be significant compared with total numbers in the region. Several measures are in place to avoid collisions with caribou. Strict speed limits will be in place for trucks and trains, thus decreasing the probability of collision. Trucks will be required to stop if wildlife is observed on or next to the road. Trains cannot stop to avoid collisions with caribou, but during seasons when large herds of caribou return, the train can cease operation until caribou move through the area. Crossings will be provided in specific locations (historical trails) for easy movement of animals across the track and snow banks will be reduced where needed to allow caribou to cross.

There are many birds through the region and a very small, but not significant, amount of habitat loss for migratory birds is expected to result from Project activities. These are not expected to lead to effects on populations of key species such as peregrine falcons, snow geese, eiders, and loons. Prior to initiating Project activities, nests and nesting areas will be identified and avoided where possible until fledging occurs.

Freshwater Environment – Surface water and sediment quality; Water quantity; Freshwater fish, fish habitats and other aquatic organisms

A number of proven mitigation measures have been included in the Project to reduce potential effects on water quality, freshwater fish, fish habitat, and other aquatic organisms. Specific Management Plans detail the many ways that water will be protected.

Water use will be reduced to the minimum necessary and all used water will be tested and treated as required before it is released back to the environment. Modern sewage treatment facilities will ensure that all discharged water meets or exceeds established standards. Run-off water from fuel storage and maintenance facility areas will be contained and wastewater from truck and rail maintenance facilities and explosives equipment-washing facilities will meet established standards before being discharged to the natural environment. An Emergency and Spill Response Plan will be in place and will ensure that there is prompt and appropriate clean-up of any spills should they occur.

The potential for acid-generating drainage from the waste rock pile, ore stockpiles or quarries is very low, but will be carefully managed, treated where needed and monitored through the life of the Project.

The roads and railway cross a large number of watercourses, and a portion of these contain fish habitat. Culverts and bridges for stream and river crossings will be designed to limit barriers to fish movement. Because railways cannot turn sharp corners, building sections of the railway into the edge of several lakes will be unavoidable. While some fish habitat will inevitably be lost, a compensation plan has been proposed to offset this unavoidable loss. This plan will be further developed and finalized in consultation with Fisheries and Oceans Canada and the Qikiqtani Inuit Association.

Marine Environment – Sea ice; Marine water and sediment quality; Marine habitat and biota; Marine mammals

Near-shore including port activities will be carefully managed to protect the marine environment. All sewage and wastewater from maintenance facilities and explosives will be treated before discharge and runoff from Project areas will be contained, monitored, and treated to meet water effluent quality requirements before discharge. Fuel transfers will take place following the *Canada Shipping Act* regulations.

Ship routing will minimize disruption to the ice patterns and no waste will be discharged into the sea by ships. Ore carriers will carry ballast water during their inbound trips to Steensby Port. This water is required in order to keep the vessels stable and at an even draft. The water is pumped overboard as the vessels approach Steensby Port. Ballast water will only be slightly different (in temperature and salinity) from the water in the Inlet. Modeling has shown that discharge will not alter the quality of water in Steensby Inlet. There is an important concern that ballast water could result in the unintended introduction of invasive species to such receiving waters. There are strict protocols developed by regulatory agencies that will protect against this concern, including mid-ocean transfer of ballast water and treatment of the ballast water prior to discharge. Ships will meet all future regulatory requirements for the treatment of ballast water using methods identified by Transport Canada. Such practices will limit the risk of introduction of invasive species.

The key marine mammal species include ringed seals, bearded seals, walruses, narwhals, beluga whales, and bowhead whales.

Ringed seals are present year-round along both the northern and southern shipping routes. Landfast ice offers preferable seal habitat for making breathing holes and lairs. Females give birth in March and April and nurse their pups for five to eight weeks. Ringed seals are generally quite tolerant of on-ice industrial activity and shipping. However, ringed seals are thought to be susceptible to disturbance during periods when they are giving birth and nursing their pups. Icebreakers will transit a small proportion of landfast ice in Steensby Inlet along the shipping corridor and at the dock site. Small numbers of ringed seal mortalities could occur as a result of icebreaking activity. However, the interaction of the Project with the ringed seal population will be limited to the shipping lane and will not affect the population overall.

Walrus occur year-round in the area and are present in relatively high numbers in northern Foxe Basin. Traditional knowledge reports that walruses regularly are present in Steensby Inlet in small numbers. Walruses also occur in Hudson Strait. Along the shipping route from Steensby, walruses that are in the open-water or hauled out on ice may be aware of the noise from the vessels many kilometers away but will not likely be disrupted by this distant noise. Based on behaviour in other situations, walruses at terrestrial haul-out sites are not predicted to be affected by Project activities. The potential interaction of

the Project with the walrus population will be limited geographically to areas near the shipping route and the shipping route itself was chosen to avoid the largest concentrations of walrus that occur west of Koch Island. Ongoing monitoring will be important to detect any unexpected effect on walrus and to implement any additional needed mitigation measures.

Bearded Seals are common in the region throughout the year and primarily occur in areas with shallow water and pack ice where ice pans are sufficient for haul-out sites. The pupping period varies through the period from mid-March to early May. The ship track in the mobile pack ice will quickly disappear because of the movement of the ice by winds and tides and it is likely that bearded seals will re-use this area of ice. The overall interaction of the Project with the bearded seal population will be limited.

Narwhals are present along the shipping route from Milne Inlet primarily during the open-water period where about 20,000 animals summer in the Eclipse Sound and Milne Inlet area. Narwhals are thought to calve and feed in this summering area. Relatively few narwhals have been present in Foxe Basin but narwhals are thought to overwinter in the eastern portion of Hudson Strait. Limited observations in the Project area indicated that narwhals do not seem to respond to vessels (including the passage of an ore carrier). The interaction of the Project with the narwhal population will be mostly limited to the shipping activities in Milne Inlet. These shipping activities are not extensive and will occur only during the early construction period and rarely afterward.

Beluga *whales* occur in the region year-round although there are relatively small numbers of belugas present in Eclipse Sound and Milne Inlet during the open-water period. Hudson Strait has been identified as an overwintering area for beluga. In Foxe Basin, small numbers of belugas are present in the vicinity of Igloolik, Hall Beach, and likely Steensby Inlet during July to early September. Studies show that belugas avoid icebreakers and vessels travelling in areas of ice at greater distances than they would for vessels travelling in open water. Belugas will likely habituate to frequent shipping, including ice breaking.

Bowhead whales are present along the proposed shipping route during summer and fall. A bowhead nursery area has been identified in a small area in northern Foxe Basin. Hudson Strait has been identified as a primary wintering area. Based on studies of bowhead response to ships and icebreakers, bowheads will likely avoid at least the immediate area around ships thus it is expected that the interaction of the Project with the bowhead whale population will be limited.

Polar Bear occur in the area throughout the year and are abundant in northern Foxe Basin, including the shorelines of Steensby Inlet and Koch, Rowley, and Bray islands. Elders noted that the southeastern portion of Steensby Inlet provides good denning habitat. Polar bears also overwinter in Hudson Strait. Polar bears are expected to avoid ships and port sites however they may also approach these areas where they sense activity. Project personnel will be educated about bear safety and the strict management of waste will reduce the chances of human-bear interactions. Polar bear monitors will be hired to ensure worker safety.

4.3.2 Project Effects on VSECs

Introduction

The Project will provide many potential social and economic benefits to the residents of North Baffin. These will arise from employment and training opportunities as well as from opportunities for businesses and from payments made to government and Inuit organizations. Careful planning is needed in order to improve the ability of people to attain these opportunities. Individuals and families will also require support as they cope with the challenges associated with the fly-in/fly-out style of life and with the wealth

and financial responsibilities that come with this lifestyle. The assessment of valued socio-economic components is an important way to identify issues and develop appropriate mitigation measures. Overall the Mary River Project represents important and significant socio-economic benefits to Nunavut.

People: Population demographics; Education and training; Human health and well-being

The potential for the Project to cause non-Inuit migration into communities, as well as the potential for Inuit to move out of the communities as a result of the Project was assessed. Neither of these possibilities is identified as significantly affecting the composition and numbers of the North Baffin populations or the community social fabric.

Baffinland's education and training commitments will help upgrade the skills of North Baffin residents. Baffinland is committed to supporting training programs that will enable residents of nearby communities to develop the skills needed to qualify and perform jobs at every level of the Project operation. Baffinland has been actively pursuing education and training partnership initiatives. In particular, Baffinland, the QIA, Qikiqtaaluk Corporation, and Kakivak Association have agreed to develop and promote the delivery of mine-related training, training related to economic and community development, labour market research, curriculum development, career development, and other related activities for the benefit of Inuit in the communities associated with the Project. A similar agreement has been signed with the Government of Nunavut and Arctic College. As well, a minimum age of 18 for Project employment will serve as an incentive for students to complete high school. Experience gained at work will also help improve overall life skills.

The challenges associated with fly-in/fly-out work are recognized. Steps will be taken to help workers and families to succeed in this type of work environment. Orientation and training will be provided to help workers and families adapt to the work rotations and improve money management practices. The shorter two-week work rotations will limit the period of absence of workers from their families and communities and provide opportunities for individuals to participate in traditional activities during two-week periods off work.

Concerns are sometimes raised about the potential effects of the Project on the transport of illegal substances through Project sites and on the affordability of such substances. To counter the possibility of increased substance abuse the company has a strict no drug–no alcohol policy. Addiction counselling will also be available.

Community: Community infrastructure and public service; Cultural Resources; Resources and land use; Governance and leadership: Livelihood and employment; Cultural Well-being

The Project is expected to create competition for skilled workers. Hamlets have expressed concern that they may face difficulty in hiring the people they need to deliver local services. However, employment experience and ongoing training will significantly improve labour force capacity helping to equip local residents with the qualifications and experience. As a result, increased competition for workers will be balanced by increased capacity.

The Project will be making use of the public airstrips at Iqaluit and at the five nearest communities for transporting workers to and from worksites. The Project's transportation plans will be designed to avoid placing demands on the airport's facilities beyond its capacity. Some increased demand for infrastructure is also expected to arise indirectly due to the Project. For example, increased wealth might lead to more vehicles and a need for road improvements.

Education and training as well as on-the-job work experience and counseling will develop leadership skills that will significantly improve local governance. The participation of community residents and leaders in agreement negotiations with Baffinland and in initiatives to identify key indicators for regional monitoring programs has already contributed to local community leadership development.

Measures will be taken to respect and preserve the culture of Inuit employees while they are working. Policies that encourage respect of other cultures and diversity are in place. Baffinland supports the use of Inuktitut onsite, for signage and in work units. Traditional country foods will be provided in the Project cafeterias. Policies encouraging safety, employment equity, and, preventing harassment will be strictly enforced.

Archaeological sites have been identified in Project areas that contain features and artifacts representing substantial degrees of area use throughout the human past to the present. A number of important archaeological sites will be avoided by relocating Project infrastructure, and others will require protection through excavation, mapping, and artifact retrieval by a licensed archaeologist. Baffinland's Cultural and Heritage Resource Protection Management Plan outlines the policies and procedures for management of archaeological sites.

The Project will interact with existing land uses by Inuit. Measures to support these activities include check-in procedures at Project sites and a focus on public safety for the Milne Inlet Tote Road and the Railway. The ship track through the landfast ice in Steensby Inlet is expected to affect existing on-ice travel routes during the winter. To mitigate this, Baffinland proposes to establish a clear and safe detour route around the port site. Baffinland will accommodate travellers at Steensby Port and provide meals and additional fuel as required by hunters passing through the area. Baffinland will continue to work with communities in order to evaluate options for establishing other safety measures.

Economy: Economic development and self-reliance; Contracting and business opportunities; Benefits, taxes and royalties

Direct and indirect economic growth generated by the Project will create new opportunities for employment and business. The Project will enhance labour force capacity and may increase Inuit business capacity. Businesses may gain opportunities to expand through the supply of business services to the Project as well as indirectly through an expanded market for consumer goods and services. Baffinland will help Inuit firms, and in particular smaller Inuit firms located in communities in the Baffin Region to develop capacity to bid on and carry out contracts for the Project.

The Project will provide substantial cash payments to Inuit organizations and to government. These will arise through the Inuit Impact and Benefits Agreement with QIA as well as through royalty payments for the iron ore made to NTI. Payments to the Government of Nunavut will arise from fuel taxes, property taxes, and taxes on the profits earned by Baffinland. Some of these payments will start as early as the construction phase, while other payments will not kick in until later in the operations phase.

Through its contribution to human skills, to household wealth and to economic growth, the Project will support achievement of overall economic development goals, including progress toward improved self-reliance of individuals, communities, and the territory.

SECTION 5.0 ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT

Baffinland is committed to protection of the health and safety of employees and the environment, and to ongoing community involvement and participation in the Project. The Project will meet or exceed the

requirements of all applicable Nunavut and Canadian laws, regulatory requirements, agreements, permits, and licences. In addition, on conclusion of the EIS process, Baffinland will complete an Inuit Impact and Benefits Agreement (IIBA) under negotiation with the QIA.

Baffinland's Environment, Health, and Safety (EHS) Management System is the framework for adaptive management based on international best practices. The EHS embraces the Precautionary Principle and Sustainable Development. Within this framework individual plans have been developed to address all aspects of the company's activities and contain the detailed mitigation measures and monitoring to be implemented throughout the life of the Project in order to eliminate, limit or minimize adverse effects. All Baffinland employees and contractors are required to comply with these management plans. The reporting and documentation requirements for these management plans, auditing, and process of management review and revisions are all specified in the EHS Management System.

The accountability for safety and environmental protection is shared among all employees and contractors and Baffinland is committed to providing the necessary training and awareness programs for effective implementation of its policies and management plans. These training programs will be documented, procedure manuals will be maintained, and retraining schedules will be established. Baffinland's Human Resource Management Plan outlines these commitments.

One of the key management plans is focused on Emergency Preparedness and Response. In the unlikely event that a major diesel fuel spill would occur along the shipping lane, such a spill would have a significant environmental effect. However, refuelling of fuel depots is a well mastered routine activity in Arctic communities. Furthermore, Baffinland will receive fuel only during the open water season. A recent study published by the National Energy Board looked at the effectiveness of oil spill recovery techniques for the Beaufort Sea and the Davis Strait under a range of weather conditions. The study concludes that for the central Davis Strait during the months of June, July, August and September, at least one method of response intervention would be available given the expected weather and wave patterns. This study confirms that for the Mary River Project, the optimal months for fuel delivery are indeed during the July to September ice-free period in Foxe Basin.

SECTION 6.0 TRANSBOUNDARY AND CUMULATIVE EFFECTS

Consideration was given to potential cumulative effects from reasonably foreseeable projects, and the main potential cumulative effects are thought to arise if development of the Mary River Project would lead to further iron ore production up to twice the currently proposed production rate. Other projects in the area will have only minor cumulative effects. A doubled production rate of one or more other deposits would increase effects to a number of valued ecosystem and socio-economic components, but not to the extent that any of the cumulative effects are expected to be significant.

Transboundary effects to marine mammals will occur as a result of shipping, however, because the effects to marine mammals within the study area are not significant, the transboundary effects are similarly not significant. Socio-economic effects will occur in other jurisdictions of Canada as a result of employment of the Project by people living outside of Nunavut.

SECTION 7.0 CONCERNS OF THE COMMUNITIES

Through the past years a number of community concerns have been raised and addressed. Some of the key issues are related to the essential balance between development and maintaining traditional lifestyles.

SOCIAL-CULTURAL CHANGE

The socioeconomic benefits offered by the Project will inevitably trigger social changes for the Inuit of the neighbourhood communities and Nunavut as a whole. The increased purchasing power of employees as well as the redistribution of wealth generated by Project activities has the potential to accelerate the changes currently being experienced by the Inuit society and families. Although such changes are inevitable and will continue to occur, with or without the Project, the rate and direction of such changes remain legitimate concerns for many Inuit.

Concerns were expressed on the overall effect of the Project on harvesting and land-use activities that could arise from the combined interactions of the Project on a wide range of factors. These interacting effects have been carefully considered and the potential for beneficial outcomes on harvesting activities appears to be more likely than overall negative outcomes. Baffinland will continue to work with communities to undertake collaborative monitoring and address issues as they arise.

YEAR ROUND SHIPPING

Although shipping is common through the Arctic, year-round shipping is new to the area and the shipping route to Steensby is very new. The community input on the proposed shipping route through Foxe Basin and Hudson Strait has been taken into account. The shipping route was determined using this input to avoid areas of highest walrus population and to remain as far as possible from areas communities use. Where there is a recognized disruption in travel patterns through landfast ice in Steensby Inlet Baffinland will continue to work with Inuit to establish safe alternate travel routes.

SECTION 8.0 CONCLUSIONS OF THE EIS

The EIS for the Mary River Project includes a thorough environmental impact assessment of Project development plans. The EIS is based on extensive studies of the biophysical and socio-economic environments. Many consultations have been undertaken to identify and address the concerns and interests of local communities, regulatory agencies, and other interested stakeholders and to benefit from the knowledge of the Elders in the region. The EIS has addressed the topics identified by NIRB in the guidelines provided for the Project.

The Project will be designed to meet all relevant regulatory requirements and to avoid, limit, and, minimize negative effects where possible and to enhance socio-economic benefits. Baffinland is confident that it has proposed a Project that will provide positive economic returns to investors and benefits to the people, the Government of Nunavut, and Inuit organizations. A comprehensive management and monitoring system has been developed to ensure that the commitments in the EIS will be respected. Baffinland is committed to ongoing consultations with stakeholders and will address public concerns throughout the life of the Project.

NO SIGNIFICANT NEGATIVE IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

The environmental assessment concludes that residual effects of the Project on the valued ecosystem component (VECs) of the biophysical environment will be not significant.

POSITIVE SOCIO-ECONOMIC IMPACTS

Assessments of potential effects on the socio-economic environment have concluded that there will be significant positive effects on local employment and skills development and that significant revenue will accrue to the Government of Nunavut. The IIBA, currently under negotiation between Baffinland and the

regional Inuit association, will ensure that benefits from the Project flow to nearby Inuit communities and the Qikiqtani Region of Nunavut. A major Project benefit will be a growing territorial economy that will increase economic stability in Nunavut. Increasing the number of ongoing mining projects in Nunavut will help stabilize the territorial economy.

Over the long term, the road, railway, and port infrastructure built by the Project will provide opportunities to access further mineral deposits in the North Baffin region and could improve access for Inuit harvesting and tourism. The two ports will provide opportunities for additional commercial uses and the bathymetry information collected by the Project will provide important information for shipping lanes through Foxe Basin.

SECTION 9.0 FORMAT OF THE ENVIRONMENTAL IMPACT STATEMENT

The EIS is part of the environmental assessment process established for a project under the Nunavut Land Claims Agreement. A number of regulatory processes apply to this Project, including conformity to the North Baffin Regional Land Use Plan, an environmental review by NIRB and an environmental review under the *Canadian Transportation Act*. NIRB coordinates these reviews, as well as a public review necessary to potentially amend the land use plan to accommodate Project needs. In addition, the project will meet requirements from several federal and territorial agencies to permit certain activities and will be subject to all relevant legislation and regulation.

The Final EIS complies with the requirements of NIRB as outlined in the Guidelines for the Preparation of the EIS issued on November 16, 2009 and subsequently amended on November 3, 2010 and also responds to numerous issues raised in the initial review period This EIS consists of the same 10 volumes as were in the Draft EIS, as follows:

Volume 1: EIS Main Document - provides an overview of the EIS, including a summary of the proposed Project, background and need for the Project, baseline studies, effect assessment methods and results, as well as the management and mitigation plans to meet commitments in this EIS.

Volume 2: Consultation, Regulatory Context, and Assessment Methodology - presents results of extensive consultation, describes regulatory requirements, and presents methods used to undertake assessments of potential effects on the biophysical and socio-economic environments.

Volume 3: Project Description - describes the proposed Project, including estimated schedule, facilities and infrastructure included in the Project, construction, operation, and closure and post/closure activities, estimated workforce, and alternatives considered to the Project and within the Project.

Volume 4: Human Environment - presents results of socio-economic background studies and potential effects of the Project on nearby communities and the people of these communities.

Volume 5: Atmospheric Environment - includes results of background atmospheric studies, an assessment of the Project's GHG emissions relative to Nunavut, Canada and the world, and potential effects of the Project on air quality and noise levels in the region.

Volume 6: Terrestrial Environment - describes results of background studies and potential effects of the Project on the terrestrial environment, including sensitive landforms, vegetation, birds, and caribou.

Volume 7: Freshwater Environment - presents results of background studies and potential effects of the Project on the freshwater aquatic environment, including flow and quality of water, and effects on fish and fish habitat.

Volume 8: Marine Environment - addresses results of background studies and potential effects of the Project on the marine environment, including sea ice, water and sediment quality, fish and marine mammals.

Volume 9: Cumulative Effects and Other Assessments – assesses cumulative effects of the Project considering past, present, and reasonably foreseeable projects and activities in the region that might also cause effects on valued components assessed in the EIS. Other assessments included an evaluation of potential accidental events, their potential effects, and likelihood of occurrence of these events, effects of the environment on the Project (i.e., extreme weather, climate change), and effects that extend beyond the boundaries of the Nunavut Settlement Area (transboundary effects).

Volume 10: EHS Management System - presents Baffinland's comprehensive management system and related management plans that will be established to limit and mitigate any potentially negative effects and enhance benefits of the Project on its employees, contractors, residents of Nunavut, and the natural environment.

Table 1-12.1 Summary of Residual Biophysical Effects

ATMOSPHERIC ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Climate change	Greenhouse Gases (GHG)	• Increased GHG emissions • Climate change	• Arctic grade diesel fuel • Rail transportation of ore	• Increased GHG emissions	Not significant
Air quality	Air quality	• Increased concentrations of: o Total Suspended Particulate (TSP), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), and carbon monoxide (CO). • Increased deposition of: o Dust, potential acid input (PAI).	• Apply best management practices for limiting air emissions • Use of low sulphur Arctic grade diesel fuel • Limit speed on roads • Ore crushing facilities are enclosed, vented and equipment with dust collection equipment • Apply dust suppressant as required in high traffic areas and stockpiles • Procurement policy on emissions from equipment (incinerator, generators, vehicles) • Waste segregation (incineration) • Where possible, use of granular material for road construction • Regular maintenance of equipment and vehicles	• Increased concentrations of: o Total Suspended Particulate (TSP), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), and carbon monoxide (CO). • Increased deposition of: o Dust, potential acid input (PAI).	Not significant
Noise and vibration	Noise and vibration levels	• Sensory impact on wildlife	• Procurement policy for noise for equipment and vehicles • Use of mufflers – regular maintenance of engines and equipment	• Sensory impact on wildlife	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

TERRESTRIAL ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Landforms, soil and permafrost	Sensitive landforms	• Soil contamination • Soil structure alteration • Soil destabilization and erosion • Thaw weakening and settlement • Creep settlement	• Siting of facilities and alignment of roads and railway • Design foundations suitable for site conditions • Design stream crossing structures for extreme flood event • Ensure adequate drainage and prevent pooling of water	• No residual effect (disturbance of sensitive landforms) after mitigation	Not significant
Vegetation	Vegetation	• Loss of vegetation abundance and diversity	• Limit physical footprint of facilities • Limit areas of access for vehicles • Progressive reclamation / closure	• Loss of vegetation limited to Project Development Areas (PDA)	Not significant
Birds	Peregrine Falcon Snow Goose Common and King Eider Red-throated Loon Thick-billed Murre Lapland Longspur Species at Risk Ivory Gull Ross' Gull Red Knot Harlequin Duck Short-Eared Owl	• Destruction of nests • Habitat loss • Mortality • Influences on health • Sensory disturbance	• Employee awareness / environmental induction program • Minimize footprint of facilities • Conduct nest search prior to start of activities • No hunting policy • Avoidance of areas of large concentrations of foraging or moulting birds • Avoidance of known nests or nesting areas • To the extent possible, enforce closure of a 500 m radius of the nest until fledging occurs	• Habitat loss • Mortality • Influences on health	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

TERRESTRIAL ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Birds	Peregrine Falcon Snow Goose Common and King Eider Red-throated Loon Thick-billed Murre Lapland Longspur Species at Risk Ivory Gull Ross' Gull Red Knot Harlequin Duck Short-Eared Owl	• Destruction of nests • Habitat loss • Mortality • Influences on health • Sensory disturbance	• Nest-specific management plans • To the extent possible, develop appropriate aircraft approach and departure flight paths • Refer to mitigation measures outlined in Appendix 10D-11 Terrestrial Environment Management Plan	• Habitat loss • Mortality • Influences on health	Not significant
Terrestrial wildlife and habitat	Caribou	• Habitat loss • Restriction of movement • Mortality	• Use of dust suppressant on Tote Road during growing season • Speed limits for trucks and trains which will provide more time for caribou to get off the road or rail, and will increase the chance of a truck being able to stop before a collision with a caribou. • The train is expected to operate 300 days per year, so seasonal stoppages are possible if large groups of migratory caribou return to the area. • Baffinland has a no hunting policy for all personnel while working on site. • Snow management that will grade snow banks along railway and roadway so that caribou are able to easily cross the transportation corridor without being blocked by steep snow banks.	• Habitat loss • Restriction of movement • Mortality	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

VEC	Key Indicator	Potential Effect(s)	Mitigation Measures	Residual Effect(s)	Significance Rating
TERRESTRIAL ENVIRONMENT					
Terrestrial wildlife and habitat	Caribou	• Habitat loss • Restriction of movement • Mortality	• The railway embankment will be constructed of finer fill material at the five identified trails for easier caribou movement across the railway embankment. The finer fill will replicate natural trail conditions. • Physical barriers from trains will be reduced by limiting train traffic to four passes per day.	• Habitat loss • Restriction of movement • Mortality	Not significant
FRESHWATER AQUATIC ENVIRONMENT					
Water quantity	Water quantity	• Reductions in water quantity due to water withdrawals • Increases in water quantity due to effluent discharges • Redistribution of water flows in the natural environment due to diversions	• Permit required for water withdrawal • Measurement of withdrawal quantities as per Water License • Implement measures to reduce water consumption	• Redistribution of water flows in the natural environment due project use	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

FRESHWATER AQUATIC ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Surface water and sediment quality	Water and sediment quality	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	• Siting of facilities/quarries at least 30 m from stream or water body • Install range of sediment and erosion control structures • Install diversion/collection channel or containment berms where appropriate • Routine inspection and maintenance • Ice and freshet management • Implementation of BMPs for surface water management • Sewage treatment • Wastewater treatment plant (oily water, truck wash, maintenance facilities, explosives equipment wash water) • Management of potentially acid generating rocks from waste rock pile, ore stockpiles, quarries and mine	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

FRESHWATER AQUATIC ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Surface water and sediment quality	Water and sediment quality	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	• Minimize footprint of stream crossing • Compensation plan for HADD • Appropriate design of stream/river crossing structures (culvert, bridges, etc.) • Limit barrier to movement with site specific design of rocky ramps at culvert crossing (where required) • Channel enhancement where required • Maintain minimum flow in impacted streams where possible • Monitor low flow stream, fish salvage if necessary • Fish barrier for extremely low flow streams • Use of explosives in or near streams/water bodies as per DFO Guidelines • Prevent discharge of contaminants • All hazardous materials stored on impermeable surface/secondary containment • Tank farm and large storage tanks placed in secondary containment structures (lined and impermeable) • Smaller tank – double wall ISO-containers • Refuelling on impermeable surfaces and runoff contained • Emergency and Spill Response Plan	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

FRESHWATER AQUATIC ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Freshwater fish, fish habitat, and other aquatic organisms	Arctic char	• Effects on Arctic char health • Effects on Arctic char movement • Effects on Arctic char habitat quality • Arctic char mortality	• Siting of facilities/quarries at least 30 m from stream or water body • Install range of sediment and erosion control structures • Install diversion/collection channel or containment berms where appropriate • Routine inspection and maintenance • Ice and freshet management • Implementation of BMPs for surface water management • Sewage treatment • Wastewater treatment plant (oily water, truck wash, maintenance facilities, explosives equipment wash water) • Management of potentially acid generating rocks from waste rock pile, ore stockpiles, quarries and mine • Minimize footprint of stream crossing • Compensation plan for HADD • Appropriate design of stream/river crossing structures (culvert, bridges, etc.) • Limit barrier to movement with site specific design of rocky ramps at culvert crossing (where required) • Channel enhancement where required • Maintain minimum flow in impacted streams where possible • Monitor low flow stream, fish salvage if necessary • Fish barrier for extremely low flow streams • Use of explosives in or near streams/water bodies as per DFO Guidelines • Prevent discharge of contaminants	• Effects on Arctic char health • Effects on Arctic char movement • Effects on Arctic char habitat quality • Arctic char mortality	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

VEC	Key Indicator(s)	Potential Effect(s)	Mitigation Measures	Residual Effect(s)	Significance Rating
FRESHWATER AQUATIC ENVIRONMENT					
Freshwater fish, fish habitat, and other aquatic organisms			• All hazardous materials stored on impermeable surface/secondary containment • Tank farm and large storage tanks placed in secondary containment structures (lined and impermeable) • Smaller tank – double wall ISO-containers • Refuelling on impermeable surfaces and runoff contained • Emergency and Spill Response Plan		
MARINE ENVIRONMENT					
Sea ice	Fast ice	• Disruption of shore fast ice in Steensby Inlet • Potential change to timing of shore fast ice break up and formation	• Minimize width of shipping lane through fast ice to the extent possible • Reduce vessel speed through fast ice	• Disruption of shore fast ice along shipping route in Steensby Inlet	Not significant
Marine water and sediment quality	Marine water and sediment quality	• Changes in water and sediment quality in Steensby and Milne Inlets • Accident and malfunction (e.g. oil spill)	• Site runoff water management as per management plan • Hazardous substances contained within impermeable areas as per Waste Management Plan • Sewage treatment and wastewater treatment plant (oily water, truck wash, maintenance facilities, explosives equipment wash water) • Emergency and Spill Response Plan, Milne Port OPEP and Steensby Port OPEP; SOPEP for all ships • Ship on-board waste management - no discharge at sea	• Changes in water and sediment quality in Steensby and Milne Inlets • Accident and Malfunction	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

MARINE ENVIRONMENT					
VEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Marine habitat and biota	Marine habitat	• Disruption of marine coastal habitat	• Minimize footprint of marine structures	• Loss marine coastal habitat for ports	Not significant
	Arctic char	• Effects on Arctic char health, habitat quality, and mortality	• Minimize footprint of marine structures • Compensation plan for HADD • Appropriate design of marine structures	• Effects on Arctic char health and habitat	Not significant
Marine mammals	Ringed seals	• Habitat change resulting from icebreaking and/or ice management • Disturbance caused by airborne and/or underwater noise from construction, shipping, and aircraft • Hearing impairment and/or damage caused by noise from construction activities • Masking of environmental sounds caused by vessel and construction noise • Mortality from collisions with vessels and blasting during construction	• Dock structures were designed to minimize the footprints in the marine environment • Minimize ice disturbance at ore dock and along shipping route • Schedule dock construction activity during period of low mammal occurrence – April to June (blasting, pile driving, dredging) • Use proven mitigation measures to reduce noise and noise propagation during construction (DFO's guideline overpressure limit, bubble curtain system for blasting) • Discourage marine mammals from the blast area with potential use of acoustic deterrent device • Vessels will maintain a constant course and speed whenever possible - reduce vessel speed in Milne Inlet • Vessels will minimize idling of engines when docked at Milne and Steensby ports • Aircraft will be operated at a minimum altitude of 450 m over marine areas, when weather conditions allow • Aircraft will be prohibited from flying low over marine mammals for sightseeing or photography • Primary use of Mary River airstrip during the Operation Phase • Educate workers about bear safety	• Habitat change from icebreaking and/or ice management • Disturbance caused by noise from construction, shipping, and aircraft overflights • Mortality from icebreaking • Masking caused by shipping noise	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

MARINE ENVIRONMENT					
VEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Marine mammals	Bearded seals		• Work areas kept clean of food scraps, garbage, and toxic materials • Use of bear monitor at camp sites • Use of bear deterrent devices		Not significant
	Walruses				Not significant
	Beluga whales				Not significant
	Narwhals				Not significant
	Bowhead whales				Not significant
	Polar bears	• Habitat change resulting from icebreaking and/or ice management • Disturbance caused by noise from construction, shipping, and aircraft • Mortality from human-bear interactions		• Habitat change from icebreaking and/or ice management • Disturbance caused by noise from construction, shipping, and aircraft overflights • Mortality if a bear is killed in defense of human life	Not significant

Table 1-12.2 Summary of Residual Socio-economic Effects

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Population demographics	Demographic stability	• In-migration of a small number of workers from south will have effect on the demographic make-up of communities • Migration of non-Inuit Project employees into the North Baffin LSA • Migration of non-Inuit into North Baffin for indirect jobs • Inter-community Inuit migration • Out-migration from the North Baffin	• Designation of North Baffin communities as "Point of Hire" (Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet) • Iqaluit and a southern hub are also designated "Point of Hire" • Free transportation from "Point of Hire" to Mine Site	• In-migration of a small number of workers from south or other Nunavut communities will have effect on the demographic make-up of communities	Not significant
Education and training	Life skills	• Improved life skills amongst young adults	• Work readiness training • Supportive work environment • Employee and family assistance program • "No drug, no alcohol" policy	• Improved life skills amongst many LSA residents	Significant - positive
	Education and Skills	• Incentives related to school attendance and success • Opportunities to gain skills	• Minimum age of 18 yrs for Project employment • Career planning • Priority hiring for Inuit • Upgrading opportunities • Summer experience • Career counselling • Training	• Incentives related to school attendance and success • Opportunities to gain skills	Significant - positive

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Livelihood and Employment	Wage Employment	• Creation of jobs in the LSA • Employment of LSA residents	• LSA points of hire • Recruitment strategy • Inuit hiring policy • Management commitment	• Creation of jobs in the LSA • Employment of LSA residents	Significant - positive
	Job Progression and Career Advancement	• New career paths	• Individual career support • Inuit hiring / promotions policy • Management commitment	• Expanded employment and career development options	Significant, positive
Economic Development and Self-reliance	Land	• Increased pressure on the land • Changes to human engagement in land-based economy	• Lease agreement • VEC-related measures • Resources and Land Use measures (see VSEC)	• Increased industrial utilization of land • VEC-related residual effects • Harvesting and travel residual effects	Not significant, negative
	People	• Increased opportunities for youth • Improved education and training • Increased wealth and well-being	• Inuit recruitment strategy • Education and training program • Community support fund • Employee and family assistance program	• Increased human capacity and well-being	Significant - positive

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
	Community Economy	• Increased wealth in community • Rotational absence of residents • Increased local business opportunities	• Money management orientation • Community Fund • Monitoring to support decision-making	• Improved ability to achieve strategic community development objectives	Not significant, positive
	Territorial Economy	• Expanded economic activity (GDP) • Increased diversity of territorial economy	• Direct and indirect investment in the economy • Payment of taxes • Payment of resource royalties	• Growth in the economy and related job creation and business expansion	Significant, positive
Human health and well-being	Substance abuse	• Transport of substances through Project sites • Affordability of substances • Attitudes towards substances and addictions	• "No drug – no alcohol" policy • Measures to prevent transportation through sites • Employee and Family Assistance Program	• Negative - increased ability to afford substances will have effects on substance abuse • Positive – focus on health and safety, employee assistance and counselling will increase awareness of employees	Not significant, negative and positive
	Well-being of children	• Changes in parenting • Increased household income and food security • Overall effects on children	• Orientation and training related to fly-in/fly-out adaptation, health, well-being • Employee and Family Assistance Program • Money management training • Community support fund	• Improved well-being of children	Significant - positive

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
	Community social stability	• Absence from community during work rotation	• Orientation and training related to fly-in/fly-out adaptation • Short rotation (two week in / two week out)	• Absence of residents while they are working at Project will have effect on community social stability	Not significant
Community infrastructure and public service	Recruitment and Retention of Hamlet	• Competition for skilled workers • Labour force capacity	• Early start for skills training • On-going training • Employment experience	• Competition for skilled workers may lead to temporary effects on municipal services. • Long term improvement in labour force capacity	Not significant, negative. Significant, positive
Contracting and business opportunities	Opportunities For Business	• Expanded market - business services to Project • Expanded market - consumer goods and services • Increased entrepreneurial capacity	• Inuit contracting strategy • Cooperation with QIA to build Inuit capacity • Establish a fund to support and build capacity • Management assistance to Inuit designated firms • Opportunities for local entrepreneurs to work with Project	• Expanded market — business services to Project • Expanded market — consumer goods and services • Increased entrepreneurial capacity	Significant, positive
Cultural resources	Archaeological Sites	• Disturbance or removal of archaeological sites • Unauthorized removal of artefacts • Potential loss of regionally significant sites through approved mitigation	• Pre-development archaeological surveys to support avoidance and protections of sites, mitigation by SDR prior to construction, implementation of a chance finds procedure • Training, flagging and exclusion zones, implementation of government-approved mitigation plans, involvement of local people, management plans, implementation of chance finds procedure	• Unmitigated archaeological sites subject to accidental or deliberate partial or complete destruction • Potential for chance finds • Increased traffic at Steensby Inlet could affect archaeological resources	Not significant, negative

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Resources and land use	Inuit harvesting of wildlife	• Changes in caribou harvesting • Changes in marine mammal harvesting • Changes in fish harvesting	• Prohibition of harvesting by employees • Measures to mitigate VEC effects (see VEC assessments)	• Changes in caribou harvesting • Changes in marine mammal harvesting • Changes in fish harvesting	Not significant, negative
Resources and land use	Travel and camps	• Safe travel around Eclipse Sound and Pond Inlet • Safe travel through Milne Port • Emissions and noise disruption • Sensory disturbance and safety along Milne Inlet Tote Road • Detour around Mine Site • HTO cabin closure • Difficulty and safety relating to railway crossings • Detour around Steensby Port • Restrictions on camping locations around Steensby Port	• Road Management Plan • Mine Closure Plan • Safety Plan • IIBA Agreement with QIA • Designated railway crossing locations	• Safe travel around Eclipse Sound and Pond Inlet • Safe travel through Milne Port • Emissions and noise disruption • Sensory disturbance and safety along Milne Inlet Tote Road • Detour around Mine Site • HTO cabin closure • Difficulty and safety relating to railway crossings • Detour around Steensby Port • Restrictions on camping locations around Steensby Port	Not significant, negative

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Cultural Well-Being	Cultural Well-Being	• Pijitsirnjiq – serving and providing for… • Pilnimmaksarniq – passing on of knowledge and skills… • Avatittinnik Kamattiarniq – environmental stewardship	• Measures to support Inuit culture on site, including Inuktitut language plan • Inuit priority for employment • Inuit involvement in environmental monitoring	• Support for values that are central to Inuit culture and cultural development	Not significant
Benefits, taxes and royalties	Territorial own-source revenues	• Increased taxes and revenues from indirect and induced growth • Payments of payroll and corporate taxes to territorial government	• None	• Increased taxes and revenues • Payments of payroll and corporate taxes to territorial government	Significant – positive
Governance and leadership	Governance and leadership	• IIBA Agreement with QIA • Development of leadership skills	• Participation in initiatives to identify indicators of relevance to regional monitoring programs, share data generated by activities related to the Project, and discuss the interpretation of this data with others involved in these initiatives • Fit well with the strategic priorities identified for both the RSA	• IIBA agreement with QIA • Development of leadership skills	Significant - positive

Notes:
1. In the unlikely event of an oil spill along the shipping route, the residual effects have been evaluated as negative and significant.
2. Health and Safety is of utmost importance. In the unlikely event that there is a Project related fatality, the effect is considered to be significant.

PROJET DE LA RIVIÈRE MARY

ÉTUDE D'IMPACT ENVIRONNEMENTAL (EIE)

RÉSUMÉ

SECTION 1.0 RÉSUMÉ DU PROJET

La société Baffinland Iron Mines Corporation (Baffinland) a préparé une étude d'impact environnemental (EIE) pour le développement de son projet de la rivière Mary. Le projet est situé dans la région du nord de l'Île de Baffin dans le territoire du Nunavut de l'Arctique canadien. La Commission du Nunavut chargée de l'examen des répercussions (CNER) a publié des lignes directrices le 16 novembre 2009 et une modification de ces dernières le 3 novembre 2010. Ces directives décrivent l'information que Baffinland devrait inclure dans son EIE.

Cette EIE fait partie du processus d'évaluation environnementale établi pour un projet en vertu de l'Accord sur les revendications territoriales du Nunavut. Dans le cadre de ce processus, le promoteur d'un projet, par exemple celui de la rivière Mary, décrit le milieu ambiant et l'aménagement proposé. Les effets possibles sont ensuite établis et des plans d'atténuation sont élaborés. La gravité ou l'importance des effets résiduels (effets qui persistent après l'application des mesures d'atténuation), est évaluée d'après les critères établis et l'opinion d'experts.

Une version préliminaire de l'EIE soumise le 23 janvier 2011 a fait l'objet d'une étude approfondie, de réunions techniques et de nombreuses demandes d'information supplémentaires. La version définitive de l'EIE donne suite aux questions et préoccupations soulevées au cours de cette période d'étude qui s'est étalée sur un an. Cette version sera maintenant étudiée par les organismes fédéraux et territoriaux, les organisations inuit, les collectivités locales et d'autres parties intéressées. Le présent résumé populaire constitue un volet important de la version définitive de l'EIE et présente les faits saillants du document complet.

1.1 PROMOTEUR DU PROJET

La société Baffinland Iron Mines Corporation appartient à ArcelorMittal (70 %) et à Iron Ore Holdings LP (30 %). Son siège social est situé à Toronto (Ontario), Canada. En plus de son siège social, Baffinland assure sa présence toute l'année à son campement d'exploration au site de la rivière Mary et grâce à des bureaux de liaison communautaires à Iqaluit, Igloolik et Pond Inlet. ArcelorMittal, l'un des principaux fournisseurs de minerai de fer du Canada, approvisionne les marchés de l'acier du monde entier et fournit quelque 40 pour cent de la production totale du Canada. Reconnue pour l'excellence de ses produits, les compétences de ses employés et son leadership dans l'industrie, ArcelorMittal est l'entreprise sidérurgique la plus importante à l'échelle mondiale; elle est en effet active dans plus de 60 pays. Les membres de ses équipes d'ingénierie et d'environnement possèdent une riche expérience de l'exploitation dans l'Arctique. En outre, Baffinland est en cours d'établir des partenariats importants avec des sociétés qui ont une expérience précise dans le Nord, par exemple, dans le domaine de la navigation et du déglaçage. ArcelorMittal met en place tous les ingrédients nécessaires pour assurer le développement durable du projet et en faire une histoire à succès pour le Nunavut et l'ensemble des Canadiens.

1.2 LE PROJET

Le projet consiste en l'extraction minière d'un minerai à haute teneur de fer du gisement n^{o} 1 de la rivière Mary à une cadence de production de 18 millions de tonnes par année (Mt/a). Il comprend la construction, l'exploitation, la fermeture et la restauration d'une mine à ciel ouvert et l'infrastructure connexe pour l'extraction, le transport et l'expédition du minerai de fer. Les trois principaux sites du projet sont le site minier, le port de Milne et le port de Steensby, le premier étant situé au nord et le second au sud du site. Le port de Milne est relié au site minier par une route déjà aménagée. Un chemin

de fer d'environ 150 kilomètres (km) sera aménagé pour relier le site minier au port de Steensby. Pour la période de construction, le matériel et l'équipement nécessaires à la construction du site minier et du segment nord de la voie ferrée seront acheminés par le port de Milne. De la même façon, l'équipement et le matériel de construction nécessaires pour le port de Steensby et le segment sud de la voie ferrée seront livrés au port de Steensby.

On prévoit qu'il faudra quatre ans pour construire les installations du port de Steensby et le chemin de fer. Durant la construction, le matériel sera livré au port de Milne et au port de Steensby durant la saison des eaux libres. Dès que le chemin de fer sera opérationnel, 18 Mt/a de minerai de fer seront transportées par chemin de fer et expédiées à partir du port de Steensby. L'expédition du minerai de fer par voie maritime se fera à longueur d'année et exigera des transporteurs brise-glace. Une fois que le port de Steensby sera opérationnel, le port de Milne sera réservé à un usage occasionnel pour la livraison de l'équipement surdimensionné requis au site minier. Le minerai de fer est principalement destiné aux sidérurgies européennes.

1.3 RAISON D'ÊTRE DU PROJET

Le monde a besoin de minerai de fer pour continuer à construire et à produire les matériaux dont notre société fait usage tous les jours. La demande mondiale pour ce minerai va augmenter, car des nations comme la Chine et l'Inde et d'autres pays émergents continuent de croître et de se développer en même temps que l'économie des pays occidentaux continue de s'améliorer. Baffinland propose de mettre en œuvre le projet afin de fournir aux marchés mondiaux un minerai de grande qualité et d'assurer un profit acceptable pour ses investisseurs.

Pour la population du Nunavut, le projet contribuera au développement de l'infrastructure et au perfectionnement des compétences ainsi qu'à la création d'emplois et d'opportunités d'affaires, tout en assurant un accroissement des revenus pour le gouvernement du Nunavut et la *Inuit birthright corporation* (Nunavut Tunngavik Inc.). Le projet apportera de nombreux avantages aux collectivités locales, en soutenant à la fois le mode de vie traditionnel des Inuits et le changement générationnel qui se produit dans leur collectivité, dont les jeunes montrent de l'intérêt à participer à un mode de vie salarié.

L'Entente sur les répercussions et les retombées pour les Inuit (négociée entre Baffinland et l'Association inuit Qikiqtani (QIA), assurera que le projet apporte des avantages aux collectivités inuit avoisinantes et à la région Qikiqtaaluk du Nunavut. Le développement du projet est conforme aux principes, politiques et objectifs généraux de la Commission d'aménagement du Nunavut et à la stratégie du gouvernement du Nunavut en matière d'exploitation minière. Le projet devrait contribuer à attirer d'autres investissements dans la région.

Le projet contribue également à la stratégie du Canada pour le Nord qui vise à renforcer la souveraineté canadienne dans cette région, à protéger le patrimoine environnemental du pays, à stimuler le développement économique et social régional, ainsi qu'à améliorer la gouvernance dans le Nord.

1.4 APPROCHE DE DÉVELOPPEMENT DU PROJET

La société Baffinland réalisera le projet de manière responsable sur les plans environnemental et social. Les besoins et les valeurs d'autrui, particulièrement les chasseurs et les trappeurs, seront respectés tout au long des phases de développement et d'exploitation du projet. Baffinland se conformera aux exigences du Nunavut et à celles de la réglementation fédérale, quand c'est économiquement et techniquement faisable, en appliquant des mesures de protection de l'environnement qui sont techniquement avérées et économiques, pour chaque volet du projet. Le processus de décision de

Baffinland sera guidé par des principes de gestion rationnelle où la séquence « politique – planification – mise en œuvre et exploitation – vérification et mesures correctives – examen par la direction » sera systématiquement suivie. À chacune de ces étapes, la participation de la collectivité sera un aspect important du processus. Grâce à une approche axée sur l'apprentissage au fur et à mesure de la vérification des effets des actions, la société Baffinland réussira à s'améliorer continuellement et à s'adapter rapidement aux conditions changeantes. Elle tient à faire preuve de précaution pour éviter et (ou) réduire les effets potentiellement négatifs de ses opérations afin d'assurer la sécurité de ses employés, le bien-être des résidents du Nunavut, ainsi que la protection de l'environnement naturel.

La société Baffinland a adopté un ensemble de principes progressistes en matière d'emploi et d'activités commerciales qui guideront ses décisions durant toute la durée du projet. La sécurité des employés est la pierre angulaire de toutes ses décisions. La société s'efforcera de fournir un environnement de travail propice à attirer, perfectionner et maintenir en poste du personnel qualifié et à maximiser la participation des Inuits. Dans la mesure du possible, elle embauchera des employés provenant des cinq collectivités les plus proches du projet. Elle travaillera en étroite collaboration avec l'Association Inuit Qikiqtani et autres institutions Territoriales, pour offrir la formation nécessaire aux employés et appuyer les programmes communautaires qui accroissent les avantages du projet et permettent aux résidents locaux d'acquérir des compétences qui auront des effets significatifs pour eux même après la fin du projet.

L'effectif de construction sera d'environ 1 700 à 2 700 personnes. Au cours de la phase d'exploitation, l'effectif total sera d'environ 950 personnes. Les travailleurs des collectivités du Nunavut travailleront par rotation, à raison de deux semaines sur le site suivies de deux semaines de congé. Pour les travailleurs de l'extérieur du Nunavut, le rythme de travail sera de quatre semaines sur le site suivies de deux semaines de congé.

Tous les travailleurs seront transportés par avion, à destination et au départ des sites du projet. La société Baffinland assurera le transport aérien à partir des cinq communautés les plus proches du projet dans la région du nord de l'Île de Baffin, et à partir d'Iqaluit et d'une autre localité au sud. Il est possible qu'elle envisage d'inclure d'autres localités.

1.5 DÉFIS DE RÉALISATION DU PROJET

Le développement d'un grand projet minier dans une région isolée du Nunavut fait face à plusieurs défis importants :

- le coût élevé lié à la construction et à l'exploitation d'un site minier et aux infrastructures de transport dans l'Arctique;
- les défis logistiques liés à la construction et à l'exploitation en raison de l'accès saisonnier limité au site et du manque d'infrastructures de transport existantes;
- les hivers longs et le froid extrême affectent l'efficacité des équipes de construction et des opérations;
- les conditions géotechniques difficiles (pergélisol, lentilles de glace, etc.) exigent des techniques de conception et de construction spécialisées;
- la nature concurrentielle de l'industrie de l'acier exige un approvisionnement constant, continu et sûr du minerai de fer.

Pour respecter ces exigences, le projet doit pouvoir compter sur des opérations d'expédition par mer fiables et régulières, toute l'année. Un navire chargera le minerai au port de Steensby environ tous les deux jours, à longueur d'année. La fréquence des expéditions augmentera durant la saison des eaux libres, car pendant ces mois, le transport maritime assure le réapprovisionnement annuel et il est possible

d'affréter des navires supplémentaires pour transporter des quantités additionnelles de minerai. L'expédition du minerai par bateau en hiver est essentielle et la flotte de transporteurs brise-glace prévue dans le cadre du projet assurera avec fiabilité l'expédition du minerai.

Il y a deux autres facteurs importants à prendre en compte :

- le projet doit fournir des avantages réels et mesurables tant pour les actionnaires de Baffinland que pour les propriétaires fonciers inuit, les collectivités locales et les utilisateurs des terres;
- les revenus de la société Baffinland reposent entièrement sur le prix de vente du minerai de fer.

L'ensemble de ces défis et facteurs a été pris en compte pour établir la stratégie de conception et de mise en œuvre du projet.

1.6 CALENDRIER ET DURÉE DU PROJET

Le projet est réparti en plusieurs phases. La phase de construction, de ses débuts jusqu'au démarrage de l'exploitation, s'étalera environ sur quatre ans. D'après les réserves actuelles de minerai, la phase d'exploitation s'étalera sur 21 ans, à une cadence de production de 18 Mt/a. La fermeture du site devrait prendre trois ans tandis que la surveillance post-fermeture demandera cinq autres années. Si les objectifs des opérations de fermeture ne sont pas atteints, la période de post-fermeture pourrait dépasser cinq ans.

1.7 GRANDES LIGNES DU PROJET

Le site de la mine, le port de Milne et le port de Steensby sont les trois principaux sites du projet. Chacun d'eux dispose des infrastructures nécessaires pour fonctionner efficacement, y compris des ateliers de maintenance et des édifices administratifs, des entrepôts et aires de stockage du matériel, des piles de stockage du minerai et les installations de gestion des eaux de ruissellement requises, des camps, l'alimentation en eau, des usines de traitement des eaux usées, des infrastructures de gestion des déchets, y compris un site d'enfouissement, de même que des centrales de production d'énergie électrique, un dépôt de carburant, des installations de télécommunication et des bandes d'atterrissage.

En plus de ces installations, le site de la mine comprend la mine à ciel ouvert, le parc de camions pour appuyer les activités minières, des installations de préparation et de stockage des explosifs, un amas de stériles, ainsi que des installations de calibrage du minerai et de chargement dans les camions et wagons. Le port de Milne Inlet comprend également un dock de fret flottant et des ateliers de maintenance des camions. Au port de Steensby, on trouve un dock de fret, un quai de chargement de minerai avec infrastructure de manutention et de chargement du matériel, une installation de déchargement des wagons et l'équipement de manutention nécessaire, un centre de stockage et de préparation d'explosifs, le dépôt principal de carburant ainsi qu'un atelier de maintenance des locomotives.

Des camps d'hébergement permanents et temporaires de diverses dimensions seront construits à chacun des trois sites et à divers points situés le long du chemin de fer. Les camps comprendront des dortoirs, une cafétéria ainsi qu'une clinique médicale et un centre récréatif. En fin de construction, les effectifs des camps d'hébergement seront réduits. Durant la phase d'exploitation, le nombre de travailleurs qui pourront être hébergés dans les camps sera réduit. Ces camps seront des constructions modulaires érigées au début de la phase de construction qui seront par la suite démantelées pour la phase d'exploitation.

Le chemin de fer comprendra un talus de voie ferrée, des traverses en bois et des rails en acier. La construction du chemin de fer demandera l'aménagement d'une route d'accès temporaire et de plusieurs carrières. Environ 30 ponts seront aménagés pour la voie ferrée ainsi que deux tunnels et de grandes

tranchées rocheuses le long du lac Cockburn. Des passages à niveau seront aménagés à des points clés le long de la voie ferrée pour permettre aux chasseurs et aux caribous de traverser les voies sans danger.

Une fois que les installations ferroviaires et portuaires seront prêtes, le port de Steensby sera exploité toute l'année et desservi par une flotte d'énormes minéraliers brise-glace spécialement construits.

1.8 MINERAIS PRODUITS

Le minerai de fer de la rivière Mary a une très haute teneur en fer. Le traitement se limite à son calibrage pour le réduire par concassage et tamisage en particules plus petites qui sont conformes aux spécifications des sidérurgies. Deux types de minerai sont ainsi produits :

- un produit de **minerai grossier**, dont la taille des morceaux va de 6,3 mm à 31,5 mm (de la grosseur d'une balle de golf), et
- un produit de **minerai fin**, dont la taille des morceaux est inférieure à 6,3 mm (de la grosseur d'un petit pois).

Les concasseurs et tamis seront installés à l'intérieur de bâtiments, et les convoyeurs seront couverts et équipés de hottes pour réduire l'exposition au vent et la dispersion de poussières. Des dépoussiéreurs seront installés pour capter les poussières recueillies par les conduits de ventilation.

1.9 FERMETURE ET POST-FERMETURE

Du début à la fin des phases, la société Baffinland planifiera et mènera ses activités de manière à remettre en état les sites du projet pour qu'ils soient sécuritaires et stables au plan environnemental. Elle entreprendra la restauration progressive des sites tout au long de la durée de l'exploitation minière. Les installations temporaires requises pour les camps de construction seront désaffectées et retirées des lieux à la fin de leur vie utile. Les lieux d'emprunt, les carrières, les routes temporaires et autres sites touchés seront stabilisés pour limiter l'érosion des terre-pleins, et restaurés quand ils n'auront plus aucune utilité. La surveillance environnementale et les suivis de sécurité se poursuivront aussi longtemps que nécessaire.

1.10 POTENTIEL DE DÉVELOPPEMENT FUTUR

Le projet en cours est conçu pour une production nominale de 18 Mt/a de minerai de fer. La cadence de production annuelle varie selon des facteurs comme les conditions du marché, la teneur du minerai et les événements imprévisibles. Pour assurer que les niveaux d'activité maximale restent sécuritaires et se réserver une certaine souplesse en cas d'événements imprévisibles, les infrastructures du projet sont conçues pour une capacité de 30 Mt/a. Tous les sites du projet peuvent donc accueillir des piles de stockage, de l'équipement de manutention du matériel et des effectifs supplémentaires.

En outre, au cours des deux dernières années, Baffinland a exploré la région et découvert d'autres gisements de minerai de fer qui semblent avoir haute teneur de fer tout comme le gisement n^{o} 1, d'après les échantillons de surface. Bien que ces autres gisements n'aient pas encore été évalués à fond, le programme d'exploration régionale de Baffinland révèle un énorme potentiel pour en assurer aussi le développement. Le fait que les infrastructures d'exploitation minière, y compris les installations portuaires, routières et ferroviaires, soient déjà en place facilitera le développement futur dans la région. Si le projet prenait une grande expansion, d'autres processus d'étude seraient mis en place.

SECTION 2.0 PARTICIPATION DES COLLECTIVÉS

Il y a eu un processus de consultation continu et étendu auprès des collectivités et organisations qui ont des intérêts dans le projet. On a ainsi mobilisé les organisations inuit publiques, locales et régionales, le gouvernement du Nunavut et les organismes fédéraux pertinents. L'accent a été mis sur les collectivités inuit établies à proximité des sites du projet.

Les Inuits de la région de Baffin ont une riche tradition orale. La société Baffinland en a tenu compte dans l'approche qu'elle a choisie pour mobiliser les collectivités locales. Elle s'est efforcée en priorité d'établir sa présence dans la région en faisant appel à des agents de liaison communautaire, en tenant de nombreuses réunions face à face avec des membres de la collectivité et en organisant autant que possible des visites de ses sites. Comme la langue principale de la région est l'Inuktitut, et qu'il s'y ajoute de nombreux dialectes régionaux dans l'Île de Baffin, le recours à des interprètes locaux a été un élément important pour assurer une bonne communication avec les intéressés. Dans tous les cas, des rapports détaillés des diverses réunions et des rencontres face à face ont été préparés.

On s'est efforcé de recueillir et documenter le savoir traditionnel local et de l'intégrer aux décisions touchant la conception du projet. Les Inuit ont une connaissance très étendue de la région du projet dont la valeur est inestimable, surtout quand on l'intègre aux études et connaissances scientifiques.

En outre, l'acceptation et les préférences des collectivités établies à proximité du projet sont des facteurs importants qui ont été pris en compte dans l'évaluation des différentes solutions de rechange du projet, par exemple l'utilisation du port de Milne, l'emplacement du port de Steensby, la route de navigation dans le bassin de Foxe et l'horaire de rotation de l'effectif.

Après la soumission de la version provisoire de l'EIE, il y a eu de nombreuses interactions avec nombre d'organismes fédéraux et territoriaux, l'Association inuit régionale (QIA) et d'autres parties intéressées, grâce à des réunions individuelles et en petit groupe et des soumissions par écrit. Tous ces efforts ont non seulement réussi à mieux faire connaître le projet et ses effets possibles, mais ils alimentent également les améliorations à apporter à sa conception. Le contenu de la version définitive de l'EIE reflète les résultats de ces discussions et de cette analyse, et fait passer la conception du projet à la phase suivante.

SECTION 3.0 CONTEXTE DU PROJET

3.1 MILIEU PHYSIQUE

Le relief et les gisements de la région du projet de la rivière Mary sont associés aux grandes périodes glaciaires que l'Île de Baffin a traversées au fil des ans. La géologie de surface se compose de dépôts de sédiments qui abondent localement et proviennent des glaciers et des rivières. La région du nord de l'Île de Baffin qui englobe la zone du projet est située dans la ceinture de « Committee Bay », un terrain de granite et roches vertes mélangés à des roches sédimentaires et volcaniques. On trouve également quelques affleurements rocheux et des formations granitiques et sédimentaires. À l'est, on aperçoit des montagnes de plus de 540 millions d'années, et à l'Ouest, des plateaux de basses terres d'environ 250 à 540 millions années.

Le projet est situé dans l'écozone du Haut-Arctique qui se caractérise par un climat semi-aride et une zone de pergélisol continu. Le pergélisol atteint une profondeur de 500 mètres et a une couche active de deux mètres. Les températures extrêmement froides de la région, combinées au pergélisol, entraînent de brèves périodes de ruissellement de juin à septembre. Les rivières et ruisseaux, à l'exception des grands réseaux, gèlent complètement pendant les mois d'hiver. En raison du climat extrêmement froid et de la faible

capacité du sol de retenir l'humidité, la couverture végétale est minimale et les eaux de surface sont abondantes. Il y a des milliers de petits lacs et cours d'eau dans la région.

De novembre à janvier, il y a moins de deux heures de crépuscule et l'obscurité règne près de 24 heures sur 24. Pendant les mois d'hiver, le terrain est dépourvu d'arbres et les vents transforment la fine couche de neige poudreuse en poudrerie, ce qui entraîne une visibilité réduite. En période estivale, il fait clair toute la journée, et la période exempte de gel s'étend de la fin de juin à la fin d'août. Les mois de juillet et août sont généralement les plus pluvieux. De septembre à novembre, la température et le nombre d'heures de clarté diminuent, et vers la mi-octobre la température quotidienne moyenne est généralement bien au-dessous de 0ºC. Cette période enregistre habituellement les plus importantes chutes de neige.

La qualité de l'air est très bonne et le niveau de bruit est faible dans la région du projet, comme c'est souvent le cas en région éloignée. Les analyses de la qualité de l'eau douce dans la région de la rivière Mary indiquent des concentrations naturellement élevées d'oxygène dissous, d'aluminium et de fer. En outre, la quantité importante de matières dissoutes accroît la turbidité de l'eau. Certaines valeurs moyennes de pH ainsi que le cadmium et le mercure présents dans l'eau douce sont actuellement supérieurs aux normes prescrites par les lignes directrices du Conseil canadien des ministres de l'Environnement (CCME).

3.2 MILIEU BIOLOGIQUE

Relativement clairsemée dans la plus grande partie de la région du projet, la végétation est généralement représentative de la flore des régions de l'Arctique. Aucune espèce végétale considérée comme « rare » au Canada n'y a été répertoriée.

Parmi les mammifères terrestres de la région, on trouve le caribou des toundras du troupeau du nord de l'Île de Baffin, le loup, le renard roux et le renard arctique, l'hermine, le lièvre arctique et le lemming. Plusieurs espèces de mammifères marins abondent dans la région, y compris l'ours polaire, le narval, le béluga et la baleine boréale, ainsi que plusieurs espèces de phoques et de morses. L'épaulard et la baleine à bec commune sont représentés en moindre nombre.

Les caribous du nord de l'Île de Baffin sont actuellement présents en faible densité et leur nombre semble varier selon un cycle de 60 à 70 ans. La dernière période d'abondance du caribou s'est étendue des années 1980 à 2000, et la période précédente de faible densité est survenue dans les années 1940. La population de caribous devrait rester faible dans les deux prochaines décennies. Cependant, tout indique que les caribous sont présents dans toute la région. Bien que certaines populations de caribous font des migrations saisonnières entre leurs habitats préférés en été et en hiver, le caribou du nord de l'Île de Baffin semble une espèce non migratrice et il est probable qu'on le trouvera en de nombreux endroits sur l'ensemble de la région du projet.

Dans la région de la rivière Mary, les espèces d'oiseaux migrateurs observées comprennent l'oie des neiges, le canard, l'eider, le harle, le huard et le grand harle. Parmi les rapaces, on y trouve la buse pattue, le faucon pèlerin, le faucon gerfaut et le harfang des neiges. On a répertorié des oiseaux chanteurs et des oiseaux de rivage en faibles densités partout dans la région. De nombreux oiseaux marins sont également présents dans le secteur de la route de navigation, y compris le guillemot de Brünnich et de nombreux types de mouettes.

Deux espèces de poissons d'eau douce sont représentées : l'omble arctique et une espèce de méné nommé épinoche à neuf-épines. Dans les eaux intérieures situées à proximité du projet, on trouve principalement une espèce d'omble arctique confinée aux eaux intérieures, bien que des ombles

anadromes soient présents dans un lac adjacent au port de Steensby et en amont du réseau de la rivière Cockburn, près d'une section de la voie ferrée. Parmi les poissons d'eaux marines, on trouve l'omble arctique, le chabot, et la lompe de l'Atlantique à Steensby Inlet, ainsi que l'omble arctique, le chabot et la morue du Groenland à Milne Inlet.

3.3 MILIEU SOCIO-ÉCONOMIQUE

La région de Baffin au Nunavut possède un riche patrimoine archéologique visible qui remonte à plusieurs centaines d'années. Il y a de nombreux sites archéologiques de petite et de grande envergure, particulièrement autour des ports de Milne et de Steensby, le long de certains tronçons de la voie ferrée.

Les cinq collectivités de la région du nord de l'Île de Baffin situées dans le voisinage immédiat du projet de la rivière Mary sont – en ordre alphabétique – Arctic Bay (280 km), Clyde River (415 km), Hall Beach (192 km), Igloolik (155 km) et Pond Inlet (160 km). Chacune d'elles a depuis longtemps des liens sociaux, économiques et environnementaux avec la région du projet. La récolte des aliments traditionnels contribue de manière importante au bien-être général, tant physique que culturel, de nombreux ménages du nord de l'Île de Baffin. Dans les cinq collectivités, le caribou, le phoque annelé et l'omble arctique ont une grande importance. En outre, le morse est une espèce importante pour Hall Beach et Igloolik, tandis que le narval est une espèce importante pour les ménages de Arctic Bay et Pond Inlet, ainsi que pour Clyde River, quoique dans une moindre mesure.

L'économie fondée sur les ressources naturelles compte pour une partie importante du mode de subsistance de nombreux résidents du nord de l'Île de Baffin. On estime que la production d'aliments provenant de la récolte des ressources de la terre et de la mer représente entre 12 et 20 millions par année dans la région. Le volume de travail nécessaire pour récolter ces aliments équivaudrait à environ 350 emplois à plein temps.

Les résidents de la région tirent également des revenus de la vente de leurs œuvres artistiques et artisanales, de l'emploi ainsi que de divers programmes sociaux du gouvernement comme le Soutien du revenu. Le revenu personnel déclaré par les résidents des cinq collectivités du nord de l'Île de Baffin s'élève à 83 millions de dollars par année.

Les Inuits du nord de l'Île de Baffin ont connu d'énormes changements sociaux et culturels au cours des dernières décennies. Les changements récents, notamment les pensionnats, ont touché l'intégrité familiale et par ricochet, la cohésion sociale. Les aînés s'engagent de plus en plus dans la vie communautaire et l'apprentissage de la culture traditionnelle par la jeune génération. En même temps, les jeunes Inuits semblent prendre un virage en faveur des attentes de la classe moyenne occidentale. Ces collectivités ont connu une croissance démographique considérable au cours des 20 dernières années. Plus de 70 % de la population est âgée de moins de 25 ans. Le sous-emploi et le manque de perspectives d'avenir contribuent au stress social.

Chez les résidents, la demande d'emplois salariés est très élevée. Ils veulent travailler, même s'ils doivent quitter leur collectivité par avion pour aller travailler en région éloignée. Toutefois, les possibilités d'emploi dans le nord de l'Île de Baffin sont limitées. Dans cette région, les Inuit qui ont un emploi ont souvent des revenus peu élevés, nettement inférieurs à ce qu'un travail à plein temps leur rapporterait, et bien peu d'entre eux occupent un emploi à plein temps rapportant des revenus annuels. La plupart des résidents qui travaillent à plein temps à Iqaluit occupent leur emploi toute l'année. Dans le nord de l'île de Baffin, un nombre beaucoup plus élevé de travailleurs occupent un emploi, mais seulement pour de brèves périodes;

les femmes qui y sont employées à plein temps ont plus de chances que les hommes de travailler toute l'année.

Il y a tout de même des possibilités d'emplois à plein temps bien rémunérés qui permettent de travailler toute l'année. Ce sont souvent des postes au gouvernement et dans le « secteur public » qui exigent un niveau de scolarité et le genre d'expérience que de nombreux résidents n'ont pas. Les aînés reconnaissent que leur collectivité doit se positionner de façon à participer à une économie basée sur les salaires.

Le nombre d'emplois occupés par les femmes a en règle générale augmenté à un rythme supérieur que ceux qu'occupent les hommes. Toutefois, les femmes de la région travaillent surtout dans le secteur public. Il est peu probable que la croissance passée dans ce secteur se poursuive, et on peut supposer que les jeunes femmes à la recherche d'un emploi devront peut-être se tourner vers des débouchés dans des secteurs qui ne sont pas traditionnellement réservés à la main-d'œuvre féminine.

Dans le nord de l'île de Baffin et à Iqaluit, environ un emploi sur cinq exige une formation universitaire. Un quart à un tiers des emplois de la région demande une formation collégiale ou des compétences dans une formation d'apprenti. Une proportion égale d'emplois exige un diplôme d'études secondaires et (ou) une formation spécifique à l'occupation. Les travailleurs non qualifiés peuvent avoir accès au reste des possibilités de travail en suivant une formation en cours d'emploi. Il est clair que les débouchés sont beaucoup plus limités pour ceux qui n'ont pas reçu une éducation ou une formation adéquate.

Le Nunavut s'appuie sur les paiements de transferts fédéraux pour au moins 90 % de ses revenus. L'emploi gouvernemental est un pilier de l'économie salariale. Un grand nombre de petites entreprises du Nunavut et de commerces de détail sont établis pour soutenir les besoins du gouvernement ou ceux des fonctionnaires publics. Les emplois gouvernementaux dans les domaines de l'administration, de l'éducation et de la santé représentent environ la moitié de tous les revenus liés à l'emploi sur le territoire. Le nombre d'emplois dans la construction a continué d'augmenter pour appuyer le développement de l'infrastructure gouvernementale.

SECTION 4.0 INTERACTIONS DU PROJET ET EFFETS SUR LES CVE ET LES CSEV

Les efforts de consultation publique ont permis de cerner les intérêts et les préoccupations clés des collectivités et des parties intéressées du projet. En outre, les études scientifiques des conditions de base du milieu biophysique ont permis d`établir l'état actuel des lieux. Par ailleurs, les entretiens avec de nombreux aînés inuit ont permis de recueillir des données précieuses provenant de leur connaissance traditionnelle de la région. Grâce à ces études et ces consultations, l'équipe du projet a pu clairement cerner les composantes importantes à évaluer et étudier. Ces domaines d'intérêt particulier sont énoncés dans l'EIE comme « composantes valorisées de l'écosystème » (CVE) et « composantes socio-économiques valorisées » (CSEV) du projet.

4.1 Composantes valorisées de l'écosystème(CVE)

Les CVE comprennent le milieu naturel, et la faune dont la survie dépend de la santé de ce milieu. On peut grouper les CVE en thèmes liés aux composantes clés du milieu. Les principales espèces indicatrices ont été identifiées et ont fourni une orientation pour les évaluations.

Milieu atmosphérique – changement climatique, qualité de l'air, bruit et vibrations.

Milieu terrestre – relief, sol et pergélisol; végétation; faune et habitat terrestres; oiseaux.

Milieu d'eau douce – eaux de surface et qualité des sédiments; quantité d'eau; poissons d'eau douce et habitats, autres organismes aquatiques.

Milieu marin – glace marine; eau de mer et qualité des sédiments; habitat marin et biote; mammifères marins.

4.2 Composantes socio-économiques valorisées (CSEV)

Les CSEV concernent le bien-être de la population, les collectivités ainsi que la santé socio-économique générale de la région.

Population : démographie; éducation et formation; santé et bien-être humains.

Collectivité : infrastructure communautaire et fonction publique; ressources culturelles; ressources et utilisation des terres; gouvernance et leadership : moyens de subsistance et emploi; bien-être culturel.

Économie : développement économique et autonomie; conclusion de contrats et occasions d'affaires; prestations, impôts et redevances.

4.3 Interaction des CVE et des CSEV avec le projet

Le processus d'étude a permis de cerner les interactions du projet avec les divers CVE et CSEV et quand c'était approprié, d'identifier et d'analyser les principales espèces indicatrices. Des études approfondies combinées au savoir traditionnel inuit ont permis d'établir l'état des lieux et les conditions préalables au projet. À l'aide de connaissances scientifiques, de l'expérience de projets passés et des prévisions tirées du savoir traditionnel, on a pu prévoir les effets de diverses interactions. Lorsqu'il est impossible éviter les interactions négatives du projet, des plans de gestion ont été élaborés pour limiter ou contrebalancer ces effets négatifs.

En tenant compte des modifications apportées et des mesures d'atténuation prévues dans le projet pour limiter les effets négatifs, les effets résiduels du projet ont été évalués afin de déterminer leur importance pour les milieux biophysique et socio-économique. L'EIE présente les résultats de ces évaluations. Un résumé par thème suit ci-dessous.

4.3.1 EFFETS DU PROJET SUR LES CVE

Introduction

Le projet a été conçu dans l'optique de minimiser ses interactions avec le milieu naturel et de mettre en œuvre des mesures visant à atténuer les effets négatifs des interactions inévitables. Une fois ces mesures en place, une évaluation des effets du projet sur l'ensemble du milieu naturel a permis d'établir qu'ils sont négligeables. Les paragraphes suivants résument les interactions importantes du projet et les mesures d'atténuation qui seront mises en œuvre.

Milieu atmosphérique – changement climatique, qualité de l'air, bruit et vibrations

Selon les prévisions, le changement climatique aura peu d'incidence sur les conditions déjà extrêmement froides et le pergélisol profond dans la région, pour la durée de vie du projet. D'ailleurs, les installations du projet seront conçues pour tenir compte de toute évolution des conditions locales provoquées par le changement climatique. Il reste que les activités du projet produiront effectivement des gaz à effet de serre (GES), quoique certains éléments du projet soient conçus pour en limiter le taux. Même si les émissions de GES représentent une hausse importante par rapport aux taux actuels enregistrés au Nunavut, elles sont

minimes par rapport à celles que l'on enregistre au plan national et ont peu d'incidence sur la totalité des GES émis au Canada.

La manutention du minerai, ainsi que la conduite sur les routes d'accès et les émissions des groupes électrogènes, des camions et des incinérateurs des camps, réduisent la qualité de l`air en générant des poussières et d'autres émissions. Il est possible de réduire ces émissions en utilisant du carburant diesel arctique à faible teneur en soufre et en s'assurant de prévoir pour l'équipement des mesures modernes de lutte antiémissions. En outre, des mesures de lutte contre la pollution atmosphérique comme l'utilisation de dépoussiérants, l'installation des concasseurs et tamis à l'intérieur de lieux fermés ventilés et l'utilisation de dépoussiéreurs atténueront les effets sur la qualité de l'air.

Les activités du projet accroîtront le niveau de bruit, mais seulement dans les lieux qui en sont proches. En outre, l'utilisation de silencieux et l'entretien régulier des engins et des équipements atténueront beaucoup le niveau de pollution sonore.

Milieu terrestre – relief, sol et pergélisol; végétation; faune et habitat terrestres; oiseaux

Le relief sensible de la région du projet comprend des sols gelés qui contiennent des lentilles de glace ou des sols qui risquent de devenir instables s'ils sont soumis à une pression. Ces endroits seront pour la plupart évités et si c'est impossible, on aura recours à des mesures de conception technique pour les protéger. En outre, un drainage adéquat est prévu lors de l'aménagement des sites pour empêcher la formation de mares en période de dégel.

Les installations sont conçues de manière à minimiser le nombre de terrains que le projet perturbera. Par conséquent, la végétation touchée sera minime par rapport à l'ensemble de la couverture végétale présente dans la région. Des études par modélisation numérique ont permis de prédire la quantité de poussière qui pourrait se déposer sur la végétation régionale et d'après leurs conclusions, des mesures de suppression de la poussière limiteraient l'empoussièrement des végétaux.

On a utilisé le caribou comme principale espèce indicatrice pour évaluer les effets possibles sur la faune terrestre. La principale interaction des activités du projet avec ces animaux pourrait se produire lorsque le caribou traverse une route ou la voie ferrée. Des collisions pourraient effectivement survenir entre un caribou et un train ou un camion, mais on prévoit qu'il en surviendra peu et que le nombre sera négligeable par rapport au nombre total d'accidents dans la région. Plusieurs mesures ont été mises en place pour éviter les collisions avec des caribous. Une limite de vitesse stricte sera imposée pour les trains et les camions, ce qui réduira la probabilité de tels incidents. Les camions devront s'immobiliser quand ses caribous passent sur la route ou en bordure. Les trains ne pourront pas s'arrêter pour éviter les collisions, mais en période de migration, il y a possibilité d`interrompe temporairement le service ferroviaire le temps que les caribous dégagent les voies ferrées. Des passages à niveau seront aménagés le long du corridor ferroviaire afin de faciliter la circulation des animaux. Au besoin, les amas de neige seront réduits pour laisser passer les caribous.

L'avifaune est abondante dans la région, mais la perte d'habitat des oiseaux migrateurs attribuable aux activités du projet sera négligeable. Le projet ne devrait pas avoir d'effets sur les populations de faucons pèlerins, d'oies des neiges, d'eiders et de huards. Les nids et aires de nidification seront identifiés avant le début des activités et dans la mesure du possible évités jusqu'à l'envol des oisillons.

Milieu d'eau douce – eaux de surface et qualité des sédiments; quantité d'eau; poissons d'eau douce et habitats, autres organismes aquatiques

De nombreuses mesures d'atténuation éprouvées sont prévues dans le cadre du projet afin de réduire les effets possibles sur la qualité de l'eau, les poissons d'eau douce et leur habitat ainsi que d'autres organismes aquatiques. Des plans de gestion spécifiques expliquent en détail les nombreux moyens de protection qui seront pris à cet égard.

La consommation d'eau sera réduite au strict minimum et les eaux usées subiront des tests et seront traitées au besoin avant d'être rejetées dans l'environnement. Les installations modernes de traitement des eaux d'égout assureront que les eaux évacuées répondent aux normes établies ou les dépassent. Les eaux de ruissellement des aires de stockage du carburant et de maintenance seront confinées, et les eaux usées des installations de maintenance des camions et des trains ainsi que les eaux de lavage des équipements explosifs seront traitées pour assurer leur conformité aux normes établies avant de les rejeter dans le milieu naturel. Le Plan d'intervention d'urgence (PIU) de Baffinland sera en place et permettra un nettoyage rapide et approprié en cas de déversement accidentel.

Les risques de drainage acide provenant des haldes de stériles, des piles de stockage ou des carrières seront soigneusement gérés et au besoin, le traitement et surveillance seront assurés durant toute la durée de vie du projet.

Les routes et la voie ferrée traversent un grand nombre de cours d'eau et dans une partie de ceux-ci, on trouve des habitats de poissons. Les ponceaux et ponts seront conçus pour limiter les obstacles à la migration des poissons. Comme il ne peut pas y avoir de virages à angle aigu sur les voies ferrées, des tronçons du chemin de fer devront inévitablement être aménagés en bordure de plusieurs lacs. Certains habitats aquatiques seront inévitablement détruits, mais un plan d'indemnisation a été proposé pour contrebalancer ces pertes inévitables. Ce plan sera étoffé et mis au point en collaboration avec le ministère des Pêches et des Océans et l'Association inuit Qikiqtani (QIA).

Milieu marin – glace marine; eau de mer et qualité des sédiments; habitat marin et biote; mammifères marins

Les activités côtières et portuaires seront soigneusement gérées pour protéger le milieu marin. Les eaux d'égout et les eaux usées provenant des installations de maintenance et des équipements explosifs seront traitées avant leur rejet et les eaux de ruissellement des zones du projet seront confinées, surveillées et traitées pour s'assurer qu'elles répondent aux exigences de qualité des effluents liquides avant leur évacuation. Les transferts de carburant seront effectués en conformité avec les règlements de la *Loi sur la marine marchande du Canada*.

La navigation météorologique réduira la perturbation du déplacement des îles de glace et les navires ne pourront pas déverser des déchets dans les eaux. Les transporteurs de minerai utiliseront des eaux de ballast pour stabiliser les navires lors de navigation en haute mer. En réponse aux préoccupations des collectivités relatif à l`introduction d`espèces exogènes invasives par l`entremise des eaux de ballast, la réglementation en vigueur exige que les eaux de ballast soient obligatoirement être échangées en mer avant l`entré du navire dans les eaux canadiennes. De plus, les eaux de ballast seront également échangées avant l`arrivée des navires au port de Steensby. Le traitement des eaux de ballast des navires devra être conforme à la réglementation future en la matière et se faire selon les méthodes recommandées par Transports Canada. Ces pratiques limiteront l'introduction d'espèces invasives.

Les mammifères importants de l'écosystème marin sont le phoque annelé, le phoque barbu, le morse, le narval, le béluga ainsi que la baleine boréale.

Le *phoque annelé* est présent toute l'année le long des routes de navigation nord et sud. Les glaces de rive offrent un habitat de choix pour cette espèce qui creuse des tanières et des trous d'aération sous la neige. Les femelles mettent bas en mars et avril et allaitent leurs petits de cinq à huit semaines. Le phoque annelé tolère généralement bien l'activité industrielle et la navigation en eaux glacées. Cependant, l'espèce est considérée comme sensible aux perturbations pendant les périodes où la femelle met bas et allaite ses petits. Les transporteurs brise-glace auront des effets sur une faible proportion de la banquise à Steensby Inlet, le long de la voie maritime et près du quai. L'activité des transporteurs brise-glace pourrait causer un petit nombre de mortalités chez les phoques annelés. Toutefois, l'interaction du projet avec cette population se limitera au couloir de navigation et celle-ci ne sera pas touchée dans son ensemble.

Le *morse* est présent toute l'année dans la région en nombre relativement important dans le nord du bassin de Foxe. Selon le savoir traditionnel des Inuit, les populations de morses sont présentes régulièrement en petits nombres à Steensby Inlet. On les trouve également dans le détroit d'Hudson. Le long de la route de navigation partant de Steensby, les morses en eau libre ou échoués sur la glace peuvent percevoir le passage des navires à des kilomètres de distance, mais il est peu probable que le bruit distant les dérange. D'après leur comportement dans des situations semblables, il est prévisible que les sites terrestres où les morses s'échouent ne seront pas affectés par les activités du projet. L'interaction possible du projet avec cette espèce se limitera aux zones géographiques situées près de la route de navigation, et cette dernière a été précisément choisie pour éviter les plus grandes concentrations de morses présentes à l'ouest de l'Île de Koch. Une surveillance continue sera importante pour détecter toute incidence imprévue sur cette espèce et prendre les mesures d'atténuation jugées nécessaires.

Le *phoque barbu* est courant dans la région toute l'année. On le trouve principalement dans les eaux peu profondes et sur les banquises où les radeaux de glace sont suffisants pour s'y'échouer. La période de mise bas s'étend du milieu du mois de mars au début du mois de mai. La voie tracée à travers la banquise mobile disparaît rapidement parce que les vents et marées déplacent la glace, et les phoques barbus vont probablement réutiliser cette même zone de glace de mer. L'interaction générale du projet avec cette population de phoques sera limitée.

Le *narval* est présent le long de la route de navigation partant de Milne Inlet, principalement durant la période d'eau libre où près de 20 000 animaux sont présents dans le détroit d'Éclipse et la région de Milne Inlet en été. On croit que les narvals mettent bas et se nourrissent dans ces aires d'été. Ils sont relativement peu nombreux dans le bassin de Foxe, mais on croit que quelques-uns hivernent dans la partie est du détroit d'Hudson. Des observations limitées dans la zone du projet révèlent que les narvals semblent peu réagir au passage des navires (y compris des transporteurs de minerai). L'interaction du projet avec la population de narvals se limitera en grande partie aux activités de navigation à Milne Inlet. Ces dernières ne sont pas énormes et auront seulement lieu au cours de la période de construction initiale, mais rarement par la suite.

Le *béluga* est présent dans la région toute l'année. Toutefois, on trouve cette espèce en nombre relativement peu élevé dans le détroit d'Éclipse et à Milne Inlet pendant la période d'eau libre. Le détroit d'Hudson est une zone d'hivernage pour les bélugas. Dans le bassin de Foxe, l'espèce est présente en petit nombre dans le voisinage d'Igloolik, de Hall Beach et probablement de Steensby Inlet, de juillet jusqu'au début de septembre. Des études révèlent que les bélugas évitent davantage les brise-glaces et

les navires qui circulent dans les zones de glace à de plus grandes distances que ceux qui circulent en eau libre. Les bélugas s'habitueront probablement à la navigation fréquente, y compris au déglaçage.

Les *baleines boréales* sont présentes le long de la route de navigation proposée en été et en automne. Il y a une aire de reproduction dans une petite zone située dans le nord du bassin de Foxe et le détroit d'Hudson est une zone d'hivernage principale. D'après les études portant sur leur réaction à la présence de navires et de brise-glaces, il est probable que les baleines boréales éviteront au moins le voisinage immédiat des navires. Toutefois, on prévoit que l'interaction du projet avec cette population sera limitée.

Les *ours polaires* sont présents dans la région tout au long de l'année. Ils sont abondants dans le nord du bassin de Foxe, y compris sur le littoral de Steensby Inlet et Koch, Rowley et des Îles Bray. Les aînés ont signalé que la partie sud-est de Steensby Inlet offre un bon habitat comme aire de mise bas. L'ours polaire hiverne également dans le détroit d'Hudson. Les ours polaires éviteront les navires et les sites portuaires, mais ils pourraient aussi s'en approcher s'ils y perçoivent une activité. Le personnel du projet recevra une formation sur la façon d'assurer sa propre sécurité, et la gestion stricte des déchets réduira les risques d'interactions entre humains et ours. Un service de sécurité assurera la protection des travailleurs.

4.3.2 EFFETS DU PROJET SUR LES CSEV

Introduction

Le projet apportera de nombreux avantages sociaux et économiques aux résidents de la région du nord de l'Île de Baffin. Les avantages iront des possibilités d'emploi et de formation aux occasions d'affaires en passant par les paiements versés au gouvernement et aux organisations inuit. Une planification soigneuse s'imposera pour s'assurer que la population est en mesure de tirer parti de ces occasions. Les travailleurs et leur famille auront besoin de soutien, car ils devront faire face aux difficultés d'adaptation au travail par rotation et à la nécessité de faire la navette par avion. Ils devront également apprendre à gérer leurs finances et les responsabilités financières qui viennent avec ce mode de vie. L'évaluation des composantes socio-économiques valorisées est un moyen important de cerner ces difficultés et de prendre les mesures d'atténuation nécessaires. Dans l'ensemble, le projet de la rivière Mary représente des avantages socio-économiques importants et significatifs pour le Nunavut.

Population : démographie; éducation et formation; santé et bien-être humains

La migration possible de travailleurs non inuit dans les collectivités locales ainsi que la possibilité que les Inuits émigrent hors de leur collectivité pour travailler au projet ont fait l'objet d'une évaluation. On a établi qu'aucune de ces possibilités ne touchera de façon significative la composition démographique et le nombre d'habitants du nord de l'Île de Baffin ni le tissu social communautaire.

La société Baffinland s'est engagée à offrir des programmes d'éducation et de formation qui aideront à améliorer les compétences des résidents de la région du nord de l'Île de Baffin. Elle tient à appuyer des programmes qui donneront la chance aux résidents des collectivités avoisinantes d'acquérir les compétences nécessaires et de se qualifier pour les emplois à tous les niveaux de l'exploitation du projet. À cette fin, la société participe activement à la création de partenariats et d'initiatives d'éducation et de formation. Par exemple, de concert avec l'Association inuit Qikiqtani (QIA), la Corporation Qikiqtaaluk et l'Association Kakivak, Baffinland a convenu de mettre au point et de promouvoir la prestation de cours de formation dans le domaine minier et sur le développement économique et communautaire, des études sur le marché du travail, l'élaboration de programmes d'étude, le perfectionnement professionnel ainsi que d'autres activités au profit des Inuits des collectivités associées au projet. Un accord similaire a été

signé avec le gouvernement du Nunavut et le Collège de l'Arctique. En outre, la fixation d'un âge minimal pour accéder à l'emploi dans le cadre du projet motivera les élèves du secondaire à terminer leurs études. L'expérience acquise au travail contribuera également à améliorer les compétences générales nécessaires à la vie active.

Les difficultés liées à la nécessité de faire la navette pour aller travailler sont reconnues. Des mesures seront prises pour aider les travailleurs et leur famille à s'adapter à ce rythme de travail. Des programmes d'orientation et de formation seront mis en place pour les aider à s'adapter au travail par rotation et à améliorer leurs capacités de gestion financière. Grâce aux périodes de rotation de deux semaines, les travailleurs ne s'éloigneront pas trop longtemps de leur milieu familial et communautaire et pourront profiter de leurs deux semaines de congé pour participer aux activités traditionnelles.

Certains s'inquiètent du risque que le projet ait des effets négatifs sur le transport des substances illégales par l'entremise des sites du projet, et sur l'abordabilité de ces substances. Pour contrer le risque que la toxicomanie augmente, la société Baffinland a adopté une politique stricte de tolérance zéro de la drogue et de l'alcool. Des services de counseling en toxicomanie seront également offerts.

Collectivité : infrastructure communautaire et fonction publique; ressources culturelles; ressources et utilisation des terres; gouvernance et leadership : moyens de subsistance et emploi; bien-être culturel

Avec le projet, la population craint de se disputer les travailleurs qualifiés. Dans les hameaux, on craint d'éprouver éventuellement de la difficulté à embaucher des travailleurs pour les services locaux. Toutefois, l'expérience professionnelle et la formation complémentaire devraient considérablement améliorer la capacité de la main-d'œuvre locale et contribuer à aider les résidents locaux à acquérir des qualifications et de l'expérience. Par conséquent, la concurrence accrue sera contrebalancée par la capacité accrue des travailleurs.

Les bandes d'atterrissage d'Iqaluit et des cinq collectivités les plus proches du projet serviront au transport des travailleurs à destination et en provenance des sites de travail. Les plans de transport du projet seront conçus de façon à éviter une demande trop élevée pour la capacité actuelle des installations aéroportuaires. Le projet pourrait entraîner indirectement une certaine hausse de la demande d'infrastructures. Par exemple, une augmentation de la richesse individuelle pourrait entraîner une hausse du nombre de véhicules en circulation, donc la nécessité d'améliorer les infrastructures routières.

L'éducation et la formation ainsi que l'expérience au travail et le counseling permettront de perfectionner les compétences en leadership, donc d'améliorer considérablement la gouvernance locale. La participation des résidents et des dirigeants communautaires à la négociation des accords avec la société Baffinland et aux initiatives visant à déterminer les indicateurs clés des programmes de surveillance régionale a déjà contribué au perfectionnement des capacités de leadership dans les communautés locales.

Des mesures seront prises pour respecter et préserver la culture des employés inuit au travail. Les politiques de Baffinland encouragent le respect des autres cultures et de la diversité. La société appuiera l'utilisation de la langue inuktitute sur les sites, dans les affichages et les unités de travail. Les cafétérias du projet offriront des aliments traditionnels locaux. Baffinland appliquera strictement ses politiques qui encouragent la sécurité, l'équité en matière d'emploi et la prévention du harcèlement.

On trouve dans les zones du projet des sites archéologiques dont le contenu et les artéfacts témoignent d'une importante exploitation du territoire à des époques passées et récentes de l'histoire humaine. Le

déplacement des infrastructures du projet permettra d'éviter nombre de sites archéologiques importants tandis qu'Il faudra en protéger d'autres en confiant les fouilles, la cartographie et la récupération des artéfacts à un archéologue autorisé.

Le projet aura une incidence sur l'exploitation du territoire par les chasseurs inuit. Des mesures seront prises pour appuyer ces activités, entre autres des formalités d'enregistrement aux sites du projet et un plan de sécurité publique visant la route d'accès à Milne Inlet et la voie ferrée. On estime que la voie tracée à travers la banquise à Steensby Inlet touchera les itinéraires empruntés sur la glace durant la saison hivernale. En guise de mesure d'atténuation, Baffinland propose d'établir une route de détournement claire et sans danger autour des installations portuaires, et d'accueillir au port de Steensby les chasseurs de passage, pour qu'ils puissent s'y ravitailler en nourriture et en carburant. Baffinland continuera de travailler en collaboration avec les collectivités pour évaluer des options visant à établir d'autres mesures de sécurité.

Économie : développement économique et autonomie; conclusion de contrats et occasions d'affaires; prestations, impôts et redevances

La croissance économique directe et indirecte produite par le projet créera de nouvelles possibilités d'emploi et des occasions d'affaires. Le projet améliorera la capacité de la main-d'œuvre et pourrait stimuler les habiletés commerciales des Inuit. Les commerces peuvent saisir l'occasion de prendre de l'expansion en offrant leurs services au projet, et de manière indirecte elles peuvent profiter de l'essor du marché des biens de consommation et des services. Baffinland compte aider les entreprises inuit, en particulier les petites entreprises situées dans les collectivités du nord de l'île de Baffin, à élargir leur capacité de soumissionner pour des contrats touchant le projet et de les exécuter.

Le projet rapportera des paiements comptants considérables aux organisations inuit et au gouvernement. Ils seront versés au titre de l'Entente sur les répercussions et les retombées du projet pour les Inuits conclue avec QIA, de même que par les paiements de redevances versés à la NTI pour le minerai de fer. Les paiements au gouvernement du Nunavut proviendront des taxes sur les carburants, des impôts fonciers et des taxes sur les profits que fera la société Baffinland. Certains de ces paiements commenceront à être versés dès la phase de construction, tandis que d'autres seront versés ultérieurement au cours de la phase d'exploitation.

Grâce à sa contribution à l'amélioration des compétences humaines, aux revenus des ménages et à la croissance économique, le projet appuie l'atteinte es objectifs généraux de développement économique, et favorise l'amélioration de l'autonomie individuelle, ainsi que l'auto-développement des collectivités et du territoire.

SECTION 5.0 GESTION DE L'ENVIRONMENT, DE LA SANTE ET DE LA SÉCURITÉ

La société Baffinland s'engage à assurer la protection de la santé et la sécurité des employés et la protection de l'environnement ainsi que la participation et l'engagement continus des collectivités au projet. Le projet respectera ou dépassera les exigences des lois du Nunavut et les lois applicables du Canada ainsi que les exigences réglementaires, les accords, les permis et les licences. De plus, à la conclusion du processus de l'EIE, elle conclura une Entente sur les répercussions et les retombées du projet pour les Inuits avec l'Association inuit Qikiqtani. Cette dernière est en cours de négociation.

Le Système de gestion de l'environnement, de la santé et de la sécurité (SGESS) de Baffinland est le cadre directeur d'une gestion adaptive reposant sur les pratiques exemplaires internationales. Le SGESS souscrit au principe de précaution et au développement durable. Des plans individuels ont été

élaborés dans le cadre du plan directeur pour traiter de tous les aspects des activités de la compagnie. Ils énoncent les mesures d'atténuation détaillées et la surveillance à exercer pour toute la durée du projet, afin d'éliminer, de limiter ou de minimiser les effets négatifs. Tous les employés et sous-traitants de Baffinland sont tenus de se conformer à ces plans de gestion. Les exigences de déclaration et de documentation pour ces plans de gestion, les audits et les processus d'examen par la direction et de révision sont précisées dans le système SGESS.

La responsabilité de la sécurité et de la protection de l'environnement est l'affaire de tous les employés et sous-traitants. Baffinland s'engage à fournir les programmes de formation et de sensibilisation nécessaires pour la mise en œuvre efficace de ses politiques et plans de gestion. Ces programmes de formation seront documentés, les manuels de procédures seront tenus à jour et des programmes de recyclage professionnel seront établis. Le plan de gestion des ressources humaines de Baffinland décrit ces engagements.

L'un des plans de gestion clés porte sur la protection civile et les interventions d'urgence. Dans l'éventualité peu probable qu'il se produise un déversement majeur de carburant diesel le long de la route de navigation, les incidences de cet accident sur l'environnemental seraient significatives. Toutefois, l'avitaillement des dépôts de carburant est une activité routinière que les collectivités de l'Arctique maîtrisent très bien. En outre, Baffinland sera avitaillée en carburant seulement durant la saison des eaux libres. Une étude récente publiée par l'Office national de l'énergie a évalué l'efficacité des techniques de récupération du pétrole déversé dans la mer de Beaufort et le détroit de Davis dans un éventail de conditions météorologiques. Selon les conclusions de l'étude, au moins un mode d'intervention rapide serait possible dans le centre du détroit de Davis, durant les mois de juin, juillet, août et septembre, compte tenu des conditions météorologiques et du régime des vagues à cette période. L'étude confirme que pour le projet de la rivière Mary, la période optimale pour la livraison du carburant est celle des mois d'eaux libres dans le bassin de Foxe, soit de juillet à septembre.

SECTION 6.0 EFFETS TRANSFRONTALIERS ET CUMULATIFS

Les effets cumulatifs potentiels de projets raisonnablement prévisibles ont été étudiés et il en ressort que les principaux effets cumulatifs surviendront si le développement du projet de la rivière Mary entraîne une hausse de la production de minerai de fer au point de doubler la cadence de production proposée. D'autres projets de la région auront seulement des effets cumulatifs mineurs. Si la cadence de production doublait pour un ou plusieurs autres gisements, les effets sur un certain nombre de composantes valorisées de l'écosystème et de composantes socio-économiques augmenteraient, mais aucun des effets cumulatifs ne serait pour autant significatif.

La navigation produira des effets transfrontaliers sur les mammifères marins, mais puisque les effets sur ces espèces dans la région du projet sont négligeables, les effets transfrontaliers le sont également. Le projet aura des répercussions socio-économiques –dans d'autres territoires de compétence du Canada en raison des travailleurs de l'extérieur du Nunavut employés pour le projet.

SECTION 7.0 CRAINTES DES COLLECTIVITÉS

La population des collectivités a exprimé nombre de craintes au cours des dernières années et elles ont été traitées. Certains des enjeux importants concernaient l'équilibre essentiel entre le développement et le maintien du mode de vie traditionnel.

CHANGEMENTS SOCIAUX ET CULTURELS

Les avantages socio-économiques découlant du projet déclencheront inévitablement des changements sociaux tant pour les Inuits des collectivités voisines du projet que pour l'ensemble du Nunavut. L'augmentation du pouvoir d'achat des employés du projet et la redistribution des richesses découlant du projet risquent d'accélérer la vague de changements qui touche déjà les structures sociales et familiales des Inuits. Bien que les changements soient inévitables et se poursuivront, avec ou sans le projet, de nombreux Inuits ont des inquiétudes légitimes quant à leur rythme et à leur évolution.

Des craintes ont été exprimées quant aux effets du projet sur la récolte et les activités d'exploitation du territoire qui pourraient découler des interactions combinées du projet sur un grand éventail de facteurs. Ces effets interdépendants on été soigneusement pris en compte et les résultats bénéfiques sur la récolte semblent plus probables que les effets négatifs sur l'ensemble. Baffinland continuera de travailler avec les collectivités pour assurer une surveillance collaborative et intervenir vis-à-vis les enjeux qui surgiront.

NAVIGATION TOUTE L'ANNÉE

La navigation est courante dans l'Arctique, mais la circulation maritime à longueur d'année est une réalité nouvelle et la route d'expédition vers Steensby est très récente. Les suggestions de la population à l'égard de la route de navigation proposée à travers le bassin de Foxe Basin et le détroit d'Hudson ont été prises en compte. La route de navigation a été choisie en tenant compte de ces commentaires, pour éviter les aires où la population de morses est élevée et rester aussi loin que possible des territoires exploités par les membres des collectivités. Pour les endroits ou la voie maritime causera des ennuis aux habitudes de déplacement des chasseurs inuit sur la banquise perturbées, Baffinland continuera de travailler avec les Inuits concernés pour établir d'autres trajets où les déplacements peuvent se faire en toute sécurité.

SECTION 8.0 CONCLUSIONS DE l'EIE

L'EIE du projet de la rivière Mary comprend une étude de l'impact environnemental des plans de développement du projet. L'EIE repose sur des études approfondies des environnements biophysique et socio-économique. De nombreuses consultations ont eu lieu pour cerner et traiter les préoccupations et les intérêts des collectivités locales, des organismes de réglementation et d'autres parties intéressées, ainsi que pour mettre à profit le savoir traditionnel des aînés de la région. L'EIE a abordé les enjeux cernés par la Commission du Nunavut chargée de l'examen des répercussions (CNER) dans ses lignes directrices pour le projet.

Le projet est conçu pour répondre aux exigences réglementaires pertinentes et pour éviter, limiter et minimiser dans la mesure du possible les effets négatifs, ainsi que pour renforcer les avantages socio-économiques du projet. Baffinland a confiance que le projet qu'elle propose assurera aux investisseurs des retombées économiques positives et apportera des avantages aux Inuits, au gouvernement du Nunavut ainsi qu'aux organisations inuit. Un système de gestion et de surveillance complet a été mis au point afin de s'assurer que les engagements pris dans l'EIE seront respectés. Baffinland s'engage à consulter de manière continue les parties intéressées et à donner suite aux préoccupations du public durant toute la durée du projet.

AUCUN EFFET NÉGATIF SIGNIFICATIF SUR L'ENVIRONNEMENT biophysiQUE

Selon les conclusions de l'évaluation environnementale, les effets résiduels du projet sur les composantes valorisées de l'écosystème (CVE) de l'environnement biophysique seront négligeables.

IMPACTS SOCIO-ÉCONOMIQUES PositiFS

Les conclusions tirées de l'évaluation des effets possibles sur l'environnement socio-économique indiquent qu'il y aura des effets positifs significatifs sur l'embauche locale et le perfectionnement des compétences, et que le gouvernement du Nunavut en tirera des revenus accrus. L'Entente sur les répercussions et les retombées pour les Inuit actuellement en négociation entre Baffinland et l'association inuit régionale, assurera que ce sont les collectivités inuit établies à proximité du projet et la région Qikiqtaaluk du Nunavut qui tirent parti des avantages du projet. L'un des principaux avantages du projet sera la croissance de l'économie territoriale, ce qui favorisera la stabilité économique du Nunavut. Le nombre croissant de projets miniers de longue durée au Nunavut aidera à stabiliser l'économie du territoire.

À long terme, les routes, le chemin de fer et l'infrastructure portuaire aménagés dans le cadre du projet favoriseront l'accès à d'autres dépôts de minerai dans la région du nord de l'Île de Baffin, et pourraient même améliorer l'accès des Inuits à leurs aires de récolte et au tourisme. Les deux ports ouvriront des débouchés pour d'autres types d'activités commerciales et les données bathymétriques recueillies aux fins du projet fourniront des renseignements importants sur les routes de navigation à travers le bassin de Foxe.

SECTION 9.0 FORMAT DE L'ÉTUDE D'IMPACTENVIRONNEMENTAL

L'EIE fait partie du processus d'évaluation environnementale établi pour un projet au titre de l'Accord sur les revendications territoriales du Nunavut. De nombreux processus réglementaires s'appliquent au projet, y compris la conformité au Plan d'aménagement de la région nord de l'île de Baffin, un examen environnemental par la Commission du Nunavut chargée de l'examen des répercussions (CNER) et un examen des effets environnementaux en vertu de la *Loi sur les transports au Canada.* La CNER coordonne ces examens, ainsi que l'examen public nécessaire pour la modification éventuelle du plan d'aménagement afin de répondre aux besoins du projet. En outre, le projet répondra aux exigences de plusieurs d'organismes fédéraux et territoriaux relativement à l'autorisation de certaines activités, et sera soumis à la législation et la réglementation pertinentes.

La version définitive de l'EIE est conforme aux exigences de la CNER énoncées dans les lignes directrices sur la préparation de l'EIE publiées le 16 novembre 2009 et modifiées par la suite le 3 novembre 2010. Elle répond également aux nombreux enjeux soulevés lors de la période initiale d'examen. L'EIE comprend les dix mêmes volumes que dans sa version provisoire, comme suit :

Volume 1 – Document principal de l'EIE - ce volume présente un aperçu de l'EIE, y compris un résumé du projet proposé, le contexte et la nécessité du projet, un aperçu des études sur les conditions de base des lieux, les méthodes d'évaluation des effets et les résultats s'y rapportant, ainsi que les plans de gestion et d'atténuation pour répondre aux engagements pris dans cette EIE.

Volume 2 – Consultation, contexte réglementaire et méthode d'évaluation – ce volume présente les résultats des efforts de consultation, décrit les exigences réglementaires et présente les méthodes utilisées pour procéder à l'évaluation des effets possibles sur l'environnement biophysique et socio-économique.

Volume 3 – Description du projet – décrit le projet proposé, y compris le calendrier prévu, les installations et les infrastructures incluses dans le projet, la construction, l'exploitation ainsi que les activités de fermeture et de post-fermeture, l'estimation de la main d'œuvre et les solutions de rechange envisagées pour le projet et dans le cadre du projet.

Volume 4 – L'environnement humain – présente les résultats des études préliminaires sur le milieu socio-économique et les effets possibles du projet sur les collectivités avoisinantes du projet et la population de ces collectivités.

Volume 5 – L'environnement atmosphérique – décrit les résultats des études préliminaires sur l'environnement atmosphérique, une évaluation des émissions de GES concernant le Nunavut, le Canada et le monde, ainsi que les effets possibles du projet sur la qualité de l'air et le niveau de bruit dans la région.

Volume 6 – Le milieu terrestre – énonce les résultats des études préliminaires et les effets possibles du projet sur le milieu terrestre, y compris les reliefs sensibles, la végétation, les oiseaux et le caribou.

Volume 7 – L'environnement d'eau douce - explique les résultats des études préliminaires et les effets possibles du projet sur l'milieu d'eau douce, y compris le débit et la qualité de l'eau ainsi que les effets sur les poissons et leur habitat.

Volume 8 – L'environnement marin - présente les résultats des études préliminaires et les effets possibles du projet sur le milieu marin, y compris la glace marine, la qualité de l'eau et des sédiments, les poissons et les mammifères marins.

Volume 9 – Effets cumulatifs et autres évaluations – évalue les effets cumulatifs du projet en tenant compte des projets et des activités passés, présents et raisonnablement prévisibles dans la région qui pourraient également produire des effets sur les composantes valorisées évaluées dans l'EIE. Les autres évaluations portent sur les risques d'accident, leurs effets possibles, ainsi que la probabilité d'occurrence de ces événements; les effets de l'environnement sur le projet (c'est-à-dire, phénomènes météorologiques extrêmes, changement climatique); de même que les effets qui dépassent les frontières de la région du Nunavut (effets transfrontaliers).

Volume 10 – Système de gestion SSE - présente le système de gestion environnemental de Baffinland et les plans de gestion connexes qui seront établis pour limiter et atténuer les effets potentiellement négatifs et accroître les avantages du projet pour ses employés, les sous-traitants, les résidents du Nunavut et le milieu naturel.

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique

MILIEU ATMOSPHÉRIQUE					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Changement climatique	Gaz à effet de serre	• Augmentation des émissions de gaz à effet de serre • Changement climatique	• Utilisation de carburant diesel à basse teneur en soufre • Transport du minerai de fer par chemin de fer	• Augmentation des émissions de gaz à effet de serre	Négligeable
Qualité de l'air	Qualité de l'air	• Augmentation des teneurs en : o Matières totales en suspension, dioxyde de souffre (SO_2), dioxyde d'azote (NO_2) et monoxyde de carbone (CO). • Augmentation : o Du dépôt de poussière, de l'apport acide potentiel.	• Emploi des meilleures méthodes de lutte contre les émissions atmosphériques • Utilisation de carburant diesel à faible teneur en soufre • Limite de vitesse sur les routes • Broyage du minerai dans des lieux fermés, équipés de dépoussiéreurs • Utilisation de dépoussiérants dans les lieux à forte circulation et les zones de stockage de minerai • Politique d'achat relative au matériel produisant des émissions (incinérateur, groupes électrogènes, véhicules) • Séparation des déchets (incinération) • Dans la mesure du possible, emploi de matériaux granuleux dans la construction des routes • Entretien régulier du matériel et des véhicules	• Augmentation des teneurs en : o Matières totales en suspension, dioxyde de souffre (SO_2), dioxyde d'azote (NO_2) et monoxyde de carbone (CO). • Augmentation : o Du dépôt de poussière, de l'apport acide potentiel.	Négligeable
Bruit et vibrations	Niveaux de bruit et de vibrations	• Effets sensoriels sur la faune	• Politique d'achat relative au matériel et aux véhicules produisant du bruit • Utilisation de silencieux : entretien régulier du matériel et des moteurs	• Effets sensoriels sur la faune	Négligeable

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU TERRESTRE					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Formes de relief, sol et pergélisol	Formes de relief sensibles	• Contamination du sol • Altération de la structure du sol • Déstabilisation et érosion du sol • Affaiblissement et tassement dus au dégel • Tassement dû à la reptation	• Choix du lieu d'implantation des installations et du tracé des routes et du chemin de fer • Conception des fondations adaptée au terrain • Conception des ouvrages de franchissement de cours d'eau en fonction d'inondations extrêmes • Mesures destinées à assurer un bon drainage et à prévenir l'accumulation d'eaux de ruissellement	• Aucun effet résiduel (perturbation de formes de relief sensibles) après la mise en œuvre des mesures d'atténuation	Négligeable
Végétation	Végétation	• Réduction de l'abondance et de la diversité de la végétation	• Réduction au minimum de l'emprise au sol des installations • Réduction au minimum de la superficie des zones accessibles aux véhicules • Réhabilitation progressive/fermeture	• Perte de végétation limitée à l'emprise physique des installations au sol	Négligeable

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU TERRESTRE					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Avifaune	Faucon pèlerin Oie des neiges Eider à duvet et eider à tête grise Plongeon catmarin Guillemot de Brünnich Plectrophane lapon Mouette blanche Mouette rosée Bécasseau maubèche Arlequin plongeur Hibou des marais	• Destruction de nids • Perte d'habitat • Mortalité • Effets sur la santé • Perturbations sensorielles	• Programme de sensibilisation du personnel à l'environnement • Réduction au minimum de l'emprise au sol des installations • Inventaire des nids avant le début des travaux • Politique d'interdiction de la chasse • Évitement des aires d'alimentation et des aires de mue occupées par des populations importantes d'oiseaux • Évitement des zones abritant des nids et des zones de nidification connues • Dans la mesure du possible, interdiction d'accès dans un rayon de 500 m du nid jusqu'au moment de l'envol • Plan de gestion pour chacun des nids • Dans la mesure du possible, définir des trajectoires d'approche et d'envol pour les aéronefs • Se reporter aux mesures d'atténuation indiquées dans l'annexe 10D-11 Plan de gestion du milieu terrestre	• Perte d'habitat • Mortalité • Effets sur la santé	Négligeable

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU TERRESTRE					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Faune et habitat terrestre	Caribou	• Perte d'habitat • Restrictions aux déplacements • Mortalité	• Emploi de dépoussiérants sur la route du port pendant la période de végétation • Les limites de vitesse imposées aux camions et aux trains vont donner le temps aux caribous de quitter la route ou le chemin de fer et vont assurer aux camions de meilleures chances de pouvoir freiner pour ne pas frapper un caribou. • Le train devrait fonctionner 300 jours par année, alors des interruptions saisonnières sont possibles si d'importantes troupes de caribous en migration reviennent dans la région. • Baffinland a une politique d'interdiction de la chasse s'appliquant à l'ensemble de son personnel sur place. • Le déneigement se fera de façon que les congères bordant les routes et le chemin de fer permettent aux caribous de franchir facilement ces voies de transport. • Le remblai de chemin de fer sera constitué d'un matériau particulièrement fin aux points de rencontre avec les cinq voies de passage des caribous qui ont été repérées de façon à permettre aux caribous de franchir aisément le remblai. Le matériau sera semblable à celui des voies de passage naturelles. • Le nombre de convois sera limité à quatre par jour pour réduire le plus possible l'effet d'obstacle physique produit par le passage des trains.	• Perte d'habitat • Restrictions aux déplacements • Mortalité	Négligeable

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU D'EAU DOUCE					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Quantité d'eau	Quantité d'eau	• Réductions de la quantité d'eau dues à des prélèvements • Augmentations de la quantité d'eau dues à des rejets d'effluents • Modifications à l'écoulement des eaux dans le milieu naturel en raison de détournements	• Obligation d'obtention d'un permis de prélèvement d'eau • Contrôle du respect des quantités d'eau autorisées par le permis de prélèvement • Mise en œuvre de mesures visant à réduire la consommation d'eau	• Modification à l'écoulement des eaux dans le milieu naturel due à l'exploitation du projet	Négligeable
Qualité de l'eau de surface et des sédiments	Qualité de l'eau de surface et des sédiments	• Modifications à la qualité de l'eau de surface dues à des sources ponctuelles, à des sources diffuses et à des émissions atmosphériques • Modifications à la qualité des sédiments dues à des sources ponctuelles, à des sources diffuses et à des émissions atmosphériques	• Distance de 30 m au moins entre les installations/carrières et les cours d'eau ou plans d'eau • Mise en place de dispositifs de lutte contre la pollution des sédiments et l'érosion • Construction de talus de collecte ou de retenue des eaux au besoin • Inspection et entretien réguliers • Gestion des glaces et des crues • Mise en œuvre de pratiques exemplaires de gestion des eaux de surface • Épuration des eaux usées • Usine d'épuration des eaux usées (eaux huileuses, eaux de lavage des camions, eaux des installations d'entretien, eaux de lavage des dispositifs explosifs) • Gestion des stériles acidogènes situés dans les zones de stockage de stériles, les zones de stockage de minerai, les carrières et la mine	• Modifications à la qualité de l'eau de surface dues à des sources ponctuelles, à des sources diffuses et à des émissions atmosphériques • Modifications à la qualité des sédiments dues à des sources ponctuelles, à des sources diffuses et à des émissions atmosphériques	Négligeable

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU D'EAU DOUCE					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
			• Réduction au minimum de l'emprise au sol des ouvrages de franchissement des cours d'eau • Plan de compensation pour la détérioration, destruction ou perturbation de l'habitat • Conception des ouvrages de franchissement de cours d'eau (ponceaux, ponts, etc.) adaptée aux besoins • Réduction des restrictions aux déplacements par la mise en place d'enrochements à l'emplacement des ponceaux (au besoin) • Amélioration du chenal au besoin • Maintien d'un débit minimal dans les cours d'eau touchés lorsque cela est possible • Surveillance des cours d'eau à faible débit, récupération de poissons au besoin • Barrière à poissons dans les cours d'eau à débit extrêmement faible • Observation des lignes directrices du MPO relatives à l'emploi d'explosifs dans les cours d'eau/plans d'eau ou à proximité • Mesures de prévention des rejets de contaminants • Stockage des matières dangereuses sur des surfaces imperméables avec enceinte de confinement secondaire • Parc de stockage et gros réservoirs de stockage situés dans des dispositifs de confinement secondaires (doublés et imperméables) • Petits réservoirs : conteneurs iso à double paroi • Rechargement en combustible sur une surface imperméable et confinement des eaux de ruissellement • Plan d'urgence et d'intervention en cas de déversement		

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU D'EAU DOUCE					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Poissons d'eau douce, habitat du poisson et autres organismes aquatiques	Omble chevalier	• Effets sur la santé de l'omble chevalier • Effets sur les déplacements de l'omble chevalier • Effets sur la qualité de l'habitat de l'omble chevalier • Mortalité de l'omble chevalier	• Distance de 30 m au moins entre les installations/carrières et les cours d'eau ou plans d'eau • Mise en place de dispositifs de lutte contre la pollution des sédiments et l'érosion • Construction de talus de collecte ou de retenue des eaux au besoin • Inspection et entretien réguliers • Gestion des glaces et des crues • Mise en œuvre de pratiques exemplaires de gestion des eaux de surface • Épuration des eaux usées • Usine d'épuration des eaux usées (eaux huileuses, eaux de lavage des camions, eaux des installations d'entretien, eaux de lavage des dispositifs explosifs) • Gestion des stériles acidogènes situés dans les zones de stockage de stériles, les zones de stockage de minerai, les carrières et la mine • Réduction au minimum de l'emprise au sol des ouvrages de franchissement de cours d'eau • Plan de compensation pour la détérioration, destruction ou perturbation de l'habitat • Conception des ouvrages de franchissement de cours d'eau (ponceaux, ponts, etc.) adaptée aux besoins • Réduction des restrictions aux déplacements par la mise en place d'enrochements à l'emplacement des ponceaux (au besoin) • Amélioration du chenal au besoin • Maintien d'un débit minimal dans les cours d'eau touchés lorsque cela est possible • Surveillance des cours d'eau à faible débit, récupération de poissons au besoin	• Effets sur la santé de l'omble chevalier • Effets sur les déplacements de l'omble chevalier • Effets sur la qualité de l'habitat de l'omble chevalier • Mortalité de l'omble chevalier	Négligeable

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU D'EAU DOUCE					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
			• Barrière à poissons dans les cours d'eau à débit extrêmement faible • Observation des lignes directrices du MPO relatives à l'emploi d'explosifs dans les cours d'eau/plans d'eau ou à proximité • Mesures de prévention des rejets de contaminants • Stockage des matières dangereuses sur des surfaces imperméables avec enceinte de confinement secondaire • Parc de stockage et gros réservoirs de stockage situés dans des dispositifs de confinement secondaires (doublés et imperméables) • Petits réservoirs : conteneurs iso à double paroi • Rechargement en combustible sur une surface imperméable et confinement des eaux de ruissellement • Plan d'urgence et d'intervention en cas de déversement		
MILIEU MARIN					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Glace marine	Glace fixée	• Rupture de la glace fixée dans Steensby Inlet • Modification possible de la date de formation et de fonte de la glace fixée	• Réduction au minimum de la voie de passage des navires dans la glace fixée • Réduction au minimum de la vitesse des navires dans la glace fixée	• Dislocation de la glace fixée le long de la voie de navigation dans Steensby Inlet	Négligeable

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU MARIN					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Qualité des eaux et des sédiments marins	Qualité des eaux et des sédiments marins	• Modifications à la qualité de l'eau et des sédiments dans Steensby Inlet et dans Milne Inlet • Accident et mauvais fonctionnement (p. ex. un déversement pétrolier)	• Gestion des eaux de ruissellement sur le lieu des installations conformément au plan de gestion • Stockage des matières dangereuses dans des zones imperméables conformément au plan de gestion des déchets • Usine d'épuration des eaux d'égout et des eaux usées (eaux huileuses, eaux de lavage des camions, eaux des installations d'entretien, eaux de lavage des dispositifs explosifs) • Plan d'urgence et d'intervention en cas de déversement, PUPH du port de Milne et PUPH du port de Steensby; PUPH pour tous les navires • Gestion des déchets à bord des navires : aucun rejet en mer	• Modifications à la qualité des eaux et des sédiments dans Steensby Inlet et Milne Inlet • Accident et mauvais fonctionnement	Négligeable
Habitat et biote marins	Habitat marin	• Perturbation de l'habitat marin côtier	• Réduction au minimum de l'espace occupé par les installations portuaires	• Perte d'habitat marin côtier due à l'emprise physique des installations portuaires	Négligeable
	Omble chevalier	• Effets sur la santé, la qualité de l'habitat et la mortalité de l'omble chevalier	• Réduction au minimum l'espace occupé par les installations portuaires • Plan de compensation pour la détérioration, destruction ou perturbation de l'habitat • Conception appropriée des installations portuaires	• Effets sur la santé et l'habitat de l'omble chevalier	Négligeable

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU MARIN					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Mammifères marins	Phoque annelé	• Modification de l'habitat due à l'activité des brise-glace et/ou à la gestion de la glace • Perturbations dues au bruit produit dans l'atmosphère ou sous l'eau par les travaux de construction, le transport maritime et le passage des aéronefs • Perte d'acuité auditive et/ou dommage auditif dus aux travaux de construction • Couverture des bruits du milieu naturel par les bruits de la circulation maritime et de la construction • Mortalité due aux collisions avec les navires et aux explosions pendant les travaux de construction	• Conception des installations portuaires visant à réduire au minimum l'espace marin occupé • Dislocation minimale de la glace aux abords du quai à minerai et le long du chenal de navigation • Construction des installations portuaires pendant la période de faible présence des mammifères – d'avril à juin (sautage, battage de pieux, dragage) • Mise en œuvre de mesures d'atténuation à l'efficacité confirmée pour atténuer le bruit et la propagation du bruit pendant les travaux de construction (ligne directrice du MPO prévoyant une limite maximale admissible de surpression de 100 kPa, barrage à bulles d'air pour les opérations de sautage) • Éloignement des mammifères marins des zones de sautage avec utilisation au besoin d'un dispositif de dissuasion auditive • Maintien, par les navires, d'une direction et d'une vitesse constantes dans la mesure du possible – réduction de la vitesse des navires dans Milne Inlet • Réduction au minimum de la marche au ralenti des moteurs par les navires amarrés dans les ports de Milne et de Steensby • Circulation des aéronefs à une altitude minimale de 450 m au-dessus des eaux marines, sous réserve de conditions climatiques favorables • Interdiction aux aéronefs de voler à basse altitude au-dessus des mammifères marins à des fins d'observation ou de photographie • Utilisation de la piste d'atterrissage de Mary River principalement pendant la période d'exploitation • Sensibilisation des travailleurs à la question de la sécurité des ours • Propreté des lieux de travail : élimination de toutes espèces d'ordures, de déchets et de matières toxiques • Présence d'un surveillant d'ours dans les zones où sont situés les campements • Emploi de répulsifs contre les ours	• Modification de l'habitat due à l'activité des brise-glace et/ou à la gestion de la glace • Perturbation due au bruit produit par les travaux de construction, la circulation des navires et les survols par les aéronefs • Mortalité due à l'activité des brise-glace • Couverture des bruits naturels par le bruit de la circulation maritime	Négligeable
	Phoque barbu				Négligeable
	Morse				Négligeable
	Béluga				Négligeable
	Narval				Négligeable
	Baleine boréale				Négligeable

Résumé des effets résiduels du projet pour les composantes valorisées de l'écosystème biophysique (Cont)

MILIEU MARIN					
Composante valorisée de l'écosystème	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Mammifères marins	Ours polaire	• Modification de l'habitat due à l'activité des brise-glace et/ou à la gestion de la glace • Perturbations dues au bruit produit par les travaux de construction, les navires et les aéronefs • Mortalité due aux interactions entre l'homme et l'ours		• Modification de l'habitat due à l'activité des brise-glace et/ou à la gestion de la glace • Perturbation due au bruit produit par les travaux de construction, la circulation des navires et les survols par les aéronefs • Mortalité si un ours est tué pour sauver une vie humaine	Négligeable

Résumé des effets résiduels pour les composantes socioéconomiques valorisées

MILIEU HUMAIN					
Composante socioéconomique valorisée	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Aspects démographiques	Stabilité démographique	• L'arrivée d'un petit nombre de travailleurs en provenance du sud aura pour effet de modifier la composition démographique des collectivités locales • Migration d'employés non Inuits du projet vers la région nord de l'île de Baffin • Migration de travailleurs non Inuits vers la région nord de l'île de Baffin pour des emplois indirects • Migration d'Inuits d'une collectivité locale à une autre • Migration depuis la région nord de l'île de Baffin	• Désignation des collectivités locales de la région nord de l'île de Baffin comme « lieux d'embauche » (Arctic Bay, Clyde River, Hall Beach, Igloolik et Pond Inlet) • Iqaluit et une plaque tournante située dans le sud sont également désignés « lieux d'embauche » • Gratuité du transport entre le « point d'embauche » et la mine	• L'immigration d'un petit nombre de travailleurs en provenance du sud ou d'autres localités du Nunavut aura pour effet de modifier la composition des populations locales	Négligeable
Éducation et formation	Compétences de vie	• Amélioration des compétences de vie chez les jeunes adultes	• Formation visant à développer l'aptitude au travail • Milieu de travail assurant un soutien • Programme d'aide aux employés et à leur famille • Politique de « Non aux drogues, non à l'alcool »	• Amélioration des compétences de vie chez de nombreux habitants de la région nord de l'île de Baffin	Significatif et positif
	Éducation et compétences	• Mesures d'incitation aux études et à la réussite • Possibilités d'acquisition de compétences	• Âge obligatoire de 18 ans pour l'embauche dans le cadre du projet • Planification professionnelle • Priorité d'embauche aux Inuits	• Mesures d'incitation aux études et à la réussite • Possibilités d'acquisition de compétences	Significatif et positif

Résumé des effets résiduels pour les composantes socioéconomiques valorisées (Cont)

MILIEU HUMAIN					
Composante socioéconomique valorisée	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Éducation et formation	Éducation et compétences		• Possibilités de perfectionnement • Stages d'été • Orientation professionnelle • Formation		
Mode de vie et emploi	Emplois rémunérés	• Création d'emplois dans le nord de l'île de Baffin • Emplois pour les habitants du nord de l'île de Baffin	• Lieux d'embauche dans le nord de l'île de Baffin • Stratégie d'embauche • Politique de priorité d'embauche aux Inuits • Engagement de la direction	• Création d'emplois dans le nord de l'île de Baffin • Emplois pour les habitants du nord de l'île de Baffin	Significatif et positif
	Progression et avancement professionnels	• Nouvelles possibilités d'avancement professionnel	• Soutien professionnel individuel • Politique d'embauche/promotion pour les Inuits • Engagement de la direction	• Élargissement des possibilités d'emploi et d'avancement professionnel	Significatif et positif
Développement économique et autonomie	Territoire	• Pression accrue sur les ressources du territoire • Modifications à la pratique des activités d'utilisation du territoire	• Accord de location • Mesures relatives aux composantes valorisées • Mesures relatives aux ressources et à l'utilisation du territoire (voir Composantes socioéconomiques valorisées)	• Augmentation de l'utilisation industrielle du territoire • Effets résiduels sur les composantes valorisées • Effets résiduels sur les activités de récolte et les déplacements	Négligeable, négatif

Résumé des effets résiduels pour les composantes socioéconomiques valorisées (Cont)

MILIEU HUMAIN					
Composante socioéconomique valorisée	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Développement économique et autonomie	Population	• Nouveaux débouchés pour les jeunes • Amélioration de l'éducation et de la formation • Amélioration de la santé et du bien-être	• Stratégie d'embauche de travailleurs inuits • Programme d'éducation et de formation • Fonds de soutien aux collectivités locales • Programme d'aide aux employés et à leur famille	• Amélioration des capacités humaines et du bien-être	Significatif et positif
	Économie locale	• Amélioration de la santé dans les collectivités locales • Absences pendant les périodes de travail • Création de davantage de possibilités économiques à l'échelon local	• Accent mis sur la gestion financière • Fonds de soutien aux collectivités locales • Surveillance en soutien à la prise de décisions	• Renforcement de la capacité à réaliser les objectifs de développement stratégique des collectivités locales	Négligeable, positif
	Économie territoriale	• Accroissement de l'activité économique (PIB) • Diversification de l'économie territoriale	• Investissements directs et indirects dans l'économie • Paiement de taxes • Versement de redevances sur les ressources	• Croissance de l'économie, création d'emplois et développement d'entreprises	Significatif, positif
Santé et bien-être	Toxicomanie	• Transport de substances illégales sur les lieux du projet • Prix abordables des substances illégales • Attitudes vis-à-vis des substances illégales et de la toxicomanie	• Politique de « Non aux drogues, non à l'alcool » • Mesures destinées à prévenir la circulation de substances illégales par le biais du programme d'aide aux employés et à leur famille • Programme d'aide aux employés et à leur famille	• Effet négatif : la plus grande capacité de se procurer des substances illégales favorisera la consommation de ces substances • Effet positif : l'accent mis sur la santé et la sécurité, l'aide aux employés et les activités de conseil vont contribuer à sensibiliser les employés	Négligeable, négatif et positif

Résumé des effets résiduels pour les composantes socioéconomiques valorisées (Cont)

MILIEU HUMAIN					
Composante socioéconomique valorisée	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Santé et bien-être	Bien-être des enfants	• Évolution du rôle des parents • Augmentation du revenu et de la sécurité de l'approvisionnement alimentaire des ménages • Effets globaux sur les enfants	• Orientation et formation sur l'adaptation au travail par rotation avec navette aérienne, sur la santé et le bien-être • Programme d'aide aux employés et à leur famille • Formation à la gestion financière • Fonds de soutien aux collectivités locales	• Amélioration du bien-être des enfants	Significatif et positif
	Stabilité sociale des collectivités locales	• Absence de la collectivité locale pendant les deux semaines de travail	• Orientation et formation concernant l'adaptation au travail par rotation avec navette aérienne • Brièveté de la rotation (deux semaines de travail/deux semaines de congé)	• L'absence des membres de la collectivité travaillant au projet pendant les périodes de travail aura un effet sur la stabilité sociale	Négligeable
Infrastructure et fonction publique dans les collectivités locales	Recrutement et maintien du hameau	• Concurrence pour l'embauche de travailleurs qualifiés • Capacité de la main-d'œuvre	• Formation précoce en compétences professionnelles • Formation permanente • Formation sur le tas	• La concurrence pour l'embauche de travailleurs qualifiés pourrait avoir des effets passagers sur les services municipaux • Amélioration à long terme de la capacité de la main-d'œuvre	Négligeable, négatif. Significatif, positif
Possibilités de passation de marchés et de développement d'entreprises	Possibilités pour les entreprises	• Développement du marché – prestation de services au projet • Développement du marché – biens de consommation et services au consommateur • Renforcement de la capacité entrepreneuriale	• Stratégie d'attribution de contrats aux entreprises inuites • Coopération ave la QIA en vue de développer la capacité des entreprises inuites • Création d'un fonds de soutien au renforcement des capacités	• Développement du marché – prestation de services au projet • Développement de marché – biens de consommation et services au consommateur • Renforcement de la capacité entrepreneuriale	Significatif, positif

Résumé des effets résiduels pour les composantes socioéconomiques valorisées (Cont)

MILIEU HUMAIN					
Composante socioéconomique valorisée	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Possibilités de passation de marchés et de développement d'entreprises	Possibilités pour les entreprises		• Soutien fourni par la direction à des entreprises inuites déterminées • Possibilités pour les entreprises locales de travailler avec le projet		
Ressources culturelles	Sites archéologiques	• Perturbation ou destruction de sites archéologiques • Prélèvement non autorisé d'artéfacts • Perte possible de sites ayant une importance à l'échelle régionale par suite de la mise en œuvre de mesures d'atténuation approuvées	• Relevés archéologiques préalables aux travaux de construction en vue d'éviter et de protéger les sites, mesures d'atténuation fondées sur la récupération systématique des données avant la construction, mise en œuvre d'une procédure relative aux découvertes chanceuses • Formation, signalisation et interdiction d'accès à certaines zones, mise en œuvre de mesures d'atténuation approuvées par l'État, participation des populations locales, plans de gestion, mise en œuvre d'une procédure relative aux découvertes chanceuses	• Des sites archéologiques n'ayant fait l'objet d'aucune mesure d'atténuation pourraient être entièrement ou partiellement détruits • Possibilité de découvertes chanceuses • L'intensification du trafic maritime dans Steensby Inlet pourrait nuire aux ressources archéologiques	Négligeable, négatif
Exploitation des ressources et utilisation du territoire	Activités de chasse et de pêche des Inuits	• Modifications aux activités de chasse du caribou • Modifications aux activités de chasse des mammifères marins • Modifications aux activités de pêche	• Interdiction de chasse et de pêche pour les employés • Mesures visant à atténuer les effets sur composantes valorisées de l'écosystème (Voir l'évaluation des composantes valorisées)	• Modifications aux activités de chasse du caribou • Modifications aux activités de chasse des mammifères marins • Modifications aux activités de pêche	Négligeable, négatif

Résumé des effets résiduels pour les composantes socioéconomiques valorisées (Cont)

MILIEU HUMAIN					
Composante socioéconomique valorisée	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Exploitation des ressources et utilisation du territoire	Déplacements et campements	• Sûreté des déplacements dans les environs d'Eclipse Sound et de Pond Inlet • Sûreté des déplacements dans le port de Milne • Nuisances dues aux émissions et aux bruits • Perturbations sensorielles et problème de sécurité le long de Milne Inlet Tote Road • Contournement de la mine • Fermeture d'un camp de l'OCT • Difficulté et problème de sécurité pour le franchissement de la voie ferrée • Contournement du port de Steensby • Restrictions à la location de camps aux alentours du port de Steensby	• Plan de gestion de la route • Plan de fermeture de la mine • Plan de sécurité • ERAI avec la QIA • Points de franchissement de la voie ferrée désignés	• Sûreté des déplacements dans les environs d'Eclipse Sound et de Pond Inlet • Sûreté des déplacements dans le port de Milne • Nuisance dues aux émissions et aux bruits • Perturbation sensorielle et problème de sécurité le long de la Milne Inlet Tote Road • Contournement de la mine • Fermeture d'un camp de l'OCT • Difficulté et problème de sécurité pour le franchissement de la voie ferrée • Contournement du port de Steensby • Restrictions à la location de camps aux alentours du port de Steensby	Négligeable, négatif
Bien-être culturel	Bien-être culturel	• Pijitsirnjiq – prestation de services et approvisionnement pour… • Pilnimmaksarniq – transmission de connaissances et de techniques… • Avatittinnik Kamattiarniq – gérance de l'environnement	• Mesures de soutien à la culture inuite, notamment un programme d'enseignement de l'inuktitut • Priorité d'embauche aux Inuits • Participation des Inuits à la surveillance de l'environnement	• Soutien des valeurs qui sont au centre de la culture inuite et du développement culturel des Inuits	Négligeable

Résumé des effets résiduels pour les composantes socioéconomiques valorisées (Cont)

MILIEU HUMAIN					
Composante socioéconomique valorisée	**Indicateur(s) clé(s)**	**Effet(s) possible(s)**	**Mesures d'atténuation**	**Effet(s) résiduel(s)**	**Importance**
Revenus, taxes et redevances	Recettes autonomes pour l'Administration territoriale	• Augmentation des taxes et autres recettes générées par la croissance indirecte et induite • Versements de cotisations sociales et d'impôts sur le revenu des sociétés à l'Administration territoriale	• Aucune	• Augmentation des taxes et autres recettes • Versements de cotisations et d'impôts sur le revenu des sociétés à l'Administration territoriale	Significatif – positif
Gouvernance et leadership	Gouvernance et leadership	• ERAI avec la QIA • Développement d'aptitudes de leader	• Participation à des actions visant à déterminer des indicateurs d'utilité pour les programmes de surveillance régionale, partage des données générées par les activités liées au projet et interprétation des données en collaboration avec les tiers participant aux actions • Cadre bien avec les priorités stratégiques définies pour les deux zones d'étude	• ERAI avec la QIA • Développement d'aptitudes de leader	Significatif et positif

REMARQUE:
1. Dans le cas improbable d'un déversement de pétrole le long de la route maritime, l'effet résiduel est évalué comme négatifs et significatifs
2. La sécurité est d'une importance primordiale. Dans le cas improbable où une fatalité humaine se produit, l'effet serait considérable.

Document Structure

Volume 1
Main Document

Volume 2
Consultation, Regulatory, Methods
- Consultation
- Regulatory Framework
- Impact Assessment Methodology

Volume 3
Project Description
- Project Description
- Workforce and Human Resources
- Alternatives

Volume 4
Human Environment
- Population Demographics
- Education and Training
- Livelihood and Employment
- Economic Development and Self Reliance
- Human Health and Well Being
- Community Infrastructure and Public Service
- Contracting and Business Opportunities
- Cultural Resources
- Resources and Land Use
- Cultural Well-being
- Benefits, Taxes and Royalties
- Government and Leadership

Volume 5
Atmospheric Environment
- Climate
- Air Quality
- Noise and Vibration

Volume 6
Terrestrial Environment
- Landforms, Soil and Permafrost
- Vegetation
- Birds
- Terrestrial

Volume 7
Freshwater Environment
- Freshwater Quantity
- Freshwater Quality
- Freshwater Biota and Habitat

Volume 8
Marine Environment
- Sea Ice
- Seabed Sediments
- Marine Fish and Invertebrates
- Marine Mammals

Volume 9
Cumulative Effects and Other Assessments
- Cumulative Effects Assessments
- Effects of the Environment on the Project
- Accidents and Malfunctions
- Transboundary Effects Assessment
- Navigable Water Assessment

Volume 10
Environmental, Health and Safety
- Management System
- Individual Management Plans

Project Fact Sheet

Location	• Located at Mary River, North Baffin Island. 1000 km north of Iqaluit, 160km south of Pond Inlet
Reserves	• Comprised of nine known iron ore deposits around Mary River. The current project is focused on Deposit No.1 with known reserves of 365 million tonnes estimated at >64 % iron
Construction Phase	• Construction of the project could commence as early as 2013 • Milne Port will support construction activities, receiving materials during the open water season and moving them to the Mine Site along the existing Tote Road • Construction materials will also be received at Steensby Port • 4 years to complete construction
Operational Phase **Open Pit Mine** **Processing**	• Operations will involve mining, ore crushing and screening, rail transport and marine shipping to European markets • Projected production of 18 million tonnes per year for 21 years • No secondary processing required; no tailings produced due to the high grade of ore
Rail Transport and Shipping	• A rail system will be built for year round transfer (~150 km) of ore to Steensby Inlet • A loading port constructed at Steensby Inlet will accommodate cape sized vessels • These specially designed ships will transport to the European market year round • Milne Port will be used to receive construction materials in the open water season and then very rarely to ship, during the open water season, oversized materials
Environment	• Baseline studies have been conducted by Baffinland since 2005 • Inuit Qaujimajatuqangit (traditional knowledge) information collected since 2006 • These baseline studies form the foundation for the environmental impact statement and provide information for the development of mitigation and management plans • Studies cover terrestrial environment, marine environment, freshwater environment, air quality, and resource utilization • Extensive ongoing consultation with communities and agencies • Monitoring during project activities will be important in validating predictions and mitigating potential affects
Social and Economic Benefits	• Mineral royalties will flow to NTI • Taxes will flow to governments of Nunavut and Canada • Baffinland finalizing negotiations with the Qikiqtani Inuit Association (QIA) for an Inuit Impact Benefits Agreement (IIBA) • During the four year construction period employment will peak at 2,700 people • Through the 21 years of operations about 950 people on the payroll each year
Closure and Post-Closure Phase	• Conceptual mine closure planning has been completed • Closure will ensure that the former operational footprint is both physically and chemically stable in the long term for protection of people and the natural environment • Post closure environmental monitoring will continue as long as needed to verify that reclamation has successfully met closure and reclamation objectives

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APPENDICES

SECTION 1.0 - INTRODUCTION

Pursuant to the NIRB's Preliminary Hearing Conference Decision for Baffinland Iron Mines Corporation (Baffinland) Mary River Project rendered on December 9, 2011, Baffinland has prepared this final environmental impact statement (EIS) for the development of its Mary River Project.

The Project is located on northern Baffin Island, in the Nunavut Territory, in the Canadian Arctic. The Project consists of mining high grade iron ore from Deposit No. 1 at a production rate of 18 Mt/a. Development of the Project includes the construction, operation, closure and post-closure activities associated with the mine and its related infrastructures, the construction of a 150-km railway to link the Mine Site to a new port facility at Steensby Inlet, and the construction of the Steensby port. The Project also includes the development of laydown areas, the construction of a fuel tank farm, and the installation of a temporary floating dock at Milne Inlet that will be used for staging equipment and material required for the construction phase, during which material and equipment will be transported from Milne Inlet to the Mine Site over the existing 100-km Tote Road.

Approximately 18 Mt of ore will be shipped year-round from Steensby Port using ice breaking ore carriers. The primary destination of the ore is Europe.

The EIS has been prepared in adherence to:

- "Guidelines for the Preparation of an Environmental Impact Statement for the Baffinland Iron Mines Corporation's Mary River Project" (NIRB File No. 08MN053; the Guidelines), issued on November 16, 2009; and
- The NIRB's Preliminary Hearing Conference Decision for Baffinland's Mary River Project, December 9, 2011.

For clarity and ease of reference, the FEIS Main Document is presented in the same order as the Guidelines and the Draft EIS submitted in January 2011. A key reference index, provided in Section 19.0 of this volume, provides a useful reference to the Volumes, Sections, and Appendices that constitute the supporting documentation. This EIS is organized in 10 volumes, along with a popular summary in Appendix 1A. The master Table of Contents and its supporting documentation are presented in Appendix 1C.

As directed by the NIRB, Appendix 1B presents Tables of Concordances and cross-reference tables for:

- "Guidelines for the Preparation of an Environmental Impact Statement for the Baffinland Iron Mines Corporation's Mary River Project" (NIRB File No. 08MN053; the Guidelines); and
- Compliance with the Pre-Hearing Conference Decision

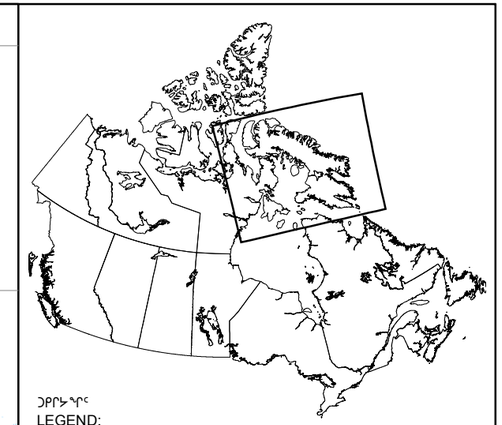
1.1 PROJECT SETTING

The Project is located in the Qikiqtani Region of Nunavut on northern Baffin Island. The site is about 160 km south of the community of Pond Inlet (Mittimatalik) and 1,000 km northwest of Iqaluit, the capital of Nunavut. Figure 1-1.1 presents the location of the Project.

DUNDAS HARBOUR
ARCTIC BAY
NANISIVIK MINE
POND INLET
BAFFIN BAY
MILNE PORT
NUNAVUT SETTLEMENT AREA BOUNDARY
MINE SITE
MILNE INLET TOTE ROAD
CLYDE RIVER
PROPOSED RAILWAY
STEENSBY PORT
AGU BAY
STEENSBY INLET
TALOYOAK
SIORARSUK PENINSULA
IGLOOLIK
ROWLEY ISLAND
GJOA HAVEN
GARRY BAY
HALL BEACH
KUGAARUK
BAFFIN ISLAND
PILING BAY
QIKIQTARJUAQ
PRINCE CHARLES ISLAND
CAPE JERMAIN
MELVILLE PENINSULA
FOXE BASIN
PANGNIRTUNG
REPULSE BAY
SOUTH HAMPTON ISLAND
CORAL HARBOUR
CAPE DORSET
IQALUIT
KIMMIRUT
LABRADOR SEA
HUDSON STRAIT
QUAQTAQ
AKULIVIK
NOMINAL SHIPPING ROUTE

0 250,000 500,000 750,000 1,000,000 1,250,000 1,500,000

8,250,000
8,000,000
7,750,000
7,500,000
7,250,000
7,000,000
6,750,000



LEGEND:
- COMMUNITY
- NANISIVIK MINE (DECOMMISSIONED)
- MILNE INLET TOTE ROAD
- PROPOSED RAILWAY ALIGNMENT
- NUNAVUT SETTLEMENT AREA BOUNDARY
- NOMINAL SHIPPING ROUTE - YEAR-ROUND SHIPPING ONLY
- NOMINAL SHIPPING ROUTE - OPEN WATER SHIPPING ONLY
- AREA OF EQUAL USE AND OCCUPANCY NUNAVUT AND NUNAVIK
- WATER
- SIRMILIK NATIONAL PARK

NOTES:

1. BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.

SCALE 50 25 0 50 100 150 200 250 km

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

PROJECT LOCATION MAP

REF NO. BL_Vol1_GIS_001
FIGURE 1-1.1
REV 0

FIGURE ID: BL_Vol1_GIS_001 Project Location Map Figure 1-1-1.mxd

1.2 THE PROPONENT - BAFFINLAND IRON MINES CORPORATION

Baffinland Iron Mines Corporation was formed pursuant to Articles of Incorporation under the *Business Corporation Act* (Ontario) on March 10, 1986. Since 2004 until early 2011 the company operated as a publicly-traded junior exploration company focused solely on the exploration and development of the Mary River Project. In March 2011, Baffinland was acquired by 1843208 Ontario Inc., a corporation owned 70 % by the steel-giant, ArcelorMittal and 30 % by Iron Ore Holdings LP. Baffinland head office is located in Toronto, Ontario. ArcelorMittal is responsible for the overall leadership and management of the Project.

Baffinland has 36 full-time employees. In addition to its head office, Baffinland maintains a year-round presence at its exploration camp at the Mary River site and Baffinland Liaison Offices in Iqaluit, Igloolik, and Pond Inlet.

1.2.1 ArcelorMittal

ArcelorMittal is the leader in all major global steel markets, including automotive, construction, household appliances and packaging, with leading R&D and technology, sizeable captive supplies of raw materials, and outstanding distribution networks.

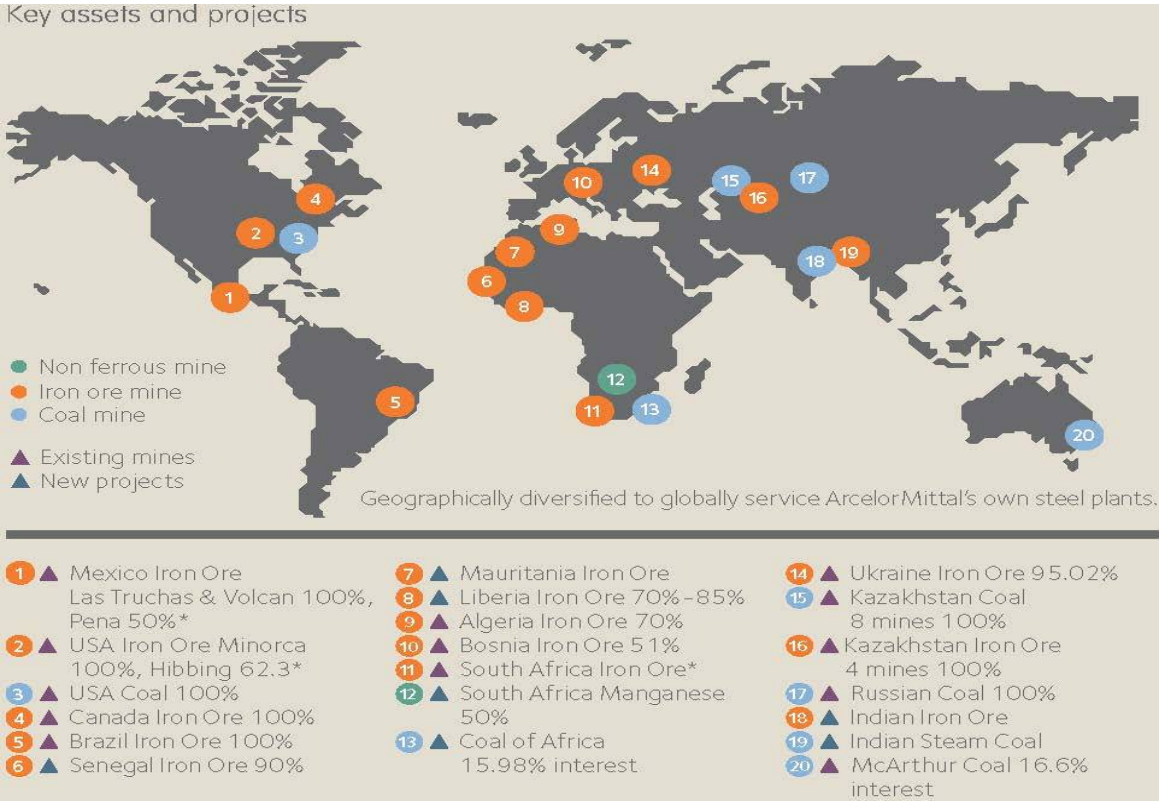


Figure 1-1.2 ArcelorMittal's Key Operations

With an industrial presence in over 20 countries spanning four continents, the Company covers all of the key steel markets, from emerging to mature. Figure 1-1.2 shows ArcelorMittal's key assets and projects worldwide. Through its core values of Sustainability, Quality and Leadership, ArcelorMittal commits to operating in a responsible way with respect to the health, safety and well-being of its employees, contractors

and the communities in which it operates. It is also committed to the sustainable management of the environment and of finite resources.

In 2010, ArcelorMittal had revenues of $78.0 billion and crude steel production of 90.6 million tonnes, representing approximately eight per cent of world steel output.

ArcelorMittal is a publicly-traded company, listed on the stock exchanges of New York (MT), Amsterdam (MT), Paris (MT), Brussels (MT), Luxembourg (MT) and on the Spanish stock exchanges of Barcelona, Bilbao, Madrid and Valencia (MTS). ArcelorMittal's 2009 and 2010 financial statements are presented in support of Type A water licence (Appendix 3B, Attachment 2).

ArcelorMittal Mines Canada is one of Canada's leading suppliers of iron ore to steel markets around the world, generating some 40 per cent of Canada's total production. As both a mining and primary processing company, it operates extensive facilities in the province of Quebec.

ArcelorMittal Mines Canada operates two large open-pit mines: one in Mont-Wright, the largest if its kind in North America, and one at Fire Lake. The Mont-Wright mining complex includes a concentrator, workshops and an automated train loading system for concentrate. The site is linked by Company rail line to the Port-Cartier facility, which comprises the pellet plant, storage areas and port facilities for marine shipping.

ArcelorMittal Mines Canada produces approximately 15 million tonnes of iron ore concentrate and over nine million tonnes of iron oxide pellets annually, and employs approximately 2,000 people.

1.2.2 Corporate Governance

The Company is committed to developing the Mary River Project in an environmentally and socially sustainable manner that will benefit both the Company and the people of Nunavut.

ArcelorMittal has an established Corporate Responsibility Program, available on its website, and issues annual Corporate Responsibility Reports that describe its efforts and performance in this area (http://www.arcelormittal.com/index.php?lang=en&page=672).

As part of its corporate governance, the Company has a workplace Health and Safety Policy and a Group-wide Environmental Policy and Energy Policy, and recently committed to the United Nations Global Compact "Care for Climate" Declaration.

Each subsidiary is asked to establish its own formal Corporate Responsibility governance structure in adherence to the Group-level arrangement. The aim is to establish a participatory Corporate Responsibility governance structure locally that would support effective community relations and Corporate Responsibility management.

Baffinland's Sustainable Development Policy (Volume 10, Section 2) is a key pillar of company operations. It provides the basis for the company's sustainable development goals and outlines commitments regarding environmental protection and stakeholder engagement. Baffinland's Sustainable Development Policy aligns with its parent company's corporate governance structure described above, and applies to its staff, and its on-site contractors.

The following elements of the Sustainable Development Policy apply to Baffinland's engagement with its stakeholders:

- Contribute to the social, cultural and economic development of sustainable communities adjacent to our operations;
- Engage with governments, employees, local communities and the public to create a shared understanding of relevant social, economic, and environmental issues, and take their views into consideration in making decisions;
- Employ our shareholder's capital effectively and efficiently; and
- Demonstrate honesty and integrity by applying the highest standards of ethical conduct.

The Company embraces the principle of Social Responsibility as outlined by the emerging voluntary International Standard, ISO 26000:2010, *Guidance for Social Responsibility.* Baffinland is continuing to fully develop its Corporate Responsibility and other policies consistent with the Group-level Corporate Responsibility program for its Mary River Project.

1.2.3 Exploration and Bulk Sampling Programs

Since 2004, Baffinland has been undertaking advanced exploration of its known iron ore deposits, as well as a regional exploration program. The Company completed a bulk sampling program in 2007 and 2008 that involved upgrading the Milne Inlet Tote Road from winter use only to facilitate hauling the 113,000 t iron ore bulk sample to Milne Inlet. The ore sample was shipped to steelmakers in Europe. As part of that program, the Company expanded camp facilities at Mary River and established camps at Milne and Steensby inlets and along the railway alignment. Bulk fuel storage facilities were filled from a tanker in both years, and the Company used this activity to carry out mock spill response exercises. To carry out the bulk sampling program, the Company worked with experienced Nunavut contractors, Qikiqtaaluk Corporation and Nuna Logistics Ltd. Baffinland has thus gained on-site experience in carrying out its exploration and bulk sampling programs to date, including Arctic construction, mining on Deposit No. 1, crushing and screening the ore into the intended iron ore products, management of logistics and weather, and human resource elements.

In 2007 Baffinland established an Environmental Protection Plan (EPP) to provide guidance to on-site personnel regarding meeting legislative and permitting requirements. The Company submits monthly and annual reports in accordance with permit requirements. The Company is in compliance with its permits and authorizations and has not experienced any major spills or other environmental emergencies at its operation, and no major accidents resulting in fatalities. The Company files regular updates to its existing Abandonment and Restoration Plan (A & R Plan), and the Qikiqtani Inuit Association (QIA), as the main landowner, holds financial assurance for the closure costs identified in the latest update to the plan. The Company maintains comprehensive liability and standard protection and indemnity insurance policies to cover accidental health and safety and environmental accidents.

1.2.4 Baffinland's Record of Community Engagement

Baffinland has been proactively engaged in consultation with local communities, increasing the scope of its consultation activities progressively since 2004. In 2007, Baffinland established liaison offices in the five North Baffin communities closest to the Project and in Iqaluit staffed by local Baffinland Liaison Officers. Due to financial constraints and a scaling back of operations in late 2008, the number of liaison offices was reduced to two from five but this number is being increased back to 5 for the beginning of 2012. With the

exception of 2009, Baffinland has carried out bi-annual public meetings in the five North Baffin communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet and, starting in 2010, Cape Dorset and Kimmirut. Details of the Company's past consultation activities are provided in Volume 2, Section 1, and the Company's Stakeholders Involvement Plan is included in Appendix 10F-1. The Stakeholders Involvement Plan and the Company's engagement activities have been aligned with ArcelorMittal's Community Engagement Standard included in Appendix 10F-1.

1.2.5 Negotiating an Inuit Impact and Benefit Agreement

Baffinland started discussions with the QIA in 2006 on the development of a future Inuit Impact and Benefit Agreement (IIBA). In March 2009 the two organizations reached an agreement-in-principle on the economic provisions of a future IIBA through the signing of a Memorandum of Understanding (MOU). Additional sections of the IIBA have also been successfully negotiated, and the Company and the QIA expect to complete a signed Agreement-in-Principle in the coming months. In a November 24, 2011, letter to the NIRB, the QIA indicated that it is close to completing negotiations with Baffinland on an IIBA for the overall project and anticipate having a final draft agreement by the end of January 2012.

1.2.6 The Company Moving Forward to Develop the Mary River Project

The Company is well positioned to advance the Mary River Project to mine development, with local experience, existing environmental management procedures, an excellent environmental compliance track record, and experienced long-term executive and site personnel. The Company is committed to designing and executing a well planned Project, and has developed a comprehensive Environment, Health and Safety (EHS) Management System, presented as Volume 10. To safely and responsibly execute the Project, Baffinland has engaged FedNav to develop shipping options that meet shipping requirements. Fednav has more than 50 years of experience shipping bulk commodities through ice in Canadian waters and has provided ice breaking ore carrier services to most of the recent mining projects in the eastern Canadian Arctic, including the former Polaris and Nanisivik mines, the historic Bent Horn Project, and currently the Raglan and Voisey's Bay mines. The Company's engineering and environmental teams have a wealth of Arctic development experience. Additional key partners will be identified in the future to continue to build a world-class team to advance the Project.

1.3 PURPOSE OF AND NEED FOR THE PROJECT

The purpose of the Project is, over a 21 year period, to extract, crush and screen approximately 18 million tonnes per year (Mt/a) of iron ore, and to ship it to overseas steel mills in an environmentally and socially sustainable manner, while providing a competitive rate of return to the Company's investors and lenders, and sharing Project benefits directly with the local Inuit communities.

There is a five-fold need for this project:

1. To ensure a financially sound operation that will be viable through the long term
2. To supply high quality iron ore to the international marketplace. The reasonably foreseeable international demand for iron ore has created market conditions that Baffinland believes are favourable for opening a mine at Mary River.

3. To support the Nunavut Planning Commission's Broad Planning Principles, Policies and Goals (NPC, 2007). The Planning Commission goals include:
    - Strengthening partnerships and institutions;
    - Protecting and sustaining the environment;
    - Encouraging conservation planning;
    - Building healthy communities; and
    - Encouraging sustainable economic development.
4. To contribute to the development of infrastructure, skills training, employment, and business opportunities in Nunavut, as outlined in the Nunavut Exploration and Mining Strategy (Government of Nunavut, 2007). The Project will help build healthy communities and strengthen partnerships between Baffinland and stakeholders and institutions.
5. To contribute to Canada's northern strategy to strengthen Canada's sovereignty, protect the country's environmental heritage, promote economic and social development, and improve Northern governance. (INAC, 2008).

Canada's mining industry is a major driver of Canadian prosperity, contributing $32 billion to GDP in 2009 and employing 306,000 workers in mineral extraction, processing and manufacturing. More than 3,200 companies provide inputs to the industry, ranging from engineering services to drilling equipment. The industry paid around $5.5 billion in taxes and royalties to federal, provincial and territorial governments in 2009—down by half from the pre-recession levels of the previous year, but still a significant contribution.

In 1999, Nunavut ranked tenth of the 13 provinces and territories in the value of mineral production (1999 - $347 M mineral production). By 2009, Nunavut ranked last, with zero mineral production. In March 2010, The Meadowbank Mine located in the Kivalliq region of Nunavut began operations. By the end of the third quarter of 2010, the Meadowbank Mine had produced approximately 189,669 ounces of gold. The mine is expected to produce an average of 350,000 ounces of gold per year over a nine-year mine life through 2019. Mining and exploration activity is increasing rapidly in Nunavut.

There are six active project reviews in the NIRB environmental process and others anticipated. As noted above, the Government of Nunavut has focused on mine development as an economic driver and a non-economic catalyst for social changes. The sustainability approach adopted by Baffinland takes into account environmental and social factors as well as economic consideration. Such a balance is important in the Project decision making process.

1.4 GENERAL ECONOMIC FEASIBILITY AND BENEFITS OF THE PROJECT

Due to the remoteness of the site, the climatic conditions, the void of infrastructure, and the competitiveness of the iron ore industry, the development of this iron deposit can be justified only by economies of scale. On the basis of current and forecasted long term iron prices, a minimum production volume is required to generate cash flow sufficient to economically justify the development of the Mary River Project.

Current market conditions are expected to remain buoyant for iron ore prices for the short and medium term. On this basis, Baffinland estimates that the minimum production tonnage required to justify a C$ 4.1 billion investment in this Project is 18 Mt/a.

Given the future demand for iron ore in the global marketplace, the Project has the potential, through its mineral exploration and mining activities, to contribute to meeting Nunavummiut needs for infrastructure, training, and sustainable economic development. The Project will generate benefits to local Inuit

communities through capacity-building, employment and business opportunities, and revenues to the Territorial and Federal governments in the form of tax revenues. The IIBA, currently under negotiation between Baffinland and the regional Inuit association, will ensure that benefits from the Project flow to nearby Inuit communities and the Qikiqtani Region of Nunavut.

Over the long term, the road, railway and port infrastructure built for the Project will provide opportunities to develop additional mineral deposits in the North Baffin Region. The two ports will provide additional commercial use opportunities, and the bathymetry information collected for the Project will provide important information for shipping lanes through Foxe Basin. In addition, Project activity will help confirm Canadian sovereignty over the region.

The Mary River Project will grow the overall size of the economy of Nunavut. The macro economic benefits of the Project are described in Volume 4 and Appendix 4B.

Another benefit of the Mary River Project is the decrease of economic instability in Nunavut. The recent economic instability in the territory has been a symptom of a relatively small number of mining projects. It is important to increase the number of ongoing mining projects in Nunavut in order to stabilize the territorial economy. Real Gross Domestic Product (GDP) in Nunavut was expected to decrease in 2009 by almost ten percent due to the end of the construction phase of the Meadowbank Mine. In order to stabilize the economy of Nunavut, it is necessary to have a larger number of ongoing mining projects.

Across the ten provinces, economic modeling indicates the potential for the Project to increase real GDP by $7.2 billion and increase employment by nearly 5,500 person years over the life of the Project.

SECTION 2.0 - PROJECT DESCRIPTION

2.1 OVERVIEW

In this section a brief synopsis of the Project development plan is presented, describing Project development phases, time frames, work required and a description of the associated infrastructure and activities. A more comprehensive description of all aspects of the Project is provided in Volume 3. The Environmental, Health and Safety Management Framework and associated mitigation and monitoring plans are found in Volume 10.

Permanent Project facilities will be located at the Mary River Mine Site, the Milne Port site and Steensby Port. The Mine Site will be connected to Steensby Port by a railway and to Milne Port by the existing Milne Inlet Tote Road (Figure 1-2.1). Marine access and shipping will occur seasonally through Milne Port and Steensby Port during the construction phase and year-round through Steensby Port during operations.

All major Project components will operate year-round with the exception of shipping to and from Milne Port. Based on the iron ore reserves currently defined and under exploration in Deposit No. 1, the Project will operate for about 21 years. The Project Schedule is shown on Figure 1-2.2. Geological conditions suggest that additional ore may be delineated as exploration continues, potentially extending the life and/or increasing the production rate of the Project. The development of other deposit(s) is conditional on future government approvals.

Site conditions play an important role in the planning and execution of the Project. The Project area experiences cold temperatures in the wintertime and near 24-hour darkness from November to January. Summers bring 24-hour daylight from May to August, with continued cool to cold conditions. Key Project facts are presented in Table 1-2.1.

Table 1-2.1 Key Project Facts

		Potential Development Area (PDA)	Footprint of Facilities within PDA
Potential Development Area (ha)	Milne Port	224 ha	35 ha
	Tote Road	865 ha	-
	Mine Site	2,739 ha	787 ha
	Railway	1,308 ha	47 ha
	Steensby Port	2,482 ha	213 ha
Number of Identified Potential Quarries/ Aggregate Site	Milne Port	One borrow area and one rock quarry	
	Mine Site	One existing borrow area (Borrow Area #3), One existing rock quarry (Rock Quarry #2) and one proposed quarry (QMR2)	
	Railway	79 rock quarries	
	Steensby Port	1 rock quarry (QS2), plus one large rock cut for airstrip	
Total Quantities Aggregate (m^3)		**Quarried Rock**	**Borrowed Sand and Gravel**
	Milne Port	600,000	80,000
	Mine Site	5,000,000	0
	Railway	16,000,000	0
	Steensby Port	12,500,000	0

Table 1-2.1 Key Project Facts (Cont'd)

Shipping of Freight and Fuel		**Construction Phase**				**Operation Phase**
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5 - 26**
Shipping Milne Port	Freight vessels	20	20	3	3	Only oversized equipment delivered when required
	Freight (tonnes)	165,000	95,000	43,000	46,000	See above
	Fuel tankers	2	3	3	3	0
	Diesel delivery	20 ML	30 ML	30 ML	30 ML	0
Shipping Steensby Port	Freight vessels	22	20	7	4	3
	Freight (tonnes)	206,000	150,000	107,000	80,000	60,000
	Fuel tankers	2	4	4	3	3-6
	Diesel delivery	40 ML	35 ML	35 ML	120 ML	160 ML
	Marine diesel				50 ML	50 ML
Traffic		**Construction Phase**				**Operation Phase**
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5 - 25**
Air Traffic (Total Annual Departures) *Smaller aircraft traffic not included.*	Milne Port (Dash-8/ATR)	210	210	105	105	occasional
	Mine Site (B737, C130)	550	550	550	550	365
	Steensby Port (B737, C130)	550	550	550	550	183
Road Traffic (Trucks/day)	Tote Road	30	30	30	30	No regular traffic
Railway traffic	Railway	N/A				4 round trips/day
Workforce		**Construction Phase**				Operation Phase
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5 - 25**
Workforce (numbers)	Exploration	150	150	150	150	150
	Construction On-Site	570	1,800	1,600	900	--
	Construction Payroll	800	2,680	2,440	1,710	--
	Operation	0	0	0	0	950
Camps, Water Supply and Wastewater		**Construction Phase**				**Operation Phase**
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5 - 25**
Camp Capacity (peak # of people)	Milne Port	150	150	150	150	40
	Mine Site	1,200	1,200	1,200	1,200	500
	Mid-Rail Ravn River S. Cockburn N. Cockburn		200 400 300 200	200 400 300 200	200→0 400→0 300→0 200→0	Camps removed
	Steensby Camps					
	Floating Accommodation	600	600	600	600	Removed
	Land based camp	600	600	600	600	300

Table 1-2.1 Key Project Facts (Cont'd)

Camps, Water Supply and Wastewater		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 - 25
Water Demand m^3/day (expected)	Milne Port	70	70	70	70	30
	Mine Site	655	655	655	655	352
	Railway	440	440	440	440	0
	Steensby Port	426	426	426	426	245
Treated Sewage Effluent (m^3/day)	Milne Port	55	55	55	55	14
	Mine Site	560	560	560	560	200
	Ravn River	Trucked to the Mine Site WWTF				Camp removed
	Mid-Rail	Trucked to Mine Site WWTF				Camp removed
	Cockburn S.	Trucked to Steensby Port WWTF				Camp removed
	Cockburn N.	Trucked to Steensby Port WWTF				Camp removed
	Steensby Port	310	310	310	310	102
Waste						
Waste to Landfill m^3/yr	Mine Landfill	6,373	6,373	6,373	6,373	1,763
	Steensby Landfill	3,972	3,972	3,972	3,972	650
Waste to Incinerator Tonnes/yr	Milne Port	135	135	135	135	46
	Mine Site	980	980	980	980	550
	Steensby Port	490	490	490	490	202

Fuel Storage		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 - 25
Milne Port	Arctic diesel	1 tank @ 5ML and 4 tanks @ 10ML				no requirements
	Jet A	2 tanks @ 1.5ML				no requirements
Mine Site	Arctic diesel	3 tanks @ 5.2ML				
	Jet A	2 tanks @ 1.5ML				
Railway	Arctic diesel	Multiple 20,000 L ISO containers positioned as required				no requirements
Quarries	Arctic diesel	Multiple 20,000 L ISO containers positioned as required				no requirements
Shipping Steensby Port	Arctic diesel	15 tanks @ 1ML 20ML fuel barge	15 tanks at 1 ML 4 tanks @ 40 ML		4 tanks @ 40 ML	
	Jet A	5 tanks @ 1ML				
	Marine diesel				1 tank @ 7.5 ML; 2 tanks @ 25 ML	
Explosives						
Explosives	Milne Port	Magazine				
	Mine Site	Mobile Mixing Unit and magazines Temporary Emulsion Mixing Plant				Permanent Emulsion Mixing Plant
	Railway	Mobile Mixing Unit and magazines				
	Steensby Port	Mobile Mixing Unit and magazines Temporary Emulsion Mixing Plant				

Table 1-2.1 Key Project Facts (Cont'd)

Production		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 - 25
Waste Rock & Overburden	Approximate Mt/a	0	0	0	22	30
Mine Ore Stockpiles	ROM, tonnes		0	0	400,000	400,000
	Rail Loadout, tonnes	--	--	--	--	1,400,000
Steensby Port	Steensby Port - 1.4 Mt fine ore stockpile capacity					900,000
	Steensby Port - 3.2 Mt coarse ore stockpile capacity					2,300,000
	Steensby Port Dedicated icebreaker ore carriers (160,000 to 190 ,000 DWT)					10
Power Supply						
Power Supply Milne Port	Camp generator	Mobile genset for camp				
	Temporary generators installed for construction period					
Power Supply Mine Site	Annual consumption	114,000 MWh				
	Running Load/Installed Power	9.8 MW/15.8MW				
	Installed Power	15.8 MW				
	Number / Size of unit	5 units at 5.6 MW each (2 standby units)				
Railway Construction	Temporary generators installed at camps and quarries					
Power Supply Steensby Port	Annual consumption	120,000 MWh				
	Running Load/Installed Power	11 MW/22MW				
	Number / Size of unit	3 units at 5.6 MW each (2 standby units)				

Figure ID: BL_Vol1_CAD_001 Location of Project Activities Figure 1-2-1

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7950000 N
7900000 N
7850000 N
7800000 N
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PI-13
PI-12
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TARIUJAQ ARM
ᐃᓕᖅᐸᒃ ᑎᒥ
RAVN RIVER
ᐃᓕᓴᕐᓂᐊᕐᓂᖅ ᑐᓴᐃᓚᐅᑦ
STEENSBY PORT
ᑲᖏᑦᓗᓕᕆᔨᒃ
STEENSBY INLET

ᑐᑭᓯᓂᖅ

LEGEND:

- ᐃᒥᒃ WATER
- ᐃᓄᐃᑦ ᓄᓇᕗᑦᓂᓕᒃ - ᖃᐅᓕᒃ ᓴᐱᖏᓴᐃᑦ ᐱᖃᓗᐅᑎᖑᓂᓪᓚᓂᑦ INUIT OWNED LAND - SURFACE ONLY EXCLUDING MINERALS
- ᐃᓄᐃᑦ ᓄᓇᕗᑦᓂᓕᒃ - ᖃᐅᓕᒃ ᐊᒋᓂᓗ ᐱᖃᓗᐅᑎᓗᓪᓚᓂᑦ ᓴᐱᖏᓐᓇᓕᖅᑐᖅᓯᓂᑦ INUIT OWNED LAND - SURFACE AND SUBSURFACE INCLUDING MINERALS
- ᓴᐱᖏᓴᖅᖄᓐᓯᒃ ᑭᓪᓕᓐᓂ ᓄᓇᕗᓂᓕᒃ ᐱᓕᕆᔨᒪᓕᖅ MINERAL LEASE BOUNDARY
- ᓴᓇᒪᓂᖅ ᑎᑭᓕᖅ CROWN LAND
- ᑐᐊᐸᑦᑕᐃᓕᕆᔨᖅ (ᐃᓄᐃᑦ ᓄᓇᕗᑦᓂᓕᒃ ᑭᓇᐅᔨᖏᓴᐅᑉᐳᖅ) EXISTING BORROW AREA (IOL COMMERCIAL LEASE)
- ᑐᐊᐸᑦᑕᐃᓕᕆᔨᓕᕐᓂᑲᖅ (ᐃᓄᐃᑦ ᓄᓇᕗᑦᓂᓕᒃ ᑭᓇᐅᔨᖏᓴᐅᑉᐳᖅ) EXISTING ROCK QUARRY (IOL COMMERCIAL LEASE)
- ᓄᓇᕗᑦ ᑐᓴᒪᓐᐃᑦ ᖃᐅᔨᓇᓱᐃᓕᓐᓂᑦ NTI EXPLORATION AREA
- ᑲᒪᒋᑐᖅᑯᑦ ᐱᓕᕆᓂᐊᕐᓂᑦᓯᒪᔨᖏᓐᓂᑦ ᓄᓇᒪᑦ CROWN MINERAL CLAIMS
- ᖃᓄᐊᖅ ᐊᖏᔪᑎ MILNE INLET TOTE ROAD
- ᓄᓇᓱᑎᓂᖅ ᐊᖏᔪᑎᓕᕆᓂᖅ PROPOSED RAIL ALIGNMENT
- ᐊᖏᔪᑎᓚᐅᔨᔨᒪᓕᖅ ᐅᑦᑐᕐᐃᐅᓂᖅ PROPOSED CONSTRUCTION ACCESS ROAD
- ᑲᖅᑐ/ᑯᒪᓚᑐᒃ/ᑯᐃᐃᐅᓕᖅ RIVER/STREAM/DRAINAGE
- ᖃᐅᖅᖃᓚᐃᓂᒃ CONTOUR

NOTES:

1. BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
4. PROPOSED RAIL ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC.

ᖃᐅᔨᒪᔭᖏᓚᐃᓪᓗᒍ

1. ᓄᓇᖕᖏᓐᓄᐊᑦᑕᐃᓪᓗᒍ: ᐊᐃᓐ ᑲᓇᑕᒪᓪ
2. ᓄᓇᖕᖏᓐᓄᐊᑦ ᑎᑎᕋᒪᓂᖓ ᒪᓕᒃᑐᖃᖅ UTM (NAD83) ZONE 17
3. ᑎᑎᕋᒪᔪᑦ ᒥᑕ: ᐊᖏᓐᓂᓕᕆᓂᑦ ᐅᖓᓗᓄᑎᖑᓂᑦ ᐊᑦᑐᕐᓂᕆᓂᑦ
4. ᓄᓇᓕᐅᑎᓂᒃᑯᑦ ᐊᑦᖏᑎᓴᖓ CANARAIL CONSULTANTS INC

ᕿᑎᓂᒃ 8 4 0 10 20 30 40 km
SCALE

BAFFINLAND IRON MINES CORPORATION

ᓄᓇᕗᑦ ᐅᐸᕕᐅᑦᓯᒃ MARY RIVER PROJECT

ᐃᓂᒋᔭᖅᑎᑦᓯᓂᖅ ᖃᓄᐃᓕᐅᕕᐅᔪᑦ
LOCATION OF PROJECT ACTIVITIES

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_CAD_001
ᑎᑎᕋᐅᔪᒥᔪᖅ FIGURE 1-2.1
REV 0

2.2 SCOPE

The Project scope includes all works and/or undertakings required for the construction, operation, modification, maintenance, decommissioning, and abandonment phases of the following components: Milne Port; Milne Inlet Tote Road, the Mine Site, the Railway, Steensby Port and marine shipping. Air Traffic and on-going geotechnical exploration will also occur during each phase.

2.3 CONSTRUCTION PHASE

The timing for the three main Project phases is summarized as follows (Figure 1-2.2):

- 4-year Construction Phase (Year 1 through Year 4);
- An approximate 21-year Operations Phase (Year 5 through Year 25); and
- An approximate 3-year Closure Phase (Year 26 through Year 28) and 5 year Post-Closure Monitoring Phase (Year 29 possibly to Year 33). If closure objectives are not met, post closure would extend beyond five years.

Construction will start by utilizing existing infrastructure established to support exploration and bulk sampling programs, including camps, fuel storage, laydown areas and the Milne Inlet Tote Road, which has already undergone some upgrades and servicing. Construction of infrastructure is expected to take four years, with the Railway being on the critical path. The Railway is necessary for shipment of iron ore to Steensby Port. To expedite its completion, concurrent construction of the Railway will occur at a number of locations; construction of the north end will be staged from Milne Port via the Mine Site, and Steensby Port will be the staging area for the south end.

In addition to those at Milne Port, construction camps will be established at the Mine Site, Steensby Port, and up to four locations along the Railway. Infrastructure such as laydown areas, aggregate sources from rock quarries, and sand and gravel borrow areas will support construction.

Temporary construction freight docks will be installed at Milne and Steensby Ports for landing equipment and materials during construction. A permanent freight dock and an ore dock will be constructed at Steensby Port. Where possible, permanent infrastructure needed for construction and operation will be built at the onset of construction. Temporary infrastructure needed during construction will be removed once construction is complete.

Large quantities of aggregate will be required for construction activities. Aggregate, including crushed rock from quarries as well as sand and gravel from borrow sources, will be required for construction of Project components, mainly for railway construction. A number of existing and potential aggregate sources have been identified, mainly along the transportation corridors. Several existing rock quarry and borrow sites located on Inuit-owned land between Milne Port and the Mine Site are permitted under Baffinland's current commercial lease with the QIA. Extracted material will be used for on-going maintenance of the Tote Road. Aggregate sources identified for construction of the railway include 63 rock quarries located along the alignment. While only a small portion of the identified quarries and borrow areas will be used for the construction of an access road to facilitate railway bed construction, most of the rock quarries will be required for building the railway embankment.

Project Activity	Project Phases																																				
	2012 Work Plan	Construction				Operation																					Closure			Post Closure							
Year#	1	1	2	3	4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3	4	5			
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045			
Milne Port																																					
Install fuel tanks in existing containment																																					
Decomissing of fuel bladders																																					
Construct additional fuel farm																																					
Deliver barge for temporary dock																																					
Construct port infrastructure																																					
Expand and operate camp																																					
Receive construction materials, equipment, fuel																																					
Receive operation phase consumables (materials, equipment, fuel)																																					
Receive material from decommissioning for shipping off-site																																					
Decommission camp																																					
Decommission port facilities including docks																																					
Post-closure monitoring																																					
Mary River Mine Site																																					
Extend Airstrip, construct quarry, laydowns																																					
Construction of tank farms																																					
Erect construction camp																																					
Remove fuel bladders																																					
Construct mine and supporting infrastructure																																					
Support railway construction																																					
Mine deposit #1 for rail operation																																					
Initiate progressive reclamation of mine wastes																																					
Mine closure																																					
Post-closure monitoring																																					
Railway																																					
Construct ice roads																																					
Receive equipment, materials, fuel																																					
Constuct camps																																					
Construct access roads																																					
Construct roadbed embankment																																					
Construct tunnels																																					
Lay track																																					
Commission railway																																					
Close quarries, access roads, camps																																					
Post-construction monitoring																																					
Operate railway																																					
Operate ballast quarry for railway maintenance																																					
Decommission railway																																					
Post-closure monitoring																																					
Steensby Port Site																																					
Install 50 person hardwall camp facility																																					
Deliver equipment, materials, fuel tanks																																					
Construct airstrip, construction camp																																					
Floating construction camp																																					
Floating fuel barge																																					
Construction of tank farm																																					
Quarry rock and construct roads, laydowns																																					
Install construction docks																																					
Install freight dock																																					
Install ore dock																																					
Construct port infrastructure																																					
Remove temporary docks																																					
Operate port facilities																																					
Ship ore for markets																																					
Close-out port facilities																																					
Post-closure monitoring																																					

The Project workforce on rotation will peak in the second year of construction. Workers hired from Nunavut communities will typically work for two weeks, followed by two weeks off. Other construction workers will likely work four weeks on and two weeks off.

2.3.1 Milne Port

The site plan for Milne Port is presented on Figure 1-2.3. Milne Port and the Milne Inlet Tote Road will be a key transportation hub supporting construction of the Mine Site and the north portion of the Railway. Equipment and supplies will be delivered to Milne Port by conventional sealift during the open-water season and then transported overland by trucks to the Mine Site via the Milne Inlet Tote Road.

The existing facilities at Milne Port will play a key logistical support role for receiving sealift materials at Milne Port at the start of construction. These facilities include: a personnel camp for 60 people, water supply and treatment facilities, mobile diesel generators, a sewage treatment plant, an incinerator, a 5 ML permanent steel fuel tank, borrow areas, rock quarries, laydown area, airstrip, and temporary bulk sampling ore stockpile area. Two new 1.5 ML steel tanks will be constructed for storage of Jet A fuel in early 2012, under existing permits; once they are tested and commissioned, the remaining fuel contained in the bladder farm (diesel and Jet A) will be transferred during the working season of 2012. The scope of the 2012 work program is presented in Appendix 3A. At the onset of construction, the camp will be expanded to accommodate 150 workers, a floating construction dock will be installed, the tank farm will be expanded and multiple laydown areas will be prepared.

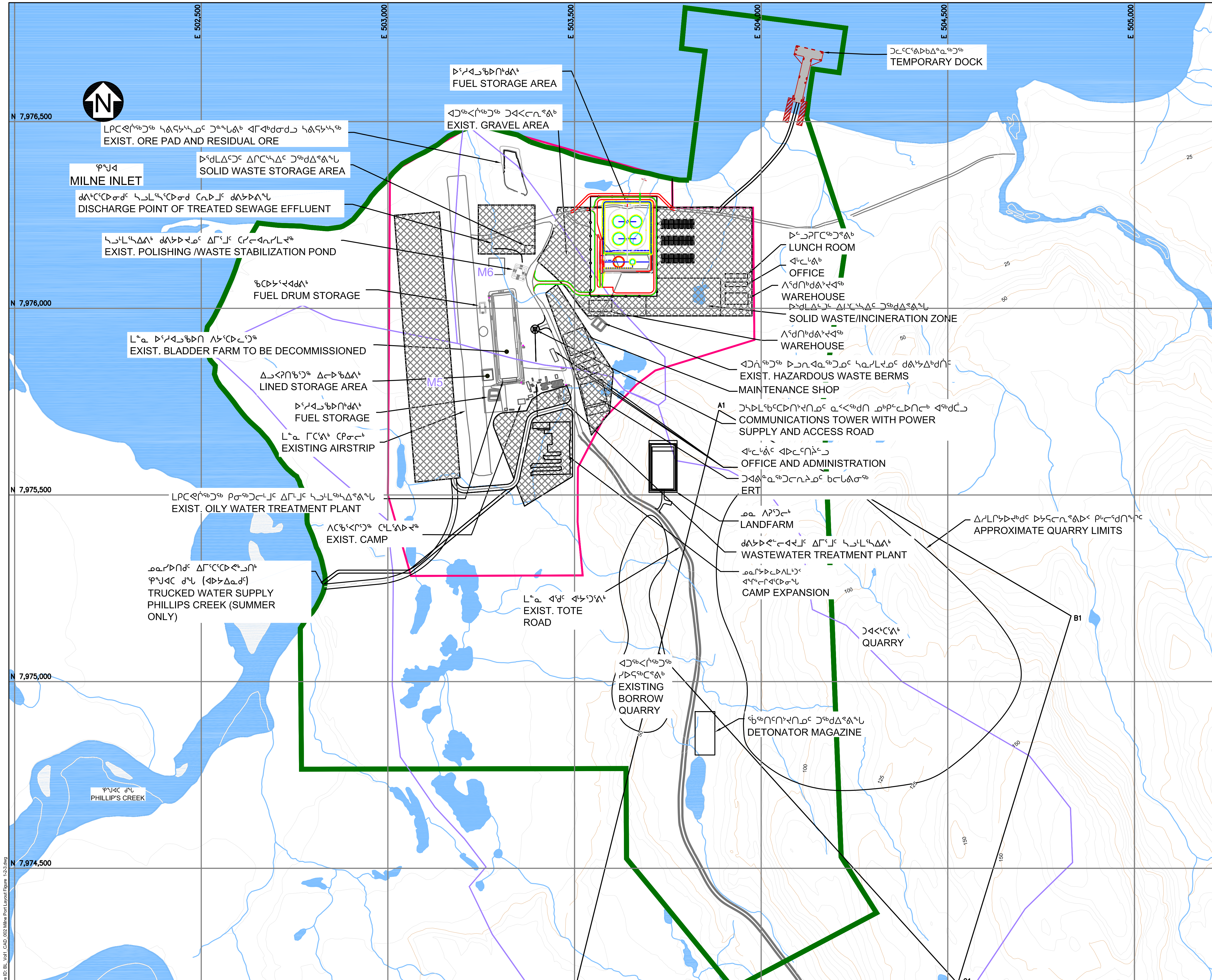
2.3.2 Milne Inlet Tote Road

The Milne Inlet Tote Road was upgraded in 2008 from a winter road to an all-season road adequate for transporting equipment and ore using 45-t trucks. Figure 1-2.4 presents the alignment of the Milne Inlet Tote Road. The road will be maintained through the construction phase with some improvements to the road base and reductions of steep grades at certain locations. No major improvements or bridge replacements are proposed, and large oversized equipment will be brought over the road during winter.

A Roads Management Plan (Volume 10, Appendix 10D-8) stipulates the rules of the road, including for example: the safe access and use by the public including hunters, limiting travel speed, yielding the right-of-way to wildlife, reporting wildlife observations, travelling in convoys for safety, emergency and spill response procedures, a safety policy addressing discharge of firearms near the road, truck traffic communications, and a community notification and update process.

2.3.3 Mine Site

Construction at the Mine Site will focus on establishment of infrastructure needed to support mining activities and the construction of the northern section of the Railway. Existing infrastructure established during the bulk sampling program will be used to the extent possible to minimize land disturbance. Figure 1-2.5 presents the layout of the Mine Site. New facilities include a permanent accommodation complex and offices, permanent fuel storage, ore handling and stockpiling facilities, temporary explosives magazines and a permanent explosives plant. As is typical for work in permafrost areas, the Mine Site building foundations and major structures such as crushers and other ore handling facilities will, where possible, be sited on bedrock. Where this is not practical, a variety of pile systems will be used in combination with elevated building designs. Surface pads consisting of locally quarried crushed rock (gravel) will be used for access and laydown areas, parking areas, elevation of grade, and generally to protect the permafrost around all of the permanent infrastructure facilities.



ᐱᕙᓪᓕᐊᔪᓐᓇᕕᐅᔪᖅ	
ᑕᕆᐅᖅ	ᓄᓇ
11.345	269.487

POTENTIAL DEVELOPMENT AREA (ha)	
MARINE	LAND
11.345	269.487

ᑐᑭᒧᐊᖓᑦ
LEGEND:

- ᐃᒥᖅ
  WATER
- ᐱᕙᓪᓕᐊᔪᖅ ᓯᐅᕋᖅᑕᕝᕕᐅᑉ ᑭᒡᓕᖓ
  PROPOSED QUARRY BOUNDARY
- ᐃᓂᒋᔭᖓ
  LAYDOWN AREA
- ᑰᒃᑐᖅ/ᑯᓚᒃᑐᖅ/ᑯᕕᐱᐅᔪᖅ
  RIVER/STREAM/DRAINAGE
- ᓄᓇ ᐊᒃᑐᖅᑕᐅᔪᓐᓇᕐᓂᖅ ᓴᕕᒃᓴᔭᐅᑦᑐᓂᑦ
  POTENTIAL DEVELOPMENT AREA
- ᓄᓇᐅᑦ ᕿᑭᖅᑖᓗᒃ ᐱᔪᓐᓇᐅᑎᒋᔭᐅᔪᑦ (ᐃᓄᐃᑦ ᓄᓇᖓᓂ ᑭᓇᐅᔭᒃᓴᐅᑕᐅᔪᑦ)
  BAFFINLAND'S COMMERCIAL LEASE ON INUIT OWNED LAND
- ᓱᕈᓯᑦ ᑲᑎᕐᕕᒃ
  CATCHMENT AREA

ᖃᐅᔨᒪᔭᒃᓴᐃᑦ

1. ᓄᓇᙳᐊᓕᐅᕐᑦ EAGLE MAPPING (2005)
2. ᓄᓇᙳᐊᖅ ᑎᑎᕋᓂᖓ ᒪᓕᒃᑐᖅ UTM (NAD83) ZONE 17
3. ᑎᑎᕋᒐᑦ ᒥᑕ: ᐊᖑᓂᖏᑦ ᐅᖓᓯᒃᑎᒋᒃᑐᑦ 5 ᒥᑕ
4. ᓴᓇᔭᐅᔪᖅ ᑐᑭᓯᒋᐊᕈ ᐊᑐᐃᓐᓇᐅᑎᑕᐅᔪᑦ ᔭᓂᕙᐅ, 2008

NOTES:

1. TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 1.5 METRES.
4. AS-CONSTRUCTED INFORMATION PROVIDED BY GENIVAR IN 2008.

ᐊᖏᓂᖓ SCALE 100 50 0 100 200 300 400 500 ᒥᑕ m

BAFFINLAND IRON MINES CORPORATION

ᓄᓘᔾᔭᓂ ᐅᔭᕆᐅᓯᐅᕐᑦ MARY RIVER PROJECT

ᕿᖑᐊᑦᑕ ᐊᕿᒃᓯᒪᓂᖓ
MILNE PORT LAYOUT

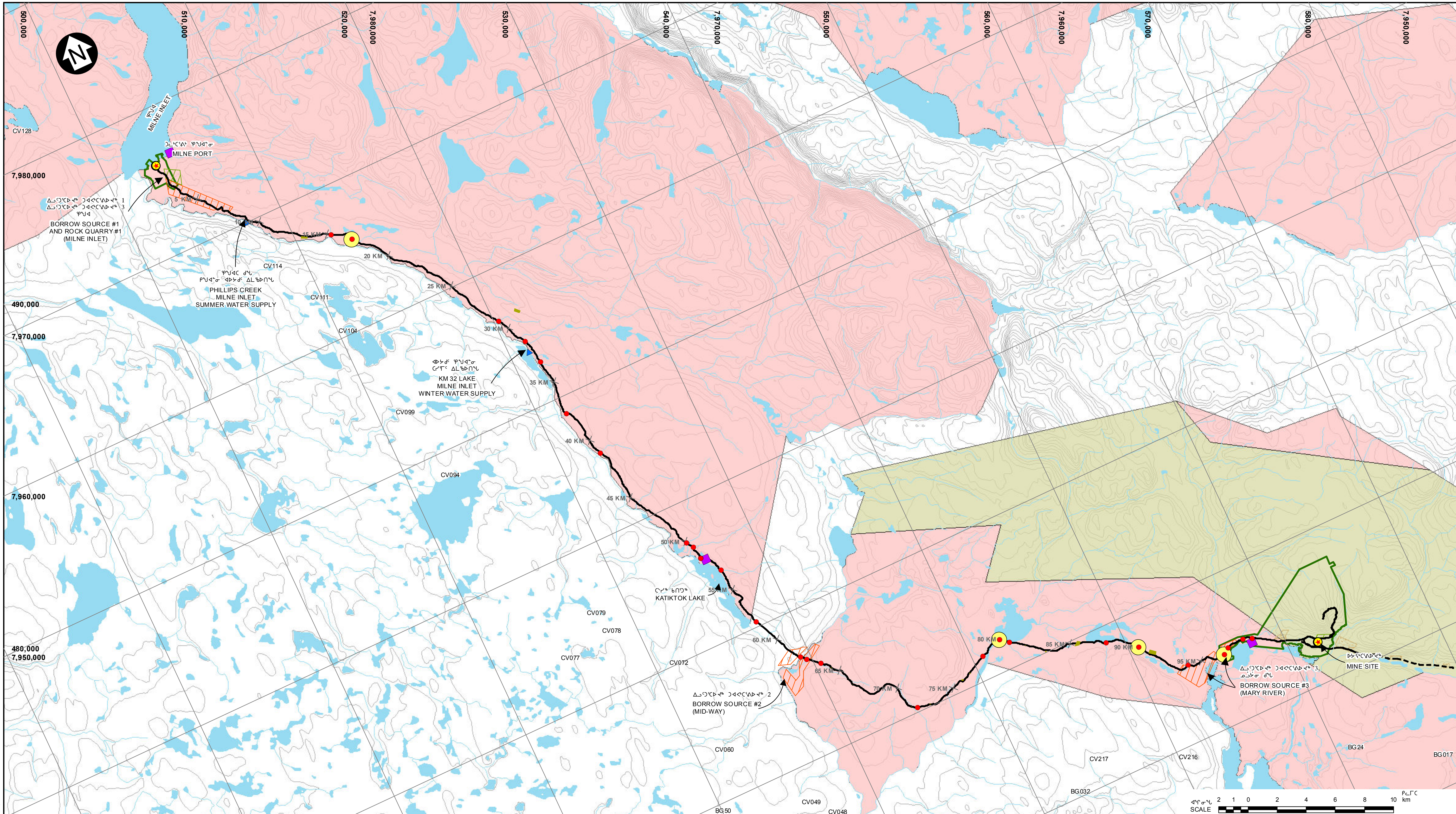
Baffinland Iron Mines Corporation

REF NO. BL_Vol1_CAD_002

ᑎᑎᖅᑕᐅᓯᒪᔪᖅ FIGURE 1-2.3

REV 0

Figure ID: BL_Vol1_CAD_002 Milne Port Layout Figure 1-2-3.dwg



LEGEND:

- WATER
- RIVER/STREAM/DRAINAGE
- MILNE INLET TOTE ROAD
- PROPOSED RAILWAY ALIGNMENT
- QUARRY AND BORROW LOCATION (EXISTING)
- CAMP
- MILNE INLET WATER SUPPLY
- CROSSINGS SUBJECT TO AN AUTHORIZATION UNDER THE *FISHERIES ACT*
- CROSSINGS SUBJECT TO AN APPROVAL UNDER THE *NAVIGABLE WATERS PROTECTION ACT*
- EXISTING BORROW AREA LEASE BOUNDARY (IOL COMMERCIAL LEASE)
- EXISTING ROCK QUARRY LEASE BOUNDARY (IOL COMMERCIAL LEASE)
- IOL SURFACE AND SUBSURFACE INCLUDING MINERALS
- IOL SURFACE ONLY EXCLUDING MINERALS
- POTENTIAL QUARRY DEVELOPMENT AREA
- POTENTIAL DEVELOPMENT AREA

NOTES:

1. BASE MAP: HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES, (2004).
2. COORDINATE GRID IS UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
4. QUARRY AND BORROW AREA DATA ACQUIRED FROM AMEC DATA EXCHANGE (SEPTEMBER 7, 2010).

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

MILNE INLET TOTE ROAD

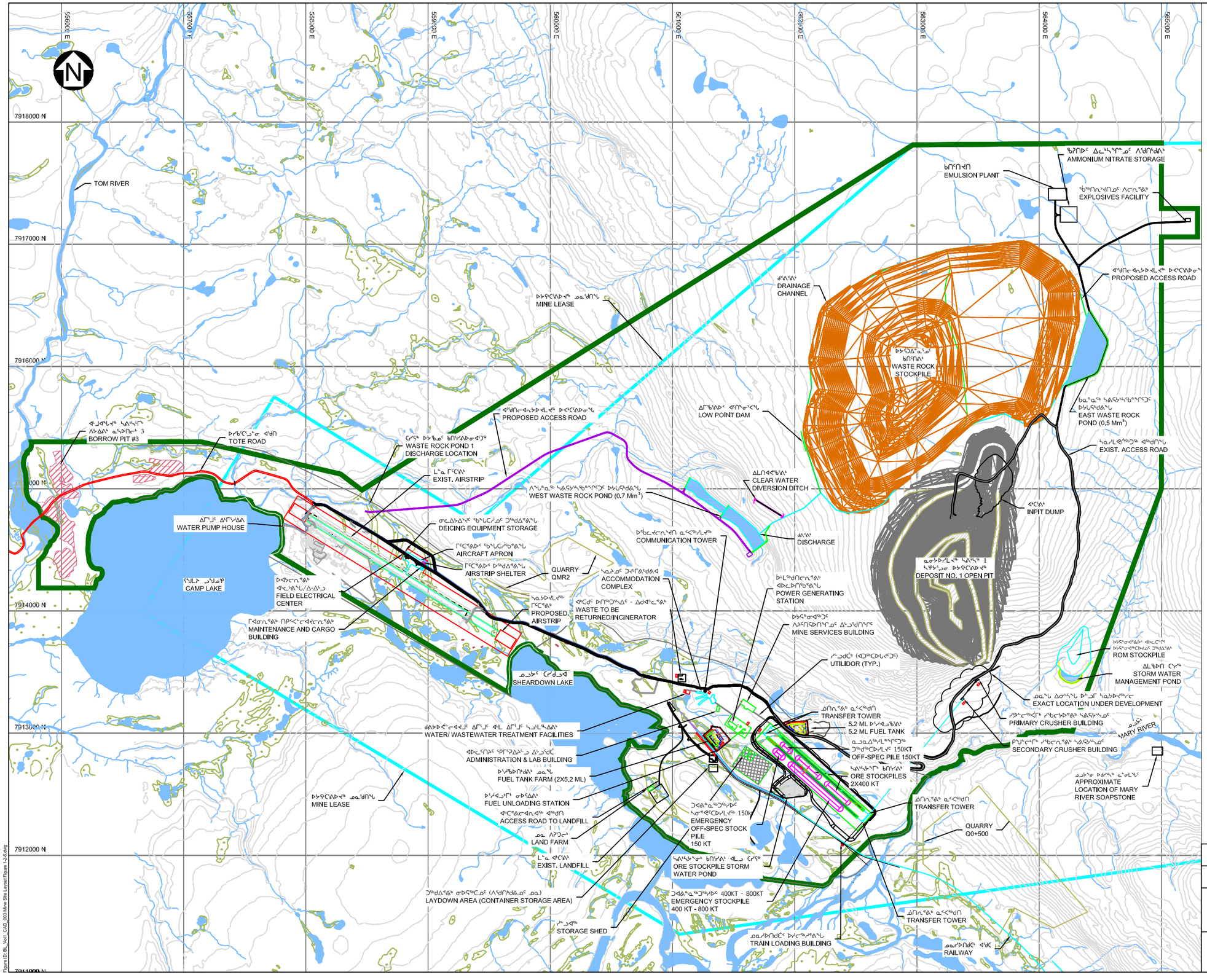
Baffinland Iron Mines Corporation

REF NO. BL_Vol1_GIS_002

FIGURE 1-2.4

REV 0

Figure ID: BL_Vol1_GIS_002 Milne Inlet Tote Road Figure 1-2-4.mxd



LEGEND:

- WATER
- EXISTING BORROW AREA
- LAYDOWN AREA
- RIVER/STREAM/DRAINAGE
- POTENTIAL DEVELOPMENT AREA
- COMMUNICATION TOWER

NOTES:

1. TOPOGRAPHY PROVIDED BY EAGLE MAPPING.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 10 METRES.
4. MATERIAL HANDLING AND PROCESSING LAYOUT WAS REVISED BASED ON AKER KVAERNER DRAWING DWG-2000-M-0003, REV C.
5. MINE SITE AS-CONSTRUCTED INFORMATION PROVIDED BY GENIVAR IN 2009.

SCALE 300 150 0 300 600 900 1200 1500 m

REFERENCES:

1. EAGLE MAPPING (2005)
2. UTM (NAD83) ZONE 17
3. CONTOUR INTERVAL 10 M
4. AKER KVAERNER DRAWING DWG-2000-M-0003, REV C.
5. GENIVAR, 2009

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

MINE SITE LAYOUT

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_CAD_003

FIGURE 1-2.5 REV 0

Figure ID: BL_Vol1_CAD_003 Mine Site Layout Figure 1-2.5.dwg

The airstrip at the Mine Site will be a primary air access point throughout the Project life. The airstrip will be extended from 1,600 m in length to 2,000 m with a graded area consistent with the dimensions. As a key link to the Project and the requirement for year-round accessibility by air, a gravel runway will be constructed to accommodate jet aircraft (Boeing 737 - 200) and L-382 Super Hercules turboprop aircraft.

2.3.4 Railway

An approximately 150-km long railway will be built to transport iron ore from the Mine Site to Steensby Port. The Railway will be constructed to accommodate heavy haul mineral transport, as well as mixed general freight traffic to supply the Mine Site and a passenger train for employees. The Railway will require the construction of 31 bridges, seven of which will be major bridges greater than 100 m in length, two tunnels (in the mountain alongside the eastern side of Cockburn Lake) of about 1,000 m and 300 m in length respectively, and more than 200 culvert crossings. The Railway Alignment is presented in Figures 1-2.6 through 1-2.10.

Construction activities will be staged from both ends of the Railway. A construction access road located along the Railway will facilitate establishment of four temporary construction camps (Ravn River area (km 36), Mid-Rail area (km 55), Cockburn Lake tunnels area (km 105) and Cockburn South Camp (km 124), quarries and temporary airstrips needed to position the large workforce, equipment fleet and fuel required to carry out construction of the railway from multiple work fronts.

The proposed Railway includes: the rail line and embankment, including tunnels, bridges and sidings; watercourse crossings; yards and terminals - including loading and unloading (loop) tracks, turning tracks for the locomotives and service and storage track; supporting facilities - including maintenance and emergency facilities; train - including locomotives (engines) and cars; and signalling and telecommunications.

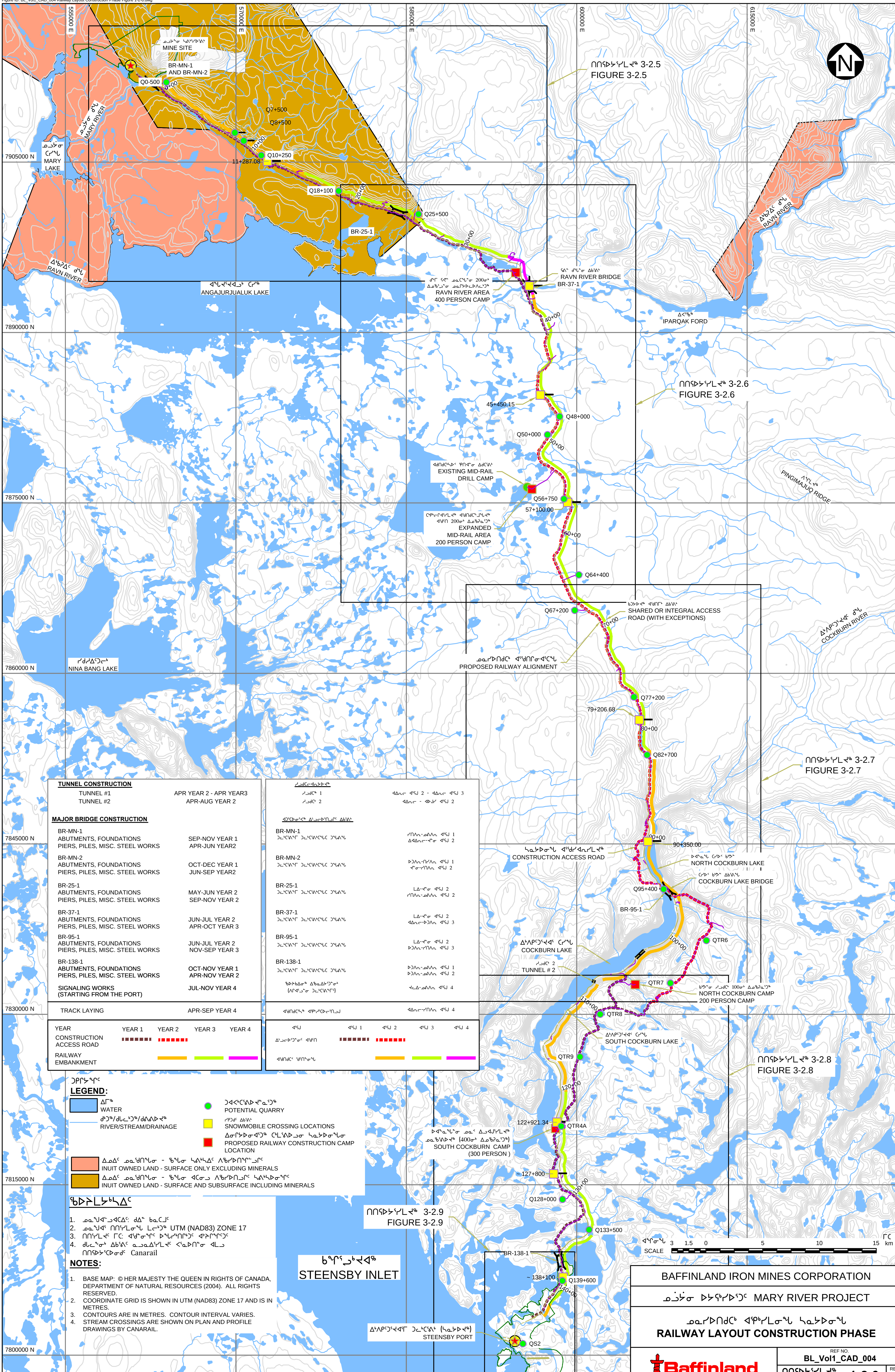
Railway construction largely defines the schedule and time required for the construction of the Project.

2.3.5 Steensby Port

Facilities at Steensby Port will be located on the mainland and on nearby Steensby Island in Steensby Inlet. Figure 1-2.11 presents the site plan. Construction will include a longer site capture phase than at Milne Port, owing to the lack of existing infrastructure, uneven terrain that results in limited pre-existing laydown area, difficulty in accessing quarry sites and the lack of an airstrip to mobilize a large workforce at the onset.

Development of the initial quarry will allow for the establishment of access roads and laydown areas to receive the very large volume of equipment, materials and fuel that will be delivered by sealift in the open water season of Year 1 of construction, and for access to additional quarries to construct the airstrip. Site capture, involving the establishment of basic infrastructure (i.e., camps, airstrips, docks, etc.) to allow full construction to proceed, will take an estimated six to nine months.

Figure ID: BL_Vol1_CAD_004 Railway Layout Construction Phase Figure 1-2-6.dwg



TUNNEL CONSTRUCTION		
TUNNEL #1	APR YEAR 2 - APR YEAR3	
TUNNEL #2	APR-AUG YEAR 2	
MAJOR BRIDGE CONSTRUCTION		
BR-MN-1	ABUTMENTS, FOUNDATIONS	SEP-NOV YEAR 1
	PIERS, PILES, MISC. STEEL WORKS	APR-JUN YEAR2
BR-MN-2	ABUTMENTS, FOUNDATIONS	OCT-DEC YEAR 1
	PIERS, PILES, MISC. STEEL WORKS	JUN-SEP YEAR2
BR-25-1	ABUTMENTS, FOUNDATIONS	MAY-JUN YEAR 2
	PIERS, PILES, MISC. STEEL WORKS	SEP-NOV YEAR 2
BR-37-1	ABUTMENTS, FOUNDATIONS	JUN-JUL YEAR 2
	PIERS, PILES, MISC. STEEL WORKS	APR-OCT YEAR 3
BR-95-1	ABUTMENTS, FOUNDATIONS	JUN-JUL YEAR 2
	PIERS, PILES, MISC. STEEL WORKS	NOV-SEP YEAR 3
BR-138-1	ABUTMENTS, FOUNDATIONS	OCT-NOV YEAR 1
	PIERS, PILES, MISC. STEEL WORKS	APR-NOV YEAR 2
SIGNALING WORKS (STARTING FROM THE PORT)		JUL-NOV YEAR 4
TRACK LAYING		APR-SEP YEAR 4

YEAR	YEAR 1	YEAR 2	YEAR 3	YEAR 4
CONSTRUCTION ACCESS ROAD	▪▪▪▪ (brown dashed)	▪▪▪▪ (red dashed)		
RAILWAY EMBANKMENT		orange	green	magenta

LEGEND:

- WATER
- RIVER/STREAM/DRAINAGE
- POTENTIAL QUARRY
- SNOWMOBILE CROSSING LOCATIONS
- PROPOSED RAILWAY CONSTRUCTION CAMP LOCATION
- INUIT OWNED LAND - SURFACE ONLY EXCLUDING MINERALS
- INUIT OWNED LAND - SURFACE AND SUBSURFACE INCLUDING MINERALS

1. UTM (NAD83) ZONE 17
4. Canarail

NOTES:

1. BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
4. STREAM CROSSINGS ARE SHOWN ON PLAN AND PROFILE DRAWINGS BY CANARAIL.

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

RAILWAY LAYOUT CONSTRUCTION PHASE

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_CAD_004

FIGURE 1-2.6 REV 0

560,000
565,000
570,000
575,000
580,000
585,000
590,000
595,000
7,915,000
7,910,000
7,905,000
7,900,000
7,895,000
N
MINE SITE POTENTIAL DEVELOPMENT AREA
QMR2 (7914203, 560128)
Q-0+500 (7912027, 563871)
BR MR 18 & BR MR 12
MINE SITE CONSTRUCTION CAMP
Q4+100 (7909446, 566638)
KP-5+000
Q7+500 (7907565, 569478)
CV-8-1
BR-8-1
KP-10+000
Q10+250 (7905223, 572892)
BR-11-1
11+287.08
Q14+500 (7904197, 575845)
KP-15+000
Q18+100 (7902454, 579052)
KP-20+000
Q22+500 (7901545, 583188)
Q25+500 (7900421, 586072)
KP-25+000
BR-25-1
Q28+400 (7898582, 588324)
KP-30+000
Q31+500 (7897799, 590918)
Q35+000 (7896830, 594460)
KP-35+000
Q35+500 (7896249
NBR-35-1
NBR-36-1
SCALE
1 0.5 0 1 2 3 4 5 km

LEGEND:

- WATER
- PROPOSED QUARRY LEASE BOUNDARY AREA
- AREA OF POTENTIAL ACCESS (PRELIMINARY)
- POTENTIAL DEVELOPMENT AREA
- RIVER/STREAM/DRAINAGE
- MILNE INLET TOTE ROAD
- PROPOSED RAILWAY ALIGNMENT
- PROPOSED RAILWAY CONSTRUCTION ACCESS ROAD
- QUARRY SITE
- EXISTING CAMP LOCATION
- POTENTIAL RAILWAY CONSTRUCTION CAMP LOCATION
- SNOWMOBILE CROSSING LOCATION
- EXPECTED QUARRY FOOTPRINT (ASSUMED 1-10 m BENCH QUARRY)
- CROSSINGS SUBJECT TO AN APPROVAL UNDER THE *NAVIGABLE WATERS PROTECTION ACT*
- MAJOR BRIDGE LOCATION

NOTES:

1. BASE MAP 1:250,000 © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004).
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
4. RAILWAY ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. (AUGUST 12, 2010).
5. THE RAILWAY AND CONSTRUCTION ACCESS ROAD PRELIMINARY DESIGNS, INCLUDING THE LOCATION OF ALL WATERCOURSE CORSSINGS, ARE PRESENTED AS PLAN AND PROFILE DRAWINGS BY CANARAIL IN VOLUME 3 APPENDICES.

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

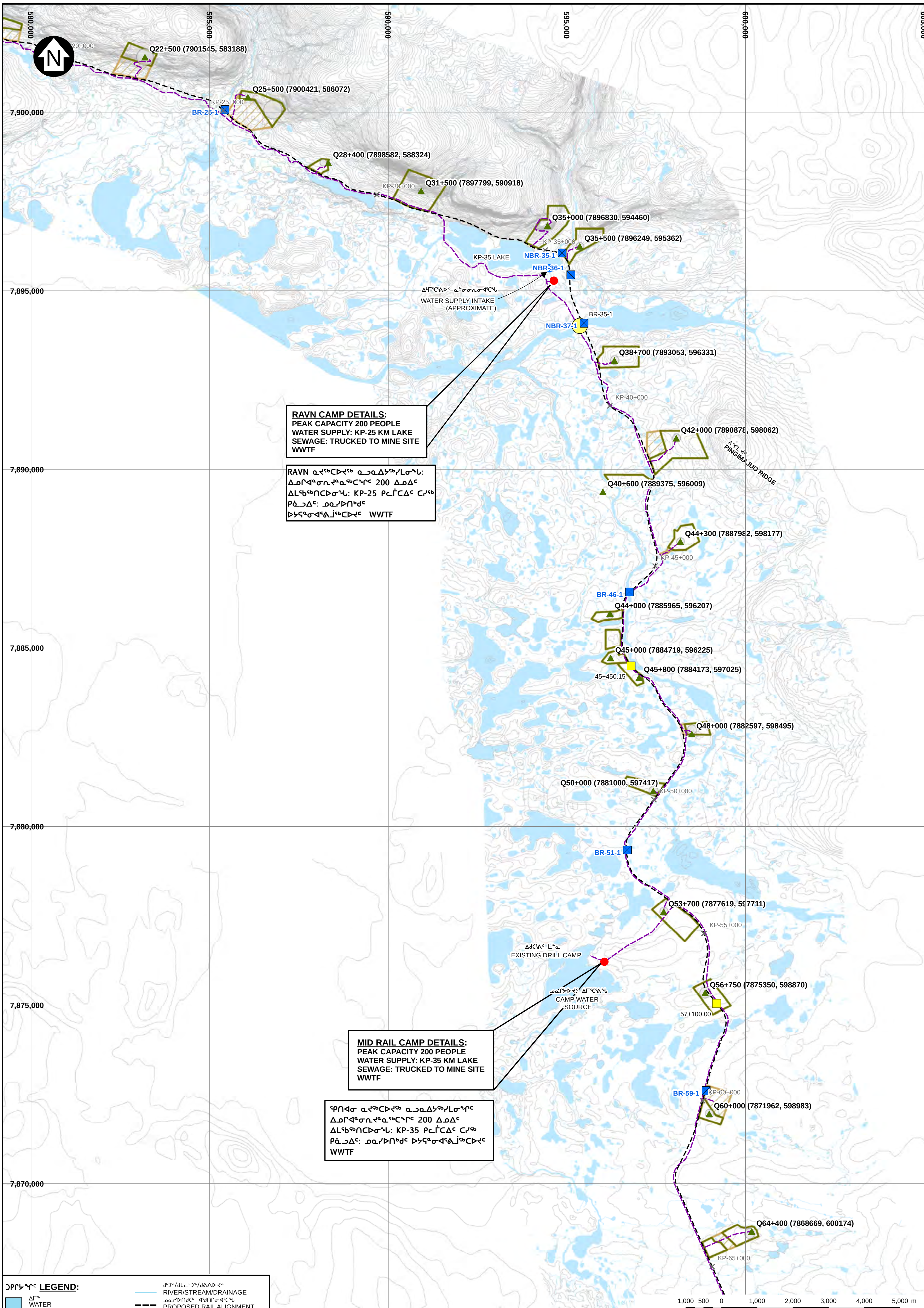
RAILWAY CONSTRUCTION POTENTIAL DEVELOPMENT AREA (SHEET 1 OF 4)

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_GIS_003

FIGURE 1-2.7 REV 0

Figure ID: BL_Vol1_GIS_003 Railway Construction Potential Development Area Figure 1-2.7.mxd



ᑐᑭᓯᒋᐊᕐᕕᒃ **LEGEND**:

- ᐃᒥᖅ WATER
- ᐊᕐᕋᑕᓚᕈᒪᔪᖅ ᑐᐊᕐᑖᕕᒃ ᐃᓗᐊᓂ ᓄᓇᐅᑉ ᐊᑦᑐᐊᑦᑕᐅ PROPOSED QUARRY LEASE BOUNDARY AREA
- ᓄᓇ ᐊᑐᕐᑕᐅᑐᐃᓇᓇᓚᕐᓂᑦ (ᐃᓯᒪᒋᔭᐅᔪᖅ) AREA OF POTENTIAL ACCESS (PRELIMINARY)
- ᓂᕆᐅᒋᔭᐅᔪᖅ ᑐᐊᑉᐸᕐᕕᐅᓚᓂᐊᖓ (ᐃᒪᓇᐃᓂᐊᕐᑐᕆᔭᐅᔪᖅ 1-10 ᒥᑕ) EXPECTED QUARRY FOOTPRINT (ASSUMED 1-10 m BENCH QUARRY)
- ᐃᑳᕐᕕᐃᑦ ᐃᑳᕐᑕᐅᓇᓱᐊᑦ ᐊᖏᕐᑕᐅᓯᒪᔪᑦ ᐃᒪᒥᒃ ᓴᐳᔾᔨᒪᓗᓂ ᒪᓕᒐᖅ CROSSINGS SUBJECT TO AN APPROVAL UNDER THE *NAVIGABLE WATERS PROTECTION ACT*
- ᑰᒃ/ᑯᓚᐅᖅ/ᑯᕕᐊᕐᕕᐅᔪᖅ RIVER/STREAM/DRAINAGE
- ᓄᓇᓯᐅᑎᑯᑦ ᐊᖁᑎᓂᐊᑦᑕᖓ PROPOSED RAIL ALIGNMENT
- ᐊᖁᑎᓕᐊᕆᔭᐅᔪᖅ ᐅᐸᒃᑕᕐᕕᐅᓂᖓ PROPOSED ACCESS ROAD
- ᐱᑕᖃᕐᑐᖅ ᑕᒪᕐᕕᐅᔪᖅ EXISTING CAMP LOCATION
- ᐃᓂᒋᔭᐅᓂᐊᕐᑐᖅ ᑕᒪᕐᕕᐅᓗᓂ ᓴᓇᔭᐅᓂᖓᓂ POTENTIAL RAILWAY CONSTRUCTION CAMP LOCATION
- ᐃᒻᒥᑦᑕᕐᕕᐅᑉ ᓇᓐᓂᓂᕆᓂᐊᑦᑕᖓ WATER INTAKE (APPROXIMATE ONLY)
- ᑐᐊᑉᐸᕐᕕᒃ QUARRY SITE
- ᓯᑭᑑᑦ ᐃᑳᕐᕕᖓ SNOWMOBILE CROSSING LOCATION
- ᐃᑳᕐᕕᓗᐊᑕᐅᑉ ᓇᓐᓂᓂᖓ MAJOR BRIDGE LOCATION

ᖃᐅᔨᒪᔭᕆᐊᓕᑦ

1. ᓄᓇᖑᐊᖅ ᓄᐊᑕᐃᑦ: ᑯᐃᓐ ᑲᓇᑕᒧᑦ
2. ᓄᓇᖑᐊᑦ ᑎᑎᕐᒪᓂᖓ ᒪᓕᒃᑐᖅ UTM (NAD83) Zone 17
3. ᑎᑎᕐᒪᔪᑦ ᒥᑕ: ᐊᖁᓐᓂᕐᑦ ᐅᖓᓯᒃᑎᒋᔪᑦ ᐊᔾᔨᒋᖕᖏᑐᑦ
4. ᐊᖁᑎᑯᑦ ᐃᓂᒋᓂᐊᑦᑕᖓ ᐊᕐᕋᑕᐅᔪᖅ ᕿᒥᕐᕈᐊᕐᕕᒋᔭᐅᓪᓗᓂ ᕿᓚᐅᒥᓗᑎᒃᓴᕐᑎᐅ (ᐊᐅᒍᓯ 12, 2010)
5. ᓄᓇᓯᐅᑎᑯᑦ ᐊᒻᒪ ᐊᖁᑎᐅᑉ ᐊᕐᕋᓯᒪᓂᐊᑦᑕᖓᓂᒃ ᐊᕐᕋᒍᓯᐅᓂᖅ, ᐃᓚᒋᓗᓂᐅᒃ ᓇᓂᓂᐊᕐᓂᖏᑦ ᐃᑳᕐᕕᐃᑦ, ᓴᕿᑕᐅᓯᒪᔪᑦ ᐸᓇᖅᑕᐅᓯᒪᓗᑎᒃ ᐊᒻᒪ ᑎᑎᕋᐅᔭᐅᓯᒪᓗᑎᒃ ᑎᑎᖅᑲᖏᓐᓂ ᕿᓚᐅᒥᓗᑎᒃᓴᕐᑎᐅ ᑎᑎᖅᑲᖃᕐᕕᖓᓂ 3 ᐃᓚᓕᐅᑎᓯᒪᔪᑦ

NOTES:

1. BASE MAP 1:250,000 © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004).
2. 5m CONTOURS PROVIDED BY EAGLE MAPPING (2008).
3. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
4. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
5. RAILWAY ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. (AUGUST 12, 2010).
6. THE RAILWAY AND CONSTRUCTION ACCESS ROAD PRELIMINARY DESIGNS, INCLUDING THE LOCATION OF ALL WATERCOURSE CROSSINGS, ARE PRESENTED AS PLAN AND PROFILE DRAWINGS BY CANARAIL IN VOLUME 3 APPENDICES.

BAFFINLAND IRON MINES CORPORATION

ᓄᓘᔾᔪᓂ ᐅᔭᕐᓯᐅᕐᑐᑦ MARY RIVER PROJECT

ᐊᖁᑎᑯᑦᓯᒥ ᓴᓇᓗᓐᓂ ᐱᓕᕆᐊᕆᔭᐅᒋᐊᕈᓐᓇᕐᑐᑦ (ᑎᑎᖅᑦ 2 ᐊᒪᓗ 4)

RAILWAY CONSTRUCTION POTENTIAL DEVELOPMENT AREA (SHEET 2 OF 4)

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_GIS_004

ᑎᑎᕋᐅᔭᖅᓯᒪᔪᖅ FIGURE 1-2.8

REV 0

Figure ID: BL_Vol1_GIS_004 Railway Construction Potential Development Area Figure 1-2-8.mxd

595,000
600,000
605,000
610,000
615,000
7,865,000
7,860,000
7,855,000
7,850,000
7,845,000
7,840,000
7,835,000

KP-65+000
Q67+200 (7865572, 600060)
KP-70+000
Q71+000 (7863129, 602468)
Q74+200 (7860211, 603522)
KP-75+000
CV-75-2
CV-76-2
CV-76-3
CV-76-1
Q77+200 (7857773, 604898)
79+206.68
Q79+600 (7855480, 605364)
KP-80+000
Q82+700 (7852818, 606182)
Q85+200 (7850260, 606253)
KP-85+000
CV-86-1
90+350.00
Q88+800 (7846618, 606000)
QTR21 (7845346, 605729)
KP-90+000
BR-91-1
Q92+000 (7843546, 605868)
QTR22 (7843323, 605269)
BR-92-1
QTR23 (7841721, 606018)
Q95+400 (7841003, 607651)
KP-95+000
BR-95-1
Q96+100 (7840516, 608562)
BR-96-1
Q96+700 (7839908, 608976)
BR-96-2
QTR10 (7839318, 611571)
QTR11 (7837944, 611940)
BR-99-1
KP-100+000
QTR6 (7836488, 611404)
QTR12 (7836146, 610810)
COCKBURN LAKE
PROPOSED RAILWAY TUNNEL #1 (N.T.S.)
PROPOSED RAILWAY TUNNEL #2 (N.T.S.)
BR-105-1
KP-105+000
QTR13 (7833926, 609489)
QTR17 (7832674, 604014)
QTR7 (7832739, 608237)
KP-109+500
KP-110+000
QTR14 (7831592. 607626)
)110+200 (7831190, 600294)

COCKBURN TUNNEL AREA CAMP DETAILS:
PEAK CAPACITY 100 PEOPLE
WATER SUPPLY: SOUTH COCKBURN CAMP
SEWAGE: TRUCKED TO STEENSBY PORT WWTF

ᐃᑲᐱᑐᔪᐊᓕᒥ ᓄᓇᐅᑦ ᐃᓗᐊᔪᒪᓚᐅᑦ ᖃᓄᑭᓕᐅᑦᓯ ᐅᓪᓗᓈᑎᑦᓯᖅᓱᖓ:
ᐃᓄᖃᓗᓐᖓᖅ 100ᓂᑦ
ᐃᒪᖃᐅᑦ: ᑕᓯᖅ ᑲᓴᓐ ᑲᓇᓇᓂᖏᓐᓂ
ᓄᐊᑦᑕᐃᖅ: ᐃᑲᐱᑐᔪᐊᑦ ᑐᓚᑦᑕᐃᖏᓇᓪᓕᑦ

LEGEND:
- WATER
- PROPOSED QUARRY LEASE BOUNDARY AREA
- AREA OF POTENTIAL ACCESS (PRELIMINARY)
- EXPECTED QUARRY FOOTPRINT (ASSUMED 1-10 m BENCH QUARRY)
- CROSSINGS SUBJECT TO AN APPROVAL UNDER THE *NAVIGABLE WATERS PROTECTION ACT*
- RIVER/STREAM/DRAINAGE
- PROPOSED RAIL ALIGNMENT
- PROPOSED ACCESS ROAD
- EXISTING CAMP LOCATION
- POTENTIAL RAILWAY CONSTRUCTION CAMP LOCATION
- WATER INTAKE (APPROXIMATE ONLY)
- QUARRY SITE
- SNOWMOBILE CROSSING LOCATION
- MAJOR BRIDGE LOCATION

NOTES:
1. BASE MAP 1:250,000 © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004).
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1,000 500 0 1,000 2,000 3,000 4,000 5,000 m
SCALE

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

RAILWAY CONSTRUCTION POTENTIAL DEVELOPMENT AREA (SHEET 3 OF 4)

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_GIS_005
FIGURE 1-2.9
REV 0

Figure ID: BL_Vol1_GIS_005 Railway Construction Potential Development Area Figure 1-2.9.mxd

N

560,000
565,000
600,000
605,000
610,000

7,830,000
7,825,000
7,820,000
7,815,000
7,810,000
7,805,000
7,800,000

QTR17 (7832674, 604054)
ᑲᑦᓯ ᓂᕆᔨᒃ ᓄᓇᖃᑦᓯᓂᖅ 100-ᖑᓂᖅ
NORTH COCKBURN CAMP
100 PERSON CAMP
QTR7 (7832739, 608237)
QTR14 (7831592, 607626)
QTR16 (7830702, 603175)
QTR15 (7830292, 606073)
QTR8 (7829996, 602064)
KP-109+500
KP-110+000
Q110+200 (7831190, 600294)
CV-111-1
Q114+600 (7827791, 597759)
KP-115+000
Q116+800 (7826076, 597570)
QTR9 (7826243, 600279)
KP-120+000
QTR18 (7822737, 599876)
ᑲᑦᓯ ᐅᐊᓂᓐᓴᓐᓂᑦ
ᐃᒥᑦᑎᐃᓕᑦ (ᐃᓂᒥᓄᐅᕐᓱᐊᒋᑦᑐᖓ)
COCKBURN SOUTH CAMP WATER INTAKE
(APPROXIMATE LOCATION)
122+921.34
QTR4A (7820471, 598561)
BR-123-1
BR-123-2
BR-124-1
BR-124-2
KP-125+000

COCKBURN SOUTH CAMP DETAILS:
PEAK CAPACITY 400 PEOPLE
WATER SUPPLY: COCKBURN LAKE
SEWAGE: TRUCKED TO STEENSBY PORT WWTF

ᑲᑦᓴᓇ ᓂᒋᐊᓂ ᓄᓯᖏᑕᐅᔨᖏ ᓄᓗᓀᐃᐱᖏᓪᓗᒋᑦᑐᓂᒃ
ᐃᓄᒋᐊᖅᓂᓯᖏᓐᓄᑦᑐᓂᒃ 400 ᐃᓄᐃᑦ
ᐃᓚᖏᖏᑎᐅᓂᖓ: ᑲᑦᓴᓇ ᑕᓯᖏ
ᑭᐅᓗᐃᑦ: ᓄᓇᓯᐅᑎᒃᑯᑎᑕᐅᔨᓂ ᓯᑎᐟᓗ ᑐᓪᓕᕐᓂᕐᓚᒃ
WWTF

QTR19 (7816733, 597909)
Q127+800 (7815815, 598769)
~ 127+800
KP-130+000
Q128+000 (7813701, 598750)
Q131+100 (7813576, 600240)
Q133+500 (7811035, 601412)
QTR20 (7810505, 598037)
KP-135+000
BR-137-1
Q138+100 (7807534, 598794)
~ 138+100
Q139+600 (7806171, 598770)
KP-140+000
BR-141-1
KP-0+000
KP-145+000
KP-LOOP 0+000
ᐃᓱᐱᑐᓴᐊᖅᑎᒥ ᐱᓴᓕᐊᓕᓗᓂᐱᐅᓴᖅᑐᖓ
STEENSBY POTENTIAL DEVELOPMENT AREA
ᐃᓱᐱᑐᓴᐊᖅᑎᒥ ᐱᓴᓕᐅᕐᖏᐃᐅᓂᐊᑦᑐᖓ
STEENSBY CONSTRUCTION CAMP
ᓂᐃᑦᑕᐃᓱ
SEWAGE OUTFALL
QS2 (7801000, 595250)
ᖁᓕᑦᓗᓴᐊᖅ
STEENSBY INLET

1,000 500 0 1,000 2,000 3,000 4,000 5,000 m
SCALE

ᑐᑭᑦᓴᖏᑦ LEGEND:

- ᐃᒥᖅ WATER
- ᐊᑭᖏᑕᐅᓕᒪᔪᖅ ᑐᐊᓴᑦᑕᐃᓱᑦ ᐃᓗᓴᖅᓂ ᓄᓇᐅᑦ ᐊᑐᐃᐊᑦᑕᑦ PROPOSED QUARRY LEASE BOUNDARY AREA
- ᓄᓇ ᐊᑐᑕᐅᐃᓇᓇᓕᒻ (ᐃᓕᒪᒋᐅᐅᔪᖅ) AREA OF POTENTIAL ACCESS (PRELIMINARY)
- ᓂᓗᑎᒋᐅᔪᖅ ᑐᐊᓴᑦᑕᐃᐅᓕᓇᖅᓯᒪᓕ (ᐃᓕᓇᐃᓂᐊᑦᑐᓂᑦᓴᓗᐅᔪᖅ 1-10 ᒥᑕ) EXPECTED QUARRY FOOTPRINT (ASSUMED 1-10 m BENCH QUARRY)
- ᐃᑲᖏᑦ ᐃᑲᑕᐅᔪᓐᓂᑦ ᐊᑦᑎᑦᑕᒋᓕᒪᔪᑦ ᐃᓕᒥᒃ ᓴᓗᐅᓕᓐᓂ ᒪᓕᓚᖅ CROSSINGS SUBJECT TO AN APPROVAL UNDER THE *NAVIGABLE WATERS PROTECTION ACT*
- ᐱᓕᓇᓴᐅᑎᐃᓇᓇᓕᒻ POTENTIAL DEVELOPMENT AREA

- ᐃᒃᑐᖅ/ᑯᒪᓕᑎᒃ/ᑯᐃᓴᐃᐅᔪᖅ RIVER/STREAM/DRAINAGE
- ᓄᓇᓕᐅᑎᑯᑦ ᐊᖏᑎᑎᓂᐊᑦᑕᖓ PROPOSED RAIL ALIGNMENT
- ᐊᑦᖏᑎᓕᐊᓴᐅᔪᓚᒃᖅ ᐅᐊᑦᑕᐃᐅᓂᖓ PROPOSED ACCESS ROAD
- ᐱᒋᑦᑕᐃᓱᒪᓕᖅ EXISTING CAMP LOCATION
- ᐃᓂᒋᐅᓂᐊᑦᑐᖓ ᑕᖓᒪᐃᐅᓗᓂ ᓴᓇᐅᓂᓐᓄᑦ POTENTIAL RAILWAY CONSTRUCTION CAMP LOCATION
- ᐃᒪᒋᑦᑕᐃᐅᑦ ᓇᓐᓂᓂᓚᐊᑦᑕᖓ WATER INTAKE (APPROXIMATE ONLY) ᑐᐊᑦᑕᑦᑕᐃᓱᑦ
- QUARRY SITE
- ᓯᓗᑐᓂ ᐃᑲᖏᑦ SNOWMOBILE CROSSING LOCATION
- ᐃᑲᖏᑦᓗᐊᑕᐅᑦ ᓇᓐᓂᓐᓂᖓ MAJOR BRIDGE LOCATION

ᖃᐅᔨᓴᓕᓴᖏᓐᓄᑦ

1. ᓄᓇᖓᑦᓗᐊᑕᐃᑦ: ᑯᐃᓐ ᖃᓇᒋᓕ
2. ᓄᓇᖓᑦ ᑎᑎᕆᓕᓂᖓ ᒪᓕᓐᓗᖅ UTM (NAD83) Zone 17.
3. ᑎᑎᕆᓕᓐᓄᑦ ᒥᑕ: ᐊᖏᓂᓐᓄᑦ ᐅᖓᓕᑎᑎᕆᓂᑦ ᐊᑦᐅᑎᑦᑎᓂᑦ
4. ᑕᖓᑎᑯᑦ ᐃᓂᒋᓂᐊᑦᑕᖓ ᐊᖏᑦᑕᐅᓄᑦ ᕿᓘᓴᖓᑎᖓᓗᓂ ᐊᓯᖏᓐᓄᑦ (ᐊᐅᓚᓕ 12, 2010)
5. ᓄᓇᕆᐅᑎᑯᑦ ᐊᒪᓗ ᐊᖏᑎᐅᑦ ᐊᖏᑦᕈᒪᓇᓂᐊᑦᑕᖓᓂᓐᓄ ᐊᖏᑦᕈᐃᓂᓐᓄ, ᐃᓕᒋᓂᐅᑦ ᓇᓂᓂᐊᒪᖓᑦᑕ ᐃᑲᖏᑦ ᓴᖏᑦᕈᒋᒪᓇᑦ ᑕᑯᓐᓄᑦᑐᓂᒃ ᐊᖏᑦᕈᒋᒪᓇᑦ ᑕᑯᓐᓄᑦᑐᓂᒃ ᐊᒪᓗ ᑎᑎᕆᓕᓐᓄᑦ ᕿᓘᓴᖓᑎᖓᓗᓂᓗ ᑎᑎᕆᓕᓐᓄᑦ ᑕᑯᓐᓄᑦᑐᓂᒃ ᐃᓕᓴᐅᔪᓂᓗ ᐱᖓᓱᓂᓗ ᐊᓯᖏᓐᓄᑦ 3 ᐃᓕᓴᐅᑎᑎᕆᓕᓴᐅᑦ

NOTES:

1. BASE MAP 1:250,000 © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004).
2. 5m CONTOURS PROVIDED BY EAGLE MAPPING (2008).
3. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
4. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
5. RAILWAY ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. (AUGUST 12, 2010).
6. THE RAILWAY AND CONSTRUCTION ACCESS ROAD PRELIMINARY DESIGNS, INCLUDING THE LOCATION OF ALL WATERCOURSE CORSSINGS, ARE PRESENTED AS PLAN AND PROFILE DRAWINGS BY CANARAIL IN VOLUME 3 APPENDICES.

BAFFINLAND IRON MINES CORPORATION

ᓄᓇᕗᑦ ᐅᖃᖅᓯᐅᑎᑦ MARY RIVER PROJECT

ᐊᖏᓂᔪᒃᑭᒥ ᓴᓇᓄᑦᓂ ᐱᓕᕆᓂᐊᖅᐱᐅᓯᖏᓐᓄᑦ (ᑎᑎᕆ 4 ᐊᒪᓗ 4)

RAILWAY CONSTRUCTION POTENTIAL DEVELOPMENT AREA (SHEET 4 OF 4)

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_GIS_006

ᑎᑎᕋᐅᓕᒪᔪᖅ FIGURE 1-2.10

REV 0

Figure ID: BL_Vol1_GIS_006 Railway Construction Potential Development Area Figure 1-2.10.mxd

Figure ID: BL_Vol1_CAD_005 Steensby Port Layout Figure 1-2-11.dwg

593000 E
594500 E
596000 E
597500 E
599000 E
7808000 N
7806500 N
7805000 N
7803500 N
7802000 N
7800500 N
7799000 N
7797500 N

ᐃᖏᐱᑦᑎᑉᓗᒃ
IKPIKITTURJUAQ BAY

LAKE
ST 347

ᓄᓇᓕᒻᒥᐅᑦ ᐊᑭᓐᓂᖅ ᒥᓂᔅᑐᐱᓕᒃ
LAKE PUMP HOUSE

ᓴᖅᑭᐃᓐ
LANDFILL

ᓄᓇ ᐱᖏᓂᓪ
LANDFARM

ᓴᓇᓐᓂᒃ ᓯᓚᖅᑐᑦ
ACCOMMODATION BUILDING

ᓯᓪᓗᑦ
UTILDORS

ᒪᐅᐱ ᐱᖅᑎᓂᐊᕐᓂᒃ ᐃᓕᓴᐃᓐᓂᒃ
MOW MATERIAL STORAGE

ᓄᓇᓯᐅᑎᑦᓴ ᐊᓯᑎᓂᐅᐊᕐᓚᓂᒃ ᐃᓕᓴᐃᓐ
RAIL MAINTENANCE BUILDING

ᐊᐅᓗᐃᑦ ᓴᓗᒪᓂᖅᑕᐅᓂᒃ
SEWAGE TREATMENT BUILDING

ᐅᖅᑎᓂᑦ ᑐᖅᑯᐃᐃᓐ ᐊᒪᓗ ᓄᓇᖅᑭᑎᓂᑦ ᓄᖅᑲᓚᓂᒃ
CONTAINER STORAGE& VEHICLE PARKING

ᑐᐅᐱᓚᐃᓂᒃᓯᒪᓐ ᓇᓪᓕᖅᑎᓂ
COMMUNICATION TOWER

ᖃᐅᔨᓴᓂᒃ ᐃᓕᓴᐅᑎᓐ
INSPECTION SHED

ᖃᖅᑎᓂᑦ ᐃᓕᓴᐅᑎᓐ
FIRE PUMP HOUSE BUILDING

ᐊᑐᐊᓐᓂᑦ
ACCESS ROAD

ᐊᐅᑕᑎᓂᒃ, ᖃᒥᓴᐃᓂᒃ, ᐊᓐᓄᖅᑐᑕᓂᖅᓴᓪᓕᐅ
ADMINISTRATION, LAB & FIRST AID BUILDING

ᐅᖅᑕᓴᖅ ᐃᒥᓪᓕᓴᐃᓐᓂᖅᓯᐅᓴᓐᓂᒃ
POTABLE WATER TREATMENT BUILDING

ᐅᖅᑐᓴᓂᒃ ᐃᓕᓐᓂᒃᑐᓐᓂᒃ ᐊᑐᓂᒃᑐᓐᓂᒃ ᐃᓕᓐᓂᒃᑐᓐᓂᒃ
SOLID WASTE DISPOSAL & INCINERATOR SYSTEM

ᐅᓪᓗᖅᑎᑦᓴᓂᒃ ᐊᐅᓚᐅᑎᖅᓴᓂᒃ
POWER PLANT BUILDING

ᓄᓇᓯᐅᑎᑦᓴ ᐊᓯᑦ
RAILWAY

ᓯᓚᓐᓂᑦ
STORAGE BUILDING

ᐅᖅᑐᓴᓂᒃ ᐅᓪᓗᒥᐅᓴᓂᒃ ᓯᓚᓐᓂᒃ
UNHEATED STORAGE SHEDS

ᐊᑐᐃᓐᓇᖅᑐᓴᓂᒃ ᓂᐅᕐᖅᑕᐅᓴᓂᒃ ᑐᖅᑯᐃᓂᒃ ᓄᓇᓕᒻᒥᓂᒃ
PERMANENT LAYDOWN AREA

ᐅᓯᐊᓗᖅᐳᑎᐃᓂᒃ
FUEL STORAGE

ᐃᓚᖅᑎᑎ ᑕᓯᓂᒃ
STORM WATER MANAGEMENT POND

ᐅᖅᓯᐊᓗᓚᓂ ᓯᐊᓚᕐᑎᓇᖅᓂᒃ ᐃᓚᓗ
FUEL DISTRIBUTION PUMP HOUSE BUILDING

ᓯᓚᑐᑐᓚᓂ ᐃᓚᒥᐅᓴᓚᓂ ᐊᐃᖅᓯᒪᓂᖅᓂᒃ
STORM WATER DISCHARGE LOCATION

ᐊᑭᑕᓂᐊᖅᓂᒃ ᓄᑎᕐᓄᐃᓐ
WASTE TRANSFER STATION

ᐊᖏᓕᐅᓴᑕᓂᓐᓂᒃ ᐊᖏᓯᒪᓴᖅ
PERMANENT LAYDOWN AREA

ᓯᐅᑕᐅᖅᑎᑕᓯᐊᑎ ᓯᖃᓕᖅᓂᒃ ᐅᐃᓴᑕᑐᓂᒃ
TERTIARY CRUSHER PRODUCT CONVEYOR

ᓯᐅᑕᐅᖅᑐᓂᒃ ᓴᐃᕆᓴᓂᒃ ᐅᐃᓴᑕᑐᓂᒃ
FINE CONVEYOR

ᑐᐊᐅᖅᑐᓂᒃ ᐅᐃᓴᑕᑐᖅ
LUMP CONVEYOR

ᓄᑎᓴᖅ ᐃᓚᑐᔪᐊᖅ
TRANSFER HOUSE

ᓯᐅᑕᐅᖅᑐᑎᑎᓇᑎ ᓯᖃᓕᓴᖅᓂᒃ ᐃᓚᑐ
TERTIARY CRUSHING BUILDING

ᑐᐊᐅᖅᑐᓂᒃ ᓴᐃᕆᓴᓂᒃ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ ᓄᖅᑲᑎᓴᖅ
LUMP STACKER/RECLAIMER &TRIPPER

ᓴᐃᓴᖅᑎᑦ ᐅᓯᓪᑐᐃᐃᓐ
ORE STOCKPILE STORM WATER POND

SMP

ᓯᓚᑐᑐᓚᓂ ᐃᓚᒥᐅᓴᓚᓂ ᐊᐃᖅᓯᒪᓂᖅᓂᒃ
Storm Water Discharge Location

ᑐᐊᐅᖅᑐᓂᒃ ᓴᐃᕆᓴᓂᓪ ᐅᐃᓴᑕᑐᖅ
LUMP PRODUCT YARD CONVEYOR

ᓯᐅᑕᐅᖅᑐᓂᒃ ᐊᑐᖅᑐᐃᐃᓐᓂᒃ ᐅᐃᓴᑕᑐᖅ
FINES YARD CONVEYOR

ᐊᖏᓕᐅᓴᑕᓂᓐᓂᒃ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ ᐅᐃᓴᑕᑐᖅ
OVERSIZE LUMP CONVEYOR

ᐊᓯᑎᓂᒃᑐᓐᓂᒃ ᐊᒃᓚᓐᓂᒃ ᓴᐃᓴᖅᑎᓂᒃ
SECONDARY SCREENING BUILDING

ᐊᓯᑎᓂᒃᑐᓐᓂᒃ ᐊᒃᓚᓐᓂᒃ ᐅᐃᓴᑕᑐᖅ
SCREEN FEED BIN CONVEYOR

ᓯᐅᑕᐅᖅᑐᓂᒃ ᐊᖏᓕᐅᓴᑕᑐᖅ
FINE ORE STOCKPILE

ᓯᐅᑕᐅᖅᑐᓂᒃ ᐊᑐᖅᑐᐃᐃᓐᓂᒃ ᓄᖅᑲᑎᓴᖅ
FINES STACKER & TRIPPER

ᐊᖏᓕᐅᓴᑕᓂᓐᓂᒃ ᐊᑐᖅᑐᐃᓴᖅᓂᒃ
LUMP ORE STOCKPILE

ᐊᖏᓕᐅᓴᑕᓂᓐᓂᒃ ᑲᑎᓂᖅᓴᖅᓂᒃ ᐅᑎᖅᓴᖅᓂᒃ
LUMP PRODUCT RECLAIMER

ᐅᒥᐊᓕᓴᐅᑎᓐᓂᒃ ᓯᓚᑐᓴᐅᓂᒃ ᐅᓂᖅᑕᐅᓂᒃ
SHIP LOADER FEED CONVEYOR

ᐅᓂᖅᑕᐅᓂᒃ
SHIP LOADER FEED CONVEYOR

ᐅᓂᖅᑕᐅᓂᒃ ᐃᓚᒥᐅᓴᓚᓂ ᐊᐅᓚᓂᒃ
TRANSFER HOUSE

ᓴᐃᓴᖅᑎᓂᒃ ᐅᓚᑦᑕᓐᓂᒃ ᐊᐅᓚᑎᓪᓕᐅᓴᓐᓂᒃ
ORE DOCK OPERATIONS FACILITY

ᓴᐃᓴᖅᑎᑦ ᐅᓚᑦᓯᓐᓂᒃ
ORE LOADING DOCK

ᑲᐅᑕᐅᓂᒃ ᐊᐅᓚᖅᐃᓴᖅᓂᒃ
DRIVE HOUSE

ᓴᖅᑭᔪᓚᐊᖅ
STEENSBY INLET

ᓴᖅᑭᔪᓚᐊᖅ
STEENSBY INLET

ᓄᓇᓯᐅᑎᑦᓴᓂᒃ ᑲᑕᓚᖅᓯᓂᒃ ᑲᐅᑕᐅᓂᒃ
AIR STRIP SHELTER

ᓄᓇᓯᐅᑎᑦᓴ ᐅᖅᑯᐃᓂᒃ ᐅᓂᖅᑕᐅᓂᒃ
RAIL CAR UNLOADING BUILDING

ᓄᓇᓯᐅᑎᑦᓴᓂᒃ ᑲᑕᓚᖅᓯᓂᒃ ᑲᐅᑕᐅᓂᒃ
RAIL RECLAIM CONVEYOR

ᓄᓇᓯᐅᑎᑦᓴ ᐅᓂᖅᑕᐅᓂᒃ
TRANSFER HOUSE

ᐱᓚᑦᑎᓂᒃ ᑐᖅᑯᐃᓴᖅᓂᒃ
PIPELINE TO MAIN BULK STORAGE

3km LAKE

ᐃᓚᖅᑎ
CAUSEWAY

ᑐᓂᓯᓂᒃᑐᓐᓂᒃ ᐅᐃᓴᑕᑐᖅ
TEMPORARY DOCKS

ᓴᐅᑕᐅᑕᐅᓚᓂ ᑐᖅᑯᐃᓴᖅ
CARGO STORAGE BUILDING

ᓴᐅᑕᐅᖅᑐᓂᒃ ᐊᖏᓕᐅᓴᑕᑐᖅ
DEICING EQUIPMENT STORAGE

ᐃᓕᓴᐅᑎᑦᓴ ᑕᓯᓂᒃᑐᓐᓂᒃ
HELICOPTER PAD

ᑕᑦᑎᓴᖅ
AIRSTRIP

ᐃᓕᓴᐅᑎᑦᓴᓂᒃ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ ᐅᐃᓴᑕᑐᖅ
FREIGHT DOCK & FUEL UNLOADING

ᐃᓕᓴᐅᑎᑦᓴ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ
ACCESS ROAD

ᐱᓕᓴᐅᑎᓂᒃ ᐊᑐᖅᑯᐃᓂᒃᑐᓐᓂᒃ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ
FREIGHT DOCK OPERATIONS FACILITY

ᐅᖅᑯᓴᐅᑎᑦᓴᓂᒃ
FUEL TANK

ᐅᓪᓗᖅᑎᑦᓴ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ
POTABLE WATER TREATMENT BUILDING

ᐅᓪᓗᖅᑎᑦᓴ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ
PROPOSED RAILWAY ALIGNMENT

ᐅᑭᐅᖅᓯᒪᔪᖅ

LEGEND:

ᐃᒥᖅ
WATER

ᓴᖅᑭᓂᖅ ᓄᓇ
WETLAND

ᓄᑦᖁᓂᓪᓕᐅᑦ/ᓄᓇᐃᓕᐅᕐᓂᖅ
RIVER/STREAM/DRAINAGE

ᐱᓕᕐᓂᐊᕐᓂᓇᐅᕐᓇᖅᑐᑦ
POTENTIAL DEVELOPMENT AREA

ᓄᓇᓯᐅᑎᑦᓴ ᐊᓯᑎᓂᒃᑐᓐᓂᒃ
PROPOSED RAILWAY ALIGNMENT

ᖃᐅᔨᓴᓂᒃᑐᖅᓯᒪᓂᖅ

1. ᓄᓇᖓᐊᕐᓂᓚᑦ EAGLE MAPPING (2005)
2. ᓄᓇᖓᐊᑦ ᑎᑎᕗᒍᓐᓇ ᒪᓕᒃᑐᖅ UTM (NAD83) ZONE 17
3. ᑎᑎᕗᒪᓕᒃᑐᑦ ᒥᑕ: ᐊᖏᓐᓄᖅᑦ ᐅᖓᓕᕐᑎᑎᓪᓗᑦ 5 ᒥᑕ
4. ᑲᓇᐅᔨᓴᖅ ᑐᐱᕐᓯᐊᑭ ᐊᑐᐃᓐᓇᐅᑎᑕᐅᔨᑦ ᓴᓂᐅᐅᑦ, 2008

SCALE 300 150 0 300 600 900 1200 1500 m

BAFFINLAND IRON MINES CORPORATION

ᓄᓕᒋᓂ ᐅᐅᖃᕐᓂᐅᔪᓂᑦ MARY RIVER PROJECT

ᐃᓕᓴᕐᓂᐊᕐᓚᑦ ᓄᓇᕗᖅ ᖃᓄᐃᑐ ᖃᒪᖅᑎᑦ
STEENSBY PORT LAYOUT

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_CAD_005

ᑎᑎᖅᑲᕐᓯᒪᔪᖅ **FIGURE 1-2-11** REV 0

Two temporary docks will be installed to support early construction, followed by an ore dock and permanent freight and fuel unloading docks. The sequence of activities during the construction phase begins with the building of access roads primarily to the quarry. The construction of laydown areas, airstrip, docks, camps, concrete batch plant, and permanent infrastructure follows.

The proposed airstrip, which will support Code C aircraft such as the Boeing 737-200, will require an airstrip with proposed dimensions of 1,830 m long by 45 m wide.

During archaeological investigations a number of resources were identified (Volume 4, Appendix 4D). The location of important archaeological resources has had a considerable bearing on the location of port infrastructure. A reconfiguration of the Steensby Port layout was undertaken following the 2008 archaeological field program to avoid those areas that are considered to be archaeologically significant.

2.4 OPERATION PHASE

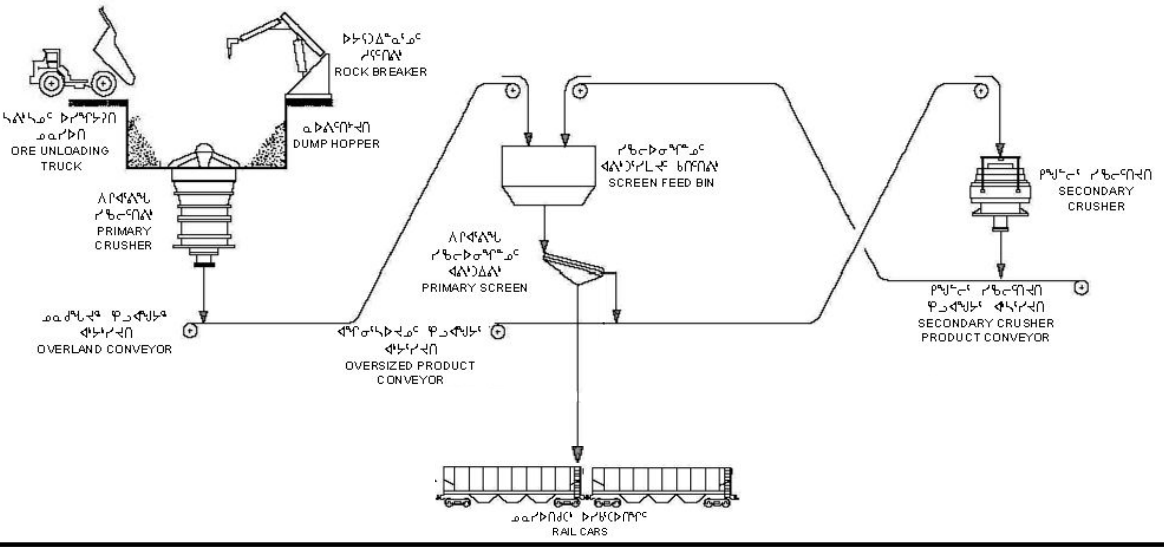
The planned operating life of the Project is 21 years. Conventional open-pit mining techniques will be used, consisting of drill, blast and excavation of ore, followed by transport to crushing and screening facilities. The overall process flow diagram showing the production and handling of ore from the open pit to ship loading is shown on Figure 1-2.12. Ore will be subjected to primary and secondary crushing and stockpiled at the Mine Site (Figures 1-2.13 to 1-2.15). Loading facilities will reclaim the ore from the Mine Site stockpiles and load the rail cars hauling to Steensby Port. Additional stockpiles are located at Steensby Port along with ship-loading facilities.

Additional successful exploration results could extend the operational life and/or increase the annual ore production volume.

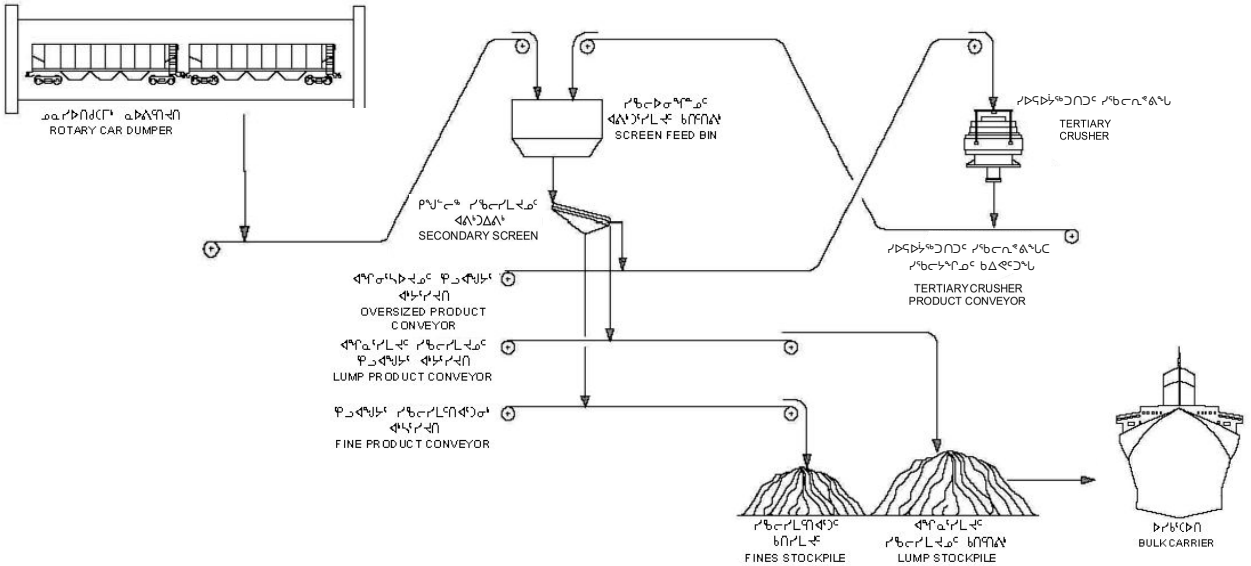
Locomotives pulling ore cars (Figure 1-2.16) will be used to deliver iron ore from the Mine Site to Steensby Port and transport supplies on return trips. Steensby Port will include rail loading and unloading facilities and rail service/maintenance facilities; worker accommodations; ore loading, freight and tug docks; ore stockpile and ship loading and unloading facilities, and an airstrip. A dedicated fleet of about ten icebreaking ore carriers (Figure 1-2.17) will transport most of the ore to international markets 12 months a year. Additional shipping will occur during the open water season.

Once operations begin, decommissioning of temporary construction infrastructure will take place, as construction camps, equipment and related infrastructure are removed and taken off-site.

MINE SITE



STEENSBY PORT



BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

OVERALL PROCESS FLOW DIAGRAM

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_GIS_007

FIGURE 1-2.12 REV 0

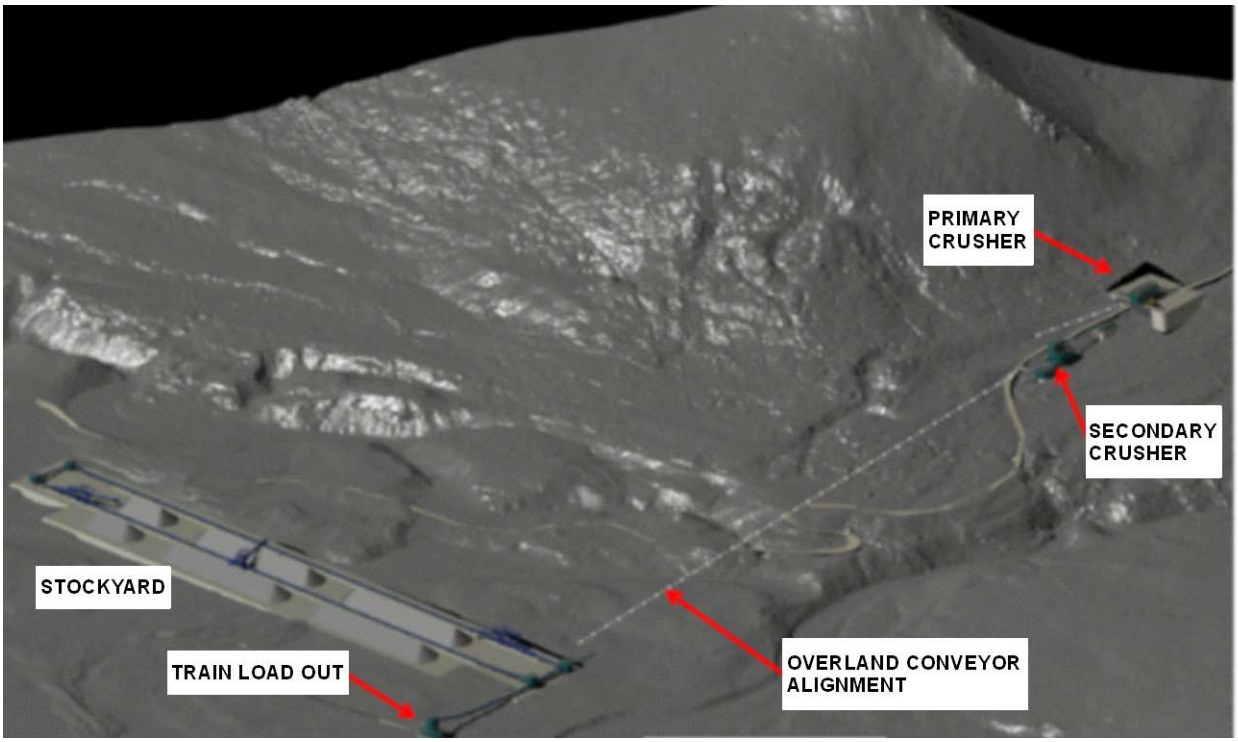


Figure 1-2.13 Material Handling at the Mine Site

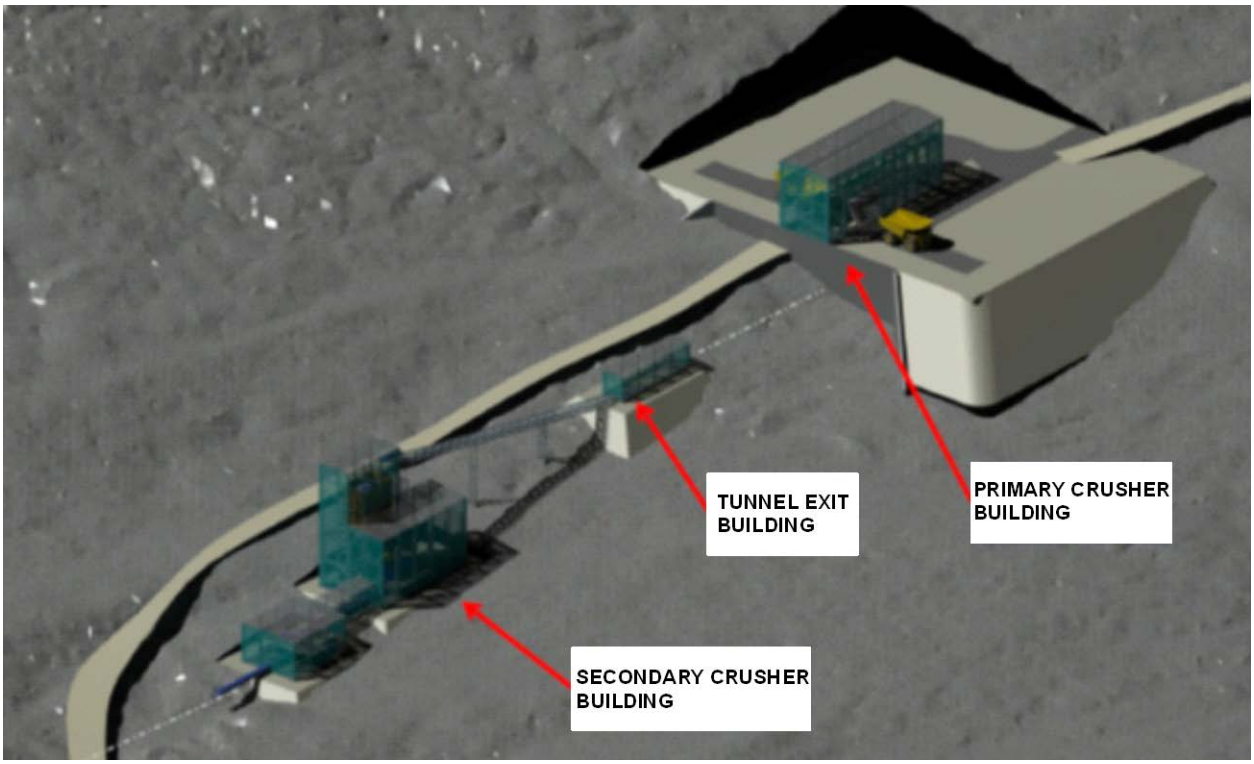


Figure 1-2.14 Mine Site Primary and Secondary Crushing

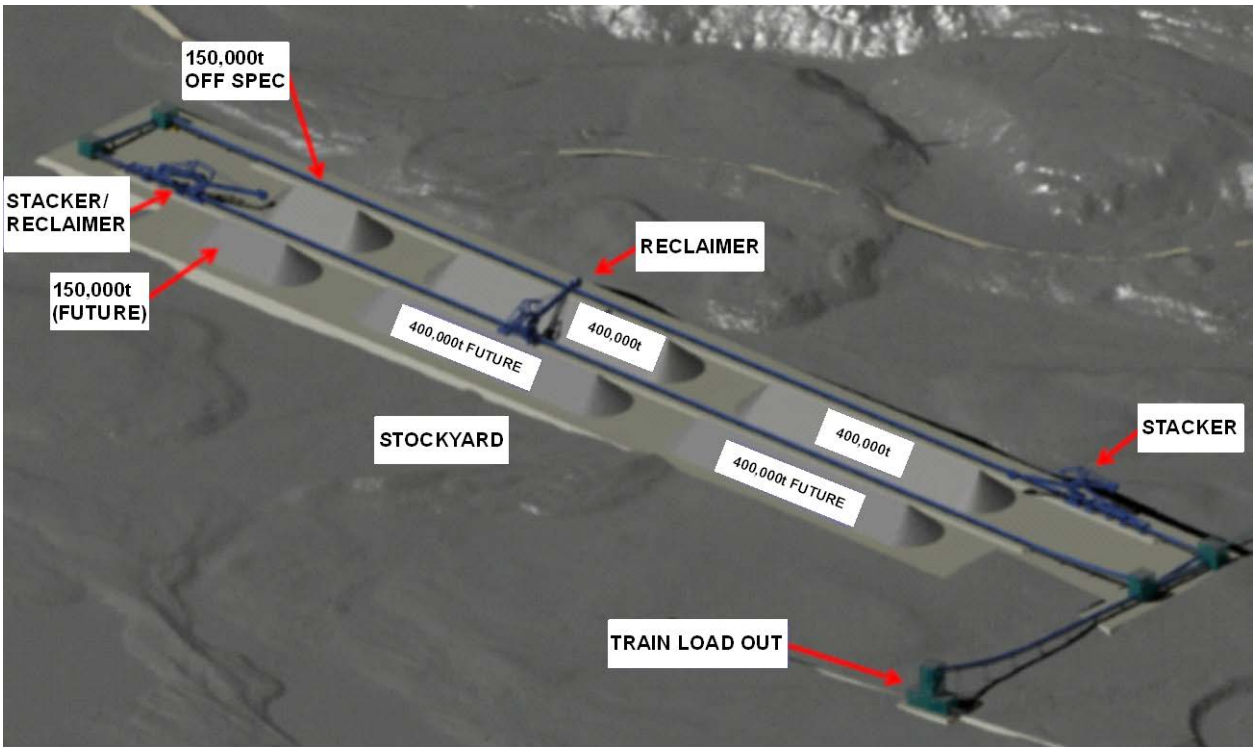


Figure 1-2.15 Mine Site Ore Stock Yard

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

EXAMPLE RAILWAY LOCOMOTIVE AND ORE CAR

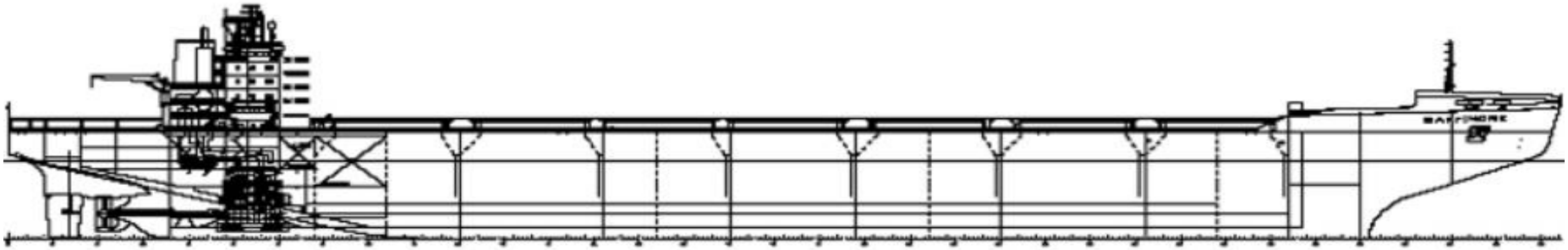
Baffinland Iron Mines Corporation

REF NO.
BL_Vol1_EXL_001

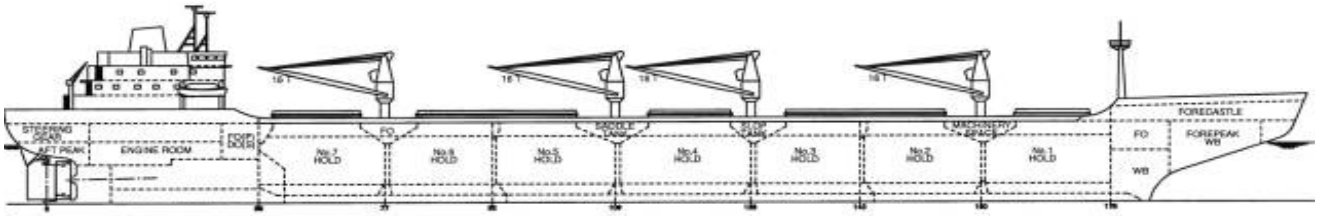
ᑎᑎᕋᐅᔾᔪᑕᓂᖅ **FIGURE** **1-2.16**

REV
A

Proposed ±190,000 DWT Capacity Ice-breaker



28,000 DWT Capacity MV Arctic (Owned and Operated by Fednav)



	Mary River	*MV Arctic*	*Difference*
Length Overall (m)	329.0	220.8	149%
Beam (m)	52.0	22.9	127%
Depth (m)	27.0	15.2	78%
Draft (m)	20.0	11.5	74%
Displacement (mt)	248,000	41,300	500%
Ore Cargo (mt)	±190,000	28,500	595%

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

ICE BREAKING ORE CARRIER
CONCEPTUAL DESIGN

Baffinland Iron Mines Corporation

P/A NO. **BL_Vol1_EXL_002**

FIGURE **1-2.17**

REV A

The following major activities characterize the operation phase:

- Open pit mining of iron ore in Deposit No. 1;
- Crushing, screening and stockpiling of ore at the Mine Site;
- Loading of ore, railway transport of ore to Steensby Port, offloading to stockpiles;
- Railway maintenance facilities at Steensby;
- Ore crushing and sizing at Steensby;
- Loading of ore carriers (ships) at Steensby Port;
- Shipping (including ice breaking) of the iron ore from Steensby Port to customers;
- Annual re-supply for operations by ship during open water to Steensby Port, with railway transport of the supplies to the Mine Site; and
- As-required open water delivery of replacement equipment to Milne Port every few years and subsequent truck transport over the Milne Inlet Tote Road to the Mine Site. These deliveries will be for oversized equipment too large to be transported through the tunnels.

2.5 SHIPPING

Figure 1-1.1 presents the shipping routes from both Milne Port and Steensby Port.

2.5.1 Milne Port

The ice-free period in Milne Port lasts approximately 90 days. Handymax (~50,000 DWT) to Panamax (~75,000 DWT) vessels will be chartered. Vessel docking will be assisted by harbour tugs and lines personnel on the temporary floating dock during the construction phase. Ships calling on Milne Port for resupply will have originated at a southern Canadian port.

The shipping route to Milne Port from the North Atlantic Ocean is well established through very deep waters. It extends from Baffin Bay and passes through Pond Inlet and Eclipse Sound to the head of Milne Port.

2.5.2 Steensby Port

A dedicated fleet of approximately ten ice class cape-size vessels with a nominal capacity of 160,000 to 190,000 dead weight tonne (DWT) cargo capacity will operate year-round to transport the 18 Mt/a of ore production to market. Fednav, the company Baffinland has engaged to develop shipping options capable of meeting shipping requirements, has operated ice-breaking bulk carriers in Canada's Arctic for several decades without the assistance of tugs or ice breakers. The cape-sized vessels will be supplemented by chartering additional ships from the open market during the open water season. Vessel docking will be assisted by harbour tugs and lines personnel on the docks.

There will be two main shipping routes from Steensby Port:

- Steensby Port to the Project's customer base (European Ports), for the movement of ore; and
- Steensby Port to a southern Canadian port for re-supply of materials and some fuel and equipment and for transport of recyclables and hazardous wastes by conventional sealift over the open water.

The nominal shipping route through Foxe Basin in and out of Steensby Port is along the east side of Koch and Rowley Islands to where it joins with the established shipping lanes in southern Foxe Basin accessing Hall Beach and Igloolik. Bathymetric surveys have indicated that this easterly route is operationally preferable to a western route. In addition, comprehensive Inuit knowledge studies in Igloolik, Hall Beach and three other North Baffin communities indicate a reliance on the waters of a westerly route for harvesting and travel, and a relative absence of use of the marine waters along the preferred shipping route east of Rowley and Koch Islands. Feedback from public meetings Baffinland held in the communities of Igloolik

and Hall Beach in 2007 and 2008 also indicated a clear community preference for the selected eastern route.

Entering the well-established shipping routes through southern Foxe Basin, the ships will continue through Hudson Strait on established shipping lanes and across the North Atlantic Ocean. Ships passing through Hudson Strait will remain within the Nunavut Settlement Area (NSA) and are not expected, under normal circumstances, to pass through the Nunavik Marine Region of Northern Quebec or the area of shared Nunavut-Nunavik occupancy. At the request of Environment Canada, the ships will maintain a setback of 15 km from Resolution Island under normal operating conditions, consistent with the setbacks recommended in the key migratory bird marine habitat sites document (Mallory and Fontaine, 2004).

2.6 PRELIMINARY CLOSURE AND POST CLOSURE

Throughout all phases of the Project, Baffinland will plan and conduct operations in a manner designed to return Project sites to a safe and environmentally stable condition. Baffinland will undertake progressive reclamation throughout the mine life. Temporary facilities will be decommissioned and removed as their use ceases. Borrow areas, quarries, temporary roads and other disturbed sites will be stabilized to limit erosion of ground surfaces and rehabilitated once they are no longer required. Environmental and safety monitoring will continue as long as necessary to ensure that closure objectives have been met. The Preliminary Closure Plan was developed in accordance with Aboriginal Affairs and Northern Development Canada (AANDC) Guidelines for Mine Closure (2007 Guidelines) as well as QIA Closure Guidelines. The Preliminary Closure Plan is presented in Appendix 3B, Attachment 10.

2.7 POTENTIAL FOR FUTURE DEVELOPMENT

The Project involves the development of the ore reserves and resources identified and currently under exploration in Deposit No. 1, one of nine known iron ore deposits within Baffinland-held mineral leases (Volume 2, Section 2.1). The locations of Baffinland's mineral leases are shown on Figure 1-2.1. As the Company develops Deposit No.1, it will continue exploration to identify further ore reserves in the region. Exploration drilling on Deposits No. 2 and 3 was initiated in 2007, and drilling on Deposits No. 4 and 5 was initiated in 2010. Deposits No. 6 to 9 were discovered during Baffinland's 2010 regional exploration program and have only been sampled at surface.

Annual production rates will vary for a number of factors such as market conditions, ore grades, and unanticipated events. Although the Project has been designed for a nominal 18 Mt/a of iron ore, the operation is capable of a production rate of up to 30 Mt/a, with additional trains, expansions to ore stockpiles and higher capacity material handling equipment. Deposits No. 2 and 3 could readily be accommodated by the proposed infrastructure. Deposits No. 4 and 5 would require additional rail infrastructure from the Mine Site to the deposits. However, an environmental assessment would be completed and submitted for review prior for developing other ore bodies.

Project Accommodation for Concurrent Uses

Baffinland recognizes the need to accommodate the safe joint use of the Project sites by the Project and the people of Nunavut. Examples of the accommodation provisions in the Project include:

- The Nunavut Land Claims Agreement (NLCA) establishes the requirements and expectations for development activities occurring in Nunavut. This Agreement includes a public easement on the Milne Inlet Tote Road; therefore access to this road will not be restricted. Provisions will ensure that hunter

use is compatible with Project operations as stipulated in the Roads Management Plan (Volume 10, Appendix 10D-8);

- Hunters will be welcome to stop into the Project sites for food, shelter and fuel as indicated in the negotiated Inuit Impact and Benefits Agreement (IIBA) and in the Human Resources Management Plan (Volume 10, Appendix 10F-3);
- Along the railway line, locations will be provided for hunter crossings and animal crossings. Final locations will be determined in consultation with hunters in the communities; and
- Hunters who would pass by snowmobile across the landfast ice at the entrance of Steensby Inlet will need to circle around the Steensby Port. In consideration of this, Baffinland will invite hunters/travellers to stop in at Steensby Port for food, shelter and fuel.

2.8 WORKFORCE AND HUMAN RESOURCES

Human Resources management activities at Baffinland are guided by the following commitments to the workplace and people:

- Strive to achieve a workplace for our employees and contractors free from occupational injury and illness;
- Respect human rights, and the traditional culture, values and customs of the Inuit people;
- Report, manage and learn from injuries, illnesses and high potential incidents to foster a workplace culture focused on safety and the prevention of incidents;
- Foster and maintain a positive culture of shared responsibility based on participation, behaviour and awareness; and
- Promote Inuit participation and engagement in the Project.

The Company is working in cooperation with stakeholders in Nunavut to establish education and training programs that will provide opportunities for employment of local residents on the Project and equip them with skills that will sustain them beyond the life of the Project.

The estimated workforce during the construction and operation phases is summarized in Table 1-.1. The estimates include the workers on shift at each site on North Baffin, excluding the approximately 150 exploration personnel. The estimates are approximate and will vary both seasonally through the year and between the years. The planned scheduled work rotation for most workers during the construction phase will be four weeks on/two weeks off. Workers hired from northern communities will work two weeks on/two weeks off during construction.

The total estimated workforce during the 21 year operation phase is about 950 per year, including on-site and off-site personnel, and Baffinland and contract personnel. This estimate does not include exploration personnel. Most operations workers will work on a scheduled rotation of two weeks working at site and two weeks off.

SECTION 3.0 - ALTERNATIVES

The NIRB guidelines section 6.1 outlines the requirements for the evaluation of alternatives of carrying out the Project components:

> *"The EIS shall include an explicit analysis of all alternative means of carrying out the Project components, including a "no-go" alternative, the identification and application of criteria used to determine the technical feasibility and economic viability of the alternatives to the Project (e.g., transportation, natural, social, economic and cultural environment). This analysis must be done to a level of detail which is sufficient to allow NIRB and the public to compare the Project with the alternatives in terms of the economic costs and the environmental, social and economic impacts and benefits. The Proponent must include reasons for selection of the Project as the preferred alternative, and the reasons for rejection of other alternatives."*

The key features of the Mary River Project are the transportation and logistics aspects. Iron ore mined from Deposit No. 1, located in the central region of North Baffin Island, must be transported to a coastal port on North Baffin Island, loaded on to ore carriers, and, shipped to customers.

The North Baffin region has no existing transportation infrastructure. In order to get the iron ore product to the customers, Baffinland must build:

- a port facility;
- a transportation link from the mine site to the port site;
- a specialized fleet of ore carriers; and
- the infrastructure and accommodation facilities for its workforce at both the Mine Site and the Port.

To determine the transportation link and associated infrastructure, the evaluation of "alternative means of carrying out the Project components" must be addressed in five distinct stages:

1. Alternative ways to meet customer requirements
2. Alternative port locations
3. Alternatives for moving ore from the mine to the port
4. Alternative transportation routes
5. Other alternative ways to operate the Project

3.1 EVALUATION CRITERIA FOR PROJECT ALTERNATIVES

Viable alternatives for the development of the Mary River Project must meet the following criteria:

3.1.1 Technical Feasibility

Technical feasibility relates to the appropriateness of an alternative from an engineering or operational perspective and incorporates aspects of known performance and reliability for the Project. Technical feasibility covers physical and operational considerations. In turn, physical constraints or consideration can only be understood in the context of operational constraints.

Given both the cold climate and relative remoteness of the Project, an important consideration in evaluating technical feasibility is proven northern performance.

3.1.2 Environmental Acceptability

Potential residual effects on the environment consider the expected severity of residual effects on the environment of one alternative relative to the other. The "environment" in this context refers to the natural

and the socio-economic environments, focusing on valued ecosystem components (VECs) and valued socio-economic components (VSECs) identified in the impact assessment (Volume 2).

3.1.3 Social Acceptability

Community acceptability or preferences are considered in the decision making process. For this Project, this input was derived from community consultations as presented in Volume 2. This criterion is by nature subjective, in terms of the community perspectives that have been expressed and the interpretation and weighing of those perspectives. In some instances communities have varying views on a specific alternative. Baffinland attempted to address concerns by undertaking supplemental studies and developing further processes to facilitate community engagement.

With respect to enhancing socio-economic effects, it is recognized that some alternatives may provide tangible and intangible benefits to local communities and the region.

3.1.4 Economic Viability

Economic viability relates the ability of the Project to achieve sufficient future cash flows to pay back the capital invested, pay the ongoing operating expenses, and cover the closure and reclamation costs while generating the necessary return on investment for shareholders to attract the upfront capital investment needed. These financial projections generate the expected "Net Present Value" (NPV) of the investment which is used by shareholders and the investment community to allocate capital investment. A project that cannot attract the necessary capital will not be developed. This is a basic go/no go decision point for the Project.

For Baffinland, the major factors impacting NPV projections are:

1. Expected future prices of iron ore (forecast based on current market conditions, number of competitors and expected growth for steel demand). In turn, this is influenced by Baffinland's ability to meet its customers' requirements for quality or product and timeliness of delivery.
2. Capital cost of the Mary River Project is very high and this capital must be repaid.
3. The cost of the capital relating to financing charges for the money invested until capital is repaid.
4. Ongoing operating costs for the Project which includes cost of supplies, consumables, manpower availability and training, ongoing monitoring, transportation and marketing charges for the iron ore, taxes and ongoing benefits paid to the land owners.
5. Required rate of return on the Project to maintain capital investment from shareholders to carry out the Project rather than other company investment opportunities.

Evaluation of Economic Viability is complex and depends on many external factors on which the Proponent has no control or influence (market forces for iron ore and competitive nature of the industry). These factors add financial risk that investors will consider. In addition, the Mary River Project introduces another dimension to the financial risks in terms of its location in the high Arctic. As a result, an alternative that does not meet Baffinland's criteria in terms of acceptable "business risk" and the related "return on investment" (as measured by NPV projections) will not meet the conditions of Economic Viability and there would be no Project possible using that alternative.

All of the above four factors Technical Feasibility; Economic Viability; Environmental Acceptability and Social/community acceptance are critical. An alternative that fails to meet the criteria in any one of the

factors can no longer be considered and any analysis of the remaining factors for this alternative is meaningless.

3.2 ASSESSMENT OF ECONOMIC VIABILITY FOR ALTERNATIVES TO MEET CUSTOMER REQUIREMENTS

When assessing alternatives it is important to understand the constraints and to build the criteria an alternative would need to meet. For the Project to succeed it must be able to meet the demands of its customers and sell a sufficient quantity of iron ore.

3.2.1 Market Conditions

3.2.1.1 Iron Ore

The iron ore commodity market is a high volume, low margin operation. There are many producers in the world and as a result, the industry is extremely competitive. The ability to produce the ore and to provide a consistent and reliable ore supply are required in order to secure long-term supply contracts and successfully compete on world markets.

3.2.1.2 The Steel Industry

The primary customer for iron ore is the steel industry. Over the past decade, the rapid growth of the Asian economies has progressively diverted the higher grades of iron ore from traditional steel makers in Europe, who now need to secure a long-term supply of high quality iron ore.

Steel-making is also a capital intensive, highly energy intensive and, competitive industry. Production costs are largely driven by the quality of raw material inputs and the associated energy consumption. Most steel mills are located in proximity of large industrial or urban centres where available space (real estate) required to maintain large stockpiles of raw materials is limited and costly. Furthermore, the competitive nature of the iron ore supply markets enables the steel producers to operate on a “just in time” delivery of their raw material. As a result, steel mill operators operate with minimal stockpile inventories. In addition, once a steel mill is configured for a specific type (metallurgical characteristics) of input materials, like iron ore, it cannot readily re-tool for other sources again underlying their need for a consistent supply.

3.2.1.3 Market Competition

In some regions of the world where other iron ore projects are being developed or expanded (Brazil, South Africa and Australia) climatic conditions make it possible to operate without interruption year-round. Infrastructure is a key component to the development of iron ore deposits. For most of these developments, there is existing transportation infrastructure (ports, roads, railway, and necessary utilities). As well, in some regions of the world, a pool of qualified and non-qualified workers is readily available in close proximity, thus eliminating the requirements for worker accommodations.

Implications for Baffinland and the Mary River Project

The Project must be able to satisfy the “just in time” delivery requirements of the customers for iron ore and must ensure the consistent and reliable delivery of iron ore, year round. This will enable Baffinland to negotiate long term supply contracts and secure stable sources of revenues for its operations. These types of supply contracts are essential in order to minimize the financial risks associated with widely fluctuating spot prices for iron ore.

3.2.2 Alternatives Considered

There are two alternatives to meeting the customer needs as analysed above:

1. Year-round Shipping from an Arctic port site selected for the Project; and
2. Seasonal shipping from an Arctic Port with a secondary port for stockpiling (in order to accommodate for seasonal shipping) and then reloading and shipping the ore to the customer (in order to accommodate for seasonal shipping).

Year Round Shipping

Year-round shipping is described in the Project Description. There is a relationship to the infrastructure costs and the minimum amount of ore needed to cover these costs. Mining less ore does not lead to reduced infrastructure costs. The Feasibility study determined that for the capital costs for the Project as described, the minimum ore requirement was 18 Mt/a. Lower production levels would still require most of the same fundamental infrastructure and any lower production levels would not be sufficient to cover the costs.

Year Round shipping is economically viable as per the Definitive Feasibility Study (2008)

Seasonal Shipping

In order to meet the customer needs for consistent delivery, seasonal shipping implies the need to:

- store more ore at the Arctic port;
- ship a year's supply of ore to an intermediate port in a shorter shipping season;
- stockpile ore at an intermediate port; and
- Ship regularly to customers from the intermediate port.

There are higher costs for almost all aspects of both construction and operation of a seasonal shipping option and there are no identifiable cost-savings.

Thus seasonal shipping imposes the following requirements at the Arctic shipping port:

- Larger ore stockpiles;
- Larger loading capacity at the dock (dock and ship loading systems);
- Larger port site infrastructure (power, maintenance facilities, camps, etc.) to deal with increased tonnage handled over a shorter period of time; and
- More ore carriers and/or a much increased shipping schedule to move the required tonnage of ore in a shorter period of time.

Seasonal shipping also implies that working inventories (stockpiles) would be required at the intermediate port (or ports) along the shipping route (between Steensby Port and the receiving port at the customer's location). The intermediate port would need to operate year-round. This would require the establishment at a port with the following infrastructure:

- Construction (or purchase) of dock and port facilities at an appropriate location;
- Construction/installation of conveying/stockpiling and reclaiming equipment;
- Construction and operation maintenance and workforce. Depending on the location of the intermediate port it may require (camps, maintenance, etc.) to support these port operations; and
- Additional ore carriers.

Since the specific locations of the end use customers (steel mills) is not known and varies, it cannot be assumed that increasing receiving and stockpiling facilities at each of the customer's mill is a feasible option.

Most known operations are located in urban areas and have limited stockpile capacity. As noted above steel mills have mostly arranged their operations for just-in-time delivery of input products.

Seasonal shipping implies that in addition to a larger Arctic shipping port facility, the Project would have to support the construction (or purchase) and operation of a second port facility (as described above) and double handling of iron ore shipped from Mary River. Operational logistics would also be much more complex.

All costs are higher and since the 18 mT/a was the minimum needed for economic viability for the base costs identified in the Project Description, 18mT/a is no longer sufficient to provide an acceptable NPV project and attract the needed capital.

The following table presents an overview of the additional costs attributed to seasonal shipping assuming the same production rate of 18 mT/a.

Conclusion

On the basis of:

1. Reliability and security of revenue stream, and
2. Additional costs associated with a seasonal shipping operation.

Seasonal shipping does not meet the criteria of “Economic Viability”.

Year Round Shipping meets the criteria for Economic Viability. A potential port location determined to enable year round shipping achieves Technical Feasibility for the port. The assessment of VECs concluded that there were no significant residual effects and thus the alternative meets the criteria in Environmental Acceptance and Community preferences have been taken into account in designing the specific components of the shipping design.

In the assessment of the following alternatives, year-round shipping as the only viable alternative is assumed.

Alternative Size for Ore Carriers

A range of sizes was considered for the ore carriers. The considerations are the capacity of the shipping and receiving ports with respect to ship size (will set an upper limit); the number of transits required to ship the amount of ore required; the number of ships required; potential for congestion in a port area depending on the number of ships. Table 3-6.2 compares the various numbers. Baffinland has balanced the various considerations and arrived at the optimal number of 10 to 12 ore carriers with 160,000 to 190,000 DWT capacity.

3.3 PORT SITE LOCATION

Due to the geographical location of the Mary River deposit, the selection of a port location is the primary component for the technical feasibility of the Project. In order to deliver a constant and reliable supply of iron ore to its customers, the port facility must be accessible year round. The port must accommodate cape size ore carriers (160,000 to 190,000 DWT; approximately 330 m long by 50 m wide) with ice breaking capabilities. Several potential port locations on Eastern Baffin Island have been evaluated for suitability of the port site. These sites are shown on Figure 1-3.1.

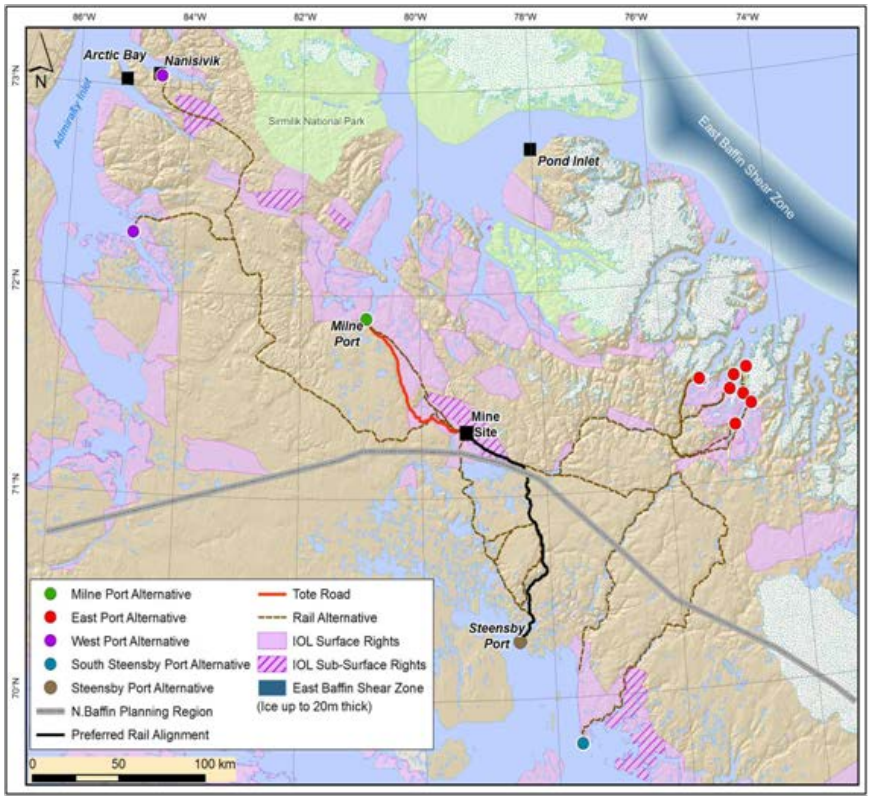


Figure 1-3.1 Potential Port Locations

3.3.1 East and North Coast of Baffin Island

Many of the potential locations were on the north and north eastern shore of Baffin Island; all have been found to present navigation challenges due to the large size of the ore carriers. Significant ice formations on the north and north eastern seaboard of Baffin Island effectively form barriers to safe transit during up to two months of the year. As stated in the Enfotec Ice Report (Volume 3, Appendix 3G):

- *The heavy ridging that can be expected at the entrance to and within Lancaster Sound has the potential to add significant delays to winter transits. This ridging, which has been known to be 20 m in depth, may at times be virtually impenetrable for periods of time while the ice remains under pressure. This may be narrowly viewed as a commercial consideration; however consequent long delays in vessel access to the port would almost certainly lead to congestion with several ships potentially affected. The Project would need to consider this possibility in determining winter shipping schedules.*
- *The port option to Steensby Inlet would require a vessel two ice classes lower (PC 4/5) compared to Milne Inlet (PC 2/3). This is owing to the much lower concentrations of old ice found along the route to Steensby Inlet than is the case for Milne Inlet. It should be noted that the MV Arctic attempted early winter voyages into the eastern Canadian Arctic in early December in both 1986 and 1989 and had to abandon the voyages because of the heavy old ice concentrations and pressure in Baffin Bay just north of the entrance to Pond Inlet (the Canadian Coast Guard vessel CCGS Louis St. Laurent was with the MV Arctic in 1986 and the CCGS Sir John A MacDonald in 1989 and they both were also unable to contend with the ice conditions). However, the same MV*

Arctic now trades all winter to Deception Bay on the south side of Hudson Strait independently without any icebreaker escort through essentially similar ice conditions as those that lead to Steensby Inlet. This is an operational example of the difference between the ice conditions to these two port options.

- *Ice navigation along the Baffin Coast can present considerable challenges as the full weight of the Baffin pack can descend on the coast south of Pond Inlet. The resulting ridging and shear zones, the locations of which would be dynamic would make route selection to the port subject to constant changes.*
- *The potential effects of Climate Change were considered as well. The conclusion being that changes in ice conditions due to Climate Change will be relatively consistent in the areas in question. There is nothing to indicate that Climate Change will effectively alter the localized patterns of ice development, indicating to us that ice conditions will remain significantly more difficult along routes to North Baffin compared to Foxe Basin.*
- *The Steensby Inlet fast ice appears level with no shear ridge at the entrance and no inclusions of old ice. The shore fast ice of Eclipse Sound is subject to ridging during freeze-up and often contains old ice inclusions. For these reasons Steensby Inlet has much more favourable fast ice conditions for winter navigation than the ice leading to any site in North Baffin.*
- *Given the significantly more difficult ice conditions at the North Baffin Sites at present and in the future our recommendation is to pursue shipping through the Foxe Basin.*

On the basis of:

- The difficult and potentially impenetrable ice conditions (during several months of the year) on the Eastern and Northern shores of Baffin Island;
- An operational standpoint, transiting through such difficult ice conditions, even with a capable ship, resulting in a higher risk profile;
- A Polar Class 1 or 2 that may be able to penetrate the types of ice conditions expected on the east coast of Baffin Island, there would be likely times when pressured ice would prevent passage for long periods. In addition, technical issues around the design of a very large ore carrier with such a Polar Ice Class would be extremely challenging.
- The narrow fiords that would lead to navigation congestion within a smaller maneuvering area (due to not being able to effectively turn in heavy ice conditions) and to safety and environmental concerns.
- The heavier ice conditions and the increase powering requirement of the ships would result in a higher overall fuel consumption and an increased carbon footprint for the Project.

Baffinland does not consider any location on the northern (Arctic Bay, Nanasivik, Milne Inlet) or the eastern Baffin coast as viable alternatives for uninterrupted year-round shipping. The Northern and Eastern Baffin Island locations do not meet the criteria of “technical feasibility” with respect to:

- Uninterrupted year-round access to the port,
- Navigability in the narrow fjord by the large ore carriers, and
- Environmental and safety concerns related to access to the port sites through the dense ice pack and ice ridging at certain times of the year.

These three factors are critical for the Mary River Project. Based on consideration of these factors and the need to ship 18 Mt/a all 12 months of the year, no further consideration can be given to the development of a port on the Eastern or Northern shores of Baffin Island.

Year-Round Shipping via Foxe Basin

Because the Project requires year-round shipping of 18 Mt/a of ore, and because the northern and eastern locations are not viable, shipping via Hudson Strait and Foxe Basin is required. Further, a suitable location for the port is one that can be linked to the mine site for overland transportation of ore. Therefore, the port location must take into account the technical feasibility of transporting iron ore from the Mine Site to the selected port location.

3.3.2 Ore Transportation Alternatives from Mine Site to Port Location

Various overland transportation methods were considered to transport ore from the Mary River Mine Site to a potential Port location. The potential overland methods are listed below:

- Conveyor;
- Slurry pipeline;
- Road trucking; and
- Conventional railway.

All four methods require construction of linear infrastructure, including utility roads with various materials, slope and ground stability requirements.

3.3.2.1 Conveyor

A conveyor system, while similar to a rail system, was studied and determined to be not technically feasible because of the extreme climate conditions. In this environment, conveyor maintenance over a distance of 100 or more kilometres would be extensive. A conveyor system would require very large trestles to deal with the sharp grade changes along the Mary River-Steensby route, and could potentially be a barrier to caribou, since it would be suspended at a level higher than a railway embankment.

3.3.2.2 Slurry Pipeline

Slurry pipelines are effective for moving materials of small particle size. The iron ore produced will be up to 60 mm, which makes slurry transfer not technically feasible.

3.3.2.3 Trucking

Truck transportation of large quantities of material is employed in Australia. Truck transportation is effective and economical over short distances or for seasonal types of operations. Fuel and maintenance requirements for trucking are much higher ($15/t to $22/t) than for railway transportation (roughly $1.50/t). Shipping 18Mt/a, over 51,000 tonnes per day, and assuming use of conventional highway trucks carrying 50 tonnes per load, would require over 1,000 truckloads per day. Assuming four trips per day at three hours each way (a distance of 150 km), more than 250 trucks would be required, involving over 2,000 passes a day. This translates to over 80 passes per hour, or more than one per minute. This rate is very intense, exacerbating the already high potential for collisions with other trucks and wildlife. During the summer months, dust generation could be considerable.

Such a large fleet of trucks would have huge maintenance requirements. The cost of purchasing, transporting to site and maintaining such a large fleet would be prohibitive. In addition, the operation of a

truck fleet is highly sensitive to fuel prices, which introduces an element of risk in the Project's economic viability.

3.3.2.4 Railway

Railways are the most efficient and economical form of land based transportation for large tonnages of materials over long distances. Rail transportation is the conventional means of transportation for large volumes of iron ore over long distances. For the Project, it is the only practical method for moving 18 Mt/a. Due to economies of scale rail transportation is the only practical and economically viable option.

3.3.3 Port Locations Accessible via Foxe Basin

Based on a requirement to ship ore from a location that is accessible through Foxe Basin, two sites were examined. A location on the shore of Steensby Inlet and a location on the shore of Cape Jensen (Nuvuit) both presented potential port locations based on accessibility from Foxe Basin. The two main criteria that dictate the viability of the potential port site are:

- Bathymetry at the proposed port site – the depth of the sea bed determines the feasibility of navigation by large vessels as well as the capital expenditure required to construct the port docks and considerations of the potential disturbance in building extensive dock structures; and
- Distance between the port site and the Mine Site – the construction costs of a railway range from $12 million to $15 million per kilometer (primarily depending on tunneling requirements, the number of bridges to be constructed, terrain and ground conditions). In addition to construction cost, the railway will operate in a difficult and challenging environment. A longer rail corridor implies additional equipment and operational concerns in terms of risks and safety of operation.

Once a port location is selected, the challenge is to find the optimal alignment for the railway corridor between the port and the Mine Site. The construction and operation of a railway in an Arctic environment presents serious technical challenges:

- Maximum grades of 1 % (1.5 m over 1 km); and
- The longer railway route increases both safety and environmental risks for both construction and operation; the amount of support infrastructure for railways is proportional to the length of the railway.

Developing transportation infrastructure in an Arctic environment is logistically challenging and very costly. Economy of scale is required in order to generate sufficient revenues to pay for the development and on-going operation of this infrastructure. For the Project as defined, and current iron ore prices, a minimum production rate of 18 Mt/a will ensure the Project is economically viable.

During the review of the Draft Environmental Impact Statement, some Inuit proposed the port location be moved from Steensby Inlet to Nuvuit. As a consequence of this concern the following actions were taken:

- In 2011 the company held a series of meetings in Igloolik;
- The Company requested Canarail to prepare a technical review assessing the proposed routes;
- The QIA initiated an independent review of the Canarail Report;
- In September the Company hosted a site visit to tour and compare the two alternatives; and
- The QIA requested their financial advisors evaluate the implications of various alternatives on the project's rate of return (see Volume 3, Section 6.1.4).

A detailed feasibility study for the Cockburn Lake – Nuvuit coastal route (based on QIA preferred routing alignment) was prepared by Canarail in September 2011 (Canarail, Cockburn Lake – Nuvuit Coastal Rail

Link Alignment Pre-Feasibility Design, September 2011). Key findings of the feasibility report are presented below. The report is located in Appendix 3E. A separate report prepared by consultants to QIA is also included in the appendix.

Table 1-3.1 Key Findings of Cockburn Lake – Nuvuit Coastal Rail Link Feasibility Report

Railway Component	Conclusion of Feasibility Report
Additional length of railway	104 km
Incremental capital cost for construction of railway	Direct capital = up to $864 million Total cost = 1,700 million (including EPCM and contingencies)
Additional cost of rolling stock (locomotive, rail cars)	3 locomotives and 141 cars at an estimated cost of $21.6 million (excluding freight & delivery charges)
Additional fuel consumption	6.44 ML per year (estimated at $4.5 million/year)
Increase in Baffinland personnel	Transportation Department = 44 employees Rolling Stock personnel= 26 employees Maintenance of Way personnel = 42 employees Estimated associated salaries and expenses = $9.5 million per year
Requirement for second Maintenance of Way shop	Satellite facility at mid point along the railway line Direct cost = $15 million Total constructed costs = $30 million
Reference: Canarail, Cockburn Lake – Nuvuit Coastal Rail Link Alignment Pre-Feasibility Design, September 2011, Appendix 3E.	

The longer rail route and larger fleet increases operating risks in that it increases the number of operating train sets, the operating distance and the number of regular mainline train meets. The Nuvuit route presents a larger terrestrial footprint than the Steensby route, with the associated environmental impacts, both during construction and operation, not least of which will be the impact of the additional mid-rail facility for Maintenance of Way.

In summary, adopting Nuvuit as the port site would have the following impacts on the Project:

- An extension of the railway by 325 km to Nuvuit, which would increase building costs by almost $2 billion;
- The construction schedule would be extended by two years, which greatly reduces the attractiveness of the Project being developed;
- The operating and maintenance costs would more than double (i.e., seven trains instead of three); and
- A larger dock structure would be needed at Nuvuit to reach deep water, thus further increasing cost.

Therefore, on the basis of "technical feasibility", "environmental acceptability" and "economic viability", the location of the port at Steensby Inlet is the preferred alternative for the Mary River Project.

3.3.4 Alternative Railway Routing Between the Mine Site and Steensby Port

Several railway alignments were evaluated on the basis of the technical and environmental acceptability. The alignment retained offers the optimal combination of technical, environmental and cost considerations. These rail options are discussed in detail in Volume 3 Section 6.7.3. The two broad rail corridors were evaluated from the Mine Site to Steensby Inlet during feasibility studies:

- One to the west of Angajurjualuk Lake (the Western Route, the original alignment studied); and
- One to the east (the Eastern Route, and current "base case") (Figure 1-3.2).

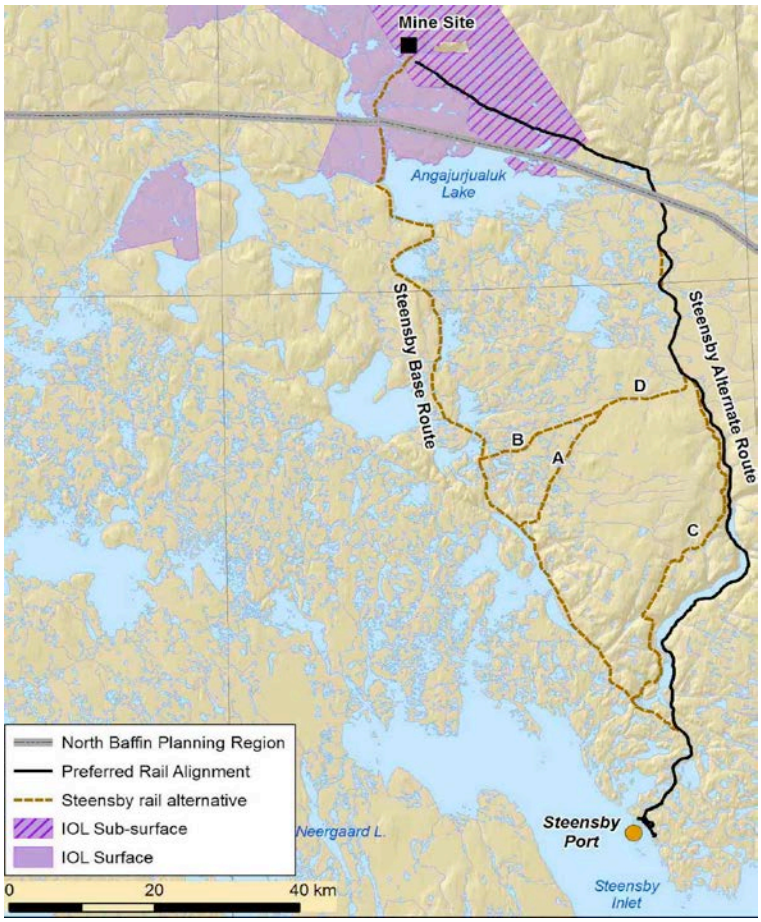


Figure 1-3.2 Alternative Rail Routes Between Mine Site and Steensby Port

Combining the ratings for physical parameters with the environmental ratings, the preferred rail route is the route along the eastern side of Cockburn Lake followed by the route with segment "C" and then the route with segment "D-A". The technical and economic pros and cons for each alternative are summarized as follows:

Table 1-3.2 Comparison of Railway Routing Alternatives to Steensby Port

Route	Length (km)	Capital Cost	Advantage	Disadvantage
Eastern Route (preferred)	148.3	Base	• Shortest (only slightly longer than Western Route) • Lowest cost • Least bridgework • Least exposed to glacial ice and solifluxion; greatest amount of construction on rock/shallow soils	• Most exposed to rockfalls • Adjacent to Cockburn Lake (fisheries and raptor nests)
Western Route (original)	146.6	Base + 2.5 %	• Shortest • Cost competitive with preferred alignment	• Poorest ground conditions • High archaeological potential • Expected interactions with wildlife (birds, caribou)
D-A	153.3	Base + 8.5 %	• Moderate length and slightly higher than main alternatives • Avoids a portion (but not all) of poor ground along Western Route	• Poorest ground conditions • Includes difficult Cockburn River crossing • High archaeological potential • Expected interactions with wildlife (birds, caribou)
D-B	167.0	Base + 11 %	• Moderate length and slightly higher than main alternatives • Avoids a portion (but not all) of poor ground along Western Route	• Poorest ground conditions • Includes difficult Cockburn River crossing • High archaeological potential • Expected interactions with wildlife (birds, caribou)
C	151.7	Base + 38 %	• Least exposed to taliks • Fewest interactions with raptor nests • Lower archaeological potential	• Highest cost • Significant fill volumes • Short radii turns (operational issues)

Based on this analysis, the selected rail transportation corridor to Steensby Port is the Eastern Route shown above.

3.3.5 Conclusions Related to Overland Transportation Corridor and Port Site

For the Mary River Project to be commercially viable, ore shipment to customers in Europe will be required 12 months of the year. Economic viability requires efficient transportation by railway from the Mine Site to the Port.

Based on these project fundamentals, a thorough assessment of port and land transportation alternatives indicate that Steensby Inlet is the only economically viable alternative for the location of the Project port facilities.

The key determinants for the selection of Steensby Port are:

- Favourable ice conditions in the Foxe basin that ensure reliable, year round shipping conditions;
- Favourable bathymetry at Steensby port; and
- Shortest distance from the Mine Site to the Port location which maximizes safety and minimizes environmental interactions, capital costs and operating costs associated with the railway operation.

In terms of the railway alignment, the Eastern Route to the east of Angajurjualuk Lake and along Cockburn Lake was selected as the preferred route based upon environmental, geotechnical, cost and constructability considerations.

The proposed railway transportation corridor is removed from communities and does not present major conflicts with land use. The railway corridor does not affect any key wildlife habitat. To the extent possible, the corridor is inland rather than on the scenic coast and avoids known archaeological sites.

3.3.6 Shipping Route Alternatives Through the Foxe Basin

Two shipping corridors (eastern and western) were assessed through northern Foxe Basin into Steensby Inlet, as shown on Figure 1-3.3. The ships will pass through southern Foxe Basin following established shipping lanes accessing Hall Beach and Igloolik. In northern Foxe Basin, the ships will pass to either the east or the west of the Spicer Islands, Rowley Island and Koch Island.

The more westerly route departs from the existing shipping lanes near to Igloolik and Hall Beach and runs west of Rowley and Koch Islands. The easterly route departs from the existing shipping lanes south of the Spicer Islands and runs east. Based on the results of 2007 surveys, both routes are viable for the Project, but the eastern route is operationally preferable. The communities of Igloolik and Hall Beach have indicated preference for the more easterly route during public meetings held by Baffinland in September 2007, on the basis that this route was more removed from their primary land-use areas.

The eastern route is the preferred alternative, as it is considered less intrusive to local land users. The communities of Igloolik and Hall Beach have indicated a clear preference for the eastern route. The Nunavut Wildlife Harvest Study shows harvest locations concentrated near the communities of Igloolik and Hall Beach but virtually none reported along the eastern route (refer to Presentation on Port Location made to QIA Executive Aug 31, 2011, attached in Volume 3, Appendix 3F). Marine Mammal workshops and individual interviews from Inuit knowledge study show that the western route has a higher level of use than the eastern route. The use is limited to Steensby Inlet which is fairly removed from the communities.

3.3.6.1 Shipping Route Through Hudson Strait

At public meetings in Cape Dorset, community representatives requested that Baffinland put as much distance as possible between its ships and the community, as safety allows. The Company has modified its proposed nominal shipping route at this request. While better ice conditions are found closer to the Baffin coast, ships will pass to the south of Mill Island (between Mill Island and Salisbury Island) to the extent possible (Option D on Figure 1-3.3). The Company has stated that ships will likely need to pass to the north of Mill Island (Option C on Figure 1-3.3) when ice conditions are very poor, to maintain safe and reliable passage.

3.3.6.2 Other Alternatives in Project Operations

Once the port location and the railway corridor are established, *alternative means of carrying out the Project components* can be evaluated. A number of Trade-off studies (Volume 3, Appendix 3H) were carried out during 2011 in order to optimize the design of the various Project components. However, it must be pointed out that for mining methods and power supply, there are no alternative approaches to what Baffinland has presented in its Project Description (Volume 3, Section 3.2 and 3.3). The assessment of alternatives within the Project included the following:

- Production Rate;
- Trucking 3 Mt/a via Milne Inlet;
- Mining methods;
- Power supply;
- On-site Accommodations and Worker Related Issues;
- Air Strip Locations;
- Steensby Ore Dock Location and Configuration;
- Steensby Freight Dock Location and Configuration;
- Ice Management;
- Ore Crushing Optimization;
- Waste Rock Disposal; and
- Closure Alternatives.

A description of these alternatives and the rationale for the preferred choices that are described more completely in the Project Description (Volume 3) is provided in Volume 3, Section 6.

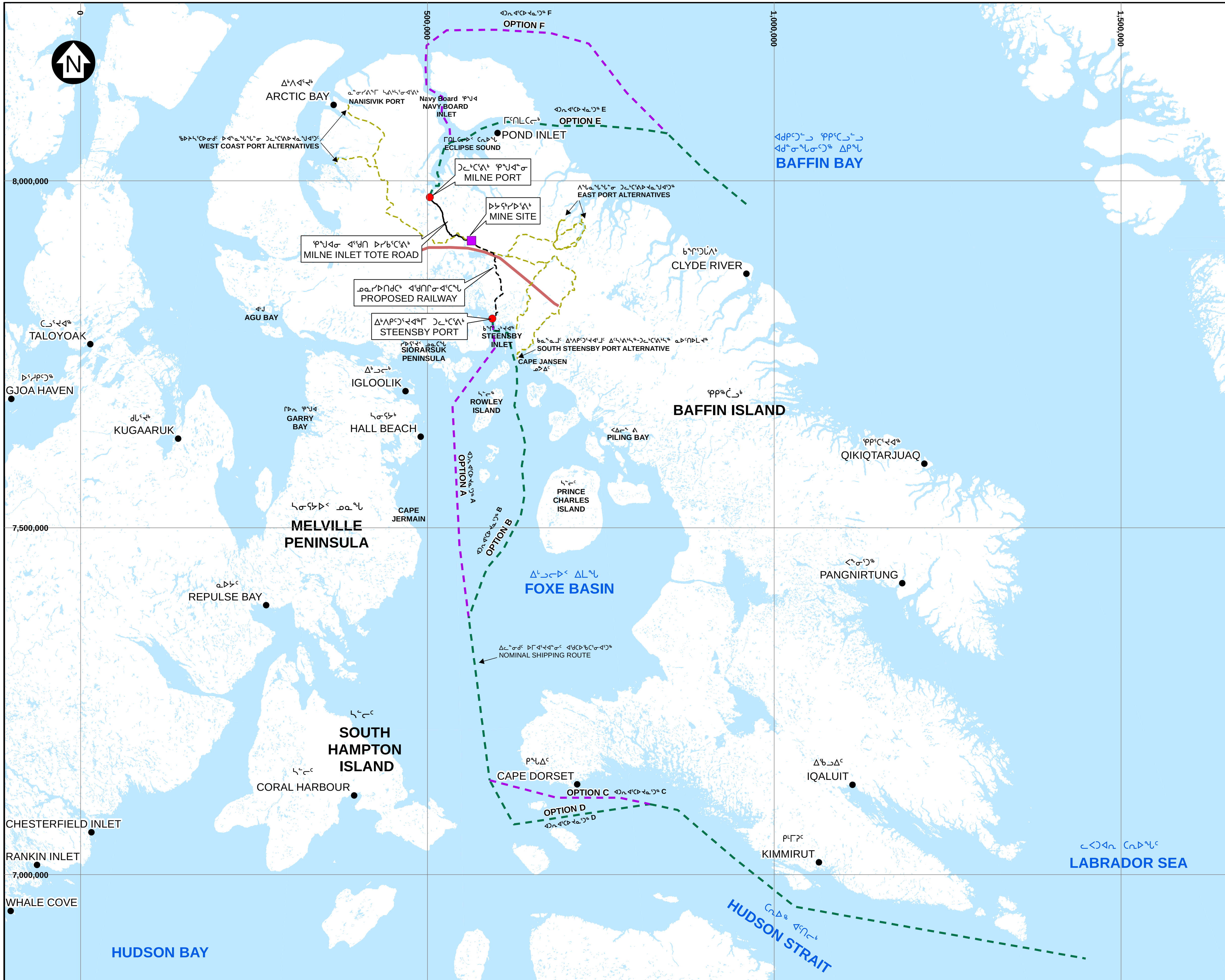


FIGURE ID: BL_Vol1_GIS_009 TRANSPORTAION ROUTE ALTERNATIVES FIGURE 1-3-3.mxd

LEGEND:

- COMMUNITY
- PROJECT FACILITY LOCATION
- MINE SITE
- PORT LOCATION ALTERNATIVE
- MILNE INLET TOTE ROAD
- PROPOSED RAILWAY ALIGNMENT
- ALTERNATIVE RAILWAY ALIGNMENT
- PREFERRED SHIPPING ROUTE
- SHIPPING ROUTE ALTERNATIVE
- NORTH BAFFIN PLANNING REGION BOUNDARY
- WATER

NOTES:

1. BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. INSET IMAGERY: © ESRI Inc.

SCALE 50 25 0 50 100 150 200 250 km

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

TRANSPORTATION ROUTE ALTERNATIVES

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_GIS_009

FIGURE 1-3.3

SECTION 4.0 - PUBLIC CONSULTATION

Consultation with stakeholders for the Mary River Project has focused on the Inuit communities near the Project sites, and has included the public, local and regional Inuit organizations, the Government of Nunavut, and federal agencies with mandates relevant to the Project. A detailed account of the consultation efforts undertaken by Baffinland since 2004 is presented in Volume 2, Section 1.

Inuit of the Baffin Region enjoy a rich oral tradition. This tradition has influenced how Baffinland has engaged local communities. Baffinland's emphasis has focused on establishing a presence in the region, meeting with the community members, and recording in-person discussions. Since the dominant language is Inuktitut, with regional dialects across Baffin Island, translation using local interpreters has been an important element during the consultation process. Translation that enables effective comprehension has been the goal at meetings and in the translation of written materials.

4.1 OBJECTIVES

Since 2004, consultation efforts have been and continue to be guided by the following objectives:

- To adequately scope and conduct environmental and socio-economic baseline studies;
- To understand local conditions and issues, through the scientific process and by engaging in dialogue with local communities and knowledge holders to acquire Inuit knowledge and understand current and historical patterns of land and resource use;
- To incorporate local knowledge and concerns in Project design at an early stage;
- To appropriately scope the environmental assessment of the proposed Project, including selection of valued ecosystem components (VECs) and valued socio-economic components (VSECs);
- To identify mitigating measures and monitoring plans, and to assist in Baffinland's evaluation of significance of residual impacts (impacts after mitigation has been applied); and
- To ensure that local stakeholders have current information about the project and how potential changes to the environment could affect them.

In this context, Baffinland views the communities of potentially affected by the Project in three categories:

- ***Category 1***: Communities in the immediate vicinity of the Project, which have existing and historical socio-economic and/or ecosystemic ties to the Project area, and for which the Project has a direct effect on the traditional land use of their residents. These communities are Arctic Bay, Clyde River, Hall Beach, Igloolik and Pond Inlet.
- ***Category 2***: Communities with a potential interest in the Project because of their location along the shipping lanes: Cape Dorset and Kimmirut.
- ***Category 3***: City of Iqaluit, which will be affected because of its commercial and institutional importance in Nunavut.

Socio-economic studies and public consultation initially focused on the Category 1 communities and Iqaluit and more recently have focused on all communities as a result of the provisions stated in the Guidelines (NIRB, 2009). The ties of the individual communities to the Project are described in more detail in the

following subsections. This information is based on historical land use patterns and discussions with elders from various communities.

4.2 COMMUNITIES AND THEIR RELATIONSHIP TO THE PROJECT

The potentially affected communities in relation to the Project sites are shown on Figure 1-4.1.

4.2.1 Category 1 Communities

Arctic Bay is located on northern Baffin Island, 280 km northwest of the Mary River site. Harvest and land use patterns indicate that the effect of Project activities is less than what it would have been historically. Arctic Bay residents might use the Milne Inlet, Eclipse Sound, and Mary River areas for hunting on a sporadic or occasional basis, but other geographic areas are more important to this community's land use.

Clyde River is located in northeastern Baffin Island, 415 km from the Project area. Historical land use information and discussions with Elders from various communities suggest that the people of the area used to travel inland from Cambridge Fiord facing Baffin Bay, into the Raven River area east of Angajurjualuk Lake and southeast of Mary River. Harvest patterns suggest that contemporary land use activities are now concentrated closer to the community; however, historical ties to the Mary River area resulted in the inclusion of this community in the study area.

Hall Beach is located on the mainland just south of Igloolik, 192 km from the Steensby Port site and 288 km southwest of the Mary River site. Harvest patterns are distinct from those of Igloolik, despite their proximity, with a concentration of marine harvesting centred on the Hall Beach area. Some hunting occurs on Baffin Island intermixed with Igloolingmiut hunting, including in and around Rowley and Koch islands and Steensby Inlet; thus, the shipping route through this area could have both land use and ecosystemic effects on the community.

Igloolik is located on the mainland but is the closest community to the Steensby Port site (155 km) and second-closest geographically to the Mary River Project site (230 km). Historically, Igloolingmiut spent the summer hunting caribou along the western side of North and Central Baffin Island. Current harvest patterns show that while they use the Baffin coast and marine areas at the mouth of Steensby Inlet, their activities are heavily concentrated around the community on Melville Peninsula and the closest Baffin Island shoreline to the north. They still hunt around Rowley and Koch islands and even in Steensby Inlet; thus, the shipping route through this area could have both land use and ecosystemic effects on the community.

Pond Inlet is geographically the closest community to the Mary River mine site, located approximately 160 km northeast of Mary River. Residents rely on hunting in the marine environment of Eclipse Sound and Milne Inlet and caribou hunting through the Mary River area. Pond Inlet has the closest land use, historical, and ecosystemic ties to the Mary River area.

4.2.2 Category 2 Communities

Cape Dorset and **Kimmirut** are located on South Baffin Island. While Project ships pass near the communities through Hudson Strait, harvest data for Cape Dorset and Kimmirut suggest that hunting activities are very concentrated along the coast and do not extend far into Hudson Strait. There is potential for hunters in boats to interact with Project vessels during the open-water season, and the potential for these ships to interact with marine mammals harvested by these communities.

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MINE SITE

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STEENSBY PORT

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CLYDE RIVER
(390 Km)

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CAPE DORSET
(800 Km)

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IQALUIT
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KIMMIRUT
(1025 Km)

LEGEND:

- ᓄᓇᓕᒃ COMMUNITY
- ᐅᓴᖅᓯᐅᑦᓵᐃᑦ MINE SITE
- ᑐᓴᕐᑎᑦᓵᐃᑦ PORT SITE
- ᐅᒥᐊᓕᐊᑦ ᐊᖏᑎᓂᐊᑦᑕᖏᑐ - ᓯᓚᓴᐅᑎᒍᓕᑦ NOMINAL SHIPPING ROUTE - ICE BREAKERS
- ᐅᒥᐊᓕᐊᑦ ᐊᖏᑎᓂᐊᑦᑕᖏᑐ -ᐊᐅᓴᓚᑦ NOMINAL SHIPPING ROUTE - OPEN WATER SHIPPING ONLY
- ᖃᐅᔨᓚᓂ ᐊᖓᔪᑎ ᐅᓱᐅᑦᑕᕐᓂᖅ MILNE INLET TOTE ROAD
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NOTES:

1. ᐅᓴᖅᓯᐊᓂᕐᓵᐃᑦ ᓄᓇᕗᑦ 2009
1. BASE MAP: COPYRIGHT © 2009 ESRI. ALL RIGHTS RESERVED.

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BAFFINLAND IRON MINES CORPORATION

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COMMUNITIES IN THE VICINITY OF THE MARY RIVER PROJECT

Baffinland Iron Mines Corporation

REF NO. BL_Vol1_GIS_011

ᑎᑎᖅᐅᒋᔭᒪᔪᖅ FIGURE 1-4.1

REV 0

BL_Vol1_GIS_011 Communities in the Vicinity of The Mary River Project Figure 1-4.1.mxd

4.2.3 Category 3 Community

Iqaluit is both geographically and ecosystemically well removed from the Project area but is inherently tied to it in a socio-economic sense because of the presence of government/regulatory agencies with whom the Project must interact and the need to pass through Iqaluit to access other Nunavut communities from other parts of Canada. The size of the city and its developed commercial economy make it a logical procurement centre and point-of-hire for the Project. It is conceivable that mine employees who were originally based in other Baffin communities might opt to move to Iqaluit because of its amenities and relatively lower cost of living.

Other communities in the Qikiqtani Region were also considered in terms of potential Project interactions, but baseline investigations did not identify any current or historic socioeconomic or ecosystemic ties to the Project area. Each of these communities is at least 500 km from the Project area. Qikiqtarjuaq, Pangnirtung, Grise Fiord and Resolute were considered but are geographically and socioeconomically well removed from the Project area. All Project activities, including shipping routes, are located far from these communities and their land use patterns do not encroach on areas that might be affected by the Project.

Although Baffinland intends to focus on the five Category 1 North Baffin communities as its direct points-of-hire, qualified workers from other Inuit communities will also be welcomed as members of the Project workforce.

The Nunavut Impact Review Board engaged early in the review process with Makavik Corporation and the communities in the Nunavik region of Quebec, carrying out scoping sessions in Nunavik communities along Hudson Strait in 2009. Also in 2009, Baffinland made project information presentations to Makivik Corporation. In February 2011 Baffinland presented to the *Nunavik Marine Region Planning Commission & Impact Review Board* an update on the Mary River Project including a summary of the DEIS.

4.3 CONSULTATION METHODS AND ACTIVITIES

Baffinland has endeavoured to engage potentially affected communities in four types of engagement (see Table 1-4.1).

Baffinland has focused stakeholder engagement efforts first and foremost with the communities identified as potentially affected by the Project, and secondarily with the South Baffin communities of Cape Dorset and Kimmirut, which are adjacent to the primary shipping route through Hudson Strait, and Iqaluit as the main administrative centre.

Particular emphasis has been placed on recognition of the historic and contemporary land-use ties to the area in which the Project is located. Information and stakeholder feedback obtained through consultation has been integrated in the design and planning process, as broad community support is critical to the ultimate success of the Project.

Table 1-4.1 Types of Community Engagement

Type of Engagement	Description	Engagement Activities Undertaken
Information	Flow from the company to stakeholder	Newsletters, community posters, Baffinland Liaison Officer offices, mining symposium, Project website, information booths in co-ops
Consultation	Information exchange	Formal and informal public meetings with public, Hamlets, Hunters, and Trappers Association/Organization (HTA/HTO), Community Land and Resource Committees (CLARC)
Participation	Active interaction and more intensive form of consultation	IQ study (2007-2010), IQ Working Group workshop (March 2008), Baffinland- Qikiqtani Inuit Association (QIA) thematic workshop (September 2010); additional 2011 workshops with QIA and QIA Executive site visits (September 2011)
Negotiation	Face-to-face discussions with the intent of reaching agreement	Baffinland and the QIA have been working on an Inuit Impact and Benefits Agreement (IIBA) since 2006, and signed a Memorandum of Understanding (MOU) on the economic provisions of a future IIBA on March 31, 2009. Included in the economic provisions are contracting, employment, capacity building, training and education, support for the communities, implementation and management (measurement, reporting, enforcement, mediation, and arbitration) of the future IIBA.

4.3.1 Community Liaison Offices

In 2007, Baffinland initially established Baffinland Liaison Officer offices in the five Category 1 communities. Baffinland has continued to maintain these offices in two of the Category 1 communities, Pond Inlet and Igloolik, and recently reopened its liaison office in Iqaluit. Two additional offices will re-open in early 2012. The offices are now referred to as Baffinland Liaison Offices and the office leads are known as Baffinland Liaison Officers.

The Baffinland Liaison Officer offices are a first point of contact for communities in terms of obtaining or exchanging information on the Project and employment. The Baffinland Liaison Officer offices have been instrumental in rolling out several initiatives, including the Inuit Qaujimajatuqangit (IQ, or Inuit knowledge) and socioeconomic studies. Baffinland Liaison Officers, as local hires, speak with community members in Inuktitut and English, facilitating the flow of project information between the company and communities. Establishment of Baffinland Liaison Officer offices reflect Baffinland's larger commitment to community consultation, stakeholder engagement, and building community capacity.

4.3.2 Meetings with Community and Local Stakeholders

This initial consultation focused on obtaining and disseminating information regarding exploration efforts (2004 and 2005), and later regarding bulk sampling plans (2006). Efforts were broadened in scope and outreach in 2007 to include all communities expected to be directly affected by Project. In that time frame, Baffinland undertook its first formal public consultations on the mine development plans. The purpose of these consultations was to inform stakeholders and solicit public input.

A second round of public meetings was held in the same communities in late March 2008 following submission of Baffinland's Development Proposal (Baffinland, 2008) to regulatory agencies. The objective of these meetings was to:

- Hold dialogue with the communities;
- Provide them with information regarding the Project Development Proposal;
- Identify any issues or concerns that might be associated with planned Project activities; and
- Integrate appropriate stakeholder feedback in Project decision-making.

In April 2009, Baffinland attended NIRB scoping sessions in the potentially affected communities. Through 2010, Baffinland visited potentially affected communities (including Cape Dorset and Kimmirut) on several occasions to provide Project updates and to discuss preliminary findings of the draft environmental impact statement (DEIS). Baffinland carried out two rounds of open houses in the Category 1 and 2 communities in 2011, and held numerous other meetings with communities in northern Foxe Basin regarding port location alternatives.

PowerPoint presentations used in public meetings were in Inuktitut. Speeches delivered in English were translated simultaneously using local translators as much as possible to preserve local dialects. As much as possible, Baffinland had at least two translators on hand at all meetings with Baffinland Liaison Officers attending meetings to provide backup translation. During meetings, headsets were provided by Baffinland, so attendees could properly hear the translations. Minutes from these meetings were recorded by Baffinland and incorporated in a central public consultation database (Volume 2, Appendix 2A-2).

4.3.3 Inuit Knowledge Working Groups

Inuit knowledge studies were initiated in Pond Inlet in 2006, expanded to Igloolik and Arctic Bay in early 2007, and to Hall Beach and Clyde River in 2008. Studies were initiated first in those communities with the closest ecosystemic and socio-economic ties to the Project and then to the other potentially affected communities. The overall objective of the studies has been to obtain local knowledge of wildlife, land use, and areas of cultural value to support Project decision-making and the social and environmental assessment process.

Inuit knowledge discussions held to date have informed and influenced descriptions and understanding of the natural environment, local land uses, and social conditions, guiding the Project research in ways that are acceptable to the community and culture. Information was collected through establishment of working groups in each community. Working groups were selected to represent a cross-section of people in the community with respect to gender, age, lifestyles, and occupation.

While the focus of the Inuit knowledge studies has been to collect information, Baffinland has at the same time learned about perspectives and key issues related to the Project. Records of working group meetings have been reviewed to identify key issues or concerns raised by the meeting participants.

The working groups have provided valuable insights into community and cultural values, priorities, fears, and hopes, and helped researchers prepare culturally sensitive and appropriate research methodologies and plans. Additionally, the presence of working groups facilitates information flow between the company and the communities.

Records from the working group meetings were incorporated in a central Inuit Knowledge or IQ database and coded to sort by topic. This database has been used to incorporate Inuit knowledge in the baseline reports for identified VECs.

4.3.4 Individual Interviews with Elders

Knowledge of individual Inuit Elders was collected from documentary and primary oral historical research. As a starting point, the collections of the Igloolik Oral History Project were researched for information relevant to the study area regarding traditional land use, harvesting, and cultural values of Igloolingmiut in the areas around the Project (see the Land Use Report in Volume 4, Appendix 4C). This research also contains information about traditional use by Igloolingmiut of the Steensby Inlet area and associated marine resources.

To round out the knowledge of the study area, and to extend forward the time depth provided by the Igloolik Oral History Project information, individual interviews were carried out in Pond Inlet, Igloolik and Arctic Bay in 2006 through early 2008. Local Inuit were trained by an anthropologist to interview, record, and map Elders' information. The interviews were transcribed in Inuktitut and translated into English. The transcribed interviews were incorporated in a central Inuit knowledge database and coded to sort by topic.

4.3.5 Focus Sessions

Focus sessions were conducted with the communities on the following natural environment and socio-economic topics:

- Caribou;
- Marine mammals;
- Land use (including archaeology);
- Elders;
- Youth;
- Economic development; and
- Health and social services.

To achieve maximum and meaningful participation in the focus sessions, a variety of techniques were employed to reach as many community members as possible. While a number of the focus sessions were restricted to invited persons, based on their particular community status (Elders and youth), knowledge (health and social services), or skill set in a particular field (economic development), other sessions were open to the general public. These sessions contributed to identifying the Valued Ecosystem Component (VECs) and the Valued Socio-economic Components) VSECs that would be assessed.

A series of meetings were held in the Category 1 and 2 communities to collect additional detailed information on topics identified as of prime importance to the communities: caribou, marine mammals, and land use. Researchers met with community working groups, Elders, hunters and trapper organizations, and members of the general public. In several communities, as the opportunity was available, Baffinland's representative and working group members participated in call-in shows on local radio and set up display tables in the local co-op stores to increase exposure of the study to the broader community.

The Kajjuqtikkut workshop brought together Inuit knowledge study working groups in March 2008. A thematic workshop held at Baffinland's exploration camp at Mary River in September 2010 presented baseline results and preliminary impact assessment conclusions to representatives of potentially affected communities and sought input on potential effects and their perceived significance. During the session, the Project description and road operation alternative were presented and discussed. The methodology used to collect baseline data and the selection of VECs was explained. As part of the terrestrial environment, the caribou baseline study was discussed. During the latter part of the session, discussion focused on the marine environment and the methodology for collecting marine mammals and biophysical data.

4.3.6 Site Visits

Baffinland has been proactive in bringing community and government representatives to visit the operations at Mary River. Representatives of North Baffin hamlet leadership, Inuit knowledge study working groups, a number of government representatives, and local community members, including students, have visited the Mary River operations over the past several years. For many of the participants, it was their first opportunity to see mineral exploration and mining (bulk sample) operations, and feedback was that the opportunity to see such operations first-hand was of immeasurable value, and participants were left with a greater level of understanding of how their communities might be involved in research and operations.

4.3.7 Radio Call-in Shows and Printed Media

One of the most effective and wide-reaching techniques for educating, engaging, and receiving information from the communities is the use of call-in radio shows. Local radio is a popular form of information sharing and entertainment, with virtually all levels of society listening to the local broadcast segments. The call-in programs provided outreach to members of the community who aren't normally engaged in the process. Feedback received both during and after radio shows has been very positive, and indicates a strong desire by the community to continue communicating with them via this format.

With an oral tradition, written materials are of secondary importance as a communication tool in the communities where many people do not have the ability or the comprehension level to be comfortable with reading. However, a proportion of the community who are bilingual have expressed a desire for more written materials to be made available in both Inuktitut and English.

4.3.8 Participation in Environmental Studies

Local involvement in environmental studies is Baffinland's objective, as well as a desire expressed by the communities. With varying degrees of regularity, local participants from Pond Inlet and Igloolik have been involved in the following studies on archaeology, caribou surveys and marine mammal surveys. In addition, numerous bear monitors were provided by the Mittimatalik Hunter and Trapper Organization.

4.3.9 Meetings with Government and Inuit Organizations

Baffinland has also been proactive in the early engagement of those stakeholders located outside the potentially affected communities. A Mineral Development Advisory Group (MDAG) meeting coordinated by Aboriginal Affairs and Northern Development Canada was held in Iqaluit in June 2007. The meeting brought together a number of government agencies and Inuit organizations that could be responsible for issuing permits or approvals, and/or that will be involved in some capacity with the environmental review process.

Since 2007, Baffinland also held a number of meetings with Inuit organizations, government agencies, and Institutes of Public Government (IPGs) to provide the groups with overviews of the Project, and to initiate and pursue dialogue regarding the applicable regulatory processes and information needs. Meetings were also held with the mayor and council of each of the potentially affected communities.

4.3.10 Public and Other Stakeholders

Baffinland's website (www.baffinland.com) hosts up-to-date Project information for a wide audience. Company representatives have also made presentations at conferences, engaged the popular press.

4.3.11 Post-DEIS Consultation with Inuit Organizations and Communities

Upon submission of the DEIS in January of 2011, Baffinland undertook two rounds of open houses in the Category 1 and 2 communities and carried out a number of meetings and site visits, with a key focus being the alternatives to the port location at Steensby Inlet. The results of these meetings have been incorporated into the public consultation database that appears in Volume 2, Appendix 2A-2.

With guidance and assistance from the QIA, Baffinland undertook to develop a DEIS summary package consisting of 1- to 2-page summaries of the DEIS by valued component. The QIA organized the translation and used this document as a primary tool for engaging its constituency in the technical review of the DEIS. The QIA can be credited for hosting a number of community sessions with local committees, facilitating committee site tours to Mary River, and hosting its own five-day workshop in Iqaluit to review the DEIS. This information is presented in Volume 2, Appendix 2A-3.

4.4 KEY OUTCOMES OF THE PUBLIC CONSULTATION PROCESS

The community meetings in the Baffin communities were well-attended and feedback on the proposed Project was balanced. Baffinland was encouraged by the level of engagement demonstrated by the communities and looks forward to continued dialogue. Volume 2, Section 1, provides more information on consultation process and a consultation record organized by key words is presented in Volume 2, Appendix 2A. Where possible, the effects assessments have incorporated an analysis of the community support and concerns regarding the Project.

The majority of the comments supporting the Project recognize the socio-economic and community benefits of the Project. Elders were vocal in the need for employment for their youth. The key concerns identified through these meetings, which Baffinland has responded to in various ways are summarized in Table 1-4.2.

Table 1-4.2 Key Community Concerns and Baffinland Response

Key Concerns	How Baffinland Addressed the Concern
A desire to maintain the existing social fabric of the Inuit culture.	Baffinland recognizes and respects this strong desire, and is committed to developing a project that is consistent with this desire. The Human Resource Management Plan is a response to this.
Opportunities for training and employment	Baffinland assessed training and employment in the Valued Socio-economic Component assessments, and has developed a Human Resource Plan aimed at maximizing training and employment opportunities on the Project.
Potential impacts on wildlife (with a focus on caribou migration patterns affected by the railway and marine mammals being disrupted by shipping), the potential to affect food security, and a desire to be compensated for impacts on wildlife.	Caribou and marine mammals were the focus of the IQ study. Effects assessments have been prepared for caribou, marine mammals and land use (including harvesting).
Opportunity for regional economic development and the need to make sure that the IIBA will benefit directly affected local communities.	Baffinland is committed to economic development and signed a memorandum of understanding (MOU) with the QIA on March 31, 2009, for the economic provisions of a future IIBA, of which regional economic development is one component.

Table 1-4.2 Key Community Concerns and Baffinland Response (Cont'd)

Key Concerns	How Baffinland Addressed the Concern
The concern of environmental degradation due to spills, contamination and pollution and need for effective environmental controls and mine closure planning.	Baffinland has developed a comprehensive environmental management system (see Volume 10).
Desire to change shipping routes and port locations to reduce impacts on communities and marine mammals. Request to consider moving the location of the Steensby Port outside of the landfast ice.	Baffinland selected the easterly of two potential shipping routes through Foxe Basin due to public concerns and IQ study results. Alternate ports and railway alignments were evaluated at the request of local communities (Volume 3, Section 6) although none of these alternatives are viable. The railway to Steensby Port is preferred because of distance, terrain and relative ease of construction and operation.
Interest in a port at Nuvuit, as an alternative to Steensby Port (an extension of the above key concern)	Baffinland conducted multiple meetings with the community of Igloolik and QIA Executive on this subject since issuing the DEIS. The QIA Executive flew the two routes and port sites with Baffinland`s railway engineers and shipping experts, and contracted an independent railway engineer to review Baffinland's engineering work regarding Steensby and Nuvuit feasibility.
The potential to bring freight for communities by return shipping, and/or share shipping costs with local communities, thereby reducing the life expenditure of local communities.	There will be limited opportunity to support community re-supplies due to the distance of the port sites from communities.
A desire to understand the Project, its use of traditional knowledge, research, monitoring, regulatory processes, operation and mitigation.	Baffinland carried out an extensive Inuit knowledge study and has involved local communities in baseline studies. Moving forward, a Stakeholders Involvement Plan (Volume 10, Appendix 10F-1) will guide the company's commitments to stakeholder engagement.
Involvement in the development and implementation of monitoring and mitigation plans for the Project.	The Company scheduled a workshop in November 2011 to obtain input from the community of Igloolik and the QIA into its Shipping and Marine Mammals Management Plan; due to weather this workshop had been delayed and was held in January 2012. The company hopes to discuss other key management plans (such as the terrestrial wildlife management plan) with the relevant communities.
The potential of shipping particularly during marine mammal calving and pupping seasons.	The Project by necessity requires year-round shipping, which is carried out elsewhere. The FEIS determined that the effects of the Project`s shipping activities on marine mammals will not be significant.
The disturbance and need for the protection of archaeological sites and the removal of artifacts.	The FEIS contains a preliminary mitigation plan addressing archaeological effects of the Project, and a Heritage Resources Protection Plan addresses ongoing protection of archaeological resources over the life of the project. Baffinland must adhere to the Nunavut Archaeological and Paleontological Regulations.
The extent of dusting from the operations may affect human health and terrestrial mammals.	Baffinland carried on an assessment in the FEIS and determined that ore dust deposition presents minimal risk to humans and wildlife.

The desire of the community of Igloolik (with support from the other communities) to have Steensby Port relocated to Nuvuit was a key issue raised during the review of the DEIS. Baffinland made best efforts to

both further explore this option and to discuss the issue with the community of Igloolik facilitated through the QIA, and believes a key outcome of these efforts has been a recognition and acknowledgement that Steensby Port is the only viable port location to support the Project.

4.5 HOW RESULTS OF PUBLIC FEEDBACK INFLUENCED THE PROJECT

Public consultation and traditional knowledge carried out since 2005 influenced project planning and design. Community acceptance or preferences was one of the factors considered in the evaluation of alternatives (see Volume 3, Section 6). Five key aspects of project design were particularly influenced by public consultation and traditional knowledge:

- Initially, Milne Inlet was the proposed year-round port. As further information became available, though, it became apparent that the ore carriers were too large for a sustained operation. Inuit concerns related to the close proximity of the shipping route to Pond Inlet and to winter shipping activity that could interrupt important flow edge activities. Therefore the current project proposal considers open-water shipping to Milne Inlet only.
- Two viable shipping routes through Foxe Basin were surveyed by Baffinland, one on either side (east and west) of Rowley and Koch Islands in Northern Fox Basin. Based on feedback expressed during public meetings in Igloolik and Hall Beach in 2007 and 2008, as well as mapped IQ information on marine mammals in Foxe Basin, the eastern route was selected as the preferred shipping route because it is considered less intrusive to marine wildlife and land use.
- Communities requested consideration of several alternative port sites, including Nanisivik Port, East Baffin Bay (between Pond Inlet and Clyde River) and Nuvuit Peninsula/Cape Jansen (at the southern mouth of Steensby Inlet). Baffinland reviewed these options (see Volume 3, Section 6), though none was found to be viable. In 2011, Baffinland through the QIA met with community representatives in Igloolik on several occasions, provided the QIA executive with a site visit of the railway and port alternatives, and funded an independent engineering study to review railway alternatives, and carried out bathymetric surveys at the Nuvuit port site as part of additional engineering evaluations of this important alternative to the communities.
- At a public meeting in Cape Dorset, participants recommended that the Company consider altering the shipping route to travel south of Mill Island rather than to the north (Figure 1-1.1). While ship safety takes precedence, the nominal shipping route has been modified to accommodate this request.
- During the community sessions, there was general consensus that the 2 week on/2 week off work schedule was preferred over other alternatives. Baffinland has committed to the two-week rotation as much as practicable.

Baffinland is committed to ongoing consultation throughout the life of the Project with governments, employees, local communities and the public, through implementation of its Stakeholders Involvement Plan (Volume 10, Appendix 10F-1), which will remain a living document through the life of the Project.

Provisions found in the Management Plans (Volume 10) also reflect public comments. Of note are the provisions incorporated in the Shipping and Marine Mammals Management Plan (Volume 10, Appendix 10D-10).

SECTION 5.0 - BASELINE STUDIES

5.1 SOCIO-ECONOMIC SETTING

The Inuit of the North Baffin region have experienced tremendous social and cultural change over the course of a few decades. Recent changes, particularly residential schools, have affected family integrity and by implication, social cohesion. Elders are becoming more engaged in community life and in the education of youth in traditional skills. At the same time, a shift toward Western middle-class expectations appears to be taking place among Inuit youth.

The land-based economy is a major part of the livelihoods of many residents of the North Baffin. Harvesting from the land and sea is estimated to produce food worth between $12 million and $20 million per year in this region. The amount of work to harvest this food is estimated to be similar to 350 full-time jobs.

In addition, residents of the region earn money through sales of arts and crafts, through employment, and from various government social programs such as Income Support. The personal income reported by residents of the five North Baffin communities amounted to $83 million per year.

Residents' demand for wage employment is very high. People want to work, even when this work requires flying to remote locations. However, job opportunities in the North Baffin are limited. Inuit employment in North Baffin is characterized by many individuals earning small levels of income, well under what full-time work would pay, and a small number earning full-time, year-round incomes. Most residents working in full-time jobs in Iqaluit do so year-round. In North Baffin, many more full-time workers are engaged in these jobs for only short periods. Women who work full-time jobs in North Baffin are more likely to work year-round than are men.

Nunavut relies on federal transfer payments for at least 90 % of its revenue. Government employment is a mainstay of the wage economy, with many of Nunavut's small businesses and retail outlets established to support government needs or those of public servants. The public sector accounts for a large portion of Nunavut's economic activity. Government jobs in administration, education and health account for about half of all employment earnings in the territory. Construction has been growing as government infrastructure has been established.

These communities have a subsistence economy and have experienced dramatic population growth over the last 20 years. Over 70 % of the population is under 25. Underemployment and lack of opportunities is causing social stress. Community Elders recognize that the communities must position themselves to enter the wage economy.

For many North Baffin households, harvest of country food provides an important contribution to overall well-being. In all five communities, caribou, ringed seal, and Arctic char are of major importance. In addition, walrus is a major species of importance in Hall Beach and Igloolik, while narwhal is a key component of the harvest among households in Arctic Bay, Pond Inlet and, to a lesser degree, Clyde River.

5.1.1 Socio-economic Baseline Studies

The socio-economic baseline presents information and data needed to assess the socio-economic impacts of the Project and to understand how the Project fits into the local social and economic environment. The baseline report is structured to meet several specific objectives:

- Identify socio-economic conditions and trends that may interact with the Project;
- Identify variability in socio-economic indicators across communities and social groups;
- Present data to help measure contributions of the Project to the achievement of community development objectives; and
- Describe conditions in areas that will be monitored should the Project proceed.

Qualitative data gathered from the community-based research for the Project provide insight into the perceptions, expectations, values, concerns, and aspirations of study area residents. Analysis of this qualitative data helped to frame the issues of importance to study area residents and provided the essential structure of the socio-economic baseline report. These perceptions also set the quantitative (statistical) data in a context that allowed for better interpretation.

Study area-specific statistical data were compiled mainly from government sources, including standard and customized 2006 Statistics Canada Census data, standard and customized Statistics Canada tax file data, and a range of Government of Nunavut data. In addition, data provided by the major employers involved during the exploration and bulk sample activities were compiled.

5.1.2 Population Characteristics

Inuit and Non-Inuit Components of the Population

The population of the North Baffin region are mostly Inuit (94 %), with non-Inuit accounting for just 6 %. The balance between Inuit and non-Inuit in Iqaluit is more even, with 60 % Inuit and 40 % non-Inuit. While the Inuit population has a very young age profile, nearly all non-Inuit residents in North Baffin are of working age. In Iqaluit, 58 % of the population - 66 % of the male population - age 40 to 64 are non-Inuit. Non-Inuit men also account for a majority of Iqaluit's male population age 25 to 39. The demographic data suggest non-Inuit residents move to local study area (LSA) communities primarily to work and that relatively few are raising families or living out their retirement years in these communities.

Gender Ratios

The ratio of non-Inuit males to females is approximately even in the younger half of the working-age population. In the older age categories there are substantially more men, with a ratio of roughly 60 % males to 40 % females in North Baffin and Iqaluit. Among the Inuit population, more males than females are resident in North Baffin, across all age groups. The opposite picture is seen in Iqaluit, where the number of Inuit females is greater than that of males.

Stability of Residency

The Inuit population of North Baffin communities was very stable over the past decade. Decentralization of territorial government jobs to Igloolik and Pond Inlet during this period did not lead to major relocation of Inuit workers from other communities. This contrasts sharply with the non-Inuit population of North Baffin, where only 1-in-3 (35 %) non-Inuit residents resided in the same community five years earlier. The level of instability of the non-Inuit population was even slightly higher during the five years leading up to the previous census in 2001.

The residential stability of the Inuit population in Iqaluit is less than that in North Baffin. In the five years leading up to 2006, 2-in-10 Inuit moved to Iqaluit from another community, province or territory. This level of mobility declined from a rate of 1-in-4 (24 %) before 2001. Stability of the non-Inuit population is considerably higher in Iqaluit than in North Baffin, and appears to be trending toward greater permanency. Before 2001, 41 % of this population had been resident in the capital for at least five years. By 2006, this stable population had increased to 50 %.

Net Migration into the Baffin Region

There are indications of an increasing net movement of Inuit from communities in the north to urban centres in the south. During the 10-year period between the 1996 and 2006 censuses, the Inuit population in regions outside traditional Inuit lands, or "Inuit Nunaat," increased 62 % from 6,795 to 11,000 individuals. In 2006, Inuit living outside Inuit Nunaat accounted for 21.8 % of the 50,480 Inuit living in all regions of Canada.

As suggested by the analysis of the non-Inuit component of the LSA population, there has been tremendous movement between southern points-of-origin and Iqaluit and North Baffin, with nearly half the population changing-over within five years. The majority of this group comes to pursue employment opportunities and, as indicated by the age profile, does not settle permanently in the region.

Tax filer data indicate that during the period from 1997 through 2002—leading up to division of Nunavut from the Northwest Territories (NWT), and for several years into the establishment of the territorial government-the net flow of people between the Baffin region and other parts of Canada was mostly into the region. Since 2002, this has reversed, with more people leaving the Baffin region than moving in. This net migration is small, however, in the order of 150 individuals per year, or less than 1 % of the total population.

Other regions of Nunavut as well as the Atlantic region of Canada have consistently seen more people leave for the Baffin region than they saw arrive from it. Since 1995-96, 548 more individuals moved to the Baffin region from Atlantic Canada than returned to that region. By contrast, the Baffin region provided a net contribution of 497 people to the population of Ontario during the same period, as well as 373 to the NWT and 383 to western Canada.

Family Structure

Most Inuit across the LSA live with immediate family members. Among non-Inuit residents, a substantial number live either alone or with unrelated individuals. In North Baffin, 94 % of Inuit live with immediate family members (i.e., in a "census family"). Only 3 % live either alone or with unrelated people, and the remaining 3 % live with relatives. Perhaps unexpectedly, this picture extends to Iqaluit as well. The picture for non-Inuit is rather different, with approximately 3-in-4 living with immediate family members, while most of the remainder either live alone—14 % in Iqaluit and 21 % in North Baffin—or with unrelated people—9 % for Iqaluit and 6 % for North Baffin.

Children in Single-Parent and Two-Parent Families

In Nunavut, 1-in-4 children live with a single parent and the remaining three-quarters live with two parents. The incidence of children living in single-parent families in Iqaluit is similar to the territorial average of 26 %, while in North Baffin communities the rate ranges from 26 % in Hall Beach and Igloolik to 20 % in Arctic Bay, Pond Inlet and Clyde River. In comparison, approximately 22 % of Canadian children live in single-parent families, suggesting that the incidence in the LSA is in line with the national situation.

Language

The Inuktitut language is prevalent in North Baffin LSA communities. Nearly all Inuit residents of the North Baffin LSA learn this language as their mother tongue, and for 9-in-10 residents, Inuktitut is the language most commonly spoken at home. A portion of the population, ranging from 6 % in Hall Beach to 24 % in Igloolik, consists of unilingual Inuktitut speakers. In North Baffin, nearly 2-in-3 Inuit work in settings where Inuktitut is the prevalent language.

The linguistic picture in Iqaluit is dramatically different from that of North Baffin. In the capital, slightly more than one-fifth of the Inuit population did not learn Inuktitut as their mother tongue and fewer than half speak Inuktitut at home. Only 20 % of Inuit in Iqaluit speak Inuktitut in the workplace, and only 3 % are unilingual Inuktitut speakers. It seems clear that while Inuktitut is healthy in North Baffin, it is under considerable threat in Iqaluit.

5.1.3 Education and Training

Early Childhood Education

Early childhood education (pre-school) opportunities are not widely available across the study area. Before-school and after-school programs, which are important for parents working during the day, are absent in nearly all LSA communities, except for Clyde River, where an after-school program has been in place since 2008. The level of service in Iqaluit is better, with full-day and part-day preschool programs and after-school programs available.

Grade 12 Graduation

The number of high school graduates has been increasing in Iqaluit and across North Baffin over the past 20 years. In total, 390 North Baffin and 393 Iqaluit residents have graduated from high school since 1987. However, while Grade 12 enrolment in Iqaluit and Pond Inlet has increased in recent years, it has declined elsewhere in the LSA.

Post-Secondary Qualifications and Training

While education levels are low across the study area, many residents of the RSA have been engaged in training and upgrading through the local college system and through various specialized programs. Arctic College, which has Adult Learning Centres in every community, reports that between 1,200 and 1,350 Nunavummiut enrol in full-time programs at the college. This equates to roughly one-quarter of the population between 20 and 29, or one-fifth of the 20-to-34 age group.

The focus of post-secondary training varies between Inuit males and females. Inuit men acquired post-secondary qualifications in areas such as construction trades and mechanical/repair technology, culinary services, corrections officer/services, peace officer/police, fire protection, heavy-truck driver, commercial driver, heavy-equipment operation, and commercial fishing. Inuit women have focused more on the fields of business, management, public administration, social and behavioural sciences, law, and education. Some men, particularly in Iqaluit, have also pursued programs focused on business, management, and public administration.

Literacy and Numeracy

Low baseline levels of literacy and numeracy present a major challenge to labour force development in the LSA and across Nunavut. In a report on adult learning in Nunavut, the largest group of adult learners in the

territory are said to be at the lowest two levels of the four-level scale used in the International Adult Literacy and Skills Survey.

5.1.4 Livelihood and Employment

Importance of the Land-Based Economy to North Baffin Livelihoods

The land-based economy is a major component of the livelihoods of many residents of the LSA, particularly in North Baffin. The North Baffin land-based economy generates productive work equivalent to an estimated 356 full-time jobs annually, or approximately one-third the labour demand from the formal wage economy in the region. This roughly translates to 0.6 million hours of labour.

The harvest effort of residents of the five North Baffin LSA communities is estimated to yield approximately 830,000 kg of food. The cost to purchase an equivalent amount of imported food through local retailers is estimated at $12 million; this is the in-kind value to households of harvest activity in the land-based economy. Since retail foods are subsidized through the food mail (and now through the Nutrition North) program, the "economic value" of the land-based harvest should take this into account, leading to a total economic value of the land-based harvest of approximately $20 million.

Demand for Workers in the Formal Labour Market

The current amount of work opportunity generated by the wage economies of the study area amounts to the equivalent of 3,700 to 3,900 full-time, year-round jobs, of which 1,100 are located in North Baffin and 2,600 to 2,800 in Iqaluit. This equates to approximately 2 million hours of work in the North Baffin labour market each year, and 4.7 million hours of work in the Iqaluit labour market.

The number of jobs occupied by women has generally increased at a greater rate than those occupied by men. In North Baffin, the growth in demand for male labour has not kept pace with the growth of the Inuit male population. In Iqaluit, male-occupied job growth and Inuit male population growth rates appear to have increased at similar rates. The jobs occupied by women are more narrowly concentrated in public sector industries. While these sectors might be fairly stable in terms of boom and bust cycles, they are less likely to experience dramatic growth, suggesting that women coming into the labour market might need to find work in sectors not traditionally filled by women.

In terms of the skills required by the LSA labour market, approximately 18 % of occupations in North Baffin, and 21 % in the Iqaluit labour markets require a university education. One-quarter to one-third of occupations in the study area require college or apprenticeship levels of training and skills. A similar number of occupations require high school education and/or occupation-specific training. The remainder of jobs can be accessed by unskilled workers capable of undertaking on-the-job training.

Supply of Workers to the Formal Labour Market

A total of 2,255 North Baffin residents worked to "fill" 1,100 North Baffin jobs, a rate of 2 workers per job. In Iqaluit, 3,665 individuals worked to fill the 2,600 to 2,800 jobs in that labour market, a rate of 1.3 to 1.4 workers per job. Wage-earners in North Baffin deliver 1.7 to 2 million hours fewer than they would if they were all working full-time, full-year. Wage earners in Iqaluit deliver 3 million hours fewer than they would if they all worked full-time, year-round.

Demand among residents for wage employment in the study area is very high, even when this work requires working in remote locations away from the community. Inuit employment in North Baffin is characterized by many individuals earning small levels of income, well under what full-time work would pay, and a small

number earning full-time, year-round income levels. The picture of Inuit employment in Iqaluit suggests a blend of work patterns with many individuals earning small wage income and many earning full-time wage levels. Most residents working in full-time jobs in Iqaluit work these jobs year-round. In North Baffin, many more full-time workers are engaged in these jobs for only short periods. The highest rate of short-term employment among full-time workers is among the younger male workforce. Women who work full-time jobs are more likely to work year-round than are men.

Experience from the Mary River Exploration and Bulk Sample Activities

A total of 1.3 million hours of fly-in/fly-out labour was delivered during the Mary River exploration and bulk sample activities by 776 workers from across Canada over a three-year period. Of this labour, 0.4 million hours were provided by 265 North Baffin residents, and 212 by residents of Iqaluit. Women accounted for 11 % of the total workforce. During peak activity in 2008, 0.8 million hours were worked at the Project, of which 0.2 million hours were provided by residents of the LSA.

Approximately 4-in-6 workers hired from North Baffin worked for at least three rotations of two weeks in, followed by two weeks back home. However a substantial number, 1-in-5, did not complete one full 14-day rotation. Among workers hired from Iqaluit, 1-in-8 did not complete one full rotation. Both North Baffin and Iqaluit labour forces continued to supply new workers for the three-year period for which data were analyzed. Therefore, the Project definition phase did not “tap out” the study area labour force.

Sources of Income in LSA Households

In addition to the $12 million in-kind income generated for North Baffin households through harvest activities in the land-based economy, residents gain monetary income through employment and various social transfers. In 2007, personal income reported by residents of the five North Baffin LSA communities amounted to $83 million, and income reported by Iqaluit residents amounted to $196 million. Among the resident Inuit population, earned income accounts for between 70 % (Clyde River) and 81 % (Pond Inlet) of total income. Most of the remaining income, ranging from 17 % (Pond Inlet) to 27 % (Clyde River) is derived from government transfers. Other income, such as that from investments, accounts for less than 3 % of total income. In Iqaluit, the role of government transfers is much lower than in North Baffin communities, accounting for only 8 % of the total income of the Inuit population of the city.

5.1.5 Human Health and Well-Being

Population Health Status

Life expectancy at birth in Nunavut is 10 years shorter than it is for the Canadian population overall. From 1999 to 2001, life expectancy at birth in Nunavut was 68.7 years. Life expectancy at age 65 is similar among the male populations of Canada and Nunavut. However, while Canadian women age 65 can expect to live an additional 20.6 years, a Nunavut, woman’s average life expectancy at age 65 is 11.4 years.

In Nunavut the birth rate is roughly twice that of Canada generally, while the incidence of pre-term delivery and low birth weight are both high relative to Canada overall. Nunavut’s infant mortality rate has been improving. It is, however, much higher than in other regions of Canada.

The major causes of death in Nunavut are cancer, suicide, heart disease, and accidents. The profile of causes of death in Nunavut differs from that of Canada overall. Age-standardized death rates for Canadian

provinces and territories can be used to compare death rates in Nunavut's young population with those of the aging Canadian population:

- The proportion of deaths by suicide in Nunavut is nearly four times that of Canada;
- Transportation-related deaths are more than twice as common in Nunavut as in Canada;
- Cancer accounts for a slightly higher share of deaths in Nunavut than in Canada;
- Heart and other cardiovascular disease account for a lower share of deaths in Nunavut; and
- Other causes of death account for a greater share of deaths in Canada than in Nunavut.

Community Perspectives on Social and Cultural Change

The Inuit of the North Baffin region have experienced tremendous social and cultural change over the course of a few decades. During the Arctic Bay working group conference, several participants spoke about the effect that recent changes, particularly the residential schools, have had on family integrity — and, by implication, social cohesion. Indication that Elders are becoming more engaged in community life and in the learning of the younger generation came out of community research. In addition, though, a shift toward Western middle-class values and expectations was observed to be taking place among Inuit youth.

Social change is clearly related to livelihood options. A shift from traditional to wage economy livelihoods was clearly identified by an Elder in Pond Inlet as being related to an understanding that the capacity of the environment has become inadequate to support today's population's food needs. Many other comments were made about the importance of employment both for gaining self-reliance as well as to support traditional harvesting activities. Finally, the importance of strong social networks in supporting people's ability to take on the challenges of fly-in/fly-out rotational work was raised.

Alcohol and Drugs in the LSA

Tobacco smoking rates in Nunavut are also high. Smoking during pregnancy has major adverse effects on fetal development, contributing to low-birth weight and pre-term delivery. The relationship between indoor smoking and respiratory problems has recently been highlighted in a study of Nunavut housing and respiratory disease.

Alcohol abuse is an issue that concerns many residents, health practitioners, social service providers and those involved in the justice system. On the health side, use of alcohol during pregnancy is known to cause brain damage in the fetus, leading to serious consequences for the individual born with fetal alcohol spectrum disorder (FASD). Community perceptions and concerns related to substance abuse, along with local alcohol policies and other related issues include the following:

- Perception that alcohol and drugs becoming more prevalent;
- Misuse of income on substances affects individuals, families, and the community;
- "If there is more money then there is potentially more availability of substances to abuse";
- "...but, even those without jobs are said to be able to purchase alcohol";
- Some are making an active effort to quit using drugs;
- Drug/alcohol-free workplace is desirable: "Access to a drug-free place will be good for people"; and
- FASD is a concern. Education to warn pregnant women not to drink is noticed by some.

In the Baffin Region, Iqaluit is the only "open" community, while Kimmirut, Pangnirtung, and Sanikiluaq are the only "dry" communities. The five communities of the North Baffin LSA each have policies in place to restrict access to alcohol. Bootleg alcohol, however, is considered to be widely available at a high cost.

Incidents of Reported Crime

The rate of violent crime in Nunavut is the highest across Canada, varying from between six and eight times the national rate during the period 1999 to 2007. Within the LSA, violent crime across North Baffin has been slightly over half the rate in Iqaluit.

A territorial breakdown of crime incidents provides insight into the nature of this violence. The rate of sexual assault across the territory reached a peak in 2003 at over ten times the national rate. While rates of sexual assault continued to be high into the later part of the decade, a decline has been noted, with the 2008 rate being the lowest of the ten-year period. Assaults with weapons and assaults causing bodily harm have increased consistently and dramatically over the decade.

Accidents and Unintentional Injury

Potential years of life lost (PYLL) among the male population of Nunavut is 3,465 per 100,000 population per year. The corresponding rate for Nunavut women is 673 per 100,000. This is the equivalent of roughly 110 PYLL per year for men and women due to unintentional injury in the North Baffin LSA, and 140 PYLL in Iqaluit. Workplace injury frequency is measured in days of work lost or modified. In the Nunavut/NWT mining sector an average of 27 days of lost/modified work is experienced per 200,000 hours of labour supplied. Over a three-year period these territories experienced one workplace fatality, which could be equivalent to up to 60 PYLL.

Food Security

For many North Baffin households, the harvest of country food provides an important contribution to overall wellbeing. In all five communities, caribou, ringed seal, and Arctic char are of major importance. Walrus is a major species of importance in Hall Beach and Igloolik, while narwhal is a key component of the harvest among households in Arctic Bay, Pond Inlet and, to a lesser degree, Clyde River. The rate of subsidy that is effectively applied to country food harvests is estimated to average approximately $1.23/kg of edible food. This equates to between one-tenth to one-fifth the subsidy rate applied to southern foods transported for sale in the North Baffin LSA.

The amount of nutritious, perishable food shipped per person in the LSA has increased steadily since 1999. During the decade total per capita shipments have increased by 52 %. This observed increase in per capita retail food consumption would be consistent with an increasing reliance on retail foods to meet household nutritional requirements. A positive relationship appears to exist between increasing income reported by women and the amount of nutritious, perishable foods purchased from retailers.

5.1.6 Economic Development and Self-Reliance

Sectors of the Economy

The public sector accounts for a large portion of Nunavut's economic activity; jobs in administration, education and health account for about half of all employment earnings in the territory. Public administration accounted for $271 million, or 24 %, of the territory's total $1.1 billion GDP in 2008. Education and health expenditures account for another $202 million. Combined, these public expenditures account for more than 40 % of the territory's GDP.

Nunavut's mining sector is once again expanding following closure, in the previous decade, of the Nanisivik and Polaris mines in the LSA and the Lupine and Jericho mines in the Kitikmeot region. The Meadowbank Mine outside the study area in the Kivalliq region is expected to begin contributing over $90 million to

Nunavut's GDP. Medium-term prospects for expansion in the sector include Newmont's Hope Bay development in Kitikmeot and AREVA Resources' Kiggavik project in the Kivalliq region. The Mary River Project is the only project In the LSA that has progressed to project description and feasibility study stage. A major challenge for the territory is to develop the labour force and entrepreneurial capacity to participate in the economic activity generated by the mining sector. The shortage of skilled workers is expected to lead to local workers filling between 15 % and 20 % of Meadowbank jobs (Conference Board of Canada 2010). Major investments in training will be required to improve these numbers. Communities, government, and the mining companies must work effectively together to achieve the potential for the mineral sector to contribute to sustainable community development.

The construction industry in Nunavut is driven by a combination of government-funded infrastructure projects and major private sector developments such as the Meadowbank Mine Project. Territorial government planned capital expenditures for the North Baffin LSA total $32.3 million for the planning period 2010-11 to 2014-15, with another $33 million planned for Iqaluit. Across the territory, $381.6 million in capital expenditures is envisioned over this period.

The transportation sector provides a critical link between Nunavummiut in small communities to the specialized medical and educational services available only in larger centres. For the 2010/2011 fiscal year, for example, the territorial government has budgeted $47.9 million for medical travel, an expenditure item that has increased at a rate of 6.9 % year-over-year, from a level of $32.6 million in 2005-06. Goods imported into Nunavut by air and marine transport totalled $900 million in 2008, and the Iqaluit airport was among the top 20 busiest airports in Canada, based on number of flights. In spite of the tremendous importance of air and marine transport, the sector is largely based outside the territory and transportation contributes less than $21 million to the territorial GDP. The high cost of transportation means that many Nunavummiut face limited mobility options.

Nunavut has a small commercial fishery based on turbot and shrimp fished offshore primarily in Baffin Bay and Davis Strait. Nunavut's share of this fishery has grown significantly during the past half decade. In addition to the offshore fishery, commercial Arctic char production is carried out at plants in Pangnirtung, Iqaluit, Rankin Inlet, and Cambridge Bay. Although the economic value is modest, the quality of this product is high and potential for value-added processing and marketing, including supplying the local Nunavut market where high retail food prices are the norm, continues to be realized. A modest commercial caribou and musk ox harvest is also carried out, the former predominantly from Coral Harbour and the latter from Cambridge Bay. As with the char fishery, these products represent high-value specialties that sell for premium prices. Given the importance, and precedence under the NLCA, of the traditional non-commercial harvest of these species, the potential for expansion of commercial fish and wildlife operations is subject to inherent biological limitations.

Most visitors to Nunavut come to the territory for work. Business travelers account for approximately three-quarters of all Nunavut visitors. Between 3,000 and 6,000 visitors come each year for non-work purposes and this component spends $6 to $12 million annually. An amount of $500,000 is estimated to be allocated each year across the North Baffin LSA to tourism activities outside business travel and sport-hunting. In addition to spending by tourists who come to visit friends and family living in the north, these expenditures also include those of cruise ship visitors ($15,000 in one community), visitors to the national park, and adventure tourists.

Community Economic Development (CED)

The municipalities of the LSA regularly undertake broad planning processes that engage many groups in the community. These processes offer an opportunity to reflect on strengths and challenges faced by the community. This self-reflection typically addresses social issues, cultural change, and issues related to education, business, and economic development. Reflection on how well local organizations are working together to address common goals is an important outcome of this process, as this can improve institutional capacity at the local level. It can be expected that with recent establishment of the Regional Socio-Economic Monitoring Committees, which involve the hamlet mayors, the CED planning process could link in with monitoring progress in key areas.

Infrastructure gaps are frequently suggested as important barriers to business, social, and cultural development in communities across the LSA. Hamlet CED plans call for many types of infrastructure: space for small businesses, workshop space for carvers, visitor centres, fish plants, swimming pools, day cares, youth centres, healing centres.

Major economic projects are widely seen to present opportunities to support achievement of local development aspirations. The mechanisms that drive these opportunities typically include project effects on human resources development through training and employment, expansion of local business opportunities by raising the level of disposable income available to purchase local goods and services, and by offering opportunities to supply goods and services to the Project, and in development of local and regional infrastructure through direct contributions as well as through increased government revenue.

Local wealth is a significant component for community development. In 2007 personal income reported by residents of the five North Baffin LSA communities and Iqaluit amounted to $83 million and $196 million respectively.

Contracting and Business Opportunities

The LSA business community is small, reflecting the small populations and low income levels of these communities. This is particularly the case in the North Baffin LSA communities, where two dozen businesses are registered with Nunavut Tunngavik Inc. (NTI) as Inuit firms, and/or with the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) program as Nunavut firms. The business sector in Iqaluit is substantially larger, with a total of 129 enterprises registered with NNI, NTI, or both. In addition to these are a number of businesses that have not registered with either NTI or NNI. These include incorporated and unincorporated enterprises such as local bed and breakfasts, taxi services, outfitters, and others. For example, while there are seven businesses from Arctic Bay registered with NNI and/or NTI, the Hamlet of Arctic Bay Economic Development Plan (2007) identified 26 local businesses. A total of 25 local businesses were identified in the Hamlet of Pond Inlet CED Plan (2010), compared with the 11 listed with NNI and/or NTI.

Self-employment is an important indicator of entrepreneurial capacity, as it can be a stepping-stone toward larger-scale business activities. The level of self-employment across the Regional Study Area (RSA) is fairly low, as is the amount of income earned through self-employment activities. In 1996, a total of 270 Baffin residents reported income from self-employment business activities. By 2004, this number had increased to 410 individuals. Most (6 out of 10) of these self-employed entrepreneurs live in Iqaluit, with the remaining 40 % distributed across the other Baffin communities. In the North Baffin LSA, approximately 70 individuals earned self-employment income in 2004.

Most North Baffin LSA residents reporting self-employment income earned less than $5,000 through their business activities. In Iqaluit, self-employment earnings are a little higher, with half of self-employment income earners reporting more than $5,000, and 1-in-5 reporting $35,000 or more. Of the self-employment income earners in Iqaluit, 1-in-4 had family incomes with no other source of market income. Most people who report self-employment income however, live in families where a wage income is also earned. This other income can be substantial.

In Iqaluit in 2004, 100 of the 240 self-employment income earners, or 42 %, had family wage incomes of $85,000 or more. In the rest of the Baffin region, a similar proportion of self-employment earners (24 %) have no other family wage income. In these communities, however, the level of other family wage income is lower, with only 41 % of families having wage incomes of $35,000 or more, suggesting that employment income plays an important role as a spring-board to self-employment. While a few families rely on self-employment as their main source of income, it is more common that self-employment activities are nurtured by the wage employment earnings of either the self-employed person or a family member, or both. This pattern appears to be stronger in Iqaluit than it is in the other Baffin region communities.

Supply of Goods and Services to the Mining Sector

During the Mary River Project definition phase, from 2006 through August 2010, $49.7 million worth of goods and services were procured by Baffinland from vendors based in the North Baffin LSA and Iqaluit. Of this amount, $10 million was purchased from businesses based in North Baffin, 3 % of total procurement, and $39.9 million from vendors based in Iqaluit, or 11 % of total procurement.

5.2 BIOPHYSICAL TERRESTRIAL ENVIRONMENT

Superficial landforms and deposits in the Mary River Project area are associated with widespread glaciation on Baffin Island. Surface geology consists of locally abundant sediment deposits from glaciers and rivers. Occasional outcrops of granitic and sedimentary rock formations occur. The North Baffin region containing the Mary River area lies within the Committee Belt, a granite-greenstone terrain mixed with sedimentary and volcanic rock. The mountains to the east are older than 540 million years old, and the lowland plateaus to the west are about 250 to 540 million years old.

The Project is situated in the Northern Arctic Ecozone. The climate is semi-arid and permafrost coverage is continuous to a depth of 500 metres, with an active layer of up to 2 metres. Extremely cold temperatures, combined with the permafrost, result in a short period of runoff that typically occurs from June to September. All rivers and creeks, exception for the very largest systems, freeze during winter. Due to the combination of low temperatures and low infiltration, vegetative cover is minimal and surface water is abundant. The region is dotted with thousands of small lakes and streams.

The region experiences near 24-hour darkness with less than two hours of twilight from November to January. During the winter months the treeless topography and fine powdery snow produce blowing snow conditions, resulting in restricted visibility. Frost-free conditions occur from late June to late August. There is continuous daylight from May to August. The months of July and August usually experience the greatest precipitation. From September to November, temperature and the number of daylight hours decrease, and by mid-October the mean daily temperature is generally well below 0 degrees C. The highest snowfall typically occurs during this period.

Air quality and noise levels in the Project area are typical of remote environment. Freshwater quality measurements in the Mary River area indicate naturally elevated concentrations of dissolved oxygen, turbidity, aluminium and iron. Some average values for pH, as well as cadmium and mercury in fresh water

are greater than levels recommended by the guidelines of Canadian Council of Ministers of the Environment.

Vegetation is relatively sparse in much of the Project area and is generally consistent with flora of Arctic regions. No plant species considered to be "rare" in Canada were found to occur in the survey locations.

Terrestrial mammals in the region include barren-ground caribou of the North Baffin herd, wolf, Arctic and red fox, ermine, Arctic hare, and lemmings.

North Baffin caribou are currently present at low densities and their numbers seem to vary in accordance with a 60- to 70-year cycle. The last period of caribou abundance in the regional study area was 1980 to 2000, and the previous period of low abundance was the 1940s. Caribou are expected to remain at low numbers for the next couple of decades. There is evidence that caribou occur throughout the entire region. While some populations of caribou migrate between preferred habitats in summer and winter, North Baffin caribou appear to be non-migratory and are likely to be found relatively equally in many locations throughout the Project area.

Migratory bird species observed in the Mary River study area include snow geese, ducks, eiders, loons, and mergansers. Raptors found include rough-legged hawks, peregrine falcons, gyrfalcons, and snowy owls. Relatively low densities of songbirds and shorebirds were recorded throughout the region.

There are two fish species in the freshwater environment: Arctic char and a minnow species named nine-spine stickleback. The inland waters near the Project mainly contain landlocked char, though anadromous or sea run char are present in a lake next to Steensby Port and up the Cockburn River system next to a portion of the Railway.

5.2.1 Meteorology and Climate

The North Baffin region is located within the Northern Arctic and the Arctic Cordillera Ecozones. Northern Baffin Island has a semi-arid climate with relatively little precipitation. The region experiences near 24-hour darkness, with less than two hours of twilight from November to January. During winter the treeless topography and fine powdery snow produce blowing snow conditions resulting in restricted visibility. Steam fog may occur in areas of open water, but does not persist more than a few miles downwind. Ice fog is infrequent. Frost-free conditions occur from late June to late August. There is continuous sunshine from May to August. The months of July and August bring maritime influences and are usually the wettest (snow may still occur), and southerly winds bring fog. From September to November, temperature and daylight hours start to decrease, and by mid-October the mean daily temperature is well below 0°C. The highest amount of snowfall typically occurs during this period. A condition called "Arctic white-out" often occurs during this time, where diffuse white clouds blend into the white snow-covered landscape, reducing visibility and increasing the likeliness of disorientation. This condition can also occur in April and May.

5.2.2 Air Quality, Noise and Vibration

Ambient air quality sampling equipment was deployed at the proposed Mary River mine site area in July 2007 to measure baseline ambient TSP, PM_{10}, SO_2, NO_2, O_3 and dust. The monitoring results from this short-term air quality baseline monitoring program indicate that all the parameters measured are well below applicable indicator thresholds.

Monitored data from the Mary River program were generally lower - and often much lower - than values for the Northwest Territories Environmental Protection Division long-term monitoring stations. Maximum values

from the baseline ambient air quality data from the Mary River monitoring program will be used as baseline levels.

A baseline assessment of ambient noise levels at the proposed mine and port locations were completed and determined that noise levels are faint. Sound exposures ranged from 25-30 dBA in the locations sampled.

5.2.3 Landforms, Soils and Permafrost

The Mary River iron deposits are located within the Mary River Group, an assemblage of Late-Archean metasedimentary to metavolcanic rocks that have been folded and preserved in greenstone belts. The Mary River Group greenstone belts are present as fragmented remnants stretching from Bylot Island south to Eqe Bay, with a maximum thickness of 4,000 m.

Iron formations occur in varying thicknesses discontinuously within the Mary River Group meta sedimentary units but are typically not present in economically extractable thicknesses or configurations except in the Mary River area. The high-grade iron ore at Deposits No. 1, 2, 3 and 4 were discovered in 1962, and these initial hematite-magnetite mineralized zones were mapped out within extensive belts of banded iron formation in the area over the next three years. As typified at Deposit No. 1, the high-grade iron formations are inter layered with thin bands of chlorite-actinolite schist, staurolite-garnet-mica schist and banded iron formation across their strike width, with the entire assemblage up to 400 m-thick.

The Project Mine Site area is located in a major glaciofluvial outwash deposit in what appears to be a classic “U’ shaped valley. In addition to the glaciofluvial deposits, there appears to be some direct glacial deposition consisting of kames, moraines, and eskers in and around the southeastern portion of Sheardown Lake. The outwash valley is essentially a relatively flat plane with very little local relief, the major exceptions being along bodies of water, esker deposits and adjacent to the edges of the valleys. The walls of the valley are generally steep and abrupt and when looked at from a distance, distinct terrace levels are easily distinguished.

The Milne Inlet Tote Road alignment generally follows a glacial valley oriented northwest-southeast to the Mary River Camp/Mine area. The surficial deposits along this alignment include till veneer or blankets on the higher elevations with some drumlins and moraines (in places). Glaciofluvial outwash sediments (gravel and sand) forming braided floodplains, terraces and fans or stratified glacial drift (gravel and sand) are typically found in the valley floors. Limited bedrock exposure is present along the Milne Inlet Tote Road.

The dominant landforms and deposition features in the Milne Inlet area are typically of glacial activity, marine and mechanical forms in various degrees. Glacial activity is not overly apparent on the immediate site but is more pronounced in the higher elevations south of the site. Marine and mechanical features are most predominant with terraces and strand (beach) lines formed by marine action which have been cut by mechanical features, some of which may be attributed to permafrost. Wind appears to have been responsible for some drifting on the finer grained soils on the lower part of the site. Recently deposited colluvium is present on many of the slopes and side hills in the area. The action of surface water has produced numerous sharp gullies along water-ways. Marine clays were also noted at some locations at the site.

The topography of the Rail Alignment to Steensby Port is generally quite hilly, with the exception of the Ravn River area, which is relatively flat. Glaciated valleys are evident along a portion of the alignment. The surficial geology of the RSA is also characterized by the recent (relatively) glacial activity of Baffin Island. Surficial geology consists of several types of deposits including glacio-lacustrine sediments, alluvial

sediments (alluvial deposits), end moraine till, and till veneers and blankets. Occasional outcrops of pre-Quaternary bedrock and sedimentary rock formations are also common along the southern section of the Rail Alignment.

Near surface bedrock is dominant in the Steensby Port area. Limited overburden is in the form of marine sediments and localized deposits of till. The majority of the overburden is located in depressions between the numerous bedrock outcrops and is typically overlain by a significant layer of wet organics and boulders.

Project-area soils were classified based on the Canadian System of Soil Classification (Soil Classification Working Group, 1998), and included primarily Cryosols (permanently frozen soils or soils with permafrost within 100-200 cm of soil surface) and Brunisols (soils with weak B horizon development). In general, Project area soils have weakly developed horizons, with a general lack of organic material accumulation. Fine to medium-textured soil materials were generally cryoturbated, and patterned ground phenomena related to permafrost and freeze-thaw cycling were also commonly observed.

Permafrost is defined as soil or rock that remains below 0 ºC for at least two years. The Mary River Project is located in a zone of continuous permafrost. The active layer through the Project area typically ranges from approximately 1 to 2 m but may be greater in areas where there is loose, sandy soil at the edges of lakes or ponds and less in areas with significant layer of wet organics at surface. Unfrozen zones termed “taliks” can exist within areas of continuous permafrost below lakes, under major rivers or near the coast. Taliks may exist under lakes within the terrestrial RSA, particularly larger lakes such as Mary Lake, Angajurjualak Lake and Cockburn Lake.

5.2.4 Vegetation

Vegetation baseline studies were conducted in proximity to the Project from 2005-2008. A total of 760 plots were surveyed, covering the deposit and proposed mine infrastructure area, the Tote Road and rail alternative to Milne Inlet, and the proposed rail alternative routes to Steensby Inlet. Locations within the proposed Steensby and Milne Port area were also surveyed.

Based on the information compiled from the vegetation plots, a vegetation classification system was developed and a species list was compiled. No “rare” Canadian plant species were found. To help develop an understanding of Inuit Qaujimajatuqangit regarding the traditional use of plants by Inuit, studies were carried out with Elders in Pond Inlet. Metals analysis of samples of surface soil and plant foliage from baseline stations in the Local Study Area established a baseline of metal concentrations in plants and soil.

Vegetation of the study areas was generally consistent with flora of Arctic regions and was characterized by short plant heights growing on rocky, sandy or silt soils of low nutrient content. Percentage of cover was dependant on slope aspects substrate and moisture regimes.

5.2.5 Ecological Land Classification

The purpose of the Ecological Land Classification (ELC) was to predict the abundance of selected plant species and/or guilds for the RSA from continuous spatial habitat data and to use these maps of plant species/guilds as well as spatial habitat data to characterize habitat suitability for wildlife. The Mary River ELC includes a descriptive and a quantitative component. The descriptive component was derived from work done by the Federal Government of Canada in the late 1970s and early 1980s. The quantitative component involved the development of a GIS-based model using field data, maps of habitat conditions, statistical analyses, and spatial modeling. A total of 45 variables related to wildlife habitat were incorporated

into the model. The ELC model was used in combination with field data regression analysis and expert opinion to produce habitat suitability for avian VECs.

5.2.6 Terrestrial Wildlife and Habitat

The terrestrial and wildlife habitat baseline report provides the most extensive and thorough summary of North Baffin Island caribou currently in existence. It summarizes and synthesizes the history of government surveys, local harvest, IQ, habitat use, and terrestrial wildlife surveys, and is one of the most in-depth analyses of caribou habitat selection completed in Nunavut.

Results and synthesis of information indicates that north Baffin Island caribou currently occur at low densities and their abundance seems to be cyclical. Inuit harvest data and IQ suggest a roughly 60-to70-year cycle of abundance. The cyclical pattern of caribou abundance is similar to patterns described on Greenland and south Baffin Island. The cause of these changes in abundance is currently unknown. The last period of caribou abundance in the RSA was 1980 - 2000. Caribou numbers are expected to gradually increase in the Mary River Region, but might not recover to historical “highs” until the 2050s. There is evidence that caribou occur throughout the entire region and, therefore, use most of the RSA as some form of habitat. Analyses of habitat use show a greater probability of caribou occurrence for some habitats in summer and winter, but the probability of occurrence of caribou is relatively equal in many locations throughout the Project area.

Wolves and foxes are the dominant carnivores in the RSA and exist at low densities. Very little information was collected on carnivores because they were so rarely observed. Information in published journal articles was supplemented with anecdotal and IQ information specific to the Project area for this baseline.

5.2.7 Birds

Baseline studies were conducted on birds within the Project area to determine species occurrence, abundance, distribution, and diversity within the RSA and LSA. Seasonal occurrence and habitat requirements of species migrating through the RSA and LSA areas and/or breeding in them were also documented. In all three years of study, numerous ground-based and aerial surveys were conducted in each of the five component areas (Milne Inlet, Milne Inlet Tote Road, the Mine Site, railway, and Steensby Port), as well as several appropriate control areas, during the spring migration, breeding season, and fall migration periods for all bird species present.

Forty-six species were seen in the Project study area and 38 of these species nested in the area. Several Peregrine falcon, Rough-legged hawk, and Gyrfalcon nests were found throughout the area in all three years indicating that the area is well used by these species and that they are well distributed throughout the area. A few Snowy Owls were seen in the area in 2006 and 2007, but nearly 200 sightings were recorded in 2008. Only four Snowy Owl nests were found in 2006 and no nests were found in 2007; however, in 2008 105 nests were found. Three Short-eared Owls were seen in 2007 and 2008 (none were seen in 2006) but no nests were found. Short-eared Owls are not known to occur this far north but that may be due to the lack of research.

Breeding Loons were common throughout the RSA in all three years of the study. Four species were seen: Red-throated, Pacific, Yellow-billed, and Common loons (in order of decreasing abundance). Long-tailed Ducks were also very plentiful in these areas. Some breeding Red-breasted Mergansers were seen in the rivers in 2007 and 2008; no broods were seen in 2006, although several groups of non-breeders were present on a semi-regular basis. Hundreds of King Eiders and Common Eiders migrated through the RSA in all three years and although no nests were found in 2006 and 2007, dozens of King and Common Eider

broods were seen along the coastline of Steensby Inlet every year, indicating that this area was used for nesting and brood-rearing.

Thousands of Snow Geese also migrated over the RSA each year in the spring and fall. Over 250 nests were found within the RSA over the three years of study. Each June, Snow Geese stopped over on various lakes around Steensby Inlet to rest and to forage on-shore before continuing their spring migrations northwards. In July and August of each year, they returned again to rest, forage, and moult their feathers before continuing their migration south.

Relatively low densities of songbirds and shorebirds were recorded throughout the RSA in all three years compared to other studies on mainland Nunavut and NWT. Very few of these species were found foraging or nesting in or around Deposits No. 1, 2, and 3 at the Mary River site. Exceptions were Snow Buntings and American Pipits observed in low densities. Higher densities and diversity levels of songbirds and shorebirds were found in low-lying tundra and wetlands found along the two transportation corridors (the Milne Inlet Tote Road to the north, and the proposed railway alignment from Mary River to Steensby Inlet).

Several hundred Glaucous Gulls were observed throughout the RSA in marine and inland environments, as were a few Herring, Iceland, Mew and Thayer's Gulls. Almost 300 gull nests (mostly Glaucous Gulls) were found scattered throughout the RSA.

5.2.8 Hydrology and Hydrogeology

Hydrologic information within the Mary River Project area was obtained from site specific stream gauges and regional data. Field specific data was obtained for locations along the PDA including areas around the Mine Site, Milne Port, Steensby Port and the transportation corridors that will connect the Mine Site to these Ports. In combination field and regional hydrologic information was used as the basis for in assessing aspects of engineering design and environmental assessment of Project activities.

Stream flow usually begins in early to mid-June as temperatures climb above 0^{o}C, and ends in late September to late October. Within the Project area runoff increases very rapidly as a relatively low proportion of precipitation is lost to infiltration, evaporation or transpiration as it makes its way into the channels. Shallow permafrost, cool temperatures and lack of vegetative cover increase this effect. In catchments with significant lakes, these events were attenuated, producing lower peaks and longer duration flow events.

There are numerous factors that can be attributed to the variation of flow described in the Project area. The proportion of lakes within a watershed has a profound effect on water flows. Lakes attenuate rapid runoff events as well diurnal fluctuations in runoff, resulting in much lower intensity and longer lasting storm event runoff and overall more stead flows. Lakes also act to evaporate larger volumes of water than does the surrounding land, therefore lowering the mean annual runoff in catchments with large lake components. Furthermore, because the lakes are still free of ice when precipitation begins to fall as snow and permafrost melt ends, rivers fed by lakes freeze up approximately a month later than systems that do not include lakes.

5.2.9 Surface and Groundwater Quality

Streams sampled for water quality within the Project area typically had naturally elevated concentrations or values for dissolved oxygen, turbidity, aluminum and iron. Some average values for pH exceeded the CCME guidelines as did average values for cadmium and mercury at most sites. Selenium routinely was reported at the CCME guideline. When all areas for stream sampling were compared based on Water

Quality Index values, the sampling locations within the area between Camp Lake and Milne Port indicated the highest value of 99.5, or "excellent" water quality.

Lake profiling indicated that dissolved oxygen and temperature in Mary Lake, Sheardown Lake and Camp Lake all showed vertical thermal stratification in late July and early August. In late August and early September the lakes were isothermic and uniformly mixed throughout the water column. Average values for pH exceeded the CCME range of 6.5 to 8.5 for lakes within the Mine Site area (Mary Lake, Camp Lake and Sheardown Lake). Cadmium and Mercury were at or above CCME guidelines in Mary Lake. Parameters that were at or above the CCME guidelines in Camp Lake and the northwest and southeast basins of Sheardown Lake included cadmium, mercury and selenium.

In areas where sediment samples were collected, the streambeds were typically cobbles and boulders with the samples being collected from the riffle pools behind the larger boulders. Sediment quality at stream and lake sites across the project area were generally good with naturally higher levels of chromium, copper and, to a lesser extent, arsenic, cadmium, mercury, lead and zinc.

5.2.10 Freshwater Biota and Habitat

The freshwater biota and habitat baseline studies provided a synthesis of information related to freshwater biota, including fish and lower trophic level communities, and aquatic habitat. Freshwater biota and aquatic habitat was characterized for Milne and Steensby Ports, the Mine Site area, the Milne Inlet Tote Road and the railway and access road areas.

Site specific data was collected for aquatic habitat (streams and lakes), primary producers (e.g. phytoplankton and aquatic plants), secondary producers (e.g., zooplankton and invertebrates), fish populations and movements and baseline metals in Arctic char (*Salvelinus alpinus*). Only two fish species were present in the study areas - Arctic char and ninespine stickleback (*Pungitius pungitius*). Both species were generally abundant and widespread in distribution; however, ninespine stickleback were absent from the freshwater lakes and streams that were surveyed near the Milne Inlet coast.

All streams with the possible exception of large rivers freeze solid in winter. Lakes provide the only overwintering habitat for both species. Lakes also provide spawning habitat for Arctic char across the study areas. Many streams provide rearing and foraging habitat and potential protection from predators for juvenile Arctic char. Most of the drainage basins that support Arctic char either contain barriers preventing anadromous migrations and/or are distant from the coast and most populations in the five study areas are land-locked. Nearshore zones of larger lakes also provide rearing and foraging habitat and potential protection from predators for juvenile Arctic char, foraging and, in some cases, spawning habitat for adult Arctic char, and overwintering habitat for all life stages. Mercury concentrations in Arctic char muscle exceeded guidelines for human consumption in some fish captured, although concentrations were similar to those reported for other land-locked char populations.

In general, the lower trophic level communities were found to be similar to other areas of the Canadian Arctic. As is typical of Arctic ecosystems, the freshwater environment is relatively nutrient-poor and primary productivity is relatively low. In general, Arctic freshwater ecosystems are characterized by relatively low diversity of zooplankton communities due to low temperatures and nutrients. Results of the baseline studies for Mine Area lakes are consistent with this generalization. The benthic invertebrate communities in the Mine Area are generally moderately diverse, although higher diversity is found in some small tributaries, and are dominated by chironomids.

5.3 MARINE ENVIRONMENT

5.3.1 Marine Physical Environment

The marine physical environment varies across the Project area. Milne Inlet is comprised of a fjord system having water depths reaching over 800 m with depths commonly between 150 and 300 m. Closer to the proposed Milne Port location is a characteristic U-shaped cross-sectional profile common to fjords that has a maximum water depth of approximately 150 m. Phillips Creek and a smaller creek to the east discharge into the inlet and have formed a sand, fjord-head deltaic complex along the southern shore with small estuaries. Hudson Straight is generally between 200 and 400 m in depth with depths north of Ungava Bay reaching 1,000 m. Foxe Basin is a broad shallow depression and is characterized by water depths commonly lower than 100 m. Water depth was in excess of 40 m over most of the area surveyed in 2008. Southern Steensby Inlet is marked by two north-south longitudinal troughs reaching maximum depths of about 145 m, shoaling to a depth of 40-60 m near the proposed port area.

Climatic conditions are similar throughout the Project area with cold, dark conditions throughout the winter and cool to moderate temperatures with 24 hours light during the summer months. Precipitation is primarily snow with moderate rainfall during summer.

Tides and currents vary substantially between Milne Inlet and Steensby Inlet. Milne Inlet tidal currents were generally small (<0.05 m/s) while tidal currents in Steensby Inlet are estimated between 0.2 and 0.4 m/s.

Winter water temperature and salinity in Milne Inlet are uniform with depth at -1.5°C and 32 practical salinity units (psu) respectively. Surface water temperatures of 4.5°C have been measured in the summer, decreasing to approximately -1.5°C at a depth of 45 m. Salinities of 23 psu at the surface were typical of open water conditions.

5.3.2 Marine Water and Sediment Quality

The water quality of Milne Inlet and Steensby Inlet was circumneutral, hard, and clear with moderate amounts of nutrients. Nutrient concentrations tended to be higher in deep waters than they were near the surface, and a distinct upper layer of water was observed. Nutrients are generally higher during the ice cover season than during the open-water season. Overall, nutrient concentrations are generally within range of those found in nearby Arctic waters.

The major elements in water samples collected from Milne Inlet and Steensby Inlet reflect those typical of marine waters (e.g., chloride, sodium, sulphate, magnesium, etc.). Several metals (including cadmium and iron) are present in such low concentrations that they are generally below the analytical level of detection. Mercury concentration at Milne Inlet exceeded the CCME guideline for the protection of marine aquatic life in two samples collected from Milne Inlet.

Sediments in shallow areas of Steensby Inlet tended to have a higher amount of coarse material than those in deeper areas; this was not observed for Milne Inlet sediments. Metal concentrations are higher in sediments with a higher proportion of fines and are similar to concentrations reported in literature. Petroleum compounds measured in Milne Inlet were low, also reflective of the literature. Concentrations of arsenic, cadmium, chromium, copper, lead, mercury and zinc are always below the respective Probable Effects Levels and Interim Sediment Quality Guidelines. Metal concentrations at Steensby Inlet are higher in sediments with higher proportions of fines, similar to trends observed in previous studies of the region. Concentrations of arsenic, cadmium, chromium, copper, lead, mercury and zinc are always below the Probable Effects Levels and most were below the Interim Sediment Quality Guidelines.

5.3.3 Marine Biological Environment

Observations made with underwater video imagery formed the basis of the nearshore seabed habitat mapping at the Port Sites. Vegetation cover was the dominant biotic feature in nearly all observations, with bladed kelps and filamentous red algae being the dominant flora. Overall, the nearshore subtidal vegetation cover is somewhat less in the Milne Inlet survey area than observed at Steensby Inlet. Associated fauna at Milne Inlet is depth stratified, generally sparse, and was most often observed in places where algal cover was low. Brittle stars, sea urchins and bivalve siphons are all commonly observed in Milne Inlet.

Surveys revealed that the coastal habitats of Milne Inlet and Steensby Inlet are typical of periglacial coastal environments where most of the shoreline is dominated by either rock or coarse sediment beaches comprised of poorly sorted boulder, cobble, pebble, and sand. Limited open-water seasons and the coarse nature of the shorelines results in complex, poorly organized shoreline morphology. The presence of sea ice limits the development of intertidal biota, although rockweed was commonly observed along the shore.

Abundances in the nearshore algal community were estimated from analysis of the georeferenced underwater video imagery collected at Milne Inlet. The degree of cover varied with water depth and included benthic bladed kelp, foliose red and filamentous red algae.

Cyclopoid copepod *Oithona similis* dominates the Milne Inlet zooplankton community, followed by *Calanus finmarichus/glacialis* and *Calanoid copepodites*. *C. finmarichus, Pseudocalanus minutus, O. similis, Harpacticoida, Sagitta elegans,* and *Fritillaria borealis* were also present in samples. Zooplankton samples were collected from water depths that ranged to 150 m, and the dominant species were similar to those identified within that depth range in Lancaster Sound in 1979. Calanoida had the highest average density in 2008, followed by the chordate Larvacea, and Thoracica. In 2010, Thoracica had the highest average density followed by Calanoida and Larvacea. Species dominance and richness were similar between the two years. The species *P. minutus* and *Balanus sp*. (nauplius or cypris) were present in 100 % of samples in both years, while *F. borealis, C. finmarichus*, and unidentified polychaete larvae were occasionally absent. In 2010, Harpaticoida and unidentified Calanoid copepodites were also present in 100 % of samples. The dominance of copepods within Steensby Inlet samples appears to be typical for the region, as reported in the literature.

A total of 146 benthic infauna species were identified from Milne Inlet. *Polychaetes* and *ostracods* were the most abundant taxa in Milne Inlet, although copepods, amphipods and several species of bivalves were also common. As reported in previous studies of the Canadian Arctic, the abundance and community composition of benthic infauna in Milne Inlet varies with depth.

The distribution and abundance of epifauna were classified from underwater towed videography. Samples were collected opportunistically during Steensby Inlet algal sampling in the same years. Like the infauna samples, epifauna species are stratified by depth. Although barnacles and bacterial mats were commonly at shallow depths and feather stars are common in deeper waters, anemones are the most abundant taxa at all depths. Polychaetes, usually followed by either Malacostraca or Ostracods, were the most abundant taxa of the 202 benthic infauna species identified from the Steensby Inlet samples. Benthic invertebrate community composition and densities changed with depth with the highest benthic infauna densities occurred between 10 m and 45 m.

The nearshore marine fish community in the vicinity of the Milne Port is characterized by low species diversity and abundance. Arctic char, fourhorn sculpin, shorthorn sculpin, Arctic staghorn sculpin, and Greenland cod were captured during the experimental gillnetting program, with sculpin species accounting

for 80 % of the catch. Muscle samples collected from the Arctic char catch contained an average mercury concentration below the Health Canada commercial export limit of 0.5 ug/g. Although few Arctic char were captured at the Milne Port site, the nearby Tugaat and Robertson Rivers support anadromous char populations.

In general, the marine fish community near the Steensby Port documented during Project specific studies was characterized by low species diversity and abundance. Arctic char, fourhorn sculpin, shorthorn sculpin, and Atlantic lumpfish were captured during experimental gillnetting programs. Arctic char were by far the most common species observed, comprising 90.6 % of the catch. The average concentration of mercury within muscle tissue samples collected from the Arctic char catch was below the Health Canada commercial export limit of 0.5 ug/g.

5.3.4 Marine Wildlife and Marine Habitat

Volume 8, Section 5.0 presents the baseline marine mammal information for the Project area. In total twenty-two marine mammal species are known or expected to occur in the identified RSA including the proposed shipping routes in Baffin Bay and Davis Strait. Species accounts are provided for all species; however, emphasis is placed on species which regularly occur within the RSA. Only one mysticete or baleen whale species, the bowhead whale (*Balaena mysticetus*), occurs regularly in the RSA. Narwhal (*Monodon monoceros*) and beluga (*Delphinapterus leucas*) are abundant in the RSA; other Odontocetes that occur (albeit in low numbers) in the RSA include killer whales (*Orcinus orca*) and northern bottlenose whales (*Hyperoodon ampullatus*). Pinniped species which occur regularly in the RSA include ringed seal (*Pusa hispida*), bearded seal (*Erignathus barbatus*), and walrus (*Odobenus rosmarus*). Polar bears (*Ursus maritimus*) also occur throughout the RSA.

5.3.4.1 Bowhead Whale

Bowhead whales occur seasonally in the RSA, typically alone or in small groups. They are adapted to living in areas of heavy unconsolidated ice and can navigate extensive distances under ice, although they are capable of breaking up to 20 cm of ice in order to breathe. Feeding and calving usually takes place in nearshore, sheltered, shallow waters in summer. During open-water periods their distribution is likely driven by the distribution of prey species. Bowheads are baleen whales (filter feeders), eating pelagic crustaceans as well as epibenthic invertebrates. Traditionally, they have been observed feeding along the floe edge and their presence is often dependent on the tides.

There are four recognized bowhead stocks, one of which (the Eastern Canada-West Greenland stock) occurs within the RSA. This stock ranges throughout the eastern and central northern Arctic and from northern Baffin Bay to Hudson Strait. Whales within Davis Strait and Baffin Bay were commercially overexploited in the early 1900s, reduced from an estimated 11,800 to perhaps as low as 1,000. The stock has shown a significant recovery in recent decades and may now number greater than 14,000.

Bowhead whales occur along the proposed northern shipping route during summer and fall. They may summer along the east coast of Baffin Island, or move westward through Lancaster Sound during June and July to feed and nurse calves in inlets and sounds within the Canadian Arctic archipelago. The IQ suggests that the number using Eclipse Sound appears to be increasing in recent years. It is thought that fall migrants wintering in Davis Strait follow the east coast of Baffin Island south to wintering areas, whereas those that winter along the west coast of Greenland may cross north Baffin Bay and then move south.

The number of bowheads within the Foxe Basin-Hudson Bay region is estimated at over 2,000. They congregate to feed and nurse calves in spring and summer around Southampton Island, along the western Hudson Bay coast, and in a relatively small area in northern Foxe Basin between Igloolik and Fury and Hecla Straits. The IQ indicates that bowheads observed near Hall Beach in spring migrate from southern Foxe Basin. Migrations are not well documented, though most movement is thought to take place through the western and central portion of Foxe Basin and may be influenced by ice cover. During summer, they tend to select areas of high ice cover, presumably to reduce the risk of predation by killer whales. Northern Hudson Bay, Foxe Basin, and Admiralty Inlet have been identified as summering areas, with whales moving farther into inlets and bays as the ice breaks up. In summer months, bowheads north of Igloolik consist primarily of juveniles and females with calves, suggesting that this is a nursing area. Aerial surveys of the Foxe Basin area identified small numbers of bowheads in northwest Foxe Basin but not Steensby Inlet.

Hudson Strait has been identified as a primary wintering area for bowhead whales. They begin winter migrations in October as the sea ice begins to form, heading south towards northeastern Hudson Bay and Hudson Strait. In 1981, over 1,300 bowheads were estimated in Hudson Strait and were observed during aerial surveys.

5.3.4.2 Beluga Whale

Beluga whales have a circumpolar distribution and occur seasonally within the RSA. They are opportunistic feeders, consuming a wide array of fish and invertebrates. Mating is thought to peak prior to mid-April, with calving likely occurring in offshore areas during late spring migration. That a limited amount of calving may also occur near estuaries and bays is supported by IQ, indicating that Koluktoo Bay and the southern portion of Milne and Navy Board inlets may be calving areas.

Four of the seven recognized populations in Canada occur in the RSA, including the Eastern High Arctic-Baffin Bay, Western Hudson Bay, Eastern Hudson Bay population, and Ungava Bay populations. The Eastern High Arctic Baffin Bay population (estimated at >20,000) summers in the Canadian Arctic archipelago and winters in the loose pack ice of two distinct areas; along the west coast of Greenland and in the North Water Polynya in northern Baffin Bay. Beluga from the smaller population wintering in the North Water begin entering Lancaster Sound in late April or early May with peak movements occurring in late June to July depending on ice conditions. Those wintering off the west coast of Greenland generally occupy similar geographic areas between years. Large numbers from the Eastern High Arctic Baffin Bay population migrate past Bylot Island during spring on their way to summering areas concentrated near Somerset Island. Only a small number of animals move into areas inland of Bylot Island, ostensibly for calving and feeding. Eastward fall migrations begin in September, and are concentrated almost exclusively along the southern coast of Devon Island. Belugas were observed in Eclipse Sound, Eskimo Inlet, Koluktoo Bay, Milne Inlet, and White Bay during aerial surveys.

All four populations in the RSA are known or expected to occur along or in the vicinity of the southern shipping route. Beluga from the Eastern High Arctic Baffin Bay population enter into northern Foxe Basin during spring and remain in the general area of eastern Fury and Hecla Strait throughout the summer, remaining in shallower waters where feeding is thought to occur.

The Western Hudson Bay and Eastern Hudson Bay populations occur in the southern shipping route waters from late October through April when the whales are in their wintering grounds, and during fall migrations from summering areas in late September and October. Belugas from both populations occur in the vicinity of Igloolik, Hall Beach, and likely Steensby Inlet during July to early September. The very small (possibly

extirpated) Ungava Bay population possibly occur year-round within the RSA. The most recent population estimate for the Western Hudson Bay population is about 57,000. The Eastern Hudson Bay population has been in decline.

The wintering location of the Western Hudson Bay beluga population has not been confirmed but is thought to be primarily in Hudson Strait. Spring migration occurs during late April to May. The majority of animals likely follow the eastern coast of Hudson Bay south to the Belcher Islands, and then across through the pack ice to the Manitoba coast in late May and early June. A small number move westwards towards Southampton Island. They generally remain within estuaries along the coast and in September begin a northward migration towards Southampton Island.

Based on aerial survey results, beluga whales were widespread in Steensby Inlet, Foxe Basin and Hudson Strait, but abundance varied with location and month.

5.3.4.3 Narwhal

Narwhals generally inhabit deep Arctic waters of Baffin Bay, the eastern Canadian Arctic and the Greenland Sea, but are seldom found south of 61°. Their diet is thought to be similar to that of beluga, consisting primarily of small cod, flatfish such as Greenland halibut, squid and other small fish and invertebrates.

Narwhals prefer coastal areas that provide deep water and protection from the wind during summer. They appear to favour deep fjords and the continental slope during winter, in areas where water depths are 1,000 to 1,500 m and marine water upwelling increases biological productivity. They are highly social animals and can be found in small numbers and in groups of hundreds or thousands during migration.

Based largely on summer distributions, two tentative populations of narwhal occur in Canadian waters: the Hudson Bay population and the Baffin Bay population; however, they are currently assessed as a single population in the eastern Arctic. They occur throughout the northern shipping route year-round but are found in the RSA primarily during the open-water period. Those that winter in Baffin Bay typically summer in the eastern Canadian Arctic, moving to summering areas in Melville Bay, Eclipse Sound, Smith Sound, and beyond Lancaster Sound. Important summering areas identified within Baffin Bay include Eclipse Sound, Inglefield Bredning, and Smith Sound-Kane Basin.

Recent estimates indicate that approximately 45,000 narwhal summer around Somerset Island, while over 27,000 inhabit waters in the Prince Regent and Gulf of Boothia area, with approximately 20,000 in the Eclipse Sound area, 10,000 in the East Baffin Island fjord areas, and 5,000 in Admiralty Inlet. Survey results from the late 1980s and early 1990s indicated that summer distribution within Eclipse Sound, Milne Inlet, Koluktoo Bay, and Tremblay Sound is influenced by presence and distribution of ice and killer whales.

Narwhals begin to migrate out of their summering areas in groups of a few hundred to several thousand just before freeze-up begins in late September. Those summering near Somerset Island enter Baffin Bay north of Bylot Island in mid to late October. Populations summering in Pond Inlet begin migrating down the east coast of Baffin Island in late September. They generally arrive in their wintering areas in November. The Baffin Bay population winters at two discrete areas: in the pack ice in central Baffin Bay and in polynyas at the north end of Baffin Bay.

Narwhals, often numbering in the thousands, were identified in aerial surveys throughout in Eclipse Sound, Milne Inlet and Koluktoo Bay. They were also frequently seen in Tremblay Sound and White Bay. Aerial surveys documented fine scale movements of large groups of narwhal between various areas of Eclipse Sound and surrounding fjords.

A much smaller number of narwhal inhabit waters along the southern shipping route. The Hudson Bay population was estimated to be almost 2,000 in the year 2000, though it may be as many as 3,500 during summer months. The timing and routes of migration used by the Hudson Bay population are less understood than those of the Baffin Bay population; they are thought to winter in eastern Hudson Strait and move towards summering areas located primarily in the Repulse Bay area north of Southampton Island during late June, while some may move north towards Fury and Hecla Strait, in the vicinity of Igloolik. Fall migrations to Hudson Strait begin in late August or early September, depending on ice conditions. A small number of narwhals that winter in Baffin Bay are thought to move through Fury and Hecla Strait into northern Foxe Basin during spring migrations in April and May.

Aerial surveys confirmed that narwhal occur in relatively low numbers in Foxe Basin; there were no sightings in Steensby Inlet. Narwhal were most abundant in Hudson Strait during April and June surveys when a small number of individuals were recorded.

5.3.4.4 Walrus

Walrus have a discontinuous circumpolar distribution and are migratory, moving with the ice. They winter in the offshore pack ice of Davis Strait and along the west coast of Greenland, the North Water Polynya off eastern Devon Island and northern Labrador, as well as in Foxe Basin ranging from the floe edge along the north side of Rowley Island and south to the Melville Peninsula. They are primarily benthic feeders on bivalve molluscs and other invertebrates, and are generally confined to shallow coastal waters up to 100 m.

Four extant stocks occur within Canadian waters; however, these may be further subdivided. Three of the four identified stocks occur within the confines of the RSA; the Baffin Bay (High Arctic) population, the Foxe Basin population, and the North Hudson Bay-Davis Strait population.

The Baffin Bay walrus population is estimated between 1,700 and 3,000 individuals with summering populations in Kane Basin, Buchanan and Princess Marie bays, Jones Sound, eastern Ellesmere Island, and the Lancaster Sound-Barrow Strait area. Walrus along the northern shipping route winter in the North Water and other polynyas among the Canadian Arctic islands, inhabiting northwest Baffin Bay north from Pond Inlet to Kane Basin, Lancaster Sound, Barrow Strait, and Jones Sound. They are also distributed along the west coast of Greenland. They move westward along the southern coast of Devon Island during spring to summering areas in the Canadian Arctic islands. Only a few individuals are now observed among the inlets and fjords south of Bylot Island. Aerial surveys within the vicinity of Eclipse Sound recorded two walrus: one in Eclipse Sound and one in Milne Inlet.

Walrus are considerably more abundant along the southern shipping route. They are year-round residents in northern Foxe Basin, overwintering in small polynyas and shore lead systems near the outlet of Fury and Hecla Strait, to the east of Hall Beach, and among the islands (Rowley, Koch, and the Spicer Islands) located farther to the east of Hall Beach and south of Steensby Inlet. Their distribution appears to be driven by ice and open-water conditions during winter. During the open water period, they move onto beaches and coasts among the islands south of Steensby Inlet and onto drifting pans of ice. Walrus have been observed within Steensby Inlet during late summer, but the degree to which they use other locations within Steensby Inlet is uncertain. The Foxe Basin population is estimated at approximately 5,500.

Walrus were abundant within northern Foxe Basin portion of the aerial survey route in 2006. They were observed in pack ice or open water with densities in northwest Foxe Basin estimated at about seven times higher than those observed in northeast Foxe Basin or southern Foxe Basin. During the aerial surveys, two terrestrial haulout sites were observed, one at Manning Islands (mid-way between Hall Beach and Spicer

Islands) and the other at Bushnan Rock (a small sandy islet west of the gap between Rowley and Koch Islands). Walrus densities in Hudson Strait were lower than any observed in Foxe Basin.

5.3.4.5 Ringed Seal

The ringed seal is an important element of the Arctic marine system, both as main prey of polar bears, and as a major consumer of marine fish and invertebrates. Ringed seals occur year-round along both proposed shipping routes and in the vicinity of both proposed port sites and are a major traditional food source for the Inuit.

Ringed seals establish a series of breathing holes and subnivean lairs, many created shortly after fall freeze up. Birth lairs are constructed on the landfast ice in mid-March and pups are born in April. Landfast ice is preferred for breeding rather than pack ice. The population of ringed seals in the Canadian Arctic is estimated to be at least a few million.

Ringed seals are common throughout Baffin Bay as well as along the length of West Greenland. During winter and spring, they concentrate on stable shorefast ice, though in areas where fast ice is limited, as in Baffin Bay, increased numbers may occupy offshore pack ice. As ice breaks up during summer, they disperse as solitary animals or small groups throughout open-water areas or to coastal. Though ringed seals were originally thought to remain in the same general region throughout the year recent evidence suggests that some members of the population, particularly juveniles, may undertake extensive seasonal movements.

Ringed seals are abundant and have been observed throughout along the proposed northern shipping route, occurring throughout Baffin Bay and Davis Strait, Eclipse Sound, Koluktoo Bay, Navy Board and Pond Inlet.

Ringed seals are abundant along the proposed southern shipping route, occurring throughout Foxe Basin, including the landfast ice of Steensby Inlet and Hudson Strait. Southern Steensby Inlet, Igloolik, Hall Beach, Murray Maxwell Bay, and Rowley Island into Fury and Hecla Strait have been described as important hunting and/or pupping areas for ringed seal.

5.3.4.6 Bearded Seals

The bearded seal has a patchy circumpolar distribution as far north as 85ºN. While there is no reliable abundance estimate for bearded seals in Canadian waters, some have suggested an estimate of >190,000. They typically occur alone or in small groups. Whelping occurs between late April and early May, and pups are typically born on unstable pack ice, where they are weaned after 12-18 days. Bearded seals eat a wide variety of foods and are generally considered to be benthic feeders that prey on an array of benthic invertebrates and fish, although pelagic fish are also a food source.

Distribution is largely determined by the presence of shallow water but the seals usually move into areas of open water <200 m deep when the pack ice retreats, while some individuals associate with ice year-round. They are seldom found in fast ice areas, but are widely dispersed in open water areas of pack ice where leads and cracks are frequent, and where ice pans are sufficient for haul out sites.

Bearded seals are considered common in the RSA. Large numbers occur around north eastern Baffin Island and in Lancaster Sound. The many polynyas of northern Foxe Basin support several colonies of bearded seals and is thought to be an area of high density.

Aerial surveys (2008) in support of the Project found bearded seals in all areas of Foxe Basin and Hudson Strait, and most sightings occurred from April to August, when they are easily observed basking on sea ice. During aerial surveys in June 2008, larger numbers were sighted near the mouth of Steensby Inlet; densities were lower in northwest Foxe Basin, northeast Foxe Basin, southern Foxe Basin, and Hudson Strait. They were observed in small numbers during springtime seal surveys in Eclipse Sound and Milne Inlet in 2007 and 2008.

Bearded seals are present year-round along both shipping routes. They occupy pack ice, giving birth in late winter. During breeding season the males are very vocal, territorial and aggressive. The interaction of the Project with the bearded seal population will be limited to the shipping activity, and as a result the residual effect is assessed as not significant.

5.3.4.7 Polar Bear

Polar bears have a circumpolar distribution and occur in relatively low densities throughout most of the ice-covered areas in the RSA. They tend to be more abundant along shore lead systems and polynyas during winter, when less consolidated ice cover provides habitat for prey species. Non-pregnant females, juveniles, and adult males remain active on the pack ice throughout the year, often moving considerable distances with the ice. Their distribution and population is likely regulated by the extent of sea ice and the distribution and numbers of their primary prey, the ringed seal.

Females give birth to 1-3 cubs every 3 to 4 years. Mating occurs from April to June, and females give birth the following December or January in maternity dens, which are excavated in accumulations of snow on stable parts of landfast ice, offshore pack ice, and most often on land within approximately 50 km of the coast. Dens are created in the fall, and bears leave them in April.

The global polar bear population is estimated at 22,000 to 25,000, of which at least 15,500 occur in Canada or in subpopulations shared with Canada. Three subpopulations occur within the RSA: Foxe Basin, Baffin Bay, and Davis Strait with each subpopulation numbering around 2,000.

Along the northern shipping route, polar bears are distributed throughout Baffin Bay, Lancaster Sound, and along coastal areas. Polar bears from the Baffin Bay subpopulation occupy drifting pack ice and landfast ice between Baffin Island and west Greenland during winter, but can concentrate along the Lancaster Sound fast ice edge. Bears are also concentrated along landfast ice edges across Pond and Navy Board inlets during spring. Bylot Island and coastal Baffin Island are used as summer retreats when sea ice melts and also provide denning habitat for pregnant females. The Davis Strait subpopulation occurs in the Labrador Sea, eastern Hudson Strait, Davis Strait south of Cape Dyer, and an undetermined portion of southwest Greenland. Polar bears are harvested domestically as well as during commercial spring sport hunt based out of Pond Inlet. Small numbers were observed during aerial surveys during the open-water season in Milne Inlet, Eclipse Sound, and Eskimo Inlet and on landfast ice in Milne Inlet, Koluktoo Bay, and Navy Board Inlet.

Polar bears from the Foxe Basin subpopulation range over Foxe Basin, northern Hudson Bay and western Hudson Strait during winter and move ashore during the open-water period, concentrating on Southampton Island and along the Wager Bay and other coasts within Foxe Basin. During aerial surveys they were observed on landfast ice, pack ice, terrestrial areas, and in open-water areas primarily in northern Foxe Basin but also in Hudson Strait.

SECTION 6.0 - RESIDUAL EFFECTS ASSESSMENT

The environmental effects assessment identifies potential effects of the Project on the biophysical and socio-economic environments. The objectives of the environmental effects assessment are as follows:

- To identify and avoid or reduce potential adverse Project effects;
- To identify and promote potential positive Project effects;
- To engage Inuit, stakeholder, and government consultation; and
- To consider plausible alternatives to the Project and Project design.

Various methods were adopted for the assessment including the following:

- Identification of potential environmental and socio-economic concerns;
- Environmental and socio-economic baseline and Inuit knowledge studies;
- Consultation with local public, Inuit organizations, and government agencies;
- Determination of valued components to focus the environmental effects assessment;
- Identification of key potential Project interactions between valued components and environment or socio-economic receptors;
- Identification of mitigation measures and adaptive management plans;
- Evaluation of the significance of residual environmental and socio-economic effects; and
- Development of monitoring programs to distinguish Project-related effects from natural variability in the environment, to verify impact assessment predictions, and as a component of adaptive management.

The effects assessment methodology applied in the EIS was based on contemporary environmental assessment practices in Canada and is consistent with the requirements of Section 12.5.2 of the NLCA, NIRB guides, and the Guidelines (NIRB, 2009).

With regards to terminology, Baffinland used definitions and concepts as identified in the Guidelines, in NIRB's (2007) terminology guide, and the *Canadian Environmental Assessment Act*. A detailed description of the assessment methodology is presented in Volume 2, Section 3.

6.1 BOUNDARIES

Spatial and temporal boundaries were determined to set maximum limits within which the environmental assessment was conducted. Spatial boundaries for the effects assessment were determined on a VEC- and VSEC-specific basis for biophysical effects. Spatial boundaries were defined by the anticipated zone of influence of Project effects. A nested approach was adopted as follows:

- Potential Development Area (PDA) reflect the physical footprint of the Project activities;
- Local Study Area (LSA) - Is the area where there exists the reasonable potential for direct interaction due to Project activities, ongoing normal activities, or to possible abnormal operating conditions (i.e., accidents and malfunctions). The LSA includes all existing and Proposed Project Areas (PDAs), and the nominal shipping route within the Nunavut Settlement Area (NSA). Individual LSAs were defined for each biophysical environmental component, and for land use and other socio-economic components; and
- Regional Study Area (RSA) - Is the area within which there exists the potential for direct, indirect, and/or cumulative biophysical and socio-economic effects. This area includes lands, waters and potentially affected communities within the NSA. Effects extending beyond the NSA have been addressed in a separate transboundary effects assessment (Volume 9, Section 4). RSAs have been defined for each of the major environmental components (human, atmospheric, terrestrial, freshwater and marine) and

are illustrated in each respective volume. Confidence and accuracy of predicted effects was generally reduced at this scale, with qualitative analysis more common than quantitative analysis.

6.1.1 Temporal Boundaries

Temporal boundaries define the period of time analyzed within which the Project or Project activities interact with environmental or socio-economic components. Temporal boundaries were defined by Project phase, as follows:

- Pre-development or Definition Phase (nine years - 2004 to 2012);
- Construction Phase (four years - 2013 to 2016);
- Operation Phase (21 years - 2017 to 2037); and
- Closure (three years - 2038 to 2040) and Post-Closure Phase (minimum five years - 2041 to 2045).

With respect to the above temporal boundaries, the following is noted:

- The Definition Phase is inclusive of all exploration and research programs, as well as the bulk sampling program carried out in 2007 and 2008; and
- The Closure and Post-Closure Phase is considered the period required for decommissioning and/or removing Project infrastructure.

6.2 BASELINE STUDIES

Baseline studies, starting in 2005, were undertaken for the following:

Subject	Description
Socio-economics	Includes demographics, workforce experience, health, social services, youth, education, economic development, opinions, perceptions, and the spiritual aspects of archaeology
Physical environment	Includes climate, air, noise, water, waste rock characterization, soils, and the physical aspects of archaeology
Terrestrial ecology	Includes terrestrial wildlife and wildlife habitat (e.g., caribou and carnivores), birds (e.g., raptors, geese, loons, shorebirds and songbirds), freshwater fish and fish habitat, vegetation, habitats, and biodiversity
Marine ecology	Includes marine mammals, marine fish and lower trophic levels, physical and chemical oceanography, and marine and shoreline habitats

Objectives of the baseline studies included:

- Defining existing social and environmental conditions (note: baseline studies were run concurrent to the bulk sample program);
- Identifying potential social and environmental concerns and sensitivities; and
- Providing information for the Project design.

Baseline studies were conducted using the following:

- Literature review;
- Site investigations;
- Stakeholder, Inuit, and government consultation; and
- Inuit knowledge studies.

Baseline study methodologies and a summary of results preface each effects assessment.

6.2.1 Challenges in Baseline Data Collection

Collection of baseline environmental data in the High Arctic has challenges, with near 24-hour darkness between November and January, and long winters of extreme temperatures. As a result, only the largest of rivers do not freeze up, and ice cover on lakes reaches thicknesses of up to 10 feet. The lack of basic infrastructure means an increased reliance on helicopters, adding cost and logistical challenges. This is a reality faced by any proponent working in Nunavut or other cold-climate regions. Consequently, baseline data collection is biased to spring, summer and fall for many aspects of the program. For most environmental components (air, noise, soils, geochemistry, archaeology, vegetation, migratory birds), this has not negatively affected the baseline dataset.

Winter work for fish was limited to late winter assessments on Sheardown Lake; however, this has not affected or biased the dataset since most streams are frozen and fishless in winter. Caribou aerial surveys were not possible during the deep winter; however, recent caribou collar data from the Government of Nunavut has helped with an understanding of year-round distribution of caribou.

6.2.2 Gaps in Baseline Data

The Project is located in an area that has been subject to relatively limited environmental studies in the past. Baffinland addressed these data limitations a variety of ways depending on the environmental component. Baffinland established numerous data collection programs that have provided data on the area that is the only such data in existence. In Volume 2 Section 3.3.2 the various strategies for data collection are outlined for a large number of the important parameters.

6.2.3 New Baseline Data Incorporated Since the DEIS

Since the DEIS was issued in January 2011, the following additional work has been carried out and is presented in the FEIS:

- Additional water quality sampling was carried out in 2011 and was incorporated into an updated water and sediment quality baseline report;
- Additional bird surveys (raptors and shorebirds) have been conducted and are reported in an updated bird baseline report;
- Additional caribou collaring data recorded since the DEIS was prepared was obtained from the GN and was incorporated in an updated terrestrial wildlife report; and
- The baseline information on hydrology was updated to include data collected during the 2010 and 2011 seasons.

A cooperative effort has been initiated with key agencies and affected communities to identify important baseline information needs in the marine environment that can improve the ability to monitor potential environmental effects of the Project. Once developed, these additional studies will be considered in 2012 to improve knowledge of the pre-Project environment. Key attention will be paid to marine mammal distribution in Steensby Inlet and along the Southern shipping route. These studies will serve to inform the design and implementation of environmental effects monitoring

6.3 INUIT KNOWLEDGE STUDIES

NIRB (2007) defines Traditional Knowledge as *"Cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission. Specific Inuit*

Traditional Knowledge is referred to as Inuit Qaujimajatuqangit". For the EIS, the term Inuit knowledge has been used interchangeably with Inuit Qaujimajatuqangit or "IQ".

Inuit knowledge studies were carried out specific to the Mary River Project, 2006 through 2010, with the sole focus of supporting project design and the environmental assessment process. IQ was explored through individual interviews with Inuit Elders (i.e., oriented to more historical-based perspective), and through workshops with current land users to obtain a contemporary perspective. An overview of this process is presented in Volume 2 Section 1.

Overall, the IQ information was found to be complementary to science, and in some instances (e.g., caribou) where limited historical scientific data was available prior to Project studies, IQ information played a central role in developing an understanding of baseline conditions and historical trends of caribou abundance, distribution and habitats. Pre-existing IQ studies by others, such as the Inuit Land Use and Occupancy Project (Milton Freeman Research Ltd., 1976) and the Nunavut Wildlife Harvest Study (Priest and Usher, 2004) were also incorporated into a land use baseline report (Volume 4, Appendix 4C) and wildlife baselines and effects assessments.

IQ was used to identify and substantiate VECs and VSECs, to help focus the effects assessments on the issues identified by local communities and knowledge-holders, and in identifying mitigation and monitoring plans. Local hunters, for example, suggested a wildlife harvest study as a means of monitoring Project effects, and a preliminary study plan for a harvest study has been noted in the Terrestrial Environment Management Plan (see Volume 10, Appendix 10D-11), as one potential approach to monitor wildlife in the region as the Project moves forward.

6.4 ISSUES IDENTIFICATION

In order to focus the environmental effects assessment, environmental and socio-economic issues of concern were identified through the North Baffin Regional Land Use Plan (NPC, 2000) and through Inuit, stakeholder, and government consultation. Issues were identified through the following:

- Public meetings;
- Inuit knowledge and IQ working group meetings;
- Intervener comments during NIRB's screening of Baffinland's bulk sampling program;
- North Baffin Regional Land Use Plan; and
- Issues raised in NIRB reviews of other mining projects.

Issues of concern led to identification of valued components, as described below.

6.4.1 Identification of Valued Components

Valued components (VCs) identify key species or topics to focus the effects assessment. NIRB (2007) distinguishes between "valued ecosystem components" (VECs) as the valued components of the biophysical environment, and "valued socio-economic components" (VSECs) relating to the human, economic and spiritual environment. VECs and VSECs are defined by NIRB as follows:

- VECs include those aspects of the environment considered to be important to a particular region or community and may include:
    - Resources that are either legally, politically, publicly, or professionally recognized as important such as parks, land selections, and historical sites;

- Resources that have ecological importance, such as keystone species which, if affected, have a disproportionate effect on their surroundings relative to the types and numbers of other species in a community, and those species that are suitable ecological indicators; and
- Resources identified for their importance to local communities because they are either harvested or of prominent spiritual importance.

- VSECs include those aspects of the social and economic environment that are identified to be important to a particular region or community, including components relating to the local economy, health, demographics, traditional way of life, cultural well-being, social life, archaeological resources, existing services and infrastructure, and community and local government organizations. VSECs were identified through focus sessions and individual and key person interviews.

The VSECs and VECs for the Project are presented in Tables 1-12.1 and 1-12.2. The impact assessment volumes (Volumes 4 through 8) are organized according to resource component themes (e.g. socio-economic environment, atmospheric environment, terrestrial environment, freshwater aquatic environment, marine environment). VECs and VSECs were identified within each of these themes based on the issues identified. The NIRB Guidelines (2009) identify a minimum set of VECs and VSECs to be considered by the Proponent in the environmental effects assessment.

Key Indicators (KIs), or environmental indicators, are sub-sets of VECs or VSECs that are used to communicate information about the environmental effects of the Project. The use of indicators is a pragmatic approach to conducting environmental effects assessment, where evaluating every potential impact to the receiving environment is not practical. Key Indicators have been identified under each VEC (Volume 4 through 8) and are used to monitor the effectiveness of the Environmental Mitigation and Management Plans (Volume 10, Table 1).

6.4.2 Measurable Parameters and Thresholds

Measurable parameters are clearly defined aspects of an indicator (or VEC /VSEC) that can be quantified and compared against a baseline value or condition. Each measurable parameter has an associated performance level or standard that can establish an effect magnitude or indicate compliance with formal standards.

Thresholds are limits of acceptable change determined from regulated guidelines or by professional opinion. For this assessment they were determined on a VEC specific basis. Wherever possible, quantitative thresholds, determined by relevant regulatory bodies, were adopted for biophysical VECs, however, where these did not exist, qualitative thresholds were considered based on professional judgment. Qualitative thresholds were commonly applied to VSECs, for example: establishing thresholds for demonstrating broad community support.

6.4.3 Interactions, Key Issues and Subjects of Note

Interaction matrices were developed as a starting point for the assessment, by relating key Project activities with VECs or VSECs and KIs. These interactions matrices are presented in Volume 2. Not all social or environmental effects or issues are equally important to warrant the same level of consideration in the EIS presentation. To focus the EIS analysis on those issues that are important to stakeholders and/or more likely to have the potential to cause a significant adverse environmental effect, a distinction between key

issues and subjects of note has been made by assigning one of three levels to each potential interaction shown in accordance with the following definitions:

- Level 0 - indicates there is no measurable (or detectable) interaction.
- Level 1 - indicates Subjects of Note, i.e., interactions that are less likely to be of notable environmental importance or consequence. These result from Project-environment interactions that are well understood, are common to projects of this nature, and which can be addressed through application of standard, proven mitigation or prevention approaches. While these subjects have been identified and analyzed to establish their level of significance as part of the impact assessment process, they are addressed with brevity in the EIS presentation in order to focus the assessment on the key issues.
- Level 2 - indicates key issues, i.e., interactions that are of substantial public interest and/or of potentially high environmental importance or consequence and, consequently require rigorous investigation and analysis in the EIS. Key issues may warrant modeling combined with scientific and/or traditional expert evaluation to substantiate effects predictions. Key issues are those which have potential to result in negative consequences to stakeholders, the environment, and/or the decision-making process.

6.5 EFFECTS ASSESSMENT

6.5.1 Assessment Methodology

The identification and assessment of environmental and social effects was based on the following steps:

- Identification of major Project activities during each phase of the Project, as defined in the Project Description (Volume 3);
- Identification of project interactions that are likely to result in a change/effect to a VEC/VSEC its indicator and mapping the interactions and effects on linkage diagrams;
- Designation of Project interactions with VEC/VSEC or indicators as either nil (no interaction), subjects of note (level 1 interaction), or key issues (level 2);
- Assessment of the magnitude of the effect of the Project's interaction with the VEC or VSECs depending upon the relative importance (scale, frequency, duration, intensity) and certainty/uncertainty around the effects;
- Selection of appropriate measurable parameters and thresholds based on established performance criteria or professional judgment;
- Establishment of the framework for evaluating significance of residual impacts;
- Identification of mitigation measures to reduce or eliminate negative effects;
- Determining the potential for a residual effect, and if anticipated, its significance; and
- Identifying monitoring plans and adaptive management objectives.

Baffinland has used best practice methods to predict the nature and extent of effects that may result from Project implementation. For each impact assessment volume, relevant references, analyses, and explanations appropriate to the resource theme being analyzed are included defining:

- How scientific, engineering, community and Inuit knowledge was used in the assessment;
- Which studies included the assistance of communities and individuals, who was involved (if the information can be made public), and how participants were selected;
- Data collection methods and limitations thereof;
- Model assumptions and study methodologies;
- Study and model outputs, calculations, support analyses, and explanation of results; and
- Reference literature or other information sources for any contributions, including Inuit Knowledge.

Additional studies were carried out to support the development of the impact assessments. Wherever possible these studies included statistical analysis or mathematical modeling to support effects predictions. A list of studies completed in support of the EIS is presented in Volume 2 while the specific modeling studies are reported in the appendices of the respective impact assessment volumes.

6.5.2 Effect Categories

NIRB defines an environmental effect as a positive or negative change in the biophysical and/or socio-economic environment caused by or directly related to a proposed activity. Effects are defined as direct, indirect and cumulative as follows (NIRB, 2007):

- Direct Effects - Changes in the VEC/VSEC that result from direct interactions between Project activities and the environment.
- Indirect Effects - Effects on the environment that are not a direct result of the Project. For example, fugitive dust fallout could have the potential direct effect of causing losses of local vegetation species. An indirect effect results when the availability of that vegetation as forage becomes limited and reduces the food supply for certain terrestrial mammals.
- Cumulative Effects - Effects that result from incremental changes caused by interactions between the Project and other past, present, or reasonably foreseeable future projects or activities. Cumulative effects are addressed in Volume 9.

6.6 MITIGATION MEASURES

Mitigation measures can be physical structures, management actions or strategies applied to minimize or eliminate negative environmental effects. Mitigation of environmental effects can be achieved through project design and adaptive management. Project design considerations and alternatives used to minimize or eliminate the potential for residual effects are identified in the Project Description (Volume 3). Mitigation measures are also used to reduce or eliminate the potential residual effects of the Project and are identified in each of the effects assessments, along with potential residual effects of the Project. Once the Project is underway, monitoring results are used to verify effect predictions identified in the EIS. If required, further mitigation measures will be identified periodically throughout the life of the Project. This is further described in the Baffinland Environmental Management Plans (Volume 10, Table 1).

6.7 DETERMINING SIGNIFICANCE OF RESIDUAL EFFECTS

Residual projects effects refer to the environmental effects identified for the Project, post-mitigation. The significance of residual environmental effects was determined from the following criteria (NIRB, 2009):

- Direction or nature of an effect (i.e., positive/beneficial versus negative/adverse);
- Magnitude and complexity of an effect;
- Extent of the effect, including such as the geographical area that will be affected, the size of the affected human populations, and/ or the size of the affected wildlife populations and habitat;
- Frequency and duration of an effect;
- Reversibility or irreversibility of an effect;
- Probability of occurrence of the effect;
- Confidence in the effect prediction; and
- Context of the effect.

These criteria were adopted for this assessment, as specified in the Guidelines and because the criteria have a precedence of use for other environmental assessments in the Canadian Arctic (NIRB, 2009; NIRB, 2007; Lawrence Environmental, 2000 and 2004; Wolfden Resources Inc., 2006; De Beers, 2004). In addition to the above attributes, NIRB (2009) directed Baffinland to consider additional qualifiers in its significance evaluation. Definitions and assessment criteria for each metric are presented in Volume 2, Section 3.

Level of confidence is a qualifier that relates to limitations in the overall understanding of the ecosystem and limitations in accurately foreseeing future events or conditions. The level of confidence with predictions of the significance of the residual effect is an important qualifier in that a low level of certainty will require that a conservative approach be taken to each of the evaluation criteria. Uncertainties associated with each prediction are described in each effects assessment at a level of detail that corresponds to the relative uncertainty.

The likelihood parameter is assigned both a probability dimension as well as a level of certainty, to qualify significance rankings relative to the likelihood that the predicted impact will actually occur**. "Unlikely"** indicate a low probability of occurrence, **"Moderate"** a moderate probability, and **"Likely"** a high probability of occurrence. Certainty is assigned to indicate the relative level of confidence in the probability prediction. Collectively, the probability and certainty assignments indicate the overall likelihood of an effect.

6.7.1 Rating Criteria for Residual Socio-Economic Impacts

Similar criteria have been applied to socio-economic effects assessment with some modification and additional criteria in consideration of the nature, complexity and multiple perspectives associated with socio-economic issues. These criteria are presented in Volume 2, Section 3 and include direction, geographical Extent, social extent, equity, magnitude, frequency, duration over the life of Project, and, reversibility.

6.7.2 Overall Evaluation of Significance

The overall significance of an effect or impact is derived from the experience and professional judgment of the environmental practitioners who prepared the assessment, considering the rankings of the contributing attributes of significance. The general approach applied in determining significance is presented in Volume 2, Section 3.

NIRB (2009) also directed Baffinland to communicate with potentially-affected communities and organizations to solicit input on the values placed on VECs and VSECs as well as significance of impacts.

To this end, Baffinland has attempted to assemble, synthesize and present feedback from the following sources:

- Records of public meetings held from 2006 through 2010;
- Records from Inuit knowledge studies held to date (individual interviews and workshops);
- Kajjuqtikkut - a five-day workshop held in Arctic Bay on March 10-14, 2008, attended by members of the five Inuit Knowledge Study working groups. The key themes of transportation (marine and rail), caribou, marine mammals and socio-economic issues were discussed and minutes recorded; and
- A five-day workshop jointly held by Baffinland and the QIA at Mary River the week of September 12-18, 2010, with community representatives selected by the QIA. The workshop focused on community perspectives on the significance of predicted impacts on caribou, marine mammals, and land use.

Baffinland has integrated a summary of the significance determination within each of the individual impact assessments in Volumes 4 through 9. The approach taken in this EIS has been to present the evidence clearly and in the manner requested in the Guidelines.

6.8 MITIGATION AND MONITORING PLAN

Mitigation measures are incorporated in the Project design in order to avoid, reduce or mitigate the severity of the expected adverse impacts of the project. Once these mitigation measures are implemented, it is necessary for Baffinland to monitor and report on the effectiveness of the proposed mitigation measures and introduce corrective action as required. This process of monitoring, reporting, evaluating, reviewing and continuous improvement is achieved with Baffinland's EHS Management System.

6.9 PROJECT RESIDUAL EFFECTS

The detailed assessment of the Project residual effects is presented in Volume 4 through 8. The findings of these assessments are summarized in Section 12; Table 1-12.1 presents the residual effects on the VECs while Table 1-12.2 presents the residual effects on the socio-economic environment VSECs.

SECTION 7.0 - ACCIDENTS AND MALFUNCTIONS

Baffinland has an obligation to identify any foreseeable hazards that may arise from the Mary River Project and to assess the risk of harm arising from the identified hazards. The reasons for this process:

- Out of concern for the health and safety of employees, contractors and visitors;
- Out of concerns for environmental protection;
- It makes good business sense and is cost-effective; and
- So that Baffinland's duty of care for its employees and contractors can be undertaken, and so that health, safety and environmental legal requirements can be met.

Knowledge of hazards and the evaluation of associated risks are necessary requirements for establishing health, safety and environmental objectives and targets, and for setting priorities to control the identified risks to employees and others on an ongoing basis. Hazard identification, risk assessment and control is an on-going process undertaken periodically throughout the Project life cycle. Baffinland's guideline for hazard and risk assessment is presented in Volume 10, Appendix 10A-2. This rigorous approach to hazard identification and risk assessment leads to the development and implementation of mitigation actions and procedures and the development of management plans that ensures on-going control of such risks.

Despite this on-going effort, major accidents and malfunctions can occur due to natural events, breakdown of mitigation measures or human error. Although the likelihood or probability of occurrence of such events is low, accidental events could have severe environmental, health or safety repercussions.

A list of potential malfunctions or accidents was developed from the following primary sources:

- Public concerns: expressed by local communities and other members of the public;
- Project personnel: all Project risks, including environment-related risks were developed and assessed as part of Project risk assessment exercises;
- Comparative projects: review of readily available Environmental Assessments issued recently for other large scale mineral Projects; and
- Experience of personnel with other Projects.

Only credible malfunctions and accidents that have a reasonable probability of occurring during the Project have been assessed. For the purpose of this assessment, the likelihood of occurrence for the accidents and malfunctions is defined as follows:

Despite the fact that all foreseeable precaution measures have been implemented to prevent the occurrence of malfunctions and accidental events, the consequences of the occurrence associated with their occurrences can entail the loss of human life or severe environmental damage. Table 1-7.2 presents a list of credible potential accident and malfunction scenarios for the Mary River Project. Risks were assessed based on operational controls implemented on the basis of best management practices (BMPs) as outlined in Baffinland's EHS Management System (Volume 10, and Appendix 10A-2 for Hazard Identification and Risk Assessment Procedure) and the application of the various management plans provided as appendices in Volume 10. The detailed discussions related to these major accident and malfunction events is presented in Volume 9, Section 3.0.

Table 1-7.1 Likelihood

Likelihood	Description in Context of Full Operating Life of the Facility	Frequency
Almost Certain	Consequence expected to occur in most circumstances	High frequency of occurrence - occurs more than once per year
Likely	Consequence will probably occur in most circumstances	Event does occur, has a history, occurs once every 1 to 10 years
Possible	Consequence could occur at some time	Occurs once every 10 to 100 years
Unlikely	Consequence may occur at some time	Occurs once every 100 to 1000 years
Rare	Consequence may occur at some time	Occurs once every 1000 to 10 000 years

NOTE(S):
1. REFER TO APPENDIX 10A-2 STANDARD FOR HAZARD IDENTIFICATION AND RISK ASSESSMENT.

7.1 EMERGENCY RESPONSE PLAN

The Mary River Project is essentially a transportation Project. Iron ore is mined and crushed at the Mine Site (no processing involved), loaded into rail cars for transportation to Steensby Port, where the ore is further crushed, sized and stockpiled prior to loading into ore carriers for transportation to customers mostly located in Europe. There is no processing of the iron ore on Baffin Island.

As a result, the number of hazardous substances transported, stored and used on the Project sites is limited. Bulk hazardous material consists of:

- Arctic grade diesel fuel and aviation fuel (Jet A)
  - Transported by tankers during open water season to either Milne Port or Steensby Port;
  - Stored in tank farms at both Milne and Steensby Port;
  - Transported by truck from Milne Port to the Mine Site during the construction phase;
  - Transported by rail cars from Steensby port to the Mine Site during the operation phase; and
  - Transported in double-wall 20,000L ISO-containers to the various work site along the railway line during construction.
- Ammonium nitrate for the manufacture of explosives
  - Received in one tonne tote bags placed within Seacan containers at both Milne Port and Steensby Port;
  - Transported by flatbed truck to the Mine Site storage area or the emulsion facility for the preparation of emulsion; and
  - Ammonium nitrate and diesel fuel are used to prepare an emulsion used for blasting at quarries and the Mine. This emulsion is transported by specialized equipment.

In terms of storage of fuel, all tank farms (Milne, Mine Site and Steensby) will be constructed in accordance with applicable codes and regulatory requirements. All fuel tanks will be installed within impermeable secondary containments. Detailed designs of these containments are presented in Volume 3, Appendix 3B, Attachment 5.

All other hazardous substances are limited in quantities and are stored in barrels/drums or specialty containers transported within the confine of Seacan containers. Such hazardous substances include:

- Lubricating oils and greases for use in the maintenance facilities;
- Minor amounts of paints and solvent used for cleaning in maintenance facilities;
- Acetylene (in bottles) used for repairs (cutting/welding);
- Cleaners, soaps and solvents; and
- Reagents for laboratory, water and sewage treatment facilities.

These materials are stored in accordance with MSDS instruction in warehouses or at the maintenance facilities (either at Steensby or the Mine Site). Hazardous waste generated by the use of these chemicals is contained within the maintenance facilities (or place of use), collected and packaged in appropriate containers, which are stored in a designated Hazardous Waste Storage Area (as outlined in the Waste Management Plan) until they are shipped off site for treatment at an approved Hazardous Waste Treatment Facility in accordance with Transport Canada regulations and the Basel Convention on the handling/transportation and disposal of hazardous material. For a more detailed description of the hazardous chemical and hazardous waste storage facility, see Volume 3, Appendix 3B, Attachment 5.

The Emergency Response and Spill Contingency Plan identifies the resources available (human and equipment) for response to spills and uncontrolled releases. Given the context described above, for the Mary River Project, it is evident that the transportation, handling and storage of diesel fuel and Jet A fuel, and, the transportation, handling and storage of ammonium nitrate are the likely source of large uncontrolled releases of hazardous substance. Therefore, Baffinland's Emergency Response and Spill Contingency Plan focuses mainly on fuel spills and ammonium nitrate spills.

It should be noted that ammonium nitrate as such does not pose a risk of explosion. Ammonium nitrate is mixed with diesel fuel to produce an emulsion that is used as explosives. The production of this emulsion occurs in a controlled environment at the emulsion production facility. The emulsion is then transported by specialized vehicles to the end use at the quarry sites or mine site. The use, storage and handling of explosives are strictly regulated. Baffinland will retain a qualified contractor licensed in the handling, production, use and storage of explosives. A detailed explosives management plan is presented in Volume 3, Appendix 3B, Attachment 8.

With respect to fuel, the draft Emergency Response and Spill Contingency Plan presented in Volume 3, Appendix 3B, Attachment 5, addresses all credible spill scenario. Draft OPEPs are presented for both Milne Port and Steensby Port. OPEP must be reviewed and approved by Transport Canada on an annual basis. These OPEPs address possible/credible fuel spill scenario for ship to shore transfer of fuel and fuel storage at the Port facilities. Transport Canada reviewed and approved the OPEP for Milne Port for the 2011 season. The OPEPs submitted in the FEIS address the 2012 shipping season at both Steensby and Milne Port. As these OPEPs will be required for the 2012 shipping season, detailed information will be provided regarding the composition of the Emergency Response Team, their role and responsibilities, the emergency response training provided (classroom and field exercises), and, the content of the emergency response kits at each sites during the first quarter of 2012.

Baffinland's overall Emergency Response and Spill Contingency Plan also addressed in a conceptual manner, possible fuel spills occurring during transportation of fuel from Milne Port to the Mine Site by tanker truck (construction period) and from Steensby Port to the Mine Site (by rail) during the operating period. The Emergency Response and Spill Contingency Plan presented in the DEIS will be updated to reflect the realities of the Project Pre-development work.

Baffinland intends to be self-sufficient and will not require the assistance of the Canadian Coast Guard (CCG) for any intervention related to its operation. However, in accordance with protocol, the CCG will be informed of any spill events. In addition, Baffinland has indicated that delivery of fuel will occur only during the open water season. The only fuels required at and delivered to the site are Arctic grade diesel fuel, marine diesel and aviation fuel. Diesel and aviation fuels are volatile and completely evaporated within days of a spill.

Canadian Transport Agency (CTA) staff has expressed concern over the issue of emergency preparedness in the case of train derailments and spills. Baffinland points out that the only hazardous substance susceptible to a major spill during rail transport is fuel (diesel and aviation fuel). Baffinland will use state of the art railway tanker cars for transportation of fuel. These tanker cars are designed to withstand the impacts of derailments. Should a derailment occur, Baffinland's response will be as follows:

- Access site derailment site by helicopter and snow cat to provide first aid and evacuate to injured personnel;
- Insure that no personnel is in imminent danger; evacuate operators if need be;
- Inspect derailed cars for damage and seal leakage if possible;
- Repair damage to the rail line; and
- Organize recovery operation of derailed cars/locomotives as weather permits.

A railway emergency response plan is presented in Volume 10, Appendix 10D-9.2.

7.2 DIESEL SPILL

Many reviewers have expressed concerns about the effects of a major fuel spill along the shipping lane. Baffinland has committed to be self-sufficient in terms of response to environmental emergencies and search and rescue operations to provide adequate resources to implement and maintain the Emergency Response and Spill Contingency Plan, including human, material and financial resources. In addition, Baffinland will implement annual training programs for emergency responders to ensure that emergency response and spill contingency procedures are effective and up to date). External organization such as Transport Canada, the Canadian Coast Guard, representatives of the Government of Nunavut and of North Baffin Island communities. Draft versions of the Emergency Response and Spill Contingency Plan and the Oil Pollution Emergency Plans for Steensby Port and Milne Port are presented in Volume 3, Appendix 3B, Attachment 5.

Large diesel fuel spills in Steensby Inlet (Volume 9, Appendix 9B), Milne Inlet (Volume 9, Appendix 9A) and along the shipping lane (Volume 9, Appendix 9C) were modeled in order to determine the size and direction of a potential diesel slick assess the potential impacts of such events. Baffinland commissioned a study by Coastal & Ocean Resources Inc. on the *Coastal Sensitivity of Proposed Port and Shipping Routes* for the Mary River Project. This study is presented in Appendix 9C and it considers the potential for open water diesel spill associated with fuel shipment to the Project. The assessment examines potential environmental sensitivity associated with the Project shipping routes.

As discussed in Volume 9, Section 3.8.2, Arctic diesel fuel and Jet-A fuel will be delivered to Milne Port in 10-20 ML tankers, while aviation fuel, Arctic diesel and marine diesel will be delivered to Steensby Port in 20 to 50 ML tankers during the open-water season. For reasons explained in Volume 9, Section 3.8.8, a credible volume for a spill is approximately 5 ML (10 % of the cargo).

The results of the two spill scenarios that were modeled to assess potential extent of spill impacts at Milne Port and Steensby Port (Volume 9, Appendix 9A and Appendix 9B) can be used to infer outcome of

potential spill scenarios along the shipping lane. The Steensby and Milne spill scenarios were modeled in OilMap, a widely used spill-modeling program. These models assumed spill volumes and release periods, previously measured wind conditions for open-water periods and predicted tidal currents to predict possible fuel spill trajectories.

Evaporation of the spill, dispersal of fuel into the water column and stranding of fuel along shorelines are the primary processes that dissipate the spill. A diesel slick is tracked as part of the modeling process. Plots of individual model runs provide a spatial picture on the extent of the spill at any one time.

The spill is modeled over a wide variety of measured wind conditions to build a stochastic picture of spill probability around the site. The spill probability envelopes indicate the potential of spills to reach a certain point.

The modeling results are developed for a specific site and rely on appropriate wind data and tidal current data for that site. Thus the predictions and results are specific to a site (wind conditions, currents). In terms of the Project shipping lane, the most challenging bathymetry and currents are on the eastern end and western end of the Hudson Strait.

However, there are some aspects of the spill scenario that can be applied to other locations. Diesel is a relatively volatile fuel and weathering is relatively rapid (refer to discussion in Volume 9, Section 3.8.3). The overall extent of a spill in open water is limited by nearby shoreline and the drift from the spill site. The above assumptions can thus be used to develop a generic worst-case spill description based on site-specific modeling.

7.2.1 Worst Case Spill Scenario

The northern shipping route is 570 km in length and the southern route is 1,610 km. A worst-case spill of 5 ML is assumed for evaluating impact scenarios. Spill trajectory analyses suggests that a 15 km swath to each side of the proposed shipping route is likely to contain a significant proportion of the spill trajectories so a 30-km wide corridor aligned with the proposed shipping routes is used to assess resources at risk within this *area of concern*.

7.2.2 Diesel Spill Along the Northern Shipping Route

The northern shipping route enters eastern Eclipse Sound from Baffin Bay and turns southwards into Milne Inlet, at the western end of Eclipse Sound. The proposed unloading port is at the head of southern terminus of Milne Inlet. The shipping route passes within the 15 km of Pond Inlet village. Approximately 600 km of Milne Inlet-Eclipse Sound-Pond Inlet shoreline lie within the *area of concern* (i.e., the 15 km swath each side of the proposed shipping route).

Concentrations of narwhal occur in Milne Inlet during the summer open-water season (estimates of up to one-third of the total narwhal population). Although the sensitivity of narwhal to spills is unknown, the large aggregation of animals in a small area could result in a significant exposure to a worst-case, open-water diesel spill.

There are large aggregations of marine birds along the proposed shipping route, particularly near the eastern mouth of Pond Inlet. Some estimates suggest that as much as 1 % of some bird populations could be represented within a single aggregation (Mallory and Fontaine 2004). These aggregations represent a significant concern for a worst-case, open-water spill.

7.2.3 Diesel Spill Along the Southern Shipping Route

The southern shipping route enters eastern Hudson Strait, passes close to the community of Cape Dorset and turns northward in Foxe Basin, passing 15 km offshore from Prince Charles Island and into Steensby Inlet, where the fuel terminal is located. There are approximately 900 km of shoreline within the area of concern, of which 500 km (56 %) is located in the Steensby Inlet area. Much of the proposed southern route passes well offshore from Foxe Basin shorelines.

Significant bird colonies and bird usage occurs along the shorelines of Foxe Basin and Hudson Strait and the area includes 13 designated Important Bird Areas. Although these areas are generally more than 15 km from the proposed shipping route, birds do forage offshore to considerable distance and may be vulnerable to open-water spills.

Estuarine habitats include salt marsh that is an important feeding habitat of geese and also co-occurs with many anadromous Arctic char streams. Estuaries in Steensby Inlet and northern Foxe Basin are within 15 km of the shipping route, so have the potential to be contacted in a worst-case, open-water spill.

During varying parts of the year marine mammals congregate in various locations along the southern shipping route. Walrus haulouts are an example. These locations are vulnerable to open water spills. Significant exposure may result during a worst-case, open water diesel spill.

7.2.4 Effects Assessment of a Major Diesel Spill Along the Shipping Lane

In the unlikely event that a major diesel fuel spill would occur along the shipping lane, such a spill would have a significant environmental effect. However, refuelling of fuel depots is a well mastered routine activity in Arctic communities. Furthermore, Baffinland will receive fuel during the open water season. A recent study published by the National Energy Board looked at the effectiveness of oil spill recovery techniques for the Beaufort Sea and the Davis Strait under a range of weather conditions. The study looks at the time of the year when three types of response measures are effective for spill recovery on the basis of:

- Wind conditions;
- Wave conditions; and
- Visibility.

The response measures investigated are:

- In-situ burning;
- Containment and recovery; and
- Dispersant.

The study concludes that for the central Davis Strait, the months of June, July, August and September, at least one method of response intervention is applicable 100 %, 100 %, 99 % and 95 % of the time respectively (on the basis of wind and wave data). The effectiveness of the recovery methods can drop to the low 80 % by November.

This study confirms that for the Mary River Project, the optimal months for fuel delivery are from June to September for the Davis Strait, which translate to the July to September period for the Foxe Basin as the ice free condition in that area start a bit later in the year.

7.2.5 Possible Significant Effects

Safety is of paramount importance, and human injury (occupational or to bystanders) is a serious occurrence. Human fatality is considered a significant event. Therefore, it is recognized that a human fatality resulting from an accident or malfunction, while considered an unlikely event, is significant and adverse.

A second potential significant effect identified is that of the unlikely potential for a large fuel spill to occur along the shipping route. While unlikely to occur and depending upon location and other factors such as weather, a diesel spill by a tanker in the open water could result in a moderate magnitude effect to most marine environmental components and a high magnitude effect to seabirds. A large spill, depending upon the location and sensitivity of the area, could have a large extent (Level II or possibly Level III) and effects are potentially permanent (Level III duration) and only partially reversible (Level II reversibility).

SECTION 8.0 - EFFECTS OF THE ENVIRONMENT ON THE PROJECT

Extreme weather (storms, extreme rainfall or snowfall, extreme low temperatures) and geo-hazards (seismicity, ground and slope instabilities) have the potential to affect Project infrastructure and in turn represent concerns for human safety and the environment. Included in the context of extreme weather is the potential for global climate change to affect the Project.

Environmental hazards that could potentially affect the engineering structures are assessed in Volume 9, Section 2. Baffinland has identified the potential engineering hazards that could occur for each Project component, described the hazard within the context of the specific Project component, described and assess potential consequences of the hazard, assessed the risk factor, and described potential mitigation measures for each hazard.

At Milne Port there are some low to moderate risks associated with ice-rich permafrost and thaw-sensitive soils that could result in failures of structures, creep settlement, or movement of foundations for heavy structures. Permafrost protection measures will be used to mitigate these risks.

Along the Milne Inlet Tote Road there are risks associated with ice-rich permafrost and thaw-sensitive soils that could result in creep settlement in high embankment, thermokarst development along the route or in borrow areas, and some general road embankment instability. While proposed construction is minimal and limited to addressing problem areas and general road maintenance, these risks will generally be mitigated through proper design and construction in an effort to protect and maintain the thermal conditions along the road. Maintenance is required at some locations due to thermal degradation of the underlying foundations. Another more significant risk is related to the hydrology and the fact that high runoff events can lead to flows beyond the capacity of the hydraulic structures established along the road alignment. This risk is further increased by the spring icing of culverts, further reducing capacity and leading to potential overtopping and wash-out of road sections, causing high sediment loadings to the downstream environment and increased erosion.

The highest risks at the Mine Site are related to ice-rich and thaw sensitive soils associated with the waste rock stockpile and open pit overburden cut slopes. The high ice contents anticipated below the waste rock stockpiles are expected to lead to significant creep settlement of the stockpiles once they are fully loaded. The stockpiles could experience instability and other settlement issues associated with changes to the thermal regime in the area resulting from improper permafrost protection measures and stockpile construction scheduling. A thermal barrier will be required at the base of each stockpile as well, to protect the exposed overburden cut slopes above the open pit to preventing thaw and instabilities above the pit. For ice-rich areas near other Mine Site infrastructure, the majority of the structures locations have been optimized to avoid problem areas or founded on competent bedrock. In areas where this optimization is not possible, adequate permafrost protection measures will be implemented.

Along the Railway, risks associated with the ice-rich permafrost and thaw-sensitive soils could result in creep settlement in high embankment sections, thermokarst development along the route or in borrow areas, and some general embankment instability. These risks will generally be mitigated through proper design and construction in an effort to protect and maintain the thermal conditions along the road. Maintenance may be required at some locations to prevent thermal degradation of the underlying foundations. Areas of cut along the Railway will require over excavation and backfill to ensure thermal stability of foundations. Cut slopes in ice-rich overburden will require a protective thermal barrier. Another risk present is related to the hydrology and high runoff events that may lead to flows beyond the capacity of

the hydraulic structures. This risk is further increased by the spring icing of culverts, further reducing capacity and leading to potential overtopping, localized changes to the thermal regime and potential washout of embankment sections. Regular inspections and maintenance programs will be implemented throughout operations and these programs will be critical for mitigating many of the risks associated with permafrost and hydrology related issues.

Potential for significant snowdrifts exists in highly exposed and hilly areas such as the Milne Inlet Tote Road, access roads and the Railway. Significant volumes of snow may exceed what was naturally collected by the existing terrain on the downwind sides of hills, especially when cut to accommodate a transportation link. Detailed snowdrift assessment of designs is recommended where the terrain is higher than the transportation corridor within a lateral distance of 75 m. Inactive mitigation measures include snow fencing, terracing and exposed (raised) road surfaces. Active mitigation measures include the use of snow berms and shaping snow banks to minimize snowdrifts. Changes in snow accumulation will have an indirect effect on run-off, slope stability/erosion and permafrost impact and may also require assessment of the change in local drift patterns.

Based on accepted climate change models, it is generally believed that global warming will have little impact on the very cold and deep permafrost conditions in the areas of the Mary River Project Site and associated infrastructure locations over the currently planned life of the Project. Although it is projected that the Mary River Project will remain within the zone of continuous permafrost, it is predicted that the active layer thickness could increase by 50 % (Arctic Council and the International Arctic Science Committee, 2005). Other potential impacts include changes to drainage pattern resulting from subsidence and thermokarst formation, increased sediment loadings and mass wasting on sensitive slopes. In general, the location of infrastructure has been optimized based on the investigations in an attempt to avoid potential problem areas to the maximum extent possible. Additionally, areas where problems cannot be avoided will be constructed with conservatively designed permafrost protection measures and thermal barriers. Thus, the project is not sensitive to changes in climate-related parameters.

Table 1-8.1 provides design measures that may be implemented to protect the project structures from the impacts of construction, operations and potential changes to the climate. In general, conservative assumptions are used as the way to address potential effects of climate change.

Table 1-8.1 Project Design Measures to Account for Climate Change

Project Structure	Design Measures used to Account for Climate Change
Milne Inlet Tote Road	No specific measures were taken into account for climate change beyond those for construction on permafrost
Milne Inlet Tote Road - Water Crossings	A 1:100 year storm event was used for design of all water crossings
Railway - Embankment	Embankment thickness and over-excavation depths in ice-rich materials increased based on a 50 % greater thickness of active layer
Railway - Water Crossings (Bridges)	Designed culverts and bridges to a higher return period of 1:200 (Dillon, 2008)

Table 1-8.1 Project Design Measures to Account for Climate Change (Cont'd)

Project Structure	Design Measures used to Account for Climate Change
Railway - Auxiliary Facilities	Loading and unloading facilities and the workshop will be located on bedrock or piles to account for the increased thickness of the active layer. The inspection shed will be unheated and placed on run of quarry rock fill. Telecommunication towers will be located on bedrock or piles into bedrock where possible; towers installed on thaw sensitive soils will be monitored for subsidence during thawing months; further, specific operating instructions will dictate how everyone is to act in the case of a tower failure; redundant measures will be in place.
Port Facilities	Docks can account for the fluctuation in sea levels due to climate change
Open Pit Mine	Thermal Barrier on ice-rich overburden slopes should be of adequate thickness to account for increase to active layer thickness
Waste Rock Stockpile	Potentially-acid generating (PAG) rock will be buried sufficiently deep within the pile to account for increase in active layer thickness
Airstrips and Access Roads	Thermal barrier (non-frost/thaw sensitive fill) thickness increased to account for increases active layer depth
Building foundations	Adfreeze pile calculations to account for slightly warmer permafrost and deeper active layer. Thermal barriers and foundation pads thicker.

SECTION 9.0 - CUMULATIVE EFFECTS

The Nunavut Impact Review Board (NIRB) defines a cumulative effect as:

"…the impact on the environment that results from the incremental effects of a development when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (NIRB, 2009)

The cumulative effects assessment (CEA) in Volume 9, Section 1 identifies the residual effects of the Project, and the potential to interact with the residual effects of other projects or activities that could result in a greater effect to a valued component (VC) of the biophysical or socio-economic environments. The CEA consists of three main steps:

- Determine whether the Project will have a residual effect on identified valued components (VECs and VSECs, together referred to as VCs);
- If a residual effect is likely, assess the potential for the Project's residual effect to interact with residual effects resulting from other projects or activities (past, current, or future); and
- Determine if the interaction of the residual Project effect, in combination with other project effects, is likely to meaningfully influence a VC.

The assessment of a single project determines if *that* project is incrementally responsible for adversely affecting a VC beyond an acceptable level. The CEA must make clear to what degree the project under review is *alone* contributing to that total effect. Interactions are only considered if their assessment would influence the decision regarding approval by the regulatory reviewers.

The temporal boundaries selected for the cumulative effects assessment was 1970 to 2045, a period of 75 years, based on the approximate date of introduction of industrial development in the area and the life of the current Project. The Nunavut Settlement Area was selected as the spatial boundary for the assessment, with provisions to include shipping through Hudson Strait associated with the Raglan Mine. Study areas were selected appropriate to the evaluation of each VC.

The CEA considered certain and reasonably foreseeable past, present, and future projects. These are defined as follows:

- Certain: based on currently available information at the time of writing the project or activity exists, will proceed, or there is a high probability the action will proceed; and
- Reasonably foreseeable: based on currently available information at the time of writing, the action may proceed, but there is some uncertainty about this conclusion.

For the assessment, 'certain' projects includes past and ongoing projects and activities as evidenced by existing disturbance areas and facilities, current land use tenures and activities, and traditional knowledge and use. 'Reasonably foreseeable' projects are those projects and activities that have entered into a formal project approval or permitting process, projects that have not entered a formal process but that have been discussed publicly by proponents, and those specified in the Guidelines (NIRB 2009).

Several key certain and reasonably foreseeable projects and activities were identified and considered in the assessment:

- Baffinland's previous exploration and bulk sampling programs;
- Baffinland's proposed monitoring programs concurrent with the Project;
- Raglan Mine at Deception Bay, Nunavik;
- Meadowbank Mine near Baker Lake, Nunavut;
- The decommissioned Nanisivik and Polaris Mines;
- A potential mine associated with the Roche Point Iron Ore Project, south of Hall Beach;
- The induced expansion of the Mary River Project through development of additional iron ore deposits with a credible development scenario of a doubling of the proposed production rate;
- General shipping through the study area, based on shipping statistics for a nine year period from 2002 through 2010;
- The proposed naval facility at Nanisivik;
- DEW Line Decommissioning;
- Air Transport;
- Military Exercises;
- Traditional land use;
- Communities; and
- Climate Change.

The assessment concludes that the greatest potential for cumulative effects on terrestrial and socio-economic VCs was the potential for induced development of additional ore bodies at Mary River. Under this scenario, Baffinland assumes that development of additional deposits would practically involve an approximate doubling of production output over the temporal scale of the assessment, through the development of one or two additional deposits. It is unlikely that more than this would be developed before the end of life of the current Project (and temporal boundary of the cumulative effects assessment), based on capital requirements, the required ship fleet, throughput capacity of the port sites, and the market for iron ore within the temporal bounds of the assessment.

The potential for cumulative effects on marine VCs is driven by current shipping by mining projects, community sealifts, military and coast guard traffic, all represented by the shipping statistics available, as well as previous and reasonably foreseeable mining projects. Again, the credible expansion scenario for Mary River was the largest factor in the assessment.

No significant cumulative effects were identified in the assessment. The assessment identified the potential need to incorporate additional mitigation measures to maintain effects below acceptable thresholds.

- Climate change – A cumulative effect on climate change will occur through the release of greenhouse gases (GHG), though these emissions will not be significant in the context of global GHG emissions;
- Air quality – A cumulative effect to air quality will occur within the Project's local study area as a result of Baffinland's credible expansion scenario. It is expected that the cumulative effect will not be significant, with the application of additional mitigation measures, if necessary;
- Noise – A cumulative effect will occur in the vicinity of the Project due to the expansion scenario, but this effect will not be significant;
- Vegetation – Cumulative effects are likely to occur to vegetation within the terrestrial RSA as a result of the expansion scenario and possibly additional exploration, but this effect will not be significant;

- Caribou – An incremental amount of habitat will be lost within the North Baffin caribou range due to the expansion scenario and ongoing exploration and aircraft disturbance, but cumulative effects to caribou movement and mortality are not expected. The predicted cumulative effect to caribou is not significant;
- Migratory birds – An incremental amount of habitat loss within the terrestrial RSA is predicted to be not significant;
- Freshwater quantity and quality – Incremental increases in water withdrawals from water supply lakes, and additional runoff into the Mary River from new mining areas within the freshwater LSAs will not be significant;
- Freshwater fish – Potential additional effects to fish and fish habitat, from habitat loss or water quality changes, are predicted to be not significant;
- Sea ice – Additional disruption of fast ice is likely to occur within Steensby Inlet; based on an assumed doubling of ice breaking associated with the credible expansion scenario for the Project and a conservative estimate for how much fast ice will be disturbed with each ship passage, the cumulative disruption effect approaches the selected threshold of disturbance based on ringed seal habitat. It is expected that based on the conservatism in the estimate, and with additional efforts to restrict the amount of fast ice disturbed, that this effect will be not significant;
- Marine water and sediment quality – Increased production will result in ballast water discharges at the port sites twice as frequently, and increased dust emissions. Increased frequency of ballast water discharge could result in water quality changes that may in turn affect the composition of local benthic biota. Increased dust could similarly increase the magnitude of water quality effects. Additional modelling of ballast water dispersion and ore dust deposition would need to be undertaken to confirm whether effects are significant, but it is expected that with additional mitigation (for example, ballast water treatment; or additional dust emission controls) that these effects could be satisfactorily mitigated to within acceptable limits, with no significant cumulative effect. Monitoring as part of the Project will allow for more accurate predictions in a future environmental assessment, if a project expansion occurred;
- Marine biota - Under the credible scenario of a doubling of production at Mary River, changes to infrastructure at Steensby Port will be required. However no cumulative effects to marine coastal habitat are expected; and
- Marine mammals VECs - For purposes of this assessment, the credible development scenario of a doubling of production at Mary River is assumed to result in an approximate doubling in shipping frequency; this would likely increase the potential for synergistic cumulative effects because the frequency of ore carrier transits will be approximately doubled along the shipping routes, thereby increasing the likelihood that more than one ore carrier may transit a given area at the same time. Synergistic disturbance and masking effects from icebreaking ore carriers are most likely to act on belugas, narwhals, and bowhead whales in Hudson Strait during the ice-covered season. During the open-water period, cetaceans, particularly narwhals in Eclipse Sound and Milne Inlet, may also experience synergistic disturbance and masking effects. However, the modelling of the noise from passing ore carriers indicated no additional effects. Should a decision be made to seek approval to proceed with the development of additional Mary River ore deposits, an environmental assessment would be required. The certainty level in cumulative effects predictions at that time will be increased by

the results of the marine mammal monitoring program proposed for shipping activities associated with the current Project.

With respect to Communities, the following Valued Components and Key Indicators were considered in the cumulative effects assessment:

- Population demographics (demographic stability) – the Roche Bay Project and Nanisivik Naval facility, if the either proceeds, will have overlapping employment and the possibility to induce in- or out-migration. The cumulative effect, however, is predicted to be not significant;
- Human health and well-being (substance abuse; and community and social stability) – cumulative effects are possible with the same two projects above, but are not predicted to be significant; and
- Community infrastructure and public service (competition for skilled workers) - given that the Project demand for labour may exceed supply, any additional projects are unlikely to have a cumulative effect on this VSEC.

For the purpose of this cumulative effects assessment only negative residual effects were addressed, though it should be noted that most of the residual socio-economic effects determined for the Project will be positive effects. In considering the cumulative effects that may arise through interactions with other projects and other reasonably foreseeable projects, none of the positive residual effects are expected to become adverse through any reasonably foreseeable interaction, and therefore, these positive residual effects are not considered further.

Additionally, an expansion scenario at Mary River combined with other land uses may have cumulative effects on cultural resources (archaeological sites). However, Baffinland has well established procedures for managing cultural resources and therefore an expansion of the Project is unlikely to cause cumulative effects since surveys will be conducted and any sites properly mitigated. The activities of other land users could contribute to a cumulative effect that can be managed through effective enforcement through land use permits.

Although cumulative effects have been identified as a possibility for several VCs, particularly caribou and marine mammals, no significant cumulative effects are anticipated to result from the Project. With the exception of marine mammals, most potential cumulative effects identified were the result of potential interactions with projects that may be induced by the Mary River Project (development of Deposits No. 2 to 9 and the Separation Lake hydroelectric project). As noted, if a decision is made to move forward with these projects (contingent on the Mary River Project proceeding), another environmental assessment will be conducted, including a detailed assessment of the potential effects of these activities in conjunction with effects of the Mary River Project; the potential cumulative effects would be reviewed by the appropriate regulatory agencies and any potential significant cumulative effects would be identified and avoided.

SECTION 10.0 - TRANSBOUNDARY EFFECTS

10.1 DEFINITION AND APPROACH

A transboundary effect can occur when animals move across jurisdictional boundaries (e.g., caribou and birds migrating) or when project activities themselves, or their zone of influence, cross jurisdictional boundaries (e.g., transportation and air quality). The focus of Baffinland's transboundary effects assessment is on the latter, as impacts to migratory VECs occurring within Nunavut are considered and fully assessed in the both the component specific and cumulative effect assessments.

In accordance with the definition and guidance provided by NIRB, the transboundary effects assessment for the Project identifies if the effects from Project activities occur across provincial, territorial and international boundaries. The Project, including the proposed Canadian shipping route, is located entirely within the NSA and therefore only the resulting zone of influence of Project activities could potentially result in transboundary effects.

There are two jurisdictional boundaries that border the Qikiqtani region of Nunavut. To the south of Baffin Island and across Hudson Strait is the Nunavik Inuit Settlement Area, which forms part of northern Quebec, and to the east of Baffin Island and across Davis Strait is Greenland. The Project does not directly cross into these jurisdictions.

The Project activities that could cause transboundary effects are shipping and air emissions. All other activities and VECs are not a transboundary concern based on the geographical location of the Project and the limited range of any possible or detectable effects. Transboundary socio-economic effects are not identified as a concern for the Project as employees from points of hire outside of Nunavut are accustomed to the wage economy.

The transboundary effect assessment is based on proximity to jurisdictional boundaries and possible long-range effects of contaminant deposition and shipping activities.

10.2 SHIPPING

There are three types of events that could cause transboundary effects resulting from the Project's shipping activity:

- A fuel spill along the shipping lane;
- Marine mammals; and
- The introduction of invasive species.

10.2.1 Large Fuel Spill Along the Shipping Lane

Large diesel spill scenarios along the shipping lanes were modeled to predict the trajectory of a diesel spill and the coast line that could be impacted by such a spill. The purpose of this modeling was for estimating the marine and coastal areas potentially affected by such an event and the initial weathering fate of the diesel fuel. In most cases, the modeling indicates that the worst case diesel spill of 5 ML is likely to have a relatively short duration, in the order of days to weeks. In addition, it is likely that a swath of 15 km on either side of the shipping lane is likely to contain to contain 98 % of the possible trajectories for an open-water diesel spill (Volume 9, Appendix 9C). Given the distance of the shipping lane from other jurisdictions, it is unlikely that such a spill would reach into other Canadian jurisdictions.

10.2.2 Marine Mammals

The impact assessment (Volume 8, Section 5) indicates that the Project will have no significant residual effects on the marine mammal population within the Project area or along the shipping lanes. For this reason, current marine mammals' migration patterns should not be impacted and no transboundary effects are anticipated.

10.2.3 Introduction of Invasive Species

The introduction of an invasive marine species is a more likely outcome of a transboundary effect. In this scenario, an invasive species would be introduced to the Port areas via the ship ballast water or by adherence to the ship hull.

To minimize the risk of introduction of such species, ballast water will be exchanged in the mid-North Atlantic Ocean, which is part of the same ocean regime as Steensby Port. Upon arrival at the port, the ships will discharge ballast water to allow for filling the ship with ore. During winter the full ballast is required to assist in ice breaking, so the entire amount of ballast water (approximately 185,000 m^3) will be discharged at the ore dock. During summer the ships may discharge ballast water along the shipping route before arriving at the dock, and only a partial load of ballast (in the order of 70,000 m^3) will be discharged at the dock. To date, there is no compelling evidence to suggest that the release of ballast water in port will adversely affect the marine environment.

With respect to antifouling coating for the ships, the dedicated ore carriers (190,000 DWT) will have no antifouling, but if the project is supported by market ships, there may be (regulatory compliant) coatings in use. Smaller ore carriers will be taken from the market and will comply with international regulations prevailing at the time. Under the *Canada Shipping Act*, the Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals apply to all ships in Canadian waters and to all Canadian ships everywhere.

10.3 AIR EMISSIONS

The assessment of effects on air quality is presented in Volume 5 of the EIS. The air dispersion modeling carried out as part of the impact assessment shows that residual effects will not extend beyond 3 km from the Project site. As a result and given the location of the Project no transboundary air quality effects are possible.

In addition to local air quality, the Project will emit greenhouse gases (GHG) into the atmosphere as diesel generators are the only current viable and available source of energy, which is required to operate the mine and support facilities. GHG emissions contribute to global warming, which is an issue of global concern that crosses all borders and affects all jurisdictions, particularly circumpolar countries. Baffinland acknowledges that GHG emissions are a broad scale transboundary issue for which there is presently no viable alternative in Nunavut.

At the Project level Baffinland will report annually on performance indicators, including energy use and GHG emissions management. The report will help to show Nunavummiut and other Canadians what the Company's current performance is and how it can be improved. Baffinland will also explore ways of conserving energy as the Project moves through development and will adapt accordingly.

SECTION 11.0 - ENVIRONMENTAL MANAGEMENT SYSTEM

11.1 ENVIRONMENTAL HEALTH, SAFETY MANAGEMENT FRAMEWORK

Baffinland is committed to the principles of Sustainability, to the protection of the health and safety of employees, to the protection of the environment and its biodiversity, and, on-going community involvement and participation in the Mary River Project. The Company embraces the principle of Social Responsibility as outlined by the emerging voluntary International Standard, ISO 26000:2010, *Guidance for Social Responsibility.*

11.1.1 Code of Business Conduct and Ethics

Baffinland has created a Code of Business Conduct and Ethics (the Code) to outline principles to which the company's employees, officers, and directors are expected to adhere in the conduct of Baffinland's business. This Code sets forth principles regarding individual and peer responsibilities, as well as responsibilities to other employees, the public, and other stakeholders.

The purpose of this Code is to promote:

- Honest and ethical conduct, integrity and deter wrongdoing;
- Compliance with applicable laws and regulations;
- Reporting of any illegal or unethical behaviour; and
- Accurate and timely disclosure.

Employees are expected to abide by this Code as well as any other applicable Baffinland policies and guidelines. Any violations of this Code or any other policies established by the company from time to time could result in disciplinary action, up to and including termination of employment.

The company's Corporate Governance Committee is responsible for monitoring compliance with the Code. The Governance Committee periodically assesses the Code's adequacy and recommends any changes to the company's Board of Directors. The Code is posted on Baffinland's website.

11.1.2 Environmental, Health and Safety Committee Charter

The EHS Committee of the Board of Directors of Baffinland acknowledges and accepts responsibilities placed on directors of corporations with respect to complying with legislation and regulations aimed to protect the environment and the health and safety of its employees, which are contained in laws, regulations, and policies of Nunavut Territory, and Canada.

The general mandate of the EHS Committee is to oversee the development and implementation of policies and management systems of the company relating to environmental, health and safety issues to ensure compliance with applicable laws and BMPs. This EHS Charter is posted on Baffinland's website.

11.2 ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT SYSTEM

Volume 10 outlines Baffinland's EHS Management System, which is a framework that describes the requirements to develop and to maintain the elements of a management system in a manner relevant to:

- The Principle of Sustainability;
- The practical application of the Precautionary Principle in the decision making process;
- The legal and regulatory requirements;
- The health and safety risks associated with the Mary River Project;

- The Project's environmental impacts; and
- On-going Stakeholder engagement.

The EHS Framework is attached in Volume 10, Appendix 10A-1.

Baffinland's EHS Management System provides a framework for the practical implementation of the above principles. The EHS Management System is consistent with the world class Occupational Health and Safety Management System (OHSAS) 18001, dated 2007; the International Standards Organization ISO 14001:2004 (Environmental) Management System Standards and, the emerging *ISO Standard 26000:2010 related to Guidance for Social Responsibility*.

The EHS Management System defines the sequence of policy, planning, implementation and operation, checking and corrective actions, and, management review process that must be in place to ensure that the Mary River Project is executed in an environmentally and socially acceptable manner and in a spirit of continuous improvement. This management process is illustrated in Figure 1-11.1.

11.2.1 Environmental Aspect Management

Baffinland identifies Health and Safety Risks/Hazards and Environmental Aspects/Impacts on a regular basis. Baffinland prepares, maintains and updates operational controls of its activities, products or services that it can control, and over which it can be expected to have an influence. The Company Standard document for carrying out Hazard/Risk and Aspect/Impact assessments (SD-STD-002) is attached as Volume 10, Appendix 10A-2.

The protection of biodiversity is embedded in those operational controls. Baffinland can then determine those aspects that have or can have significant impacts on the environment. The Company needs to ensure that the aspects related to these significant impacts are considered in setting environmental objectives and targets.

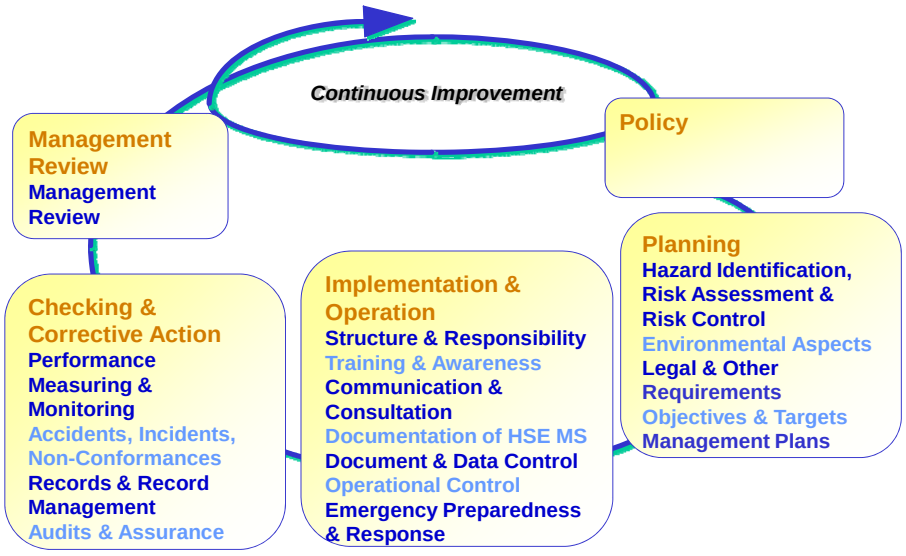


Figure 1-11.1 EHS Management System

11.2.2 Continuous Improvement and Adaptive Management

Baffinland's EHS system defines the sequence of "Policy – Planning – Implementation and Operation – Checking and Corrective Actions – Management Review Process" that must be in place to ensure that the Mary River Project is executed in an environmentally and socially acceptable manner and in a spirit of continuous improvement and employs adaptive management principles.

The EHS system and its associated management plans are Life of Project Management Plans. They apply from the onset of the exploration phase, through pre-development activities, construction, operation and closure phases of the Project. The application of the continuous improvement principle, also known as adaptive management (Policy – Planning - Checking and Corrective Actions – Management Review Process) ensures that the various environmental management plans are appropriate for the level of activities on site at all times. Adaptive management is the application of mitigation measures when management review processes identifies potential adverse direct effects caused by the project.

11.2.3 Environmental and Social Impact Assessment (ESIA)

Environmental and Social Impact Assessment is an important tool for ensuring that environmental protection is integrated into project planning and decision-making and that relevant environmental and social interfaces are considered. The ESIA process provides a structured approach to considering the environmental, economic, and social consequences of options and alternatives. The ESIA is applied to all stages of the Mary River Project life cycle and takes into consideration the principles of:

- Sustainability;
- Precautionary Principle;
- Stakeholders Involvement;
- Incorporation of Traditional Knowledge;
- Biodiversity; and
- Climate Change.

The impact assessments in Volumes 4 through 8 predict and assess the magnitude of potential Project-related impacts and identify the specific mitigation measures that are required to reduce those impacts to acceptable levels. Volume 9 incorporates assessments on cumulative and trans-boundary effects.

11.2.4 Inuit Knowledge

Baffinland recognizes the importance of traditional Inuit Knowledge, or Inuit Qaujimaningit (IQ), and that it is an "indispensable element both as baseline information and as an Inuit lens through which impact analyses can be better understood and can also result in a more active and meaningful community engagement" (NIRB, 2009). Baffinland will continue to consult the IQ database it has generated as part of its overall baseline database and is committed to incorporate into its Environmental Mitigation and Management Plans (EMMP) IQ to which it has access. As an example, a harvest study is currently in the planning stages, and may be carried out in conjunction with the Qikiqtani Inuit Association. This harvest study will monitor caribou and marine mammal harvests in relation to the Project. The details of the study remain a work in progress.

Baffinland will continue the practice of retaining an "Elder-in-residence" or ombudsman on-site to advice and counsel on IQ issues. This individual will also be involved in the Management Reviews of the various plans (refer to Volume 4, Section 11.3). The Company's Stakeholder Engagement Plan and Human Resources Plan outline other strategies by which the objective of integrating IQ in EHS management practices will be achieved.

11.3 ENVIRONMENTAL DESIGN GUIDELINES

Avoidance of negative impacts is a cornerstone of the principles of sustainability, the precautionary principle, community involvement, and protection of biodiversity. The establishment of Environmental Design Guidelines (EDG) at an early stage in the project life cycle enabled Baffinland to avoid many potentially adverse impacts on the VECs and VSECs identified and discussed in Volumes 4 through 8 of the EIS.

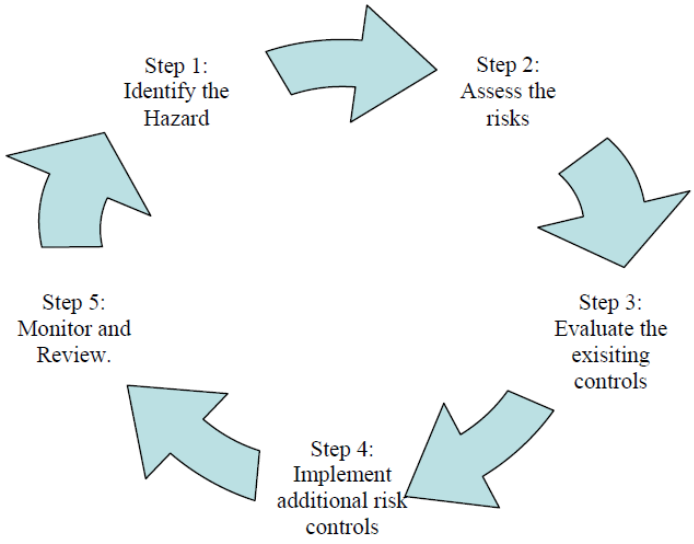
The EDG presented in Volume 10 are central to environmental protection practices such as siting of the facilities, the establishment of setbacks from ecologically sensitive areas, design guidelines adapted to the climatic extremes of the area, and energy efficiency. Energy use is linked to climate change due to GHG emissions.

11.4 ENVIRONMENTAL PROTECTION PLAN (EPP)

The EPP provides activity specific, plainly written, environmental protection procedures to help ensure a high level of environmental protection throughout the life of the Project. The EPP summarizes the routine mitigative actions and monitoring that are specified in the various EMMP. It is the objective of Baffinland to apply appropriate and effective management practices to advance environmental management to all facets of its operations related to the Project. Officers, management, employees and contractors of Baffinland are all responsible for the incorporation of environmental protection measures into their work responsibilities. This is largely accomplished by means of appropriate distribution and communication of the EPP at the Project Site.

11.5 HAZARD IDENTIFICATION AND RISK MANAGEMENT

Knowledge of hazards and the evaluation of associated risks are necessary requirements for establishing health, safety and environmental objectives and targets, and for setting priorities to control the identified risks to employees and others on an ongoing basis. Baffinland's Risk Assessment (Standard SD-STD-002) methodology is an integral part of the EHS Management Framework (Volume 10, Appendix 10A). The Hazard Identification and Risk Assessment procedure can best be illustrated as a cycle:



The results of hazard identification and risk assessment are the basis for establishing and documenting:

- Environmental, health and safety objectives;
- Environmental, health and safety performance targets; and
- Actions to achieve the established objectives and targets.

Each hazard classified as representing a priority risk requires an action plan with recommendations to control the risk. Recommendations include consideration for:

- Operational controls;
- Training and awareness; and
- Performance measurement and monitoring.

The action plan and recommendations are forwarded to the area management responsible for the follow-up. In all cases, the action plan and recommendations are communicated to the interested and affected employees (and others as required). Typically, the recommendations are implemented in consultation with interested and affected employees (and others as required).

The Emergency and Spill Response Plan, Oil Pollution Emergency Plans for both the Milne Port and the Steensby Port (OPEP), the Explosives Management Plan and the Hazardous Material Management Plans are founded on the risk assessment analysis.

11.5.1 Emergency Response and Spill Contingency Plan

Accidents and malfunctions, emergencies and unforeseen events that could result in an accident or incident causing injuries, illnesses or environmental impacts, or that could cause health and safety risks or environmental impacts, need to be considered within the EHS Management System.

Baffinland maintains operational controls to identify the potential for and responses to accidents, incidents and emergency situations, and to prevent and mitigate the likely injury, illness and adverse environmental impacts that may be associated with such accidents or incidents.

Due to the remoteness of the Project site and the lack of infrastructure, Baffinland has committed to be self-sufficient in terms of emergency response capabilities.

Baffinland's Emergency Response Plan is adapted to the level of activities taking place at the Mary River site. An overview of the Emergency Response and Spill Contingency Plan for the 2012 work plan is presented in Volume 10 while the detailed plan is presented in Volume 3, Appendix 3B, Attachment 5.

11.5.2 Oil Pollution Emergency Plans (OPEP)

The OPEPs address potential spills scenarios associated with refuelling of tank farms and ship to shore transfer of fuel. OPEP are requirements of the *Canada Shipping Act* and the associated *Oil Handling Facility Regulations*. OPEPs must be reviewed and approved by Transport Canada on an annual basis. An overview of the OPEPs for the 2012 work plan is presented in Volume 10 while the draft OPEP for the 2012 work plan are presented in Volume 3, Appendix 3B, Attachment 5.

11.5.3 Explosives Management Plan

The storage and use of explosives is strictly regulated. An overview of this management plan is plan is presented in Volume 10 while the draft OPEP for the 2012 work plan are presented in Volume 3, Appendix 3B, Attachment 8.

11.5.4 Hazardous Material Management Plan

A variety of petroleum products and other hazardous materials are used as part of ongoing site activities. Large quantities of petroleum products (Arctic diesel, marine diesel and Jet A aviation fuel) are stored on site at designated locations. Explosives are also stored on site, as are other hazardous materials, though in smaller quantities. Nonetheless, all these products are considered as potential environmental and safety hazards. Transportation, handling and storage methods and procedures of these materials are subjected to the Hazard/Aspect Identification and Risk Assessment. Baffinland prepared a Hazardous Material Management Plan on the basis of MSDS instruction for each of these hazardous substances. An overview of this management plan is presented Volume 10 while the detailed plan is presented in Volume 3, Appendix 3B, Attachment 5 (supporting document for the Type A Water License Application).

11.6 ENVIRONMENTAL MITIGATION AND MONITORING PLAN

The EMMP take over where the Impact Assessment and the EDG leave off. The EMMPs:

- Define the processes by which the mitigation measures will be implemented;
- Define the monitoring systems that will be put into place in order to assess and document the adequacy of each mitigating action in reducing impacts to insignificant levels;
- Define the roles and responsibilities of individuals responsible for implementation and follow up;
- Identify Indicators and thresholds for performance evaluation and to trigger corrective actions;
- Define the reporting and documentation requirements; and
- Establish the management review requirements and the process of continuous improvement.

The purpose of the EMMPs is to ensure that the proposed mitigation are implemented and monitored. Corrective actions can be rapidly implemented should the mitigation measures proved ineffective and / or adverse residual effects to the specific VECs are detected. Table 1-11.1 presents a list of EMMPs developed for the Mary River Project and their respective targeted VECs.

The EHS Management System also specifies the reporting and documentation requirements for all EMMPs, auditing, and the process of management review and adaptive changes. An overview of the various EMMPs is presented in Volume 10. The specific EMMPs are presented in Volume 3, Appendix 3B, Attachment 5 and in Volume 10, Appendix 10D-1 to 10D-11.

11.6.1 Environmental Management Plan

Each of the EMMP contains monitoring and reporting requirements. The purpose of the Environmental Monitoring Plan is to regroup the monitoring requirements of each EMMP into a comprehensive document. The EMP outlines the measures to be employed for monitoring and reporting aspects of the atmospheric, terrestrial, freshwater and marine environments adopted by Baffinland for the Mary River Project.

This comprehensive EMP was prepared in response to requests from various stakeholders during the DEIS review process. An overview of the EMP is presented in Volume 10 while the detailed EMP is presented in Volume 3, Appendix 3B, Attachment 5.

Table 1-11.1 Environmental Mitigation and Monitoring Plans and Targeted VECs

Environmental Monitoring and Mitigation Plan	Document	Appendix	Targeted VECs
Air Quality and Noise Abatement Management Plan	SD-EMMP-001	Volume 10, Appendix 10D-1	Terrestrial Wildlife, Birds and Marine Mammals
Surface Water, Aquatic Ecosystems, Fish and Fish Habitat Management Plan	SD-EMMP-002	Volume 3, Appendix 3B, Attachment 5	Water quantity Water quality, Aquatic Ecosystem, Vegetation, Terrestrial Wildlife, Fish and Fish Habitat
Wastewater Management Plan	SD-EMMP-003	Volume 3, Appendix 3B, Attachment 5	Water quality, Fish and Fish Habitat
Waste Management Plan	SD-EMMP-004	Volume 3, Appendix 3B, Attachment 5	Land use, Water quality, Aquatic Ecosystem, Fish and Fish Habitat, Air quality, and Birds
Waste Rock Management Plan	SD-EMMP-005	Volume 3, Appendix 3B, Attachment 5	Landform, Water quality, Aquatic Ecosystem, Fish and Fish Habitat, Vegetation
Borrow Pits and Quarry Management Plan	SD-EMMP-006	Volume 3, Appendix 3B, Attachment 6	Noise, Air quality, Water quality, Aquatic Ecosystem, Fish and Fish Habitat, Vegetation and Terrestrial Wildlife
No Net Loss Plan Management Plan	SD-EMMP-007	Volume 10, Appendix 10D-7	Water quality, Aquatic Ecosystem, Fish and Fish Habitat
Roads Management Plan	SD-EMMP-008	Volume 10, Appendix 10D-8	Cultural Heritage, Water quality, Aquatic Ecosystem, Fish and Fish Habitat, Terrestrial Wildlife
Railway Management Plan	SD-EMMP-009	Volume 10, Appendix 10D-9	Water quality, Aquatic Ecosystem, Fish and Fish Habitat, Terrestrial Wildlife
Shipping and Marine Mammals Management Plan	SD-EMMP-010	Volume 10,l Appendix 10D-10	Marine environment VECs, targeting Marine Mammals
Terrestrial Environment Management Plan	SD-EMMP-011	Volume 10, Appendix 10D-11	Vegetation, Birds and Terrestrial Wildlife

11.7 ENVIRONMENTAL EFFECTS MANAGEMENT FRAMEWORK (EEMF)

This EEMF is a component of the Baffinland's EHS Management System). Baffinland's approach to environmental management is to seek continuous improvement in performance with documentation comprising a series of Environmental Mitigation and Environmental Monitoring Plans (EMMPs) focused on valued ecosystem components (VEC). An overview of the EEMP is presented in Volume 10.

A good EEMP design addresses public concerns, regulatory requirements, and scientific issues. The goals and objectives of the respective monitoring programs will be clearly stated to ensure the results are

scientifically defensible and relevant. The goals relate to the specific purpose of the respective monitoring components of the EEMP and the objectives will address the need to confirm predictions and to confirm the effectiveness of mitigation measures. Most importantly, the role of the various monitoring programs as early warning indicators will help to identify exceedances or unanticipated effects and trigger additional monitoring studies or the implementation of mitigation measures.

It is the intention of Baffinland to establish cooperative environmental arrangements between the company, the QIA (Qikiqtani Inuit Association) and the Inuit of Northern Baffin Island to protect both the environment as well as the traditional relationship of the Inuit peoples with the natural environment. Review agencies will also be consulted (Environment Canada, Government of Nunavut DoE, DFO, others as required). The objectives of these arrangements are to:

- Develop a comprehensive and integrated environmental monitoring program, Incorporate an ecosystem-based approach for monitoring and management of Project-related environmental effects;
- Include the meaningful participation Inuit in all aspects of the environmental monitoring program in all phases of the development, including the decommissioning and reclamation;
- Integrate traditional knowledge into the development and implementation of the environmental monitoring programs;
- Coordinate all aspects of the environmental monitoring program; and
- Report in an effective and timely manner on the environmental monitoring program and its results in ways that are meaningful to Inuit people.

There are specific purposes for conducting an EEM program. These are:

- To assist in the identification of target indicators, threshold, and, linkages for monitoring;
- To provide baseline data so that project activities can be scheduled or planned to avoid or reduce Project adverse effects interactions;
- To evaluate the effectiveness of mitigation;
- To identify unforeseen environmental effects;
- To provide an early warning of undesirable change in the environment;
- To improve the understanding of cause-and-effect relationships; and
- To verify/validate effects predictions.

There are three categories of study which flow from these purposes:

1. Research – background studies intended to establish need for, or parameters of, an EEM program. Research studies could address issues such as natural variability of a measured parameter or monitoring target, or examine the nature, extent or duration of a potential Project – Valued Ecosystem Component (VEC) interaction. Research studies address Purpose #1 for EEM.

2. Surveillance – programs to produce information about the pattern of occurrence of target indicators/monitoring targets. Studies, for example to establish travel patterns of migratory animals through the Project area would address Purpose # 2 for EEM.

3. Monitoring – programs to address and quantify cause and affect linkages between Project activities and components of the receiving environment. The full rigor of design criteria would apply to this type of monitoring program, which would address one or more of Purposes #3 through #7.

Research monitoring is conducted primarily to determine the need for further monitoring and if a program is deemed necessary, to identify target indicators and linkages. Research is usually only done once (at the beginning). Upon the determination that an EEM program is necessary, either a surveillance program or an EEM program is initiated.

The surveillance program is usually short term and is typically designed to identify potential mitigation measures to avoid adverse Project interactions. A surveillance program can also serve to identify a change in conditions which could trigger an EEMP. A full scale EEMP program is typically long term and is usually multifaceted.

In developing the EEM program, Baffinland has sought to ensure that relevant issues have been addressed, while avoiding the tendency to carry out a broad spectrum of poorly focused efforts. In order to accomplish this, emphasis has been focused on the issue of Project-induced change and addressing the challenge of establishing cause-and-effect relationships between the Project and the identified monitoring target.

Monitoring which simply records change is not Effects Monitoring. EEM must be relevant to the Project and to the possible effects which the Project will have on the environment; EEM must be capable of establishing a relationship between any observed change in the environment and some feature of the Project. The set of criteria to be applied in considering candidate monitoring studies include:

- A credible Cause and Effect relationship can be postulated/established;
- The identified Effect has the potential to be negative;
- The effect is considered Significant;
- The likelihood is High or Moderate;
- The timing of interaction between the Project and the VEC will be sustained;
- A credible, Unplanned Event could result in a significant negative effect; and
- The level of Confidence in the predicted Effect is low.

For the design of the EEMP, Baffinland's approach is to draw on the understanding of ecosystem interconnections and pathways in developing individual monitoring studies. The result is a pattern of individual monitoring programs, each of which satisfies the selection criteria and the design requirements for EEMP, and which, in total provide a comprehensive monitoring network. Through examination of the measured changes in the selected indicators, conclusions will be drawn with respect to impacts on the ecosystem as a whole.

In EEMP it will be necessary to establish protocols for evaluating data to determine if there is a need to modify monitoring plans or develop and implement corrective action as per the procedure illustrated in Volume 10, Figure 10-7.1. Thus, thresholds will need to be established for each monitoring program in one of a number of possible ways:

- Exceedance of background or baseline data by a prescribed percentage;
- Exceedance of an established "no observable effects concentration";
- Exceedance of "meaningful change" threshold criteria;
- Exceedance by an amount which is "statistically significant"; and
- Observance of levels which are known to cause an environmental effect.

For each monitoring program, appropriate thresholds will be established for the parameters and environmental effects being monitored. When thresholds are exceeded, the appropriate staff and management within Baffinland will be notified. As well, the appropriate regulatory agencies and Monitoring Partnerships will be notified and consulted. The cause of the exceedance and its nature will be investigated. An action plan will be developed and appropriate mitigation measures will be

implemented. As per Baffinland's EHS Management System requirement, the EEMP will be reviewed and, if necessary modified to ensure that it continues to be appropriate.

11.8 ENVIRONMENTAL EFFECTS MONITORING (MMER)

The MMER stipulates a number of conditions under which a mine may release effluent into the environment. These conditions include monitoring:

- Effluent for pH and deleterious substances;
- Acute lethality testing;
- Daphnia magna monitoring tests; and
- Environmental effects monitoring (EEM) studies.

The EEM studies are specified in Schedule 5 of the MMER Regulations and are designed to monitor the potential effects of effluent on the receiving environment, i.e., on fish populations, on fish tissue and on the benthic invertebrates community.

11.9 HEALTH AND SAFETY MANAGEMENT PLAN

The Health and Safety Management Plan aims at protecting the safety and health of its employees and contractors, and the communities in which Baffinland operates. The Company's vision is to achieve:

- An accident/incident free culture; and
- A sustainable and competitive business advantage through leadership and excellence in environmental, health and safety.

Baffinland is focused on everyone's safety each and every day. Business success will not be possible without a safe workplace and safe workers. Implementing the processes and systems for safety excellence and integrating them into everyday activities, develop safe behaviour and ensure a safe place for its employees are Baffinland objectives.

The Health & Safety Management Plan adapted to the 2012 work plan is presented in Volume 3, Appendix 3B, Attachment 5.

11.10 SOCIO-ECONOMIC MANAGEMENT PLAN

The Socio-Economic Management Plans (SEMP) is an integral part of Baffinland EHS Management System. Three management plans have been developed. An overview of these socio-economic management plans is presented in Volume 10.

11.10.1 Stakeholder Engagement Plan

The Project will affect primarily the five closest North Baffin communities of Arctic Bay, Clyde River, Hall Beach, Igloolik and Pond Inlet; Iqaluit, the territorial capital of Nunavut and the commercial gateway to Baffin Island will experience increased activity. The shipping zone of influence is relevant to Cape Dorset and Kimmirut. These communities comprise the Project's social zone of influence and were selected based on existing and historical socio-economic and/or ecosystemic ties to the Project area and in some cases their geographic proximity to the Project.

The SEP (Volume 10, Appendix 10F-1) is a core principle of the ISO Standard 26000:2010 related to Guidance for Social responsibility. This SEP establishes the approach, strategy and means by which Baffinland will communicate with the Project stakeholders. It draws on the knowledge gained from past consultation and engagement practices, and focuses on maintaining and improving existing stakeholder

relationships and management systems. Engagement will be of particular importance during the construction phase of the Project, as relationships are developed and solidified. As the Project advances, the SEP will be refined and updated to provide relevant guidance that will be applicable to subsequent phases of the Project.

11.10.2 Cultural and Heritage Resource Protection Plan (CHRPP)

The North Baffin region and the Mary River Project Area have a very rich archaeological history. This CHRPP (Volume 10, Appendix 10F-2) describes the processes by which ground disturbing activities of the Project can be carried out with appropriate assessments by project archaeologists, and also lays out the procedures for addressing chance finds of archaeological resources during construction activities.

11.10.3 Human Resources Management Plan (HRMP)

The HRMP (Volume 10, Appendix 10F-3) which focuses on action and strategies to ensure maximum Inuit participation at all levels of the Project. Baffinland is committed to providing an employment climate that will attract, develop, and retain qualified personnel. Maintaining effective, committed employees is vital to the achievement of Baffinland goals. Baffinland will respect the terms and conditions of the IIBA and is committed to use best efforts in its attempts to maximize Inuit participation throughout the life of the Project. Baffinland will use best efforts with respect to:

- Inuit employment opportunities;
- Inuit education and training;
- Equal access to job opportunities for women;
- Contracting and subcontracting to Inuit firms; and
- Support for communities.

Baffinland will work closely with the Qikiqtani Inuit Association and other third parties to deliver the necessary training to employee and community support programs in order to enhance the beneficial effects of the Project.

11.11 AUDITS, MANAGEMENT REVIEWS AND ASSURANCE

It is important for senior management to review the EHS Management System, on a regular basis, to determine its continued suitability, adequacy and effectiveness. Baffinland conducts audits to determine the degree of implementation of the Baffinland EHS Management System, and to verify the performance of the EHS Management System. The results of audit(s) and management review(s) can form the basis for the annual written statement of assurance by management on the effectiveness of the EHS Management System. Regular audits and management reviews are an essential part of Baffinland's adaptive management approach describer in Section 11.2.2 above.

11.12 RESOURCES

Baffinland provides adequate resources to implement and maintain the EHS Management System including the necessary human, material and financial resources.

11.13 RESPONSIBILITIES

The Chief Operating Officer of Baffinland is responsible for obtaining an annual written statement of assurance regarding the degree of implementation and effectiveness of the Baffinland EHS Management System.

Management is responsible for the EHS performance, the implementation of the EHS Management System, the maintenance of the EHS Management System, and for providing an annual statement of assurance to the Chief Operating Officer.

Personnel with health and safety, and environmental responsibility are responsible for advising and assisting management in meeting their EHS Management System responsibilities.

The Manager, Sustainable Development or designate is responsible for reviewing and updating the Baffinland EHS Management System document and providing functional oversight and advice regarding the implementation of the EHS Management System.

Employees will comply with all regulations, wear protective equipment, promptly report and Health, Safety and Environmental incidents. Employees will follow all Operational Controls.

The public will provide input on EHS management plans through public meetings. Citizens will be able to access the Baffinland Policy on Sustainability.

SECTION 12.0 - STATEMENT OF RESIDUAL EFFECTS

Based on the information presented in this EIS, the Mary River Project as planned will have no significant adverse residual effects for the VECs identified within the biophysical environment. The Project is not expected to compromise the ecosystematic integrity of the Nunavut Settlement Area.

No significant adverse residual effects are predicated to occur to VSECs identified within the socio-economic environment, and the Project is expected to have significant positive effects for most of the VSECs. The Project is reflects the priorities and policies of the Government of Nunavut as well as the aspirations of local communities, and is expected to enhance the future well-being of the residents and communities of the Nunavut Settlement Area and the rest of Canada.

These statements are supported by comprehensive site specific studies (baseline and modeling studies), IQ, extensive public consultation, and expert opinions.

The residual effects of the Project are summarized in Table 1-12.1 for the VECs and in Table 1-12.2 for the VSECs.

Notwithstanding the mitigation measures put in place to prevent the occurrence of a large diesel spill, such an event could have a significant effect on the coastal environment along the shipping lane.

Table 1-12.1 Summary of Residual Biophysical Effects

ATMOSPHERIC ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Climate change	Greenhouse Gases (GHG)	• Increased GHG emissions • Climate change	• Arctic grade diesel fuel • Rail transportation of ore	• Increased GHG emissions	Not significant
Air quality	Air quality	• Increased concentrations of: o Total Suspended Particulate (TSP), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), and carbon monoxide (CO). • Increased deposition of: o Dust, potential acid input (PAI).	• Apply best management practices for limiting air emissions • Use of low sulphur Arctic grade diesel fuel • Limit speed on roads • Ore crushing facilities are enclosed, vented and equipment with dust collection equipment • Apply dust suppressant as required in high traffic areas and stockpiles • Procurement policy on emissions from equipment (incinerator, generators, vehicles) • Waste segregation (incineration) • Where possible, use of granular material for road construction • Regular maintenance of equipment and vehicles	• Increased concentrations of: o Total Suspended Particulate (TSP), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), and carbon monoxide (CO). • Increased deposition of: o Dust, potential acid input (PAI).	Not significant
Noise and vibration	Noise and vibration levels	• Sensory impact on wildlife	• Procurement policy for noise for equipment and vehicles • Use of mufflers – regular maintenance of engines and equipment	• Sensory impact on wildlife	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

TERRESTRIAL ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Landforms, soil and permafrost	Sensitive landforms	• Soil contamination • Soil structure alteration • Soil destabilization and erosion • Thaw weakening and settlement • Creep settlement	• Siting of facilities and alignment of roads and railway • Design foundations suitable for site conditions • Design stream crossing structures for extreme flood event • Ensure adequate drainage and prevent pooling of water	• No residual effect (disturbance of sensitive landforms) after mitigation	Not significant
Vegetation	Vegetation	• Loss of vegetation abundance and diversity	• Limit physical footprint of facilities • Limit areas of access for vehicles • Progressive reclamation / closure	• Loss of vegetation limited to Project Development Areas (PDA)	Not significant
Birds	Peregrine Falcon Snow Goose Common and King Eider Red-throated Loon Thick-billed Murre Lapland Longspur Species at Risk Ivory Gull Ross' Gull Red Knot Harlequin Duck Short-Eared Owl	• Destruction of nests • Habitat loss • Mortality • Influences on health • Sensory disturbance	• Employee awareness / environmental induction program • Minimize footprint of facilities • Conduct nest search prior to start of activities • No hunting policy • Avoidance of areas of large concentrations of foraging or moulting birds • Avoidance of known nests or nesting areas • To the extent possible, enforce closure of a 500 m radius of the nest until fledging occurs	• Habitat loss • Mortality • Influences on health	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

TERRESTRIAL ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Birds	Peregrine Falcon Snow Goose Common and King Eider Red-throated Loon Thick-billed Murre Lapland Longspur Species at Risk Ivory Gull Ross' Gull Red Knot Harlequin Duck Short-Eared Owl	• Destruction of nests • Habitat loss • Mortality • Influences on health • Sensory disturbance	• Nest-specific management plans • To the extent possible, develop appropriate aircraft approach and departure flight paths • Refer to mitigation measures outlined in Appendix 10D-11 Terrestrial Environment Management Plan	• Habitat loss • Mortality • Influences on health	Not significant
Terrestrial wildlife and habitat	Caribou	• Habitat loss • Restriction of movement • Mortality	• Use of dust suppressant on Tote Road during growing season • Speed limits for trucks and trains which will provide more time for caribou to get off the road or rail, and will increase the chance of a truck being able to stop before a collision with a caribou. • The train is expected to operate 300 days per year, so seasonal stoppages are possible if large groups of migratory caribou return to the area. • Baffinland has a no hunting policy for all personnel while working on site. • Snow management that will grade snow banks along railway and roadway so that caribou are able to easily cross the transportation corridor without being blocked by steep snow banks.	• Habitat loss • Restriction of movement • Mortality	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

TERRESTRIAL ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Terrestrial wildlife and habitat	Caribou	• Habitat loss • Restriction of movement • Mortality	• The railway embankment will be constructed of finer fill material at the five identified trails for easier caribou movement across the railway embankment. The finer fill will replicate natural trail conditions. • Physical barriers from trains will be reduced by limiting train traffic to four passes per day.	• Habitat loss • Restriction of movement • Mortality	Not significant
FRESHWATER AQUATIC ENVIRONMENT					
Water quantity	Water quantity	• Reductions in water quantity due to water withdrawals • Increases in water quantity due to effluent discharges • Redistribution of water flows in the natural environment due to diversions	• Permit required for water withdrawal • Measurement of withdrawal quantities as per Water License • Implement measures to reduce water consumption	• Redistribution of water flows in the natural environment due project use	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

FRESHWATER AQUATIC ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Surface water and sediment quality	Water and sediment quality	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	• Siting of facilities/quarries at least 30 m from stream or water body • Install range of sediment and erosion control structures • Install diversion/collection channel or containment berms where appropriate • Routine inspection and maintenance • Ice and freshet management • Implementation of BMPs for surface water management • Sewage treatment • Wastewater treatment plant (oily water, truck wash, maintenance facilities, explosives equipment wash water) • Management of potentially acid generating rocks from waste rock pile, ore stockpiles, quarries and mine	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

FRESHWATER AQUATIC ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Surface water and sediment quality	Water and sediment quality	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	• Minimize footprint of stream crossing • Compensation plan for HADD • Appropriate design of stream/river crossing structures (culvert, bridges, etc.) • Limit barrier to movement with site specific design of rocky ramps at culvert crossing (where required) • Channel enhancement where required • Maintain minimum flow in impacted streams where possible • Monitor low flow stream, fish salvage if necessary • Fish barrier for extremely low flow streams • Use of explosives in or near streams/water bodies as per DFO Guidelines • Prevent discharge of contaminants • All hazardous materials stored on impermeable surface/secondary containment • Tank farm and large storage tanks placed in secondary containment structures (lined and impermeable) • Smaller tank – double wall ISO-containers • Refuelling on impermeable surfaces and runoff contained • Emergency and Spill Response Plan	• Changes in water quality due to point-source, non point-source and airborne emissions • Changes in sediment quality due to point-source, non point-source and airborne emissions	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

FRESHWATER AQUATIC ENVIRONMENT					
VEC	**Key Indicator**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Freshwater fish, fish habitat, and other aquatic organisms	Arctic char	• Effects on Arctic char health • Effects on Arctic char movement • Effects on Arctic char habitat quality • Arctic char mortality	• Siting of facilities/quarries at least 30 m from stream or water body • Install range of sediment and erosion control structures • Install diversion/collection channel or containment berms where appropriate • Routine inspection and maintenance • Ice and freshet management • Implementation of BMPs for surface water management • Sewage treatment • Wastewater treatment plant (oily water, truck wash, maintenance facilities, explosives equipment wash water) • Management of potentially acid generating rocks from waste rock pile, ore stockpiles, quarries and mine • Minimize footprint of stream crossing • Compensation plan for HADD • Appropriate design of stream/river crossing structures (culvert, bridges, etc.) • Limit barrier to movement with site specific design of rocky ramps at culvert crossing (where required) • Channel enhancement where required • Maintain minimum flow in impacted streams where possible • Monitor low flow stream, fish salvage if necessary • Fish barrier for extremely low flow streams • Use of explosives in or near streams/water bodies as per DFO Guidelines • Prevent discharge of contaminants	• Effects on Arctic char health • Effects on Arctic char movement • Effects on Arctic char habitat quality • Arctic char mortality	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

FRESHWATER AQUATIC ENVIRONMENT					
VEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Freshwater fish, fish habitat, and other aquatic organisms			• All hazardous materials stored on impermeable surface/secondary containment • Tank farm and large storage tanks placed in secondary containment structures (lined and impermeable) • Smaller tank – double wall ISO-containers • Refuelling on impermeable surfaces and runoff contained • Emergency and Spill Response Plan		
MARINE ENVIRONMENT					
Sea ice	Fast ice	• Disruption of shore fast ice in Steensby Inlet • Potential change to timing of shore fast ice break up and formation	• Minimize width of shipping lane through fast ice to the extent possible • Reduce vessel speed through fast ice	• Disruption of shore fast ice along shipping route in Steensby Inlet	Not significant
Marine water and sediment quality	Marine water and sediment quality	• Changes in water and sediment quality in Steensby and Milne Inlets • Accident and malfunction (e.g. oil spill)	• Site runoff water management as per management plan • Hazardous substances contained within impermeable areas as per Waste Management Plan • Sewage treatment and wastewater treatment plant (oily water, truck wash, maintenance facilities, explosives equipment wash water) • Emergency and Spill Response Plan, Milne Port OPEP and Steensby Port OPEP; SOPEP for all ships • Ship on-board waste management - no discharge at sea	• Changes in water and sediment quality in Steensby and Milne Inlets • Accident and Malfunction	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

MARINE ENVIRONMENT					
VEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Marine habitat and biota	Marine habitat	• Disruption of marine coastal habitat	• Minimize footprint of marine structures	• Loss marine coastal habitat for ports	Not significant
	Arctic char	• Effects on Arctic char health, habitat quality, and mortality	• Minimize footprint of marine structures • Compensation plan for HADD • Appropriate design of marine structures	• Effects on Arctic char health and habitat	Not significant
Marine mammals	Ringed seals	• Habitat change resulting from icebreaking and/or ice management • Disturbance caused by airborne and/or underwater noise from construction, shipping, and aircraft • Hearing impairment and/or damage caused by noise from construction activities • Masking of environmental sounds caused by vessel and construction noise • Mortality from collisions with vessels and blasting during construction	• Dock structures were designed to minimize the footprints in the marine environment • Minimize ice disturbance at ore dock and along shipping route • Schedule dock construction activity during period of low mammal occurrence – April to June (blasting, pile driving, dredging) • Use proven mitigation measures to reduce noise and noise propagation during construction (DFO's guideline overpressure limit, bubble curtain system for blasting) • Discourage marine mammals from the blast area with potential use of acoustic deterrent device • Vessels will maintain a constant course and speed whenever possible - reduce vessel speed in Milne Inlet • Vessels will minimize idling of engines when docked at Milne and Steensby ports • Aircraft will be operated at a minimum altitude of 450 m over marine areas, when weather conditions allow • Aircraft will be prohibited from flying low over marine mammals for sightseeing or photography • Primary use of Mary River airstrip during the Operation Phase • Educate workers about bear safety	• Habitat change from icebreaking and/or ice management • Disturbance caused by noise from construction, shipping, and aircraft overflights • Mortality from icebreaking • Masking caused by shipping noise	Not significant

Table 1-12.1 Summary of Residual Biophysical Effects (Cont'd)

MARINE ENVIRONMENT					
VEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Marine mammals	Bearded seals		• Work areas kept clean of food scraps, garbage, and toxic materials • Use of bear monitor at camp sites • Use of bear deterrent devices		Not significant
	Walruses				Not significant
	Beluga whales				Not significant
	Narwhals				Not significant
	Bowhead whales				Not significant
	Polar bears	• Habitat change resulting from icebreaking and/or ice management • Disturbance caused by noise from construction, shipping, and aircraft • Mortality from human-bear interactions		• Habitat change from icebreaking and/or ice management • Disturbance caused by noise from construction, shipping, and aircraft overflights • Mortality if a bear is killed in defense of human life	Not significant

Table 1-12.2 Summary of Residual Socio-economic Effects

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Population demographics	Demographic stability	• In-migration of a small number of workers from south will have effect on the demographic make-up of communities • Migration of non-Inuit Project employees into the North Baffin LSA • Migration of non-Inuit into North Baffin for indirect jobs • Inter-community Inuit migration • Out-migration from the North Baffin	• Designation of North Baffin communities as "Point of Hire" (Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet) • Iqaluit and a southern hub are also designated "Point of Hire" • Free transportation from "Point of Hire" to Mine Site	• In-migration of a small number of workers from south or other Nunavut communities will have effect on the demographic make-up of communities	Not significant
Education and training	Life skills	• Improved life skills amongst young adults	• Work readiness training • Supportive work environment • Employee and family assistance program • "No drug, no alcohol" policy	• Improved life skills amongst many LSA residents	Significant - positive
	Education and Skills	• Incentives related to school attendance and success • Opportunities to gain skills	• Minimum age of 18 yrs for Project employment • Career planning • Priority hiring for Inuit • Upgrading opportunities • Summer experience • Career counselling • Training	• Incentives related to school attendance and success • Opportunities to gain skills	Significant - positive

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Livelihood and Employment	Wage Employment	• Creation of jobs in the LSA • Employment of LSA residents	• LSA points of hire • Recruitment strategy • Inuit hiring policy • Management commitment	• Creation of jobs in the LSA • Employment of LSA residents	Significant - positive
	Job Progression and Career Advancement	• New career paths	• Individual career support • Inuit hiring / promotions policy • Management commitment	• Expanded employment and career development options	Significant, positive
Economic Development and Self-reliance	Land	• Increased pressure on the land • Changes to human engagement in land-based economy	• Lease agreement • VEC-related measures • Resources and Land Use measures (see VSEC)	• Increased industrial utilization of land • VEC-related residual effects • Harvesting and travel residual effects	Not significant, negative
	People	• Increased opportunities for youth • Improved education and training • Increased wealth and well-being	• Inuit recruitment strategy • Education and training program • Community support fund • Employee and family assistance program	• Increased human capacity and well-being	Significant - positive

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
	Community Economy	• Increased wealth in community • Rotational absence of residents • Increased local business opportunities	• Money management orientation • Community Fund • Monitoring to support decision-making	• Improved ability to achieve strategic community development objectives	Not significant, positive
	Territorial Economy	• Expanded economic activity (GDP) • Increased diversity of territorial economy	• Direct and indirect investment in the economy • Payment of taxes • Payment of resource royalties	• Growth in the economy and related job creation and business expansion	Significant, positive
Human health and well-being	Substance abuse	• Transport of substances through Project sites • Affordability of substances • Attitudes towards substances and addictions	• "No drug – no alcohol" policy • Measures to prevent transportation through sites • Employee and Family Assistance Program	• Negative - increased ability to afford substances will have effects on substance abuse • Positive – focus on health and safety, employee assistance and counselling will increase awareness of employees	Not significant, negative and positive
	Well-being of children	• Changes in parenting • Increased household income and food security • Overall effects on children	• Orientation and training related to fly-in/fly-out adaptation, health, well-being • Employee and Family Assistance Program • Money management training • Community support fund	• Improved well-being of children	Significant - positive

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
	Community social stability	• Absence from community during work rotation	• Orientation and training related to fly-in/fly-out adaptation • Short rotation (two week in / two week out)	• Absence of residents while they are working at Project will have effect on community social stability	Not significant
Community infrastructure and public service	Recruitment and Retention of Hamlet	• Competition for skilled workers • Labour force capacity	• Early start for skills training • On-going training • Employment experience	• Competition for skilled workers may lead to temporary effects on municipal services. • Long term improvement in labour force capacity	Not significant, negative. Significant, positive
Contracting and business opportunities	Opportunities For Business	• Expanded market - business services to Project • Expanded market - consumer goods and services • Increased entrepreneurial capacity	• Inuit contracting strategy • Cooperation with QIA to build Inuit capacity • Establish a fund to support and build capacity • Management assistance to Inuit designated firms • Opportunities for local entrepreneurs to work with Project	• Expanded market — business services to Project • Expanded market — consumer goods and services • Increased entrepreneurial capacity	Significant, positive
Cultural resources	Archaeological Sites	• Disturbance or removal of archaeological sites • Unauthorized removal of artefacts • Potential loss of regionally significant sites through approved mitigation	• Pre-development archaeological surveys to support avoidance and protections of sites, mitigation by SDR prior to construction, implementation of a chance finds procedure • Training, flagging and exclusion zones, implementation of government-approved mitigation plans, involvement of local people, management plans, implementation of chance finds procedure	• Unmitigated archaeological sites subject to accidental or deliberate partial or complete destruction • Potential for chance finds • Increased traffic at Steensby Inlet could affect archaeological resources	Not significant, negative

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Resources and land use	Inuit harvesting of wildlife	• Changes in caribou harvesting • Changes in marine mammal harvesting • Changes in fish harvesting	• Prohibition of harvesting by employees • Measures to mitigate VEC effects (see VEC assessments)	• Changes in caribou harvesting • Changes in marine mammal harvesting • Changes in fish harvesting	Not significant, negative
Resources and land use	Travel and camps	• Safe travel around Eclipse Sound and Pond Inlet • Safe travel through Milne Port • Emissions and noise disruption • Sensory disturbance and safety along Milne Inlet Tote Road • Detour around Mine Site • HTO cabin closure • Difficulty and safety relating to railway crossings • Detour around Steensby Port • Restrictions on camping locations around Steensby Port	• Road Management Plan • Mine Closure Plan • Safety Plan • IIBA Agreement with QIA • Designated railway crossing locations	• Safe travel around Eclipse Sound and Pond Inlet • Safe travel through Milne Port • Emissions and noise disruption • Sensory disturbance and safety along Milne Inlet Tote Road • Detour around Mine Site • HTO cabin closure • Difficulty and safety relating to railway crossings • Detour around Steensby Port • Restrictions on camping locations around Steensby Port	Not significant, negative

Table 1-12.2 Summary of Residual Socio-economic Effects (Cont'd)

HUMAN ENVIRONMENT					
VSEC	**Key Indicator(s)**	**Potential Effect(s)**	**Mitigation Measures**	**Residual Effect(s)**	**Significance Rating**
Cultural Well-Being	Cultural Well-Being	• Pijitsirnjiq – serving and providing for… • Pilnimmaksarniq – passing on of knowledge and skills… • Avatittinnik Kamattiarniq – environmental stewardship	• Measures to support Inuit culture on site, including Inuktitut language plan • Inuit priority for employment • Inuit involvement in environmental monitoring	• Support for values that are central to Inuit culture and cultural development	Not significant
Benefits, taxes and royalties	Territorial own-source revenues	• Increased taxes and revenues from indirect and induced growth • Payments of payroll and corporate taxes to territorial government	• None	• Increased taxes and revenues • Payments of payroll and corporate taxes to territorial government	Significant – positive
Governance and leadership	Governance and leadership	• IIBA Agreement with QIA • Development of leadership skills	• Participation in initiatives to identify indicators of relevance to regional monitoring programs, share data generated by activities related to the Project, and discuss the interpretation of this data with others involved in these initiatives • Fit well with the strategic priorities identified for both the RSA	• IIBA agreement with QIA • Development of leadership skills	Significant - positive

Notes:
1. In the unlikely event of an oil spill along the shipping route, the residual effects have been evaluated as negative and significant.
2. Health and Safety is of utmost importance. In the unlikely event that there is a Project related fatality, the effect is considered to be significant.

SECTION 13.0 - ABANDONMENT AND RECLAMATION

Canadian regulations require that publicly traded companies characterize their environmental liabilities. Closure and reclamation of the Project is one such liability. This regulatory requirement is one of the mechanisms that ensure adequate funding for closure and reclamation activities. In addition, Baffinland will adopt a progressive approach to reclamation activities throughout the life of the mine. This allows for the development of solutions to problem areas, adjustments and modifications to reclamation techniques, implementation of mitigation measures and assessment of reclamation performance.

Conceptual mine closure planning has been completed for the Project, with the objective of reclaiming Project areas to be both physically and chemically stable in the long-term for both public safety and environmental protection. This Preliminary Closure Plan (PCP) was prepared in accordance with AANDC's Mine Site Reclamation Guidelines (2007) and the QIA Site Closure Guidelines. The Preliminary Closure Plan incorporates progressive rehabilitation during the course of the Project to limit the work required after cessation of operations and to limit the environmental effects during the Project life. It addresses temporary and long-term closure as well as final cessation of operations. The PCP is presented in Volume 3, Appendix 3B, Attachment 10.

For final closure, materials and equipment will either be removed from Project sites or disposed of in the open pit and/or onsite landfills. All hazardous materials and wastes will be removed and shipped to licensed disposal facilities. The open pit and waste rock stockpiles will be inspected for physical and chemical stability. Roads (with the exception of the public Milne Inlet Tote Road), airstrips and development areas will be re-contoured as necessary to provide long-term stability and reduce the potential for considerable erosion. Docks will be removed and water intakes will be blocked. Steel rails will be removed from the rail line, and tunnels will be blocked. The open pit will gradually fill with water due to precipitation over an estimated 150 years. The closure and reclamation phase is expected to take three years, followed by a minimum of five years of post-closure environmental monitoring to verify that reclamation has successfully met closure and reclamation objectives. Long-term monitoring of water quality in the pit lake will continue as long as necessary to ensure that effluent discharge quality guidelines are met.

The Plan will be reviewed and revised regularly throughout the operation phase to reflect the progress of the Project as well as changes in technology and/or standards or legislation. The Plan is subject to review and approval by authorizing agencies. Baffinland expects to submit an Interim Closure Plan prior to commencing operation in 2016. Future revisions will also consider input from consultations with communities and other stakeholders on methods to be used, and potential uses for project infrastructure.

The main objectives of the Closure Plan are to:

- Return the Project affected and viable sites (Mine Site, Milne Port and Steensby Port) "wherever practical, [to] self-sustaining ecosystems that are compatible with a healthy environment and human activities" (Natural Resources Canada, 1994);
- Where practical, undertake progressive reclamation to reduce the environmental risk (INAC, 2002; NWT Water Board, 1990; and QIA, 2009);
- Provide for the reclamation of affected sites and areas to a stable and safe condition. Where practical, affected areas will be returned to a state compatible with the original undisturbed area (*Territorial Land Use Regulations*);

- Reduce the need for long-term monitoring and maintenance by designing for closure and instituting progressive reclamation, as possible;
- Provide for mine closure using the current available proven technologies in a manner consistent with sustainable development, and
- Return altered water courses to their original alignment and cross-section (*Territorial Land Use Regulations*).

The Preliminary Closure Plan is presented in Volume 3, Appendix 3B, Attachment 10.

SECTION 14.0 - OPTIMIZATION OF BENEFITS

14.1 SUSTAINABLE DEVELOPMENT AND PRECAUTIONARY PRINCIPLE

Mining can contribute to sustainable development in a number of ways. The economic activity created by mining activities can, when used effectively, be a springboard for other kinds of development which may, in turn lead to community sustainability as a direct result of the economic opportunities created by mining.

Since 2005 Baffinland has undertaken extensive consultation with local communities to identify and address the concerns of Inuit of the North Baffin Region in the Project development phase. The input of communities and their IQ have been a considerable help in the planning of the proposed Project.

Baffinland proposes to extract and process minerals effectively so as to reduce adverse environmental effects and produce economic benefits. The needs and values of other resource users will be respected throughout the development and operation of the Project. Baffinland will meet, and where it is economically and technically feasible, seek to exceed territorial and Federal regulations by applying technically proven and economically feasible environmental protection measures for each part of the Project.

A comprehensive EHS Management System (Volume 10) has been developed as an integral part of the Project. The philosophy which underlies the EHS management system is the application of the precautionary principle and a commitment to reduce and mitigate potentially adverse effects of its operations on its employees, residents of Nunavut and the natural environment.

14.2 INUIT PARTICIPATION

Baffinland reiterates that underlying the economic provisions of the IIBA is the principle of mutual benefit for Inuit and for the Company from the Project. Benefits for Inuit include financial participation, a comprehensive training strategy, and target levels of Inuit employment, capacity building, business opportunities, and Inuit content considerations in contracting.

Baffinland understand the importance of the Project for the Inuit of the Northern Baffin Region. During these negotiations, the Company and QIA agree that:

- “A structure must be established that facilitates implementation the IIBA, and that implementation of the IIBA will require continuing participation from QIA and the Company over the life of the Project; and
- A process must be established that enables QIA to monitor the operation and management of the Project, and for the Company to get ongoing advice about Inuit concerns and interests.”

As a result, Baffinland and QIA have agreed to the creation of a management structure that can best ensure that the goals and objectives of the IIBA and environmental protection are attained. This management structure will consist of:

- A senior Executive Committee composed of three Baffinland and three QIA executive:
    - The role of this committee will be to oversee the implementation of economic, social/cultural and environmental provisions of the IIBA.

- A joint Management Committee consisting of four representatives of the Company and four representatives of the QIA:
    - The role of this committee will be to monitor the Project on a continuous basis and review progress of the Project as it relates to the goals and objectives established; and
    - This committee will report to the Executive Committee

Baffinland has agreed to fund the operation of these two committees as well as to fund a position for QIA representatives as IIBA Coordinator. The Company has agreed to fund Training Officers and a QIA-appointed IIBA Coordinator. In consultation with QIA, Baffinland will also establish a position of Inuit Employment and Training Coordinator and will fund QIA to hire an Inuk for a second position as Inuit Employment and Training Coordinator.

The IIBA has provisions for a number of initiatives intended to alleviate adverse effects that may occur as a result of the Project activities. In all aspects of these provisions, Baffinland has clearly indicated its willingness to work jointly with QIA to address these challenges. The technical comments received from the QIA with respect to on-going monitoring and management plans will need to be considered in light of the IIBA commitments and ongoing discussions with Baffinland on these matters.

14.3 MAXIMIZING INUIT BENEFITS

Baffinland is committed to providing an employment climate that will attract, develop, and retain qualified personnel. Maintaining effective, committed employees is vital to the achievement of Baffinland goals.

Baffinland will respect the terms and conditions of the IIBA and is committed to use best efforts in its attempts to maximize Inuit participation throughout the life of the Project. Baffinland will use best efforts with respect to:

- Inuit participation in training and education;
- Inuit employment opportunities; and
- Contracting and subcontracting to Inuit firms.

14.3.1 Inuit Employment Strategy

Baffinland will develop and implement an effective and appropriate training and employment strategy during Construction, Operations, and Closure phases of the Project. This strategy, known as the “Inuit Human Resources Strategy”, will include relevant provisions of the IIBA as it relates to Inuit Education and Training (refer to Volume 3, Appendix 10F-3 - Human Resources Management Plan).

As part of the Inuit Human Resources Strategy, Baffinland will identify any existing barriers to the employment and advancement of Inuit, particularly Inuit women, and Baffinland will use all reasonable efforts to reduce these barriers throughout the Project.

The employment component of the Inuit Human Resources Strategy will include the following components:

- A recruitment and selection component;
- A retention and advancement component;
- Target levels for Inuit employment;
- An Inuit women’s employment component;
- A summer student employment component; and
- An employee well-being component.

The Inuit Human Resources Strategy will include, to the extent possible, measures to optimize exploration, construction, and other activities that take place prior to the start of commercial production as opportunities to provide training and work experience prior to the start of commercial operations in order to maximize the proportion of Inuit employees during the Construction, Operations and Decommissioning phases of the project.

14.3.2 Education and Training

Baffinland will undertake to provide training to Inuit in all areas of the Project. All areas of the Project will be considered for training opportunities.

Baffinland will give priority to the development of practical skills and educational qualifications that will be necessary for Inuit men and women to:

- Maximize their prospects for employment in the Project workforce;
- Do their jobs effectively;
- Advance according to merit and aspirations;
- Contribute to the well-being of their communities; and
- Reduce barriers and seek to maximize Inuit participation in the Project workforce throughout the life of the Project.

Baffinland recognizes that training and education opportunities must begin well before the start of construction and operation phases. Through the Executive Committee of the IIBA, Baffinland will work cooperatively to support the school system in Inuit communities, to address impacts of the Project on the education and school system, and to encourage Inuit to attain the practical skills and educational qualifications that will maximize their employment opportunities.

Baffinland will establish training programs for Inuit, including skills training in jobs that may lead to certification, supervisory and management training and selected external training programs, all with the intention of qualifying Inuit employees for future skilled and supervisory positions on the Project. Additional training could be offered to Inuit employees in areas such as business administration, accounting, environmental technology, engineering, computers, resource development planning, geology, and exploration.

Education and training will require cooperation of Baffinland, QIA, GN, training institutions, and North Baffin communities.

Baffinland will maintain relations with partner education and training organizations and institutions including:

- Nunavut Arctic College;
- Kakivak Association;
- Human Resources and Social Development Canada;
- The Government of Nunavut Department of Education;
- The Government of Nunavut Municipal Training Organization; and
- A Nunavut mine training institute or other relevant education and training organizations that may in the future come into being.

Baffinland will make best efforts to integrate education and training for the Project with existing programs, and to take advantage of relevant programs in other regions of Nunavut. The Company will contribute annually to an education and training fund. Baffinland and QIA will work together to locate sources of funding for all Inuit training, including the preparation of joint applications to sources that include the HRSDC Aboriginal Skills and Employment Program (ASEP), the Mining Industry Human Resource Council, and Indian and Northern Affairs Canada. The activities of the education and training fund as well as any

additional funding from outside sources will be administered by the Baffinland's Human Resources Department.

As part of the Inuit Employment and Training Strategy, Baffinland will commit to long-term training and education programs to develop Inuit managers and Inuit with advanced skills on the Project over time. On-site advanced skills and management training opportunities will include mentoring and job shadowing. Off-site advanced skills and management education and training opportunities will include diploma and degree programs in disciplines related to the Project or to management generally. Short-term advanced management programs will be included in the program, and work placements with contractors and suppliers will be included in the program where practical.

14.3.3 Contracting and Subcontracting

Although Baffinland is only obligated to contract with businesses that have the ability to deliver products and/or services in a timely, efficient and competitive manner, Baffinland will use best efforts to maximize contracting and subcontracting opportunities for qualified Inuit firms throughout the Construction, Operations, and Decommissioning phases of the Mary River Project. Baffinland will cooperate in efforts to build capacity to enable as many Inuit firms as possible to achieve designated status as described in the IIBA.

14.3.4 Capacity Building

Baffinland recognize that many Inuit Firms, and in particular smaller Inuit Firms from communities in the Baffin Region, lack capital, experience and capacity to bid on or carry out contracts for the Project. In order to address this shortfall, Baffinland will:

- Assist Inuit Firms to develop capacity in the bidding process.
- Identify opportunities to break down large contracts into smaller components to improve the capacity of Inuit to bid on and carry out contracts.
- Encourage Contractors to break down large Subcontracts into smaller components to improve the capacity of Inuit firms to bid and the ability of Inuit firms to bid on and carry out contracts.
- Help QIA or a QIA subsidiary organization establish a Business Capacity and Start-Up Fund to assist Designated Baffin Inuit Firms with business start-ups and development of capacity in the following areas:
    - Locating start-up capital and financing;
    - Management development;
    - On-going business management;
    - Financial management;
    - Contracts and procurement; and
    - Human resources management.

14.4 SUPPORT FOR COMMUNITIES

Baffinland recognize that while the Project presents Inuit communities with substantial opportunities, it is also likely to create social and cultural impacts and stresses on these communities, including families and individuals. Due to the long duration of the Project needs and opportunities will evolve.

Mitigating existing and potential impacts, promoting community well being, and developing long-term individual and community capacity is a shared responsibility of Baffinland, the QIA and the Government of Nunavut. Baffinland will cooperate in efforts to address this challenge.

The communities must be engaged in the development and implementation of strategies to build the capacity necessary to enable communities to deal with existing and potential impacts and to maximize benefits from the Project and to sustain those benefits beyond the life of the Project.

It is very difficult to measure and predict social and cultural impacts in advance of construction and operations. Thus, Baffinland will make proactive efforts to address impacts and to capitalize on benefits as they are identified over time. Efforts to address existing and potential social and cultural impacts must include capacity building and the well being of individuals, families, and communities in order to sustain a productive workforce and build good relations with Inuit and Inuit communities.

Baffinland's contributions to capacity building and long-term social development include its commitments to employment, training, contracting and subcontracting described in its Human Resources Management Plan (Volume 10, Appendix 10F-3). These provisions do not impose any responsibility on Baffinland to assume the role of government or responsibility for social services and infrastructure.

14.4.1 Ilagiiktunut Nunalinnullu Pivalliajutisait Kiinaujat

In order to provide the required community support and capacity building, Baffinland will contribute to Ilagiiktunut Nunalinnullu Pivalliajutisait Kiinaujat (the Fund). The terms of Baffinland's participation in this fund are established by the IIBA. The Fund has the following objectives:

- Creating opportunities for capacity building and synergy with existing capacity in the communities;
- Ensuring equity and fair distribution of impacts and benefits within and between communities and across generations;
- Maintaining consistency with community development goals;
- Ameliorating social and cultural consequences if a proposed mitigation or enhancement is unsuccessful or in the event that unanticipated impacts emerge;
- Promoting mutual understanding and learning; and
- Ensuring transparency and accountability.

Activities supported by the Fund may include:

- Participation in community projects;
- Youth and Elder programs;
- Hunter support activities;
- Family and community-wide activities and programs;
- Cultural learning and revitalization programs;
- Social support programs for families and individuals;
- Individual and family financial planning;
- Educational incentives;
- Counselling and healing programs; and
- Seed funding or operational funding for local charities and social organizations.

SECTION 15.0 - LAND TENURE AND APPROVALS REQUIRED FOR DEVELOPMENT

15.1 MINERAL LEASES

Baffinland is the sole owner of the three mining leases at Mary River, the locations of which are shown on Figure 1-2.1. Lease 2484 covers the iron ore deposit referred to as Deposit No. 1, Lease 2485 covers Deposit Nos. 2, 3 and 3B; and Lease 2483 covers Deposit No. 4. Deposit 3A, referenced in some documents as part of Lease 2485, has been confirmed as a continuous extension of Deposit 3, and therefore is no longer referenced separately. Similarly, recent drilling identified an additional ore body now referred to as Deposit No. 3B. The leases cover a total area of 1,593 ha and are renewable beyond the current 21-year period expiring August 27, 2013.

The Nunavut Land Claims Agreement (NLCA) establishes the requirements and expectations for development activities occurring in Nunavut. The mining leases at Mary River predate the May 25, 1993 NLCA, but are surrounded by Inuit-owned surface and mineral (subsurface) rights. Inuit owned surface rights in the area are administered by the QIA, while Inuit-owned mineral rights are administered by the Inuit birthright corporation Nunavut Tunngavik Incorporated (NTI). The Mary River mineral leases are administered by AANDC under the Canadian Mining Regulations of the Territorial Lands Act on federal (Crown) land. Access to the surrounding surface lands is provided through land use permits and leases issued by QIA or AANDC.

In addition to the three original mining leases described above, Baffinland holds the following mineral exploration instruments:

- NTI Exploration Agreement - signed on May 1, 2008, identifies an NTI Exploration Area that includes an initial area of 16,695 ha in the vicinity of Deposit No. 1 and the original Lease 2484, and an additional area of 1,425 ha covering a portion of Deposit No. 5. The NTI Exploration Agreement will become a Joint Venture between Baffinland and NTI, only if and when a feasibility study is completed on the NTI Exploration Area;
- McOuat Lake Claim Block - 18 federal claims registered with AANDC covering lands covering and surrounding both Deposits No. 4 and 5;
- Glacier Lakes Claim Block - 20 federal claims surrounding Deposit No. 6;
- Turner River Claim Block - 9 federal claims covering Deposit No. 7;
- North Cockburn River Claim Block - 8 federal claims covering Deposit No. 8; and
- North Rowley River Claim Block - 4 federal claims covering Deposit No. 9.

Deposits No. 6 through 9 are all recent discoveries identified during Baffinland's 2010 regional exploration program.

Figure 3-1.2 shows the location of Baffinland's original leases and mineral exploration claim blocks in the region.

15.2 LAND USE PLANNING AND ENVIRONMENTAL ASSESSMENT PROCESSES

The prominent legislation that directs the regulatory process in Nunavut is the Nunavut Land Claims Agreement (NLCA). For additional federal and territorial legislation and guidelines applicable to development of the Project, see Table 2-2.1.

A number of regulatory processes apply to the Project, including conformance with the North Baffin Regional Land Use Plan (NBRLUP) by the Nunavut Planning Commission (NPC) and an amendment to the same plan. The Project is also subject to a Part 5 environmental review by the Nunavut Impact Review Board (NIRB) as well as an environmental review by the Canadian Transportation Agency (CTA).

15.3 REQUIRED PERMIT, LICENCES AND AUTHORIZATIONS

Various permits, licences and approvals will be required on successful completion of the review processes (Table 2-2.2). Archaeological and palaeontological permits are required from the Department of Culture, Language, Elders and Youth (CLEY) for survey and mitigation of archaeological and palaeontological sites prior to development. Land tenure through long-term leases and shorter-term land use permits will be required from the QIA to access Inuit-owned lands that surround the Mary River Mine Site and from AANDC for the port at Steensby Inlet and most of the railway. Other key approvals include a Type A Water Licence from the Nunavut Water Board (NWB), *Fisheries Act* authorization with the Department of Fisheries and Oceans (DFO), approvals or exemptions under the *Navigable Waters Protection Act* administered by Transport Canada Navigable Waters Protection Program (TC-NWPP), and a licence for explosives manufacture from Natural Resources Canada (NRCan) under the *Explosives Act*.

A listing of Federal and Territorial Approvals required as well as the relevant legislation and regulations can be found in Volume 2 Table 2-2.2.

SECTION 16.0 - INDEX OF SUPPORTING DOCUMENTATION AND APPENDICES FOR VOLUME 1

EIS DOCUMENT INDEX		
EIS Main Volume		**Content**
	Executive Summary	Inuktitut Version English Version French Version
1.0	Introduction	
2.0	Project Description	Succinct description of the Project
3.0	Alternatives Considered	Presents the alternatives that were considered for various components of the Project
4.0	Public Consultation	Presents an overview of the public consultation undertaken to date
5.0	Baseline Studies	Presents an overview of the socio-economic and biophysical baseline condition
6.0	Residual Effects Assessment	Describes the environmental assessment methodology
7.0	Accidents and Malfunctions	Presents potential accidents and malfunctions and mitigation measures
8.0	Effects of the Environment on the Project	Presents the effects on the environment on the Project and how climate change has been taken into consideration
9.0	Cumulative Effects	Discusses cumulative effects
10.0	Transboundary Effects	Discusses transboundary effects of the Project
11.0	Environmental Management	Provides an overview of Baffinland's environmental, health and safety management system
12.0	Statement of Residual Effects	Summary of Project residual effects in table format
13.0	Abandonment and Reclamation	Describes the conceptual approach for closure and abandonment of the site
14.0	Optimization of Benefits	
15.0	Land Tenure and Approvals Required for Development	Identifies Baffinland's mineral leases and permits required for the Project
16.0	Index of Supporting Information and Appendices	Provides an index of supporting documentation
17.0	List of Contributors	Identifies the participants
18.0	Distribution	
19.0	References	
20.0	Abbreviations	
Appendices	Appendix 1A	Popular Summary
	Appendix 1A-1	Popular Summary – Inuktitut Version
	Appendix 1A-2	Popular Summary – English Version
	Appendix 1A-3	Popular Summary – French Version
	Appendix 1B	Table of Concordance
	Appendix 1B-1	Concordance with EIS Guidelines
	Appendix 1B-2	Concordance with EIS Guidelines (Appendix J and K)
	Appendix 1B-3	Concordance with EIS Guidelines (NWB)
	Appendix 1B-4	Concordance with PHC Report Section 3.3.4
	Appendix 1B-5	Concordance with PHC Report Appendix 1
	Appendix 1B-6	Concordance with PHC Report Appendix 2
	Appendix 1B-7	Concordance with PHC Report Appendix 3
	Appendix 1B-8	NIRB Determinations
	Appendix 1B-8-1	Screening Decisions
	Appendix 1B-8-2	EIS Guidelines
	Appendix 1C	EIS Master Table of Contents
	Appendix 1D	Glossary

EIS DOCUMENT INDEX		
EIS Main Volume		**Content**
	Appendix 1E	Plain Language Summaries
Volume 2	**Presents the framework under which the EIS has been prepared**	
1.0	Consultation	Consultation Baffinland has undertaken with stakeholders at all levels.
2.0	Regulatory Framework	Regulatory processes that are applicable to both the review of the project and the subsequent operation of the mine.
3.0	Assessment Methodology	The approach to carrying out the impact assessment: how valued components were identified, criteria used in the assessment, how the significance of impacts was determined.
4.0	List of Contributors	
5.0	References	
6.0	Definitions and Abbreviations	
Appendices	Appendix 2A	Public Consultation Record
	Appendix 2A-1	Lists of Meetings (Tables 2A-1.1 to 2A-1.4)
	Appendix 2A-2	Public Consultation Database
	Appendix 2A-3	QIA Community Consultation Database
	Appendix 2B	Summary of Community-Based Research Undertaken for the Mary River Project
	Appendix 2C	Effects Interaction Matrices
	Appendix 2D	Steensby Land Lease Application
Volume 3	**Project Description**	
1.0	Introduction	Presents the Project schedule and Project description for the construction, operation and closure phases, work force requirement, and Project Alternatives.
2.0	Project Description – Construction Phase	
3.0	Project Description – Operation Phase	
4.0	Project Description – Closure and Post-Closure	
5.0	Workforce and Human Resources	
6.0	Alternatives	
7.0	References	
8.0	Definitions and Abbreviations	
Appendices	Appendix 3A	Related Drawings
	Appendix 3B	Type A Water License Application
	Appendix 3C	Mobile Equipment Lists
	Appendix 3D	Mine Site Documents
	Appendix 3E	Railway Information
	Appendix 3F	Steensby Documents
	Appendix 3G	Ice and Marine Shipping Assessment
	Appendix 3H	Trade Off
	Appendix 3I	2012 Work Plan
Volume 4	**Human Environment - Baseline conditions and impact assessment**	
1.0	Introduction	Describes the socio-economic conditions of the potentially affected communities in the North Baffin Region as well as Iqaluit as a regional hub in the South Baffin. Describes potential impacts and proposed mitigation to limit negative effects. Presents an evaluation of the significance of residual effects that may exist after mitigation have been implemented.
2.0	Population Demographics	
3.0	Education and Training	
4.0	Livelihood and Employment	
5.0	Economic Development and Self-Reliance	
6.0	Human Health and Well-Being	
7.0	Community Infrastructure and Public Services	

EIS DOCUMENT INDEX		
Volume 4	**Human Environment - Baseline conditions and impact assessment**	
8.0	Contracting and Business Opportunities	
9.0	Cultural Resources	
10.0	Resources and Land-Use	
11.0	Cultural Well-Being	
12.0	Benefits, Royalty and Taxation	
13.0	Government and Leadership	
14.0	Socio-Economic Impact Summary and Conclusions	
15.0	Socio-Economic Monitoring and Adaptive Management	
16.0	Conclusions	
17.0	Authors	
18.0	References	
19.0	Definitions and Abbreviations	
Appendices	Appendix 4A	Socio-Economic Baseline Report
	Appendix 4B	Economic Impact Model
	Appendix 4C	Land Use Report
	Appendix 4D	Preliminary Archeological Mitigation Plan
Volume 5	**Atmospheric Environment - Baseline conditions and impact assessment**	
1.0	Climate	Presents climatic conditions in the region and baseline air quality conditions. Identification of potential impacts and significance of residual effects after mitigation are implemented.
2.0	Air Quality (VEC)	
3.0	Noise and Vibration	
4.0	References	
5.0	Definitions and Abbreviations	
Appendices	Appendix 5A	Baseline Meteorological Report and Meteorological Instruments Report
	Appendix 5B	Greenhouse Gas Assessment
	Appendix 5C	Air Quality
	Appendix 5C-1	Air Quality Baseline Report
	Appendix 5C-2	Air Quality Monitoring During Bulk Sampling Preparations 2007, Milne Inlet
	Appendix 5C-3	Air Quality During Bulk Sampling Operations 2008, Mary River
	Appendix 5C-4	Air Emissions Inventory
	Appendix 5C-5	Air Quality Modelling Contour Plots
	Appendix 5D	Noise
	Appendix 5D-1	Noise Baseline Report
	Appendix 5D-2	Noise Emission Inventory
Volume 6	**Terrestrial Environment - Baseline conditions and impact assessment**	
1.0	Introduction	Identifies the key environmental issues and wildlife species (valued ecosystem components, or VECs) focused on in the assessment. Potential environmental impacts to these VECs that may result during different phases of the project. Mitigation or actions to be undertaken to limit negative impacts to these VECs. An evaluation of the significance of residual impacts that may exist after mitigation plans have been implemented.
2.0	Landforms, Soils and Permafrost	
3.0	Vegetation	
4.0	Migratory Birds and Habitat	
5.0	Terrestrial Wildlife and Habitat	
6.0	References	
7.0	Definitions and Abbreviations	
Appendices	Appendix 6A	Palaeontology Report
	Appendix 6B	Geochemical Evaluations
	Appendix 6B-1	Geochemical Evaluations of Ore and Waste Rock
	Appendix 6B-2	Geochemical Evaluations of Tote Road Aggregate Materials
	Appendix 6B-3	Geochemical Evaluation of Railway Quarry Materials
	Appendix 6C	Vegetation Baseline Report

EIS DOCUMENT INDEX		
Volume 6	**Terrestrial Environment - Baseline conditions and impact assessment**	
	Appendix 6D	Ecological Land Classification
	Appendix 6E	Birds Baseline Report
	Appendix 6F	Terrestrial Wildlife Baseline Report
	Appendix 6G-1	Evaluation of Exposure Potential from Metals in Dust (2010)
	Appendix 6G-2	Evaluation of Exposure Potential from Metals in Dust (2011)
	Appendix 6H	Caribou Energetics
Volume 7	**Freshwater Aquatic Environment - Baseline conditions and impact assessment**	
1.0	Regional Freshwater Setting	Summarizes the baseline conditions. The impact assessment for the freshwater aquatic environment: Hydrology, water quality and sediment, fish and fish habitat. Identifies the key environmental issues and species (VECs) focused on in the assessment. Potential environmental impacts to these VECs that may result during different phases of the project, mitigation or actions to be undertaken to limit negative impacts to these VECs, and, evaluation of the significance of residual impacts that may exist after mitigation plans have been implemented.
2.0	Freshwater Quantity	
3.0	Freshwater Quality	
4.0	Freshwater Biota and Habitat	
5.0	References	
6.0	Glossary and Abbreviations	
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	Appendix 7B	Water and Sediment Quality Baseline Report
	Appendix 7C	Freshwater Aquatic Habitat and Fish Baseline Report
Volume 8	**Marine Environment - Baseline conditions and impact assessment**	
1.0	Introduction	Summarizes the baseline conditions for oceanography, sea ice, water quality and sediment, and, fish and fish habitat. Identifies the key environmental issues and species (VECs) focused on in the assessment. Describes potential environmental impacts to these VECs that may result during different phases of the project. Mitigation or actions to be undertaken to limit negative impacts to these VECs. An evaluation of the significance of residual impacts that may exist after mitigation plans have been implemented.
2.0	Sea Ice	
3.0	Water and Sediment Quality	
4.0	Marine Habitat and Biota	
5.0	Marine Mammals	
6.0	References	
7.0	Definitions and Abbreviations	
Appendices	Appendix 8A	Marine Baseline Description
	Appendix 8A-1	Oceanography Baseline
	Appendix 8A-2	Marine Mammal
	Appendix 8A-3	Analysis of Polynya-like Features in Foxe Basin and Hudson Strait
	Appendix 8B	Effluent Dispersion Modelling
	Appendix 8B-1	Ballast Water Discharge at Steensby Inlet
	Appendix 8B-2	Sewage Effluent Discharge Modeling at Steensby Inlet
	Appendix 8C	Underwater Noise Modelling
	Appendix 8C-1	Underwater Noise Modeling for Steensby Inlet, Foxe Basin and Hudson Strait
	Appendix 8C-2	Underwater Noise Modelling for Milne Inlet and Eclipse Sound
	Appendix 8C-3	Composite Marine Mammal Audiogram and Noise
	Appendix 8C-4	Assessment of Underwater Noise from Pile Driving
	Appendix 8D	Ship-generated Wave and Aircraft Noise Analyses
	Appendix 8D-1	Aircraft Airborne Noise Analysis Relative to Known Walrus Haulout Sites
	Appendix 8D-2	Ship Generated Wave Effects
Volume 9	**Cumulative, Effects of the Environment, Accident and Malfunction, Transboundary Effects and Sustainability**	
1.0	Cumulative Effects Assessment	
2.0	Effects of the Environment on the Project	

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Volume 9	**Cumulative, Effects of the Environment, Accident and Malfunction, Transboundary Effects and Sustainability**	
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4.0	Transboundary Effects Assessment	
5.0	Navigation of Waterways	
6.0	References	
7.0	Definitions and Abbreviations	
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	Appendix 9B	Steensby Port Fuel Spill Modelling
	Appendix 9C	Coastal Environment Sensitivity Mapping
Volume 10	**Overview of the Baffinland's Environmental, Health and Safety Management System, Sustainability Policy and Environmental Design Guidelines for the Mary River Project.**	
1.0	Environmental, Health and Safety Management Framework	
2.0	Impacts and Mitigation Measures by Project Phase	
3.0	Environmental Design Guidelines	
4.0	Environmental Protection Plan	
5.0	Roles and Responsibilities	
6.0	Risk Management and Emergency Response	
7.0	Definitions and Abbreviations	
8.0	Biophysical Environmental Effects Monitoring Framework	
9.0	Socio-Economic Environment Management Plan	
10.0	Mine Closure and Reclamation Plan	
11.0	Follow-up and Adaptive Development Schedule	
12.0	Management Plan Updates and Development Schedule	
13.0	Definitions and Abbreviations	
Appendices	Appendix A	Baffinland's Environmental, Health and Safety (EHS) Management Framework
	Appendix 10A-1	EHS Framework Standard
	Appendix 10A-2	Hazard Identification and Risk Assessment Procedure
	Appendix 10A-3	Construction Risk Management Report
	Appendix 10B	Environmental Protection Plan **Moved to Volume 3, App 3B**
	Appendix 10C	Emergency Response and Spill Contingency Plans **Moved to Volume 3, App 3B**
	Appendix 10C-1	Emergency Response and Spill Contingency Plan **Moved to Volume 3, App 3B**
	Appendix 10C-2	Oil Pollution Emergencies Plan – Milne Port **Moved to Volume 3, App 3B**
	Appendix 10C-3	Oil Pollution Emergencies Plan – Steensby Port **Moved to Volume 3, App 3B**
	Appendix 10C-4	Explosives Management Plan **Moved to Volume 3, App 3B**
	Appendix 10C-5	Hazardous Materials and Hazardous Waste Management Plan **Moved to Volume 3, App 3B**

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Volume 10	**Overview of the Baffinland's Environmental, Health and Safety Management System, Sustainability Policy and Environmental Design Guidelines for the Mary River Project.**	
	Appendix 10D	Environment Monitoring and Mitigation Plans
	Appendix 10D-1	Air Quality and Noise Abatement Management Plan
	Appendix 10D-2	Surface Water and Aquatic Ecosystems Management Plan **Moved to Volume 3, App 3B**
	Appendix 10D-3	Fresh Water Supply, Sewage and Wastewater Management Plan **Moved to Volume 3, App 3B**
	Appendix 10D-4	Waste Management Plan for Construction, Operation and Closure **Moved to Volume 3, App 3B**
	Appendix 10D-4	Landfarm Manuals **Moved to Volume 3, App 3B**
	Appendix 10D-4	Landfill Manuals **Moved to Volume 3, App 3B**
	Appendix 10D-4	Incinerator Manuals **Moved to Volume 3, App 3B**
	Appendix 10D-5	Waste Rock Management Plan **Moved to Volume 3, App 3B**
	Appendix 10D-5	ARD/ML Program **Moved to Volume 3, App 3B**
	Appendix 10D-6	Borrow Pit and Quarry Management Plan **Moved to Volume 3, App 3B**
	Appendix 10D-7	Fish Habitat Compensation
	Appendix 10D-8	Roads Management Plan
	Appendix 10D-9.1	Railway Maintenance Management Plan
	Appendix 10D-9.2	Railway Emergency Management Plan
	Appendix 10D-10	Shipping and Marine Mammals Management Plan
	Appendix 10D-11	Terrestrial Environment Effects Framework
	Appendix 10D-12	Environmental Monitoring Plan **Moved to Volume 3, App 3B**
	Appendix 10D-13	Biophysical Environmental Effects Monitoring Framework
	Appendix 10D-14	MMER Environmental Effects Monitoring Study Design Framework
	Appendix 10E	Health & Safety Management Plan **Moved to Volume 3, App 3B**
	Appendix 10F	Socio-Economic Environment Management Plan
	Appendix 10F-1	Stakeholders Involvement Plan
	Appendix 10F-2	Cultural and Heritage Resources Protection Plan
	Appendix 10F-3	Human Resources Management Plan
	Appendix 10G	Preliminary Closure and Reclamation Plan **Moved to Volume 3, App 3B**

SECTION 17.0 - LIST OF CONTRIBUTORS

This EIS was prepared for Baffinland by a diverse team of specialists, consultants and companies. The contributors are listed in Table 1-17.1.

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8. RWDI AIR INC., 650 WOODLAWN ROAD WEST, GUELPH ONTARIO N1K 1B8; TEL (519) 823-1311
9. EBA ENGINEERING CONSULTANTS LTD. 14940 - 123 AVE., EDMONTON, ALBERTA TSV 1B4; TEL (780) 451-2121
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- Aboriginal Affairs and Northern Development
- Government of Nunavut
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- Nunavut Planning Commission
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- Cape Dorset Hunters and Trappers Association
- Hall Beach HT Hunters and Trappers Association
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- Parks Canada
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- Transport Canada, Environmental Affairs
- Natural Resources Canada

SECTION 19.0 - REFERENCES

1. Arctic Council and the International Arctic Science Committee. 2005. *Arctic Climate Impact Assessment*. Available at: http://www.acia.uaf.edu/. Last updated on February 27, 2008.
2. Baffinland Iron Mines Corporation (Baffinland). 2008b. *Development Proposal*. March 2008.
3. Conference Board of Canada. 2010. *Northern Outlook January 2010 – Economic Forecast*. Ottawa, Ontario. Available online at: http://www.nunavuteconomicforum.ca/public/files/library/REPORTSO/Northern %20Outlook %20January %202010.pdf
4. De Beers Canada. 2004. *Victor Diamond Project – Comprehensive Study Environmental Assessment*.
5. Dillon Consulting Ltd. 2008. Hydraulics Design Criteria for Culverts and Bridges - Baffinland Iron Mines Corporation - Mary River Project. Prepared for Canarail, Baffinland (Rev. A). Ottawa: September 30, 2008.
6. Government of Nunavut. 2007. *Nunavut Exploration and Mining Strategy*.
7. Hamlet of Arctic Bay. 2007. *Community Economic Development Plan – 2007*. Prepared by the Hamlet of Arctic Bay.
8. Hamlet of Pond Inlet. 2010. *Community Economic Development Plan - 2010*. Prepared by the Hamlet of Pond Inlet.
9. Indian and Northern Affairs Canada (INAC). 2002. *Mine Site Reclamation Policy for Nunavut*. Prepared by Indian and Northern Affairs Canada.
10. Indian and Northern Affairs Canada (INAC). 2008. *Fact Sheet, Northern Strategy*, Available at: www.ainc-inac.gc.ca/ai/mr/is/n-strat-eng.asp. Last modified: November 3, 2008.
11. Lawrence Environmental. 2000. *Significance in Environmental Assessment*. Prepared for Research and Development Monograph Series, 2000. Catalogue No. EN 105-3/74-2003E-IN. ISBN 0-662-34452-9.
12. Lawrence Environmental. 2004. *The Significance of Social and Economic Impacts in Environmental Assessment*. Prepared for the Research and Development Monograph Series, 2003. Catalogue No. En105-3/29-2005E-HTML. ISBN 0-662-39664-2.
13. Mallory, M.L. and A.J. Fontaine. 2004. *Key marine habitat sites for migrating birds in Nunavut and Northwest Territories*. Canadian Wildlife Service Occasional Paper Number 110. Environment Canada, Ottawa, Ontario Canada.
14. Natural Resources Canada. 1994. *The Whitehorse Mining Initiative Leadership Council Accord Final Report*. Oct 1994.

15. Nunavut Impact Review Board (NIRB). 2009. *Guidelines for the Preparation of an Environmental Impact Statement for the Baffinland Iron Mines Corporation's Mary River Project*. NIRB File No. 08MN053.

16. Nunavut Impact Review Board (NIRB). 2007. *Guide 2: Guide to Terminology and Definitions*. Updated August 2007.

17. Nunavut Planning Commission (NPC). 2007. *Nunavut Planning Commission Broad Planning Principles, Policies and Goals*.

18. Nunavut Planning Commission (NPC). 2000. *North Baffin Regional Land Use Plan*.

19. Northwest Territories Water Board (NWT Water Board). 1990. *Guidelines for Abandonment and Restoration Planning for Mines in the Northwest Territories*. September 1990.

20. Priest, H. and P.J. Usher. 2004. *The Nunavut Wildlife Harvest Study*. Prepared for the Nunavut Wildlife Management Board. February 2004.

21. Qikiqtani Inuit Association (QIA). 2009. *Abandonment and Reclamation Policy for Inuit Owned Lands (Draft)*. May 2009.

22. Soil Classification Working Group. 1998. *The Canadian System of Soil Classification, 3rd ed*. Agriculture and Agri-Food Canada Publication 1646, 187p.

23. Wolfden Resources Inc. 2006. *High Lake Project Proposal*.

SECTION 20.0 - ABBREVIATIONS

°C ..... Degrees Celsius
°N ..... Degrees of latitude north
AANDC ..... Aboriginal Affairs and Northern Development Canada
ACIA ..... Arctic Climate Impact Assessment
AINC ..... Affaires Indiennes et du Nord Canada
As ..... Arsenic
ASEP ..... Aboriginal Skills and Employment Program
ATV ..... All Terrain Vehicle
BIM ..... Baffinland Iron Mines Corporation
BOD ..... Biological Oxygen Demand
C$ ..... Canadian Dollars
CCME ..... Canadian Council of Ministers for the Environment
CED ..... Community Economic Development
CFU ..... Colony-Forming Unit
CHS ..... Canadian Hydrographic Service
CLARC ..... Community Land and Resource Committee
cm ..... Centimetre(s)
Cu ..... Copper
dBA ..... Decibel(s)
DFO ..... Department of Fisheries and Oceans
DFS ..... Definitive Feasibility Study
DWT ..... Deadweight Tonne
EHS ..... Environmental Health and Safety
EIS ..... Environmental Impact Statement
ELC ..... Ecological Land Classification
EMMP ..... Environmental Mitigation and Management Plan
EPP ..... Environmental Protection Plan
ESIA ..... Environmental and Social Impact Assessment
FASD ..... Fetal Alcohol Spectrum Disorder
FC ..... Faecal Coliform(s)

GDP ..... Gross Domestic Product

GHG ..... Greenhouse Gas

GIS ..... Geographical Information System

GN ..... Government of Nunavut

GNDoE ..... Government of Nunavut Department of Environment

ha ..... Hectare(s)

HADD ..... Harmful Alteration, Disruption, Destruction

HRSDC ..... Human Resources and Skills Development Canada

HTA ..... Hunters and Trappers' Association

HTO ..... Hunters and Trappers' Organization

IIBA ..... Inuit Impact and Benefits Agreement

IPG ..... Institute of Public Government

ISO ..... International Organization for Standardization

IQ ..... Inuit Qaujimajatuqangit

kg ..... Kilogram(s)

KI ..... Key Indicator

km ..... Kilometre(s)

L ..... Litre(s)

LSA ..... Local Study Area

m ..... Meter(s)

m^3 ..... Cubic meter(s)

m^3/day ..... Cubic meter(s) per day

m^3/year ..... Cubic meter(s) per year

m/s ..... Meter(s) per second

mg/L ..... Milligram(s) per litre

MHTO ..... Mittimatalik Hunters and Trappers Organization

mm ..... Millimetre(s)

MOU ..... Memorandum of Understanding

Mt/a ..... Million tons per annum (year)

ML ..... Megalitre(s)

MWh ..... Megawatt hours

Ni ..... Nickel

NIRB ..... Nunavut Impact Review Board

NLCA ..... Nunavut Land Claims Agreement

NNI ..... Nunavummi Nangminiqaqtunik Ikajuuti

NO_2 ..... Nitrogen dioxide

NPC ..... Nunavut Planning Commission

NSA ..... Nunavut Settlement Area

NTI ..... Nunavut Tunngavik Incorporated

NWB ..... Nunavut Water Board

NWT ..... Northwest Territories

O_3 ..... Ozone

O&G ..... Oil and Grease

OHSAS ..... Occupational Health and Safety Management System

OPEP ..... Oil Pollution Emergency Plan

PAG ..... Potentially Acid Generating

Pb ..... Lead

PDA ..... Project Development Area

PM_{10} ..... Particulate Matter, 10 micrometre

psu ..... Practical Salinity Units

PYLL ..... Potential Years of Life Lost

QIA ..... Qikiqtani Inuit Association

ROM ..... Run of Mine

RSA ..... Regional Study Area

Satcom ..... Satellite communications

SO_2 ..... Sulphur dioxide

t ..... Tonnes

IQ ..... Traditional Knowledge

tonnes/yr ..... Tonnes per year

TSP ..... Total Suspended Particulate

TSS ..... Total Suspended Solid(s)

TSX ..... Toronto Stock Exchange

ug/g or µg/g ..... Microgram(s) per gram

VC ..... Valued Component

VEC ..... Valued Ecosystem Component

VSEC..... Valued Socio-Economic Component

WWTP ..... Wastewater Treatment Plant

Zn ..... Zinc

ZOI ..... Zone of Influence