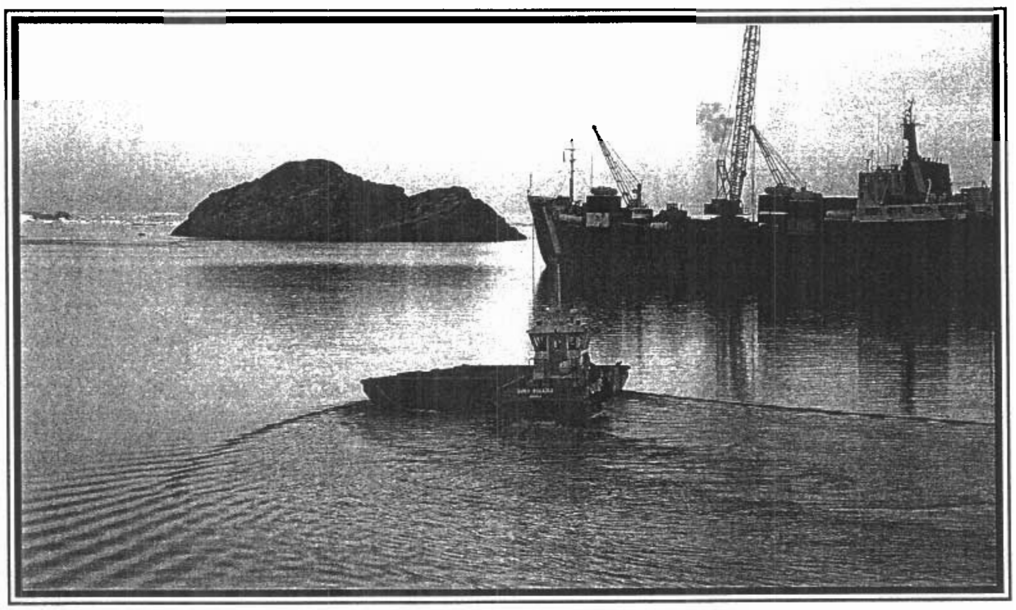
INDIAN AND NORTHERN AFFAIRS CANADA
NUNAVUT REGIONAL OFFICE

SUMMARY OF 2002 ACTIVITIES

RESOLUTION ISLAND PROJECT

BAF-5 : ABANDONED POLE VAULT MILITARY RADAR STATION



Prepared by:

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QIKIQTAALUK CORPORATION

November 2002

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SUMMARY OF 2002 ACTIVITIES

RESOLUTION ISLAND PROJECT

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ᐊᐅᓚᑦᓯᔩᑦ ᓇᐃᖅᓯᒪᔪᑦ

ᕿᒪᒃᑕᐅᓂ ᓚᕝᕕᖃᕝᕕᒥᓂᖅ ᑐᔾᓂ ᕿᑭᖅᑉ ᓂᕆᐊᓂ ᕿᒪᐃᓐᓇᖅᑕᐅᒥᒻᒪᑦ ᓴᓗᒪᒐᓂ. ᓯᕗᓂᐊᒍᑦ ᖃᔮᓴᕈᑎᒥᑦ ᑕᕝᕙᓂ ᐊᒥᐊᓕᒐᕐᓄᑦ ᑕᐃᒪᐃᑕᐅᓂᖏᑦ ᓇᓗᓇᐃᔭᕈᑎᐅᓯᒪᔪᑦ ᖃᓄᑎᒋ ᐊᕙᑎᒧᑦ ᐊᑲᐅᓐᖏᓕᐅᕈᑕᐅᒻᒪᑦ ᓇᔪᖅᑕᐅᓚᐅᖅᓯᒪᓂᖓᓄᑦ. ᑐᔾᓂ ᓴᓗᒻᒪᖅᓴᐃᓂᐅᔪᖅ ᐱᖁᓯᐅᑎᓯᒪᒻᒪᑦ ᔭᐃᕙᓪᓕᐊᓂᕐᒥᒃ, ᖃᐃᓂᕐᒥᓪᓗ, ᐱᕋᓚᒃᑯᕕᒻᓇᓂᕐᒥᒃ, ᐊᒻᒪᓗ ᐊᑦᑕᖅᓯᓂᕐᒥᒃ ᐱ..ᒧᑦ ᓱᕈᕐᓇᖅᑐᖃᖅᑐᓂᓂᒃ ᓄᓇᒥ, ᐊᒻᒪᓗ ᐊᐅᓚᑕᐅᓂᑦᓴᖏᓐᓂᒃ ᐊᓯᖏᓐᓂᒃ ᐊᑦᑕᓇᖅᑐᓂᒃ ᑎᒥᒧᑦ ᐊᕙᑎᒧᓪᓗ ᕐᓗ ᐃᔾᔪᓂᒃ ᖃᓂᒋᔭᖃᖅᑐᓂᒃ ᐃᒪᕐᓂᒃ, ᐃᑭᐊᖅᑎᑦᓴᒥᓂᓂᓪᓗ, ᐊᒻᒪᓗ ᖃᑦᑕᐅᔭᓪᑦᑐᓂᒃ (ᐅᖅᓱᐊᓗᓐᓂᐅᑎᓂᒃ). ᐃᓕᓐᓂᐊᕐᓂᖅ ᐱᒻᒪᕆᐅᖃᑕᐅᓯᒪᒻᒪᑦ ᑕᒪᑦᑐᒧᖓ ᐱᓕᕿᐊᖑᔪᒧᑦ. ᓄᓇᓕᐅᔪᖅ ᐊᐅᓚᑦᑐᓐᓇᑦᑎᐊᖅᑐᖅ ᐃᓄᖃᖑᔪᖅ 60ᓂᒃ ᐱᓕᕆᔪᓐᓇᖅᑐᓂᒃ. ᑐᔾᓂ ᐱᓕᕆᐊᖑᔪᖅ ᐱᒋᐊᖅᑎᑕᐅᓚᐅᖅᓯᒪᔪᖅ 1998ᒥ ᐅᑭᐅᒐᓴᓐᓄᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑎᓪᓗᒍ. ᑕᒪᓐᓇ ᑲᔪᓯᑎᑕᐅᓂᔪᖅ ᕿᑭᖅᓗᒃᑯᓐᓄᑦ ᐅᑯᐊᖑᕗᓪᓗ ᓇᐃᖅᓯᒪᓪᓗᑎᒃ:

1997: ᓱᓇᒃᑯᓂᒃ ᓄᑦᑎᓇᓂᐅᕆᐊᓐᖓᓚᐅᖅᓯᒪᔪᖅ ᐃᖃᓗᖕᓂᑦ ᑐᔾᓄᑦ. ᕿᑭᖅᓗᒃᑯᑦ ᐊᐅᓪᓚᑎᑦᓯᓚᐅᖅᓯᒪᔪᑦ 20ᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑐᑦᓴᓂᒃ ᑐᔾᓂ ᐅᒥᐊᕐᔪᐊᒃᑯᑦ ᑎᑭᑦᑐᑦᓴᓄᑦ ᓄᓇᓕᒻᒥᓗ ᐱᓕᕆᐊᒃᓴᓪᓗᐊᑕᐅᔪᓄᑦ. ᕿᑭᖅᓗᒃᑯᓪᓗ ᐱᔭᕆᑐᔪᓄᒧᑦ ᐃᑲᔪᖅᑐᐃᕙᓚᐅᕐᒥᔪᑦ ᑯᐃ8ᓴ ᐃᓕᓴᕐᓪᔫᐊᖑᓄᑦ ᐱᓕᕆᐊᒥᑎᒍᑦ ᒪᓕᑦᑐᑎᒃ.

1998: ᕿᑭᖅᓗᒃᑯᑦ ᐊᐅᓪᓚᑎᑦᓯᓚᐅᖅᓯᒪᔪᑦ 40ᓂᒃ ᐃᖅᑲᓇᐃᔭ.ᖅᑐᑦᓴᓂᒃ ᑐᔾᓂ ᓄᓇᓕᒻᒥ ᓴᓇᕆᐊᕈᑎᒃᓴᓄᑦ, ᑲᒪᕐᑯᓪᓗᕆᓪᓗ ᐊᐅᓚᑦᓯᕐᑯᓪᓗᕆᓪᓗ ᓄᓂᒃ ᐱᕐᑯᑎᓂᒃ ᓱᓇᒃᑯᓂᓪᓗ ᐅᒥᐊᕐᔪᐊᒃᖅᑕᐅᔪᒥᓂᕐᓂᒃ ᒪᓐᑐᓇᐊᒥᑦ ᑐᔾᓄᑦ, ᖅᑭᑦᑕᐅᕐᑯᓪᓗᒍ 290,000 ltesᓂᒃ ᐅᖅᓱᐊᓗᖃᐅᑎᑦᓴᒥᒃ, ᔭᐃᕐᑯᓪᓗᕆᓪᓗ ᐃᑭᐊᖅᑎᒥᓂᕐᓂᒃ ᐃᓪᓗᒥᓂᕐᓂ, ᐱᐅᓯᕆᐊᖅᑕᐅᕐᑯᓪᓗᕆᓪᓗ ᐊᑐᐊᓇᐊᓕᐊᖑᓯᒪᔪᑦ, ᐊᒻᒪᓗ ᐃᓕᓴᐃᔪᖃᕐᑯᓪᓗᒍ ᐃᓄᓐᓄᑦ ᓴᓇᔭᒃᓴᐅᓂᒃ ᑕᐃᒪᐃᒃᑐᓂ.

1999: ᕿᑭᖅᓗᒃᑯᑦ ᐊᐅᓚᑎᑦᓯᓚᐅᖅᓯᒪᔪᑦ 50ᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑐᑦᓴᓂᒃ ᑐᔾᓂ ᑲᔪᓯᕆᐊᓕᕐᑯᓪᓗᕆᑦ ᓴᓪᓗᒻᒪᖅᓴᐃᓂᕐᒥᒃ ᐃᓕᓐᓂᐊᖅᑕᐅᔫᓴᓂᓪᓗ ᓂ 15ᒥᑦ ᓯᑎᐱᕆ 15ᒧᑦ. ᐱᓕᕆᐊᖑᓚᐅᖅᑐᑦ ᕐᓗ ᓯᖅᓂ ᐊᐅᖅᑭᓴᕋᐃᑦᑐᓄᑦ ᐊᑦᑕᕝᕕᒥᓂᖅ ᐊᒻᒪ ᐊᑦᑕᖅᑕᐅᕙᑦᑐᒥᓂᕐᓂᒃ ᓇᓗᓇᐃᓇᕈᓪᓕᐊᓂᕐᒥᒃ., ᔭᐃᓂᕐᒥᓪᓗ ᐊᒻᒪᓗ ᖃᐃᓂᕐᒥᒃ ᑯᓇᖃᖅᑐᓂᒃ ᐃᔾᔪᓂᒃ; ᓯᓚᓄᓪᓗ ᐊᐅᓪᓚᖅᑎᒡᓴᐅᔪᓂᒃ ᖃᖅᑐᓂᒃ ᐊᓯᖏᓐᓂᓗ ᓱᕈᕐᓇᖅᑐᓂᒃ, ᐱᕐᑯᑎᒥᓂᓪᓗ ᐊᑦᑕᖅᑕᐅᓂᑯᓂᒃ, ᐃᓪᓗᒥᓂᕐᓂᓪᓗ ᓱᕋᐃᔭᐃᓂᕐᒥᒃ, ᓴᓇᓂᕐᒥᒃ/ᐊᐅᓚᑦᓯᓂᕐᒥᒃ ᓱᕈᕐᓇᖅᑐᖃᕝᕕᐅᓕᖅᑐᒧᑦ, ᓱᕋᐃᔭᐃᕙᓐᓂᒥᓪᓗ ᐊᑦᑕᖅᓯᕙᓐᓂᒥᓪᓗ ᖃᑦᑕᐅᔭᒥᓂᕐᓂᒃ, ᐃᑭᑦᑎᓇᓂᕐᒥᒃ ᖃᖅᑐᓂᒃ, ᓴᐅᓂᑦᓴᓂᓪᓗ ᓴᕕᕋᔭᓪᓂᒃ ᓴᓇᔭᐅᓂᖑᓂᒃ ᑲᓱᓐᖑᓕᕐᑯᓪᓗᕆᑦ ᐃᓪᒃ ᒪᖅ ᓴᓇᕝᕕᐅᒃ, ᕐᑯᓗ ᐊᑭᓐᓇᖑᓗ ᓱᕕᑦᑕᐃᓕᕈᑎᒃᓴᓄᑦ, ᓄᓇᓯᐅᑎᖃᕝᕕᐅᓪᓗ ᒪᑐᖑᓂᒃ ᑲᓱᕝᕕᐅᓯᒪᔪᓂ, ᐊᒻᒪᓗ ᓴᕕᕋᔭᒃᓴᐃᑦ ᐊᑐᖅᑐᑦᓴᐅᒃᑲᓐᓂᑐᑦᓴᓄᑦ.

2000: ᕿᑭᖅᓗᒃᑯᑦ ᐊᐅᓪᓚᑎᑦᓯᓚᐅᖅᑐᑦ 50ᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑐᑦᓴᓂᒃ ᑐᔾᓂ ᓴᓗᒻᒪᖅᓴᐃᕝᕕᖃᖅᑐᑎᒃ ᐃᓕᓐᓂᐊᖅᓯᓐᓂᑦ ᔪᓚᐃ 5ᒥᑦ ᓯᑎᐱᕆ 15ᒧᑦ. ᐱᓕᕆᐊᖃᓪᓗᐊᑕᓚᐅᖅᑐᑦ: ᓄᓇᓕᒻᒥᒃ ᓄᓐᖑᕆᐊᓇᓂᖅ ᓱᕈᒃᑎᖅᑕᐅᓚᐅᖅᑎᓪᓗᕆᑦ ᑭᓱᑦ ᓇᓄᕐᓄᑦ, ᔭᖅᑕᐅᓂᖏᓪᓗ ᓱᓇᒃᑯᑦ ᐊᑦᑕᖅᑕᐅᓂᑯᑦ, ᓱᕋᐃᔭᖅᑕᐅᓂᖏᓐᓂᓪᓗ ᖃᖅᑐᒥᑦ ᐃᓪᓗᐃᑦ ᐊᒻᒪ ᖃᖅᑕᐅᓂᖏᓐᓄᑦ ᓱᕈᕐᓇᖅᑐᖃᖅᑐᑦ, ᐃᔾᔪᐃᓪᓗ S1/S4 ᐃᑉ ᐊᕙᓗᐊᓂ, ᖅᑭᑦᑕᐅᓂᖓᓄᓪᓗ ᐊᐅᓚᑕᐅᓂᖓᓄᓐᓗ ᖃᑦᑕᐅᔭᓄᑦ ᐱᓕᕆᕝᕕᑦᓴᖅ, ᐊᐅᓚᑕᐅᓂᖓᓄᓪᓗ ᐅᖅᓱᐊᓗᒻᒥᒃ ᔭᐃᔾᔪᑎ ᐃᒥᕐᒥᓪᓗ ᓴᓗᒻᒪᖅᓴᐃᕈᑎ, ᐃᑭᑎᑕᐅᕙᓐᓂᖓᓄᓪᓗ ᐅᖅᓱᐊᓗᒥᑦ, ᐊᑐᓇᐊᓕᐅᕐᓂᓪᓗ ᐊᓪᓚᖅᑯᑦ ᑕᓯᕐᑯᑦ ᑭᓗᕝᕕᒥᓂᕐᒧᑦ. ᐊᓯᐊᖅᑕᐅᓂᖓᓄᓪᓗ ᓇᓗᔾᔪᑎᓄᑦ ᓱᓪᓗᓕᒃ ᓇᓗᕝᕕᖓᓗ.

2001: ᕿᑭᖅᓗᒃᑯᑦ ᐊᐅᓪᓚᑎᑦᓯᓚᐅᖅᑐᑦ 50ᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑐᑦᓴᓂᒃ ᑐᔾᓂ ᓴᓗᒻᒪᖅᓴᐃᓯᒋᐊᕐᑯᓪᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᓯᑦ ᔪᓚᐃ 4ᒥᑦ ᓯᑎᐱᕆ 3ᒧᑦ. ᐱᓕᕆᐊᖕᒍᓚᐅᖅᑐᑦ: ᔭᖅᑕᐅᓂᖕᒋᑦ ᓱᕈᕐᓇᖅᑐᖃᖅᑐᑦ ᐃᔾᔪᐃᑦ S1/S4 ᐃᒡᓗᒥ ᐊᒻᒪ ᑭᕕᒥᓂᖕᒐ, ᔭᖅᑕᐅᓂᖕᒋᓪᓗ ᓱᕈᕐᓇᖅᑐᑦ ᐊᑦᓯᕕᒥᓂᕐᒥ ᐊᑦᓯᕕᐅᓕᖅᑐᒥᓪᓗ ᓯᓂ, ᑯᕕᑎᑕᐅᓂᖕᒋᓪᓗ ᐱᐅᓴᖅᑕᐅᓂᖕᒋᓪᓗ ᓱᕈᕐᓇᖅᑐᖃᖅᑐᑦ ᐃᑦ ᓯᓂ ᐅᖅᓱᐊᓗᖃᐅᑎᒥᓂᕐᓂᑦ, ᐊᐅᓚᑕᐅᓂᖕᒋᓪᓗ ᐃᑭᑎᖅᑕᐅᓂᖕᒋᓪᓗ ᓱᕈᕐᓇᖅᑐᑦ ᐅᖅᓱᐊᓗᒥᑦ, ᓄᒥᓪᓗ ᐊᖅᑯᓯᐅᓐᓂᕐᒥᒃ ᓚᐅᑎᖃᕐᕕᐅᕐᑯᓕᖅᑐᒧᑦ, ᐊᐅᓚᑕᐅᓂᖕᒐᑕᓗ ᐊᑦᑕᕐᕕᐅᓕᖅᑐᖅ ᓚᐅᑎᖃᕐᕕᐅᓕᖅᐸ ᐅᖕᒐᑎᑦᓯᐊᖕᒐᓂ.

2002: ᕿᑭᖅᓗᒃᑯᑦ 50ᓂᒃ ᐊᐅᓪᓚᖅᑎᑦᓯᓚᐅᖅᑐᑦ ᐃᖅᑲᓇᐃᔭᖅᑐᑦᓴᓂᒃ ᑐᔾᓂ ᓴᓗᒻᒪᖅᓴᐃᒋᐊᓕᕐᑯᓪᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᓯᓐᑦ ᔪᓚᐃ 12ᒥᑦ ᐅᒡᒍᓯ 28ᒧᑦ. ᐱᓕᕆᐊᖕᒍᓪᓗᐊᑕᓚᐅᖅᑐᑦ:

- ᐃᖕᒋᕐᕋᔪᓕᕆᓂᖅ: ᑐᑭᒧᐊᕆᓗᒋᑦ ᑕᕆᐅᒃᑯᑦ ᓯᓚᒃᑯᑦ ᐅᓯᖃᑦᑕᕐᓂᖅ ᓱᓇᒃᑯᓂᒃ ᐃᓚᑦᓴᓂᓪᓗ ᑐᔾᓄᑦ ᑐᔾᓂᓪᓗ. (ᓴᐅᑎᒥ 2)
- ᒥᒃ ᓴᓗᒻᒪᓴᐃᓂᖅ: ᔭᕐᓗᒋᑦ ᒥᓪᓗᐊᕐᓗᒋᓪᓗ ᖃᐅᖅᑐᑦ ᐃᔾᔪᐃᑦ S1/S4 ᓇᖅᓴᖕᒐᓂ, ᔭᕐᓗᒋᓪᓗ ᖃᖅᑐᑦ ᐃᔾᔪᐃᑦ ᖃᕐᕕᐅᓪᓗᐊᑦᑕᖅᑐᒥ ᐃᒡᓗᒥ ᐊᑦᑕᕕᐱᖕᒥ, ᓂᓪᓗ ᖃᐅᔨᓴᐅᑦ ᒥᐊᓂᕆᐱᓗᒍ. (ᓴᐅᑎᒥ 3)
- ᓱᕈᕐᓇᖅᑐᓂᒃ ᖅᑲᐃᓂᖅ: ᓴᓇᒋᐊᕐᓗᒋᑦ ᓴᕕᕋᔭᐃᑦ ᕕᑦ ᒪᓕᒐᐃᑦ ᒪᓕᓪᓗᒋᑦ, ᖅᑲᖅᑕᐅᓗᑎᓪᓗ ᖃᖅᑐᑦ ᓱᕈᕐᓇᖅᑐᓂᓪᓗ ᖃᕐᕕᐅᔪᒥ ᐊᑐᖅᑕᐅᓗᑎᒃ ᐊᐅᓪᓚᔾᔪᑎᑦᓴᐅᕙᖅᑐᑦ ᖃᑦᑕᐅᔭᓄᑦ ᐊᓪᓕᖅᒥ. (ᓴᐅᑎᒥ 4)
- ᐊᓯᖕᒋᑦ ᓴᓗᒻᒪᖅᓴᐃᓂᐅᔪᑦ: ᔭᐃᓂᖅ ᐊᐅᒃᓴᕋᐃᓄᑦ ᓴᕕᕋᔭᕐᓄᑦ ᐊᑦᑕᕐᕕᑐᖃᒥᓂᕐᒥ ᐊᑦᑕᕐᕕᐅᓕᖅᑐᒥᓪᓗ, ᓱᕋᐃᔭᐃᓂᖅ ᓴᐅᓯᓂᕐᓗ ᐊᑦᑕᓇᖕᒋᑦᑐᓂᒃ ᐊᑦᑕᖅᑕᐅᔪᒃᓴᓂᒃ ᓯᓂ ᐊᑦᑕᕐᕕᐅᓕᖅᑐᒧᑦ, ᐱᖃᓯᐅᑎᓗᒋᓪᓗ ᓱᕈᕐᓇᖅᑐᖃᐅᖅᑐᑦ ᓯᓂ ᓱᕈᕐᓇᖅᑐᖃᕐᕕᖕᒧᑦ. (ᓴᐅᑎᒥ 5)
- ᖃᑦᑕᐅᔭᐃᑦ ᐅᖅᓱᐊᓗᓕᕆᓂᕐᓗ: ᔭᐃᓂᖅ ᐅᖅᓱᐊᓗᓕᕆᓂᕐᓗ ᖃᑦᑕᐅᔭᓂᒃ ᓄᓇᓂ ᐊᔾᔨᖕᒋᑦᑐᓂ, ᐊᐅᓚᑦᓯᓂᕐᓗ ᐅᖅᓱᖅᑎᕈᑎᓂᒃ □ᔾᔭᐃᒍᑎᓂᒃ ᐃᓚᐅᕈᑎᖕᒋᓐᓂᓪᓗ, ᑕᒪᒃᑯᓂᖕᒐᓪᓗ ᐃᑭᑦᑎᑦᓯᓂᖅ ᐊᒻᒪ ᐊᓯᖕᒋᓐᓂᒃ ᐃᖅᓱᐊᓗᒥᓂᕐᓂᒃ, ᓴᓗᒻᒪᖅᑕᐅᓂᖕᒋᓐᓂᓪᓗ ᖃᑦᑕᐅᔭᒥᑦ ᐊᒻᒪ ᐅᖅᓱᕈᑎᖃᖅᑐᓂᒃ ᐃᒥᕐᓂᒃ. (ᓴᐅᑎᒥ 6)
- ᓄᓇᓕᒻᒥ ᐊᐅᓚᔾᔪᑎᑦ ᒥᐊᓂᕆᓪᓗ: ᐱᐅᓯᒋᐊᕐᓗᒋᑦ ᐃᒥᑦ, ᑐᓴᐅᑎᓕᕆᔾᔪᑎᓪᓗ ᒥᐊᓂᕆᓗᒋᑦ, ᓱᓪᓗᓕᕆᒋᐊᓕᓪᓗ ᐊᒻᒪ ᐅᐊᔭᓕᕆᒋᐊᓕᑦ ᐊᒻᒪ ᓴᓇᔭᐅᕙᒋᐊᑦ. (ᓴᐅᑎᒥ 7)
- ᐃᓕᓐᓂᐊᕈᑎᑦ: ᐃᓕᓐᓂᐊᕐᒃᓴᖅᐸᓪᓗᓂ ᐃᖅᑲᓇᐃᔭᖅᑐᓄᑦ ᐊᔾᔨᐅᖕᒋᑦᑐᓂᒃ ᐱᓕᕆᐊᒃᓴᐅᔪᓄᑦ: ᑭᒃᓰᔾᔪᑎᓄᑦ ᓄᓇᓂᒃ ᐊᐅᓚᑦᑎᓂᒥᒃ ᐊᑦᑕᓇᖅᑕᐃᓕᓂᕐᒥᓪᓗ, ᑐᐊᕕᓐᓇᖅᑐᓕᕆᓂᕐᒥᒃ, ᐃᓕᓴᐃᓂᕐᒥᒃ, ᓴᓇᓂᕐᒥᒃ, ᐅᖁᒪᐃᑦᑐᕐᓂᐅᑎᓕᕆᓂᕐᒥᒃ, ᓐᓂᐊᖅᑕᐃᓕᓂᕐᒥᒃ ᐊᑦᑕᓇᖅᑕᐃᓕᓂᕐᒥᓪᓗ, ᐊᕙᑎᓕᕆᓂᕐᒥᒃ, ᐊᐅᓚᐅᓯᕆᓂᕐᒥᒃ, ᐊᐅᓚᑦᓯᓂᕐᒥᒃ, ᐊᓯᖕᒋᓐᓂᓗ. (ᓴᐅᑎᒥ 8)
- ᐊᓯᖕᒋᑦ ᐱᓕᕆᐊᒃᓴᑦ ᖅᑭᒋᐊᕐᓗᒍ ᐃᓚᖕᒋᑦ ᐅᖅᓱᐊᓗᓐᓄᑦ ᐃᑯᐊᓪᓚᐃᕕᒃ, ᓯᐅᕋᖅᑕᕐᕕᒥᒃ ᔭᐃᕆᓐᓂᖅ ᖃᐅᔨᓴᖅᐸᓂᕐᓗ, ᑎᓇᓂᖅ ᐅᖅᓱᑦᓴᓂᒃ ᐅᓇᓕᑦᓴᔭᒃᑯᑦ ᐅᖅᓱᐊᓗᓐᓂᐅᑎᖕᒋᓐᓂᑦ ᐃᓄᓕᕆᔨᑐᖃᒃᑯᑦ ᐅᖅᓱᐊᓗᓐᓂᐅᑎᖕᒋᓐᓄᑦ, ᐱᔭᓗᒋᓪᓗ ᐅᐊᔭᐃᑦ ᖃᕐᕕᐅᔪᒥ ᐃᒡᓗᒥ. (ᓴᐅᑎᒥ 9)

ᓴᐅᑎᑦᑐᖅ 10 ᑭᖑᓪᓕᖅᖅᓯᐅᑎᓂᒃ ᐅᖃᐅᓯᖃᖅᑐᖅ ᐊᒻᒪᓗ ᖅᓯᒪᓪᓗᓂ ᐊᑐᓕᕐᑯᔭᐅᔪᓂᒃ 2003ᒧᑦ ᐊᒻᒪᓗ ᐊᒻᒥᖅᑐᓄᑦ.

ᑕᒫᓂ ᓇᐅᔭᖃᖅᑎᑕᐅᓯᒪᔪᖅ ᐊᕙᑎᓕᕆᓂᕐᓄᑦ ᓱᐳᕐᓇᖅᑐᓕᕆᓂᕐᓄᓪᓗ ᐃᓄᓕᕆᓂᕐᑐᖃᒃᑯᓐᓂ. ᐊᖏᖅᑕᐅᓚᐅᖅᓯᒪᔪᖅ ᑕᒫᓂ ᐊᖏᕈᑎᑎᒍᑦ ᓇᐅᔭᓂᒃ ᕿᑭᖅᓗᒃᑯᓐᓄᑦ, ᓇᒻᒥᓕᓂᕆᔭᐅᔪᒧᑦ ᕿᑭᖅᑕᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒃᑯᓐᓄᑦ, ᐃᓄᓐᓄᑦ ᑎᒥᖁᑕᐅᔪᒧᑦ ᑭᒡᒐᖅᑐᖅᑐᑎᒃ ᕿᑭᖅᓗᖕᒥᐅᓂᒃ ᓄᓇᕗᒻᒥ. ᑐᔾᓂ ᐱᓕᕆᐊᖑᔪᖅ ᐊᑐᐃᓐᓇᖅᑎᑦᓯᓯᒪᔪᖅ ᐃᖅᑲᓇᐃᒃᓴᓂᒃ ᐃᓕᓴᐅᑎᓂᓪᓗ ᐃᓄᓐᓄᑦ ᓄᓇᕗᑦ ᓄᓇᓕᖕᒥᓂᑦ. ᓱᐳᕐᓇᖅᑐᑦ ᔭᖅᑕᐅᓂᖏᓐᓄᑦ, ᐱᓕᕆᐊᒃᓴᐅᔪᖅ ᐊᓯᔪᖅᑐᖅ ᐊᕙᑎᒥᒃ ᓱᕐᕋᐃᓂᐅᔪᒥᓂᕐᓂᒃ ᓄᓇᓕᑦ ᖃᓂᒋᔭᖏᓐᓂᑦᑐᓂ, ᓴᐳᑎᔭᐅᓕᕐᓗᑎᒃ ᐃᓄᐃᑦ ᑎᒥᒃᑯᑦ ᖃᓄᐃᓐᓂᕆᔭᖏᑦ ᓯᕗᓂᑦᓴᖏᓐᓄ.

EXECUTIVE SUMMARY

An abandoned radar station located on Resolution Island at the southeastern tip of Baffin Island was left in poor environmental condition. Previous investigations performed at this former USAF station determined the extent of environmental problems from past occupation. The Resolution Island Project consists of the removal, containerisation, storage, and disposal of PCB contaminated soils (> 50 ppm PCBs), as well as the management of other immediate health and environmental risks such as contaminated soils located near water bodies, asbestos, and drum contents (POL products). Training is an important aspect of this project. A fully operational core camp accommodates a working crew of approximately 60 persons.
The Resolution Island (RI) Project started in 1998 after several years of investigations. The work accomplished by Qikiqtaaluk Corporation (QC) is summarised as follows:

1997: Initial equipment mobilisation from Iqaluit to RI. QC sends a 20 person crew to RI for sea lift operations and basic core camp renovations. QC also provides technical support to Queen's University ASU, and LDS (*i.e.,* Sinanni) for their respective field work.

1998: QC sends a 40 person crew to RI to complete camp renovations, to receive, and handle new material and equipment sea lifted from Montreal to RI, to assemble a 290,000 litre fuel tank farm, to remove asbestos from abandoned buildings, to repair roads, and to provide training to Inuit in trades related to the scope of work.

1999: QC sends a 50 person crew to RI to proceed with scheduled clean up and training activities from June 15 to September 15. Activities include beach lead dump excavation and waste sorting, removal and containerization of mercury contaminated soils; off-site shipment of PCBs and other hazardous waste, furniture dump excavation, building demolition, construction/operation of a NH waste landfill, shredding and disposal of empty drums, incineration of POL products, structural steel construction to join the two maintenance buildings, roof and wall cladding, garage door installation on the joined buildings, and aluminium recycling.

2000: QC sends a 50 person crew to RI to proceed with scheduled clean up and training activities from July 5 to September 15. The main tasks accomplished include: camp renovations following polar bear damages, excavation of the furniture dump, demolition of PCB contaminated buildings and containerisation of CEPA material, removal of CEPA soil from S1/S4 building area, set up and operation of a drum staging/sorting/pumping/washing station, operation of an oil separator / water treatment system, waste oil incineration, construction of a road to Lower Lake borrow pit, relocation of the sewage line and lagoon.

2001: QC sends a 50 person crew to RI to proceed with scheduled clean up and training activities from July 4 to September 3. Activities include: excavation of CEPA PCB soil from S1/S4 building and drainage area, excavation of waste from Old Beach Dump and New Beach Dump, drainage and treatment of phenol contaminated water from beach POL tanks, clean up of the Battery Dump, installation of trial silt fence in drainage path of former Furniture Dump, drainage of fuel from beach POL tank, management and incineration of waste POL products, construction of a new road to Radio Hill, operation of a new borrow pit located behind Radio Hill.

2002: QC sends a 50 person crew to RI to proceed with scheduled clean up and training activities from July 12 to August 28. The main tasks accomplished include:

- Transportation Services: Coordinate marine and air transportation of equipment and materials to, and from, Resolution Island. (Section 2)

- PCB Clean Up: Excavate and vacuum CEPA PCB soil from the upper S1/S4 valley, excavate CEPA PCB soil from the PCL dump, operate the PCB CEPA soil screener. (Section 3)

- CEPA Soil Containerisation: Repair old 3.1 m^3 steel containers according to EIS specifications, containerize PCB CEPA soil from the Main PCB storage building using conveyor, transport / stage steel containers at the lower site. (Section 4)

- Other Clean Up Activities: Remove waste debris from Lead Beach Dump and New Beach Dump, shred and landfill non-hazardous waste into beach NH landfill site, add waste items to beach hazardous waste storage facility. (Section 5)

- Drums and POL Management: Remove and manage POL drums from various areas, operate the grease thinning and mixing system, incinerate grease and other waste POL products, wash empty drums and treat oily water. (Section 6)

- Camp Operations and Maintenance: Adjust drinking water pH, maintain communication system, plumbing as well as electrical and carpentry work. (Section 7)

- Training: Provide training to workers in specialised fields: Crane truck operations and safety, Hazwoper, WHMIS, first aid / CPR, construction, heavy equipment operations, health and safety, environmental technologies, mechanics, management, etc. (Section 8)

- Other Activities: Repair one of the oil incinerators, gravel excavation and screening, transfer fuel from DND tanks to INAC tanks, complete electrical wiring in Main PCB Storage Building, etc. (Section 9)

Section 10 presents conclusions and provides a list of recommendations for the 2003 season and subsequent seasons.

This project is funded by the Environment and Contaminants Office, Indian and Northern Affairs Canada (INAC). The project was granted, through a Contribution Agreement, to QC, a company owned by the Qikiqtani Inuit Association (QIA), the Inuit birthright organization representing the Baffin Island region of Nunavut. The Resolution Island Project provides employment and training benefits to Inuit from Nunavut communities. By removing the source of pollution, the project will eventually attenuate the environmental impacts on nearby communities, thereby protecting the health and future of the Inuit.

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GLOSSARY

ASU:	Analytical Services Unit (Queen's University)
CEPA:	Canadian Environmental Protection Act
DND:	Department of National Defence
EIS:	Environmental Impact Statement
ESG:	Environmental Sciences Group
HDPE:	High density polyethylene
H&S:	Health and Safety
INAC	Indian and Northern Affairs Canada
NTI:	Nunavut Tunngavik Incorporated
NWS:	North Warning System
NWT:	Northwest Territories
O&M:	Operations and Maintenance
NSSI:	Nunavut Sealink and Supply Inc.
PAHs:	Polycyclic Aromatic Hydrocarbons
PCB:	Polychlorinated Biphenyls
PCL:	PCL construction company
PMT:	Project Management Team
POL:	Petroleum Oil & Lubricants
PPE:	Personal Protection Equipment
QIA:	Qikiqtani Inuit Association
QC:	Qikiqtaaluk Corporation
RI:	Resolution Island
RRMC:	Royal Roads Military College
SMT:	Senior Management Team
USAF:	United States Air Force
drum:	45 imperial gallon cylindrical container

1- INTRODUCTION

The 2002 field season at Resolution Island (RI) started on July 12th with the initial crew mobilisation. Scheduled tasks rapidly started once the camp was operational. All planned activities were accomplished, and the site closed on August 28th.

Indian and Northern Affairs Canada (INAC), in partnership with Qikiqtaaluk Corporation (QC), initiated this project in 1997 following several environmental investigations conducted by the Department of National Defence (DND), Environment Canada, The Royal Roads Military College (RRMC), and Queen's University Analytical Services Unit (ASU). QC and Sinanni have coordinated, and conducted previous work focusing on mobilisation, infrastructure, settings and environmental remediation. In 2002, more than 70 individuals combined their efforts to make this field season a successful one. The following important tasks were completed in 2002 at Resolution Island:

- Excavation of PCB CEPA soil in the upper S1/S4 valley;
- Excavation of PCB CEPA soil from the PCL dump;
- Operation of the CEPA soil containerization platform;
- Filling the steel containers with CEPA soil, and staging the containers at the lower site;
- Excavation of waste debris in both beach dumps;
- Management and incineration of waste grease (dilution and mixing);
- Management of scattered drums, incineration of POL products, and washing empty drums;
- Consolidation, securing, labelling, and storage of new drums of waste products to be shipped south inside the beach hazardous waste storage building;
- Shredding, and landfilling of non-hazardous waste and debris;
- Improvement to camp facilities, and general camp operations and maintenance.

Some other tasks were accomplished during the 2002 field season:

- Excavation and screening of gravel at Radio Hill borrow pit;
- Repairs to one of the incinerators;
- Completion of the electrical wiring of the Main PCB storage building;
- Repairs to old steel containers according to the Environmental Impact Statement (EIS) requirements (*i.e.*, additional steel plate added in bottom, and welds water-proofed);
- Transfer of fuel from DND tanks to INAC tanks.

This document summarizes the construction activities carried out on site in July and August 2002. Section 2 of the report describes the activities related to the transportation of equipment and materials. Section 3 presents information on the excavation, and vacuuming of CEPA PCB soil, while Section 4 describes the CEPA soil containerization operations. In Section 5, clean up activities other than those related to PCB soil and waste are presented. Section 6 describes the activities of waste POL management, and incineration. Sections 7 and 8 present information on camp operations and maintenance, as well as training activities, respectively. Section 9 describes other tasks accomplished during the 2002 field season and section 10 presents recommendations.

Photographs depicting fieldwork activities are presented throughout this report. The as-built drawings are submitted in a separate attachment as part of the current report.

2- TRANSPORTATION SERVICES

To successfully conduct the Resolution Island 2002 field season, various required transportation services were coordinated and managed. These included sealift operations and air transportation.

2.1-Sealift Operations

The services of a marine shipping company, Nunavut Sealink and Supply Inc. (NSSI), were required to transport various materials and equipment to RI for the 2002 season and subsequent years. Approximately 1,350 cubic metres of equipment and materials were purchased for the project and most were shipped by sea. Details on the purchased items are presented in the 2002 RI Procurement Report[1]. The list of major equipment and materials shipped by sea includes the following items:

- Mobile conveyor system;
- Conical shaped (3.1 m^3) steel containers (558 units on 71 pallets);
- Polyethylene liner bags for steel containers;
- Parts and materials to repair POL incinerator;
- Overpack drums (50 units on 17 pallets);
- Gasoline drums (20 units on 5 pallets);
- Replacement screens for screening units;
- Miscellaneous items (*e.g.,* calcium carbonate, drum dolly, slings, cable and winch line, mixer, aluminium labels).

Because the second batch of steel containers (*i.e.,* 505 containers) was ordered late in the spring, the containers could not all be manufactured in time for the sealift. Therefore, only 190 containers were shipped on the first sealift, and the rest (*i.e.,* 368 containers) was shipped on the second sealift.

The following subsections describe the loading (Montreal) and receiving (Resolution Island) operations that were conducted during the 2002 field season.

2.1.1-Loading Cargo in Montreal

For the first sealift, equipment and materials were delivered by suppliers to the port of Ville Sainte-Catherine between June 15, and July 3, 2002. Cargo was loaded onto the NSSI ship (*M.V. Mathilda Desgagnés*), on July 3, and 4. A representative from Sinanni supervized the loading operations and verified that all equipment and materials were loaded on the ship. All cargo was loaded without any damage. The ship left the port of Ville Sainte-Catherine on July 4.

As for the second sealift, the steel containers were delivered to the port of Ville Sainte-Catherine

1 Project Procurement 2002 - Resolution Island Project. Prepared by Sinanni Inc. and Qikiqtaaluk Corporation, November 2002.

between July 4 and September 1, 2002. The containers were loaded onto the NSSI ship (*M.V. Mathilda Desgagnés*), on September 12, and 13. A representative from Sinanni ensured that all the containers were delivered to the NSSI yard prior to loading of the ship. The ship left the port of Ville Sainte-Catherine on September 14.

Photograph 2.1 Load of Steel Containers Arriving at the Port of Ville Sainte-Catherine

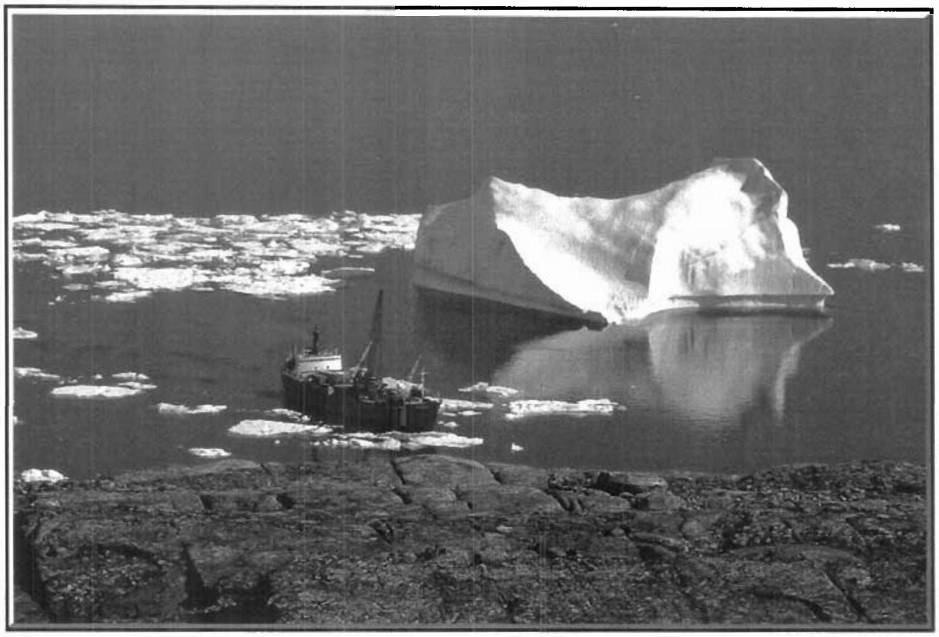
2.1.2-Unloading Cargo at Resolution Island

Prior to the ship's arrival, the beach barging area was backfilled, and graded to provide a smooth working surface. Approximately 60 m^3 of screened sand was used to prepare the barging area.

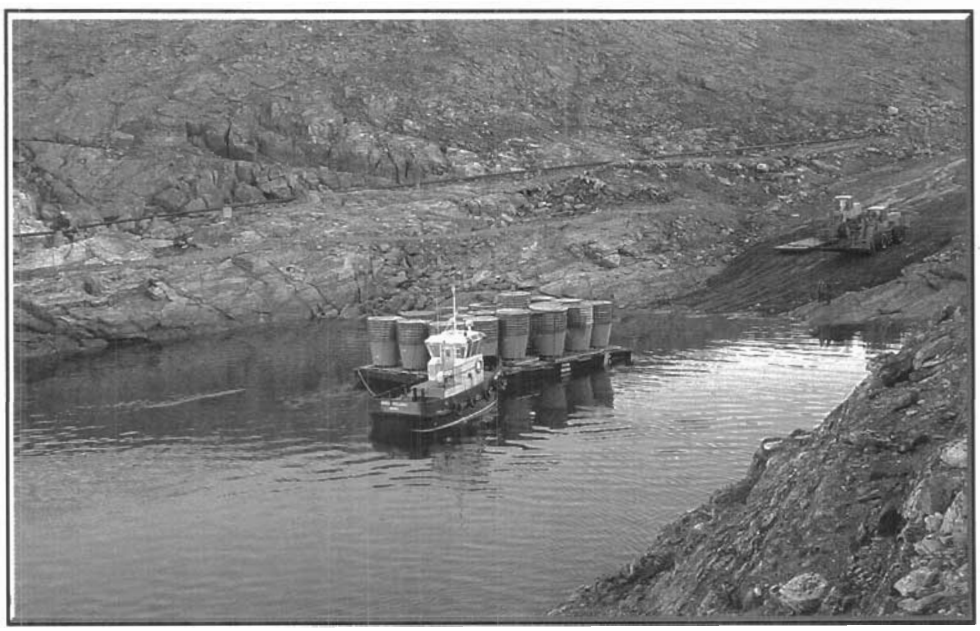
The first sealift arrived at Resolution Island on July 27 at 4:30 PM. Initially, a barge, loaders, and a tug boat were unloaded from the ship. The cargo was then transferred from the ship to the barge. The tug boat was used to push the loaded barge from the ship to the beaching area. The NSSI loaders unloaded the cargo from the barge to the beach at the highwater mark. No cargo was damaged during the unloading operations. A total of three (3) barge trips were required to unload all the cargo. Sealift operations were completed within 3.5 hours. All unloaded cargo was temporarily stored near the beach tank farm. Sinanni and QC representatives monitored all operations, and verified and signed the shipping manifest. The inventory warehouseman added all new items received to the general inventory list.

The second sealift arrived at Resolution Island on September 27 at approximately 6:00 AM. The containers were all unloaded without any damage. A total of three (3) barge trips were required to unload the containers. Sealift operations were completed within approximately 4 hours. The pallets of containers were stored for winter near the beach tank farm. They will be hauled to the upper site at the beginning of next season. An INAC representative monitored the end of the sealift operations and signed the shipping manifest.

A copy of the NSSI transport manifests are provided in Appendix 1.



Photograph 2.2 First Sealift Arriving at Resolution Island



Photograph 2.3 Tugboat Pushing Barge Full of Steel Containers

2.1.3-Wet Sealift

A tanker ship delivered fuel to Resolution Island on August 22. The ship arrived at 5:00 AM, and operations lasted approximately 10 hours. After anchoring the ship in Brewer Bay, a motor boat hauled the fuel line from the ship to the beach tank farm. Two workers conducted the fuel pumping operations from the beach. A total of 139,000 litres of fuel were transferred to the INAC tanks. A QC representative supervized the transfer operations.

2.2- Air Transportation

Air transport services were required for crew mobilization and rotation, as well as for shipment of equipment and supplies to and from the island. Following a tendering process, Canadian Helicopters Ltd was selected, and contracted to provide the air transportation services using a Bell 212 helicopter. QC coordinated, and managed the helicopter contract on a daily basis over the duration of the field season. Total flying time was logged and reported[2].

In addition to the helicopter services, chartered Twin Otter flights were used to transport crew and cargo to and from the site. Twin Otter flights were mainly scheduled at the beginning and at the end of the field season to carry bulky materials and supplies as well as larger crews. QC coordinated and managed these flights throughout the 2002 RI Project field season.

The following equipment and materials were shipped by air:

- Steel parts and paint for container repairs;
- Liners and replacement gaskets for the old steel containers;
- Wire feed welding machine.

[2] 2002 Field Season Summary Report - Resolution Island Project, prepared by Qikiqtaaluk Corporation, to be submitted to INAC, 2002.

3- PCB CLEAN UP

The 2002 work plan prepared during the pre-season PMT meetings (winter and spring 2002) was defined to address CEPA PCB contaminated soils (CEPA soils) in the S1/S4 upper valley, and the PCL dump, as well as the storage and containerization of these soils. The latter will be discussed in Section 4 of this report. The field season's objective was to remove approximately 800 m^3 of CEPA soil from the S1/S4 valley. The following paragraphs describe the nature of the clean up activities conducted during the 2002 season.

3.1- S1/S4 Upper Valley

Last year, during the 2001 season, the excavation of CEPA soil was carried out in the S1/S4 building, and upper drainage areas following a pre-established excavation protocol. A total of twenty-one (21) quadrants were decontaminated, and signed off. At the end of the 2001 season a berm was constructed in grids J15 and K15 to prevent PCB migration from contaminated areas to clean grids. This berm proved effective as no re-contamination occurred during the off-season.

During the 2002 season, CEPA soil was excavated from the upper S1/S4 valley, along the access road located below the former building area, as well as below the access road in the valley itself. A total of fifteen (15) quadrants were decontaminated and signed off this season. These quadrants, identified on the Project Drawings, are: G15, I9, I10, J11, J14, J15, K12 to K17, L14 to L16. Copies of the signed quadrant log sheets are presented in Appendix 2.

In order to reach and remove CEPA soil in the S1/S4 valley area, other materials such as debris and boulders had to be removed before, as well as during, the excavation of CEPA soil. Debris were removed from the soil surface in the S1/S4 valley area using an excavator. Approximately 8 m^3 of Tier II debris were excavated and hauled away, using an International dump truck, to the Tier II debris stockpile located in the upper most portion of the valley.

Large boulders, classified as Tier I, were also removed from various areas (*i.e.,* grids I12, J12 to 14, K13, K14, K16, and L17) using the 322 excavator with grapple. They were either pushed aside or hauled away, using the D250 dump truck, and dumped on Tier II soil. Some boulders were also used to extend the access road for the vacuum truck.

The removal of CEPA soil started on July 23, and continued until August 25. The 315 excavator equipped with the ditch bucket was used to load soil into an International dump truck. The excavation began with the removal of > 2000 soil in the valley below the access road (*i.e.,* quadrants K14, K15). This was followed by the removal of soil slightly down gradient from that area (*i.e.,* quadrants K17 and L17). Excavation work then proceeded back (*i.e.,* up gradient in the valley) towards the screening plant, as well as along the access road, also going back towards the screener. Working on two fronts, alternating soil removal between the valley and the access road minimized down time while waiting for analytical results.

Photograph 3.1 Excavation and Vacuuming of CEPA Soil in S1/S4 Valley

The vacuum truck was also used to remove CEPA soil down to bedrock, and in hard to reach areas (*i.e.*, cracks and crevasses). Soil vacuuming was only required in certain areas (*i.e.*, quadrants J13, J15, K13 to K17, L16, and L17). In certain areas, an access road was built over the cleaned surface for the vacuum truck to progress, and reach further areas. These access roads were built using pit run placed, and compacted with a loader.

CEPA soil > 2000 ppm was placed, unscreened, directly into steel containers. All other CEPA soil (excavated and vacuumed) was hauled, by an International dump truck, from various locations to the contaminated soil screening unit located to the east of the S4 building. The 322 excavator with grapple attachment was used to feed the screener. It was also used to load the screened CEPA soil into a second International dump truck, or a D250 dump truck. The dump trucks then hauled the screened soil to the Main PCB storage building. The screening rejects, consisting of rocks larger than 2 inches (5 cm) in diameter, automatically fell off the screener and onto a pile located below the screening unit. Details on the containerization and storage of the CEPA soil is presented in section 4.

3.2- PCL Dump

The remediation, and clean up of the PCL dump was carried out on July 25. A total of 11 m^3 of CEPA soil was excavated and hauled to the screening plant using an International dump truck. Vacuuming of the bedrock surface was not required in that area. Confirmatory testing following the excavation showed that PCB contaminated soil at Tier II levels remained in place.

Photograph 3.2 Excavation of CEPA Soil (> 2000 ppm) in S1/S4 Valley

The following table summarizes the quantities of PCB contaminated soil and debris that were excavated and removed from the S1/S4 valley area, and the PCL dump during the 2002 season.

Table 3.1: Summary of PCB Clean up at RI

Type of Material	Volume (m^3)	Storage
S1/S4 Upper Valley		
CEPA soil (> 2,000 ppm)	146	Placed, unscreened, in steel containers
CEPA soil (< 2,000 ppm)	964	Screened and hauled to Main PCB storage building
Tier II PCB debris	8	Stockpiled in upper part of S1/S4 valley
PCL Dump		
CEPA soil (< 2,000 ppm)	11	Screened and hauled to Main PCB storage building

The total volume of unscreened CEPA soil excavated during the 2002 season is approximately 1,121 m^3 (*i.e.,* sum of lines 1, 2, and 4 in the previous table). This volume represents 1.4 times the excavation volume (*i.e.,* 800 m^3) set as an objective in the work plan.

4- PCB CONTAINERIZATION AND STORAGE

The following paragraphs describe the containerization and storage of PCB waste conducted during the 2002 season.

4.1-Containerization of CEPA Soil

One of the major activities scheduled for the 2002 season was the containerization of CEPA soil.

4.1.1-Containers

During the previous season (2001), it was noticed that the 3.1 m^3 steel containers (75 units) used for CEPA soil were not built exactly according to EIS requirements. First of all, the interior side weld on the containers was not continuous and therefore water could potentially leak out. Furthermore, the bottom plate was not thick enough (*i.e.,* 1/16 inch too thin). The gasket supplied with the container was also inadequate. Despite the fact that these containers did not comply with the EIS, some were used for temporary storage of soil. One of the tasks identified in the 2002 work plan consisted of repairing the unused containers.

During this past season, a total of forty-four (44) containers were repaired, in accordance with EIS requirements. These repairs consisted of the following steps:

- mechanical removal of the epoxy paint coating, 5 cm on both sides, of the interior bottom and side welds, using an electric grinder;
- welding of a 1/16 inch thick carbon steel plate in the bottom of the containers;
- welding (continuous) of the interior side weld using a wire feed welder;
- applying epoxy paint on the newly welded areas and bare steel on both sides.

In addition to the repaired containers, a total of 558 new steel containers, built according to EIS requirements, were purchased. Important changes were brought to the previous container design to improve strength, water-tightness, and handling capabilities. These changes include the following:

- continuous interior side weld (EIS requirement);
- thicker bottom plate (EIS requirement);
- thicker top flange to increase strength, and to reduce distortion during handling;
- higher and wider fork channels on the bottom of the containers to improve handling during lifting and hauling operations;
- larger diameter holes in the lid to improve lid positioning, and bolting operations;
- larger bolts to increase water-tightness;
- thicker (1/4 inch), and wider one piece neoprene gaskets to improve water-tightness.

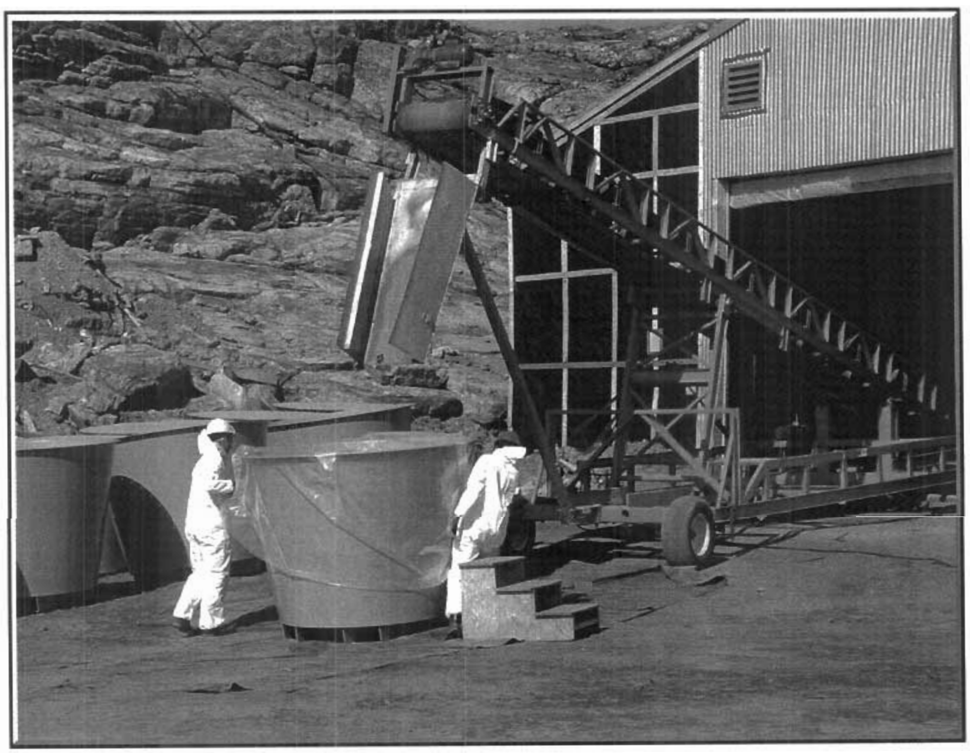
Also, thicker polyethylene bags (8 mil) were used to line the interior of the containers, and protect the painted surface. The packaging of the empty containers for transport was also modified to reduce the risk of damage during transportation.

4.1.2-Containerization Operations

CEPA soil containerization was conducted in two (2) main areas, the S1/S4 valley, and the Main PCB Storage Building. All available containers present on site (234) were filled with soil.

During excavation in the S1/S4 valley, CEPA soil (> 2,000 ppm) was placed, unscreened, in the steel containers as it was being excavated. In order to maximize efficiency, the filled containers were then moved, using the IT38 loader, onto a platform dedicated to lid positioning and bolting operations. A total of 58 containers were filled with CEPA soil (> 2,000 ppm).

As for the screened CEPA soil stored inside the Main PCB Storage Building, it was transferred into steel containers by using a newly purchased mobile conveyor system. The intake conveyor hopper was placed inside the building while the discharge end was located outside the building. The crew working in the building used a Bobcat mini-loader to feed the conveyor. At the other end of the conveyor belt, the soil was discharged into a container, sitting on a containment pad made of HDPE membrane. An IT38 loader was used to move the containers (empty and full). Once filled, the containers were brought to the lid positioning and bolting platform. A total of 176 containers were filled with CEPA soil (> 50 ppm but < 2,000 ppm).



Photograph 4.1 Soil Containerization Operations

Containerization operations began at the east end of the building but quickly ceased when frozen soil was encountered. The conveyor was then moved to the west side of the building where operations resumed, and continued until all available containers were filled. A total of 14 days, including down time (*e.g.,* maintenance, bad weather, crew change, etc.), was required to fill the 176 containers. A maximum of 31 containers were filled, and bolted shut in a single day, but on average, 16 containers were filled daily.

After a few days of operations, the conveyor system encountered some minor problems. During the loading of soil in the feed hopper, some soil would fall on the under side of the belt, and accumulate at the bottom of the belt near the base pulley. When too much soil had accumulated the belt had a tendency to slip off the pulley and move to one side, therefore jamming the belt. To counter this, a scraping and deflecting device was installed on the conveyor in order to remove the soil stuck on the under side of the belt before it reached the base pulley. A deflector was also installed on the feed hopper to reduce the amount of soil falling beside the hopper and onto the under side of the belt. These modifications reduced down time due to maintenance.

The lid and bolting operations consisted of the following tasks:

- fold liner towards the inside of the container (*i.e.,* close bag);
- place gasket on top flange, align flange and gasket holes, and temporarily secure with tape;
- lift lid in place, using loader, and manually align lid and flange holes using a minimum of two (2) pry-bars;
- install nuts, bolts and washers, and tighten using an air-powered impact wrench.

Once filled and closed the containers were identified with numbered labels for waste tracking purposes. Two (2) labels, with the same number, were placed on each container. A third label, also with the same number, is kept as a backup in case one of the labels is lost during handling and transportation. The containers filled in 2002 were numbered RI-2 to RI-235. The containers filled with soil at concentrations > 2,000 ppm PCB were identified with the marking "*> 2000*", using paint markers. Afterwards, ASU personnel placed a registered Environment Canada PCB label on each container. The registered PCB number was also written on each container using paint markers, in case the PCB label is lost or damaged during transportation. The list of identification numbers of all soil filled containers is presented in Appendix 3.

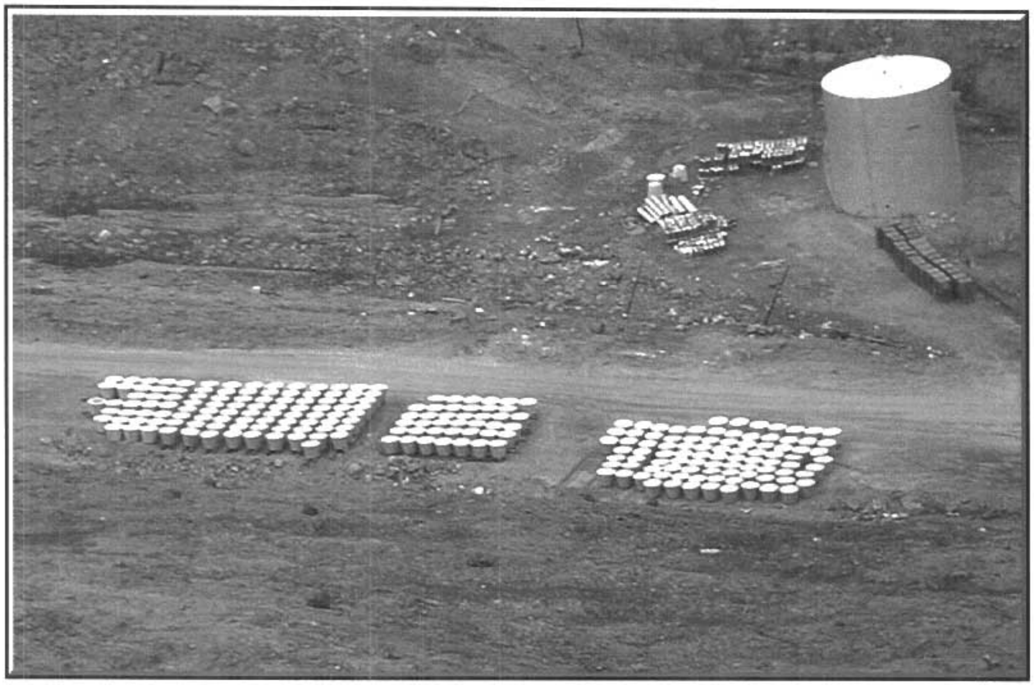
After labeling, the containers were loaded onto a flat bed trailer using the IT38 loader. A maximum of 7 containers were placed on the trailer. The containers were then hauled down to the lower site using the crane truck. At the staging area, the containers were unloaded using the IT38 loader.

4.2-PCB Storage

PCB contaminated soil is stored either at the Main PCB storage building or in containers at the lower site staging area. Other PCB waste is stored at the Beach PCB storage facility.

4.2.1-CEPA Soil Containers

A staging area was built for the temporary storage of the CEPA soil filled steel containers to be shipped south. The storage pad was built on the site of the former beach gravel screening plant near the NH waste landfill. Initially, pallets of waste fuel, construction materials, and a stockpile of screened sand had to be moved to clear the way. The area was then backfilled with screened sand and leveled. Afterwards, creosote timbers were placed on the level ground, and used as the foundation on which to stage the containers. All of the 234 soil filled containers were placed on this storage pad. The staging area is presented on the Project Drawings as well as on Photograph 4.2.



Photograph 4.2 CEPA Soil Containers (234) at the Beach Staging Area; and, New Location of DND Soil Filled Red Vaults (near POL Tank)

4.2.2-Main PCB Storage Building

The 156 blue plastic drums (containing CEPA soil and concrete from Iqaluit Upper Base) and the 3 wooden crates of CEPA soil from the Furniture Dump, stored outside the west end of the PCB storage building, were moved to the east of the building to make room for the containerization operations.

The 9 steel containers filled with CEPA > 2000 ppm soil stored inside the PCB storage building were moved out of the building near the west end to make room for the bulk storage of CEPA soil.

Excavated CEPA soil from the S1/S4 valley and PCL dump was hauled to the Main PCB storage building for temporary storage. The CEPA soil was dumped on the protective floor membrane, and a mini-loader (Bobcat) was used to push, and stockpile the soil. Approximately 774 m^3 of excavated, and screened soil was hauled to the building, while approximately 440 m^3 of soil from the building was transferred into the 176 steel containers (this volume is based on the assumption that 2.5 m^3 of soil was placed in each container). As a result, the total volume of soil in the building was increased by 334 m^3 (*i.e.*, 774 - 440 = 334) over the 2002 field season. Therefore, at the end of the season there was approximately 1,799 m^3 of bulk CEPA soil inside the building. Table 4.1 summarizes the soil volume transfers to and from the Main PCB Storage Building.

A monthly inspection of the Main PCB Storage Facility was conducted and logged as per regulations. The complete inventory of containers and CEPA soil stored inside this storage facility is to be presented in Queen's University ASU 2002 report.

Table 4.1: Summary of Soil Volumes - Main PCB Storage Building

Soil Storage and Movement	Volume (m^3)
Stockpile inside building - end of 2001 season	1465
Transfer from screener to building	774
Transfer from building to 176 steel containers	-440
Stockpile inside building - end of 2002 season	**1799**

4.2.3-Beach PCB Storage Facility

No new waste items were added to the Beach PCB Storage Facility. However, 52 red steel vaults containing non-CEPA soil (*i.e.*, PCB soil at Tier I and Tier II levels), belonging to DND, were removed from the PCB Storage Facility (east side). They were moved and placed near the west beach POL tank, on the access road along the fuel line. Figure 1 presents the location of the Beach PCB Storage Facility, and the new location of the DND soil-filled vaults. Table 4.2 lists the identification number and contents of the waste containers presented in Figure 1.

The registered Beach PCB storage facility contains the following waste items:

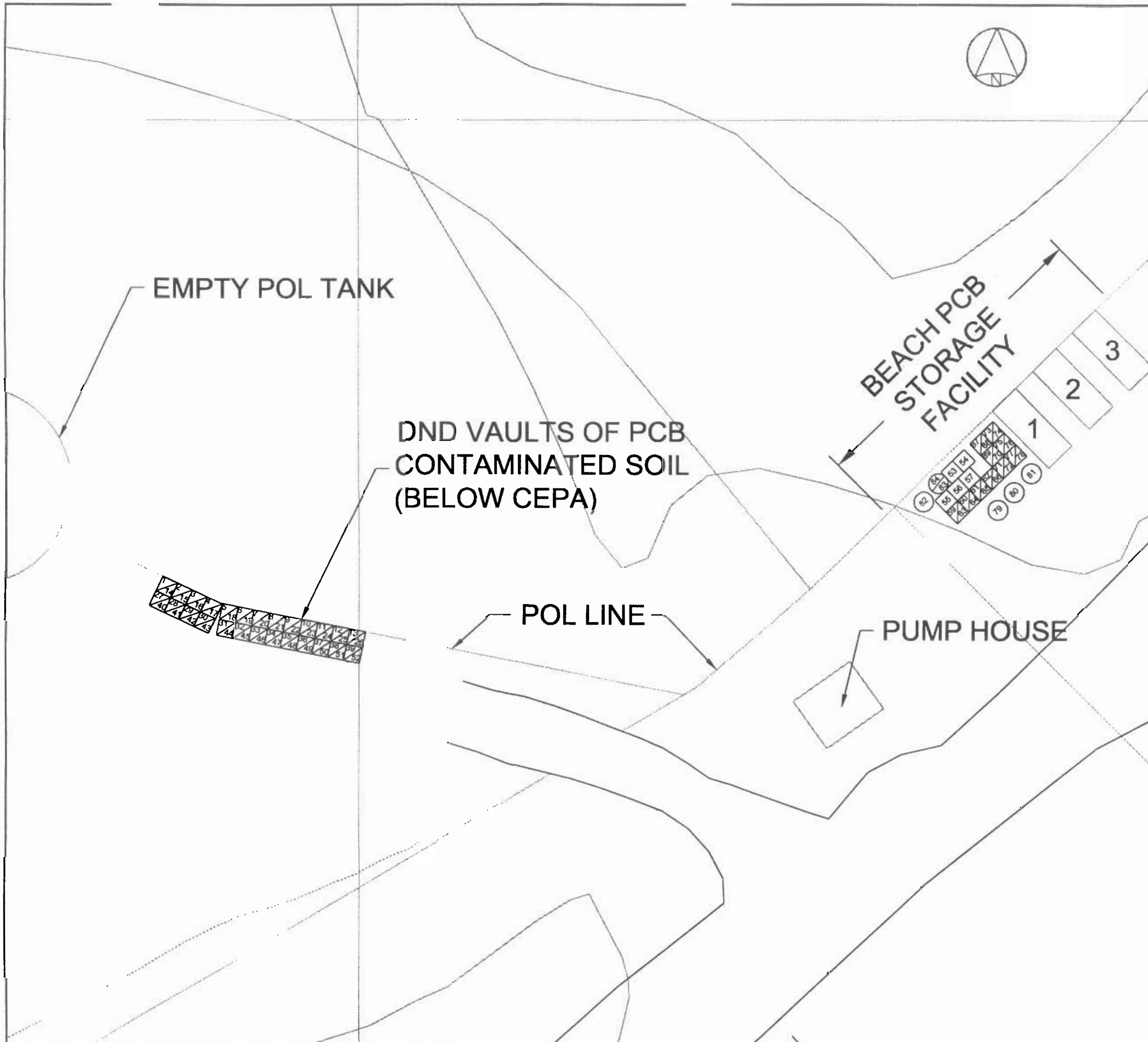
- sea can #1: All drained transformers from the Furniture Dump (1999 and 2000 seasons). One drained transformer from the airstrip dump (2001 season). The transformers were strapped on pallets and secured inside the sea can using wood bracing. Packaging was conducted in compliance with shipping requirements.

- sea can #2: Blue plastic drums containing PCB contaminated floor tiles, capacitors, ballasts, and one overpack drum containing PCB oil.

- sea can #3: No waste, used for temporary storage of PCB water treatment unit.

- outside area: 26 red vaults containing CEPA demolition debris, 3 small (1.6 m^3) steel containers containing CEPA soil > 2000 ppm from S1 building area, and 3 large (3.1 m^3) steel containers containing CEPA wood debris from the S1/S4 area.

A monthly inspection of this PCB storage facility was conducted and logged. The full inventory of waste items is to be presented in Queen's University ASU 2002 report.



INDIAN AND NORTHERN AFFAIRS CANADA

NUNAVUT REGIONAL OFFICE

General Notes - Notes Générales:

Legend - Légende:

No.	DATE	REVISION	REVISION	APPR.

Qikiqtaaluk Corporation

Sinanni

SCALE - ÉCHELLE 2.5 1.25 0 2.5 5 7.5 10 m

PROJECT - PROJET
BAF-5 RESOLUTION ISLAND

TRADE - MÉTIER: SITING
DATE: 2002-11-28

SUBJECT - SUJET
Figure 1:
Location of Beach PCB Storage Facility and DND Soil Filled Vaults

PRODUCTION	CONCURRENCE - ASSENTIMENT
DESIGNED ÉTUDIÉ	P.S.
DRAWN DESSINÉ	G.J.
CHECKED VÉRIFIÉ	K.C.
CO-ORDINATION	REVIEWED - REVU

DWG. NO. - DESSIN NO.
AB-2002-102-ZOOM

Canada

Table 4.2: Identification Numbers and Contents of DND Vaults and INAC Containers

ID Number	DND Vault Number	Contents
1	249	Non-CEPA PCB Soil
2	258	Non-CEPA PCB Soil
3	259	Non-CEPA PCB Soil
4	251	Non-CEPA PCB Soil
5	317	Non-CEPA PCB Soil
6	319	Non-CEPA PCB Soil
7	321	Non-CEPA PCB Soil
8	324	Non-CEPA PCB Soil
9	323	Non-CEPA PCB Soil
10	38	Non-CEPA PCB Soil
11	17	Non-CEPA PCB Soil
12	13	Non-CEPA PCB Soil
13	46	Non-CEPA PCB Soil
14	37	Non-CEPA PCB Soil
15	260	Non-CEPA PCB Soil
16	257	Non-CEPA PCB Soil
17	254	Non-CEPA PCB Soil
18	318	Non-CEPA PCB Soil
19	320	Non-CEPA PCB Soil
20	322	Non-CEPA PCB Soil
21	250	Non-CEPA PCB Soil
22	253	Non-CEPA PCB Soil
23	256	Non-CEPA PCB Soil
24	267	Non-CEPA PCB Soil
25	266	Non-CEPA PCB Soil
26	300	Non-CEPA PCB Soil
27	252	Non-CEPA PCB Soil
28	261	Non-CEPA PCB Soil
29	262	Non-CEPA PCB Soil
30	264	Non-CEPA PCB Soil
31	8	Non-CEPA PCB Soil
32	299	Non-CEPA PCB Soil
33	268	Non-CEPA PCB Soil
34	35	Non-CEPA PCB Soil
35	32	Non-CEPA PCB Soil
36	291	Non-CEPA PCB Soil
37	36	Non-CEPA PCB Soil
38	290	Non-CEPA PCB Soil
39	56	Non-CEPA PCB Soil
40	269	Non-CEPA PCB Soil
41	270	Non-CEPA PCB Soil
42	248	Non-CEPA PCB Soil
43	263	Non-CEPA PCB Soil
44	281	Non-CEPA PCB Soil
45	20	Non-CEPA PCB Soil
46	247	Non-CEPA PCB Soil
47	12	Non-CEPA PCB Soil
48	21	Non-CEPA PCB Soil
49	271	Non-CEPA PCB Soil
50	255	Non-CEPA PCB Soil
51	32	Non-CEPA PCB Soil
52	265	Non-CEPA PCB Soil

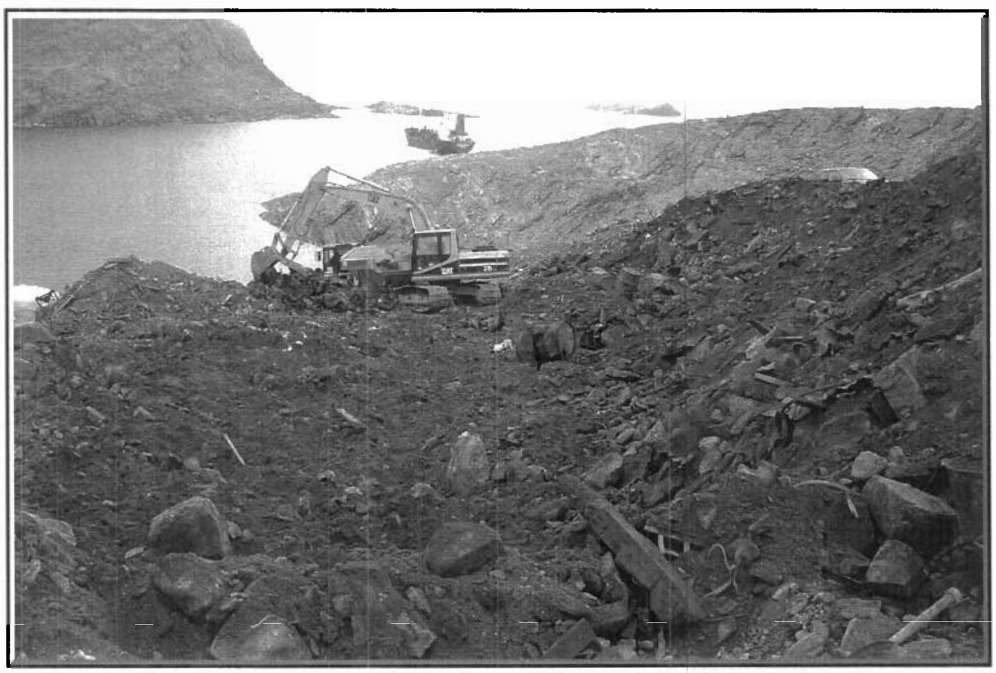
ID Number	INAC Container Number	Contents
53	108/106 - Racks	CEPA Wood and Metal Debris
54	272	CEPA Wood and Metal Debris
55	S1-CEPA-#3	CEPA Wood and Metal Debris
56	313	CEPA Wood and Metal Debris
57	315	CEPA Wood and Metal Debris
58	279	CEPA Wood and Metal Debris
59	S1-CEPA-#2	CEPA Wood and Metal Debris
60	311	CEPA Wood and Metal Debris
61	314	CEPA Wood and Metal Debris
62	286	CEPA Wood and Metal Debris
63	S1-CEPA-#4	CEPA Wood and Metal Debris
64	1-CEPA-DEBRIS-#	CEPA Wood and Metal Debris
65	316	CEPA Wood and Metal Debris
66	WN10461	CEPA Wood and Metal Debris
67	233	CEPA Wood and Metal Debris
68	285	CEPA Wood and Metal Debris
69	278	CEPA Wood and Metal Debris
70	277	CEPA Wood and Metal Debris
71	NO NUMBER	CEPA Wood and Metal Debris
72	NO NUMBER	CEPA Wood and Metal Debris
73	PN00283	CEPA Wood and Metal Debris
74	PN00280	CEPA Wood and Metal Debris
75	PN00282	CEPA Wood and Metal Debris
76	PN00284	CEPA Wood and Metal Debris
77	PN00271	CEPA Wood and Metal Debris
78	PN00281	CEPA Wood and Metal Debris
79	WN10460	CEPA Soil
80	WN10462	CEPA Soil
81	PN00270	CEPA Soil
82	PN00485	CEPA Wood Debris
83	PN00483	CEPA Wood Debris
84	PN00484	CEPA Wood Debris

5- OTHER CLEAN UP ACTIVITIES

Other clean up activities listed in the 2002 work plan, and carried out during the field season include: remediation and clean up of the beach dumps, shredding of non-hazardous waste, disposal of waste at the lower site non-hazardous (NH) landfill, and storage of non-PCB hazardous waste. The following sections describe in detail the nature of the other clean up activities conducted during the 2002 field season.

5.1- Clean up of the Beach Dumps

The clean up of the Beach Dumps (*i.e.,* Lead Beach Dump and New Beach Dump) was conducted between July 20, and August 24. Work proceeded slowly due to the presence of permafrost. Excavation of debris was carried out until permafrost was encountered. This was then followed by a period of thawing that lasted a few days. Excavation operations, and thawing periods were carried out alternately during the whole season.



Photograph 5.1: Excavation of Waste Debris at the Lead Beach Dump

The 315 excavator with thumb attachment was used to pick debris items out of the dumps. Drums containing liquids were segregated and put aside for further inspection and sampling. Most drums encountered during the clean up were empty, however a few were found to contain some liquid. These liquid containing drums were put aside and temporarily stockpiled on spill pans. They were later sampled and analyzed by the ASU laboratory. Once the liquid was sampled, it was pumped from the old drums, and spill pans into sound drums. The new drums were then managed according to their analytical results (*i.e.,* incinerated on-site, temporarily stored prior to shipment south, or dumped on land). A total of 3 oil-filled drums were hauled up to the incineration platform. One drum containing water was dumped on land.

Bulky waste debris items were loaded into D250 dump trucks and hauled to the beach shredder located adjacent to the non-hazardous landfill. Approximately 55 m^3 of compacted waste (*i.e.,* 11 loads of D250 dump truck) were hauled to the beach shredder. It can be assumed that a truck load contained approximately 5 m^3 of compacted waste (*i.e., in situ* volume). The bulk of this volume (*i.e.,* 40 m^3) originated from the Lead Beach Dump.

During waste excavation, some drums containing amyl acetate (*i.e.,* white gelatin substance emitting solvent odours) were found. These drums were segregated and placed in one of the 3 steel containers (3.1 m^3) stored outside the beach hazardous waste storage facility, near the east Beach POL tank.

5.2- Non-Hazardous Waste Shredding and Landfilling

Waste debris excavated from the Beach Dumps, scattered debris gathered from various areas, and washed drums from the incineration platform were all hauled to the Beach NH Landfill site. Lighter metal debris such as empty drums were shredded, and disposed of in the landfill, while bulkier metal debris (*e.g.,* vehicle and heavy equipment frames and parts, structural steel) were dumped directly into the landfill. Occasionally, the landfill debris were compacted by driving the D7 bulldozer on top of the debris pile. During the 2002 season, the shredder was operated for a total of 5 days, and approximately 108 m^3 of waste debris were disposed of in the NH landfill site.

On one occasion, during the shredding operations, an empty drum that probably contained residual material self-ignited, and caused a small fire as it was being processed through the shredder. The combustible material burned rapidly and intensively, but no extinguisher was required as the fire burned out on its own.

5.3- Engineered Silt Barrier

The trial silt barrier installed down-gradient from the former Furniture Dump during the 2001 season was inspected at the beginning of this past season (*i.e.,* 2002). The barrier resisted very well to the harsh weather conditions encountered at the upper site (*e.g.,* wind and snow) and to surface runoff water from precipitation and the spring thaw. Furthermore, the barrier effectively blocked and retained eroded soil particles which accumulated on the up-gradient side of the barrier. However, it is not yet known whether these soil particles are actually contaminated by PCBs or not.

5.4- Hazardous Waste Storage

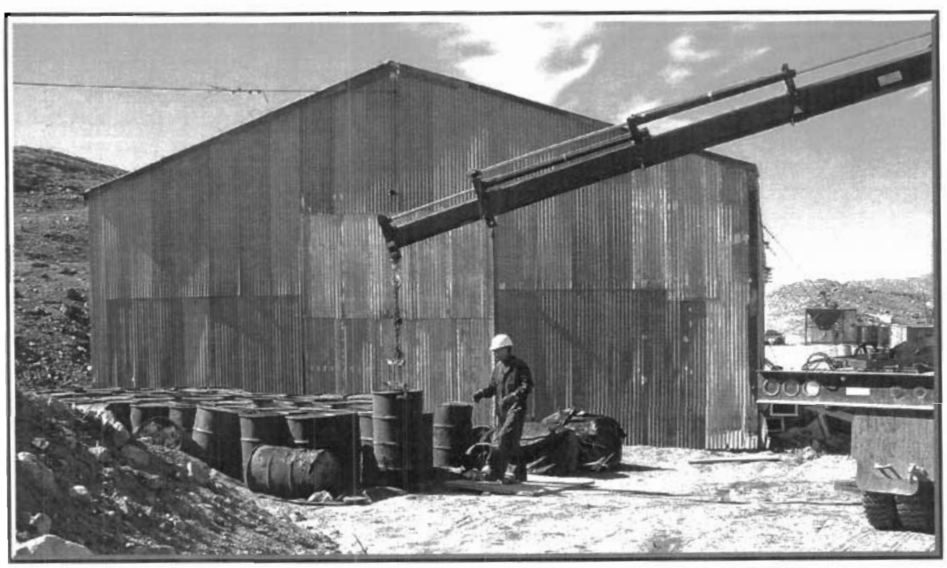
During the 2002 season, various types of hazardous wastes were recovered, and added to the inventory. These items were sent to the beach warehouse, which has been used as a non-PCB hazardous waste storage facility since the 2000 season. The following waste items were added to the inventory:

-24 drums of POL products to be shipped south
-1 waste wrangler of oily sorbent (from floor clean up, 2002)

The waste items already stored in this facility prior to the 2002 season are listed below:

-30 wooden crates filled with mercury contaminated soil
-29 wooden crates filled with metal contaminated soil
-1 red metal vault filled with batteries
-2 overpack drums filled with batteries
-1 blue plastic drum filled with paint products and thermometers
-1 drum filled with NiCad batteries
-2 waste wranglers filled with batteries
-1 drum filled with zinc contaminated soil
-1 conical (3.1 m^3) container with residual solid combusting substance
-3 conical (3.1 m^3) containers filled with amyl acetate substance (outside)
-8 drums of oil (< 50 ppm PCBs) and 1 drum ethanol
-131 drums of POL products to be shipped south

Some of the drums stored inside the warehouse at the end of 2001, awaiting sampling and analysis, leaked on the floor over the winter. These drums were sorted, and transferred into overpack drums, and then placed on pallets and strapped. The oily floor was then cleaned up by spreading sorbent material on the floor. The oily sorbent was recovered, and placed in a waste wrangler which was stored in the warehouse.



Photograph 5.2: Drums of Waste Grease Removed from Storage Area

6- DRUMS AND POL MANAGEMENT

The activities of drum, and POL (Petroleum, Oil and Lubricants) management, initiated during the 1999 season, were scheduled as an on-going process for the 2002 season. Last summer, processing and incineration of the waste grease was initiated, drum consolidation continued, and remaining waste oil was also incinerated. One of the waste oil burners was repaired at the beginning of the season. Other operations surrounding the oil incineration platform included drum staging, sorting, and pumping, drum washing as well as water treatment by separation and sorption. The layout of the POL incineration facilities are presented in the Project Drawings.

6.1-Incineration System Improvements

In order to improve the burning efficiency, and to increase operations safety, one of the two oil incinerators was overhauled at the beginning of the season. The incinerator was moved from the incineration platform to the maintenance garage where the repairs were conducted.

The burner inlet pipe had become partly detached from the incineration chamber due to age, and normal wear. Previous attempts to weld the two parts together or patch the gap with cement were unsuccessful. Therefore, a steel plate was welded in place to fill the gap and provide structural strength.

The refractory cement lining the inside of the incineration chamber was also redone. Loose pieces of old cement were broken off and removed, and the entire surface was scraped clean. The cracks were filled with cement, and then a layer of cement was applied to the entire interior surface of the chamber.

The exterior surface of the incinerator was painted with high temperature paint to reduce rusting of the steel surface.

A spill containment berm, made of earth and geomembrane, was built around the three (3) oil separator and water treatment tanks. This berm will serve as protection in case of a spill.

6.2-Waste Grease Processing

Processing, and incineration of the waste grease was a major part of the POL management program for the 2002 season. During the pre-season, it was determined that the grease should be diluted with waste fuel to decrease viscosity, and therefore facilitate pumping and incineration. Prior to the field season, bench scale tests were carried out by Stabilis at the ASU laboratory in Kingston, Ontario. Results from these tests showed that the minimal fuel to grease dilution ratio to be used was 1.25/1. Results also showed that heating the mixture did not significantly decrease fluid viscosity.

The grease dilution, and mixing process required the use of a mixing tank. This was constructed from a 1.6 m^3 conical shaped steel container. Two bars of angle-iron were welded inside the container, near the top and at a slight angle. These bars were used to support the grease drums on their sides, and facilitate the draining of their contents. An explosion proof propeller mixer (2 HP) was installed on the mixing tank.

At first, each mixing batch consisted of three (3) drums of fuel and two (2) drums of grease (*i.e.*, 1.5/1 ratio). After a while, the dilution factor was increased in order to improve the burning efficiency. The mixing batches then consisted of four (4) drums of fuel and two (2) drums of grease (*i.e.*, 2/1 ratio). Overall, the average fuel/grease dilution ratio was approximately 1.7/1.

Photograph 6.1: Grease Drum Being Transferred to Mixing Tank

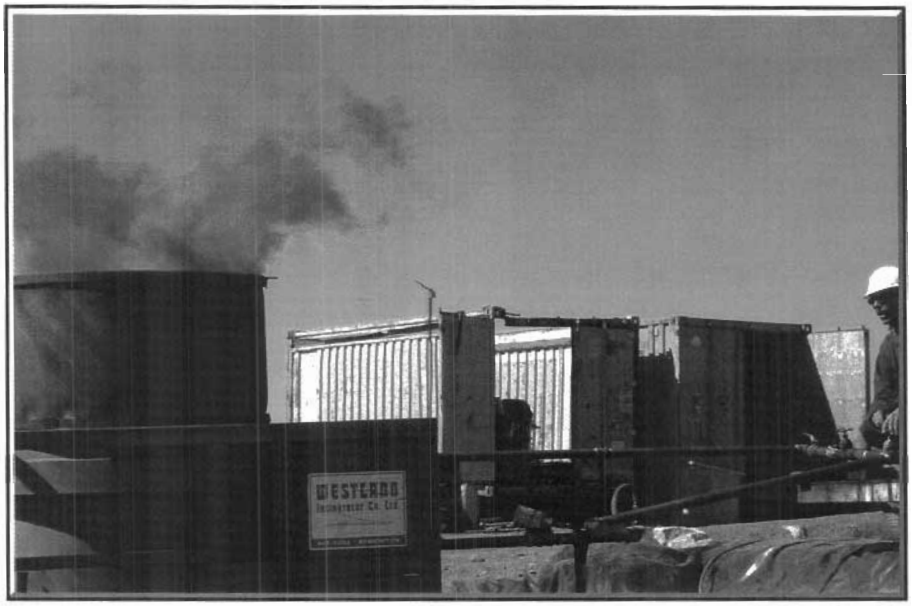
The drums of grease requiring incineration were consolidated from various areas during the 2001 season, and temporarily stored behind the Beach Hazardous Waste Storage Facility. The waste fuel used in the mixture came from the West Beach POL Tank drained during the 2001 season and temporarily stored in drums.

Each drum of POL product was placed on the two angle-irons and drained by gravity. The fuel drums drained rapidly, however the drums of grease required more effort. The bulk of the grease flowed out by gravity but the residual contents were manually scraped out. Once the five (5) or six (6) drums were transferred into the mixing tank, the mixer was turned on and the two products were homogenized for a few minutes. The mixture was then pumped into the feeding tank prior to incineration.

A gear pump was installed beside the feeding tank and used to re-circulate the grease and fuel mixture within the tank. This circulation was useful in keeping the mixture homogenous and preventing separation and settling of the grease.

6.3-Incineration Operations

Drums of waste POL products were hauled from various locations (*i.e.,* hazardous waste storage facility, beach POL tank storage area, land, etc.) to the incineration platform by using the 14-tonne HIAB boom truck. Prior to processing, drum identification numbers were logged. Air powered diaphragm pumps were used to transfer the waste oil, and fuel, from drums (staged on a spill pan) to a temporary holding/settling tank (*i.e.,* wheel tank). The POL products were then pumped from the top of this holding tank to the incinerator feeding tank. The diluted grease mixture, as mentioned previously, was pumped from the mixing tank directly into the feeding tank.



Photograph 6.2: Incineration Operations

Incineration of the grease mixture proved a little more difficult than the regular waste oil and fuel mixtures. Small pockets of water, often trapped inside grease globules, occasionally caused irregular burning, and sometimes even extinguished the fire. For this reason, the proportion of fuel in the grease mixture was slightly increased in order to improve the calorific value of the mixture as well as the burning efficiency.

Furthermore, grease particles trapped in various restrictions along the piping (*i.e.,* elbows, tees, and valves) caused partial clogging of the lines and reduced flow rate. In order to clear the lines and maintain a constant flow rate, the feeding lines were tapped on a regular basis with a blunt steel object, particularly near restriction points. During the incineration of the grease mixture, constant attention, and frequent manual adjustments were required.

During the 2002 field season, the incinerators were operated for a total of 247 hours, over a 33 day period, including 3 days of down time. A total of 25,600 litres (5,625 Imp. gal.) of POL products were incinerated. The average burning rate of the incineration system was 108 litres/hr (24 gals/hr).

A total of 59 drums of waste oil, oily water and waste fuel were transferred into the settling tank. The bottom water was drained out of the tank and treated, while the remaining oil was incinerated. As for the diluted grease mixture, 29 drums of grease, and 50 drums of fuel were mixed together and incinerated. The following table summarizes the amount of drums incinerated as part of the POL incineration program during the past three years.

Table 6.1: Summary of POL Incineration Program

Sectors	Incinerated 2000	Incinerated 2001	Incinerated 2002
Barrel Cache Valley	67	171	-
Upper Beach	29	32	-
Airstrip / Maintenance Complex	42	50	-
S1/S4 Valley	27	19	-
Imploded Tank	31	57	-
Other Locations	24	77	-
Beach Hazardous Waste Storage (oil)[1]	-	-	59
Beach Hazardous Waste Storage (grease)	-	-	29
West beach POL Tank Storage (fuel)	-	-	50
Total	**220**	**406**	**138**

[1] temporarily stored in 2001 because contents not tested; 2002 results showed they could be incinerated

6.4-Drum Washing

The drum washing station, installed beside the incineration platform, was operated for most of the season. The washing station, operated by one person, uses high pressure steam to remove residual oil from inside the empty drums. Oily water, which drains out of the drums by gravity, is collected and processed through the oil-water separator.

Drums processed through the washing station consisted mostly of drums emptied of their waste oil contents as part of the POL management, and incineration program. Drum washing was required to render the empty drums non-hazardous, and to allow for the on-site disposal in the beach non-hazardous waste landfill. Approximately 165 empty drums were processed through the drum washing station during the 2002 season.

Washed drums were temporarily stockpiled near the incineration platform and then hauled to the beach shredder (located next to the non-hazardous landfill). The shredded drums were dumped into the Beach Non-Hazardous landfill.

7- CAMP OPERATIONS AND MAINTENANCE

As part of the commitment to maximize worker health and safety, and comply with all regulations, various tasks and activities related to camp operation and maintenance (O&M) were carried out during the 2002 season. The present section describes the treatment of drinking water, the communication system problems, and many other minor activities related to electricity, plumbing and carpentry. Most camp O&M activities are aimed at improving camp facilities as well as the general well being and comfort of the workers.

7.1-Drinking Water pH Adjustment

Water from the supply lake has a naturally low pH value (*i.e.,* approximately 4.2) which is below the aesthetic objective range of 6.5 to 8.5 as specified in the *Guidelines for Canadian Drinking Water Quality*. In order to increase the pH level prior to usage, food-grade sodium carbonate (Na_2CO_3) powder was added to the camp water feeding tanks, every time water was transferred from the tanker truck. Turbulence caused by the water rushing in helped dissolve the powder which has a relatively low water solubility. By adding approximately 550 grams of sodium carbonate on a daily basis, the pH value was maintained within the specified range. Tap water pH levels were measured on a daily basis by ASU personnel, who reported the values to the site engineer. The amount of carbonate added was determined from the daily pH level measurements.

7.2-Communication System

During the 2001 season, a new communication system was installed on site. At the beginning of the 2002 season, the feed-horn on the satellite dish was damaged. The defective part was shipped out and replaced by the service provider (*i.e.,* Vancouver Teleport) who sent a technician on site to install a new feed-horn, and start the system up for the season.

The communications technician was on site on July 24, and 25, and the system became fully operational on July 26. From that date on, the system reliability was irregular, and service interruptions were frequent. Interruptions of service were encountered on the following dates: July 31, August 4 to 7, August 16, August 17, and August 19 to 28 (*i.e.,* until camp shut down). Each time, the site engineer, assisted by the technicians at Vancouver Teleport Ltd, had to repair, and restart the system. Much time was spent troubleshooting, both through software tests and commands, and by testing and changing parts on the communication dish. Apparently defective system components (*i.e.,* feed-horn, CPI module, cables, and connectors) were shipped out for testing, and replaced by other components. Despite all these efforts the system remained down for the last ten (10) days of camp operations.

The problems with the communication system had repercussions on various aspects of the project. Since email could no longer be used, communications in general and document transfers between RI, and other offices, were affected. The single backup communication line (*i.e.,* MSAT phone) had to be used for both fax and phone, by everyone, thereby increasing delays. In general, an overall decrease in efficiency was felt as a direct effect of the communication system being non-operational.

Photograph 7.1: Replacing Parts on the Communication Dish

7.3-Electrical Work

Various tasks required for the improvement, modification, and maintenance of the various electrical systems in camp were conducted by the site electrician, and trainee.

Two different fire alarm systems were being used in camp. One of the tasks carried out this year was to hook up all pull stations, smoke and heat detectors, from the older fire alarm system onto the newer system (installed during the 2001 season). All detectors are now hooked onto a single fire alarm system. After these modifications, the system was completely tested.

Other tasks carried out included:

- Startup and tested various equipment, and systems;
- Installed outdoor lighting at the entrance to the office;
- Repaired the garbage incinerator supply wires.

7.4-Plumbing

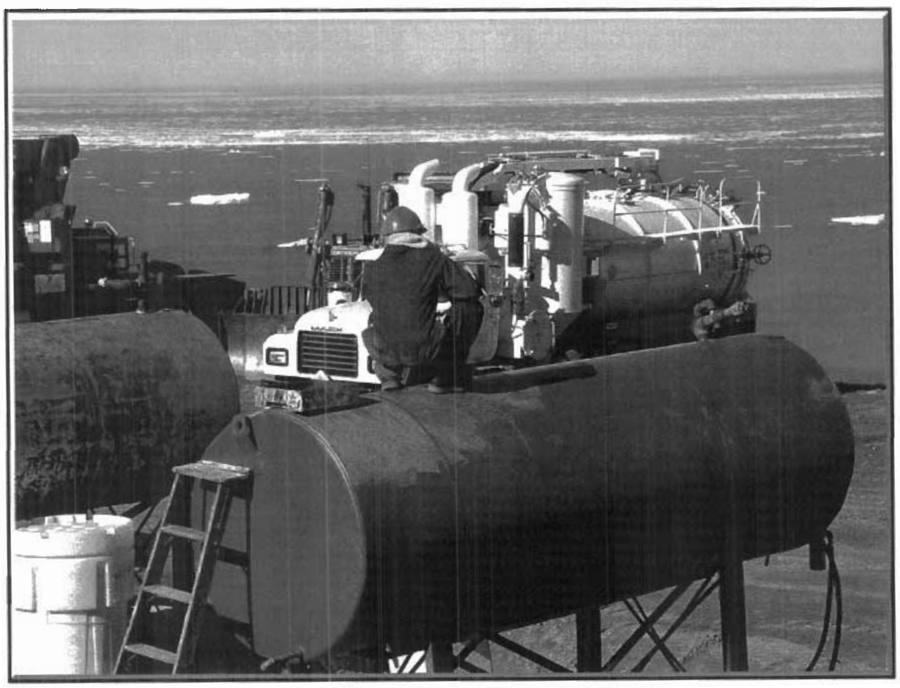
Tasks required for the improvement, modification and maintenance of the water and sewage systems, ventilation, as well as oil furnaces in camp were conducted by the site plumber, and trainee. The activities carried out during the 2002 season included:

- Installed an exhaust fan in the carpentry shop;
- Installed a new fuel line on the furnace located in the hallway between the rec room and the mud room;
- Installed water fill inlet and overflow lines on the water tank located in the ASU lab trailer;
- Conducted preventative maintenance, and various repairs in the washrooms;
- Replaced the oil furnace in the medic, and H&S office;
- Replace the oil furnace in the dining room;
- Inspected, and serviced all oil furnaces;
- Replaced a defective valve on the water supply line;
- Startup, and performed maintenance of the garbage incinerator.

7.5-Carpentry

As part of the general camp maintenance, and improvement to facilities, the following tasks related to carpentry were conducted by the site carpenter and his trainee:

- Built a closet around the oil furnace in the dining room;
- Built a dividing wall in the main office;
- Repaired the roof and a dividing wall (damaged by water infiltration) in the kitchen area;
- Repaired the roof and exterior wall near the oil furnace in the men's washroom;
- Built and installed additional benches in the mud room;
- Repaired the ceiling in the cooks' quarters damaged by water infiltration.



Photograph 7.2: Painting the Gasoline Tank Near the Core Camp

7.6-Camp Closure and Winterization

A few days prior to camp closure, vehicles and heavy equipment were stored in the main garage and in the beach warehouse. Due to limited storage area, equipment such as shredders were not stored inside buildings. All engine powered vehicles or equipment stored outside were winterized by blocking exhaust systems, and air intakes to prevent infiltration of snow and rain.

Windows of the core camp, training centre, and trailers were boarded up with plywood to prevent snow from entering the facilities. All entrances were locked, and blocked with lumber, nails, and rope. All remaining perishable food supplies were shipped out for donation in Iqaluit.

The drinking water tanks, toilets, urinals, sinks, and water lines were drained. The waste water lines were then filled up with antifreeze prior to departure. The pre-established camp winterization procedures were followed.

The Caterpillar D7 bulldozer was parked next to the dump adjacent to the core camp. This heavy equipment is used to clear snow from roads during camp opening.

8- TRAINING

As in previous years, during the 2002 season, the Resolution Island project was a unique opportunity for Inuit workers to acquire on-the-job training skills in various fields. As per the Contribution Agreement between Qikiqtaaluk Corporation, and INAC, training was identified as a priority.

Prior to the beginning of the field season, Hazwoper training and refresher courses were provided in Iqaluit. Theoretical boom truck training was also provided in Iqaluit while the practical training was given at RI. Other formal training sessions were organized and presented on-site by certified instructors. All the training courses provided as part of the 2002 season are presented below:

HELICOPTER FLIGHT TRAINING:

Helicopter flight training was provided to Eelow Ejetsiak, who has a pilot's license, and is working towards his certification on a Bell 212 helicopter. Over ninety (90) hours of practical training were provided over the season by pilots from Canadian Helicopter Ltd.

Photograph 8.1: Helicopter Pilot Bruce Wentzell and Co-pilot Eelow Ejetsiak (right)

BOOM TRUCK OPERATION AND SAFETY:

The boom truck training course was initiated in Iqaluit by the presentation of a 20-hour theoretical instruction class. Three (3) trainees attended the course provided by KDC Managed Processes Training Inc. The practical training was conducted at Resolution Island, also for a period of 20 hours. All 3 new operators successfully completed the course, and received their training certificate.

Photograph 8.2: Practical Training on the 30-Tonne Hydralift Boom Truck

HAZWOPER:

A 40-hour Hazwoper training course was provided to 17 people. An 8 hour Hazwoper refresher course was also provided to 4 people. Theory and practical training was presented by Pro-Medic personnel. The course outline included contaminated site procedures, personal protection equipment, and hazard identification. Certificates were issued to all who successfully completed the course.

WORKPLACE HAZARDOUS MATERIAL INFORMATION SYSTEM (WHMIS):

Nine (9) junior workers received a 4-hour training course on WHMIS, provided by Pro-Medic personnel. The course dealt with the identification, classification, and labeling of hazardous materials used in the workplace, the use of Material Safety Data Sheets (MSDS), as well as the health and safety risks involved in using hazardous products. Certificates were issued to all 9 workers.

FIRST AID and CPR:

A total of eight (8) workers received an 8-hour first aid and CPR training course, and were issued certificates from St.John's Ambulance. The course, provided by Pro-Medic personnel, covered the practical application of first aid techniques in a remote setting.

OTHER AREAS OF TRAINING:

Theoretical and practical on-site training, in the following fields, was also provided:

- Construction: including welding, carpentry, plumbing, and electricity.
- Heavy Equipment: operating excavators with various attachments (*i.e.,* bucket, thumb, grapple), bulldozers, loaders, D250 dump truck, vacuum truck, 6-wheeled dump truck, waste shredder, and soil screener.
- Safety and Rescue: including workplace and environment safety, fire fighting, first response training, and decontamination procedures.
- Environmental Technologies: operating a waste oil incineration platform (*i.e.,* drum handling, oil transfer, drum washing, incinerators).
- Environmental Assessment: sampling various media (soil, water, POL liquids), GPS surveying, lab work, etc. (provided by Queen's University ASU).
- Mechanics: including heavy equipment repairs / maintenance and welding, small engine mechanics.
- Management: including procurement, finances, administration, office management, inventory, and expediting.
- Others: including housekeeping, kitchen maintenance, and cooking.

Details related to the training protocol and activities are to be found in the document entitled "RI-2002 Project Summary" prepared by Harry Flaherty, site superintendent, Qikiqtaaluk Corporation. These details include:

- People trained;
- Areas of training;
- Number of hours per training area;
- Detailed description of tasks;
- Statistics.

9- OTHER ACTIVITIES

Other miscellaneous tasks accomplished throughout the course of the 2002 season are presented in this section. Some of these tasks were not specifically scheduled in the initial work plan but were nonetheless conducted as an integral part of the 2002 season.

9.1-Pre-Season Activities

Prior to the beginning of the field season, various tasks related to the RI project were conducted.

In the spring of 2002, Sinanni and QC assisted INAC in the registration of the petroleum product storage facilities located on RI. The registration was carried out in accordance with the *Federal Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on Federal Lands or Aboriginal Lands Regulations, SOR/97-10*. The following above-ground storage facilities were registered:

- Beach tank farm (eight (8) 32,000 litre steel tanks);
- Helipad tank (32,000 litre steel tank);
- Camp tank (60,000 litre steel tank).

Sinanni and QC also registered, on behalf of INAC, four (4) hazardous waste storage and management facilities on RI. The facilities were registered with the Government of Nunavut, Department of Sustainable Development, Environmental Protection Service, in accordance with the *Guideline: General Management of Hazardous Waste in Nunavut*. The following facilities were registered:

- Main PCB storage facility;
- Beach PCB storage facility;
- Hazardous waste storage facility;
- Waste POL management facilities.

9.2-Management Committee

The Contribution Agreement signed between QC and INAC included provisions for the forming of a management team. The Project Management Team (PMT) responsibilities are to closely monitor project progress, to hold bi-monthly meetings and to report to the Senior Management Team (SMT). The following individuals (or company representatives) were part of the PMT:

- INAC - Natalie Plato (occasional observer on site)
- Scientific Adviser - Queen's University ASU (Allison Rutter, Graham Cairns, Shakeel Virk)
- Site Superintendent - Harry Flaherty
- Assistant Site Superintendent - Chris Giroux
- Health & Safety Officer - Scott Clay and David Cain (Pro-Medic)
- On-site Emergency Medical Technician - Andrew Bullion (Pro-Medic)
- On-site Financial Comptroller - Anita Ootoowak

- Heavy Equipment Supervisor - Joe Erkidjuk
- Technical Adviser - Stabilis Environment Inc. (Jacques Dion)
- Project Engineer - Sinanni Inc. (Philippe Simon, Karl Côté, Greg Johnson)

Minutes of all PMT meetings held on-site during the season are presented in Appendix 4.

9.3-Permits

Several permits were obtained prior to the 1998 field season. Some of these permits require yearly reporting to various agencies. The main field permits are land use (INAC and Nunavut Impact Review Board - NIRB), water license (Nunavut Water Board - NWB), and quarrying (INAC).

9.3.1-Land Use

The initial land use permit for the RI clean up project was obtained in 1998. An application to renew this permit was submitted to INAC in the spring of 2001. The permit excludes any activities related to the storage, treatment, transportation, and disposal of PCB CEPA soils. This aspect of the project was discussed between NIRB and INAC, and public hearings were held in Iqaluit and Kimmirut in September 2000. Following this, it was decided that the CEPA soils would be shipped off site to an authorized disposal facility. The current land use permit can be renewed for an additional year before it expires.

9.3.2-Water Licence

A water licence (#NWB5RES9803), for the RI clean up project, was granted on July 31, 1998. The current licence expires in 2003. This licence allows for the use of up to 400 m^3 of freshwater per month and provides various conditions related to the following operations:

- Water use;
- Waste disposal;
- Undertaking;
- Studies;
- Spill prevention and contingency planning;
- Modifications;
- Operation and Maintenance;
- Abandonment and Restoration.

The monthly quantities of freshwater, sewage water and waste discharge will be compiled and reported later to NWB. Furthermore, ASU analytical results from the drinking water lake, and the tap water samples will be included. A new application will be submitted to NWB in 2003 to ensure compliance for next season.

9.3.3-Quarrying

A permit application for quarrying sand and gravel from three (3) borrow pits on RI was submitted to INAC in the spring of 2002. The new Quarry Permits for the Lower Lake, and Lake #2 pits

(#2002QP0063, #2002QP0064) were issued on 16 July 2002 while the permit for the Radio Hill pit (#2002QP0068) was issued on 29 July 2002 (see Appendix 5). The permits provide conditions for the use 15,000 m^3 of sand and gravel (*i.e.,* 5,000 m^3 from each borrow pit). These permits are renewed on a yearly basis. During the 2002 season, approximately 910 m^3 of material was excavated from the Radio Hill pit. The two (2) other borrow pits were not used this year. Most of the excavated pit run was screened prior to usage. The sand and gravel was mainly used for the following activities:

- Road repairs and maintenance;
- Access road for vacuum truck in S1/S4 valley;
- Staging pad for steel containers filled with CEPA soil;
- Beach barging pad for sealift.

During the first three (3) weeks of the field season, stockpiled material from the previous season had to be used while the permit applications were being processed. Late issuing of the quarrying permits caused some delays in the scheduled work plan.

9.4-Road Maintenance

At the beginning of the season, spring time erosion caused by rainfall and snow melt had partly damaged most roads on site and therefore minor repairs were needed. Road maintenance is also required on a regular basis due to the normal wear of the roads caused by vehicle, and heavy equipment traffic.

Despite the late start to the field season (*i.e.,* July 12 opening date), significant amounts of snow were still present on some roads. Approximately two (2) days were required to clear the snow from all the roads, and six (6) days were needed to clear snow out of all the ditches to allow for proper drainage.

Otherwise, heavy equipment was used to grade roads, and fill holes. Approximately 180 m^3 of sand, gravel, and screening reject were used for road maintenance and minor repairs. Throughout the 2002 season, all site roads had to be maintained in proper condition for vehicle and heavy equipment traffic. Small piles of sand, used for road maintenance, were staged all along the road from the beach area to the upper camp area.

Also during this season, the access road which leads to the lower S1/S4 valley from the former Furniture Dump was repaired, and improved. Approximately 490 m^3 of sand and gravel were used to complete this task.

9.5-Miscellaneous

9.5.1-Electrical Work

Various tasks required for the improvement, modification, and maintenance of the various electrical systems in different areas of the site were conducted by the site electrician, and trainee. The electrician is required at the beginning of the season to test and start up various systems, and equipment, as well as at the end of the season to shut down and winterize these same systems.

During the 2002 season, electrical work was particularly required for the following:

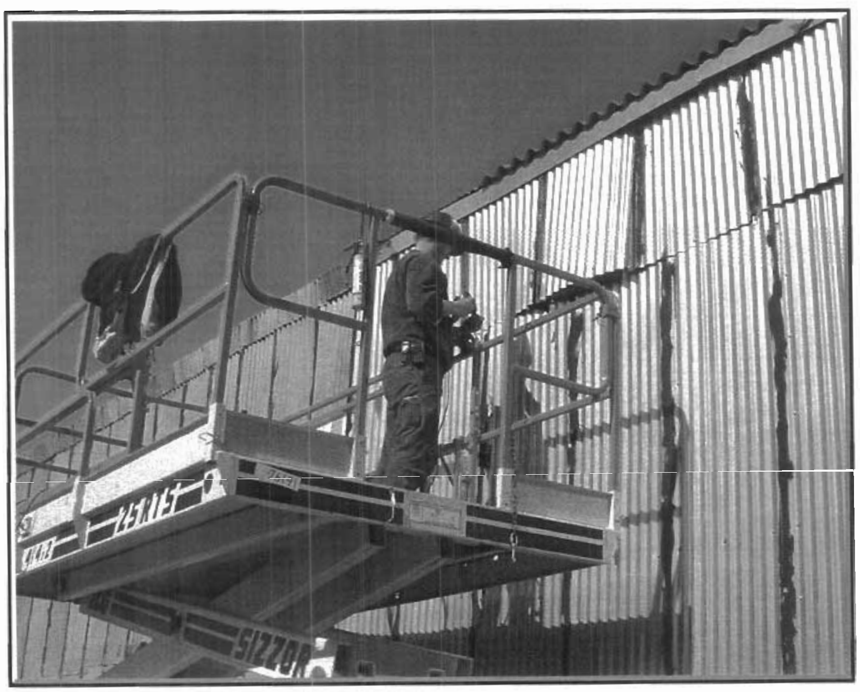
- Gravel screener at Radio Hill pit;
- Waste oil incineration platform;
- Maintenance garage (welding operations);
- Soil conveyor system;
- Decon trailer generator.

9.5.2-Carpentry

Besides general maintenance and improvement to camp facilities, carpentry work was also required in other areas of the site.

During the off-season, the two (2) garage doors of the main PCB storage building were damaged by the elements. Once opened, the badly warped doors were taken apart. Each door panel was removed, straightened, and then reinforced before being re-installed. Strong winds also loosened, and detached some pieces of steel cladding on the side of the main PCB storage building. The cladding was repositioned and, screwed in place.

The garage door of the beach hazardous storage facility was also damaged over the winter. This door was repaired as well during the 2002 season.



Photograph 9.1 Repairs to Main PCB Storage Building Cladding

9.5.3-Mechanical Work

Tasks required for the improvement, modification and maintenance of heavy machinery, vehicles, and various other equipment were carried out on site by the mechanics. Besides servicing, conducting regular inspections, and preventive maintenance on heavy equipment, vehicles, and gensets, the following activities were carried out during the 2002 season:

- Repaired various pumps;
- Repaired hydraulic lines and stoppers on grapple attachment of excavator;
- Set up plasma welder for use as a power generator for the soil conveyor;
- Replaced the rear axle and differential on the water truck;
- Repaired the fuel pump on the fuel truck;
- Built and installed centre bolts on rear axle of International dump truck;
- Repaired a hydraulic leak on the HIAB boom;
- Conducted bodywork and paint job on Suburban truck and replaced injection pump;
- Replaced flat tires on various pieces of equipment;
- Repaired the muffler on the water truck.

Photograph 9.2 Repairs to Rear Axle of International Dump Truck

9.5.4-Health and Safety

As in previous years, worker health and safety was identified as one of the priorities for the 2002 field season. Various procedures were implemented to comply with the health and safety plan, and other achievements were met as part of this commitment. Activities carried out during the 2002 season included but were not limited to:

- Carried out weekly health and safety committee meetings;
- Provided site orientation sessions to new employees (*i.e.,* site visit, camp safety rules, restricted areas, PPE);
- Conducted weekly camp and building inspections, and audits;
- Filled and logged accident and incident reports;
- Logged Workers Compensation Board (WCB) reports;
- Reported spills, and filled spill reports;
- Conducted camp evacuation drills;
- Conducted worker PPE inspections and enforced rules on a daily basis;
- Provided health and safety tips during daily morning meetings.

The Fire Safety Plans were updated taking into consideration the minor modifications made to the buildings and the alarm system. The Plans are presented in the Project Drawings.

More details on health and safety activities will be presented in QC's report of 2002 activities prepared by Harry Flaherty.

9.5.5-Minor Activities

After the 2001 season, fuel was delivered by tanker ship to RI. Some of the fuel ordered by INAC for the RI project was inadvertently pumped into the DND tanks instead of the INAC tanks. At the beginning of the 2002 season the fuel belonging to INAC was transferred from the DND tanks into the INAC tanks, and then tested for approval for use by the helicopter.

A spill containment berm, made of earth, was built around the two (2) camp gasoline and diesel tanks located near the helipad. These tanks are mostly used to fuel vehicles and heavy equipment.

As identified in the 2002 work plan, the electrical wiring inside the main PCB storage building was completed. As part of the work, a power outlet was installed in order to bring power to the soil conveyor. Lighting was also installed inside the building.

10- CONCLUSIONS AND RECOMMENDATIONS

This final section summarizes the information presented in all the previous sections of the report. Furthermore, based on the activities conducted and tasks accomplished during the 2002 season, QC and Sinanni have formulated technical recommendations for 2003 and subsequent years.

10.1-Environmental Concerns and Remediation Activities

The project's main goal is to bring the site into legal compliance. However, apart from PCB CEPA soils, other environmental concerns also need to be addressed.

10.1.1-Management of PCB CEPA Soils

The priority for the 2002 season was the excavation and containerization of CEPA soil. The excavation objective for the season was 800 m^3. The CEPA soil removal activities proceeded efficiently, and the objective was largely surpassed. Also during this past season, a total of 234 steel containers were filled with CEPA soil. These containers are currently stored at the beach staging area, awaiting off-site shipment for disposal.

Presently, almost 1,800 m^3 of CEPA soil is stored inside the main PCB storage facility. An additional 400 m^3 of CEPA soil could probably be stored inside the building before its storage capacity is reached. Furthermore, a total of 368 empty steel containers are presently on site. These containers represent a storage capacity of approximately 920 m^3. Therefore, the total additional storage capacity for CEPA soil on site is presently 1,320 m^3 (400 m^3 + 920 m^3).

In addition, another 150 m^3 of CEPA soil is still stored in non-EIS steel containers outside the PCB storage building. These soils will have to be transferred into EIS approved containers.

However, since the desired end result of the project is off-site shipment, emphasis will have to be put on containerization, and off-site transportation. In order to achieve this task within a reasonable time frame, more containers may have to be purchased. Table 10.1 summarizes the volumes of CEPA soil presently on site and the time required to containerize these soils. The following assumptions were used in the calculations:

- 300 m^3 of soil remains to be excavated in the lower S1/S4 valley;
- 2,100 m^3 of soil will be excavated at the S1/S4 beach;
- 1,800 m^3 of soil is currently stored in the Main PCB Storage Facility;
- screening rejects account for one third (33%) of the volume of soil in place;
- 25 steel containers can be filled in a normal work day;
- each steel container is to be filled with approximately 2.5 m^3 of soil.

Table 10.1: CEPA Soil Volumes and Containerization

Type of Soil	Area	Volume (m^3) unscreened soil	Volume (m^3) screened soil	Number of containers to be filled
Soil ready for shipment	Staging Area (234 EIS Containers)	-	-	0
Soil in storage	Main PCB Building	-	1,800	720
	Non-EIS Containers	-	150	60
Soil in place (est.)	Lower S1/S4 Valley	400	267	107
	S1/S4 Beach	2,000	1,333	533
Total		**2,400**	**3,550**	**1,420**
Containerization rate (containers/day)				25
Containerization time (days)				**57**

Approximately fifty-seven (57) days of containerization will be required. However, since the total volume of soil is not completely excavated more than one field season will be required to complete the project.

Table 10.2 presents four (4) different scenarios integrating the excavation and containerization activities as well as the number of containers to be purchased, filled, and shipped every year. These scenarios are summarized below:

- Option 1 - activities completed in 2 years, purchase of 342 new containers;
- Option 2A - activities completed in 3 years, purchase of 105 new containers;
- Option 2B - activities completed in 3 years, no new containers purchased;
- Option 3 - activities completed in 4 years, no new containers purchased.

Many other possible combinations exist, but the four (4) scenarios listed present realistic options. Moreover, the choice of scenarios will be dependant on the available budgets. These four (4) scenarios should be discussed by the PMT members.

Whichever option is chosen, the excavation of the S1/S4 valley should be completed during the 2003 field season and the excavation of the S1/S4 beach should be initiated.

Table 10.2: Scenarios for the Excavation and Containerization of CEPA PCB Soil for the Upcoming Seasons

Option 1 - 2 years

Year	Soil volume (m^3) excavated unscreened	excavated screened containerized	screened stored containerized	total containerized	total containers filled	containerization days (25 / day) (60 m^3 / day)	Nb. containers purchased	available on-site	returned to site	filled	left on-site	shipped	left to be shipped
2002	-	-	-	-	-	-	**558**	234	0	**234**	368	**0**	1654
2003	1200	800	975	1775	710	28	**342**	368	0	**710**	0	**944**	710
2004	1200	800	975	1775	710	28	**0**	0	710	**710**	0	**710**	0
total	2400	1600	1950	3550	1420	57	**900**						

Option 2A - 3 years

Year	Soil volume (m^3) excavated unscreened	excavated screened containerized	screened stored containerized	total containerized	total containers filled	containerization days (25 / day) (60 m^3 / day)	Nb. containers purchased	available on-site	returned to site	filled	left on-site	shipped	left to be shipped
2002	-	-	-	-	-	-	**558**	234	0	**234**	368	**0**	1654
2003	800	533	650	1183	473	19	**105**	368	0	**473**	0	**707**	947
2004	800	533	650	1183	473	19	**0**	0	474	**474**	0	**474**	473
2005	800	533	650	1183	473	19	**0**	0	473	**473**	0	**473**	0
total	2400	1600	1950	3550	1420	57	**663**						

Option 2B - 3 years

Year	Soil volume (m^3) excavated unscreened	excavated screened containerized	screened stored containerized	total containerized	total containers filled	containerization days (25 / day) (60 m^3 / day)	Nb. containers purchased	available on-site	returned to site	filled	left on-site	shipped	left to be shipped
2002	-	-	-	-	-	-	**558**	234	0	**234**	368	**0**	1654
2003	800	533	650	1183	473	19	**0**	368	0	**368**	0	**602**	1052
2004	800	533	650	1183	473	19	**0**	0	552	**552**	0	**552**	500
2005	800	533	650	1183	473	19	**0**	0	500	**500**	0	**500**	0
total	2400	1600	1950	3550	1420	57	**558**						

Option 3 - 4 years

Year	Soil volume (m^3) excavated unscreened	excavated screened containerized	screened stored containerized	total containerized	total containers filled	containerization days (25 / day) (60 m^3 / day)	Nb. containers purchased	available on-site	returned to site	filled	left on-site	shipped	left to be shipped
2002	-	-	-	-	-	-	**558**	234	0	**234**	368	**0**	1654
2003	600	400	487	887	355	14	**0**	368	0	**368**	0	**602**	1052
2004	600	400	488	888	355	14	**0**	0	355	**355**	0	**355**	697
2005	600	400	487	887	355	14	**0**	0	355	**355**	0	**355**	342
2006	600	400	488	888	355	14	**0**	0	342	**342**	0	**342**	0
total	2400	1600	1950	3550	1420	57	**558**						

Another issue to be addressed is the question of the presence of permafrost inside the Main PCB Storage Facility. During the containerization activities, the frozen soil layer was reached early in the season, and this slowed the operations considerably. The short work season does not allow enough time for the entire frozen volume to thaw. The same problem will be encountered next season as well. In order to counter this problem, it is recommended that measures be taken during the pre-season, or at the very beginning of the field season, to promote the thawing of the soil pile. This will prevent delays, and therefore, accelerate containerization activities. The use of one, or a combination of techniques, should be analyzed, and these various soil thawing options should be discussed amongst the PMT members. The preferred method should cause minimal loss of contaminant by volatilization. Possible methods could include the following:

- Electrical or diesel powered heaters;
- Heated electrical tarps or cables;
- Transparent roofing and walls to induce a greenhouse effect within the building;

We also recommend that QC and Sinanni be implicated in the planning, coordination, and logistics activities related to the off-site shipping and disposal of the CEPA PCB soil. These activities are directly related to, and affected by, the excavation and containerization activities. The opposite is also true, all decisions made concerning excavation and containerization of CEPA soil will affect the shipping and disposal. Therefore, since QC oversees all excavation and containerization activities, and because both projects are so closely related, it is only fitting that QC be directly implicated in the decision making process, as well as in the operational aspects of the shipping and disposal project.

10.1.2-Other Clean up Activities

Engineered Tier II Landfill

Once INAC has determined the preferred location of the landfill site and completed the engineering design, pre-construction work, including permitting, should be conducted. During the 2003 season the actual construction of the engineered landfill site should be initiated. Activities that could be carried out include: surface levelling and preparation, construction of the base layers, installation of the bottom geomembrane, and excavation and screening of clean fill material. Landfilling operations could be initiated the following season (*i.e.,* 2004). For planning purposes, it is recommended that the Tier II landfill design be made available as soon as possible.

Clean up of the Beach Dumps

Removal of buried debris from the Beach Dumps progressed slowly during the 2003 season. Permafrost encountered during the excavation and removal of debris was responsible for the slow progression. The removal of the remaining debris should continue during the 2003 season.

POL Management and Incineration

The major part of the on-site POL waste inventory has been addressed either through incineration or temporary storage prior to off-site shipment. The remaining waste POL to be incinerated consists mainly of grease and fuel. The grease processing, and incineration activities were initiated during the 2002 season. However, because of the shortened season, and the required overhauling of one of the incinerators, the volume of grease processed was not as large as expected. The waste grease processing, and incineration program will resume next season, and could potentially be completed within the 2003 season. However, it is probably more realistic to plan for the completion of these activities over the next two (2) seasons due to the increased challenge of incinerating the grease.

Engineered Silt Barrier

The trial silt barrier installed down-gradient from the former Furniture Dump during the 2001 season was inspected at the beginning of this past season (*i.e.*, 2002). The barrier effectively blocked, and retained eroded soil particles on the up-gradient side. It is not yet known whether these soil particles are actually contaminated by PCBs or not.

This barrier was designed and constructed as a temporary structure. Therefore, we recommend that a more permanent structure be designed, built, and installed and the same location. A similar barrier will also be required in the lower S1/S4 valley, and the S1/S4 Beach once the soil excavation, and clean up is completed.

10.2-Other Activities

Communication System

During the 2001 season, a new communication system was installed on site and proved very effective and reliable. The access that it provided to internet and email, as well as multiple phone lines helped to greatly increase productivity and lower phone costs. However, during the 2002 season, the system reliability was irregular, and service interruptions were frequent. Much time was spent restarting the system, and troubleshooting, both through software tests and commands, and by testing and changing parts on the communication dish. On more than one occasion, system components were shipped out for testing and replaced by other components.

The problems with the communication system had repercussions on various aspects of the project. In general, an overall decrease in efficiency was felt as a direct effect of the communication system being non-operational. Solutions to this problem and alternatives to the system and/or to the service provider will have to be analyzed in preparation for the 2003 season.

Bridge to S1/S4 Beach

Since the excavation of CEPA soil at the S1/S4 beach area is expected to be initiated next year, it will be necessary to plan for the extension of the existing road to the bottom of the cliff. Presently, the road ends just before the stream, on the south side. In order to extend the road past the stream a bridge will have to be built. This bridge will be required for at least two (2) seasons and will have to be strong enough to support heavy machinery required for the soil excavation activities. During the pre-season, various options will have to be studied and a final design will have to be submitted prior to the beginning of the season.

10.3-Proposed Schedule, Work Plan and Budget for 2003

Following the next joint PMT - SMT meeting, QC and Sinanni will review the proposed work plan for the 2003 Resolution Island season. The work schedule and budget will be prepared in the months following this meeting. The development of the schedule, work plan, and budget will take into consideration the expected funds to be committed by INAC for the 2003 season as well as the unused funds from the 2002 season (*i.e.*, shipping and disposal project budget) to be transferred to the clean up project, and used to purchase various equipment and materials, and to conduct pre-season activities.