

# PEREGRINE DIAMONDS LTD. ENVIRONMENTAL GUIDELINES

#### **Environment**

Peregrine believes that wise environmental stewardship is founded on the diligent application of best environmental management practices. Peregrine believes that best environmental practices are in the interests of its employees, its owners, and the communities affected by its operations.

#### Peregrine will:

- Comply with all environmental laws and regulations and ensure that their contractors do the same.
- Establish and maintain a clearly defined environmental programme.
- Ensure that its directors, officers, managers, employees and contractors understand and adhere to its environmental programme.
- Ensure adequate environmental training is available for employees and contractors.
- Provide its managers and supervisors at each operation with the authority and resources necessary to carry out its environmental programme.
- Conduct periodic reviews of its operations to monitor and improve environmental performance and mitigate environmental risks.
- Promote environmental awareness among its employees and subcontractors.
- Work with community and government leaders to develop a mutual understanding of environmental issues and aboriginal traditional knowledge.
- Ensure that reclamation occurs for exploration activities.

(Excerpted from Page 3, Health, Safety, Environment and Community Guidelines, "Peregrine Diamonds Ltd. - Health, Safety, Environment and Community Policy", 30 June 2008)

# **APPENDIX 2 - ON CD**

**Material Safety Data Sheets (MSDS) for:** 

Fuels, Fuel Additives, Oil

**Drilling Muds, Greases, Lubricants** 

**Miscellaneous Chemicals** 

(Updated CD accompanies this application)

#### NUNAVUT SPILL REPORT FORM





# Northwest Remfortes Numavut Canada NT-NU SPILL REPORT

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130 FAX: (867) 873-6924 EMAIL: spills@gov.nt.ca

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## **Procedures for Recording/Avoiding Suspected Archaeological Sites**

Many heritage sites may be situated on level terraces, peninsulas, bedrock and gravel exposures adjacent to the shores of lakes and rivers, and on eskers and other prominent landforms, typically with a good view. Site locations elsewhere in Nunavut suggest that habitation sites are likely to be found where portage routes begin or end, as well as where resources are concentrated, for example, where eskers are cut through by rivers and lake levels rising after deglaciation.

Some South Baffin reported sites contain tent rings, remnants of qarmaaq (sod huts) and other stone features and scatters of lithic material, as well as wood and bone fragments. Where good organic preservation exists, some sites contain well-preserved materials, such as food bones, tools and utensils that contribute further to an understanding of subsistence activities, seasonality and technology at the time of occupation. Some sites contain single or multiple stacked boulders used to direct caribou in a certain direction, markers used for direction or notice of a specific area, and places where stone tools were made. Such sites may not be immediately recognisable to lay people. Burial sites may be clearly capped with boulders or marked with a stone or other marker; others may not be as easily identified. (Please refer to the "Archaeological Site Recognition Guide" provided to Peregrine by our consulting archaeologist in 2009.) If any suspected sites are encountered during field activities, the following should occur. If time is short, minimum information should include site co-ordinates.

- If possible, avoid any disturbance at the site; if disturbance is necessary, try to confine the activities to a part of the site where no bone, stone tools or boulder arrangements that may be archaeological in nature are situated, but avoid disturbance in the vicinity of a grave.
- Check for evidence of a tent ring, hearths or habitation structures; if present, sketch and avoid.
- Record the location by GPS, by elevation, with a dot and reference number on a map (and aerial photo if available), and with a sketch of site components. Describe the location, local environment (knoll, hilltop, esker, peninsula, bedrock, proximity to water, etc.). Photograph the suspected archaeological or other heritage material and provide a setting shot, which will help in relocation. Add your name and contact numbers to the report. If you have a copy of a site record form, feel free to fill out a form in as much detail as you like or have time for.
- Send a report on the site(s) to a designated Company representative, who will forward it to the project's archaeologist for analysis.

At some point in the future, the archaeologist will visit the sites and verify the attributes as reported. Many thanks for your co-operation.

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# Peregrine Diamonds Ltd. - Wildlife Sightings Form

Please record all wildlife sightings in/around camp, when sampling, on flights and at drill sites. (Bears, wolves, caribou, birds \* -- especially birds of prey, such as falcons, hawks and eagles)

Who Saw It (Your Name)	Date and Time of Day	Where (GPS co- ordinates where possible)	What Was the Animal Doing?	How Many

<sup>\*</sup> NOTE: Nests on the ground or boulders, or "scrapes" on cliff ledges, may indicate the presence of birds of prey, who have fidelity to nest sites; thus nests, particularly with eggs, should be recorded; include GPS co-ordinates.



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# **APPENDIX 6**

# PEREGRINE DIAMONDS LTD.

GENERAL GUIDELINES: CHIDLIAK AND ADJOINING QILAQ PROPERTY, AND CUMBERLAND PROSPECTING PERMITS, BAFFIN, NU,

# ABANDONMENT AND RESTORATION OF CAMP FACILITIES AND WORKSITES

Revision 8: 20 September 2011



# LIST OF REVISIONS: ADDENDUM PAGE

Original Plan: 04 January 2008 Revision 1: 23 July 2008

Revision 2: 12 November 2008
Revision 3: 25 February 2009
Revision 4: 03 June 2009
Revision 5: 26 March 2010
Revision 6: 07 May 2010

Revision 6b: 27 September 2010 Revision 7: 23 March 2011 Revision 8: 20 September 2011

(NOTE 1: Revisions are identified in the text with a superscript number at the end of the revised or added sentence, phrase or paragraph. Superscript numbers appear as  $^3$ ,  $^4$ ,  $^5$ ,  $^6$ ,  $^7$  or  $^8$ )

(NOTE 2: Revisions denote changes such as programme or date changes, change of phone number, change or addition of personnel, addition of equipment or products, new or adjusted maps and new appendices.)



# **TABLE OF CONTENTS**

INTRODUCTION	1
Waste Generator Registration	1
BUILDINGS AND CONTENTS	2
INFRASTRUCTURE SUPPORT	3
FUEL STORAGE AREAS	4
CHEMICAL STORAGE	5
MOB ILE AND FIXED EQUIPMENT	5
WATER MANAGEMENT	5
DRILL SITE MANAGEMENT AND CLOSURE; TRENCH CLOSURE	6
SEDIMENT-SAMPLING HOLE CLOSURE	6
SHORT-TERM SHUTDOWN	7
SCHEDULE FOR PLAN, POST-CLOSURE INSPECTION AND/OR	
MONITORING	7
FIGURES Figure 1 <sup>8</sup>	
DRAWINGS Drawing 1a <sup>8</sup> , Drawing 1b <sup>8</sup> , Drawing 2 <sup>8</sup> , Drawing 3 <sup>8</sup>	
MAPS  Map 1 <sup>8</sup> Map 2a <sup>8</sup> Map 2b <sup>8</sup> Map 2c <sup>8</sup> Map 3 <sup>8</sup> Map 4 <sup>8</sup>	

#### INTRODUCTION

This Peregrine Diamonds Ltd. (Peregrine) Abandonment and Restoration Plan (the Plan) is in respect of the three existing seasonal fly-in tent camps, Discovery Camp, sited beside a natural-cobble airstrip; Sunrise Camp, sited on the shore of "Sunrise Camp Lake", have ast of Discovery Camp; Aurora Camp, situated on a small lake approximately 50km NW of the other two camps, have and a new CH-6 Temporary Camp, which is being set up to serve 2012 bulk sampling of CH-6 kimberlite. This new camp is 13.25km NW Discovery Camp. Discovery and Sunrise camps, the logistical bases of operations for the 2012 bulk-sampling programme, are located approximately 30 minutes by air from lqaluit and 1.0 hour by air from Pangnirtung. CH-6 Temporary Camp is located approximately 35 minutes by air from lqaluit and also is 1.0 hour by air from Pangnirtung. Discovery, Sunrise and CH-6 camps will be operational intermittently for the winter 2012 programme, commencing in February 2012. All camps except CH-6 Temporary Camp are anticipated to be operational in summer 2012.

For 2012<sup>8</sup>, this Plan will be in effect for the Chidliak, Qilaq and Cumberland Project worksites, as well as for activity on surface Inuit-Owned Land (IOL) parcels on which exploration access may be required<sup>8</sup> and which already is authorised<sup>8</sup> by the Qikiqtani Inuit Association (QIA). <sup>6</sup> There will be no camps erected on IOLs. <sup>3</sup>

At seasonal closure of the existing<sup>8</sup> Chidliak camps<sup>3</sup> in September 2012<sup>8</sup> and anticipated closure of CH-6 Temporary Camp at the end of the winter programme<sup>8</sup>, usable items removed from the sites may be flown to a Peregrine facility, recycled and flown to another project, sold or returned to the supplier (if applicable). Unusable inventory which cannot be burned on-site, such as waste oil or filters, will be flown off site to Iqaluit for disposal via a waste-disposal contractor, in compliance with NU Transportation of Dangerous Goods regulations. If treatable hazardous waste should exist at the time of seasonal or permanent closure, such material will be transported to Yellowknife, then to Newalta Recycling Facility in Redwater, AB, or similar licensed facility for such waste at closer distance. In the remote possibility that non-treatable or difficult-to-treat<sup>3</sup> hazardous waste should exist at the time of closure, such material will be transported to Swan Hills Special Waste Treatment Centre<sup>3</sup> in Swan Hills, AB, or other suitable licensed facility for such waste at closer distance.

#### **Validity of Land-Use Authorisation**

Aboriginal Affairs and Northern Development Canada<sup>8</sup> (AANDC)<sup>8</sup> Class A Land-Use Permit #N2008C0005 is now in force for Chidliak Project activity on Crown land, along with a Nunavut Water Board (NWB) Type B Water Licence #2BE-CHI0813. The existing<sup>8</sup> QIA Licence #Q10L1C008 for exploration on Chidliak and Qilaq IOLs<sup>8</sup> and existing QIA Licence #Q10L1C014 for activity on IOLs within the Cumberland Project <sup>6</sup> are in effect until 01 March 2013<sup>8</sup>. Any final abandonment and restoration shall occur when valid land- and water-use authorisations are in place (when such are required), and in consultation and co-operation with the designated AANDC<sup>8</sup> (formerly INAC) <sup>8</sup> field inspectors (land and water), the QIA inspector, NWB staff and local communities, principally the closest communities, Iqaluit, 80km west<sup>3</sup> of the SW corner of the Chidliak property block, and Pangnirtung, 133km north of the NE corner of Chidliak. If an archaeology permit is in place, notification also shall be provided to the Nunavut Chief Archaeologist. If a then-existing land- or water-use authorisation is due to lapse during the closure process, an extension or renewal will be sought, as appropriate.

#### **Waste Generator Registration**

Peregrine is registered as Waste Generator #NUG-100030 with the Government of Nunavut – Department of the Environment (DOE), and any non-burnable waste transported off site which is not suitable for landfill disposal (such as drums of waste oil)<sup>3</sup> will be accompanied by a DOE Waste Manifest Form and, where required<sup>8</sup>, by a Transportation of Dangerous Goods aircarrier form (or a Dangerous Goods Shipping Document and marine booking form, if being transported by Northern Sealift & Supply out of Iqaluit to a Registered Waste Receiver). The waste will be properly handled, conveyed and then properly disposed of at its final destination

by Peregrine's agent, a waste-management disposal contractor<sup>3</sup>, in accordance with existing legislation and any directives. Initial Waste Receiver is Discovery Mining Services<sup>7</sup> or Qikiqtaaluk Logistics in Iqaluit, where Peregrine will station a designated expediting person. The expeditor will then transfer the drummed or packaged waste to Nunatta Environmental Services Inc. in Iqaluit for oil recovery or onward shipment to a Registered Waste Receiver for final disposal. <sup>8</sup> Additional registered waste receivers (Ecolocycle and BFI Canada, both in Lachenaie, PQ) are identified in Peregrine's Waste Generator Form supplied to DOE.

#### **BUILDINGS AND CONTENTS**

The existing<sup>8</sup> Peregrine camps can accommodate up to 24 persons each<sup>7</sup> and AANDC authorised in 2011 emergency accommodation of up to 30.8 Authorisation is being sought to operate the new CH-6 camp with 30 persons and Discovery with 40.8 Camps are comprised of the following basic infrastructure: 8 sleep tents, a generator shed, first-aid tent, a Pacto toilet shed, office, core shack (Discovery and Sunrise)  $^{7}$ , kitchen, 2 dry sheds and a storage shed $^{7}$  all of which can be disassembled, removed and reused later (*Drawings 1a*<sup>8</sup>, 1b<sup>8</sup>, 2 and 3). Use areas include several<sup>8</sup> fuel-drum storage areas per camp (a new Designated Fuel Station at Discovery camp will have additional storage and fuel-transfer berms<sup>8</sup>), burn area (incinerator) and aircraft-<sup>8</sup> and helicopterlanding areas. Activities in 2012<sup>8</sup> are to be comprised of winter land-based bulk sampling by means of a reverse-circulation (RC) rotary drill<sup>8</sup>, followed by summer exploration potentially comprised of<sup>8</sup> airborne and ground geophysics, summer prospecting, till sampling, land-based drilling and mini-bulk sampling, if warranted<sup>8</sup>, as well as environmental and archaeological studies.<sup>7</sup> Two core<sup>8</sup> drills with drill shacks and pump shacks<sup>7</sup> are stored on site<sup>8</sup> and will be utilised for summer drilling. The RC drill will be flown to site along with 2 of 5 new pieces of heavy equipment for the bulk sample: 3 pieces of heavy equipment – a Morooka, Challenger and Sno-Cat are to driven to site via the winter "Pang Trail" (Map 3), which Peregrine last used in 2009. 8 Sleep and work tents will be heated by combination oilelectric stoves<sup>8</sup>; oil is supplied in 205L drums. All three existing camps<sup>8</sup> have bear fences installed. <sup>7</sup> There will be no separate camp for the Qilaq Project; activity will continue<sup>8</sup> to be conducted either out of one of the existing camps or via Igaluit.<sup>5</sup> Heliborne sampling associated with the Cumberland Project will continue<sup>8</sup> to be conducted out of Pangnirtung, situated west of the project area <sup>6</sup> (*Map 4*)<sup>8</sup>.

Sunrise Camp, approximately  $12 \text{km}^5$  east of Discovery (*Drawing 2*), is sited on a lake which provides a natural-ice strip for landing large<sup>8</sup> aircraft in winter-spring. <sup>5</sup> Aurora Camp also provides a natural-ice strip on Camp Lake. <sup>7</sup> Discovery Camp has, and CH-6 Temporary Camp will have, land-based strips. <sup>8</sup>

At final closure, all tent structures, bear fences and contents of camps deemed reusable will be dismantled and the components transported off-site by plane or via existing winter trail<sup>3</sup> (*Map 3*) <sup>8</sup>. Non-reusable items will be dismantled and clean, untreated wooden components burned on site on a gravel or sand area, *if allowed* (otherwise, transported off site<sup>3</sup>), with all débris such as nails, bolts and screws raked up, bagged and removed off-site for disposal to a pre-authorised community waste disposal facility. On-site burning would involve only untreated timbers, construction scrap wood and plywood, in order to lessen the fuel burden of flying out such items, and only in compliance with the Canada-Wide Standards (CWS) for Dioxins and Furans, the CWS for Mercury Emissions and other governing legislation; items such as plastics and Styrofoam are non-burnable and will not be burned on site.

Any absorbent padding used where fuel is transferred, such as at the generator and at camp structures, will be bagged and removed to the nearest authorised disposal facility after burning has ceased at camp. The area around each diesel drum will be inspected and the soil beneath will be sampled, if necessary, for potential hydrocarbon contamination; sampling will be in accordance with accepted sampling protocol and analysed in an accredited environmental laboratory against CCME criteria. Any remediation will be in accordance with the Canadian Council of Ministers of the

Environment (CCME) CWS for Petroleum Hydrocarbons (PHC) in Soil (latest revision), the CCME CWS for PHC in Soil – Technical Supplement (latest revision), the Nunavut Environment Department's Environmental Guideline for Site Remediation, and informed by the PHC in Soil CWS User Guidance Document (latest revision). Contaminated soil will be drummed, manifested and disposed of properly off-site with a Waste Receiver (see Page 2<sup>8</sup>), or remediated on site. Used drip pans or pails will be flown out for disposal with other contaminated solid waste. With the concurrence of regulatory authorities, contaminated soil can be shovelled onto clean tarps or hydrocarbon-resistant poly-liner<sup>3</sup> for aeration through turning. The advantages of this method is that it is faster than natural attenuation yet is non-invasive of permafrost regimes and appropriate for small, localised hydrocarbon leaks and spills, where time is available (e.g., aeration over at least several field seasons, until the excavated soil tests within Tier 1 CCME criteria for industrial soil, coarse-grained or fine-grained). Should sufficient contaminated soils be identified prior to closure, an engineered land farm could be constructed to accommodate larger volumes of soil for longer-term remediation. Such remediation would be conducted in accordance with any plans then approved by regulatory authorities.

The drill shacks<sup>3</sup>, pump shacks<sup>3</sup> and associated equipment, any scrap, fuels, lubricants, additives and waste hydrocarbons will be flown off site at the end of the respective programme and prior to closure.

#### **INFRASTRUCTURE SUPPORT**

#### Freshwater Supply and Greywater System

Potable water for Discovery Camp<sup>4</sup> will be obtained in summer<sup>8</sup> from the unnamed stream south and east of camp (see Drawing 1a) and in winter for drinking and for drilling of neighbouring kimberlites<sup>8</sup> from Sunrise Camp Lake, approximately 12km E, via water tank hauled in a equipment sleigh<sup>8</sup>. Water for CH-6 Temporary Camp and associated winter drilling will be hauled from a water source 5.6km S or a contingency source, 5km W. 8 All lines associated with the water intake will be drained, dismantled and removed off-site for future reuse. In the case of Sunrise Camp, <sup>4</sup> and Aurora Camp, <sup>7</sup> potable water will be obtained from the adjoining lakes (see Drawings 2 and 34), and water lines would be handled as for the other camps. In all camps, the greywater system will consist of plastic pipe, and greywater sumps which receive water from the camp kitchen and dry buildings<sup>4</sup>. The greywater lines will be drained, dismantled and removed off-site for disposal or recycled to another project. The sumps and immediate environs will be examined, any remaining débris removed, the sumps backfilled/levelled/restored to prior condition, combustibles burned or bagged and remaining bagged materials transported off-site for disposal. If necessary, the sump pits will be treated with lime or Javex to kill odours which might attract animals. Pacto toilets will be used for each camp, unless outhouse use is authorised<sup>3</sup>; no water use is required.

#### Refuse Disposal Facilities

All combustible wastes will be incinerated<sup>8</sup> on site in a CSA dual-chamber fuel-fired incinerator (Inciner8 models), one per camp. Particular care will be taken to secure and then incinerate<sup>8</sup> all food wastes at least daily, to limit animal attraction. Non-combustibles will be flown off-site for disposal, as noted elsewhere in this Plan. These practices will remain in effect until the camps are closed. At the point where incineration is no longer required, *i.e.*, at the completion of cleanup, the incinerators themselves will be removed off-site.

Any<sup>8</sup> wooden latrine sheds<sup>6</sup> will be dismantled and components burned, if allowed, or transported off-site for disposal.<sup>6</sup> If Pactos are on site at the time, these will be cleaned and recycled to another project. Any existing pit privy holes will be backfilled. The ground in the vicinity of the sheds<sup>6</sup> will be levelled and raked, if necessary, so that the site is restored to prior condition.

#### Generator Area

Generator-shed and other storage-shed areas<sup>8</sup> will be inspected for any remaining hazardous materials (such as oils and greases<sup>8</sup>), cleaned and dismantled for salvage or disposal, and the ground inspected. At Peregrine camps, used motor oil typically is collected in an empty drum and removed for recycling. Where practical, given the remote location, this practice will continue until final closure; where not practical, the waste oil will be flown out for proper disposal. Used materials such as floor-dry (vermiculite), drip pans and padding will be properly disposed of off-site. Any oil- or fuel-contaminated soil will be removed for proper disposal, or remediated as described on Page 3<sup>8</sup>. If necessary, ground in the vicinity of the sheds<sup>8</sup> will be sampled for contamination. The use areas will be raked clean and restored to prior condition.

#### **Transportation Facilities**

In 2012<sup>8</sup>, transportation facilities at the camps will consist of gravel/cobble airstrips<sup>8</sup> at Discovery and CH-6 Temporary Camp<sup>8</sup> and lake-ice strips at Sunrise and Aurora camps<sup>7</sup>, as well as helicopter landing pad(s)<sup>4</sup> for each camp (a level patch of gravel adjacent to the camp). The helipad areas<sup>4</sup> will be checked and any contaminated soil will be bagged and disposed of properly off-site, or remediated as described on Page 3<sup>8</sup>. If necessary, ground in the vicinity of the pads will be sampled for hydrocarbon contamination. The use areas will be raked clean and restored to prior condition. Peregrine has approval from AANDC<sup>8</sup> for temporary positioning of an emergency tent and core tent at lake-based drill sites<sup>5</sup> and will position the former Sunrise core shack on Sunrise Camp Lake during installation of a Herc strip for winter use<sup>8</sup>. No material will be stored on lake ice at Sunrise or Aurora camps.<sup>7</sup> At seasonal and final closure, the ice surface and shorelines<sup>8</sup> will be checked for any landing-strip markers or similar and any remaining items removed.

All winter access trails  $(Map\ 2c)^8$  between camps, worksites, water sources and cuttings-deposition areas will be monitored to ensure no leakage of fuel or drill cuttings (the latter being only rock flour and water, though cuttings may not be aesthetically pleasing). No fuel will be cached on ice strips. Heavy equipment (principally tracked rather than wheeled vehicles) travelling on or grooming the access trails, will be checked during and following use to remove any materials inadvertently left behind (e.g., bits of plastic, strapping, wood, etc.). Although heavy equipment is not considered transportation, its movement to use sites will be monitored by project personnel, and no débris left behind at its use or travel area. When stationary, the equipment will be parked over a drip pan or on a drive-on drip pad to lessen the need for cleanup measures at camp closure.

#### **FUEL STORAGE AREAS**

For each of the camps, the fuel storage area will consist of segregated groups of drums, with empties separated from full drums of diesel and aviation fuel. In winter 2012, a Designated Fuel Station (*Drawing 1b*) <sup>8</sup> will be established at Discovery Camp to provide organised fuel storage, transfer and drum outshipment or crushing for the bulk-sample programme<sup>8</sup>. Waste fuel will be sent out as manifested Class 9 waste on backhauls. Propane, as standard 45kg cylinders, will be stored upright and secured beside the kitchen and dry areas. At programme closure, unneeded drums and cylinders will be removed; at final closure, all fuel containers will be removed.

Should some drums be left in camp caches<sup>8</sup> for future use, a fuel inventory will be completed to assess the quantity and type of fuel remaining, and the storage areas inspected. Any contaminated soil will be bagged and removed for proper disposal, if in small quantity, or remediated as described on Page 3<sup>8</sup>. If necessary, the ground in the storage areas will be sampled for contamination. The use areas will be restored to prior condition. This process also will be followed at any temporary fuel caches associated with sampling in the Chidliak-Qilaq areas and within the Cumberland property.<sup>6</sup> At

final closure, all fuels and empty drums will be removed; usable fuel will be transported to another project or returned with empties to the supplier.

#### CHEMICAL STORAGE

The chemicals to be used on site will be limited to household-strength cleaning supplies such as Javex, ammonia-based cleaning sprays, wash soaps, degreasers and the like, and limited miscellaneous items such as antifreeze, insect repellent and aerosols; most cleaning and washing products used in 2011<sup>8</sup> were environmentally benign.<sup>6</sup> Products will be stored in their original containers in their respective use areas, and removed off-site with routine backhauls and properly disposed of or returned to the supplier, as applicable. In 2012<sup>8</sup>, the drilling contractor will store drilling muds, additives, oils and lubricants in a temporary shed at drillside; these materials would not be present on site at closure. Upon closure of the camps, any unused inventory will be recycled to another project, returned to the supplier or properly disposed of; partially-used containers will be removed for disposal. As part of final closure activities, areas in the immediate vicinity of chemical storage areas, such as the kitchen, dry and generator shed, will be inspected, any soil so requiring will be collected, bagged and removed off-site for disposal.

If necessary, ground at chemical storage areas will be sampled for contamination. Should limited blasting be required in future, <sup>6</sup> materials for blasting will be under the control of the blasting contractor and not accessible to project personnel. If a storage magazine is required, this also will be under the control of the blasting contractor. When the blasting contractor leaves site, no blasting materials or devices will be left behind, and no blasting materials will be on site at time of final closure.

#### MOBILE AND FIXED EQUIPMENT

All mobile and fixed equipment will be properly stored at seasonal closure<sup>8</sup> and removed from sites<sup>8</sup> prior to final<sup>8</sup> closure. This inventory in 2012<sup>8</sup> will include generators, pumps, all-terrain vehicles and heavy equipment stored in the new equipment shed at Discovery Camp<sup>8</sup> (*Drawing 1a*)<sup>8</sup>, snowmachines, and power and hand tools (including pneumatic electric hand drills<sup>4</sup>), welding and drilling equipment and pipe.

Any equipment required for final<sup>8</sup> restoration, such as loaders<sup>8</sup>, shovels, chainsaw, a generator for power tools, *etc.*, will remain on site until all activities are completed. Areas such as sump pits will be re-covered with reserved overburden and recontoured, if required, to blend with surrounding terrain and ensure drainage away from nearby watercourses.

Before removal from site, sufficient heavy equipment will be retained<sup>8</sup> for site cleanup, as required, with special emphasis on restoration of trenched or other open<sup>8</sup> areas, where applicable<sup>3</sup>, by means of re-covering with stockpiled overburden where available<sup>8</sup> or other non-vegetated native soils<sup>8</sup> and re-contouring to blend with surrounding terrain and ensure drainage away from nearby watercourses.

#### **WATER MANAGEMENT**

During fieldwork, water consumption figures will be kept and the total reported in the Nunavut Water Board (NWB) Annual Report.

Water-quality sampling will occur as part of final abandonment and restoration activities, if required, and will be conducted in compliance with the NWB water licence then in effect. Grab samples will be collected from the camp water sources<sup>8</sup> for analysis of standard parameters against CCME guidelines by an accredited environmental laboratory to ensure minimal degradation from the demobilisation and abandonment of the campsite. Seasonal water-quality monitoring will occur in association with lake-based drilling in 2012<sup>8</sup> if winter core drilling occurs<sup>8</sup>, in compliance with the Drilling from Ice Guidelines, and<sup>8</sup> at established water stations in summer<sup>6</sup> and at any trench locations in future, either in neighbouring meltwater flows, or in sumps<sup>3</sup>, should water be reserved/contained in sumps for

sampling due to use of explosives. Should blasting be necessary to break up the rock sample, water accumulating in blast trenches would report to a lined sump or sumps or poly tanks brought to site for monitoring; this sump water or tank water would be sampled before any release to the environment.

Source water will be used only as required, *i.e.*, not wasted, and bottled water may be used to supplement drinking water, if necessary. No water use has been associated with either the Qilaq or Cumberland programmes to date<sup>6</sup>.

#### DRILL SITE MANAGEMENT AND CLOSURE; TRENCH CLOSURE

In compliance with best practice, Peregrine ensures that each drillsite is properly cleaned up when the hole is closed, not simply when the project closes. In compliance with the land-use permit or QIA land licence<sup>5</sup> then in effect, any lake-based coreholes will be closed with grout plugs, any lake-based large-diameter holes (should such be drilled in a future year) will be capped with cement, and land-based holes cemented and casings cut. In winter 2012, it is planned that any large-diameter holes drilled would be capped, and that overburden (anticipated to be shallow) as well as cuttings would be transported to engineer-selected cuttings-deposition areas<sup>8</sup>. Locations of drillholes are recorded as GPS co-ordinates for future reference. Bulk-sample<sup>8</sup> drillhole locations proposed for 2012<sup>8</sup> are attached as *Figure 1*<sup>8</sup> and *Maps 2a* and *2b*<sup>8</sup>. The co-ordinates of any trenching site (no trenching has yet occurred<sup>5</sup>) will be provided, should trenching be planned in future<sup>8</sup>. Trench closure is discussed in the section "Mobile and Fixed Equipment".

In addition to closure of the drillhole, and removal of all associated equipment and débris, drill sumps also are inspected. In almost all cases, the underflow material or cuttings<sup>8</sup> consist only of sandy/silty water or rock flour and water<sup>8</sup>. However, where necessary, sumps are backfilled; if this is not possible due to snow cover and frozen ground, then any sumps requiring backfill will be filled in summer conditions. Should additives which are not inert materials<sup>8</sup> be used in any holes (a rare event) <sup>8</sup>, the associated sediments or cuttings<sup>8</sup> will be placed in poly-lined sumps or in Polydril tanks<sup>5</sup> where necessary and the liner material and contents would be disposed of as waste on flight backhauls. However, Peregrine promotes use only of environmentally-benign additives, as determined by Material Safety Data Sheets (MSDS). The drill contractor is required to supply MSDS prior to an additive being approved by Peregrine for delivery to site. Drill sumps for the 2012<sup>8</sup> programme and any subsequent programmes will be sited so as to lessen the possibility of flow of drill cuttings into any neighbouring waterbodies, taking advantage of topographic features such as natural depressions and bedrock outcrops.

At final closure, old work sites, including any trench sites, will be re-inspected if necessary to ensure compliance and return of the sites to their natural condition.

# SEDIMENT-SAMPLING HOLE CLOSURE <sup>3</sup>

In respect of the collection of surficial sediment samples on both Crown land and IOLs: Sample holes are hand dug and shallow, but will be filled, as required, after the sample has been collected and before the sampling crew moves on to the next sample site. Both foot-traverse and helicopter-supported sampling are pack in/pack out activities, where nothing is left behind by samplers in the field. Should a temporary fuel cache be sited on Crown land or surface IOL to support a sampling programme in 2012<sup>8</sup>, the cache will be sited at least 30m from Ordinary High-Water Mark of any adjacent waterbody, and will be established, preferentially, as a lined depression or an area where manufactured secondary containment<sup>6</sup> can be positioned to best accommodate fuel drums for helicopter refuelling. A spill kit will be positioned at the cache. Empty drums will be rotated out. At the end of programme, nothing will be left behind in the field. Cache co-ordinates will be recorded and provided to inspectors, should they choose to review the cache site at a later date. As with drillholes, Peregrine ensures that each sample site is left clean when the site is closed, not simply when the project closes.

-- 7 --

#### **SHORT-TERM SHUTDOWN**

Since activity on the property still<sup>8</sup> is at an early stage, there will continue to be periods of short-term shutdown, *i.e.*, periods when the camps are<sup>8</sup> inactive and no geophysical surveying, sediment sampling, drilling or other activity is occurring. At the end of the 2012<sup>8</sup> programme, the camps, fuels and any equipment will be secured for the winter. A seasonal shutdown procedure will be activated. The camps would be cleaned up and secured, an inventory taken, personal and unnecessary office items removed, remaining empty drums removed or crushed and removed, and garbage removed off site for proper disposal, thus ensuring public and wildlife safety. All fuel and water lines would be drained, and all fuel and power sources would be shut off and disconnected. However, the camp will be left in such a way that all equipment, buildings and utilities remain in serviceable and safe condition, such that startup in the next season could be effected safely and efficiently, and in consonance with the terms and intent of the governing authorisations.

#### SCHEDULE FOR PLAN. POST-CLOSURE INSPECTION AND/OR MONITORING

Prior to seasonal closure in September 2012<sup>8</sup>, inspectors will be notified of this event in advance, should they wish to visit the site. At final closure, final inspection, documentation and one or more site visits by community representatives, conducted by the permitholder in co-operation and consultation with AANDC<sup>8</sup>, QIA, NWB staff and local land users, will ensure successful closure of the camps. One or more community visits also may occur, if required.

The schedule for final closure cannot be known in advance, as closure is directly related to exploration outcomes and other variables at the time, but regulators and communities will be given notice, as appropriate, and final closure activities will be completed as noted in this Plan.

Some past abandonment incidents by others (non-Peregrine) at campsites and fuel caches in the NWT and Nunavut have been unfortunate, and are not condoned by this permitholder or its agents. Peregrine practises a good-neighbour policy in all its programme areas, and voluntarily removes abandoned drums or scrap that it encounters. Where the unknown abandoned areas are extensive, the permitting authorities are supplied with co-ordinates.

If, in the judgement of regulators, it is deemed that monitoring is required in regard to some component of the Chidliak, Qilaq or Cumberland projects<sup>6</sup>, this will be carried out by the permitholder in such form and manner, and for such duration, as is best able to ensure successful abandonment and restoration of the property and its future benefit to other land users.

Shirley Standafer-Pfister Peregrine Diamonds Ltd.
 September 2011

# FIGURE 18

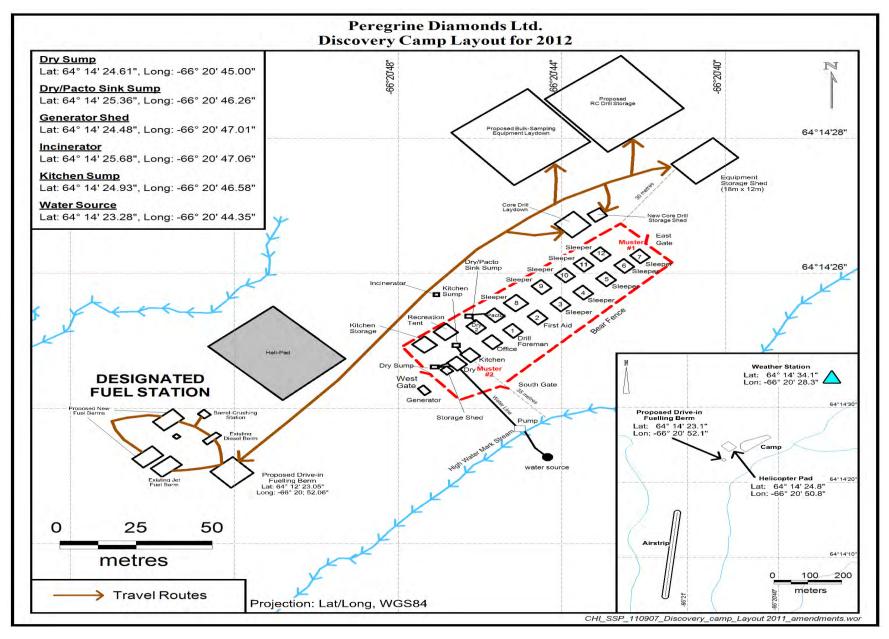
# PROVISIONAL BULK-SAMPLING DRILL PLAN: All Potential Drillholes from which Final Selection Of Drillholes will be Made

KIMBERLITE	LDDH#	LDDH CO-ORDINATES WGS84 (Lats/Longs)	TOPOGRAPHY	MAX. HOLE DEPTH
CH-6	CH-6-A	64° 19' 19.16" -66° 31' 47.59"	Land	250m
CH-6	CH-6-B	64° 19' 19.08" -66° 31' 45.89"	Land	250m
CH-6	CH-6-C	64° 19' 19.31" -66° 31' 44.48"	Land	100m
CH-6	CH-6-D	64° 19' 18.49" -66° 31' 48.00"	Land	250m
CH-6	CH-6-E	64° 19' 18.36" -66° 31' 46.21"	Land	250m
CH-6	CH-6-F	64° 19' 17.87" -66° 31' 48.32"	Land	250m
CH-6	CH-6-G	64° 19' 17.80" -66° 31' 46.18"	Land	250m
CH-6	CH-6-H	64° 19' 17.06" -66° 31' 46.09"	Land	250m
CH-7	CH-7-A	64° 15' 2.08" -66° 21' 14.39"	Land	100m
CH-7	CH-7-B	64° 15' 2.19" -66° 21' 13.54"	Land	100m
CH-7	CH-7-C	64° 15' 1.24" -66° 21' 17.95"	Land	250m
CH-7	CH-7-D	64° 15' 0.75" -66° 21' 19.14"	Land	250m
CH-7	CH-7-E	64° 15' 0.40" -66° 21' 17.48"	Land	250m
CH-7	CH-7-F	64° 15' 0.01" -66° 21' 19.20"	Land	250m
CH-31	CH-31-A	64° 13' 21.94" -66° 18' 30.30"	Land	250m
CH-31	CH-31-B	64° 13' 20.84" -66° 18' 32.07"	Land	250m
CH-31	CH-31-C	64° 13' 20.82" -66° 18' 28.72"	Land	250m
CH-31	CH-31-D	64° 13' 19.55" -66° 18' 32.18"	Land	250m
CH-31	CH-31-E	64° 13' 19.50" -66° 18' 29.05"	Land	250m
CH-31	CH-31-F	64° 13' 17.41" -66° 18' 31.62"	Land	250m
CH-31	CH-31-G	64° 13' 16.15" -66° 18' 32.53"	Land	250m
CH-44	CH-44-A	64° 13' 33.52" -66° 20' 12.77"	Land	200m
CH-44	CH-44-B	64° 13' 33.47" -66° 20' 11.12"	Land	200m
CH-44	CH-44-C	64° 13' 32.87" -66° 20' 12.66"	Land	200m
CH-44	CH-44-D	64° 13' 32.75" -66° 20' 11.14"	Land	200m
CH-45	CH-45-A	64° 14' 33.01" -66° 21' 8.09"	Land	200m
CH-45	CH-45-B	64° 14' 33.00" -66° 21' 6.72"	Land	200m
CH-45	CH-45-C	64° 14' 32.40" -66° 21' 8.30"	Land	200m
CH-45	CH-45-D	64° 14' 32.30" -66° 21' 6.70"	Land	200m

Zone 19 for all LDDH above.

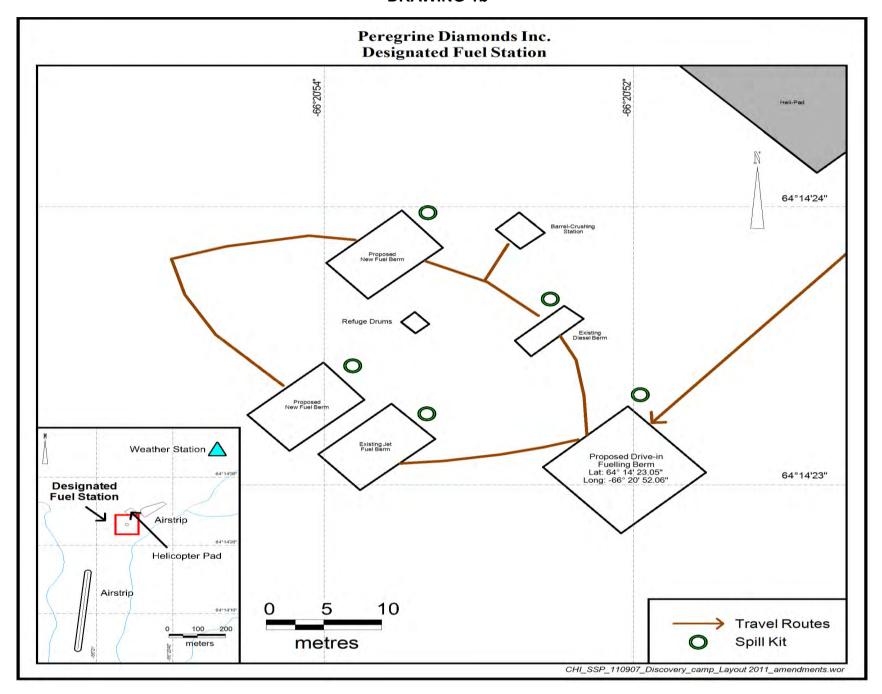
Note: Final number of holes drilled into the above kimberlites – between 12 and 15 (approx.) – will be determined by various factors, including 2011 drill results, modelling interpretation, formations encountered, weather and actual site conditions.

DRAWING 1a<sup>8</sup>



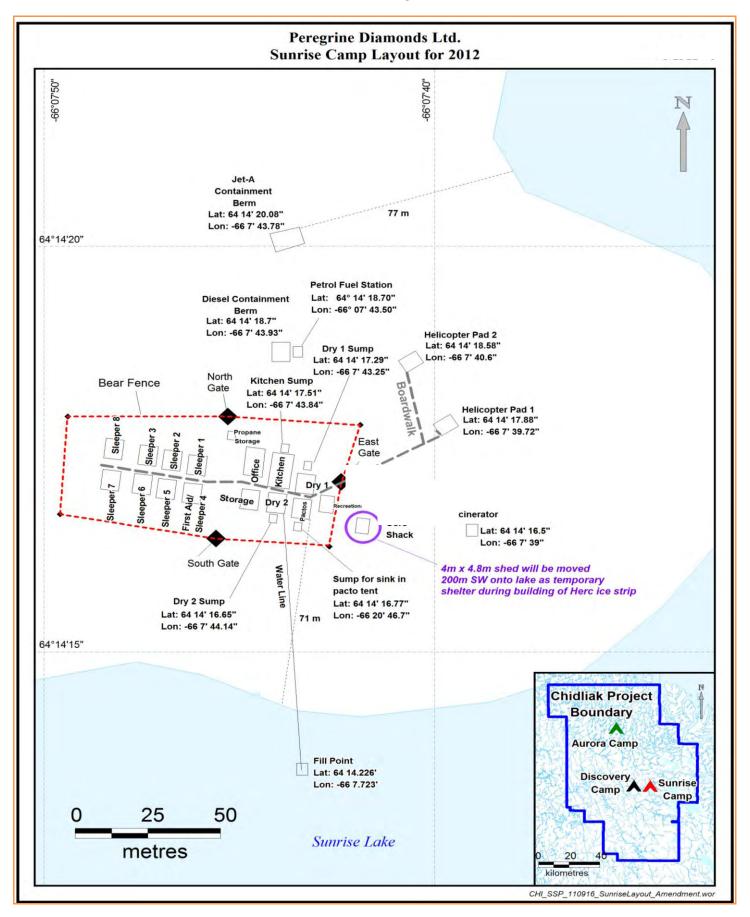
Discovery Camp, with new Designated Fuel Station, depicted after expansion in February 2012. Drill laydown areas are shown north of the bear fence and the new heavy-equipment quonset shed is shown to the east. <sup>8</sup>

DRAWING 1b<sup>8</sup>

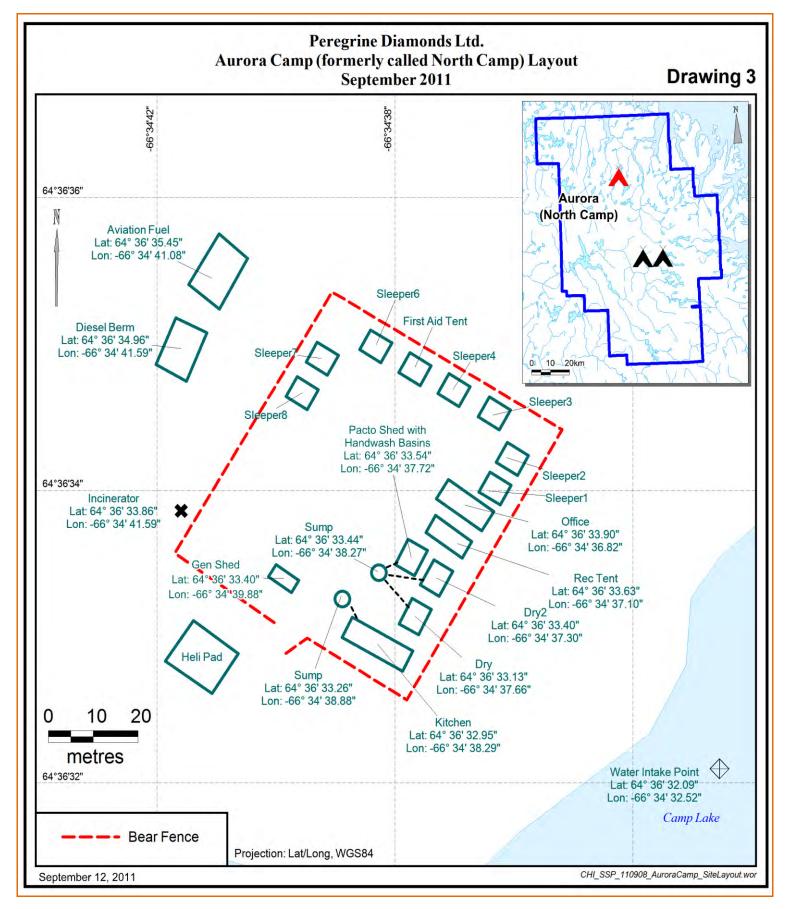


Closeup of new Designated Fuel Station, Discovery Camp, as it will be set up in February 2012 8

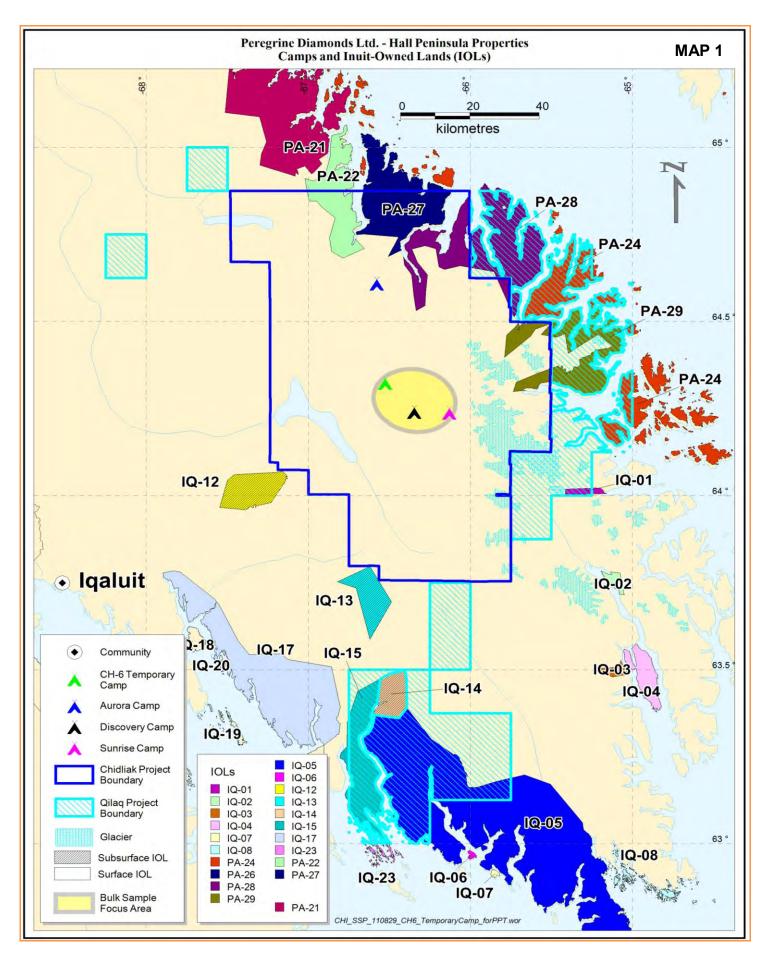
# **DRAWING 2**8



Sunrise Camp, depicting 2011 core shack which will become a temporary survival shed on the lake during Herc strip building. <sup>8</sup>

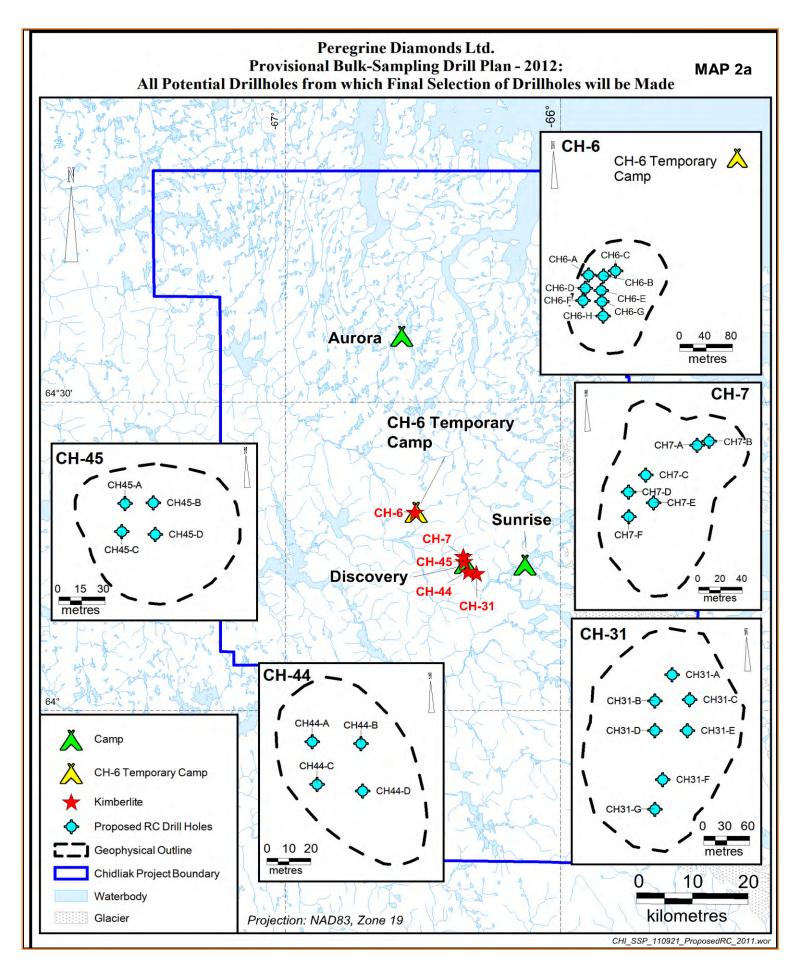


Aurora, formerly North Camp, layout as of September 2011. (Peregrine does not intend to reopen Aurora for the winter 2012 bulk-sampling programme.) 8

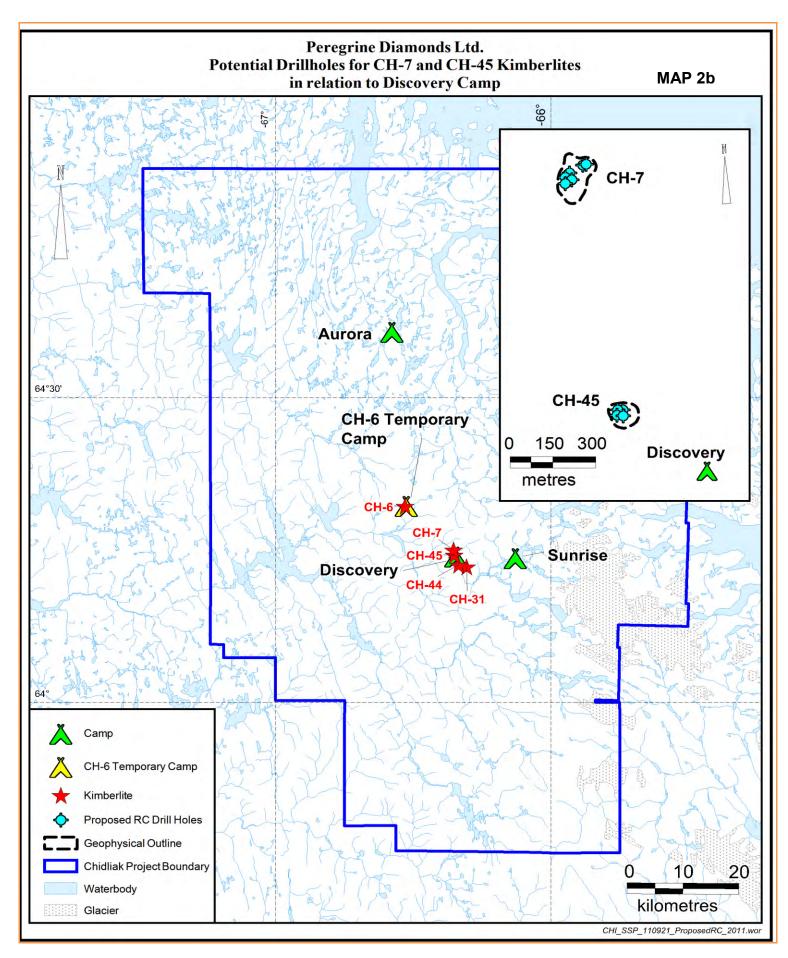


2012 Bulk-Sample Focus Area is shown as a circle on the Chidliak property. On the adjoining Qilaq property, drilling, air and ground geophysics and sampling was conducted in 2011.

Plans for Qilaq in 2012 have not been completed. 8

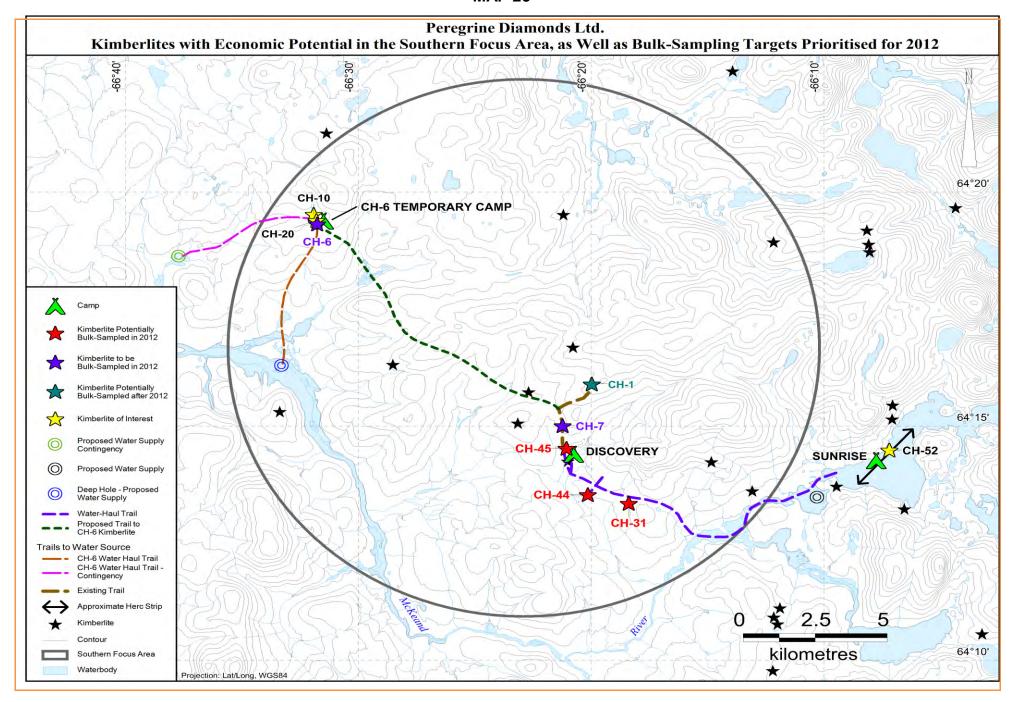


Provisional 2012 bulk-sampling drill plan with 29 "long list" LDDH from which selection of 12-15 final drillholes will be made. 8

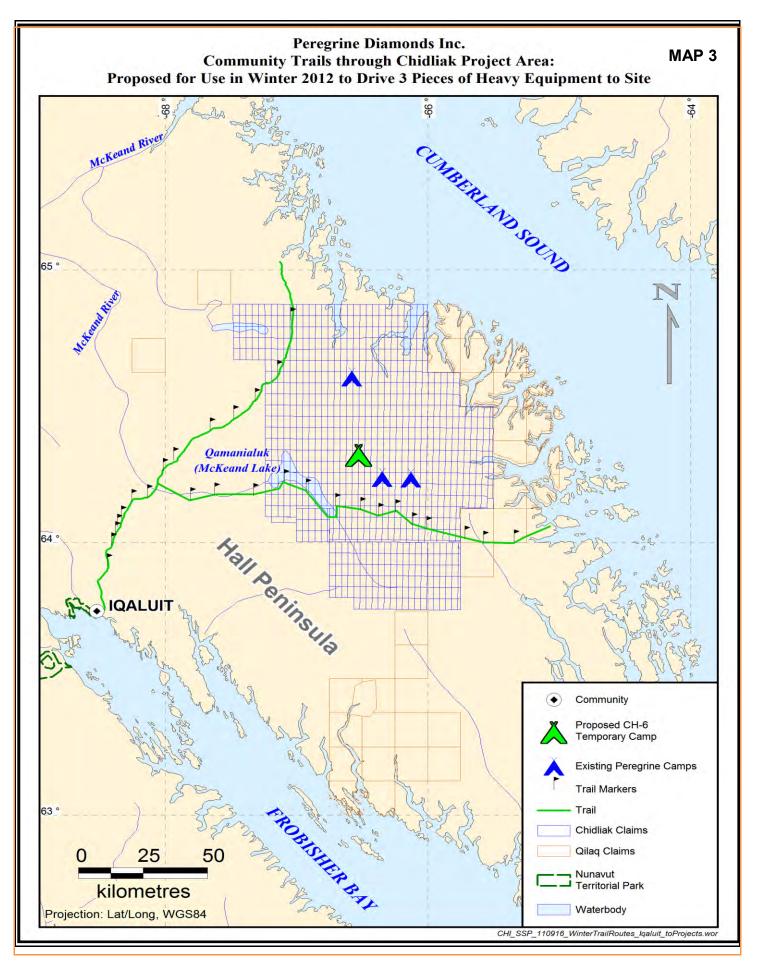


Closeup of CH-7 and CH-45 kimberlite provisional "long-list" LDDH in relation to Discovery Camp, which will serve as logistical base for the 2012 bulk-sampling programme. 8

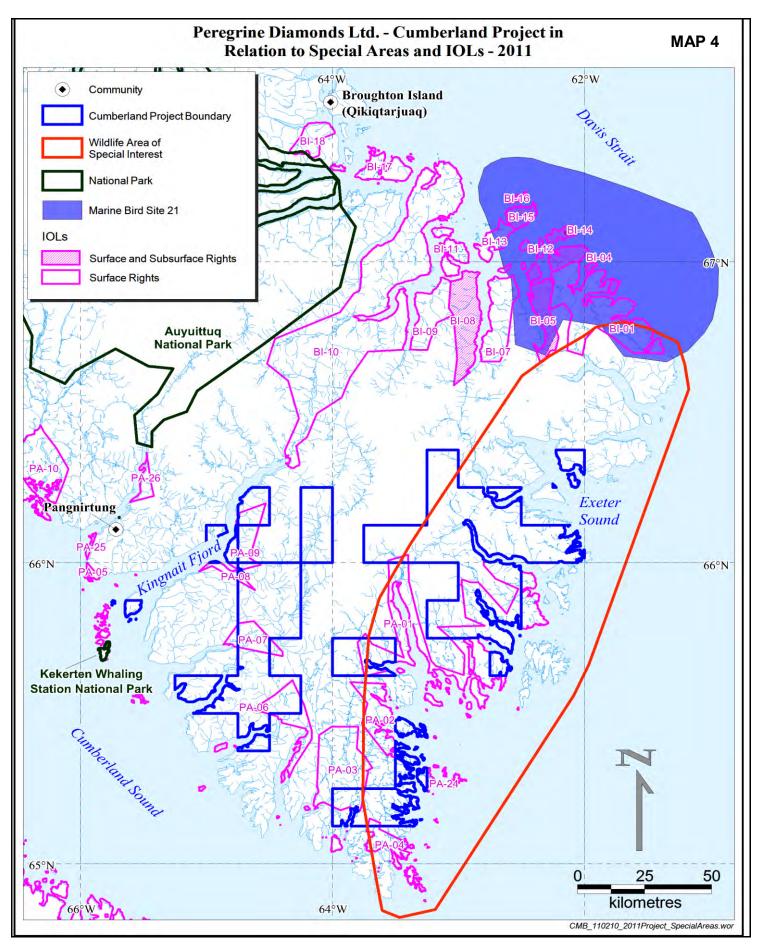
MAP 2c <sup>8</sup>



Winter trail network will be expanded to access all 5 potentially-sampled kimberlites in the 2012 Bulk-Sample Focus Area. 8



Peregrine last used the local "Pang Trail" in winter 2009 to drive in one piece of heavy equipment from Iqaluit.<sup>8</sup>



Peregrine conducted a second season of prospecting and sampling on the Cumberland prospecting permits in 2011. Plans for 2012 have not yet been completed. 8



201-1250 HOMER STREET, VANCOUVER, BRITISH COLUMBIA, CANADA V6B 1C6 TELEPHONE: (604) 408-8880 FAX: (604) 408-8881 www.peregrinediamonds.com

# **APPENDIX 7a**

# SPILL CONTINGENCY PLAN

CHIDLIAK AND ADJOINING QILAQ PROPERTY, AND CUMBERLAND PROSPECTING PERMITS BAFFIN ISLAND, NU, (including both Crown Land and IOL Parcels) PEREGRINE DIAMONDS LTD.

Revision 9: 20 September 2011



# **TABLE OF CONTENTS**

INTRODUCTION	1
BASIC STEPS – SPILL PROCEDURE	1
PERMITS AND AUTHORISATIONS	2
SPILL-RESPONSE TEAM LEADERS	2
FACILITY DESCRIPTION	3
TRAINING AND PRACTICE DRILLS	4
FUEL SPILLS: RISK ASSESSMENT AND PREVENTIVE MEASURES	4
PRODUCT CATEGORIES	10
Flammable Immiscible Liquids	10
RESPONSE ORGANISATION	11
GENERAL RESPONSIBILITIES	12
CONTACT LIST – SPILL RESPONSE/ASSISTANCE	15
SPILL RESPONSE ACTIONS: BY PRODUCT	16
SPILL PLANNING AND LOGISTICS	31
MONITORING SPILLS	31
SPILLS ON LAND	31
SPILLS ON WATER	34
Containment Strategies for Spills on Water	34
SPILLS ON SNOW AND ICE	37



#### LIST OF REVISIONS: ADDENDUM PAGE

Original Plan: 03 January 2008
Revision 1: 28 July 2008
Revision 2: 01 March 2009
Revision 3: 29 May 2009
Revision 4: 25 March 2010
Revision 5: 07 May 2010

Revision 5b: 27 September 2010 Revision 6: 17 January 2011 Revision 7: 23 March 2011 Revision 8: 11 May 2011

Revision 9: 20 September 2011

(NOTE 1: Revisions are identified in the text with a superscript number at the end of the revised or added sentence, phrase or paragraph. Superscript numbers appear as  $^2$ ,  $^3$ ,  $^4$ ,  $^5$ ,  $^6$ ,  $^7$ ,  $^8$  or  $^9$ )

(NOTE 2: Revisions denote changes such as programme or date changes, change of phone number, change or addition of personnel, addition of equipment or products, new or adjusted maps and new appendices.)



#### **LIST OF TABLES**

Table 1	Projected Fuel and Oil Use for 2012 <sup>9</sup> Exploration Activities
Table 2	Contents of Spill Kits – Spring to Autumn 2012 <sup>9</sup>
Table 3	General Response Inventory – Spring/ to Autumn 2012 <sup>9</sup> – Chidliak Property

#### **LIST OF FIGURES**

Figure 1	Updated NWT-Nunavut Spill Report Form
Figure 2	Instructions for Completing the NT-NU Spill Report Form

## LIST OF MAPS<sup>3</sup>

Map 1	Discovery Camp Layout for 2012 9
Map 2	Sunrise Camp Layout for 2012 9
Map 3	Aurora (Formerly Called North Camp) Layout, September 2011 9
Map 4	CH-6 Temporary Camp Layout 2012 <sup>9</sup>
Map 5 <sup>9</sup>	Revised CH-1 Trenching Plan, 2009 (Not Yet Activated) 9
Map 6a <sup>9</sup>	Provisional Bulk-Sample Drill Plan 2012 9
Map 6b <sup>9</sup>	Potential Drillholes for CH-7 and CH-45 Kimberlites in relation to Discovery Camp <sup>9</sup>

#### **APPENDICES**

Appendix A - MATERIAL SAFETY DATA SHEETS (MSDS)
Index to contents of sections on <u>Fuels, Fuel Additives, Oil</u>; <u>Drilling Muds, Greases, Lubricants</u>; and <u>Miscellaneous Chemicals</u><sup>8</sup>
(See updated MSDS CD accompanying this application as Appendix 2) 9

Appendix B - SPILL RESPONSE: PRACTICE DRILL Record, with photographs, of a Chidliak camp spill-response exercise held 31 August 2011<sup>9</sup>

Appendix C - "Notice of Modification" Letter to Nunavut Water Board regarding Single Event of Blasting which Occurred in July 2010 $^6$ 



The Spill Contingency Plan for "Chidliak and Adjoining Qilaq Property, and Cumberland Prospecting Permits<sup>5</sup>" of Peregrine Diamonds Ltd. (Peregrine), found on the following pages, shall be in effect from the current date (January 2012<sup>9</sup>) until the end of January 2012<sup>9</sup>, and is subject to revision as required. The main activity of the year will be collection of an initial bulk sample<sup>9</sup>, part of a multi-phrase sample programme<sup>9</sup>, between mid-February (construction of the CH-6 Temporary Camp) 9 and 01 June 9 when the bulk-sampling of up to 5 kimberlites will be completed. 9 Utilising support initially from Sunrise Camp ice strip to mobe in a reversecirculation drill, equipment and startup fuel, the focus will then shift to Discovery Camp, which will be the logistical base and fuel-storage/transfer/refuelling centre for the programme.9 Exploration by means of core drills already on site may follow the bulk-sampling programme and conclude in September 2012.9 Discovery camp is to be expanded in February-March to accommodate 40 people; CH-6 Temporary Camp will accommodate 30 to serve drilling of the CH-6 kimberlite. Support services come from Iqaluit, approximately 75km SW9 of the southwest corner of Chidliak<sup>2</sup>. The Chidliak property is comprised of 852<sup>7</sup> claims located across 18 mapsheets in NTS 26A, 26B, 25O and 25P. Qilag is comprised of 33<sup>7</sup> Prospecting Permits and Cumberland is comprised of 40<sup>7</sup> Prospecting Permits. This Spill Plan will be in effect for all 39 properties2, for any sampling or drilling on IOLs, and for helicopter-borne sampling7 conducted on the new Cumberland Prospecting Permits.<sup>5</sup> It also must be noted that Peregrine properties<sup>2</sup> are remote; no communities are nearby, and thus no persons other than the camp population of Peregrine geologists and geophysicists, geophysical personnel, helicopter pilots, drillers, cook/first-aider (Level II certification or higher), medic, camp managers<sup>2</sup> and attendant(s), environmental/bear monitors<sup>2</sup>, and potentially local assistants for the ground geophysics, environmental<sup>2</sup> and sediment-sampling programmes would be affected in the event of an incident. In the case of the Cumberland Peninsula sampling project, Pangnirtung is only 38km W of the closest point on the Cumberland Project, so special attention will continue to be given to co-ordinating activities with local land-use.

All employees, whether permanent or casual, and programme contractors, are required to be trained in Peregrine procedures, field and wildlife safety, spill and fire procedures and environmental awareness prior to engaging in work at a Peregrine site. Peregrine is keenly aware that planning for an emergency situation is not an option but an obligatory activity, equal in importance to the exploration programme itself. This Contingency Plan will be posted in camp and at each worksite or office of each project<sup>2</sup> and will be distributed to supervisory personnel for dissemination to staff and contractors.

#### **BASIC STEPS - SPILL PROCEDURE**

A <u>spill</u> is classified as the discharge of petroleum products or other dangerous substances into the environment. Potential hazards created by the spill for humans, vegetation, water resources, fish and wildlife vary in severity, depending on several factors, including nature of the material, quantity spilled, location and season. Refer to this Plan<sup>9</sup> for specific response information. The general emergency response to be followed in the event of a spill at the Chidliak Project, the Qilag Project<sup>4</sup>, adjoining IOLs<sup>2</sup> or the Cumberland Project<sup>5</sup>, is:



Protect people - prevent personnel from approaching the site and keep them at a distance sufficiently removed that they will not be injured by, or cause, a fire or explosion

*Identify the product and its source* - check container design, warning labels, markings, Material Safety Data Sheets, etc., to enable prompt and appropriate response.

Stop the flow at the source - reduce or terminate flow of product without endangering anyone Assess the seriousness of the spill - assess potential dangers of the spill to human health and safety, the aquatic environment, wildlife, ground water, vegetation and other land resources.

Report the spill – complete a NU Spill Report Form and contact the NU 24-hour Spill Report Line. Provide information on the form to the Environment Canada officer by phone/FAX or e-mail<sup>3</sup>, including location of spill, (company) name of polluter, type and amount of material spilled, date and time of the spill, any perceived threat to human health or the environment, and remedial actions taken and planned.

Clean up spill - follow procedures appropriate to location, environment, material, time of year. Evaluate and learn — after the emergency has passed, evaluate the incident and the cleanup with the goal of continuous improvement in prevention and response; train or re-train personnel and ensure a practice incident-and-response drill is held at least once per field season (cf. Appendix - "Spill Response: Practice Drill").

24-Hour Spill Report Line: (867) 920-8130 or fax (867) 873-6924

Environment Canada Enforcement: 24-Hour Emergency Line: (867) 920-8130

AANDC<sup>9</sup> Water Resources Officer (Iqaluit): (867) 975-4298

AANDC<sup>9</sup> Lands Administrator (Iqaluit): (867) 975-4275

AANDC<sup>9</sup> Manager of Field Operations (Iqaluit): (867) 975-4295

#### PERMITS AND AUTHORISATIONS

The Chidliak and Qilaq<sup>4</sup> properties total over 1.2 million<sup>7</sup> ha; the Cumberland property in 2011 totals 526 728.63 ha<sup>7</sup>. Most of Chidliak-Qilaq is on Crown land, but 8<sup>7</sup> surface parcels of Inuit-Owned Lands (IOLs) intersect the properties at the north, northeast and south<sup>2</sup>. This Spill Plan also will be in effect on any IOL parcels where activity is conducted in 2012<sup>9</sup>, as well as on the Cumberland Prospecting Permits<sup>5</sup>.

Peregrine holds a Class A Land-Use Permit #N2008C0005 from Aboriginal Affairs and Northern Development (AANDC, formerly INAC) <sup>9</sup> and Type B Water Licence #2BE-CHI0813 from the Nunavut Water Board (NWB). Peregrine also holds Qikiqtani Inuit Association (QIA) Land Licence #Q10L1C008 <sup>5</sup> to conduct mineral sampling on the adjoining surface IOLs<sup>2</sup> and #Q10L1C014<sup>5</sup> to conduct mineral sampling on IOLs within the Cumberland property. <sup>9</sup>.

#### SPILL-RESPONSE TEAM LEADERS

The following are in charge of the Chidliak sites<sup>3</sup>, in respect of management or control of contaminants.

Peter Holmes, VP – Exploration: (604) 408-8880; 24-hour mobile: (250) 830-4443.

Shirley Standafer-Pfister, Manager, Regulatory and Environmental Affairs<sup>2</sup>: (604) 408-8880<sup>3</sup>, (604) 408-8881 (FAX); 24-hour mobile: (250) 686-1769.<sup>3</sup>



Operations Manager: Sunrise camp phone \_\_\_\_\_(to be provided)
Discovery \_\_\_\_\_(to be provided)
CH-6 Temporary Camp \_\_\_\_\_(to be provided)
Aurora Camp \_\_\_\_\_(to be provided, if camp opens

Project Manager, Al O'Connor<sup>6</sup>: Camp phones (above) or 24-hour mobile: (604) 379-0998.<sup>6</sup> Project Manager-Cumberland – Dave Willis: 24-hour mobile: (604) 836-3284.<sup>8</sup>

Name and address of proponent in charge of the projects<sup>2</sup> noted in this Plan: Peregrine Diamonds Ltd.

Suite 201-1250 Homer Street Vancouver, BC V6B 1C6

#### **FACILITY DESCRIPTION**

Facility – Seasonal tent camps which can accommodate personnel numbers as follows: 24 – Sunrise, 24 – Aurora, 40 – Discovery (after amendment approval) and 30 – CH-6 Temporary Camp (after amendment approval). <sup>9</sup>. All have or will have above-ground fuel storage in 205L drums (diesel, Jet-B, petrol/gasoline) and propane in 45kg cylinders. Discovery also will have a Designated Fuel Station where drum fuel will be transferred to enviro-tanks. <sup>9</sup>
Location – Discovery camp and natural-gravel airstrip: 64° 14′ 25″ N. lat. – 66° 20′ 45″ W. long. <sup>3</sup>
Sunrise camp<sup>2</sup> on unnamed lake to the east: 64° 14′ 16″ N lat. – 66° 07′ 38″ W long. <sup>3</sup> New North Camp<sup>6</sup> at: 64° 36′ 33″ N. lat. – 66° 34′ 36″ W. long. <sup>5</sup> Fuel: stored on flat, gravel/cobble area at each camp<sup>2</sup>, a safe distance from the tents and well away (>30m) from waterbodies. Large caches <sup>3</sup> and tent drums <sup>6</sup> are bermed in secondary containment. <sup>3</sup>

Table 1: Projected Fuel and Oil Use for 2012<sup>6</sup> Exploration Activities

Fuels	No. of Containers	Capacity of Containers		
Diesel for drilling, equipment, camps	2000 <sup>9</sup> drums	205L		
Aviation turbine fuel (Jet-B)	250 <sup>9</sup> drums	205L		
Aviation turbine fuel (Jet-B) – Cumberland <sup>5</sup>	500 drums	205L	(if req'd)	
Unleaded petrol (gasoline)	20 <sup>9</sup> drums	205L		
Propane	65 <sup>9</sup> cylinders	45kg		
Oxygen (medical)	3 <sup>9</sup> cylinders	10kg		
Oxygen and Acetylene (welding cutting)	4 <sup>9</sup> cylinders (total)	45kg		
Oils/lubricants/cleaners	2009	1L to 5L (typical sizes)		

Empty drums (crushed) and backhauled <sup>9</sup>, cylinders regularly backhauled.

Table 2: Contents of Spill Kits – Spring to Autumn 2012  $^9$ 

# Fuel Cache/Heli Area and Airstrip<sup>3</sup>-Spill-Kit Drums - 1 per Cache<sup>2</sup> and 1 per Airstrip<sup>3</sup>

1 complete drum kit will be supplied at each fuel cache,<sup>2</sup> at each<sup>9</sup> gravel airstrip, and at each<sup>9</sup> ice airstrip, with (as a minimum) absorbents, socks, disposal bags. (Kits at all<sup>9</sup> camps<sup>5</sup> will contain the following: safety goggles, rubber gloves, absorbents, socks, sealant putty and a plastic disposal bag.) [Note: On-ice cleanup measures are discussed on Pages 37-38].

Auxiliary kits (e.g., approximately 130L-136L size) will be deployed around cache areas, as required. 2



Camps - Spill-Kit Drums - 1 (Full Size<sup>6</sup>) per Camp (as a Minimum) plus 5 Kits at Discovery <sup>9</sup>

<u>Location:</u> Stationed at gen-shed in camp, but can be deployed where required: 1 complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags. (Kits at all<sup>9</sup> camps<sup>5</sup> will contain the following: safety goggles, rubber gloves, absorbents, socks, sealant putty and a plastic disposal bag.) *NOTE:* **Discovery Camp Designated Fuel Station** will have **5** spill kits, as well as extra absorbents and other response items (cf. Map 1 below). <sup>9</sup>

RC Drill and Core Drillshack - Spill-Kit Drums - 1 per Drillsite

Trenching Site - Spill-Kit Drums - 1 (if trenching were to occur)

Fuel Cache (on Land) proximal to Lake-Based Drillsite - Spill-Kit Drums - 1

<u>Location: Moves with drillshack <sup>2</sup> or cache</u>: 1 complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags, whether the hole is land-based or ice-based. <sup>3</sup>

At all locations, additional bundles of absorbents will be present in addition to the spill kits.

# Table 3: General Response Inventory – Spring to Autumn 2012 9 – Chidliak Property

- Fire extinguishers (valid/recharged) in each structure: Tents, sheds.
- Water pump and spare at camp; hoses and fittings
- Hammers, assorted weights, at core shack or storage shed <sup>2</sup>
- Cat 247B2 Multi-Terrain Loader (to move drums or other loads) <sup>3</sup> and Kubota Sub-Tractor (for snow-clearing on lakes) <sup>6</sup> Cat 930 loader (brought in for bulk sample) (to move drums or other loads) <sup>9</sup>
- Assorted 10L-20L plastic pails; galvanised metal pails (approx. 10L each)
- Ice auger (gas-powered) c/w extensions (for spring conditions)
- 121L plastic garbage bags (boxes of 20 each) kitchen and latrine
- Plastic tarps assorted sizes
- Extra bundles of absorbents
- Fuel-transfer pump and spare at each <sup>2</sup> camp
- Refuge drums (empty drums for containing spilt substances).

#### TRAINING AND PRACTICE DRILLS

All members of the programme response team – as well as members of the general team, such as the Regulatory/Environment Manager<sup>2</sup> and the Expeditor – will be familiar with the spill-response resources at the worksites (including their location and how to access them), this Spill Plan, and appropriate spill-response methods. Involvement of other personnel may be required, from time to time. This familiarity will be acquired through:

- 1. Initial or refresher training (practice drills), as appropriate, provided once per field season (cf. Appendix "Spill Response: Practice Drill").
- 2. Regular inventory updates, provided in list form to all team members. Information to be reported includes listing of resources, number of items and locations, condition, date of last inspection and any comments (e.g., expiry dates, under whose authority they may be accessed and special handling instructions, if any).

#### FUEL SPILLS: RISK ASSESSMENT AND PREVENTIVE MEASURES

4



The possibility of a fuel spill on Peregrine projects will vary, depending on a number of factors, including human error, mechanical failure, route conditions, weather.

#### Risk Assessment & Preventative Measures

POTENTIAL PROBLEM	IMPACT	PROBABILITY	PREVENTATIVE MEASURES
Diesel or Oil Major leak from drums	High	Low	Training/refresher training for site personnel who handle fuels.  Daily inspections and monitoring will take place during the programme by designated site personnel.  Placement of drums in a suitable area (e.g., depression, vegetation-free and boulder-free), with natural drainage pattern away from water, and the required setback from shoreline.  Berming with peat bales or snow.  Secure drums in use on proper stands or racks.
A spill from a valve left open or a break in a transfer hose.	High	Moderate	Daily inspections to ensure all valves are either closed (when not needed), or that a catch pail is installed beneath valves, e.g., at tents, drillshacks, or that an enviro-tainer is in use.  Fuel transfer hoses will have a double locking mechanism and undergo daily inspection as part of the routine work cycle, to check for soundness and wear.  Markers around all fuel transfer lines.
Pump Failure	Low	Low	Pumps are to be inspected weekly and - serviced monthly.



# Risk Assessment & Preventative Measures (cont.)

POTENTIAL PROBLEM	IMPACT	PROBABILITY	PREVENTATIVE MEASURES
Diesel or Oil Major leak from drums	High	Low	Training/refresher training for site personnel who handle fuels. Daily inspections and monitoring will take place during the programme by designated site personnel. Placement of drums in a suitable area (e.g., depression, vegetation-free and boulder-free), with natural drainage pattern away from water, and the required setback from shoreline. Berming with peat bales or snow. Secure drums in use on proper stands or racks.
A spill from a valve left open or a break in a transfer hose.	High	Moderate	Daily inspections to ensure all valves are either closed (when not needed), or that a catch pail is installed beneath valves, e.g., at tents, drillshacks, or that an enviro-tainer is in use.  Fuel transfer hoses will have a double locking mechanism and undergo daily inspection as part of the routine work cycle, to check for soundness and wear.  Markers around all fuel transfer lines.
Pump Failure	Low	Low	Pumps are to be inspected weekly and - serviced monthly.
Power Outages	Low	Low	In case of gen-set failure/power loss, any refuelling or maintenance under way in the gen-shed will cease immediately and the spare gen-set will be brought on line before refuelling or maintenance resumes.
Broken Or Blocked Drill Sludge Lines	Low	Moderate	Lines are inspected daily as part of the routine work cycle.



Risk Assessment & Preventative Measures (cont.)

RISK ASSESSITIETIL & P	Teverilative ivie	asures (cont.)	,
POTENTIAL PROBLEM	Імраст	PROBABILITY	PREVENTATIVE MEASURES
Chemical Spills	Low – High	Low	Training in the handling of chemicals will take place to ensure safe handling. Chemicals will be stored in their original labelled drums, bottles, canisters or packages. Chemicals will be stored in such a way as to protect from the weather or spillage, and be in non-reactive trays, underlain with liner material or absorbents to prevent chemicals coming into contact with soil or tent floors. Regular inspections will take place of stored chemicals. Inventory controls in place.
Gases (oxygen, acetylene, propane, argon, carbon dioxide)			Training/refresher training for site personnel who handle gases. Stored in designated areas until required, secured upright. Daily checks of cylinders in use, including gas-detector monitoring, as necessary.



# FIGURE 1: Updated NWT-Nunavut Spill Report Form

Northy	Northwest Numavut Canada NT-NU SPILL REPORT OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS  NT-NU 24-HOUR SPILL REPORT LINE TEL: (867) 920-8130 FAX: (867) 873-6924 EMAIL: Spills@gov.nt.ca  REPORT LINE USE ONLY										
Α	REPORT DATE: MON	TH - DAY - YEAR		I	BERC	ORT TIME	I				PORT NUMBER
^							☐ OR	IGINAL SPILL REP	ORT, OR		CHINONDEN
В	OCCURRENCE DATE	: MONTH — DAY — YEA	AR		OCCL	URRENCE TIME		DATE# EORIGINALSPILL	REPORT	.	•
С	LAND USE PERMIT N	UMBER (IF APPLICABI	LE)			WATER LICENCE N	IUMBEF	(IF APPLICABLE)			
D	GEOGRAPHIC PLACE	NAME OR DISTANCE	AND DIRECTION FRO	OM THE N	AMED	LOCATION		REGION	AVUT 🗖	ADJACE	ENT JURISDICTION OR
E	LATITUDE DEGREES M	INUTES SECO	ONDS			LONGITUDE DEGREES	MINUT	ES SEC	ONDS		
F	RESPONSIBLE PART	Y OR VESSEL NAME		RESPON	ISIBLE	PARTY ADDRESS C	OR OFFI	CE LOCATION			
G	ANY CONTRACTOR II	NVOLVED		CONTRA	CTOF	ADDRESS OR OFFI	CELOC	ATION			
H	PRODUCT SPILLED			QUANTI	ΓΥ IN L	ITRES, KILOGRAMS	OR CUE	BIC METRES	U.N. NU	MBER	
	SECOND PRODUCTS	SPILLED (IF APPLICABI	LE)	QUANTII	TY IN L	ITRES, KILOGRAMS	OR CUE	BIC METRES	U.N. NU	MBER	
I	SPILL SOURCE			SPILL CA	USE			AREA OF (	CONTAMI	NATION	IN SQUARE METRES
J	FACTORS AFFECTING	SPILL OR RECOVER	Y	DESCRIE	BE AN	Y ASSISTANCE REQU	JIRED	ED HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT			
К	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS  K						CONTAMINATED MATERIALS				
L	REPORTED TO SPILL	LINE BY	POSITION	EMPLOYER LOCATI		OCATION CALLING	CATION CALLING FROM		TELEPHONE		
М	ANY ALTERNATE CON	ITACT	POSITION		EM	PLOYER	R ALTERNATE CONTACT LOCATION		ATION	ALTERNATE TELEPHONE	
REPOR	REPORT LINE USE ONLY										
Ν	N RECEIVED AT SPILL LINE BY POSITION Station operator			r	EM	PLOYER				REPORT LINE NUMBER (867) 920-8130	
LEAD AGENCY   EC   CCG   GNWT   GN   ILA   INAC   NEB   TC			SIG	NIFICANCE   MIN	OR 🗆 N	MAJOR   UNKNO	NW	FILE ST	ATUS OPEN CLOSED		
AGENCY CONTACT NAME				00	NTACT TIME	R	REMARKS				
LEAD A	LEAD AGENCY										
FIRSTS	SUPPORT AGENCY										
SECON	D SUPPORT AGENCY										
THIRDS	SUPPORT AGENCY										



# FIGURE 2: Instructions for Completing the NT-NU Spill Report Form

Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and e-mailed as an attachment to <a href="mailto:spills@gov.nt.ca">spills@gov.nt.ca</a>. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.

The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. Please do not fill the Report Number: the spill line will fill this out. Please do not fill the Report Number: the spill line will assign a number after the spill is reported.  B. Occurrence Date/Time  Indicate, to the best of your knowledge, the exact date and that the spill occurred. Not to be confused with the report date and time (see above).  C. Land Use Permit Number  Water Island and/or if a land Use Permit has been licenced by the Nunavut mines and mineral exploration sites.  In most cases, this will be thanne of the city or town in which the spill order than an adminished exploration sites.  In most cases, this will be thanne of the city or town in which the spill order than a spill of the spill occurred outside of an established comments and direction from the nearest population center. You must include the geographic Coordinates (Refer to Section E).  E. Geographic Coordinates  This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of latitude and Longitude.  F. Responsible Party Or Vessel  Name  This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/resel include the name of the ship/vessel. Please include full address, telephone number and e-mail, use box k if there is insufficient space. Please note that, the owner of the substance, regardless of who may have actually caused the spill.  H. Product Spilled  Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of that substance, and trick of the owner of the owner of the spill. In the case of a spill from a ship/center spilled in the course (eg. UNI203 for gasoline; UNI202 for dieself fuel; UNI363 for Jat A & B		
occurred. Not to be confused with the report date and time (see above).  C. Land Use Permit Number / Water Licence Number Water Board and/or if a Land Use Permit has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been licenced by the Nunavut water Board and/or if a Land Use Permit has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been licenced by the Nunavut water Board and Cocurred. For remote locations - outside of human habitations - identify the most prominent geographic Coordinates (Refor to Sociotia).  E. Geographic Coordinates (Refor to Sociotia).  This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.  F. Responsible Party Or Vessel Name  This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel, Please include full address, telephone number and e-mail. Use box K if there is insufficient space. Please note that, the owner of the spilled substance is utilimately responsible for any spills of that substance, regardless of who may have actually caused the spill.  G. Contractor involved?  Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or heavily and of is responding to the spill.  H. Product Spilled  Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substance, and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1803 for Jet A & B).  I. Spill Source  Identify the produc	A. Report Date/Time	phoned in, the Spill Line will fill this out. Please do not fill in the Report
Water Board and/or if a land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.  D. Geographic Place Name  In most cases, this will be the name of the city or town in which the spill occurred. For remote locations — outside of human habitations — identify the most and direction from the near-set population center. You must include the geographic Coordinates (Refer to Section E).  E. Geographic Coordinates  This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.  F. Responsible Party Or Vessel Name  This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.  G. Contractor involved?  Were there any other participy control to the spill.  H. Product Spilled  Identify the product spilled, most commonly, it is gasoline, diesel fuel or sewage. For other substances any old trade names. Wherever possible, use the chemical name of the substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.  I. Spill Source  Identify the product spilled, most commonly, it is gasoline, diesel fuel or sewage. For other substances any old trade names. Wherever possible, use the chemical name of the substance and further, dientify and spill, spill and participy caused the spill.  I. Spill Source  Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide any additional	B. Occurrence Date/Time	
occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. You must include the geographic coordinates (Refer to Section E).  E. Geographic Coordinates  This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.  F. Responsible Party Or Vessel Name  This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.  G. Contractor involved?  Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on balf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.  H. Product Spilled  Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)  I. Spill Source  Identify the source of the spill: truck, ship, home haring fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m²)  J. Factors Affecting Spill  Avy factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or ase		Water Board and/or if a Land Use Permit has been issued. Applies primarily to
community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Lalitude and Longitude.  F. Responsible Party Or Vessel Name  This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.  G. Contractor involved?  Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.  H. Product Spilled  Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UNI203 for gasoline; UNI202 for diesel fuel; UNI863 for Jet A & B)  I. Spill Source  Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; bip ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m²)  J. Factors Affecting Spill  Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.  K. Additional Information  Provide any additional, pertinent details abo	D. Geographic Place Name	occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. You must include the
the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and emal. Use box K if there is insufficient space. Please note that, the owner of the spilled substance is utilimately responsible for any spills of that substance, regardless of who may have actually caused the spill.  G. Contractor involved?  Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.  H. Product Spilled  Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, a void trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B I dentify the source of the spill; truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m²)  J. Factors Affecting Spill  Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.  K. Additional Information  Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill gisposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill repo	E. Geographic Coordinates	community such as a mine site. Please note that the location should be stated in
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the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m²)  J. Factors Affecting Spill  Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.  K. Additional Information  Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. Please number the pages to ensure that recipients can be certain that they received all pertinent documents. If only the spill report form was filled out, number the form as "Page 1 of 1".  L. Reported to Spill Line by  Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.  M. Alternate Contact  Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.	H. Product Spilled	For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN
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peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. Please number the pages to ensure that recipients can be certain that they received all pertinent documents. If only the spill report form was filled out, number the form as "Page 1 of 1".  L. Reported to Spill Line by  Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.  M. Alternate Contact  Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.	J. Factors Affecting Spill	weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose
you are reporting the spill. Use box K if there is insufficient space.  M. Alternate Contact  Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.	K. Additional Information	peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. Please number the pages to ensure that recipients can be certain that they received all pertinent documents. If only the spill report form was filled out, number the form as "Page
obtain additional information if they cannot reach the individual who reported the spill.	L. Reported to Spill Line by	
N. Report Line Use Only  Leave Blank. This box is for the Spill Line's use only.	M. Alternate Contact	obtain additional information if they cannot reach the individual who reported the
	N. Report Line Use Only	Leave Blank. This box is for the Spill Line's use only.



### **PRODUCT CATEGORIES**

The materials in this Spill Contingency Plan are generally divided into five categories:

Flammable Immiscible Liquids Soluble Solids/Oxidisers Flammable Compressed Gases Soluble Liquids Toxic Solids

### Flammable Immiscible Liquids

These substances are all hydrocarbon-based and will ignite under certain conditions.

Petrol (gasoline) and aviation fuels pose the greatest fire and safety hazard and are not recoverable when spilled on water.

## **Action Plan Steps**

Confirm that a spill has occurred. It may not be obvious if a spill has occurred - look for:

pooled liquid.

damage to equipment/tanks.

smell of fuel or chemicals and

leaks from hatches, valves or other fixtures

#### **Assess the Situation**

Before initiating response actions, take the time to determine the nature of a spill and to collect some or all of following facts:

potential risk of fire, explosion and environmental damage.

extent of injuries to co-workers or the public.

source and approximate size of the spill.

possible methods to stop the flow of product; and

proximity to water.

#### **Take Action**

Eliminate ignition source(s) if safe to do so.

Shut off spill source if safe to do so.

Attend to any injured persons.

Restrict personnel to the spill site using barriers or marker tape.

Warn others in the area of the spill.

Use an explosion meter to monitor atmospheric gas concentrations.

Report spill to Peregrine management.

Transport Spill Kit to the spill site.

Control spreading and minimise impacts.

10



# **Spill Containment and Recovery**

Special care should be taken to ensure that spilled material does not reach waterbodies where recovery is more difficult. Ice augers (under appropriate conditions) can be effective in terms of locating and exposing oil for burning or pumping off.

### **Waste Disposal**

At the Chidliak camps<sup>2</sup>, all combustibles will be incinerated on a daily basis. This includes food scraps, office garbage, etc.

Non-hazardous solid "inert" waste generated (*i.e.*, scrap metal, pipe, wood, plastics, liners, Styrofoam) will be transported off site for disposal according to its nature.

All hazardous wastes and waste items that cannot be incinerated (including items which might be present at a remote fuel cache) are securely packaged, flown out on aircraft backhauls, and disposed of in designated locations off-site.

Prior to disposal, the hazardous waste will be properly packaged, labelled, and stored and manifested in a Transportation of Dangerous Goods (TDG) approved shipping container. (Peregrine's government-issued waste generator number for Nunavut projects will be written on manifests accompanying outbound waste shipments<sup>2</sup>).

The container will have the appropriate hazardous waste labels.

All Federal and Territorial regulations will be adhered to.

### **Used Container Disposal**

To ensure the proper disposal of used containers that have contacted, collected or contained a hazardous or regulated substance (e.g., paint cans, oil cans, acid containers, aerosol cans).

Containers having contacted, collected or contained an acute hazardous material, corrosive or reactive substance will be triple washed with water prior to disposal. (Contaminated wash-water can report to labelled refuge drums).

Metal containers can be disposed of as scrap metal and flown off-site for disposal. Any free liquid in the container will be disposed of properly, and the residual material allowed to dry or solidify.

### **Used Drum Disposal**

The majority of used fuel drums (205L) for Jet-B fuel, diesel<sup>2</sup> and unleaded petrol are returned to the supplier for refund or crushed<sup>5</sup>. However, during operations, some drums will be set aside for usage as refuge drums, for storage of other "used" products (*i.e.*, used glycol, used oil, spilt materials, oil filters, *etc*). These drums will be properly labelled and stored prior to acceptable removal and disposal, usually off-site at an approved facility.

#### **RESPONSE ORGANISATION**

On rare occasions, additional company and outside resources may need to be brought in to support the spill cleanup. For a major incident, the Project Manager (*cf. Page 3*) in co-operation with<sup>2</sup> the Project Manager – Operations<sup>3</sup> or the specific Project Manager, if not Chidliak<sup>5</sup>, would mobilise Peregrine, contractor (emergency remedial responder in Iqaluit is Nunatta Environmental Services)<sup>9</sup> and outside expertise for the response.



### **GENERAL RESPONSIBILITIES**

The following provides a general guide to the Spill Response Organisation responsibilities. In some cases, certain Peregrine personnel may fill dual roles, depending upon the circumstances of the incident.

In most incidents, the Site Supervisor, working with the site Spill Response Team, will handle the initial response, containment and cleanup. In larger incidents, Peregrine management will play a more active role. In all cases, Peregrine management will be notified immediately of a spill and will be responsible for notifying the 24-hour Spill Line or assigning this task to a designate.

Other contractors and specialists may be brought in to assist in response to a major incident.

### **Individual Discovering Incident**

- Assess the initial severity of the spill and safety concerns.
- Identify the source of the spill
- Report all spills to Supervisor.
- Determine the size of the spill and stop or contain it, if possible.

### Spill Response Team

- Conduct the cleanup of spills under the direction of the Supervisor.
- Deploy booms, absorbents and other equipment and materials as required.
- Take appropriate response measures.
- Continue the cleanup as directed by the Supervisor or until relieved.

### **Supervisor**

- Assist in initial and ongoing response efforts.
- Supervise the Spill Response Team.
- With work crew, take initial action to seal off the source and contain spill.
- Decide with Peregrine management if mobilisation of additional equipment is required.
- Assess whether burning is a viable cleanup measure. Consult Peregrine's emergency spill-response contractor or environmental consultant in completing this assessment.<sup>7</sup>
- Ensure co-ordination of equipment and manpower as needed (Peregrine and contractors)
- Ensure expeditious response and cleanup of the spill site and impacted area.

12

## Additional Resources – Support Team to the Spill-Response Team



- Provide assistance to Supervisor as required.
- Responsible for mobilising additional Peregrine support staff, security and other contractors as required.

## **Peregrine Management**

- Records the time of the report, source of information and details on location, size, type of spill and any other information available on the Spill Report Form.
- Ensures that the spill is reported to the Nunavut 24-Hour Spill Report Line.
- Oversees or directs the cleanup operation until it is satisfactorily completed.
- Together with the Supervisor, decides if additional equipment is required to contain and clean up spills.
- Maintains contact with Supervisor to ensure final inspection and sign-off on the spill.
- Notifies internal company departments.
- Initiates Mutual Aid Agreements if so required.
- Oversees completion and distribution of the Spill Report.



- Ensures investigation identifies measures to prevent similar spills.
- Provides cleanup advice to the Supervisor.
- Assists with preparation of press releases.
- Provides advice on storage and disposal options.
- Ensures that there are followup reports prepared on the spill event, cleanup and environmental impacts.
- Takes action, as necessary, to prevent a recurrence.
- Liaises with government agencies (as required)

#### **Response Resources**

A wide variety of spill control/recovery equipment and material exists for dealing with spills of petroleum products and chemical reagents (*cf. Page 4*).

#### **Response Equipment Deployment**

All equipment is stored in such a manner as to be readily available on short notice.

The Supervisor would immediately respond to a reported spill site by notifying site personnel to move into place material necessary to provide control and cleanup (e.g., shovels, refuge drums, tarps, etc.). Emergency spill containment and recovery materials and supplies will be available on site for immediate mobilisation at any time. (In the case of the Qilaq Project<sup>2</sup> or activity on IOLs, or the Cumberland sampling project<sup>5</sup> where there is no associated camp, a fully-equipped spill kit will be positioned at an easily-accessible central point or fuel cache within the programme area <sup>2</sup>).



**Expediting/Logistics** 

### CONTACT LIST - SPILL RESPONSE/ASSISTANCE

Mobile Emergency Spill Response – Nunatta Environmental Services Inc., Iqaluit (

NTI-registered company) nunatta@northwestel.net

Axel Have (867) 979-1488 (during

business, after hours)

Jim Wilson (same)

Qikiqtaaluk Corporation qc@nur

qc@nunavut.com

(867) 222-1020<sup>3</sup>

(867) 979-8433 (FAX)

Discovery Mining Services<sup>3</sup> logistic

**logistics@pdiam.com** (867) 445-1644 (24 hours)<sup>3</sup>

(867) 222-3630 (Igaluit mobile)

**Environment Canada** 24-hour line (867) 766-3737

Manager, Field Operations <sup>4</sup>, Aboriginal Affairs and Northern Development (AANDC) <sup>9</sup>

Nunavut (Iqaluit Office)

(867) 975-4295<sup>4</sup>

(867) 975-6445 (FAX)

Water Res. Officer

(867) 975-4298

AANDC (Iqaluit) 9

RCMP, Iqaluit detachment

Emergencies only:

(867) 979-1111

RCMP, Pangnirtung

detachment

Emergencies only:

(867) 473-4111

**Iqaluit** (867) 979-4422 **Fire Department** (emergency)

24-hour spill line: (867) 920-8130<sup>2</sup> spills@gov.nt.ca<sup>2</sup>

Qikiqtani Inuit Association Iqaluit Office (867) 979-5391

Environ. Conserv. Officer GN-DOE- Iqaluit Office (867) 975-7700 Workers' Safety and Compensation Commission<sup>9</sup> Board –Occupational Health and Safety (Iqaluit Office) (877) 404-4407

Workers' Safety and Compensation Commission<sup>9</sup> Board-Exploration Site Accident Reports (800) 661-0792 (24hr)



# SPILL RESPONSE ACTIONS: BY PRODUCT

At the Peregrine projects under this Plan<sup>2</sup>, "safety first" is the abiding principle which will guide response: Spills and products are to be handled as/if safety permits.

After adequate safety precautions, effort will be concentrated on stopping or eliminating the source of ignition.

# Diesel

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES				
APPEARANCE: Clear, Yellow or Red Flash Point: 40°C (Minimum) ODOUR: Petroleum Pour Point: -50° to -6°C SOLUBILITY: Insoluble VISCOSITY: Not Viscous VAPOUR DENSITY: Will Sink to Ground Levels SPECIFIC GRAVITY: Floats on Water (0.8 – 0.9)				
SAFETY MEASURES				
WARNING	Vapours are heavier than air and form easily at high temperatures. Empty containers can contain explosive vapours. Toxic gases form upon combustion. Eye contact causes irritation. Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.			
Always wear impervious, chemica1-resistant clothing, gloves, footwear, and goggles; nitrile and PVC are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE.)  Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.				
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone and peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.			



RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO <sub>2</sub> , dry chemical, and alcohol foam or water fog. Use water to cool containers exposed to fire.

# Hydraulic Oil

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES				
APPEARANCE: Straw-Yellow Liquid FLASH POINT: 215°C (Minimum) ODOUR: Petroleum POUR POINT: -25°C SOLUBILITY: Generally Insoluble VISCOSITY: Medium (265 x ST, 15°C) VAPOUR DENSITY: Few Vapours Emitted SPECIFIC GRAVITY: Floats on Water (0.9)				
SAFETY MEASURES				
WARNING  Vapours are heavier than air but are unlikely to form.  Toxic gas can form in fire and at high temperatures.  CO, CO <sub>2</sub> , and dense smoke are produced upon combustion.  Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.				
PERSONAL PROTECTION Always wear impervious, chemical -resistant clothing, gloves, footwear, and goggles; PVC, nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER). Use of organic vapour cartridge respirator is highly unlikely.				
PRECAUTIONS  Avoid excessive heat, which can cause formation of vapours.  Avoid contact with strong oxidisers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides.  Eliminate ignition sources.  Restrict access and work upwind of spill.				



RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO <sub>2</sub> , dry chemical, alcohol, foam or water fog. NOTE: water or foam may cause frothing. Use water to cool containers exposed to fire.

# **Lubricating Oil**

<u></u>					
TYPICAL PHYSICAL AND CHEMICAL PROPERTIES					
APPEARANCE: Amber Liquid FLASH POINT: 190° to 2220°C ODOUR: Petroleum POUR POINT: -35° to -40°C SOLUBILITY: Generally Insoluble VISCOSITY: Medium (255 xST, 15°C) VAPOUR DENSITY: Few Vapours Emitted SPECIFIC GRAVITY: Floats on Water (0.9)					
SAFETY MEASURES					
WARNING	Vapours are heavier than air but are unlikely to form.  Toxic gas can form in fire and at high temperatures.  CO, CO <sub>2</sub> , and dense smoke are produced upon combustion.  Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.				
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER). Use of organic vapour cartridge respirator is highly unlikely.				
PRECAUTIONS	Avoid excessive heat, which can cause formation of vapours. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.				



RESPONSE TO FIRES	
CONSIDER ACTION	Wear SCBA and eye protection when responding to lube oil fires.
ONLY IF SAFETY	Shut off fuel supply.
PERMITS!	Extinguish fire with CO <sub>2</sub> , dry chemical, alcohol foam or water fog. NOTE:
	water or foam may cause frothing.
	Use water to cool containers, exposed to fire.
On Land	Prevent additional discharge of oil.
	Do not flush into ditch/drainage systems.
	Block entry into waterways.
	Contain spill by diking with earth, snow or other barrier.
	Remove minor spills with absorbent and/or peat moss.
	Remove large spills with pumps or vacuum equipment.
	Spill can also be mechanically removed if oil is too viscous to be pumped.
On Water	Use booms to contain and concentrate spill.
	Remove spill using absorbents or skimmer.
	Protection booming can be considered for water intakes.
STORAGE &	Store closed, labelled containers in cool, and ventilated areas away from
TRANSFER	incompatible materials.
<b>D</b>	
DISPOSAL	Segregate waste types.
	Place contaminated materials into marked containers.
Figure Air	Consult with environmental authorities during fina1 disposal.
FIRST AID	T
EYES	Flush eyes immediately with fresh, warm water (NOT HOT) water for 20
	minutes, while holding the eyelids open.
	Remove contact lenses, if exposed to vapours or liquid.
	Get prompt medical attention.
SKIN	Remove and launder contaminated clothing.
	Wash skin thoroughly with soap and water.
	Get medical attention.
	Discard saturated leather articles.
1	Marca disting to for the six
INHALATION	Move victim to fresh air.
	Perform CPR if victim not breathing.
	Provide oxygen if victim is having difficulty breathing.
	Get prompt medical attention.
INCECTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to
INGESTION	drink. If vomiting begins, keep victim's head below hips to prevent
	aspiration. Get prompt medical attention.
	Oet prompt medical attention.

# **Waste Oil**



On Land	Prevent additional discharge of oil.
	Do not flush into ditch/drainage systems.
	Block entry into waterways.
	Contain spill by diking with earth, snow or other barrier.
	Remove minor spills with absorbent pads and/or peat moss.
	Remove large spills with pumps or vacuum equipment.
	Spill can also be mechanically removed if oil is too viscous to be
	pumped.
On Water	Use booms to contain and concentrate spill.
	Remove spill using absorbents or skimmer.
	Protection booming can be considered for water intakes.
STORAGE &	Store closed, labelled containers in cool, ventilated areas away
TRANSFER	from incompatible materials.
DISPOSAL	Segregate waste types.
	Place contaminated materials into marked containers.
	Consult with environmental authorities during fina1 disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT
	WATER) for 20 minutes, while holding the eyelids open.
	Remove contact lenses, if exposed to vapours or liquid.
	Get prompt medical attention.
Cicini	Demove and levelor conteminated slathing
SKIN	Remove and launder contaminated clothing.
	Wash skin thoroughly with soap and water.  Get medical attention.
	Discard saturated leather articles.
	Discard saturated leather articles.
INHALATION	Move victim to fresh air.
111111111111111111111111111111111111111	Perform CPR if victim not breathing.
	Provide oxygen if victim is having difficulty breathing.
	Get prompt medical attention.
	DO NOT INDUCE VOMITING; if victim is conscious; give milk or
INGESTION	water to drink. If vomiting begins, keep victim's head below hips
	to prevent aspiration.
	Get prompt medical attention.
	i i



# **Petrol (Unleaded Gasoline)**

TVDICAL	DUVCIONI	V VID (		<b>PROPERTIES</b>
TYPICAL	PHYSICAL	AND I	CHEMICAL	PROPERTIES

APPEARANCE: Colourless Liquid

(Can Be Dyed) FLASH POINT: -50°C

Gasoline/Petroleum POUR POINT: -60°C ODOUR:

SOLUBILITY: Insoluble VISCOSITY: Not Viscous (<1 cSt)

VAPOUR DENSITY: Will Sink to Ground Level Specific Gravity: Floats on

Water (0.7 - 0.8)	
SAFETY MEASURES	
WARNING	Vapours form instantaneously, and are heavier than air. Empty containers can contain explosive vapours. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton and PVC are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE).  Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO <sub>2</sub> , dry chemical, alcohol foam or water fog. Use water to cool containers, exposed to fire.



On Land	ELIMINATE IGNITION SOURCES.  Do not flush into ditch/drainage systems.
	Block entry into waterways.
	Contain spill by diking with earth, snow or other barrier.
	Remove minor spills with peat moss and/or absorbent pads.
	Cover pools with foam to prevent vapour evolution if gasoline
	presents a fire hazard; otherwise allow vapours to dissipate.
On WATER	ELIMINATE IGNITION SOURCES.
ONWATER	DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.
STORAGE &	Protection booming can be considered for water intakes.
TRANSFER	Store closed, labelled container in cool, ventilated areas away
IRANSFER	from incompatible materials.
Diamagu	Electrically ground containers and vehicles during transfer.
DISPOSAL	Place contaminated materials into segregated marked containers.
FIDOT AID	Consult with environmental authorities during final disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT
	WATER) for 20 minutes, while holding the eyelids open.
	Remove contact lenses, if exposed to vapours or liquid.
	Get prompt medical attention.
SKIN	Remove and launder contaminated clothing.
	Wash skin thoroughly with soap and water.
	Get medical attention.
	Discard saturated leather articles.
INHALATION	Move victim to fresh air.
	Perform CPR if victim not breathing.
	Provide oxygen if victim is having difficulty breathing.
	Get prompt medical attention.
	DO NOT INDUCE VOMITING; if victim is conscious; give milk or
INGESTION	water to drink. If vomiting begins, keep victim's head below hips
	to prevent aspiration.
	Get prompt medical attention.



# Jet-B (JP-4) OR Jet-A Fuel

### TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White or Pale Yellow Liquid FLASH POINT: -20°C to -25°C

ODOUR: Gasoline/Petroleum POUR POINT: -50°C

SOLUBILITY: Negligible VISCOSITY: Not Viscous (<7 cSt)

VAPOUR DENSITY: Will Sink to Ground Level Specific Gravity: Floats on

Water (0.75 - 0.8)

CAFETY MEAGUIDEG	
SAFETY MEASURES	Vancura instantaneously form, and are beguing than air
WARNING	Vapours instantaneously form, and are heavier than air.
WARNING	Low-lying areas can trap explosive vapours.  Vapours can travel to distant sources of ignition and flash back.
	Eye contact causes irritation.
	Material can accumulate static charges.
	Inhalation of vapours can cause irritation of the respiratory tract,
	headache, vomiting, and unconsciousness.
	The state of the s
PERSONAL	Always wear impervious, chemical-resistant clothing, gloves,
PROTECTION	footwear, and goggles; PVC, Nitrile, and Viton and PVC are
	suitable materials (DO NOT USE NATURAL RUBBER or
	NEOPRENE).
	Wear full-face organic vapour cartridge respirator where oxygen is
	adequate; otherwise wear positive pressure SCBA, if
	circumstances warrant.
	Monitor for explosive atmosphere.
PRECAUTIONS	Avoid contact with strong oxidizers, such as nitric acid, sulphuric
	acid, chlorine, ozone, peroxides.
	Eliminate ignition sources. Restrict access and work upwind of spill.
	Restrict access and work upwind or spill.
RESPONSE TO FIRES	
CONSIDER ACTION	Wear SCBA in confined areas.
ONLY IF	Shut off fuel supply.
SAFETY PERMITS!	Extinguish fire with CO <sub>2</sub> , dry chemical, alcohol foam or water fog. Use water to cool containers, exposed to fire.



	ELIMINATE IGNITION SOURCES.
On Land	Do not flush into ditch/drainage systems.
OH E/ HID	Block entry into waterways.
	Contain spill by diking with earth, snow or other barrier.
	Remove minor spills with peat moss and/or absorbent pads.
	Cover pools with foam to prevent vapour evolution if gasoline
	presents a fire hazard; otherwise allow vapours to dissipate.
	ELIMINATE IGNITION SOURCES.
On WATER	DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.
ONWATER	Protection booming can be considered for water intakes.
	Store closed, labelled containers in cool, ventilated areas away
STORAGE &	
	from incompatible materials.
TRANSFER	Electrically ground containers and vehicles during transfer.
Dioposal	Diago contaminated materials into accurated marked containers
DISPOSAL	Place contaminated materials into segregated marked containers.
	Consult with environmental authorities during final disposal.
FIRST AID	
	Flush eyes immediately with fresh, warm water (NOT HOT
EYES	WATER) for 20 minutes, while holding the eyelids open.
	Remove contact lenses, if exposed to vapours or liquid.
	Get prompt medical attention.
SKIN	Remove and launder contaminated clothing.
	Wash skin thoroughly with soap and water.
	Get medical attention.
	Discard saturated leather articles.
INHALATION	Move victim to fresh air.
	Perform CPR if victim not breathing.
	Provide oxygen if victim is having difficulty breathing.
	Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or
	water to drink. If vomiting begins, keep victim's head below hips
	to prevent aspiration.
	Get prompt medical attention.



# **Fuel Dye**

TVDICAL	DUVCIONI	V VID (		<b>PROPERTIES</b>
TYPICAL	PHYSICAL	AND I	CHEMICAL	PROPERTIES

APPEARANCE: Dark Red Liquid FLASH POINT: -28°C

ODOUR: Aromatic Hydrocarbon POUR POINT: -45°C

SOLUBILITY: Negligible VISCOSITY: Not Viscous

VAPOUR DENSITY: Will Sink to Ground Level Specific Gravity: Floats on

Water

SAFETY MEASURES		
Warning	Vapours instantaneously form, and are heavier than air. Low-lying areas can trap explosive vapours. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material contains xylene, benzene and ethyl benzene. Inhalation of vapours can cause nausea, headache and dizziness.	
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE OR PVC).  Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.	
PRECAUTIONS	Avoid breathing vapours or mist. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.	
RESPONSE TO FIRES		
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO <sub>2</sub> , dry chemical, AFFF foam or water fog. Use water to cool containers, exposed to fire.	



# **Propane**

TYPICAL PHYSICAL AND	CHEMICAL PROPERTIES

APPEARANCE: Colourless Gas FLASH POINT: -104°C ODOUR: Natural Gas Odour POUR POINT: -190°C

SOLUBILITY: Insoluble VISCOSITY: N/A

VAPOUR DENSITY: Will Sink to Ground Level SPECIFIC GRAVITY: Liquid Floats

on Water

SAFETY MEASURES	
WARNING	Vapours form instantaneously, and are heavier than air. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material can accumulate static charges.
	Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; Nitrile: and Viton are suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC).  Avoid frostbite bum to skin and eyes from contact with propane.  Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO <sub>2</sub> , dry chemical, alcohol foam or water fog. Use water to cool containers, exposed to fire.



On Land	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.	
On Water	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.	
STORAGE & TRANSFER	It is not possible to collect released material.	
DISPOSAL	Consult with environmental authorities if the disposal of any contaminated materials is required.	
FIRST AID		
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.	
SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.	
INHALATION	Move victim to fresh air.  Perform CPR if victim not breathing.  Provide oxygen if victim is having difficulty breathing.  Get prompt medical attention.	
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.  Get prompt medical attention.	



# Acetylene

TYPICAL PHYSICAL AND	D CHEMICAL PROPERTIES		
TIFICALI III SICAL AN	D GITEMICAL I ROPERTIES		
	rless Gas FLASH POINT: -18°C -Like Pour Point: -82°C		
	y Soluble Viscosity: N/A		
	Will Sink to Ground Level SPECIFIC GRAVITY: Liquid Floats		
SAFETY MEASURES			
WARNING	Vapours form instantaneously, and are heavier than air. Empty containers can contain explosive vapours. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation.		
	Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.		
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; use suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC).  Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.		
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.		
RESPONSE TO FIRES			
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO <sub>2</sub> , dry chemical, alcohol, foam, or water fog. Use water to cool containers, exposed to fire.		



# **Antifreeze (Ethylene Glycol)**

TVDICAL	DUVCION	AND CHEMICAL	PROPERTIES

APPEARANCE: Colourless Liquid FLASH POINT: 111°C

ODOUR: Slight; Undetectable <25 ppm POUR POINT: -13°C (48% Solution)

SOLUBILITY: Soluble in All Proportions VISCOSITY: Not Viscous (=22 cSt) VAPOUR DENSITY: Will Sinks to Ground Level SPECIFIC GRAVITY: Same as

Water (1.0)

vator (1.0)		
SAFETY MEASURES		
WARNING	Vapours are heavier than air. Ingestion of significant quantities can be lethal. Eye contact causes irritation. Skin contact can cause intoxication due to absorption. Inhalation of vapours can cause intoxication, headache, vomiting, unconsciousness with convu1sions, and even death Avoid inhaling vapours, particularly in enclosed places.	
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; neoprenes, nitrile, PVC are suitable protective materials.	
PRECAUTIONS	Monitor empty containers for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.	
RESPONSE TO FIRES		
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO <sub>2</sub> , dry chemical, alcohol foam or water fog. (Note: Water or foam may cause frothing). Use water spray to cool containers exposed to fire.	



	1
On Land	Block entry into waterways.  Do not flush into ditch/drainage systems.  Contain spill by diking with earth, snow or other barrier. Remove minor spills with universal type absorbent.  Remove large spills with pumps or vacuum equipment.
On Water	Ethylene glycol sinks and mixes with water; contain spill by isolating contaminated water through damming or diversion.
STORAGE & TRANSFER	Store closed, labelled containers in cool, ventilated areas away from incompatible materials
DISPOSAL	Segregate waste types. Place contaminated materials into marked containers. Consult with environmental authorities during final disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove contaminated clothing. Wash skin thoroughly soap and water. Get medical attention.
INHALATION	Move victim to fresh air.  Perform CPR if victim not breathing Provide oxygen if victim is having difficulty breathing.  Get prompt medical attention.
Ingestion	INDUCE VOMITING IMMEDIATELY if victim is conscious; Get prompt medical attention.



### SPILL PLANNING AND LOGISTICS

The feasibility of containing and recovering a spill will be generally determined by its location and the rate of release, spreading, transport and evaporation. These rates should be compared with the total time needed to deploy response equipment in order to evaluate whether or not containment, and/or absorbent and skimming operations can be effectively implemented. The pre-assembly of spill cleanup kits will expedite response and reduce the total deployment time needed, including:

Equipment and support material mobilisation time. Personnel mobilisation time, including transit and assembly. Actual equipment setup and deployment time.

- a. Determine Whether or not a spill has entered a waterway and whether or not access by land or water to control points is possible so that booms, absorbents and skimmers can be deployed. Check maps and consult with personnel familiar with the spill area.
- b. Establish priorities to optimise use of personnel and gear needed for all cleanup phases (containment, removal, storage, transfer and disposal) at selected sites.
- c. Allow additional time for adverse weather and flying.

### **MONITORING SPILLS**

Peregrine will monitor spills throughout the response to ensure safety and to direct cleanup efforts:

Explosive gas concentrations in the atmosphere using an explosion meter.

Spill movement and behaviour, in order to properly direct response efforts.

All threats to the safety of people, property and the environment.

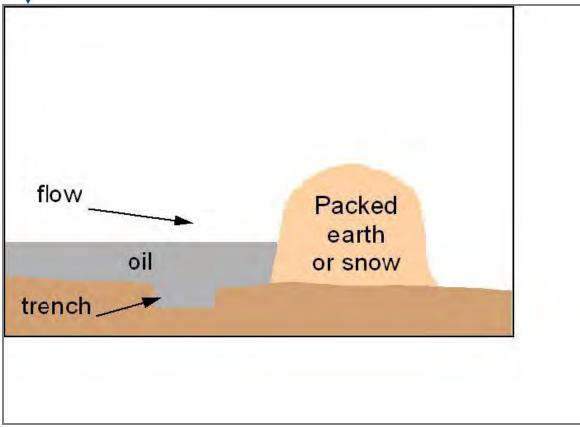
### **SPILLS ON LAND**

Spills on land should be contained as close to the source as possible, if safety allows. Peregrine will make every effort to ensure that a spill does not reach water, where its containment and recovery (after breakup) are more difficult and the potential environmental impacts are greater. Containment can be achieved using:

A berm or dyke around the spill source.

A trench or ditch downslope of the spill source.





#### Earthen Berm/Trench

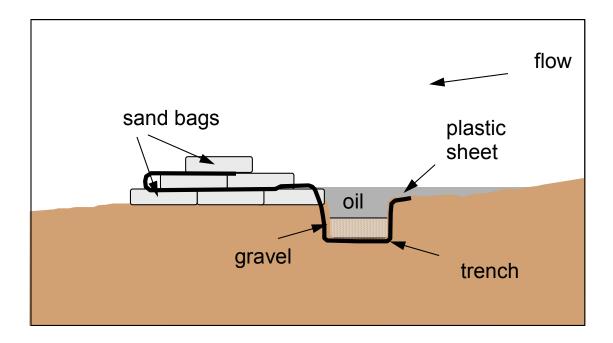
If possible, locate the berm/trench sufficiently downslope of the release point to complete its construction before the spill arrives. Dig the trench along a natural drainage contour.

It should be approximately 0.5 m deep with a relatively flat bottom. The excavated material can then be combined with other available material to build the berm.

### Sand Bag Berm/Trench

Sand bags can be used where available and if the earth is too hard or frozen and cannot be excavated or compacted. A plastic liner can be used to seal the trench and bags should be anchored with gravel or rocks and be woven between layers of bags.





### Spills on Muskeg

Muskeg is generally poorly drained, wet and spongy. Internal drainage is usually slow and the depth of peat over mineral soil varies greatly. Muskeg is also highly acidic and low in nutrients, making biodegradation very slow, even during the summer months.

It is recommended that small oil spills in muskeg be mixed with peat moss and allowed to degrade during the summer months, since more damage can be done by attempting cleanup using mechanical removal methods.

In the event of a small spill, it is important to weigh the advantages or cleanup versus the potential negative impacts on the terrain. Both personnel and equipment on wet or sensitive areas can cause considerable damage. In many cases, the best solution may be to add nutrients to the contaminated area and monitor the site to ensure that the spill does not migrate to an adjacent sensitive area. In all cases, appropriate environmental advisors and regulatory authorities should be consulted.



#### **SPILLS ON WATER**

Containing spills in water is often difficult because oil quickly spreads. In turbulent water, oil and chemicals are likely to mix into the water column, making recovery impractical. For these reasons, it is important that if the spill reaches water, that containment be attempted as close to the source as possible, and that the spill be prevented from reaching a flowing stream.

Spills in lakes should be contained, if possible, before reaching outlets where containment and recovery can be difficult and dangerous.

Efforts to contain spills in large streams should be limited to land-based operations where the oil might pool in accessible back eddies. The recovery of water-soluble chemicals is not possible.

In flowing streams, oil travels at the same speed as the surface current. On larger rivers or in open lake areas, slicks are also transported at 3.5% of the wind speed. Although a comparatively small effect, it can be an important factor if the wind is at right angles to the water flow and if the water surface is extensive. The wind can force the spill to the sides of the river where flows are slower or the shore of a lake. Long reaches of the river may become contaminated, although containment and recovery might also be possible.

In smaller streams, the wind will have less impact and the slick speed can be easily estimated. Placing a small stick in the middle of the stream and determining the length of time required to travel a given distance, typically 10 m. This information can be quickly converted to speed (36/time (sec) = km/h) to determine the estimated travel time to a confluence or other sensitive area.

## **Containment Strategies for Spills on Water**

Determining the best strategy for containment will depend on a number of factors:

Speed of oil-slick travel Location of possible containment sites Availability of personnel and equipment Location of sensitive areas Safety of operations

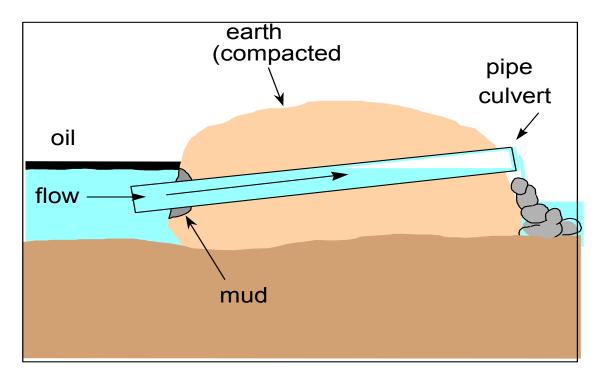
Spills on water can be contained by using floating booms (absorbent or non-absorbent) or by constructing a temporary berm or inverted weir. The objective is to build a barrier against which the (normally floating) oil will pool whilst allowing the underflow of water.



### **Inverted Weir:**

#### **Booms**

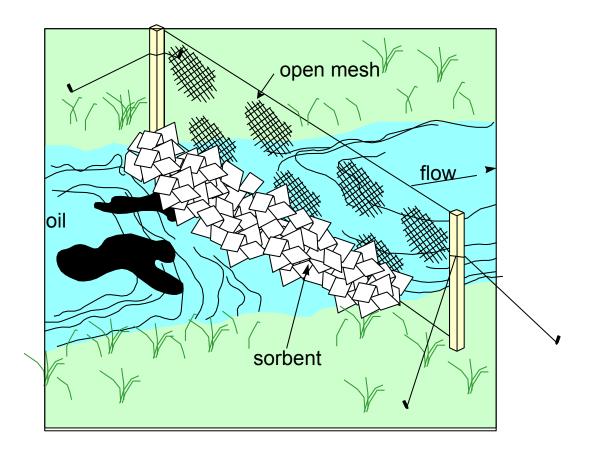
Booming with either absorbent or non-absorbent booms can also be an effective means of containing spills on slow-moving waters and in lakes. Effective containment using conventional booming techniques will be difficult in streams or rivers where currents exceed 0.7 knots (0.4m/s). At these speeds, oil will become entrained in the water flowing under the boom, resulting in significant Losses. Some improvements can be achieved in waters flowing at 1-2 knots (0.5-1 m/s) if the boom is deployed at an angle of less than 90 degrees to the direction of the flow.



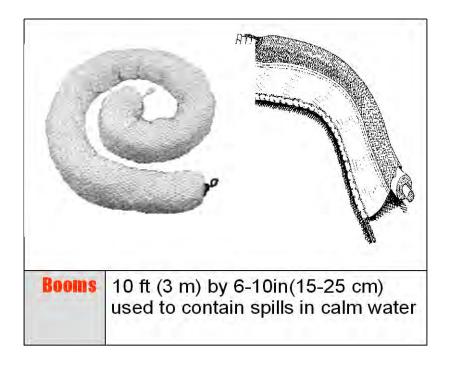
Absorbent booms or socks can also be used to provide a barrier to floating oil. These types of booms should be checked regularly to ensure that they do not become saturated with either water or oil, since they will tend to float very low in the water or even sink and release oil downstream.



# Filter Fence:







### **SPILLS ON ICE AND SNOW**

Oil can remain relatively fresh, i.e., in an unweathered state under snow and ice for several months or more after a spill.

Evaporation rates will still be high when oil is ultimately exposed to the atmosphere, except in very low temperatures. Oil can also move up and down small hills (several metres high) due to the capillary action of the snow.

### Containment

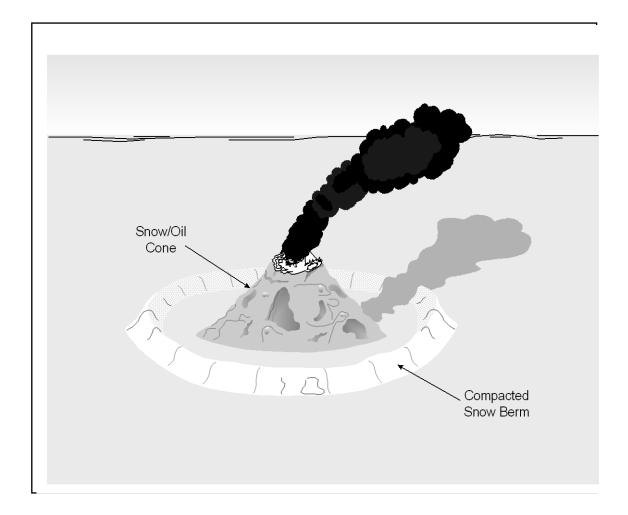
Snow and ice can be used to create berms to keep spills from spreading. In frozen rivers, angled slots about 1 m wide or holes can be cut in the ice, where safety permits, to allow possible spill recovery. The oil will rise up into the openings where it will concentrate and be available for recovery using skimmers or pumps.



# **Disposal**

Oil spills in snow and ice can sometimes be burned if the spill can be isolated from the source. Although there is generally a reduced fire hazard, due attention to safety of operations is still required. If burning is not effective, recovered contaminated material will be collected and transported to a designated disposal/treatment facility.

# **Burning Snow Cone:**





### Recovery

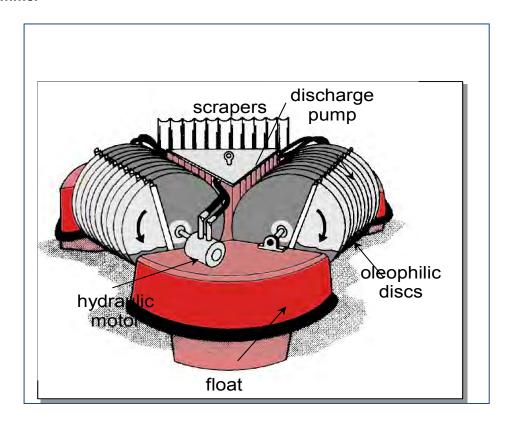
When large volumes of oil have been contained either through natural or mechanical containment, it will be necessary to remove or recover the accumulated oil. This will generally occur in excavated trenches or adjacent to berms or natural barriers and occasionally in slow running streams or quiet ponds.

Vacuum trucks are not feasible at fly-in sites, but would be suitable for sites served by a seasonal or winter road and where a large volume of oil has pooled that is generally free of water. The truck must be positioned at a safe distance so that there is no possibility of fire or explosion.

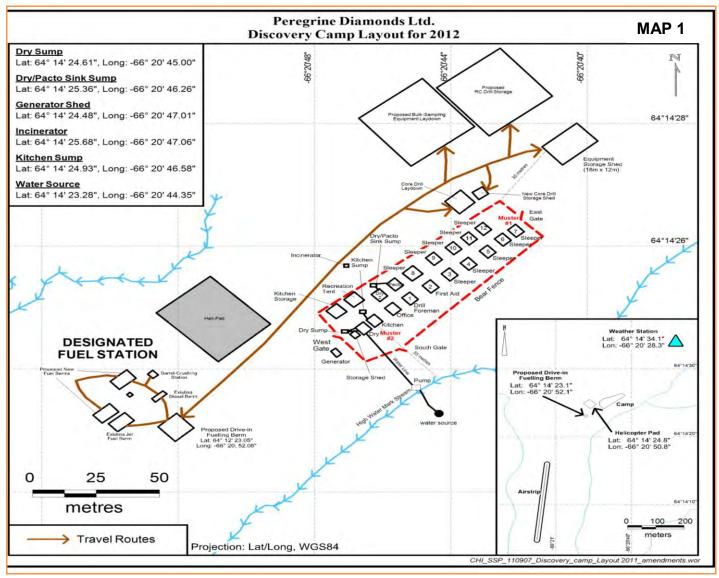
Oleophillic devices, such as disc or drum skimmers, can selectively recover oil in water, and are better suited to applications where the oil has formed a distinct layer on top of quiet water. Accumulations adjacent to an inverted weir are an example. A vacuum truck would be largely ineffective in this instance, since it would recover large amounts of water, particularly in a thin layer of oil with water flowing through the pipe or culvert.

When using disc or drum skimmers, ensure that small items of debris are periodically removed from the scrapers to ensure their efficient operation.

### **Disc Skimmer**

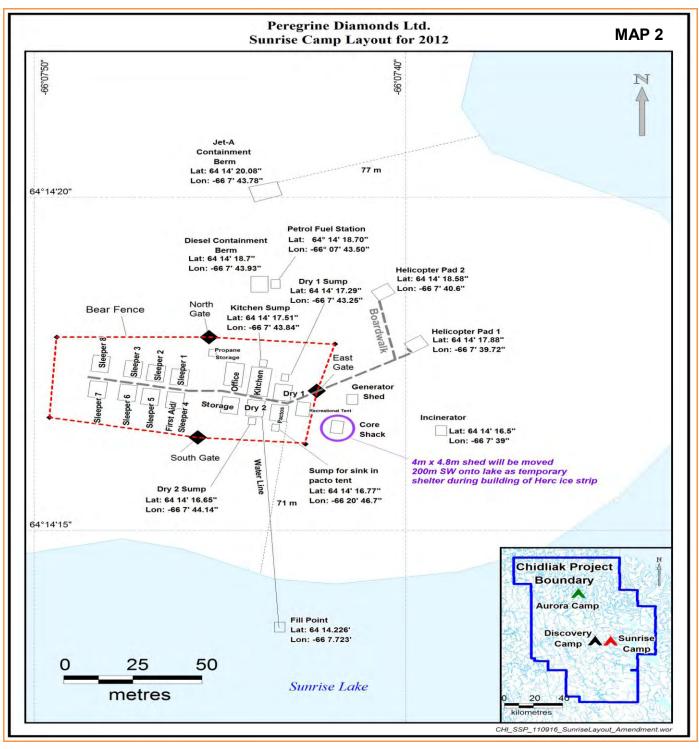






Discovery Camp as it will appear after addition of Designated Fuel Station in February 2012 and Expansion  $^9$ 

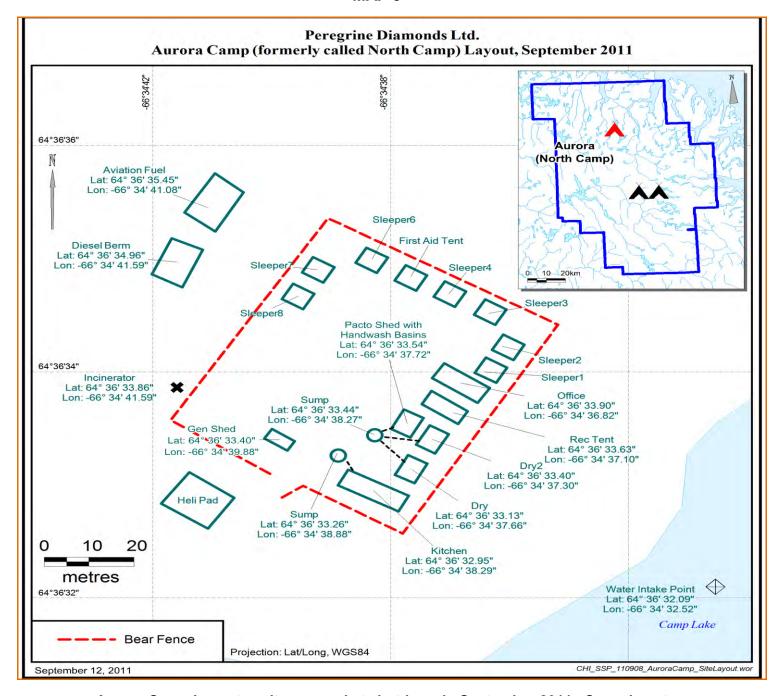




Sunrise Camp Layout for January 2012  $^{9}$ 



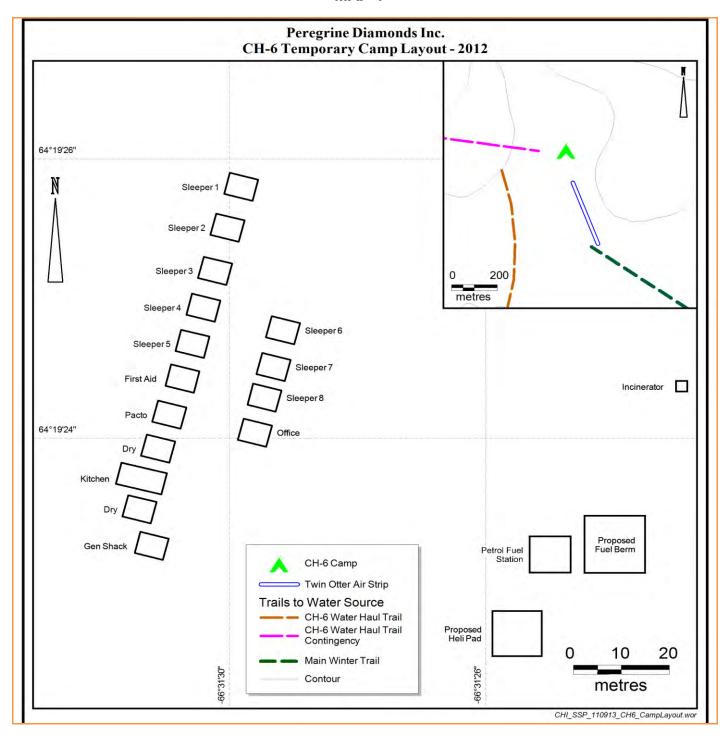
**MAP 3** 9



Aurora Camp Layout, as it appeared at shutdown in September 2011. Camp is not scheduled to operate in winter 2012



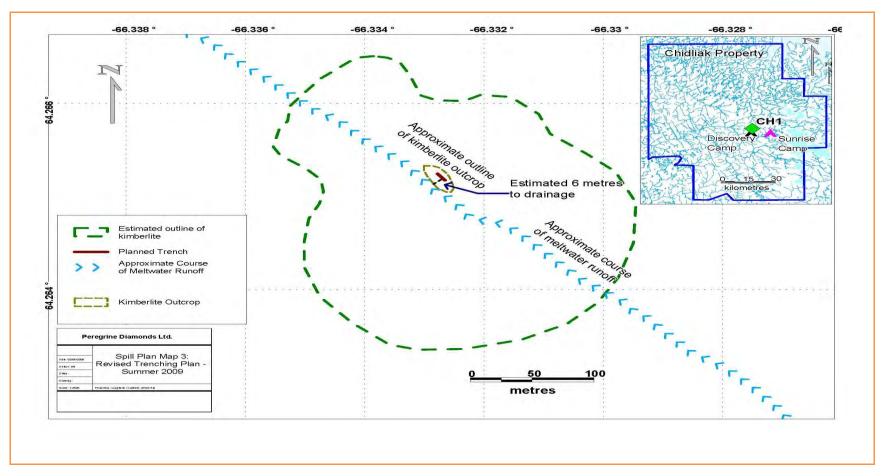
**MAP 4** 9



Proposed Layout – CH-6 Temporary Camp, February 2012

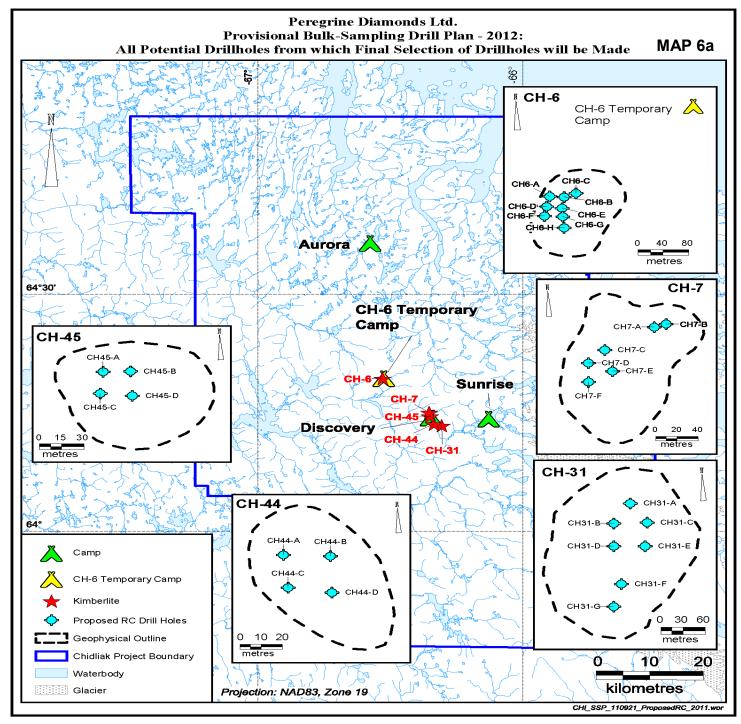


**MAP 5** 9



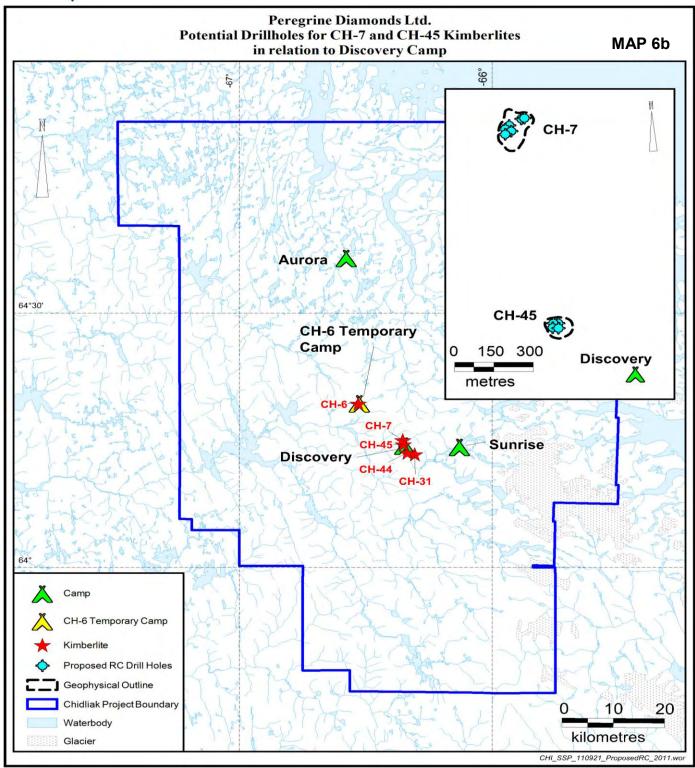
Trenching plan was approved for CH-1 kimberlite but has not yet occurred as of  $2011^6$ 





Potential drillholes in relation to outlines of geophysical anomalies and camps in the Focus Area  $^{9}$ 





Potential drillholes within outlines of CH-7 and CH-45 kimberlites in relation to the proposed base of operations, Discovery Camp.



### APPENDIX TO SPILL CONTINGENCY PLAN – CHIDLIAK AND QILAQ PROPERTIES $^4$ AND IOLs AND CUMBERLAND PROJECT $^5$

### MATERIAL SAFETY DATA SHEETS (MSDS)

(See updated MSDS CD accompanying this application as Appendix 2) $^9$ 



### **APPENDIX A**

### MATERIAL SAFETY DATA SHEETS (MSDS) INDEX (UPDATED)

# FUELS, FUEL ADDITIVES, OIL Chidliak, Qilaq, Cumberland and Nanuq Projects – 2012 Programmes (and activity on IOLs, as applicable)

MSDS-Air Tool Oil-Kleen-Flo-2010-CURRENT-Added to List-Cooper

MSDS-ATF Dexron III-Mercon-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-ATF Type F Oil-Petro-Canada-2010-CURRENT-Added to List

MSDS-Bombardier BRP XP-S Mineral 2-Stroke Injection Oil-413803000-Unregulated

MSDS-ChainOil-Light-Shell-2008-CURRENT

MSDS-Delo LE400 Synthetic SAE 5W40-2008-CURRENT-Added to List

MSDS-Diesel Fuel No 2-Conoco-2010-Added to List-Cooper

MSDS-Diesel Fuel Oil Conditioner-Kleen-Flo-2009-CURRENT

MSDS-DIESEL Fuel-PetroCan-2009-CURRENT

MSDS-Duron 10W-30 Heavy Duty EngineOil-PetroCan-2009-CURRENT

MSDS-Duron 15W-40 Heavy Duty EngineOil-PetroCan-2010-CURRENT

MSDS-Essolube HD Engine Oil 15W-40-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-Essolube HDX Plus Engine Oil 10-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-Hydraul 50-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-HYDREX MV 22 36 60-PetroCan-2009-CURRENT

MSDS-HYDREX\_MV\_Arctic\_15-PetroCan-2010-CURRENT-Updated

MSDS-HYDREX Extreme-PetroCan-2011-CURRENT-Added to List

MSDS-Jet A1-Shell-2008-CURRENT

MSDS-Jet A-A1-PetroCan-2009-CURRENT

MSDS-Jet B-PetroCan-2009-CURRENT

MSDS-Kaybob Frac Oil 300-Amoco-2010-CURRENT-Added to List-Cooper

MSDS-Kerosene-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-Kleen Start-Starting Fluid-Kleen-Flo-2010-CURRENT

MSDS-Light Distillate Winter DIESEL-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-Mobil Hydraulic Oil 15 Special-Exxon-2010-CURRENT-Added to List-Cooper

MSDS-Mobil Jet Oil 254-Esso-2008-CURRENT

MSDS-Mobil Jet Oil II-Esso-2007-CURRENT

MSDS-Petrol Unleaded-Shell-2010-CURRENT

MSDS-Petrol-Unleaded-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-Petrol-Unleaded-PetroCan-2010-CURRENT

MSDS-Polaris 2T VES Synthetic Oil-2007-CURRENT

MSDS-Polaris Prem Blue SemiSynthetic Blend Oil-2007-CURRENT

MSDS-Portable Heater Fuel-Imperial Oil-2010-CURRENT-Added to List-Cooper

# FUELS, FUEL ADDITIVES, OIL *(cont.)*Chidliak, Qilaq, Cumberland and Nanuq Projects – 2012 Programmes (and activity on IOLs, as applicable)

MSDS-Propane-Air Liquid-2011-CURRENT-Updated-Cooper

MSDS-PWC 150 Frac Fluid-Poco-2010-CURRENT-Added to List-Cooper

MSDS-Quaker State SAE 30 Motor Oil-2008-CURRENT

MSDS-Quick Start Ether Cylinders-2011-CURRENT-Added to List

MSDS-Rotella T 10W-30-CJ-4-Engine Oil-Shell-2009-CURRENT

MSDS-Rotella T 15W-40-CJ-4-Engine Oil-Shell-2009-CURRENT

MSDS-Snowmobile Motor Oil-PetroCan-2009-CURRENT

MSDS-Sour Natural Gas-Conoco-2010-CURRENT-Added to List-Cooper

MSDS-Stihl Bar and Chain Lubricant-Omni-2010-CURRENT-Added to List-Cooper

MSDS-Sweet Natural Gas-Conoco-2010-CURRENT-Added to List-Cooper

MSDS-United Farmers of AB Hydraulic Oil XL-L-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-United Farmers of AB Hydraulic Oil XL-LoTemp-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-Used Oil-Safety Kleen-2010-CURRENT-Added to List-Cooper

MSDS-XD-3 Extra Engine Oil 10W-30-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-XD-3 Extra Engine Oil 15W-40-Imperial Oil-2010-CURRENT-Added to List-Cooper

# DRILLING MUDS, GREASES, LUBRICANTS Chidliak, Qilaq, Cumberland and Nanuq Projects – 2012 Programmes (and activity on IOLs, as applicable)

MSDS-Aeroshell Fluid 41-Aircraft-2009-CURRENT

MSDS-Aeroshell Grease 7-Aircraft-2008-CURRENT

MSDS-Aeroshell Grease 22-Aircraft-2008-CURRENT

MSDS-Alcomer 120L OS-Diversity Tech-2008-most CURRENT

MSDS-Allstar Lubricant Sealer-Topco-2011-CURRENT-Added to List-Cooper

MSDS-API Modified Thread Compound-Topco-2010-CURRENT-Added to List-Cooper

MSDS-API ModifThreadCompound-PetroCan-2009-CURRENT

MSDS-Arctic Blend Boiler Compound-World Chemicals-2010-CURRENT-Added to List-Cooper

MSDS-Bayol 35 Mineral Oil-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-Bio Foam-Diversity Tech-2008-CURRENT

MSDS-Brazilian WW Gum Rosin-2008-CURRENT-Added to List

MSDS-Calcium Chloride-Pestell-2011-CURRENT-Updated

MSDS-Compro Compressor Fluid 32 68 100 150-Petro-Canada-2009-CURRENT

MSDS-CSB-Beet Juice Antifreeze-Westway-2007-most CURRENT

MSDS-DD2000-MATEX-Control Chemical-2011-CURRENT-Updated

MSDS-Distillate 822-Prairie Mud-2009-CURRENT-Added to List-Cooper

MSDS-Drill Rod Grease-PetroCan-2010-CURRENT

MSDS-Duron Synthetic Oil-Petro-Canada-2010-CURRENT-Added to List

MSDS-Enviro Grease- Drill Rod Grease-Poly-Drill-2008-CURRENT

MSDS-EP1\_EP2-Precision-General-Purpose-2010-CURRENT-Added to List

MSDS-Esso Gear Oil GX 75W-90-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-GEN 49D with Cetane Improver-Maryn-2010-CURRENT-Added to List-Cooper

MSDS-Grease OG-0-1-2-PetroCan-2010-CURRENT-Added to List-Cooper

MSDS-Howes Lubricator 70-30 and Winter Treat Plus-RB Howes-2010-CURRENT-Added to List-Cooper

MSDS-Insulating Cement R-ANH Refractories-2009-CURRENT-Added to List

MSDS-Kopr Kote Thermal Grade-Jet-Lube-2010-CURRENT-Added to List-Cooper

MSDS-LBX Special Grease-Jet-Lube-2010-CURRENT-Added to List-Cooper

MSDS-Lithium Complex Moly 3 or 5-Grease Warehouse-2007-CURRENT

MSDS-LPS 1 Premium Lubricant-2008-CURRENT

MSDS-LPS 2 Aerosol-PetrolDistillate-2009-CURRENT

MSDS-NL Collar Compound-Topco-2010-CURRENT-Added to List-Cooper

MSDS-PD1300-Poly-Drill-2008-CURRENT

MSDS-Powr Kote-Jet-Lube-2010-CURRENT-Added to List-Cooper

MSDS-Precision Synthetic-Petro-Canada-2011-CURRENT-Added to List

MSDS-Precision Synthetic Moly-Petro-Canada-2011-CURRENT-Added to List

MSDS-Precision XL 3 Moly Arctic-Petro-Canada-2009-CURRENT-Added to List

MSDS-Produro TO-4 XL Synthetic Blend Lo-Temp-PetroCan-2011-CURRENT-Added to List

MSDS-Produro TO-4 10W 30 50 60-PetroCan-2011-CURRENT-Added to List

MSDS-Pure Vis-Mineral Oil Viscosifier-Poly-Drill-2009-CURRENT

MSDS-Rando HDZ Lubricating Oil-Chevron-2008-CURRENT-Added to List

MSDS-Rockwell Foamer-Rockwell Servicing-2010-CURRENT-Added to List-Cooper

# DRILLING MUDS, GREASES, LUBRICANTS *(cont)*Chidliak, Qilaq, Cumberland and Nanuq Projects – 2012 Programmes (and activity on IOLs, as applicable)

MSDS-Rod Ease-Miswaco-2009-CURRENT-Added to List

MSDS-Traxon-80W-90-85W-140-PetroCan-2009-CURRENT

MSDS-Traxon Synthetic 75W-90-PetroCan-2009-CURRENT

MSDS-Unirex-EP2 Grease-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-United Farmers of AB Multipurpose Gear Oil 80W-90-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-United Farmers of AB THG Fluid Extra-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-Univis N22-Imperial Oil-2010-CURRENT-Added to List-Cooper

MSDS-WD40-Aerosol-2010-CURRENT-Updated

MSDS-WD40-BulkLiquid-2008-CURRENT

MSDS-White Lithium Grease-Bulk-2010-CURRENT-Added to List

MSDS-Zincote-Topco-2010-CURRENT-Added to List-Cooper

# MISCELLANEOUS CHEMICALS Chidliak, Qilaq, Cumberland and Nanuq Projects – 2012 Programmes (and activity on IOLs, as applicable)

MSDS-50-50 Premixed Diesel Extended Life Antifreeze Coolant-Recochem-2010-CURRENT-Added to List-Cooper

MSDS-262 Threadlocker Permanent Strength-Loctite-2010-CURRENT-Added to List-Cooper

MSDS-ABC Fire Extinguisher-PyroChem-2011-CURRENT-Updated

MSDS-Acetylene-Air Liquide-2011-CURRENT-Added to List

MSDS-Air Brake Antifreeze-Rechochem-2010-CURRENT-Added to List-Cooper

MSDS-Air Compressed-Air Liquide-2010-CURRENT-Added to List-Cooper

MSDS-Armashell Chrome Cleaner-Kleen-Flo-2010-CURRENT-Added to List-Cooper

MSDS-Auto Glass Cleaner-Radiator Specialty-2010-CURRENT-Added to List-Cooper

MSDS-Back Off Bear Deterrent--2010-CURRENT

MSDS-Blueshield Pro Gouging Electrode-Air Liquide-2008-most CURRENT-Added to List

MSDS-Brake & Elec. Contact Kleen-2009-CURRENT

MSDS-Brakleen Brake Parts Cleaner-Aerosol-CRC Canada-2011-CURRENT-Added to List

MSDS-Calcium Aluminate Cement-Kerneosinc-2010-CURRENT-Added to List

MSDS-Calibration Gas-Calgaz-2010-CURRENT-Added to List-Cooper

MSDS-Carbon Dioxide-Air Liquide-2010-CURRENT-Added to List-Cooper

MSDS-Carbon Steel Electrode Prostar S6-Sidergas-2010-CURRENT-Added to List-Cooper

MSDS-Chem-Sol-Chemfax-2010-CURRENT-Added to List-Cooper

MSDS-Chevrolet Orange Spray Paint-Seymour Paint-2011-CURRENT-Added to List

MSDS-Commercial Coatings 600N Spray Pain-Martin Seymour-2010-CURRENT-Added to List-Cooper

MSDS-Dow Corning 736 Heat-Resistant Sealant-2010-CURRENT

MSDS-Electro Contact Cleaner-LPS Labs-2008-CURRENT

MSDS-Engine Degreaser 75025-CRC-2010-CURRENT-Added to List-Cooper

MSDS-Envirosol-RM-Chemicals-2010-CURRENT-Added to List-Cooper

MSDS-Esso HD Antifreeze-2010-CURRENT-Added to List-Cooper

MSDS-Esso Rad-2010-CURRENT-Added to List-Cooper

MSDS-Form-a-Gasket #2 Sealant-Loctite-2010-CURRENT-Added to List-Cooper

MSDS-Form-a-Gasket R 26C RTV Red High Temp-Loctite-2010-CURRENT-Added to List-Cooper

MSDS-Glass Cleaner-14100-CRC-2010-CURRENT-Added to List-Cooper

MSDS-Gloss Red-Barnes Distribution-Seymour Paint-2007-most CURRENT-Added to List

MSDS-Gloss White-Barnes Distribution-Seymour Paint-2010-CURRENT-Added to List

MSDS-Gun Blue-Bushnell-Aug2007-CURRENT

MSDS-High Strength Threadlocker Red Automotive GradeHenkel-2008-CURRENT-Added to List

MSDS-Kleen-Flo Silicone Gasket Maker-2009-CURRENT

MSDS-Lacquer Thinner 13-554-Recochem-2007-CURRENT

MSDS-LaFarge Portland Cement--2008-CURRENT

MSDS-Lead-Acid-BATTERY-Exide-2008-CURRENT

MSDS-LePage Prestite Contact Cement-2008-Unregulated

MSDS-LePage Speed-Set Epoxy Hardener-2008-CURRENT

MSDS-Liquid Fire Starting Fluid-Radiator Specialty-2010-CURRENT-Added to List-Cooper

# MISCELLANEOUS CHEMICALS (cont) Chidliak, Qilaq, Cumberland and Nanuq Projects – 2012 Programmes (and activity on IOLs, as applicable)

MSDS-Lock De-Icer-Kleen-Flo-2009-CURRENT-Added to List

MSDS-LPS A-151 Solvent Degreaser-incl. Aerosol-2010-CURRENT

MSDS-LubeCorp Regular Diesel-Fuel Conditioner-LubeCorp-2008-CURRENT-Added to List

MSDS-Marine Enamel Gloss Alkyd Rust-Resistant White Base-Cloverdale-2010-CURRENT-Added to List-Cooper

MSDS-Marking SPRAY PAINT-RustOLeum-2008-CURRENT

MSDS-Methyl Ethyl Ketone Solvent-Scienlabs-2008-CURRENT

MSDS-Methyl Hydrate 13-390-Alcohol Solvent-Recochem-2009-CURRENT

MSDS-Motomaster Elec. Contact Cleaner-ShraderCanada-2008-CURRENT

MSDS-Nitrogen-Inert-Undated-CURRENT

MSDS-Non-Flammable Gas Mixture-Gas Liquide-2010-CURRENT-Added to List

MSDS-Original Gas Line Anti-Freeze-Kleen-Flo-2009-CURRENT-Added to List

MSDS-Oxygen-Compressed-Air Liquide-2010-CURRENT-Updated-Cooper

MSDS-Oxygen (gas liquid)-Various Uses-Air Liquide-2008-CURRENT

MSDS-Oxygen Medical-Airgas Company-2007-CURRENT

MSDS-Petro-Canada-Antifreeze-2010-CURRENT-Added to List

MSDS-Premium RV Plumbing Antifreeze-50-2010-CURRENT-Added to List-Cooper

MSDS-Preserves Protectant-Mothers-2010-Added to List-Cooper

MSDS-PRIST Aviation Glass Cleaner Aerosol-2010-CURRENT

MSDS-Propylene Glycol USP/EP-Univar-2009-CURRENT

MSDS-Propylene Glycol Antifreeze-Boss Lubricants-2009-CURRENT

MSDS-Rad Seal Radiator Stop Leak-Kleen-Flo-2009-CURRENT-Added to List

MSDS-Rough Neck-Chemfax-2010-Added to List-Cooper

MSDS-RTV Red Silicon Sensor-Safe Hi-Temp GasketMaker-LocTite-2008-most CURRENT-Added to List

MSDS-Siloo Glass Cleaner-CRC-2010-CURRENT-Added to List-Cooper

MSDS-Snowmobile Antifreeze 50-50 PreMix PG-Polaris-2007-CURRENT

MSDS-Superflex Clear RTV Silicone Adhesive Sealant-Loctite-2010-CURRENT-Added to List-Cooper

MSDS-Supreme Fuel Injector Gas Line Anti-Freeze-Kleen-Flo-2009-CURRENT-Added to List

MSDS-T300 Tar Remover-Ostrem-2010-CURRENT-Added to List-Cooper

MSDS-Tal-Strip II Aerosol-Bondo-2010-CURRENT-Added to List-Cooper

MSDS-Tal-Strip II Aircraft Coating Remover-Plastic Gallons-Bondo-2010-CURRENT-Added to List-Cooper

MSDS-Windshield Washer and Antifreeze-35-Recochem-2010-CURRENT-Added to List-Cooper

MSDS-Windshield Washer -35° C-Recochem-2009-CURRENT-Added to List

MSDS-Winter Universal Gas Line Antifreeze-PetroCan-2010-CURRENT

MSDS-Wurth Brake Cleaner 4L-2009-CURRENT

MSDS INDEX-Peregrine-Sept2011-Updated Revised: 14 September 2011



### **APPENDIX B**

CHIDLIAK PROGRAMME
SPILL RESPONSE PRACTICE DRILL (TEST OF EMERGENCY-RESPONSE PLAN)
31 AUGUST 2011



### CHIDLIAK PROGRAMME

### SPILL Response Practice Drill (Test of Emergency-Response Plan), 31 August 2011

nput#	Time:	Message Form:	Message To:	Sent By:	Text of Message:	Expected Action / Key Performance:
1	19:52	Visual	N/A	Visual	Jet A spill discovered near the helicopter pad. Drum of Jet A fallen from long line and split open spilling contents.	Attempt to stop remaining fuel in drum from spilling if safe to do so. Estimate the volume and extent of the spill. Immediately report incider to the ERT and all available staff within 5 minutes.
2	19:52	Operations Manager	Emergency Response Team	Radio	"Code 1, Code 1, Code 1,This is Ron at the heli pad. There is large Jet A spill near the southwest gate. Spill response team come to the heli pad and bring the large spill kit. All available personnel to the site and bring shovels and containers.	Spill response team goes to the incinerator to retrieve the large spill kit Project Manager arrives at heli pad to investigate source and cause of the spill. Operations Manager initiates the spill clean up.
3	19:54	Operations Manager	Emergency Response Team	Verbal	A drum of Jet A was dropped from the helicopter long line. Most of the fuel has spilled out. Get the oil absorbent booms and put them around spill.	Primary response is to contain and isolate the spill for treatment either by aeration or removal.
4	19:55	Operations Manager	Emergency Response Team and all available staff	Verbal	Direction given for clean up activities. Laying out oil absorbent booms, using small containers to scoop pooled Jet A into spill kit drum, laying out of oil absorbent pads and shovelling contaminated soil into spill kit and other containers, including plastic bags provided in spill kit.	Responders follow Operations Manager's directions (contain spill with oil absorbent booms, scoop excess fuel into spill kit drum, lay out absorbent pads and shovel soil into drum)
5	20:10	Operations Manager	N/A	N/A	Operations Manager continues to give direction to spill response team and all available personnel until site cleaned.	Continued cleaning. Site cleaned.
6	Same Day	Project Manager	Spill Line	Phone	Simulated verbal report to the Spill Line.	Simulated report to Spill Line. Once the spill is controlled and clean up actions are taken.
7	Same Day	Project Manager	IMT Leader	N/A	Simulated verbal report to the IMTLeader.	Simulated call to IMT Leader to notify of spill and planned action.



#### **Exercise Time Line:**

- 19:52 Operations Manager calls in CODE 1 emergency to spill response team
- 19:54 Spill response team arrives with spill kit and equipment to stop, contain and remove contamination.
- 19:55 Operations Manager directs spill response team (Joe Kilabuk and Allan Munick) and all staff in containment and recovery methods
- 20:10 Spill and contaminated soil placed in drums.



19:54 Response Team member, Joe Kilabuk, arrives with spill kit.





Hazardous material boom placed around the spill. Contaminated soil shovelled into spill kit.

#### 20:10 Spill clean up completed.

Operations Manager determined that spill was approximately 200 litres, therefore there was a requirement to report to the 24 Hour Spills Report Line. Simulated call made to spill line.



Same	Project Manager made a simulated telephone call to Brooke Clements, our IMT Leader to notify of the Action Plan and resolve.
Day	
Same	The ERT and staff present for the exercise held a short critique to discuss the exercise. A review of the Spill Kit was conducted
Day	to ensure that all understood the contents and applications. Key performance timelines for reporting of the spill to the
	Operations Manager, calling of a "Code 1, containment of the camp spill, initiation of the clean up and reporting of the spill to the IMT
	Leader were met.



### **APPENDIX C**

# "NOTICE OF MODIFICATION" LETTER TO NUNAVUT WATER BOARD REGARDING SINGLE EVENT OF BLASTING WHICH OCCURRED IN JULY 2010

In compliance with Water Licence #2BE-CHI0813 Amendment #3,
Part H, Item 2(a), Peregrine commits to providing 30 days' notice to
the Nunavut Water Board, should explosives use be contemplated in
2011 or 2012 9. The appropriate mitigations for the specific explosives intended
and for their specific use would then be supplied by Peregrine
as advised by the explosives specialist supplying the product(s).



201-1250 HOMER STREET, VANCOUVER, BRITISH COLUMBIA, CANADA V6B 1C6 TELEPHONE: (604) 408-8880 FAX: (604) 408-8881 www.peregrinediamonds.com

#### APPENDIX 7b

### EMERGENCY RESPONSE PLAN – CHIDLIAK PROJECT, QILAQ PROJECT AND PROJECT ON IOLs, AND CUMBERLAND PROJECT

A <u>spill</u> is classified as the discharge of petroleum products or other dangerous substances into the environment. Potential hazards created by the spill for humans, vegetation, water resources, fish and wildlife vary in severity, depending on several factors, including nature of the material, quantity spilled, location and season. Refer to the detailed *Spill Contingency Plan – Chidliak Project and Adjoining Qilaq Property,) and Cumberland Prospecting Permits* for specific response information. The general emergency response to be followed in the event of a spill in the project areas, South Baffin Island, NU, is:

- Protect people prevent personnel from approaching the site and keep them at a distance sufficiently removed that they will not be injured by, or cause, a fire or explosion
- Identify the product and its source check container design, warning labels, markings, Material Safety Data Sheets, etc., to enable prompt and appropriate response.
- Stop the flow at the source reduce or terminate the flow of product without endangering anyone
- Assess the seriousness of the spill assess potential dangers of the spill to human health and safety, the aquatic environment, wildlife, ground water, vegetation and other land resources
- Report the spill complete a NU Spill Report Form and contact the NU 24-hour Spill Report Line. Provide information on the form and to the Environment Canada officer by phone/FAX/e-mail, including location of spill, (company) name of polluter, type and amount of material spilled, date and time of the spill, any perceived threat to human health or the environment, and remedial actions taken and planned.
- Clean up the spill follow procedures appropriate for the location, environment, material and time of year.
- Evaluate and learn after the emergency has passed, evaluate the incident and the clean up with the goal of continuous improvement in prevention and response; train or re-train personnel and ensure a practice incident-and-response drill is held at least once per field season.

### 24-Hour Spill Report Line: (867) 920-8130 or fax (867) 873-6924

Environment Canada Enforcement: 24-Hour Emergency Line: (867) 920-8130 Indian and Northern Affairs (INAC) Manager, Field Operations (Iqaluit): (867) 975-4295 (ph), -6445 (FAX) (manager ensures proper interface with land and water inspectors)

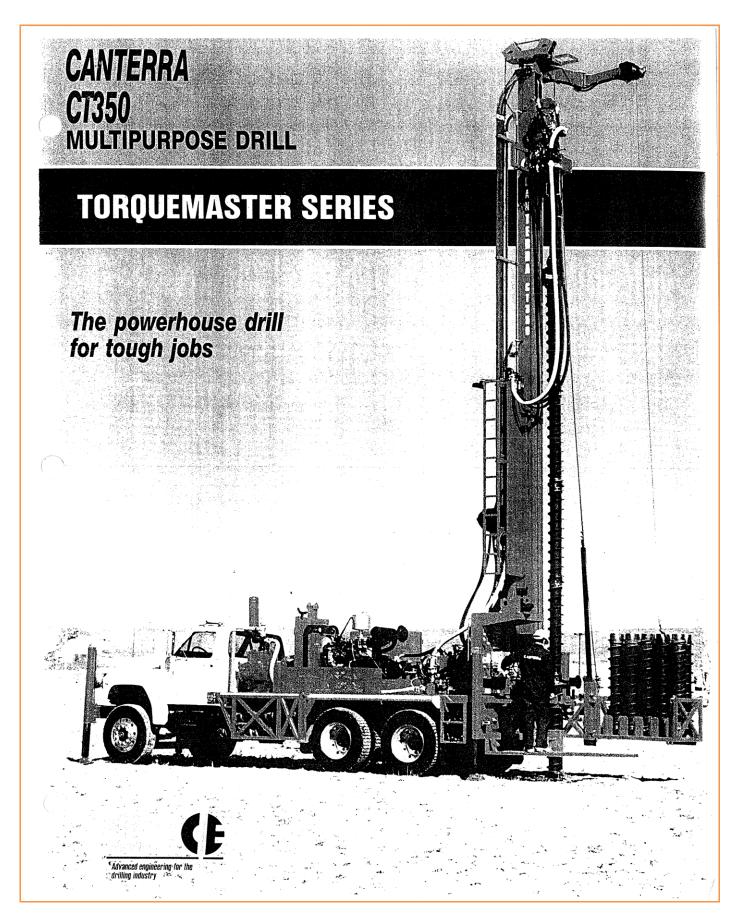
### **APPENDIX 8**

# Additional Equipment Proposed for Use in 2012 Bulk-Sampling Programme Chidliak Project, NU



### **TABLE OF CONTENTS**

CANTERRA T350 RC DRILL	1-6
CHALLENGER 875C TRACTOR; BLADE ATTACHMENT	1-6
MOROOKA MST3000VD	1-2
AMCO VEBA CRANE ATTACHMENT FOR MOROOKA	1-2
SNO-CAT BR 350	1
938H CAT LOADER	1
930H CAT LOADER	1
ENVIRO-TANK, WATER TANK, SLEIGH	1



Canterra CT350 Rotary Reverse-Circulation Rig is being provided to Chidliak bulksampling programme by Cooper Drilling (a northern-experienced LDD contractor)



August 2011

Below, is a list of the projected equipment package Cooper Drilling will supply:

### 1) Equipment Specifications:

Rig:

Year Remanufactured 2011

Make and Model Cooper 14 Remanufactured CT 350. Original Manufacturer by Foremost

Carrier Rubber-track mounted as well as skid mounted

Weight 12,700 KG (28,000 lbs)
Engine Perkins @ 250 Horsepower

Mast Certified Construction of 50,000 lbs with 24' stroke Top Drive Variable speed 0 to 120 RPM Torque at 9,000 ft/lbs

Break Out Hydraulic make out breakup tongs.

Pipe Handling Pipe handler automated for a hands-free pipe handling procedure.

Pullback Rated at 20,411 KG. (45,000 lbs)
Water Injection 200 liters per minute maximum.

Other 4 Levelling jacks

SCU Listed are the key components:
(Solids Control Unit)

• 14 cubic meter fluid tank.

• Mi SWACO model BE650 shaker, with water jetting capability.

• Waterproof electrical system.

3 X 4 Mission Magnum pump for desilters and fluid mixing.

• Bank of 12.7cm (5") desilters to remove plus 20 micron particles.

• Rubber lined at sample impact.

Electrical Power 140 Kilowatt generator capable of 480, 230 and 115 power with a

distribution panel with various connections available.

Tooling:

Drill Pipe, Collars and

50 pieces 7 inch OD-by 5.91 ID drill pipe in 6.1 meter lengths.

Adapters

18,000 lbs of drill collars.

Downhole Hammer and

30cm (12") Helco hammer to clean out the casing during advancement.

Bits

Bits as needed to drill the kimberlite.

Winterising

The rig is completely enclosed and protected from the elements. The

enclosure has combination of electrical, steam, and diesel heaters.

Environmental The rig has a built-in containment pan underlying all major components.

All auxiliary equipment will have containment systems.

2) Auxiliary Equipment:

Air Compressors 3 Ingersoll Rand VHP400WIR 400 CFM - 250 psi

Steam Boiler 60 horsepower

#### CT350 MONITORING DRILL **SPECIFICATIONS**

Mounting

- Ford F700 4x4 all wheel drive, 5 speed manual transmission, 2 speed transfer case.

Tires 10:00 x 20 grip type. ... terrain carrier optional)

Weight

typically less than 28,000 lb with rods, augers, tools and accessories

Width maximum deck width 8 1/2 feet Height 11 feet 9 inches (mast down)

Power Take Off

2 speed transfer case has pressure oil lubricated PTO driving the hydraulic pumps

Rotary

2 inch hollow spindle head with 3 speed direct drive hydraulic motor

low range 10,000 ft-lb torque/0-50 rpm medium range 6,600 ft-lb torque/0-75 rpm high range 3,300 ft-lb torque/0-150 rpm

Swivel

top mounted 2 inch King swivel (2 1/2 inch optional)

Mast

feed cylinder mounted inside rectangular tube mast actuates hoist chain through 2 to 1 pulley system

stroke 24 feet, 50000 pounds load rating

mast crown has guides to allow "stacking' of rods by winches

Pulldown Pullback

20,000 pounds capability 24,000 pounds

Drawworks Winch

pulls directly over hole with tophead swung aside. Hydraulic failsafe brake. 8,000 pounds pull @ 240 fpm. Equipped with 80 feet of 9/16 NR wire rope

Casing Handling

tophead swings aside to use drawworks

Pipe Rack

handles up to 24 foot lengths of 14 inch casing holds up to 200 feet of 3 1/2 inch x 15 foot rods. Pipe slide built in

Jacks

two 36 inch stroke jacks mounted on front of truck

Powered Swing Out

two 36 inch stroke jacks mounted on rear of drill frame top drive unlatches and swings open hydraulically to sample or handle casing

Night Lights Tool Box

12 V lighting illuminates panel, breakout table, mast and deck locking with flush mounted locks. 39" wide x 18" deep x 46" high

Miscellaneous Storage Breakout Wrench

place for safety hammer, auger bolts and pins, split spoon sampler, and drilling tools

48 inch pipe wrench powered by hydraulic cylinder

ons Pan

N.

mud pan swings up behind drill for travel. Center section dumps cuttings using winch. Mud riser, trough, mud mixer, frost cutter, desander and all hoses included.

hydraulically driven wheels spin tool joints together or apart. Turns the rod above breakout

Rod Spinner

Cathead

hydraulically powered variable speed. Rated up to 4,000 pound pull

Vertical Auger Racks

one rack on each side of truck stores augers vertically in front of rear tire. They swing out behind operator for access from operator's platform while drilling

each rack holds 20 lengths of 6 1/4 ID hollow stem or 28 lengths of 4 1/4 ID hollow stem auger

Mud Pump

Gardner Denver 4 1/2 x 5 duplex piston hydraulically driven by separate hydraulic pump

rated up to 120 USGPM/200 psi

Water Tank

100 US gallon

All Terrain Vehicle Mounting

Tandem Truck Mounting

Air Compressors

4 wheel drive carrier with large tractor tires for operating off road.

Can be mounted on 4x6 or 6x6 tandem truck. Recommended with 550 cfm/220 psi drilling air, Piston or screw air compressors for well development or for drilling are available mounted on drill or as an auxiliary package. Standard PTO driven drilling air is 550 cfm/220 psi.

Jib Winch Used for hoisting augers from swing out racks, picking up heavy tools from right hand side of drill or with optional rod loader Rod Loader Jib winch is used to put rods into this single rod loader while drilling is proceeding

Mud Pumps Grout Pump Hydraulically driven 5x6 GD piston pump or 2x3 or 3x4 Magnum centrifugal pumps available

Hydraulically driven progressive cavity types of various sizes available. Air driven diaphragm pumps available for mud drilling or grouting.

Angle Drilling Water Injection System Provisions for drilling with mast at angles up to 45° are available

Sandline Winch

Hydraulically driven variable speed piston pump rated at 10 gpm @ 500 psi for air drilling 3250 lb pull at 300 fpm on bare drum. Hydraulic failsafe brake

Equipped with 250 feet of 3/8 NR wire rope

Spudder/Automatic Impact Hammer

ary winches

for driving split spoons, casing or screens. Used in conjunction with sandline winch Hydraulically powered winches available are rated 4000 lb,65000 lb, 8500 lb and 12,000 lb.

CANTERRA EQUIPMENT INC.

3610 - 29th Street N.E., Calgary, Alberta, Canada, T1Y 5Z7 TELEPHONE (403) 291-0650 FAX (403) 250-8411 TELEX 03-821214 TOLL FREE from the USA 1-800-661-9190

## WHY IS CANTERRA TAKING THE ROTARY DRILLING

### OUR SPECIFICATIONS SHOW WHY

With the strongest hydraulic top drive in the industry, the CT350 is designed to handle the deep, big diameter, tough jobs. If this Powerhouse can't auger the formation it probably can't be augered. On the CT350, you can change over to rotary drilling with mud, air or downhole hammer to handle a wide variety of formations and drilling applications. The long stroke mast makes it easy to use a simultaneous casing system or add a casing hammer to drill tough overburden that can't be augered.

#### APPLICATIONS

- · Monitoring, recovery or water wells
- · Auger capacity up to 18 inch diameter
- · Handles casing up to 18 inch diameter in lengths up to 35 feet
- Rotary\* up to 24 inch hole diameter, 8" holes to 1000 feet, 6" downhole hammer to 1000 feet
- Hollow stem augers\* 41/4 ID to 300 feet, 61/4 ID to 200 feet, 83/4 ID to 160 feet, and 101/4 ID to 120 feet and 121/4 ID to 90 feet
- Coring\* NW to 1,500 feet
- Depth capacity may be more or less than these guidelines depending on the formation and circulation. Please discuss your requirements with an experienced Canterra representative.

#### STANDARD FEATURES

- 165 HP diesel engine
- · Optional 250 HP diesel engine
- · Water well rotary, 5000 ft-lb torque/0-115 RPM
- Upgraded rotary option with 3¾" hollow spindle and top mounted swivel Variable displacement motor with built in automatic torque control. Torque options of 12,500, 15,500 or 20,000 ft-lb. Speed continuously variable from 0-140 RPM without shifting. Gimbal universal to sample through the spindle.
- Coring shifter option for upgraded rotary, 0-550 RPM
- 28,000 pounds pullback, 0-100 fpm
- 22,500 pounds pulldown, 0-130 fpm

- · 24 foot long stroke, cylinder and cable feed
- Triple stage engine air filtration
- · Load sensing main hydraulic pump
- Single lever proportional control for rotary speed and direction
- · Single lever proportional control for feed rate and direction
- · All functions are hydraulic operated, variable speed
- · High capacity hydraulic oil cooler controlled by thermostat
- · Top drive slides off hole hydraulically to trip rods, set casing or sample
- · 12,000 pound hydraulic winch with failsafe brake
- · Breakout table/rod guide and hydraulic breakout wrench

#### OPTIONAL FEATURES

- ☐ 2,000 pound sandline winch with 250 foot capacity
- ☐ Auto sample spudder with 30 inch freefall for wireline sampling
- ☐ Two inch circulation plumbing with mud gauge and control valves
- ☐ 10 gpm/500 psi water/foam injection pump
- □ 3 x 4 Centrifugal mud pump, 300 gpm/140 psi
- ☐ 5 x 6 Piston mud pump, 180 gpm/310 psi
- ☐ 5½ x 8 Piston mud pump, 260 gpm/340 psi
- ☐ Mud pan with desander and mud mixer
- ☐ Grout pumps Progressive cavity type
- ☐ Developing air compressors to 250 cfm
- ☐ Jib Winch for handling augers, rod, tools

- ☐ Single rod loader for adding rods to top drive
- ☐ Rod spinner for fast rod tripping
- ☐ Powered breakout table
- ☐ 2,000 pound cathead hydraulic powered
- ☐ Wagtail, slide base
- □ Auger guides
- ☐ Night lights
- ☐ 120 VAC inverter to power electric impact wrench for auger bolts
- ☐ Lubricator for downhole hammers
- ☐ Dust curtain for air drilling
- ☐ Auxiliary air compressors

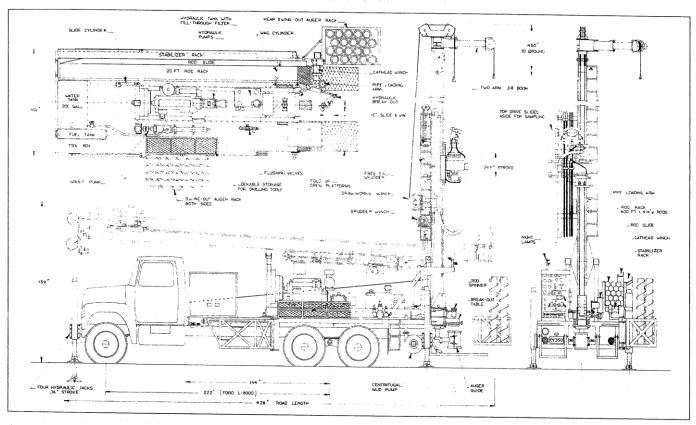
### TRUCK MOUNTING OPTIONS (may also be mounted on ATV)

- ☐ 16 foot non-skid surfaced, steel deck for mounting on 120 or 126 CA tandems
- □ 20 foot non-skid surfaced, steel deck for mounting on 144 or 156 CA tandems
- ☐ Driller's and helper's platforms
- ☐ Four fully enclosed jacks with 36" stroke
- ☐ Large swivelling jack pads
- ☐ 15 foot or 20 foot rod rack with rod slide

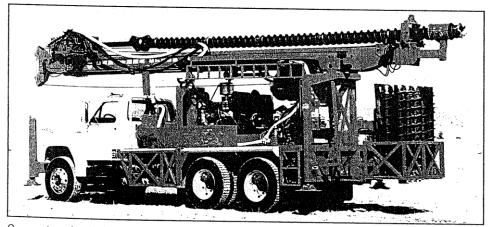
- ☐ Rack for inhole hammer or stabilizer
- □ Locking tool boxes
- ☐ Locking mesh box for drilling tools
- ☐ 200-500 gallon water tank with storage rack on top
- ☐ Side mounted swing out auger racks
- ☐ Rear mounted auger rack

Canterra reserves the right to change specifications and configurations without notice.

# INDUSTRY BY STORM?



CT350 Typical Layout — Layouts may vary depending on truck, mud pumps and other options selected. A short deck is available on a 120 CA truck.



Our mast carries 25 feet augers.

### MODILITY AND ROAD SAFTIY

### STEEL CONTAINED

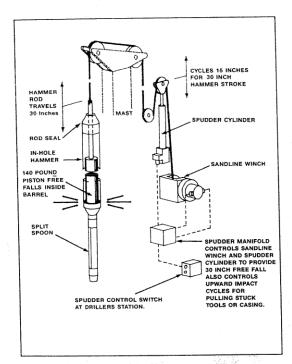
Secure storage for the augers, rods and drilling tools is designed into the CT350 deck plan so the crew can go out with confidence that they have everything they need.

Dry storage is provided with a large locking tool box. Heavy drilling tools are stored in a locking mesh box so they can be washed off.

Canterra drills are built from high strength steel tubing for superior strength and durability while meeting the tough new road weight restrictions. Dodging scales is time consuming and fines are getting expensive. Enjoy good road speed, better off-road mobility and peace of mind with a Canterra CT350.

### THE BENEFITS OF REAL PERFORMANCE!

Performance you can take to the bank! Features unavailable on competitive monitoring drills put Canterra's rigs in a class by themselves.



Canterra drills sample without rods

#### TOP DRIVE SLIDES OFF HOLE

The top drive shifts aside hydraulically to use the winches for sampling, setting casing or handling rods. There is no need to slide the rig off-hole so the top drive can be used by itself or in conjunction with the winch to pull augers or push casing.

With the top drive shifted off hole there are no cylinders or hoses across the mast that can interfere with winch lines, rods or casing and get damaged.



### AUTO SAMPLE SYSTEM — NO SAMPLING RODS

Split spoon SAMPLING WITHOUT RODS! A quantum leap in productivity can be achieved by using Canterra's Auto Sample Spudder, sealed in-hole hammer and wireline auger pilot bit.

#### MULTIPURPOSE

It's not just an auger rig — the CT350 can drill with augers, mud, air, coring, reverse circulation or casing hammer to handle the wide range of jobs encountered in monitoring. The CT350 has the BIG DRILL performance to handle large diameter recovery wells by auger or rotary drilling. Auxiliary air packages up to 750 cfm are available for air rotary or downhole hammer drilling.

### LONG FEED STROKE HAS MANY ADVANTAGES

- Rapid feed and long stroke makes "spudding" with augers very effective. Raising the rotary lifts soil from the hole which reduces friction and lets the CT350 auger faster and deeper.
- Efficient rotary drilling with 15 or 20 foot drill rods. Only four 5 foot rods required to match sampling intervals.
- Faster to retract augers. The rotary can pull 20 feet of augers at a time with rotation reversed if necessary to get out of a difficult formation. The augers can then be removed in 5 foot sections (lowering the rotary after each section is removed) which reduces the number of connections to the rotary when tripping out.
- Easier to handle center rod. When drilling with center rods and augers, the long stroke lets the auger and rod be added separately.
- Less reconnect problems. If the drill rods will not drop to the bottom after the hole
  is disturbed by sampling, the rotary can be raised and swung back over the hole
  to reconnect and resume drilling.

#### VARIABLE SPEED TOP DRIVE

The CT350 rotary speed is continuously variable up to 140 rpm, so the driller can rotate at optimum speed without stopping to shift gears. The high rotary speed gets auger cuttings quickly out of the hole for faster drilling.

The rotary is instantly reversible and has full torque in reverse to back out of a difficult situation before getting stuck.

#### HIGH TORQUE DELIVERY

The CT350 top drive motor has high torque efficiency, especially at stall so it can outperform drills with similar torque ratings.

With up to 20,000 ft-lb of torque, the CT350 can handle hollow stem augers up to 18 inch diameter.



Challenger 875C tracked vehicle will be deployed to haul fuel in sleigh-mounted enviro tanks, drummed fuel, water tanks in a sleigh, the RC drill from hole to hole, and assisting the Sno-Cat in heavy-drift snow-clearing.



### The World Leader In Track Technology

For more than 100 years, Caterpillar® has been the handsdown, undisputed leader in track technology. It was in 1904 that Benjamin Holt, one of Caterpillar's founding fathers, first demonstrated his concept for a machine that moved on self-laying tracks. Eighty-three years later, Cat introduced the world's first rubber-tracked farm tractor, designed to stretch the limits of productivity and performance. Today, at 118.1 inches (3,000 mm), the MT800C Series Mobil-trac' system wheebase is first again, as the longest in its power class. Thanks to the long wheebase and six-axle design, tractor weight is distributed over a greater area for lower ground pressure and more tractive efficiency in typical soils.

### The Challenger Difference

The Mobil-trac's longer wheel base remains in constant contact with the ground for better traction, more pulling ability, greater efficiency and a smoother ride, which means you get more work done in a day.

### The Softest Ride In the Industry

Whether you're on the road or in the field, the most appreciated features of the MT800C Series Mobil-trac system are the exceptional traction and comfort.

Fatigue and distraction are only a couple of the effects of long days and rough fields. The Challenger Mobil-trac system helps combat both. Thanks to our exclusive Opti-Ride™ suspension, which molds the track to every ridge, bump and rut the tractor encounters, the operator experiences a softer ride.

### A Wide Choice Of Belt Options

Belts are available in four widths and two types, while idler, midwheels and driver are available in two different widths to improve belt life and belt-to-driver performance.

#### General Ag Belt

Available in three widths — 27.5 in (698.5 mm), 30- in. (762-mm) and 36-in. (914-mm) — the general ag belt is equipped with 4.5-in. (115-mm) guide blocks and 2.7-in. (68.5-mm) tall treadbars for dependable traction in a variety of agricultural conditions.

### Extreme Application Belt

This tough belt is a good choice for applications that involve a large amount of road travel, steep side slopes or abrasive underfoot conditions. The Extreme Application belt is equipped with longer, 5.3-in. (135-mm) guide blocks, taller, 3-in. (76-mm) treadbars, an additional layer of steel cables and an extra layer of rubber, the belts are available in 18-in. (457-mm), 30-in. (762-mm) or 36-in. (914-mm) widths.

	180	27.50	30"	360	
General Ag Belt		X	×	X	
Extreme Application Belt	X		X	X	

### Balance The Load With Ballast

Proper ballasting is essential for peak performance, whether you're running on tracks or tires. Challenger offers everything you need to balance the load for maximum traction and fuel efficiency. Track tractor options include a full rack of suitcase weights on the front, wheel weights for the idler wheels and a bank of undercarriage weights.







### Challenger MT800C/MT900C

### **Hitch Options**

### to Match Every Need

When you hitch up to an MT800C or MT900C Series tractor, you can rest assured that the balance and load-carrying requirements of the drawbar and three-point hitch options were carefully examined and integrated into the unit from the very beginning of the design process.

### Standard Drawbar Hitch

Thicker and wider than the average hitch, the standard drawbar on the MT800C Series can swing 32 degrees from the tractor centerline when unpinned. Rubber bumpers and wear plates are standard to cushion shock loads and ensure long life. The drawbar on the MT900C Series extends nearly to the center of the wheebase for more efficient transfer of usable drawbar horsepower.



### Steerable Three-Point Hitch (MT800C Series)

Exclusive to Challenger track tractors, the steerable three-point hitch offers numerous customer benefits. In float mode, it can help dampen the side-to-side movement, while in manual mode, it can be locked into one fixed position. Benefits include improved steering when turning under load and improved performance when following field contours with three-point mounted implements.

### Conventional Three-Point Hitch (MT900C Series)

The MT900C Series offers the option of a Category 3/4N or Category 4 three-point hitch with a lift capacity of 19,500 pounds (8,845 kg) to handle even the largest mounted implements. With draft and slip sensors, the three-point hitch automatically adjusts to changing field conditions to keep you running even in the toughest situations.

### Controlled-Swinging Drawbar (MT800C Series)

The optional controlled drawbar puts the operator – rather than gravity – in control of hitch position. Use the manual mode to find the ideal position on sidehills, or trim the draft of offset implements. A "float" position allows the operator to select the appropriate percentage of damping force for the draft load.

### Optional PTO

A 1,000-pm PTO is optional on all MT800C and MT900C Series tractors. In addition to a 20-spline, 1-3/4" shaft, it features electronic control through a wet multi-disc clutch and hydraulic actuation, for smooth modulation and system protection.



### **The Topcon System 150**

## Offers Serious Navigation















The Topcon System 150, an industry leader in performance, is a complete automatic steering system, featuring flexible accuracy options.

### Satellite-Assisted Guidance – The Strongest Partnership in the Industry

AGCO and Topcon Positioning Systems have teamed up to usher in a new era of precision agriculture. This partnership was formed with a commitment to provide the most sophisticated and accurate satellite-guided positioning systems in the category.

### **Multiple Viewing Options**

Virtual road and high-visibility LED lightbar provide state-ofthe-art guidance.

#### Visual Indicators

Easily identify area applied, speed, row number and satellites.

### **Automatic Coverage Mapping**

Features easy-to- read maps for tracking areas covered or missed, and boundary mapping for planning application and coverage.

# Convenient USB Port Quick and simple for transferring field data and reports.



### A Complete Steering Solution

The AGI-3 Positioning System is a complete steering solution that can be upgraded to Omnistar or RTK performance with 900 mHz, Digital UHF or GSM options. The AGI-3 is also compatible with Topcon base stations, GSM and CORS networks.

Topcon's unique Paradigm G3 Triple Constellation Technology is capable of receiving GPS, Glorass and Galileo (when available) and features state-of-the-art inertial sensors and steering control with superior line acquisition and holding capabilities.

### Direct Interface Steering

- . Automated calibration of steering system.
- + Designed for a wide range of "guidance-ready" equipment

### RTK Centimeter Snap-In Module

Easily upgrade from sub-meter/decimeter to centimeter accuracy by installing a Snap-In Module. The module also allows the use of Internet-based correction signals, such as CORS networks.

### The Challenger Difference

Every System 150 from AGCO comes standard with sub-meter and decimeter accuracy. Simply call OmniSTAR to subscribe to one of their correction signals (VBS, XP or HP) and start driving. Or, you can use WAAS for a no-cost sub-meter system.

### SPECIFICATIONS

### **MT800C** Specifications

	MT835C	MT845C	MT855C	MT865C	MT875C
ENGINE	Cat® C15 ACERT™ Tier III	Cat®C15 ACERT® Tier II	Cat® C15 ACERT® Tier II	Cat® C18 ACERT™ Tier II	Cat® C18 ACERT® Tier II
Rated Engine Power - hp (kW)	410 (306)	440 (328)	475 (364)	525 (391)	585 (436)
PTO Power @ rated 2100 rpm - hp (kW)	335 (249)	360 (268)	385 (287)	425 (316)	425 (316)
Engine Power Growth @ 1800 rpm	8%	8%	8%	9%	8%
Peak Engine Power - hp (kW)	442 (329)	475 (364)	513 (382)	567 (422)	ସେ (470)
Engine Torque Rise @rpm	42%@1400	42%@1400	42%@1400	42%@1400	42%@1400
# Öylinders / # Nalves	6/24	6/24	6/24	6/24	6/24
Displacement - cubic in. (L)	928 (15.2 L)	928 (15.2 L)	928 (15.2 L)	1,105 (18.1 L)	1,105 (18.1 L)
Aspiration	Turbocharged / Air-to-Air Aftercooled	Turbocharged / Air to-Air Aftercooled	Turbocharged / Air to Air Aftercooled	Turbocharged / Air-to-Air Aftercooled	Turbocharged / Air to-Air Aftercooled
RUEL SYSTEM	MEUL - AŒM™ 4 Full Electronic Control	MEUL - ALEM™ 4 Full Electronic Control	MEUL - ALEM™ 4 Full Electronic Control	MEUL - ACEM™ 4 Full Electronic Control	MEUL - AEEM™ 4 Full Electronic Control
Fuel Tank Capacity - US gal. (L)	305 (1,155)	305 (1,155)	305 (1,155)	330 (1,249)	330 (1,249)
TRANSMISSION	Cat® Powershift 16F / 4R	Cat® Powershift 16F / 4R	Cat® Powershift 16F / 4R	Cat® Powershift 16F / 4R	Cat® Powershift 16F / 4R
Maximum Speed - mph (kph)	24.6 (39.6)	24.6 (39.6)	24.6 (39.6)	24.6 (39.6)	24.6 (39.6)
Steering	Cat <sup>®</sup> Differential Steering	Cat <sup>®</sup> Differential Steering	Cat® Differential Steering	Cat <sup>®</sup> Differential Steering	Cat <sup>®</sup> Differential Steering
GAUGE OPTIONS	Infinitely adjustable bar axle with smooth hardbar	Infinitely adjustable bar axle with smooth hardbar	Infinitely adjustable bar axie with smooth hardbar	Infinitely adjustable bar axie with smooth hardbar	Infinitely adjustable bar axie with smooth hardbar
Standard - in. (mm)	90 - 128 (2,286 - 3,251)	90 - 128 (2,286 - 3,251)	90 - 128 (2,296 - 3,251)	90 - 128 (2,296 - 3,251)	90 - 128 (2,286 - 3,251)
BELT OPTIONS					
General Ag Betts - in. (mm)	27.5, 30, 36 (898.5, 762, 914)	27.5, 30, 36 (698.5, 762, 914)	27.5, 30, 36 (698.5, 762, 914)	27.5, 30, 36 (898.5, 762, 914)	27.5, 30, 36 (898.5, 762, 914)
Extreme Application Betts - in. (mm)	18,30,36 (467,762,914)	18, 30, 36 (467, 762, 914)	18,30,36 (467,762,914)	18,30,36 (467,762,914)	18,30,36 (467,762,914)
MOBIL -TRAC UNDERCARRIAGE					
Hardbar Suspension	Two Marsh Mellow® Springs	Two Marsh Mellow® Springs	Two Marsh Mellow® Springs	Two Marsh Mellow® Springs	Two Marsh Mellow® Springs
Undercarriage Suspension					Osdillating Bogie System w/ Suspended Midwheels
Hardbar Oscillation	Stabilizer Bar with 8° Range of Motion	Stabilizer Bar with 8° Range of Motion	Stabilizer Bar with 8° Range of Motion	Stabilizer Ban with 8° Range of Motion	Stabilizer Bar with 8° Range of Motion
INDEPENDENT PTO	1000 RPM, 20 Spline, 1.75" (46 mm)	1000 RPM, 20 Spline, 1.75" (46 mm)	1000 RPM, 20 Spline, 1.75" (46 mm)	1000 RPM, 20 Spline, 1.75" (46 mm)	1000 RPM, 20 Spline, 1.75" (46 mm)
(Optional)	Bectronically Controlled	Electronically Controlled	Bectronically Controlled	Electronically Controlled	Electronically Controlled
EL ECTRICAL SYSTEM					
Atternator	185 amp	185 amp	185 amp	185 amp	185 amp
Batteries Hydraulic system	(4) 1,000 cca 12 V	(4) 1,000 cca 12 V	(4) 1,000 cca 12 V	(4) 1,000 cca 12 V	(4) 1,000 cca 12 V
	Load Independent Flow Division	Lond Index or deat Class Chinises	Lond Independent Com Chining	Load Independent Flow Division	Load Independent Flow Division
Type of System		Load Independent Flow Division (Closed-Center, Pressure-Flow Compensated)	Load Independent Flow Division (Closed-Center, Pressure-Flow Compensated)		
Std. Pump Flow - apm (fpm)	(Closed-Center, Pressure-Flow Compensated) 43.5 (164.7)	(3.5 (164.7)	43.5 (164.7)	(Closed-Center, Pressure-Flow Compensated) 43.5 (164.7)	(Closed-Center, Pressure-Flow Compensated) 43.5 (164.7)
Opt. Pump Flow - gpm (pm)	45.5 (184.7) 59 (224.2)	59(224.2)	59(224.2)	455 (1647) 59(224.2)	45.5 (164.7) 59 (224.2)
Hydraulic Remotes	4 Standard / up to 6 Optional	4 Standard / up to 6 Optional	4 Standard / up to 6 Optional	4 Standard / up to 6 Optional	4 Standard / up to 6 Optional
Max Flow at 1 Remote - com (fpm)	4 Standard 7 op 10 8 Optidial 36 (136.3)	4 Santa 07 op we opodia 36 (136.3)	4-sandard/op/we-optiona 36 (136.3)	4 sandard / op we opidia 36 (136.3)	4 Sandard 7 op we opddia 36 (136.3)
Maximum System Pressure - psi (bar)	2,900 (200)	2,900 (200)	2,900 (200)	2,900 (200)	2,900 (200)
DRAWBAR	2,900 (200)	2,900 (200)	2,900 (200)	2,500 (200)	2,500 (200)
Std. Wide Swing Drawbar	Roller Type +/- 32° Swing	Roller Type +/- 32° Swing	Roler Type +/-32° Swing	Roller Type +/- 32° Swing	Roller Type +/-32° Swing
Opt. Wide Swing Controlled Drawbar	Hydraulic Position Control / Dampening	Hydrautic Position Control / Dampening	Hydraulic Position Control / Dampening	Hydraulic Position Control / Dampening	Hydraulic Position Control / Dampening
Drawbar Load Rating - bs. (kg)	10,000 (4,536)	10,000 (4,536)	10,000 (4,536)	10,000 (4536)	10,000 (4536)
Category	Cat 4 (Std.)	Cat 4 (Std.)	Cat 4 (Std.)	Cat 4 (Std.)	Cat 4 (Std.)
3-POINT HITCH (OPTIONAL)	ow Hosp	ow i lovali	on the st	our (ma)	on Horah
Lift Capacity - lbs. (kg)	19,500 (8,946)	19,500 (8,946)	19,500 (8,946)	19,500 (8,946)	N/A
Category	Category 3.4N	Category 3,41V	Category 3.4N	Category 3.4N	N/A
DIMENSIONS	23.3., 2.2.	conguly or co	23.30, 27.21		
Wheelbase - in. (mm)	1 18 (2,997)	118 (2,997)	118 (2,997)	118 (2,997)	1 18 (2,997)
Overall Width Wide Gauge - in.(mm)	141.8(3,601)	141.8(3,601)	141.8(3,601)	141.8(3,601)	141.8(3,601)
Overall Length -in.(mm)	266 (6755)	266 (6755)	266 (6755)	266 (6755)	266 (6755)
Overall Height to Top of Cab - in. (mm)	136 (3460)	136 (3460)	136 (3460)	136 (3460)	136 (3460)
Drawbar Clearance - in. (mm)	14.4 (366)	14.4 (366)	14.4 (366)	14.4 (366)	14.4 (366)
Approx. Shipping Weight - lbs. (kg)	41,000 (18,697)	41,000 (18,597)	41,000 (18,597)	42,200 (19,142)	42,200 (19,142)
Maximum Operating Weight - lbs. (kg)	50,000 (22,680)	50,000 (22,680)	50,000 (22,680)	50,000 (22,690)	50,000 (22,680)
	• •	• •	• •	• • •	•



Unit 1862 Challenger is equipped with the following quick attach blade:

Make: Degelman

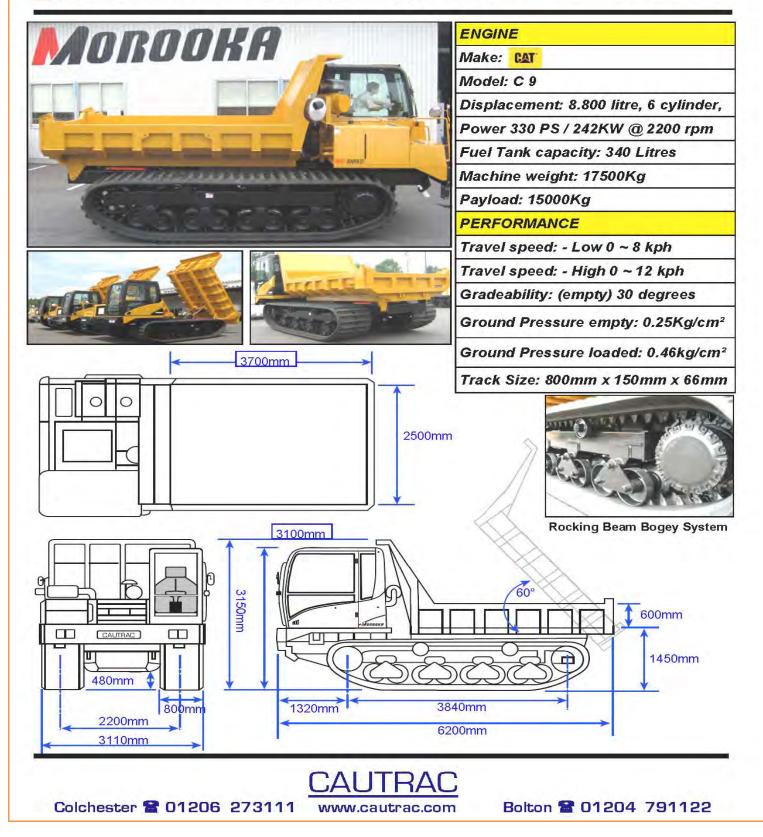
Model: 7900

Dimensions: 4.3m (14ft.) wide x 1.4m (4.5ft.) high.

Approximate weight off the Challenger is: 3 629kg (8000 lbs)

Blade above is similar to the blade to be purchased for the Chidliak machine,

# MOROOKA MST3000VD



Morooka MST3000VD tracked vehicle will be deployed to haul cuttings (with a picker crane) and will be a backup for the Challenger in moving the RC drill, and fuel and water sleighs.

### Unit 1864

Serial # 30146

### MST 3000VD Morooka Rubber Track Carriers

The Morooka MST 3000VD is Morooka's largest machine offered in the US. Powered by a Caterpillar © C-9 engine, they provide unparalleled performance.

Morooka Dimensions	3000 VD	
Length	20, 5, 10	
Width	10' 4"	
Height	10' 4"	
Wheel Base	12' 8 '	
Min. Ground Clearance	20"	
Gauge	7' 4"	
Track Width	31.625"	
Length of Dump Bed	12"	
Width of Dump Bed	8' 2"	
Weight (lbs.)	38,600 lbs.	
Fuel Cap. (gal.)	75 gal.	
Engine Mfg,	Caterpillar® / C9	
Horse Power	325	
Transmission	HST	



MAI JUUUVU

Morooka Dimensions	3000 VD
Maximum Load	33,100 lbs.
Travel Speed (Low - High)	5 - 7.5 mph
Ground Pressure (empty)	2.6 psi
Ground Pressure (loaded)	4.8 psi

\* Carrier length of 6m (20.02ft above) may change for the Chidliak unit with the addition of a custom deck.

### WST Series



MST 300VD & 300VDR MST 600VD & 600VDL MST 800 & 800VDL >>more MST 1500VD

MST 2200VD

MST 3000VD

>>more

>>more >>more >>more >>more

EASY WORKING ON FIELDS AND IN THE FOREST WITHOUT SOIL COMPACTION MOROOKA dump carriers are well-made products that can handle all job requirements due to their hydrostatic hydraulic system and specially developed rubber tracks.

The MST dump carriers series ranges from 2.5 to 15 tons loading capacity. The rubber tracks are easy on the soil, but with their excellent traction, can be used for even tough jobs on difficult surfaces.

#### THE HYDROSTATIC TRANSMISSION

The hydrostatic transmission allows for economically utilizing the full engine's power. All steering maneuvers can be executed by using only two levers. The two speed ranges can be selected without shifting gears, but by pushing only one button. A clutch or levers to shift gears are not part of the hydrostatic systems.

#### DURABLE RUBBER TRACKS

The rubber tracks are the result of 30 years of joint development from Bridgestone and MOROOKA. The rubber tracks combine the characteristics of a tire equipped vehicle, such as speed and smooth ride, and the good traction of a chain equipped vehicle. Especially on sensitive or muddy and sandy soils, rubber chains are much more durable than steel chains with their many joints.



### Truck, Stationary & Marine Cranes

Home

Series 103

Series 105

Series 108

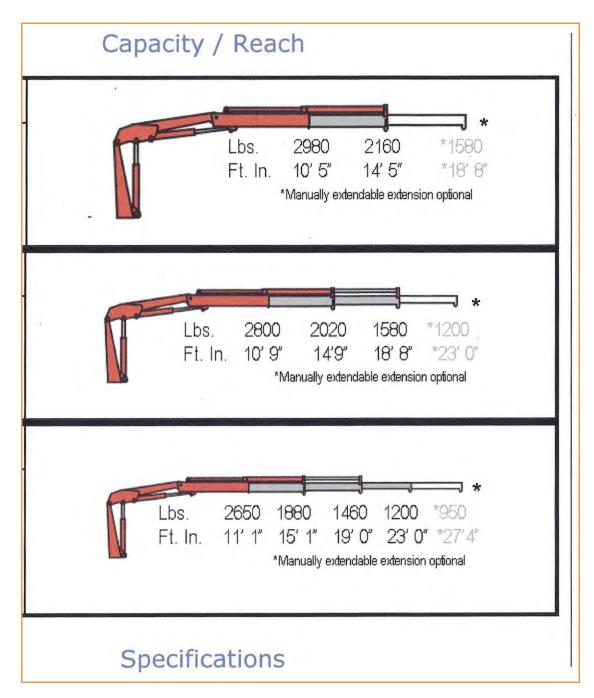
Contact Us

### AMCO VEBA Series 105 Knuckleboom Crane



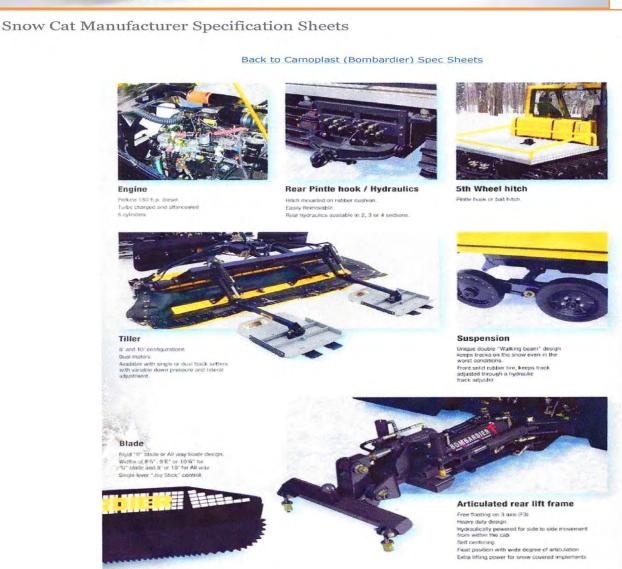


AMCO VEBA Series 105 Crane with hook on the end will be used to hoist loads such as cuttings bags.

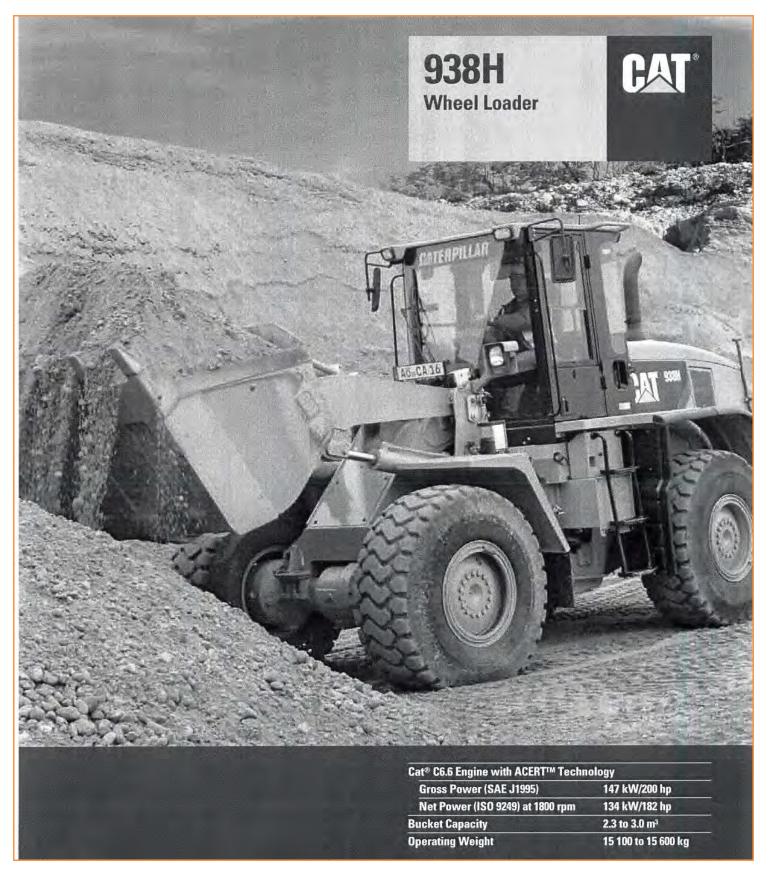


Models from top are: 105/S1, 105/S2 and 105/S3

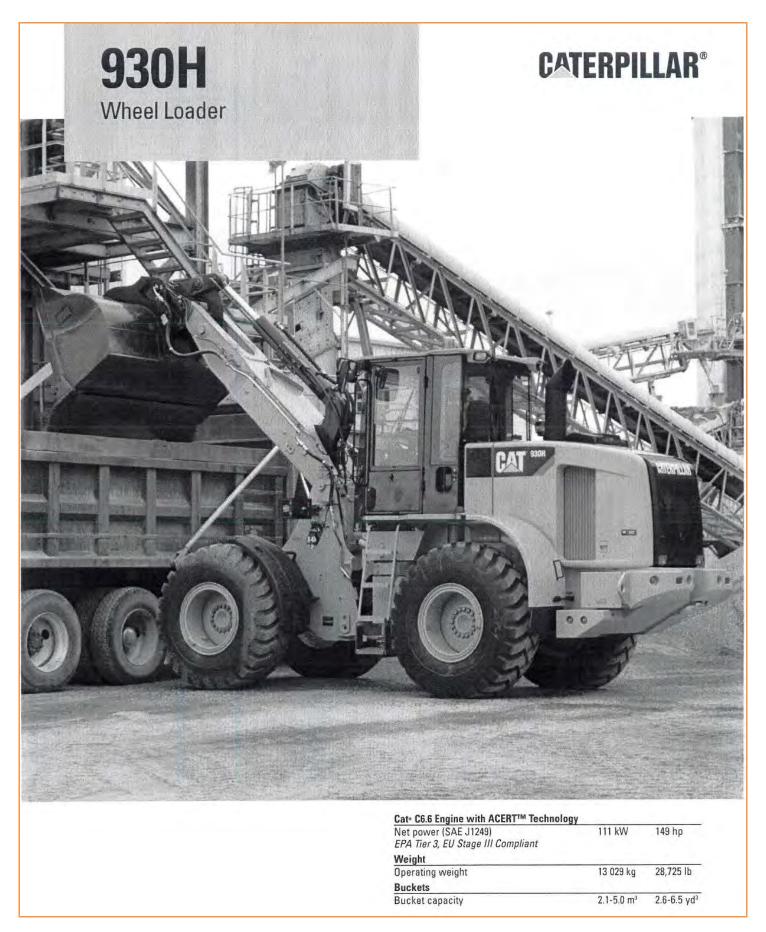




The Sno-Cat BR 350 will be used for building/grooming the winter-access trails, for clearing the Sunrise Lake airstrip and for transporting drill crews (when crews are not moved by helicopter).



Cat 938 loader will be dedicated to moving heavy loads such drill pipe, freight and moving cuttings around the rig during drilling. This model loader also can be fitted with tracks.



Cat 930 loader will be dedicated to unloading freight and clearing the Sunrise Camp Lake icestrip. This model loader also can be fitted with tracks.







From top: 15 000L steel double-walled enviro-tank; sleigh with tilt-deck (similar to sleigh custom made for Chidliak; 10 000L water tank is housed in insulated trailer; the trailer will be sleigh-mounted for ease of movement to supply CH-6 camp and drillsites.



201-1250 HOMER STREET, VANCOUVER, BRITISH COLUMBIA, CANADA V6B 1C6 TELEPHONE: (604) 408-8880 FAX: (604) 408-8881 www.peregrinediamonds.com

# **APPENDIX 9**

# PEREGRINE DIAMONDS LTD.

BULK-SAMPLING MONITORING PLAN: CHIDLIAK PROJECT, BAFFIN, NU,

Original Plan: 20 September 2011



# LIST OF REVISIONS: ADDENDUM PAGE

Original Plan: 20 September 2011

Revision 1: N/A Revision 2: N/A

(NOTE 1: Revisions will be identified in the text with a superscript number at the end of the revised or added sentence, phrase or paragraph. Superscript numbers added in future will appear as  $^{1}$ ,  $^{2}$ , etc.)

(NOTE 2: Revisions denote changes such as programme or date changes, change of phone number, change or addition of personnel, addition of equipment or products, new or adjusted maps and new appendices.)



# **TABLE OF CONTENTS**

BULK-SAMPLE PLAN	1
INTRODUCTION	1
BULK SAMPLE PLAN – 5 KIMBERLITES	1
PROVISIONAL DRILL PLAN – 2012	1
DRILLING METHODOLOGY	5
CUTTINGS DEPOSITION LOCATIONS	6
WATER SOURCES FOR BULK SAMPLING	9
STANDARD OPERATING PROCEDURES (Unnumb	ered Section)
FIGURES Figure 1	
TABLES Table 1, Table 2, Table 3, Table 4	
PHOTOS Photo 1, Photo 2, Photo 3	
MAPS Map 1, Map 2, Map 3, Map 4a, Map 4b, Map 4c	

#### **BULK SAMPLE PLAN - 2012**

#### **INTRODUCTION**

This Peregrine Diamonds Ltd. (Peregrine) Bulk-Sample Monitoring Plan (the Plan) is in respect of the initiation of bulk sampling of diamondiferous kimberlites of economic potential on the Chidliak Project, South Baffin, NU, in winter 2012. This first bulk sample of at least 3 Chidliak kimberlites which have previously been tested by core drilling, small-diameter, waterless reverse-circulation (Hornet) drilling and/or collection of mini-bulk samples of up to 50 tonnes, will represent the initial phase of a multi-year programme of bulk sampling.

The programme is intended to be conducted between February and May 2012 from a new tent camp, the CH-6 Temporary Camp, which will serve bulk-sampling of the CH-6 kimberlite (*cf. Map 1*), and from the existing Discovery Camp, 12km southeast (*cf. Map 1*). Discovery Camp will serve bulk sampling of at least 4 neighbouring kimberlites, CH-7, CH-45. CH-44 and/or CH-31. The existing Sunrise Camp – which can accommodate landing of large freighter aircraft on a lake-ice airstrip – will serve as an additional supply base for freight travelling to or samples departing from site.

This Plan will be in effect from 01 January 2012 until 01 January 2013, and is subject to revision and extension as required.

#### **BULK SAMPLE PLAN – 5 KIMBERLITES**

The Peregrine sampling plan for the Chidliak Project for 2012 allows for collection of 100-200 tonnes of kimberlite from at the least 3 of a total of 5 kimberlites within a 16km-long "Bulk Sample Focus Area" (cf. Map 1) that extends from CH-6 kimberlite at the northwest of this Area to CH-31 in the southeast. A total of approximately 600 tonnes of chip sample will be collected from between 12 and 15 large-diameter (34cm) drillholes, each drilled to a maximum depth of 250m (range of from 100m to 250m depth).

The goal of the Peregrine sampling plan is to obtain at least 200 carats of diamonds from each kimberlite body sampled in order to allow a preliminary assessment of diamond value – although as little as 50 carats might be collected from some kimberlites, if this smaller sample size can still allow assessment of diamond quality. Confirmed for sampling in winter 2012 are CH-6 and CH-7 kimberlites (cf. Map 1). Additional sample tonnage to complete the bulk sample could be collected from one or more of the following 3 kimberlites south and southeast of CH-7: These are CH-45, CH-44 and CH-31 (cf. Map 1).

Further evaluation of other kimberlites with economic potential in year(s) following 2012, such as of CH-1 kimberlite, approximately 2.25km northeast of CH-7 (*cf. Map 3 below*) will be addressed in future revisions of this Plan.

It must be emphasised that all work proposed in the Peregrine sampling plan remains within the approved Project Scope area, and no increase in water allotment is sought in 2012.

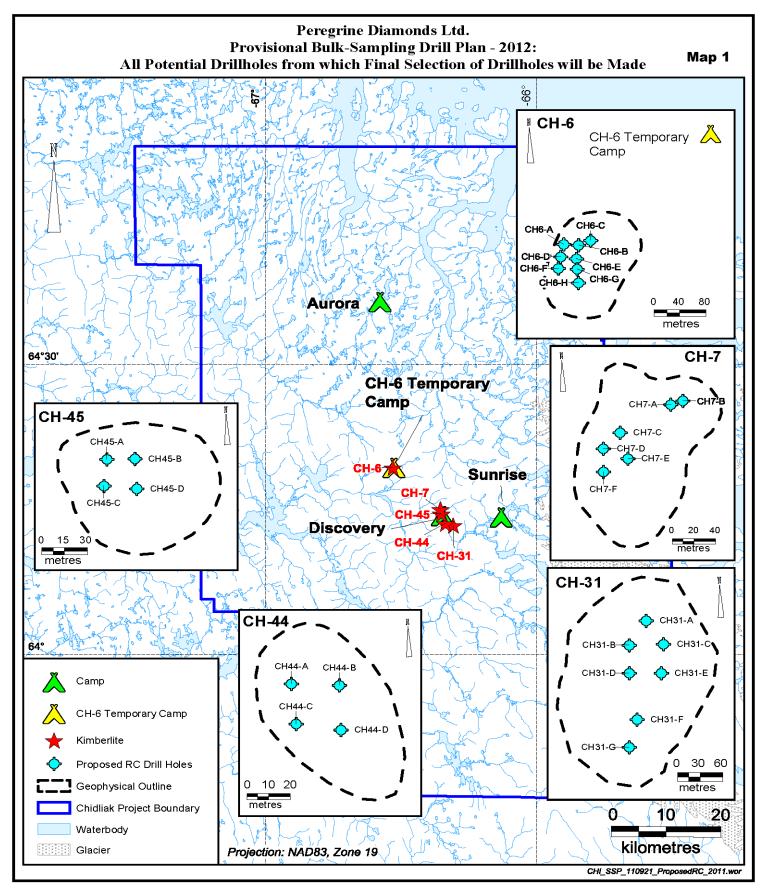
#### **Provisional Drill Plan - 2012**

The provisional Chidliak Project bulk-sampling plan (the "long list") is itemised in *Table 1;* all potential large-diameter drillhole (LDDH) co-ordinates are presented by kimberlite. Kimberlites, in turn, are listed in the proposed order of drilling. The final selection of 12-15 LDDH will be made from this "long list" of 29 potential target locations. *Maps 1* and 2 follow *Table 1* below and depict all potential drillhole locations.

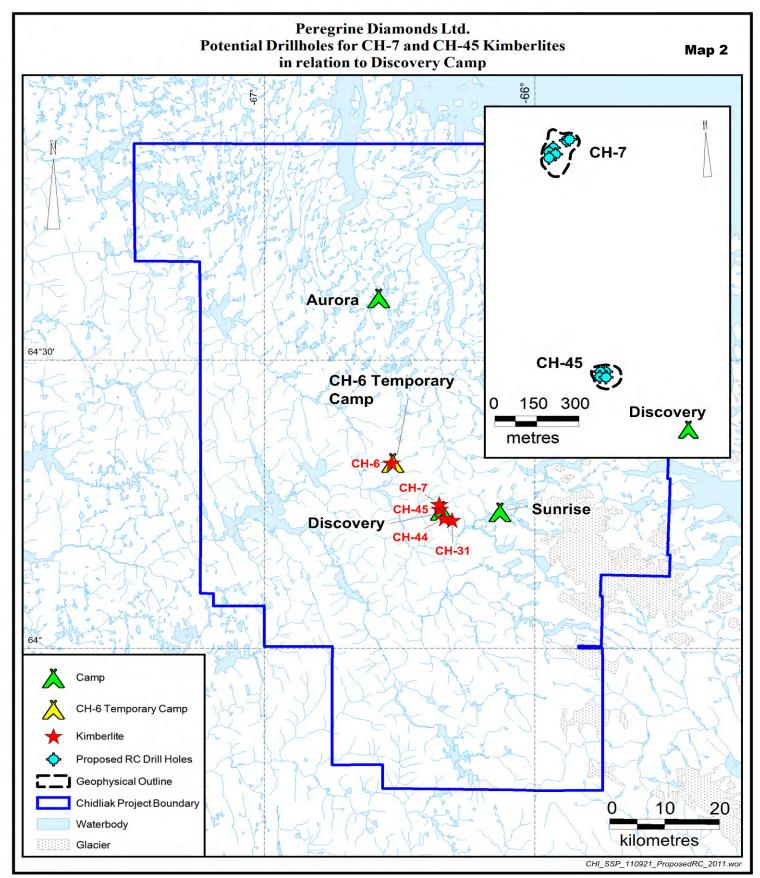
Table 1: Provisional Bulk-Sampling Drill Plan: All Potential Drillholes from which Final Selection Of Drillholes will be Made

KIMBERLITE	LDDH#	LDDH CO-ORDINATES WGS84 (Lats/Longs)	TOPOGRAPHY	MAX. HOLE DEPTH
CH-6	CH-6-A	64° 19' 19.16" -66° 31' 47.59"	Land	250m
CH-6	CH-6-B	64° 19' 19.08" -66° 31' 45.89"	Land	250m
CH-6	CH-6-C	64° 19' 19.31" -66° 31' 44.48"	Land	100m
CH-6	CH-6-D	64° 19' 18.49" -66° 31' 48.00"	Land	250m
CH-6	CH-6-E	64° 19' 18.36" -66° 31' 46.21"	Land	250m
CH-6	CH-6-F	64° 19' 17.87" -66° 31' 48.32"	Land	250m
CH-6	CH-6-G	64° 19' 17.80" -66° 31' 46.18"	Land	250m
CH-6	CH-6-H	64° 19' 17.06" -66° 31' 46.09"	Land	250m
CH-7	CH-7-A	64° 15' 2.08" -66° 21' 14.39"	Land	100m
CH-7	CH-7-B	64° 15' 2.19" -66° 21' 13.54"	Land	100m
CH-7	CH-7-C	64° 15' 1.24" -66° 21' 17.95"	Land	250m
CH-7	CH-7-D	64° 15' 0.75" -66° 21' 19.14"	Land	250m
CH-7	CH-7-E	64° 15' 0.40" -66° 21' 17.48"	Land	250m
CH-7	CH-7-F	64° 15' 0.01" -66° 21' 19.20"	Land	250m
CH-31	CH-31-A	64° 13' 21.94" -66° 18' 30.30"	Land	250m
CH-31	CH-31-B	64° 13' 20.84" -66° 18' 32.07"	Land	250m
CH-31	CH-31-C	64° 13' 20.82" -66° 18' 28.72"	Land	250m
CH-31	CH-31-D	64° 13' 19.55" -66° 18' 32.18"	Land	250m
CH-31	CH-31-E	64° 13' 19.50" -66° 18' 29.05"	Land	250m
CH-31	CH-31-F	64° 13' 17.41" -66° 18' 31.62"	Land	250m
CH-31	CH-31-G	64° 13' 16.15" -66° 18' 32.53"	Land	250m
CH-44	CH-44-A	64° 13' 33.52" -66° 20' 12.77"	Land	200m
CH-44	CH-44-B	64° 13' 33.47" -66° 20' 11.12"	Land	200m
CH-44	CH-44-C	64° 13' 32.87" -66° 20' 12.66"	Land	200m
CH-44	CH-44-D	64° 13' 32.75" -66° 20' 11.14"	Land	200m
CH-45	CH-45-A	64° 14' 33.01" -66° 21' 8.09"	Land	200m
CH-45	CH-45-B	64° 14' 33.00" -66° 21' 6.72"	Land	200m
CH-45	CH-45-C	64° 14' 32.40" -66° 21' 8.30"	Land	200m
CH-45	CH-45-D	64° 14' 32.30" -66° 21' 6.70"	Land	200m

Note: Final number of holes drilled into the above kimberlites – between 12 and 15 (approx.) – will be determined by various factors, including 2011 drill results, modelling interpretation, formations encountered, weather and actual site conditions.



Potential drillholes in relation to outlines of geophysical anomalies and camps in the Focus Area.



Potential drillholes within outlines of CH-7 and CH-45 kimberlites in relation to the proposed base of operations, Discovery Camp.

#### **Drilling Methodology**

Drilling will be conducted by contractor Cooper Drilling LLC by a 7-person crew utilising a CT350 Canterra (Foremost) large-diameter reverse-circulation (RC) drill modified to the needs of the project (cf. Appendix 8 – Additional Equipment). As is typical in the drilling of kimberlite formations in the North, the rotary drill will use water in a closed-loop, reverse-flood method (cf. Figure 1 below), with the addition of air via a compressor at the rate of 11.3m³ per minute, to lift the kimberlite chips gently to surface inside the drill pipe to safeguard against breakage of any diamonds contained in the sample. At only 12 700kg, this rig is relatively lightweight amongst the range of RC drills, and has modest daily water consumption of 15m³ (average use during drilling) up to a maximum of 25m³ per day at startup and in special circumstances, such as drilling of a difficult formation, if encountered. Maximum depth of a large-diameter drillhole (LDDH) will be 250m, which is within about 50m of the maximum depth of holes drilled during the Chidliak core-drilling programme. The LDDH will be 34cm wide through 41cm-diameter casing; however, if specific hole conditions warrant, LDDH diameter may be reduced to 31cm. To safeguard the environment of the drillsite, the drill rig will have a built-in containment pan underlying all major components. All auxiliary equipment will have containment systems (berms or enviro-tainers).

As illustrated in *Figure 1* below, water conveyed to the drill in a tank is injected into the circuit through the inner drill pipe (*bottom centre of Figure 1*), along with compressed air that enters the pipe via a tube. The clean source water is injected at a maximum rate of 0.2m³ per minute until sufficient water has been added to charge the borehole and initiate drilling, *e.g.*, 20m³ at startup. Together, the injected water and air lift the kimberlite sample up the pipe to surface, with water recirculated within the circuit. The raw sample (kimberlite chips + fine rock flour [cuttings] + water from the circuit) then is discharged through a connecting hose to a drop-box and then onto a shaker table, where the kimberlite chips are agitated and screened to +1.0mm size, dewatered, and then directed from the table into a waiting 1-tonne mega-bag for removal, security-tagging and out-shipment for processing. The remaining water in the cuttings tank is then desilted via a bank of desilting cones, with the fines – the cuttings – reporting to a waiting 1-tonne mega-bag for transport to the designated cuttings-deposition area in a sleigh hitched to the tracked Morooka MST 3000. The desilted water is then returned to the drilling circuit.

#### Clean Cuttings

It should be noted that cuttings from extraction of kimberlite sample are clean rock flour mixed with water. Use of drilling mud is infrequent in Northern bulk sampling, and, when deployed, is typically represented by bentonite, an inert volcanic clay. Peregrine sanctions only environmentally-benign drill additives within its MSDS inventory of products (cf. Appendix 2 of amendment application, or MSDS inventory list at end of the Chidiak/Qilaq/Cumberland Spill Contingency Plan). Peregrine's contractors are required to submit their MSDS inventory list to Peregrine for approval prior to bringing any products to a Peregrine site.

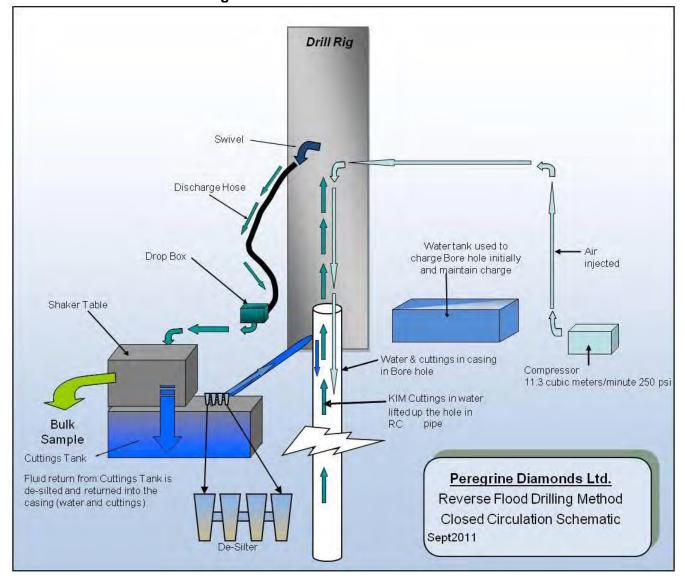


Figure 1: Schematic of RC Drill Circuit

#### **CUTTINGS-DEPOSITION LOCATIONS**

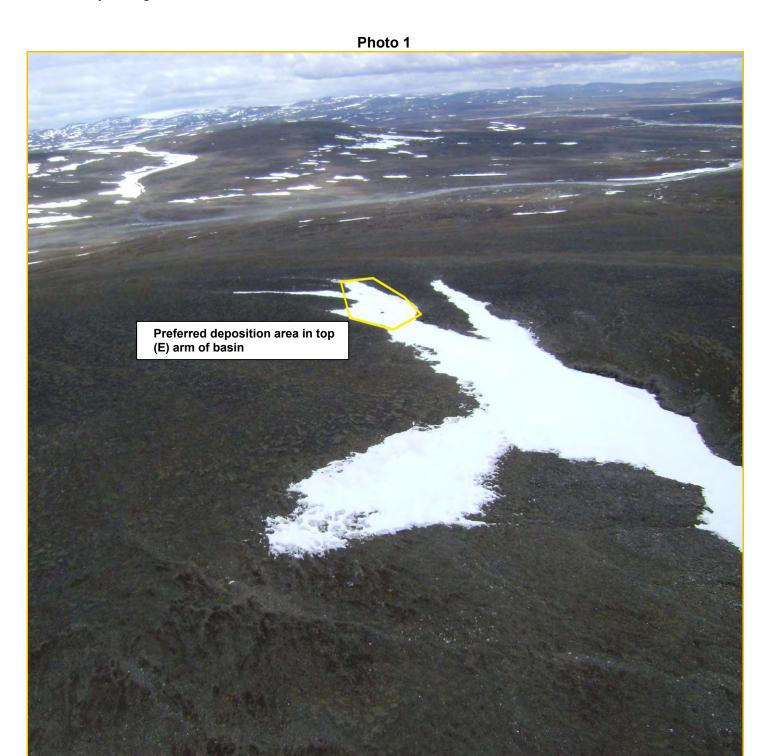
Cuttings-deposition locations with more than sufficient capacity for containment of the cuttings from the 2012 bulk sample programme were identified in the field by Peregrine's Arctic-specialist consulting geotechnical engineer in summer 2011 and ground-truthed by Peregrine and heavy-equipment contractor personnel. Locations were visited in both mid-July (*photos below, with snow filling much of the basins*) and at the end of August (*when accumulated snow had melted significantly*). Preliminary calculations reveal a potential cuttings volume per hole of between 400-500m<sup>3</sup>.

#### "CH-7 Basin"

A suitable rock basin of approximately 7 000m<sup>3</sup> capacity (conservative estimate) was found east of CH-1 and within 2.25km (trail distance) of CH-7; basin depth was estimated at 2-3m. This "CH-7 Basin" also could accommodate cuttings from neighbouring kimberlites CH-45, CH-44 and/or CH-31. Given removal of snow in advance of bulk sampling and tailoring the natural rocky access approach with packed snow, this rock basin could easily accommodate cuttings from a number of RC holes in its higher-elevation, upper (eastern) reaches, as illustrated in *Photo 1* below.

-- 7 --

For illustration purposes, if one uses a figure of 9 holes drilled in the area (*e.g.*, 6 holes drilled into CH-7 and 3 holes into one neighbouring kimberlite), this could result in a volume of between 3 600m<sup>3</sup> and 4 500m<sup>3</sup> reporting to the "CH-7 Basin". The cuttings and released water would then filter slowly and naturally through the rock-rubble base of the containment basin.



Cuttings from CH-7 and one or several of CH-45, CH-44 and/or CH-31 could be accommodated in this basin, following snow removal from the target deposition area marked above.

#### "Alternative Deposition Area for CH-31 and CH-44: Flat Plateau"

A flat plateau area of approximately 2 000m³ capacity (conservative estimate) was found 1.0km northeast of CH-44. This "Flat Plateau", when encircled by a snow berm for the winter 2012 bulk sample, could accommodate cuttings from both CH-44 and CH-31 kimberlites (*Photo 2* below). Using the example provided on Page 7, cuttings of between 400-500m³ per hole x 3 holes drilled into CH-31 and CH-44 would result in a total volume of 1 200m³-1 500m³ reporting to the bermed "Flat Plateau". The cuttings within the snow berm would then thaw slowly over the spring. Water released from the cuttings could be expected to infiltrate into the active soils at this site, *i.e.*, the clean granular glacial till that would naturally filter runoff from the cuttings.



View of terrain in Flat Plateau area proximal to CH-44 and CH-31 which could serve as a deposition area for cuttings from these kimberlites, if encircled by a snow berm. Terrain is typical of the interior of the property, *i.e.*, sparsely vegetated, with rock scatter.

#### "CH-6 Basin"

A suitable rock basin of approximately 4 000m³ capacity (conservative estimate) was found approximately 1.9km west of CH-6; basin depth was estimated at 2-4m. Given removal of snow in advance of bulk sampling and tailoring the natural rocky access approach with packed snow, this rock basin could easily accommodate cuttings from CH-6 drillholes (*Photo 3* below). Using the example provided on Page 7, cuttings of between 400-500m³ per hole x 6 holes drilled into CH-6 would result in a total volume of 2 400m³-3 000m³ reporting to the "CH-6 Basin".





Looking to the east, or upper reaches, of the preferred "CH-6 Basin" from the lower limits. This rock basin could accommodate cuttings from CH-6, following snow removal from the upper reaches (target deposition area).

**Table 2: Preferred Cuttings-Deposition Areas and Volume Capacity** 

DISPOSAL AREA	UTM ZONE	NORTHING – EASTING (mN – mE)	VOLUME – m <sup>3</sup> (est.)	COMMENT
CH-6	19	7 134 913 617 845	4 000	Rock basin: 20m W x 200m L
CH-7 (and 1 or more of CH-45, CH-44, CH-31) *	19	7 129 158 629 399	7 000	Rock basin: 25m W x 300m L
CH-31, CH-44	19	7 125 616 629 729	2 000	Flat Plateau: 100m W x 100 L (requires snow berm)

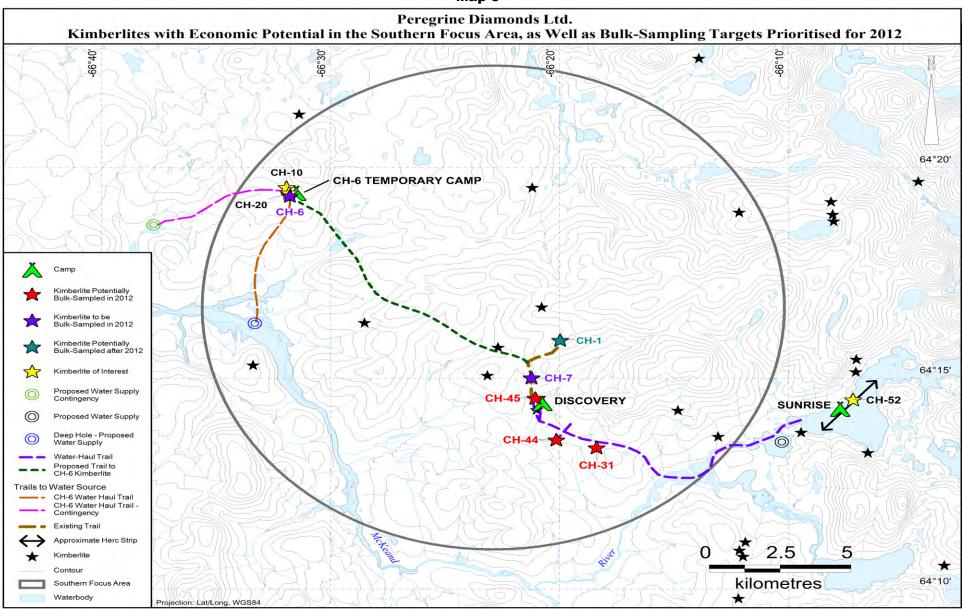
<sup>\*</sup> Use of this basin may be considered for CH-1 cuttings, if CH-1 kimberlite is sampled in future, e.g., 2013

#### WATER SOURCES FOR BULK SAMPLING

Three water sources have been studied to supply the 2012 bulk sample and two associated camps (*Map 3*), the existing Discovery Camp (proximal to CH-7, CH-45, CH-44 and CH-31) and the new CH-6 Temporary Camp (proximal to CH-6). The proposed water sources are: (1) "deep hole" in McKeand River, 5.6km south of CH-6; (2) contingency lake in a tributary of the McKeand River, 5.0km west of CH-6; and (3) lake immediately west of Sunrise Camp Lake, or 12.5km east-southeast of CH-7.

A Challenger 875C pulling a 10 000Lwater tank mounted on a sleigh will be used to haul water to the drill and to the Discovery and CH-6 camps.

Map 3



Proposed water sources are shown in the Focus Area in relation to kimberlites and the anticipated expansion of the winter-trail network.

10% of Under Ice Volume: 8,200 m3

Table 3: Surface Areas and Volumes of 2012 Bulk-Sample Water Sources \*

(Prelim	ninary Data	from EBA Engir	neering Bathym	etric Survey, <i>I</i>	August 2011)	
WATER SOURCE	SURFACE	NORTHING - EAS	TING (mN - mE)	VOLUME – m <sup>3</sup>	UNDER-ICE	DEPTH OF
	AREA m <sup>2</sup>	(centroid of deep	oest-water zone)		VOLUME - m <sup>3</sup>	DEEPEST
						WATER (m)
	1					
"Deep Hole" –		7 129 620	618 380	124 600	81 700	10.0
Bathymetric Site B	21 400					
"Contingency Lake"						
- Bathymetric Site C	70 900	7 133 740	614 825	135 300	35 400	7.0
Lake W of Sunrise -	1 059 500	7 125 250	637 250	9 264 500	7 462 500	
Bathymetric Site I						32.0

#### DUE CARE FOR WATER WITHDRAWAL: DEPARTMENT OF FISHERIES AND OCEANS

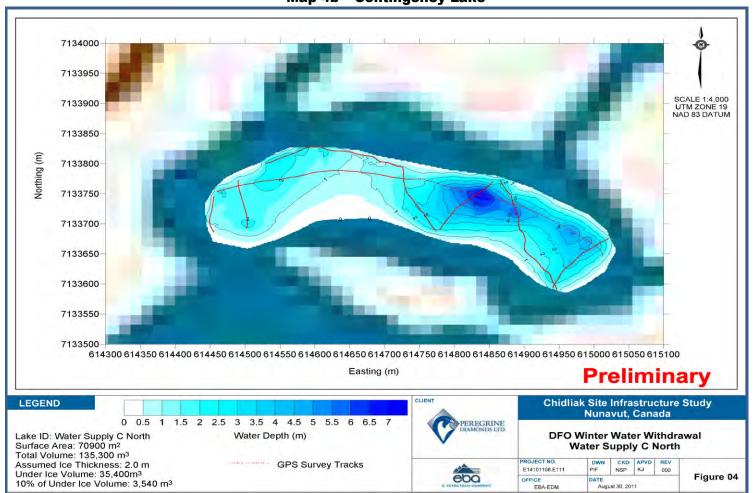
Maps 4a through 4c below depict NWT Winter Water Withdrawal Protocol limits, i.e.: Withdrawals under ice per season shall not exceed 10% of total available volume. This standard is used as reference, as corresponding "Nunavut Mineral Exploration Activities Operational Statement" (Section 11 - Water Withdrawal) does *not* specify a specific limiting percentage.

Map 4a - Deep Hole 7129720 7129700-SCALE 1:1.500 7129680 UTM ZONE 19 NAD 83 DATUM 7129660 Northing (m) 7129640 7129620 7129600 7129580 7129560 7129540 7129520 618260 618280 618300 618320 618340 618360 618380 618400 618420 618440 618460 618480 6185 Easting (m) CLIENT LEGEND Chidliak Site Infrastructure Study Nunavut, Canada PEREGRINE 2 3 5 6 10 **DFO Winter Water Withdrawal** Lake ID: Water Supply B Water Depth (m) Surface Area: 21,400 m<sup>2</sup> Water Supply B Total Volume: 124,600 m3 ROJECT NO. CKD APVD REV Assumed Ice Thickness: 2.0 m GPS Survey Tracks E14101108.E111 PIF NSP KJ 000 Under Ice Volume: 81,700 m3 eba Figure 03

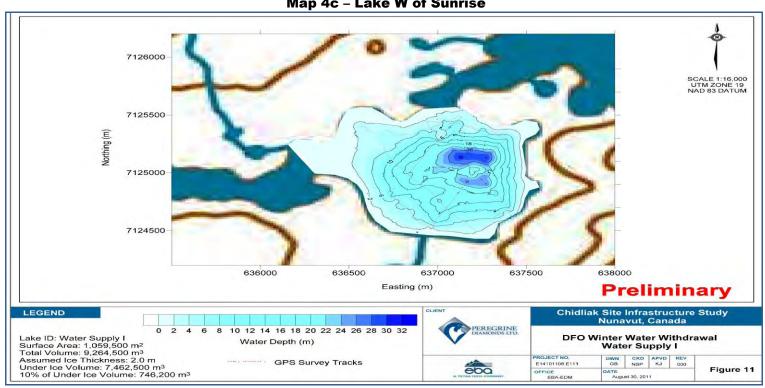
DATE

August 30, 2011

Map 4b - Contingency Lake



#### Map 4c - Lake W of Sunrise



-- 13 --

Table 4: Potential Withdrawal Volume for Drilling vs. 10% of Under-Ice Volume of Water Sources \*

WATER SOURCE	TOTAL # OF HOLES (Assumed)	AVERAGE ASSUMED CONSUMPTION PER HOLE – m <sup>3</sup>	VOLUME – m³ FRM SOURCE (7 days/hole)	10 % OF UNDER-ICE VOLUME - m <sup>3</sup>	DRAWDOWN Y or N
"Deep Hole" -	Г		1		
Bathymetric Site B	6	15	630	8 200	N
"Contingency Lake"					
- Bathymetric Site C	6	15	630	3 540	N
Lake W of Sunrise –	9	15	945	746 200	
Bathymetric Site I					N

<sup>\*</sup> If it is further assumed that 5m³/day is consumed for domestic purposes + 20m³/day for misc. uses, such as trail-building/maintenance, the daily overall total would increase to 40m³. Potable + misc. uses, (25m³/day) if exercised for 30 days at either Site B or C would = 750m³. 750 + 630m³ = 1 380m³, still well below drawdown level, if the NWT standard were applied. Potable + misc. uses, (25m³/day) if exercised for 100 days at Site I would = 2 500m³. 2 500 + 945m³ = 3 445m³, still well below drawdown level, if the NWT standard were applied.



# BULK-SAMPLING MONITORING: STANDARD OPERATING PROCEDURES (SOPs)

- Removal of Drill Cuttings to Cuttings-Deposition Area
- Fuelling of RC Drill Fuel Tank Bulk Sample Location

PEREGRINE DIAMONDS SAFE WORKING PROCEDURES			
Division:	Bulk Sample Monitoring		
Section:			
Subject:	Removal of Drill Cuttings to Cutt	tings-Deposition A	rea
Owner:	Corporate EHS Manager	Effective	January 2012
		Date:	
Revision:		Replaces:	

#### **OBJECTIVE**

1.01 To ensure the health, safety and wellbeing of all personnel, workers, contractors, operators and the environment in respect of safe removal and proper storage of drill cuttings. Further, Peregrine will provide the steps to remove mega-bags from the reverse-circulation (RC) bulk-sampling drill and placement of cuttings in an area appropriate for storage. (For the purpose of this Bulk-Sampling Monitoring Plan, this storage area is referred to as the Cuttings-Deposition Area.)

#### **SCOPE**

2.01 This procedure applies to all workers, contractors and visitors working on the Chidliak Project and specifically applies to the work site and movement to and from the Cuttings-Deposition Area.

#### INTRODUCTION

3.01 This procedure covers all forms of RC, core, RC rotary air-blast, air-core, percussion; vacuum and mechanised auger drilling conducted by Peregrine for exploration, construction and other purposes on Chidliak Project designated work sites.

#### **Procedure**

- 4.01 The drill rig system is built to contain the separation of the clean cuttings (relict material from the raw sample) coming out of the bored hole into a catch-all nylon bag (mega-bag). The bag is hung within a containment box where the process begins receiving the cuttings coming out of the large-diameter (LDDH) RC or core hole. The cuttings are comprised of wet rock flour (water in the closed-loop drill circuit).
- 4.02 Operators will notify the CAT Morooka driver when the cuttings bag has been filled to capacity. Once full, the bags containing the cuttings will be secured and tied at the top to avoid any loose materials from becoming airborne as dust or spilt to ground or snow underneath. Once secured, the mega-bag, weighing approx. 1 tonne, will be slid along gantry beams to a location away from the drill containment housing, and close enough to the hook of the Marooka picker boom. Once the mega-bag load is secured to the picker hook, the Morooka will pull away from the location.
- 4.03 Once away from the drilling equipment, the Morooka heavy equipment will travel a set route to the designated Cuttings Deposition Area. The Morooka will then approach the Cuttings Deposition Area by access trail, lower the mega-bag to the inner edge of the Area (a natural basin or bermed flat plateau in 2012), release the load and return to the work site for removal and deposition of the next bag. Where possible to do so, the mega-bag will be separated from its load and returned as garbage to the Discovery base camp for storage in a designated area until the inert waste is outshipped via the camp airstrip.
- 4.04 Operations staff will monitor the Cuttings Deposition Area during the drill shift to ensure the cuttings mega-bags are properly contained and that no leakage has occurred away from the Cuttings Deposition Area.

- 4.05 The Equipment Operator shall report all spills and leaks to the Supervisor immediately. A Spill Report will be filled out and amounts > **100L** of clean inert cuttings will be reported to appropriate regulators via an NWT-NU Spill Report form, following the current procedure in the Peregrine Spill Contingency Plan.
- 4.06 Cuttings spills will be cleaned up immediately by the Camp Spill-Response Team, who will place all spilt materials, used absorbents (if hydrocarbons are involved in the spill), affected snow or water into properly-labelled refuge drums inside a designated bermed area adjacent to the Cuttings Deposition Area. Documentation of cleanup will be added to the spill record to complete it.

#### **Addressing Environmental Concerns**

- Large quantities of substances that have the potential to cause harm to the environment, such as a fuel-storage berm or transfer berm, shall be under controlled and observed conditions. A Designated Fuel Station will be established at Discovery Camp and shall be under control of a Fuel Specialist at all times (please refer to Fuel-Management SOPs for further details). Fuel berms and transfer berms at other camps the CH-6 Temporary Camp and Sunrise Camp also shall be under control of the Camp Manager and designated fuel-management staff. As per the Peregrine land-use permit and water licence, all storage of hydrocarbons and other hazardous substances is no closer than 31m from the ordinary high-water mark of the nearest water source.
- At the RC drill, all fuel shall be stored or transferred in containment.
- The Morooka and other heavy equipment at the RC drill shall be parked over drip pans or troughs when stationary whilst awaiting cuttings loads.
- A fully-equipped, full-sized spill kit and extra absorbents shall be readily available at the RC drill site and at
  any location of petroleum products, fuels and other substances that have the potential to cause harm to the
  environment.
- Fuel-management SOPs will be implemented to avoid, contain and remedy any fuel spillage during all refuelling.
- All spills of substances that have the potential to cause harm to the environment shall be cleaned up
  immediately and reported to the Peregrine Supervisor. Reportable spills >50L of petroleum products shall be
  reported to the applicable regulators.
- All petroleum products must be contained and disposed of accordingly when equipment maintenance is carried out. All soiled rags, drip cloths, absorbent "diapers" and fluids must be stored in proper refuge drums within a designated waste area and properly identified and labelled as hazardous waste, e.g., Class 9 miscellaneous hazardous waste, solid or liquid.
- Drip pans or troughs must contain all drips under stationary equipment. All soiled rags, drip cloths, absorbent "diapers" and fluids must be stored in proper refuge drums within a designated waste area and properly identified and labelled as hazardous waste, e.g., Class 9 miscellaneous hazardous waste, solid or liquid.
- When leakage on equipment such as the Morooka or other mobile heavy equipment is detected, repairs are to be conducted immediately and inside the lined equipment storage and maintenance quonset shed being constructed at Discovery Camp. All soiled rags, drip cloths, absorbent "diapers" and fluids must be stored in proper refuge drums within a designated waste area and properly identified and labelled as hazardous waste, e.g., Class 9 miscellaneous hazardous waste, solid or liquid.

### **Storage and Handling**

 Hazardous materials shall be handled and stored in accordance with existing territorial and federal legislation and all governing permits and licences, with due regard for this Plan and other Chidliak monitoring plans.

- Hazardous materials must be clearly labelled, including even inert cuttings spills contained in refuge drums.
   Appropriate Material Safety Data Sheets (MSDS) must be readily available for all products. MSDS and inventory lists for all manufactured products are readily available via the Peregrine MSDS CD and Spill Plan.
- Equipment and materials at the RC drill where cuttings are transferred and at all other sites shall be arranged
  to minimise storage/stacking and handling hazards at all times, in order to minimise risk to the wellbeing of
  workers and to the receiving environment.

#### REFERENCES AND RELATED DOCUMENTS

6.01 NWT and NU Mine Health and Safety Act and Regulations: 6.01, 1.135 and 1.137

#### **Attachments**



Morooka MST 3000 tracked carrier for lifting and transport of cuttings mega-bags will be equipped with an AMCO VEBA 105 Series picker boom ((illustrated above). The crane will be attached at the front of the Morooka at a 45° angle and equipped with a picker hook.

#### **APPROVED RECORD**

7.01 Approved Record

NAME	POSITION	DATE	REV#	NOTES

PEREGRINE DIAMONDS SAFE WORKING PROCEDURES				
Division:	Bulk Sample Monitoring			
Section:				
Subject:	Fuelling of RC Drill Fuel Tank –	Bulk Sample Loc	ation	
Owner:	Corporate EHS Manager	Effective	January 2012	
		Date:	-	
Revision:		Replaces:		

#### **OBJECTIVE**

1.01 To ensure fuel transfer from a sleigh-mounted enviro-tank to the reverse circulation (RC) drill tank during conduct of bulk sampling at a Chidliak Project drill site so as to prevent or minimise environment impacts and potential splash-back injuries to Equipment Operator or other adjacent personnel. (For the purpose of this Bulk-Sampling Monitoring Plan, the "enviro-tank" is understood to be a 10 000L steel tank within a tank holder mounted on a custom-built deck, surrounded by steel railing, and conveyed to and from the drill site by a Challenger 875C, Morooka MST 3000 or other heavy equipment.)

#### **SCOPE**

2.01 This procedure applies primarily to the Equipment Operator and refuelling workers at the drill and secondarily to other contractors and visitors working on the Chidliak Project and specifically applies to the RC drill site.

#### INTRODUCTION

3.01 This procedure applies primarily to the 2012 RC bulk-sample drill rig and secondarily to all forms of RC, core, RC rotary air-blast, air-core, percussion, vacuum and mechanised auger drilling equipment that must be refuelled for the Chidliak Project bulk sample programme.

#### RESPONSIBILITY

- 4.01 The **Project Manager** is responsible for:
  - Ensuring this procedure is implemented and maintained,
  - Ensuring that written authorisation is given to the Equipment Operator, refuelling workers and their cross-shift personnel, and
  - Ensuring these authorised personnel receive the appropriate training.
- 4.02 The **Authorised Personnel** transferring fuel at the RC drill are responsible for:
  - Understanding and complying with the requirements of this procedure.
- 4.03 The **Environment Manager** is responsible for:
  - Monitoring the implementation of this procedure, compliance and reporting, and
- 4.04 The Site Health, Safety and Environment (HSE) Co-ordinator is responsible for
  - managing spills and maintaining records.

#### 5 **PREPARATION**

TOOLS: PPE (Gloves, Goggles, Respiratory protection, if required)

#### **Procedure**

#### 6.01 Fuel Transfer to Drill Tank using Sleigh-Mounted Pump (Mobile Fuel Station)

- Ensure spill equipment is readily available and in usable form. Ensure supplies are adequate in the event of a spill or leak, including fire extinguishers.
- It is important to note that the sleigh-mounted fuel tank (the enviro-tank) is enclosed in its own containment made of the same materials as the tank. This will serve to catch leaks or drips off the tank pump itself.
- Ensure any wheels are chocked so no movement can take place. Ensure engines of the equipment are turned off before any fuelling takes place.
- Pull mobile fuelling sleigh with enviro-tank up to the RC drill fuel tank, remaining at least 3m away. Ensure
  that mobile fill station is on the opposite side of any rock faces or high walls.
- Open the fuel cap on the mounted enviro-tank and check the fuel level prior to fuelling.
- Unwind the hose from the fuel sleigh and insert the nozzle securely into the drill-tank filling inlet, ensuring that
  no fuel drips onto the snow, ground or on the equipment. (A drip pan or absorbents are to be placed
  underneath equipment to prevent spillage.)
- Set the sleigh pump to the "on" position. Stand to the side. Squeeze the nozzle handle to begin dispensing fuel into the drill tank. In extreme cold temperatures, set the nozzle to the "on" position and insert it securely into the tank inlet and remain by the sleigh pump, ensuring the nozzle remains securely in place for the duration of the fuel transfer. This is permitted to prevent frostbite from handling cold nozzles. If the nozzle slips out, immediately set the vehicle pump to the "off" position.
- The nozzle shall *not* be placed in the "on" position unless the Equipment Operator or designated refuelling worker is holding the nozzle. Proper PPE will be worn at all times to prevent frostbite and an additional assistant will be available to ensure extra help is always available.
- For larger refuelling loads during extreme cold temperatures, set the nozzle to the "on" position and place it securely into the tank inlet. Remain outside the equipment and watch the fuel nozzle closely to ensure it remains securely in place for the duration of the fuel transfer.
- Periodically check the level of filling to prevent overfilling. Wait several seconds after stopping before looking
  into the drill tank inlet to avoid surging fuel. Only fill the drill tank to 90% of capacity to allow for expansion
  and avoid splash-backs.
- When returning the nozzle after use, avoid drips and spills. Reseal the enviro-tank and secure the lid to the secondary containment, if applicable.

# 6.02 Fuel Transfer to Other Fuel Tanks at the Drill Site (for example, Compressor, Pumps using Sleigh-Mounted Pump [Mobile Fuel Station]

Follow same procedural steps as per 6.01 above, always ensuring that spill equipment is readily available
and in usable form. Ensure supplies are adequate in the event of a spill or leak, including fire extinguishers.

**NOTE**: If any fuel spills occur, ensure spillage is cleaned up right away with absorbent material. All cleanup materials are to be safely disposed of as hazardous waste and separated in their own containment berms/containers. In the event of a spill or leak, the Equipment Operator, refuelling worker at the drill or Fuel Specialist at Discovery Camp will notify the Supervisor so an incident/spill report can be filled out. All focus and attention shall be on the spill and proper spill response. Peregrine reports fuel spills of **50L** or more to the NU-NWT Spill Line and proper authorities.

#### **Attachments**



Fuel enviro-tank with spill containment



Fuel sleigh that enviro-tank will be secured to



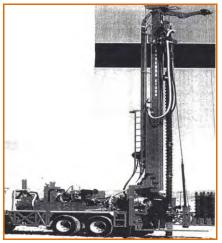
Manual pump without hose and nozzle (Optional to electrical (battery) pump)



Electrical pump for filling tank from enviro-tank



**CAT Challenger to pull sleighs** 



Canterra (Foremost) CT350 RC drill

# APPROVED RECORD

# 7.01 Approved Record

NAME	POSITION	DATE	REV#	NOTES



201-1250 HOMER STREET, VANCOUVER, BRITISH COLUMBIA, CANADA V6B 1C6 TELEPHONE: (604) 408-8880 FAX: (604) 408-8881 www.peregrinediamonds.com

# **APPENDIX 10**

# PEREGRINE DIAMONDS LTD.

# BULK-FUEL MANAGEMENT FACILITY MONITORING PLAN: CHIDLIAK PROJECT, BAFFIN, NU,

Original Plan: 25 September 2011



# LIST OF REVISIONS: ADDENDUM PAGE

Original Plan: 25 September 2011

Revision 1: N/A Revision 2: N/A

(NOTE 1: Revisions will be identified in the text with a superscript number at the end of the revised or added sentence, phrase or paragraph. Superscript numbers added in future will appear as  $^{1}$ ,  $^{2}$ , etc.)

(NOTE 2: Revisions denote changes such as programme or date changes, change of phone number, change or addition of personnel, addition of equipment or products, new or adjusted maps and new appendices.)



# **TABLE OF CONTENTS**

BULK-FUEL MANAGEMENT FACILITY PLAN	1
INTRODUCTION	1
WHAT IS IN THE PLAN AND WHAT IS NOT	1
DESIGNATED FUEL STATION	1
RATIONALE FOR STATION	1
PLAN FOR STATION OPERATION	6
WINTER TRAILS: FUEL MANAGEMENT AND RESPONSE	7
SUNRISE ICE STRIP: FUEL MANAGEMENT AND RESPONSE	7
STANDARD OPERATING PROCEDURES	7
STANDADD ODEDATING DDOCEDIDES (Unnum	harad Saction

DRAWINGS
Drawing 1a, Drawing 1b

MAPS Map 1, Map 2

#### **BULK-FUEL MANAGEMENT FACILITY PLAN - 2012**

#### INTRODUCTION

This Peregrine Diamonds Ltd. (Peregrine) Bulk-Fuel Management Facility Monitoring Plan (the Plan) is in respect of the initiation of bulk sampling of diamondiferous kimberlites of economic potential on the Chidliak Project, South Baffin, NU, between approximately 15 February and 31 May 2012. This activity will result in a shift in fuel use *from* predominantly *aviation fuel* (used for extensive prospecting, geophysical surveying, sampling and test drilling of targets across a large property\* in the early years of the Chidliak Project) *to* predominantly *diesel fuel* (used for evaluative drilling of selected kimberlites within a defined Focus Area and operation of equipment to support and supply that programme).

#### What is in the Plan and What is Not

The proposed fuel use for the 2012 bulk-sampling programme is approximately 2 000 drums of diesel fuel, up from the early-exploration level of approximately 250 drums a year. The Plan is centred on the management of that bulk-fuel allotment. Up to a few hundred of those drums may be used for exploration activities such as core drilling and camp operations after the bulk sample is completed, and that typical usage is outside the parameters of this bulk-fuel Plan. Similarly, the anticipated decreased level of aviation fuel (Jet-A, Jet-B) use, to approximately 250 drums, is outside the scope of bulk-fuel management. Both uses – as well as standard uses of non-bulk quantities of petrol (gasoline) and propane – are well addressed by the controls of the Chidliak/Qilaq/Cumberland Spill Contingency Plan and the Abandonment and Restoration (A&R) Plan already approved by our regulators and revised for the current amendment application.

Thus, the focus of this Plan is the management of a large volume of diesel fuel within the framework of management of all other fuels that are required for operating camps and work sites: aviation fuel, petrol (gasoline) and propane. As will be discussed in the following pages, Peregrine has chosen to address the management of its diesel bulk-fuel requirement by means of a "Designated Fuel Station" (cf. Drawings 1a and 1b below).

This Plan will be in effect from 01 January 2012 until 01 January 2013, and is subject to revision and extension as required.

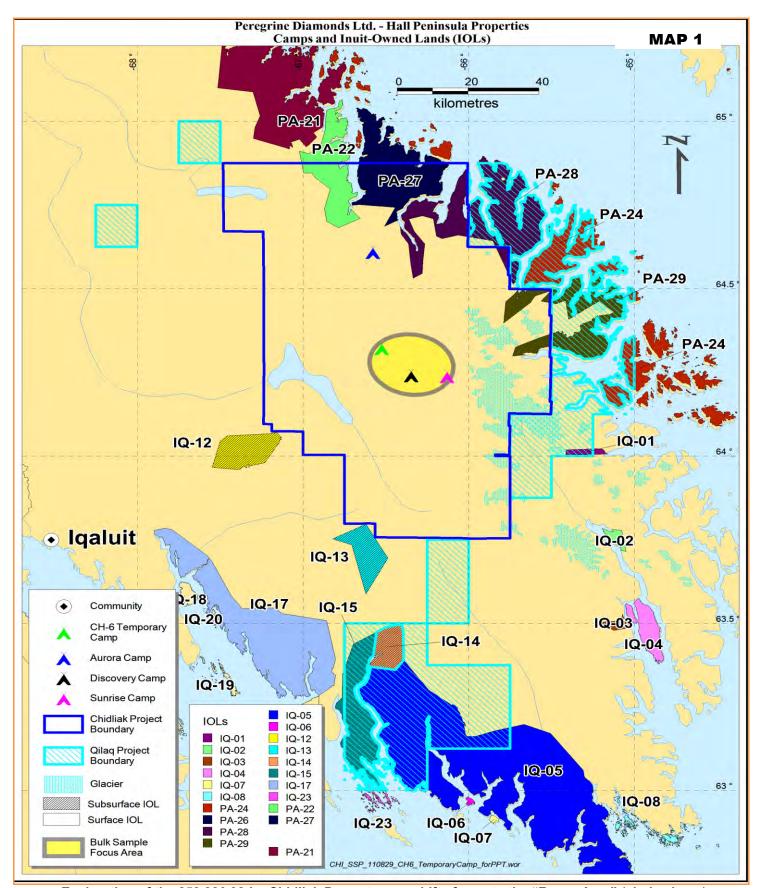
#### **DESIGNATED FUEL STATION**

The Designated Fuel Station (the Station) will be the management, storage and traffic-control centre for fuel drums, mainly diesel drums, arriving in Discovery Camp, the logistical base for the winter bulk-sampling programme. Discovery Camp is proximal to 4 of the 5 kimberlites to be bulk-sampled – CH-7, CH-45, CH-44 and CH-31 – which are within a 3.8km area; the fifth kimberlite, CH-6, is 12km NW (*cf. Map 2 below*).

#### **Rationale for Station**

The Station is being established to ensure operational and monitoring efficiency in a predominantly-ground-based field programme. As the programme will be initiated at the height of the dark, severe Baffin winter season – CH-6 Temporary Camp will be established and the CH-6 kimberlite sampled within a brief 35-day period in February-March 2012 – there is a greater human-safety risk of transporting fuel by helicopter slinging than by overland routing on established and groomed winter trails. Conducting the programme in winter during the period of stable snow cover also lessens potential impact to archaeological sites and the local environment (the active soil layer and waterways are frozen). Although the trails and spur routes to water sources and cuttings-deposition areas have been archaeologically surveyed and judged to be of low archaeological potential, any undetected archaeological sites will be afforded optimal protection by frozen snow cover.

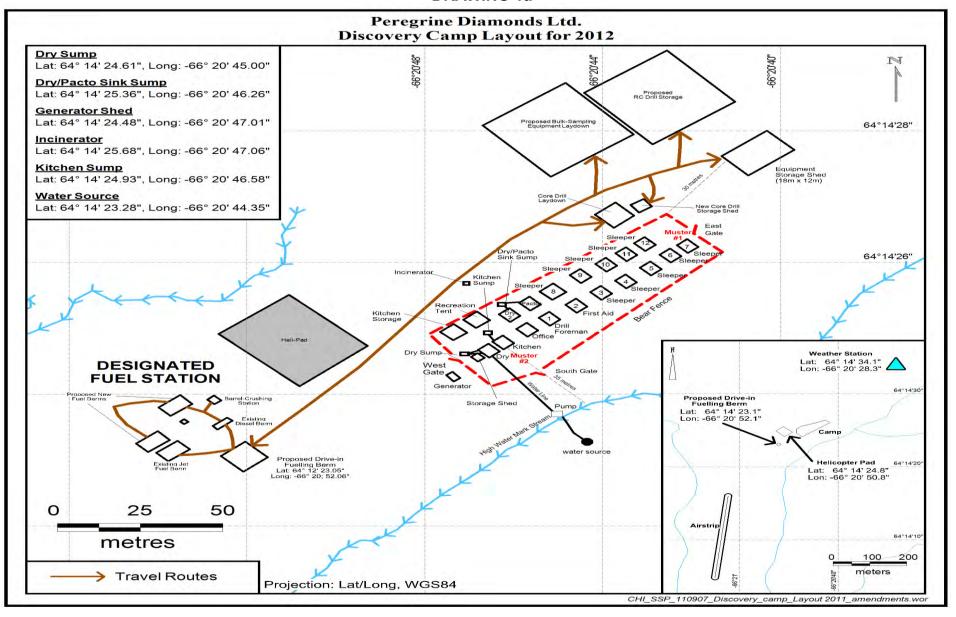
<sup>\*</sup> See Map 1 below to review the project in a regional context.



Exploration of the 858,886.92-ha Chidliak Property now shifts focus to the "Focus Area" (circle above).

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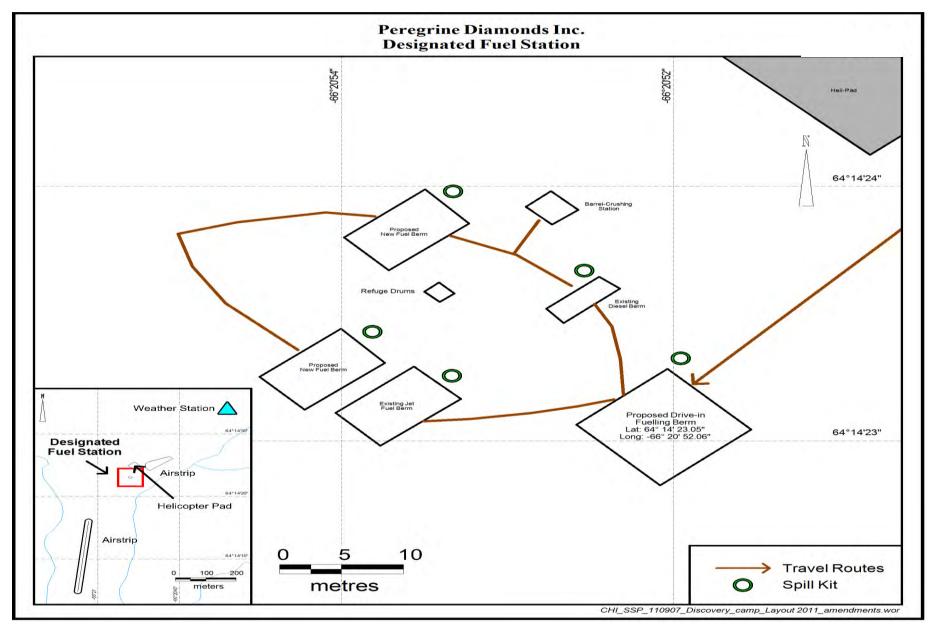
#### **DRAWING 1a**



The new Designated Fuel Station based at Discovery Camp will cover an area approx. 50m long x 38m wide and will serve as the controlled fuel-transfer and refuelling hub for all equipment for the winter 2012 bulk-sampling programme.

-- 4 --

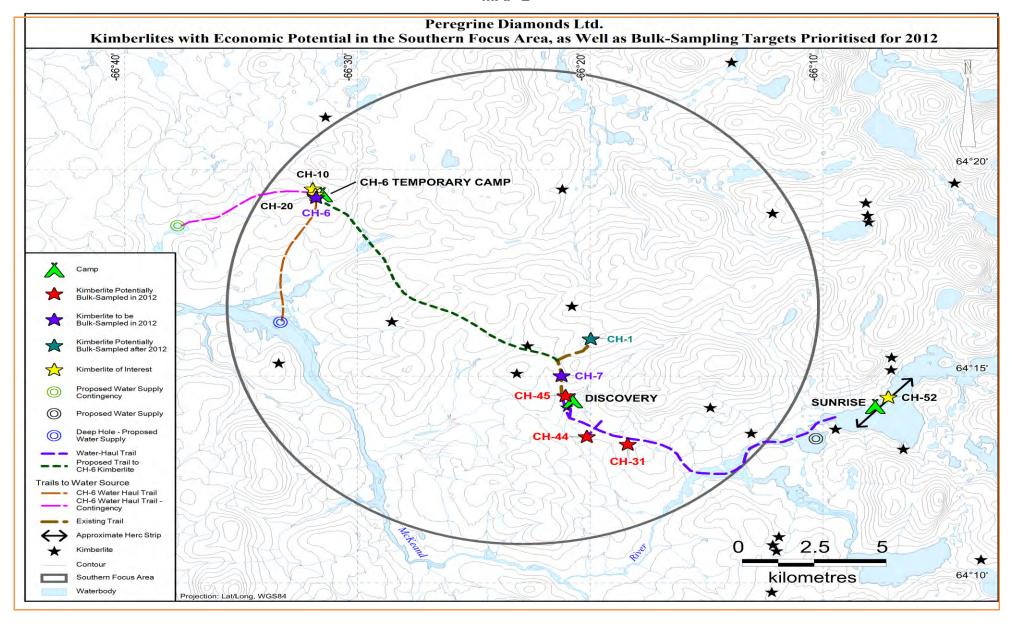
#### **DRAWING 1b**



The new Designated Fuel Station will be served by an established trail route for ease of accessing the drive-in transfer berm.

-- 5 --

#### MAP 2



Discovery Camp will serve as the fuel centre for accessing the 5 potentially-sampled kimberlites and the ice airstrip at Sunrise, mainly by means of a 23km-long extension of the existing winter trail network.

#### **Plan for Station Operation**

#### Fuel Delivery

Fuel will be delivered by regular in-shipments of 205L drums, as has occurred to date in the Chidliak exploration programmes. Although the overall volume of diesel fuel is greater for the 2012 programme than in previous years, the overall process of rotating drums in and out will not be appreciably different than in past years: The *main difference* in initial drum delivery is that First Air's Hercules L382 aircraft will be utilised to bring in the first 100 drums of the programme during the first approximately 14 days of the programme when the drill, water and fuel tanks and other equipment are being mobilised to site via the Sunrise Camp airstrip. In past seasons, this first mobilisation of fuel was via DC-3 aircraft.

The main "work-horse" equipment of the programme – the Sno-Cat, Challenger and Morooka with picker crane and deck – will be driven to site from Iqaluit during or prior to this period. This equipment will build the winter-access trails which will allow opening of Discovery Camp and establishment of the Designated Fuel Station. Immediately following establishment of the Station, the heavy equipment will transport the RC drill to its first kimberlite location, CH-6, and deliver a startup supply of fuel for the new CH-6 Temporary Camp. The existing land-based airstrip at Discovery Camp will then be groomed for winter landings of the DC-3 and Twin Otter, thus allowing not only in-shipment of further supplies but also out-shipment of empty drums, principally diesel drums. To facilitate out-shipment and drum management, a new DD-30 drum crusher already at Discovery Camp (*cf. crusher Standard Operating Procedure at the end of this Plan*) will be put into service to crush the empty drums for ease of removal.

#### **Fuel Transfer**

The *main difference* in fuel transfer is that simple transfer of fuel by pumping directly from drums will in most instances of diesel use be replaced by the more efficient transfer of fuel from drums to two 15 000L double-walled enviro-tanks (*cf. photo in enviro-tank Standard Operating Procedure at the end of this Plan*). This transfer will occur in a transfer berm at the Station (*cf. Drawings 1a and 1b*) and will consist of two processes: (1) transfer of fuel within the lined, drive-in manufactured transfer berm by pumping from drums to the enviro-tanks, and (2) refuelling of mobile equipment which is driven into and out of the same berm. Where instances of simple fuel transfer from a container directly to equipment occurs in the field – either diesel, petrol (gasoline) or aviation fuel to aircraft and helicopters – this transfer will in all cases occur with the container placed inside a drum-sized mini-berm, with all hose connections wrapped and underlying ground protected with absorbent matting and/or drip pans, as already occurs in all conventional exploration fuel transfer.

#### Fuel Storage and Management

Existing large-berm fuel storage at Discovery Camp will be consolidated at the Station (*cf. Drawings 1a and 1b*). Two new fuel berms will be added beside the existing berms already placed at that location, and all berms will be in close, driveable proximity to the transfer berm. Three additional full-sized spill kits will be added to the two kits already present in this area, and additional absorbent matting, socks and booms will be on hand and within reach. The Inspection Log process already in effect for existing fuel-storage berms will be increased from daily to once-per shift inspections.

Management also will extend to the entire Station area as part of the Plan, as follows: (1) once-per-shift inspection via the Inspection Log process of the overall Station components; (2) once-per-shift inspection via the Inspection Log process of the transfer berm; (3) once-daily inspection of any waste-storage areas inside of the transfer berm or outside of it, and (4) once-daily inspection of the drum-crushing station.

## Station Personnel

The main difference between allocation of personnel for past exploration and the 2012 programme is that operation and control of the Station will be the responsibility of a dedicated and experienced Fuel Specialist and Fuel Specialist Assistant (cf. discussion of Fuel Specialist and Fuel Specialist Assistant in the Standard Operating Procedures at the end of this Plan). These personnel and their cross-shifts will report to the Project Supervisor, who is turn reports to the Project Manager.

#### Station Personnel and the Precautionary Principle

An important component in the successful functioning of the Station is that Peregrine has engaged a Nunavut Tunngavik Incorporated registered Arctic logistical and heavy-equipment contractor to acquire and train a suitable Fuel Specialist and Fuel Specialist Assistant; the 2012 contractor for this role is Nuna Logistics. The precautionary principle has led Peregrine to the conclusion that hiring or contracting dedicated Station staff, familiar with operation of similar Stations on other Northern projects and trained in site procedures, is the best guarantee of proper functioning of the Plan and the smooth operation of fuel transfer and refuelling.

Providing Station control to a dedicated two-person team, and their equally-trained cross-shifts, will compliment Peregrine's pre-existing dedication to training and re-training of all site staff. Training, as noted by Peregrine in past Chidliak applications, is not simply confined to one-shot orientation training, but is reinforced with refresher training whenever personnel return to site after a break, as well as regular health, safety and environment meetings at which key site-performance areas ranging from cold-weather safety to proper drum storage to recycling are discussed amongst programme personnel and issues of mutual concern discussed and resolved. Other targeted training, such as firearms operation and first-aid, also is provided when sufficient camp numbers warrant. Once each season, a spill-response-exercise is conducted for all site personnel, as well as periodic safety-emergency training.

#### WINTER TRAILS: FUEL MANAGEMENT AND RESPONSE

There will be no bulk-fuel stations along the winter trails that will serve the 2012 programme. As per current practice in driving the previously-existing 3.8kms of winter trail between CH-1, CH-7 and Discovery Camp, any vehicles travelling the route will be equipped with valid communication (two-way radios within short range and sat-phones for longer range) as well as vehicle-sized spill kits and related supplies such as absorbent padding which can be secured around hoses with wire to prevent drips and leaks, and placed under equipment when stopped on a trail. Mobile heavy equipment also will carry at least one mini-berm, where a deck or suitable container is available, or, at a minimum, sufficient absorbent padding and garbage bags for use during jerry-can transfer of petrol to ice augers and pumps required for profiling and water extraction for trail grooming. Refuelling of heavy equipment will be carried out only at the Designated Fuel Station. Refuelling of small equipment such as skidoos will occur at designated petrol stations, such as at CH-6 Temporary Camp and Sunrise Camp.

#### SUNRISE ICE STRIP: FUEL MANAGEMENT AND RESPONSE

There will be no bulk-fuel transfer from an aircraft bladder to an enviro-tank at Sunrise Camp. Drums simply will be offloaded as per current exploration practice and moved off the lake ice strip as soon as they are offloaded by deployment of the dedicated CAT 930 loader (*cf. separate "Additional Equipment" appendix to this application*) or by skidoo with komatik to the designated fuel berms on land at Sunrise Camp.

#### **STANDARD OPERATING PROCEDURES**

A set of three Standard Operating Procedures (SOPs) which are built upon this Plan and intended to support it are found on the following pages. This Plan is complementary to the existing Spill Contingency Plan and informed by its commitment to prevention of spills and preparedness in the event a spill should occur.

SOPs in support of the "Bulk-Sampling Monitoring Plan" are attached to that separate but complementary Plan.



## BULK-FUEL MANAGEMENT FACILITY MONITORING: STANDARD OPERATING PROCEDURES (SOPs)

- Enviro-Tank Fuel Procedure
- Inspection Log Procedure Designated Fuel Station
  - Drum Crushing within a Berm

PEREGRINE DIAMONDS SAFE WORKING PROCEDURES					
Division:	Fuel Management Station				
Section:					
Subject:	Enviro-Tank Fuel Procedure				
Owner:	Corporate EHS Manager	Effective	January 2012		
		Date:			
Revision:		Replaces:			

#### 1 OBJECTIVE

1.01 To ensure fuel transfer to/from enviro-tanks on the Chidliak Project is carried out in a safe, environmentally-acceptable manner so as to prevent or minimise environmental impact and prevent potential splash-back injuries to workers.

#### 2 SCOPE

2.01 This procedure applies to all workers, contractors and visitors to the Chidliak Project, but specifically is within the job scope of the Fuel Specialist, his/her Fuel Specialist Assistant, and the two cross-shift personnel who will replace the Specialist and Assistant on rotation.

#### 3 INTRODUCTION

3.01 This procedure covers the transfer of fuel to/from sleigh-mounted enviro-tanks using one of a variety of pumps, including electric pumps and manual pumps at the Discovery Camp **Designated Fuel Station** (the Fuel Station).

Fuelling of skidoos, pumps and jerry cans from petrol (gasoline) drums also will occur within a designated berm at each camp in operation for the 2012 bulk-sampling programme. That process will be guided by the principles of this comprehensive procedure.

#### 4 RESPONSIBILITY

- 4.01 The **Project Manager** is responsible for:
  - Ensuring this procedure is implemented and maintained,
  - Ensuring that written authorisation is given to the Fuel Specialist and Fuel Specialist Assistant and their cross-shift personnel, and
  - Ensuring these authorised personnel receive the appropriate training.
- 4.02 The **Authorised Personnel** dispensing or transferring fuel the **Fuel Specialist** and **Fuel Specialist Assistant** are responsible for:
  - Understanding and complying with the requirements of this procedure.
- 4.03 The **Environment Manager** is responsible for:
  - Monitoring the implementation of this procedure and compliance, and
- 4.04 The Site Health, Safety and Environment (HSE) Co-ordinator is responsible for
  - Managing spills and maintaining records.

#### 5 DEFINITIONS

- 5.01 **Designated Fuel Station:** Designated area at Discovery Camp for fuel transfer and equipment refuelling (cf. Drawings 1a, 1b in the Fuel Management Plan), and under the control of the Fuel Specialist.
- 5.02 **Fuel Specialist**: An experienced and competent worker who has been trained in the proper fuel-handling procedure, has been oriented by the Project Manager or his designate and is the person responsible for operation of the Designated Fuel Station at Discovery Camp and for supervision of the Fuel Specialist Assistant.
- 5.03 **Fuel Sleigh:** Steel sleigh for conveying the fuel enviro-tank to field locations, such as the reverse circulation drill collecting the 2012 bulk sample. The sleigh is pulled by a Challenger tractor. (*See photos at end of procedure*).
- 5.04 **Enviro Tank:** Double-walled steel tank (capacity of 15 000L for 2012 bulk sample programme) used to contain diesel fuel that is transferred to equipment and the reverse-circulation drill; it is carried in the Fuel Sleigh. (*See photo at end of procedure*). Fuel flown to site in 205L drums will be transferred to one of two enviro-tanks at the Designated Fuel Station.
- 5.05 **Reportable Spill:** Peregrine reports **all fuel spills of 50L or more** to regulatory authorities, which exceeds the territorial requirement.

#### 6 REFERENCES AND RELATED DOCUMENTS

- 6.01 NWT and NU Mine Health and Safety Act and Regulations: 5.07, 6.01, 6.04, 6.10.
- 6.02 AANDC (formerly INAC) Class A Land-Use Permit #N2008C0005 [Chidliak land-use permit and amendments].
- 6.03 NWB Type B Water Licence #2BE-CHI0813 [Chidliak water licence and amendments].
- 6.04 Chidliak/Qilaq/Cumberland Spill Contingency Plan, Version 9, Peregrine Diamonds Ltd.
- 6.05 Indian and Northern Affairs Canada-Nunavut Fuel Storage and Handling Guidelines Draft (April 2008)
- 6.06 Nunavut Environmental Protection Act
- 6.01 National Research Council of Canada 2010 National Fire Code of Canada

#### 7 PREPARATION

- **TOOLS:** PPE (Gloves, Goggles. Respiratory protection if required)
- **HAZARDS:** Burns, Slips, Trips, Falls ,Strains/sprains, Spills, Environment Damage, Equipment Damage, Pinch Points, Worker Injury and Illnesses
- **REQUIREMENTS:** Adequate training in this procedure and experience related to fuel handling/transfer will be required. A valid WHMIS (Workplace Hazardous Materials Information System) certificate will be required for both the Fuel Specialist and the Fuel Specialist Assistant. The Fuel Specialist should hold as a minimum a valid Mine Health & Safety Supervisor Level I certificate.

#### 8 PROCEDURE

#### 8.01 General

This procedure will be broken out by specific tasks being done on site. They will be broken out by:

- Transfer of fuel from 205L drums to an enviro-tank in the Designated Fuel Station.
- Transfer of fuel from a sleigh-mounted enviro-tank to equipment, drills and other machines that require fuel.

- Fuel dispensed from dispensers/containers (e.g., jerry cans) to equipment, drills, snowmobiles, ATVs, pumps..
- Transfer of fuel within the Designated Fuel Station containment berm using the stationary enviro-tank and battery-operated pump.

**Note:** As stated in **Sec. 3.01** above, all petrol (gasoline) equipment will be fuelled by hand pump within the confines of a designated fuel berm. Such fuelling does not constitute bulk fuelling, as minimal gas-powered equipment will be operated at the Chidliak Project and only small numbers of petrol drums will be in any one camp at any one time.

#### In all cases, the process below shall be followed at all times, as a minimum.

- Ensure spill kits and extra absorbents are on hand for immediate use. Fuel Specialist and Fuel Specialist Assistant dispensing fuel are to be aware of the proper use of all response materials and are to have received proper training on their use, as well as site communications protocol in the event of a reportable spill or release.
- All drums will be secured in portable berms whilst the filling of machinery, equipment, pumps, *etc.*, is in progress. Spill protection shall be on hand at all times.
- All fuel-dispensing nozzles are to be equipped with a splash-back guard.
- No smoking or open flame is allowed within 20 metres of any fuelling operations.

#### 8.02 Fuel Transfer from Drums to Enviro-Tanks using an Electric or Battery-Operated Pump

- Ground all metal drums to a solid grounding post to ensure no electrical charge can be generated. Ensure that a valid fire extinguisher is in place and in good operating condition.
- Check fuel levels visually before transferring fuel, wherever possible.
- Ensure full drums on pallets are moved with due care to avoid spills and injury.
- Move the sealed drum to within 3 metres of the fuel tank to be filled and ensure it is within a berm to prevent drips/leaks to ground and away from areas where it may be knocked over. Ensure the drum cannot tip over or be punctured. Take extra care to avoid placing hands or fingers in potential pinch points when moving drums by hand. Ensure full and empty drums are stored with due care in designated areas to avoid spills and injury. Ensure the drum is placed on/in a catch berm/containment at all times whilst filling or when offloading of product is under way.
- Using a bailer tool, verify that the drum contains the correct fuel. Ensure drums are properly labelled (Workplace Hazardous Materials Information System (WHMIS) and Transport of Dangerous Goods (TDG) decals/stamps.)
- Extend the pump head and place it in the drum and ensure it is screwed on properly and secured in place.
- Ensure the pump is OFF. External plugs ensure that there will be no direct contact with battery or power source. Insert the nozzle into the tank being filled, whilst standing to the side of the nozzle to avoid splash-backs.
- Connect battery (black wire first) then the red wire. Turn pump ON. Commence pumping fuel.
- Ensure that the fuel is going into the tank and that the tank is not overfilling. Fill tanks to 90% of capacity to allow for expansion and to avoid splash-backs. To look into the tank, stop pumping fuel, remove the nozzle carefully, turning it upwards to avoid drips. Wait several seconds before looking to avoid surging fuel that can cause splash-backs.
- Do **not** leave the pump un-attended whilst fuelling equipment at any time.
- When the drum is empty, release the nozzle handle, turning the nozzle upwards to prevent dripping.

- The nozzle contains a hook to store it against the lip of the drum in an upright position.
- Turn OFF pump by un-plugging pump from power source and disconnect the battery (red wire first) then the black wire.
- Ensure the nozzle is pointing up when not in use. Wipe down the nozzle to ensure no product leaks or drips.
- When storing the pump away from the Designated Fuel Station, ensure that it is properly placed in the Discovery Camp Equipment Shed on absorbent pads, and within a berm/containment to catch any fuel that may drip from the unit.
- Pump may be left standing in an empty containment whilst secured within the Designated Fuel Station fuel-transfer berm.

#### 8.03 Fuel Transfer using Sleigh-Mounted Pump (Mobile Fuel Station)

- Ensure spill kits and extra absorbents are on hand for immediate use. Ensure supplies are adequate in the event of a spill or leak, including valid fire extinguishers.
- It is important to note that the sleigh-mounted fuel tank (the enviro-tank) is enclosed in its own containment made of the same materials as the tank. This will serve to catch leaks or drips off the tank pump itself.
- Ensure any wheels are chocked so no movement can take place. Ensure engines of the equipment are turned OFF before any fuelling takes place
- Pull mobile fuelling sleigh and tank up to the equipment, vehicle or additional tank that requires filling, remaining at least 3 metres away. Ensure you place the mobile fill station on the opposite side of any rock faces or high walls.
- Open the fuel cap on the mounted tank and check the fuel level prior to fuelling any equipment.
- Unwind the hose from the vehicle and insert the nozzle securely into the filling inlet, ensuring that no fuel drips onto the ground or on the equipment. (A drip pan or absorbents are to be placed underneath equipment to prevent spillage.)
- Set the vehicle/sleigh pump in the ON position. Stand to the side. Squeeze the nozzle handle to begin dispensing fuel into the equipment. In extreme cold temperatures, set the nozzle to the ON position and insert it securely into the tank inlet and remain by the vehicle pump, ensuring the nozzle remains securely in place for the duration of the fuel transfer. This is permitted to prevent frostbite from handling cold nozzles. If the nozzle slips out, immediately set the vehicle pump to the OFF position.
- The nozzle shall NOT be placed in the ON position unless the Fuel Specialist or Fuel Specialist Assistant is holding it.
- PPE shall be worn at all times and due care exercised at all times to prevent frostbite during winter fuelling.
- The Fuel Specialist is to ensure that an additional trained assistant is always available, in case extra help is required during a fuelling or fuel transfer event.
- For larger refuelling loads during extreme cold temperatures, set the nozzle to the ON position and place it securely into the tank inlet. Remain outside the vehicle and watch the fuel nozzle closely to ensure it remains securely in place for the duration of the fuel transfer.
- Periodically check the level of filling to prevent overfilling. Wait several seconds after stopping before looking into the tank inlet to avoid surging fuel that can cause splash-backs. Only fill tanks to 90% of capacity to allow for expansion and avoid splash-backs.
- When returning the nozzle after use, avoid drips and spills. Reseal the tank and secure the lid to the secondary containment, if applicable.

#### 8.04 Field Fuel Transfer from Dispensers (e.g., Jerry Cans) to Vehicles/Equipment/Pumps

- Ensure spill kits and extra absorbents are on hand for immediate use. Ensure supplies are adequate in the event of a spill or leak, including valid fire extinguishers
- Park the vehicle on the travelway in front of the fuel dispenser, lowering the bucket or blades (if any). Shut the engine OFF.
- When vehicles are on level ground, two wheel chocks must be placed, one on each side of wheels. When vehicles are on an incline, both chocks must be placed on the downhill side of two wheels.
- Open vehicle fuel cap. Insert dispenser nozzle securely into tank inlet whilst raising the jerry can evenly and slowly, allowing gravity to take over filling the vehicle/equipment. Stand to the side when adding fuel. Fill tanks to 90% of capacity to allow expansion and avoid splash-backs. Ensure that the fuel dispenser is cleaned and wiped down to ensure no leakage or spills; remember that fuelling is to occur within the Designated Fuel Station or at a designated area at the other camps and only when a berm to contain the jerry can and a drip pan or padding is available for the vehicle to drive onto. For refilling, return the fuel dispenser/jerry can to the Designated Fuel Station or designated area at other camps.

#### 8.05 Fuel Dispensing at Designated Fuel Station – Discovery Camp

- The Fuel Station will be built upon a flat surface with a protective layer of spill/leak/seepage proof matting inside a berm in order to protect the ground/soil from any contamination caused by filling of vehicles and equipment. The ground within the Fuel Station travel area will be protected from spills and leakage as well.
- Good housekeeping in and around the Fuel Station must be undertaken at all times.
- Vigilance as to traffic management on the travel path to, from and through the Fuel Station must be exercised at all times.
- Signage and lighting must be in good condition at all times.
- Ensure spill kits and extra absorbents are on hand for immediate use at all times at the Fuel Station. The Fuel Specialist and/or Fuel Specialist Assistant will check and verify the inventory and condition of all spill management materials, including fire extinguishers, according to the once-per shift or daily schedule identified in the *Inspection Log Procedure*. They also will be inspecting and verifying the safety and integrity of the transfer berm and underlay matting once per shift. (See separate Inspection Log Procedure.)
- Vehicles/equipment will pull inside the transfer berm, shutting down the vehicle whilst the operator conducts the filling process. The Fuel Station will be operated by a 110-volt pump. The power source will be from a light tower: a light tower is required due to dark winter conditions. The Fuel Specialist or Fuel Specialist Assistant will turn ON the pump whilst the other is holding the fill nozzle in the air to avoid any accidental charging or engagement of the pump. Holding the nozzle in the air will prevent any unintentional fuel releases.
- Operators are to keep in mind at all times that fuelling/fuel transfer at the Fuel Station is a 2-person job: One person must remain at the enviro-tank and the other person must remain at the vehicle or equipment to be filled.
- The filling nozzle will be inserted into the equipment's receiving inlet. The Fuel Specialist or Fuel Specialist Assistant will fill to 90 % capacity only, to allow for settling of fuel to avoid splash-back and allow room for expansion. Once filling is complete, the Fuel Specialist or Fuel Specialist Assistant will repeat the same steps until the filling nozzle is secured back into its holder on the enviro-tank. The fuel specialist team will ensure any leaks or spills inside the drive-in berm are wiped up and used absorbents properly disposed of. The filled vehicle will then be allowed to start and drive away.

- Inspection of the equipment, hoses, pumps, batteries, spill-management supplies, signage and lighting will occur periodically each day during each shift to ensure safe and environmentally-acceptable process at all times, and that any leaks are detected and dealt with immediately.
- **Note**: If a fuel spill should occur, despite best efforts, the Fuel Specialist and Fuel Specialist Assistant, and any additional help from the camp Spill-Response Team shall ensure the spill is cleaned up right away with absorbent material. All cleanup materials are to be safely disposed of as hazardous waste and separated in their own containment berms/containers. In the event of a spill, the Fuel Specialist will notify the Supervisor so an incident/spill report can be filled out. All focus and attention must be made to the spill and proper spill response, as per the Chidliak Spill Plan. The area in front of the Fuel Station drive-in berm will be lined to protect the underlying ground. Peregrine reports all fuel spills of 50L or more to the NU-NWT Spill Line and proper authorities.

#### 9 **ATTACHMENTS**



Fuel enviro-tank with spill containment



Fuel sleigh that enviro-tank will be secured to



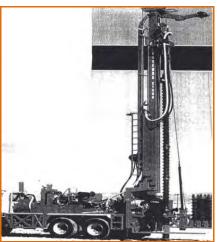
Manual pump without hose and nozzle (Optional to electrical (battery) pump)



Electrical pump for filling tank from enviro-tank



CAT Challenger to pull sleighs



Canterra (Foremost) CT350 RC drill

#### 10 APPROVED RECORD

NAME	POSITION	DATE	REV#	NOTES

PEREGRINE DIAMONDS SAFE WORKING PROCEDURES					
Division:	Fuel Management Station				
Section:	-				
Subject:	Inspection Log Procedure – Designated Fuel Station				
Owner:	Corporate EHS Manager	Effective	January 2012		
		Date:	_		
Revision:		Replaces:			

#### 1 OBJECTIVE

1.01 To maintain and inspect all fuel products, the Fuel Station transfer berm itself and any hazardous waste products within the confines of the transfer berm or the environs of the Designated Fuel Station at Discovery Camp on behalf of the Registered Waste Generator (*cf. Definition 5.09 below*), whilst providing a system of identification of products that allows the safe and environmentally-acceptable tracking of fuels and fuel-handling and the maintenance of the drum storage berms.

#### 2 SCOPE

2.01 This procedure applies to all workers, contractors and visitors to the Chidliak Project, but specifically is within the job scope of the Fuel Specialist, his/her Fuel Specialist Assistant, and the two cross-shift personnel who will replace the Specialist and Assistant on rotation.

#### 3 INTRODUCTION

- 3.01 The **Inspection Log** is an existing Peregrine commitment which will now apply to the **Designated Fuel Station** which in turn allows consolidation and efficiency of fuel management at Discovery Camp, the logistical base of the 2012 bulk-sampling programme.
- 3.02 The **Inspection Log** is in addition to, not a replacement for, the routine **Daily Inventory Log** which is kept in each Chidliak Project camp: The Inventory Log simply records number of fuel containers by type in camp on each day that the camp is in operation.

#### 4 RESPONSIBILITY

- 4.01 The **Project Manager** is responsible for:
  - Ensuring this procedure is implemented and maintained,
- 4.01 The **Fuel Specialist** is responsible for:
  - The inspection each day, at least once per shift, of the Designated Fuel Station and the **fuel transfer berm**, seeking out any failures of the berm, underlay matting, fuel containers and all drums within the confines of the berm.
  - Related inspection each day, at least once per shift, of the associated **fuel-storage berms** where diesel, aviation fuel and petrol (gasoline) are kept.
  - Related inspection at least once per day of waste-storage areas (inside the fuel transfer berm and in any separate, dedicated berm(s) at the Station).
  - Related inspection at least once per day, or as per the crushing schedule, of the empty-drums stockpile and DD-30 **Drum Crusher operations** in the Designated Fuel Station. (*See separate drum-crushing procedure.*)
  - Report immediately to the Project Supervisor any spills or failures at the transfer berm, a fuel-storage berm, the crusher station or other aspects of the Designated Fuel Station.

- 4.02 The **Project Supervisor** is responsible for:
  - Designating the Fuel Specialist and ensuring management of the Designated Fuel Station.
  - Labelling, or directing labelling, of drums according to WHMIS, TDG and MSDS requirements.
- 4.03 The **Environment Manager** is responsible for:
  - Monitoring the implementation of this procedure and compliance, and
- 4.04 The Site Health, Safety and Environment (HSE) Co-ordinator is responsible for
  - Managing spills and maintaining records.

#### 5 **DEFINITIONS**

- 5.01 **Designated Fuel Station:** Designated area at Discovery Camp for fuel transfer and equipment refuelling (cf. Drawings 1a, 1b in the Fuel Management Plan), and under the control of the Fuel Specialist.
- 5.02 **Fuel Specialist**: An experienced and competent worker who has been trained in the proper fuel-handling procedure, has been oriented by the Project Manager or his designate and is the person responsible for operation of the Designated Fuel Station at Discovery Camp and for supervision of the Fuel Specialist Assistant.
- 5.03 **Fuel Transfer Berm:** The lined berm in which fuel will be transferred from barrels to one of two 15 000L fuel enviro-tanks attached to the bulk-sampling programme. Equipment and vehicles also will be refuelled in this drive-in berm.
- 5.04 **Fuel-Storage Berm:** A manufactured berm for storage of drum fuel.
- 5.05 **Drum Crusher:** A generator-run compaction device which flattens empty drums for ease of storage (flattened drums conserve space) and ease of outshipment.
- 5.06 **Inventory Log:** A routine log, updated on a daily basis in large camps, which tracks number of containers of fuels in a camp by type, *e.g.*, diesel, aviation fuel, petrol (gasoline), propane. This is not the same as the Inspection Log, which is a controlled instrument to meet safety and environmental obligations.
- 5.07 **Waste-Storage Areas:** Areas designated within the Fuel Storage Berm and outside of it in one or more manufactured berms set up to label, complete documentation for and house waste products such as waste oil and fuel-contaminated water until their outshipment.
- 5.08 **Government of Nunavut Waste Movement Manifest Form:** A numbered form for tracking of chain of custody of waste, on which the Nunavut Government Pollution Control Division requires listing of type and quantity of waste products out-shipped by a Registered Waste Generator.
- 5.09 **Registered Waste Generator:** Peregrine Diamonds Ltd. in the case of the Chidliak Project.

#### 6 REFERENCES AND RELATED DOCUMENTS

- 6.01 NWT and NU Mine Health and Safety Act and Regulations: 5.07, 6.01, 6.04, 6.10.
- 6.02 AANDC (formerly INAC) Class A Land-Use Permit #N2008C0005 [Chidliak land-use permit and amendments].
- 6.03 NWB Type B Water Licence #2BE-CHI0813 [Chidliak water licence and amendments].
- 6.04 Chidliak/Qilaq/Cumberland Spill Contingency Plan, Version 9, Peregrine Diamonds Ltd.
- 6.05 Environmental Guideline for the General Management of Hazardous Waste Nunavut Government Department of Environment (April 2010)
- 6.06 Indian and Northern Affairs Canada-Nunavut Fuel Storage and Handling Guidelines Draft (April 2008)
- 6.07 Nunavut Environmental Protection Act

#### 7 PREPARATION

- **TOOLS:** Gloves, Goggles (for use whilst moving, counting items). Labels. Government of Nunavut Waste Movement Manifest Form. Record book for Inspection Log.
- HAZARDS: Loss of containment (berm failures), leaks, spills, matting/underlay damage.
- **REQUIREMENTS:** Ensure that the Project Supervisor, Fuel Specialist and Fuel Specialist Assistant are aware of and knowledgeable in this procedure, and trained in the handling and storage of hazardous goods associated with mineral exploration programmes.

#### 8 PROCEDURE

#### 8.01 General

- To inspect and manage the Designated Fuel Station where the fuel is going to be stored, handled
  and transferred, and where fuelling of equipment and the mobile fuel sleighs and enviro tanks
  will occur.
- All waste for storage in crates or drums must be stored so as to ensure safety and environmental control. A WHMIS workplace label and TDG labelling (e.g., Class 9 sticker, UN number) must be affixed to all containers that contain controlled products or hazardous materials.
- Full or partially-full drums must be moved so as to ensure safety and environmental control. The Fuel Specialist and Fuel Specialist Assistant moving the drums within this location, or directing such movement by an Equipment Operator, are responsible to advise EHS personnel that the crate/barrel has been moved there.
- Those requiring any drums for waste storage must consult the Project Supervisor or his designate.
- All hazardous waste must have a WHMIS label and TDG labels, as well as a Government of Nunavut Waste Movement Manifest Form for outshipment of waste.
- The **Inspection Log** records the following information:
  - Which site was inspected;
  - o Confirmation of daily inspection;
  - o Actions taken or required;
  - o Comments about the inspection event.

#### 9 ATTACHMENT

9.01 **Inspection Log** 

# PEREGRINE DIAMONDS LTD. Inspection Log for Chidliak Fuel Management: DESIGNATED FUEL STATION, DISCOVERY CAMP

SITE OPTIONS: #1 (Fuel Transfer Berm in Fuel Station), #2 (Diesel Storage Berm); #3 (Aviation-Fuel Storage Berm); #4 (Petrol/Gasoline Storage Berm); #5 (Drum Crusher); #6 (Waste Storage Area)

SITE # (Pick #1,	INSPECTION DATE	INSPECTION RESULT:  Held + OK ( * ),	ACTIONS TAKEN OR REQUIRED  (e.g., tightened bungs, removed	ADDITIONAL COMMENTS (e.g., time of inspection, reportable spill,
#2, etc.)	(DD/MM/YY)	Held + Action Req'd (X)	dented drum, etc.)	other details, etc.)

<sup>\*</sup> NOTE: This log is modified from the more generic Inspection Log maintained at all Peregrine camps

#### 10 APPROVED RECORD

NAME	POSITION	DATE	REV#	NOTES

PEREGRINE DIAMONDS SAFE WORKING PROCEDURES				
Division:	Fuel Management Station			
Section:				
Subject:	Drum Crushing within a Berm			
Owner:	Corporate EHS Manager	Effective	January 2012	
		Date:	-	
Revision:		Replaces:		



#### DD-30 Drum Crusher -Largest Model - Chicago-Compactors.com

With 19.6 tons (17.8 tonnes) of crushing force, the <u>DD-30 Drum Crusher</u> allows you to profit from recycling or helps reduce disposal costs. Its 6-to-1 compaction ratio saves valuable storage space. Crushed drums are easier to handle, ship off-site.

(ABOVE: Peregrine Drum Crusher, Model DD-30, at Discovery Camp, Chidliak Project)

#### 1. PURPOSE AND SCOPE:

- To maintain the control of all fuel waste products prior to and after barrels have been crushed.
- To ensure that all barrels are crushed in a manner that is safe for workers, the site and the environment.

#### **Specific Hazards Include:**

- Explosion/fire of waste fuel
- Contact injuries from hydrocarbons, such as inhalation of fumes, skin and eye irritation and possible burns.
- Cuts, lacerations and crushing injuries.
- Slips, trips and falls.
- Waste fuel spillage.
- Pinch points.
- Strains/sprains while lifting, rolling or carrying empty barrels.

These hazards require that specific controls be implemented to reduce the risk of personnel being injured or the possibility of potential environmental problems. This Standard Operating Procedure details the controls that are to be followed when crushing empty 205L barrels.

#### 2. RESPONSIBILITIES:

#### **Operations Manager or designate is responsible for:**

• Ensuring a procedure is established for Drum Crushing in a manner that is safe for workers, the site and the environment

#### **Site Manager is responsible for:**

• Ensuring the implementation of this procedure.

#### Supervisors are responsible for:

- Implementing this procedure
- Ensuring that workers are trained and understand this procedure.
- Ensuring the regular maintenance and repair of generator and crusher is done.
- Ensuring that spill kits, fire extinguishers and signage are provided.
- Ensuring the Environment Manager and the workers' direct Supervisor are notified in the event of a spill.

#### Fuel Specialist on site or his/her designate is responsible for:

• Recording all reported spills and area inspections

Ensuring spill kits are available at crusher station at all times whilst in operation.

#### Safety and Health Co-ordinator is responsible for:

- Monitoring the implementation of this Procedure
- Ensure procedure is being followed and that all spills are identified.

#### Worker is responsible for:

- Understanding and following this procedure.
- Reporting all spills to his/her immediate Supervisor.
- Wearing and adhering to the PPE to be worn specific to this procedure.

#### 3. PROCEDURE

#### Personal Protective Equipment (PPE)

In addition to the site PPE requirements of Safety Glasses, Hard Hat, Safety Boots, retro-reflective vests/clothing, workers at the crusher station require the following:

- Rubber gloves
- Rain pants
- Hand-held radio for communication purposes.

#### **Pre-Operational Check list**

- Generator:
  - Check oil level, belts, fuel level, filters and hoses. (see Figure #1)
  - Check for any leaks to the Generator Fuel System.
- Crusher unit:
  - o Ensure inside of machine is clean.
  - o Check hydraulic filter on top, ensure no hydraulic leaks.
  - o Ensure key is in place for generator and crusher. Key is needed to operate machines.
  - Test proper operation of door lockout. Open door, hit start button, then emergency stop button, see if crush cycle starts. MACHINE SHOULD NOT START WITH DOOR OPEN.
- Emergency Equipment:
  - o Check fire extinguisher, spill kit and eyewash station are present and operable.
  - Open-ended 205L drum for waste product should be in proper containment. All crushing is to occur in a lined berm with steel underlay. (see Figure #2)

#### 4. OPERATIONS

#### **Barrel Handlers:**

- Remove bung from barrel using barrel opener.
- Empty contents into open-ended 205L barrel. (see Figure #3)
- When barrel is empty, place on ramp and slowly roll to crusher operator. (see *Figure* #4) OR lift with CAT Skidsteer loader.
- When open-ended drum is full, use designated transfer pump to transfer contents to sealable drum.

#### **Crusher Operator:**

- Turn on the Generator and allow time to warm up. (see Figure # 1)
- Turn key on control panel to "Crush". (see Figure # 5)
- Remove empty barrel from ramp or equipment bucket and place upright into crusher. (see Figure # 6)
- Close and lock door with safety latch. ( see Figure # 7)
- Press "Cycle Start" button. (see Figure # 8)
- When the cycle is complete, the barrel crusher will automatically shut off.
- Remove the crushed barrel and hand to outside worker. (see Figure # 9)
- When the crushing operation is complete, turn the crusher key to the "Off" position, and turn off the generator. (see Figure # 10)

#### Packaging full waste oil barrels:

- Place full waste-oil barrels on pallet using a barrel lifter. Maximum of four barrels per pallet.
- Mark on pallet or top as "Waste Fuel", mark "UN3082" and strap with wood on top.
- Place pallets in designated area for storage until out-shipment.

#### Packaging crushed barrels:

- Crushed barrels are to be placed on pallets in stacks of no more than 20 crushed barrels per pallet.
- Place wooden side walls and corners on all four sides and top of stack, then strap pallet.
- Cut off excess strapping and put into trash can.
- Store pallets of crushed barrels in assigned storage area until shipped from site for proper disposal.

#### **FIGURES**

Process steps to follow at all times. (NOTE: DD-30 crusher at Discovery Camp is new: Photos below, from Nuna Logistics, are for illustration purposes).



Figure # 1



Figure # 2







Figure # 4



Figure # 5



Figure # 6



Figure # 7



Figure # 8

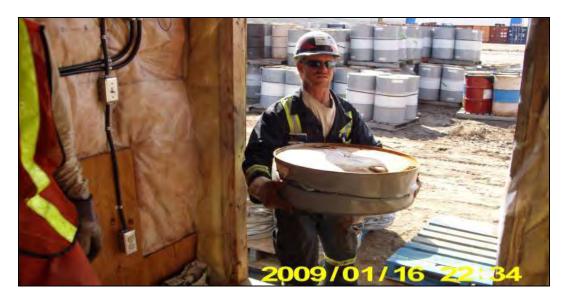


Figure # 9

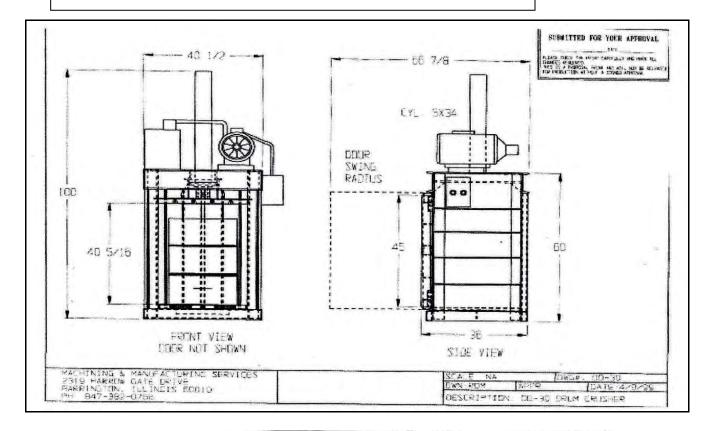


Figure # 10

#### 10 APPROVED RECORD

NAME	POSITION	DATE	REV#	NOTES

#### **MECHANICAL DRAWING AND SPECIFICATIONS - DD-30**



#### **DD 30 SPECIFICATIONS**

#### GENERAL EQUIPMENT SPECIFICATIONS

Dimensions:

Depth 36",width 40.5",Height 100" 39,300 lbs.

Compaction Force : Ram face dimension:

29"W \* 29"D. 46.7 psi

Ram face pressure : Cycle time :

28 sec

Baler meets or exceeds ANSI Z245.5 safety standards.

Baler uses readily available,nationally and internationally distributed components.

Baler is assembled from atleast 95% American made components.

Machine weight:

#### RESULTS

6 to 1 compaction ratio

#### CONSTRUCTION SPECIFICATION

Floor: 1/4" steel plate, 4" channel Sides: 1/4" steel plate, (4)3/8"x 3"sides: 1/4" steel plate, (4)3/

1/4" steel plate,(4)3/8"x 3"side stiffners per side

Back: 6" channel,6" tube

Door: 3/16" plate , 4" \* 3" \* 3/16" tubing
Cylinder mounting: 4" heavy channel,1" steel plate

Presshead: 1/4 steel plate

#### HYDRAULIC SYSTEM SPECIFICATION

Pump (type):

Rotatory vane positive displacement

(capacity):

10.5 gpm

System Pressure (normal):

2000 psi

(max):

2400 psi

System Design Pressure:

2500 psi

Cylinder (bore):

5"

(stroke):

34"

(rod):

Reservoir capacity:

3" 22 gal

The system is completely self-contained within the baler. The power unit has the following feature: 20 micron filering System, soft shift directional valve and oil heater port.

#### ELECTRICAL SYSTEM SPECIFICATION

molor (hp):

1750

(rpm):

1750

(voltage):

208/230/480 VAC 60Hz Three phase

(voltage):

230 VAC 60hz single phase (optional)

Electric Panel (main):

Hoffman NCMA 4

(junction):

Hoffman NEMA 3R

3/4" satellite with 8 TFFN wire(note all looms

Looms (motor):

are grounded)

(main):

Multi - conductor cord (color coded)

(power unit):

Multi - conductor cord (color coded)

Motor starter:

IEC size 2

Controls:

Relay Logic

Operators (type):

Allen Bradley 800E series(20mm)

(Used):

Keyed start switch

Red mushroom stop push button

Interlock switches

Mag Switch

#### PAINT SPECIFICATION

Primer:

Rush inhibiting ballom coat,2mil thickness.

Paint:

Industrial enamel, high solids, 4mil thickness.

Dhole-ID	Kimberlite	Easting (NAD83)	Northing (NAD83)
CH6-A	CH-6	619403.28	7135215.17
CH6-B	CH-6	619426.19	7135213.78
CH6-C	CH-6	619444.75	7135221.59
CH6-D	CH-6	619398.63	7135194.35
CH6-E	CH-6	619422.84	7135191.17
CH6-F	CH-6	619395.00	7135175.00
CH6-G	CH-6	619423.86	7135173.92
СН6-Н	CH-6	619426.00	7135151.00
CH7-A	CH-7	628233.18	7127604.88
CH7-B	CH-7	628244.35	7127608.75
CH7-C	CH-7	628186.35	7127576.95
CH7-D	CH-7	628170.88	7127561.06
CH7-E	CH-7	628193.65	7127551.17
CH7-F	CH-7	628171.00	7127538.00
CH31-A	CH-31	630572.15	7124599.71
CH31-B	CH-31	630549.83	7124564.75
CH31-C	CH-31	630595.00	7124566.24
CH31-D	CH-31	630550.00	7124525.00
CH31-E	CH-31	630592.24	7124525.00
CH31-F	CH-31	630560.25	7124459.10
CH31-G	CH-31	630549.83	7124419.66
CH44-A	CH-44	629177.06	7124900.00
CH44-B	CH-44	629199.26	7124899.22
CH44-C	CH-44	629179.27	7124880.05
CH44-D	CH-44	629200.00	7124877.00
CH45-A	CH-45	628355.27	7126709.06
CH45-B	CH-45	628373.81	7126709.45
CH45-C	CH-45	628353.30	7126690.12
CH45-D	CH-45	628375.00	7126688.15

#### **APPENDIX 12**

# Press Release and News Story regarding 49/50 Chidliak Ownership and Continuance of Peregrine as Chidliak Project Operator:

- Peregrine Diamonds Ltd. Press Release:
  - 01 December 2010
- Financial Post News Story:
  - 02 December 2010



Toronto Stock Exchange Trading Symbol: PGD

December 1, 2010 For Immediate Release

#### PEREGRINE MAINTAINS 49 PERCENT INTEREST IN CHIDLIAK

Peregrine Diamonds Ltd. ("Peregrine" or "the Company") is pleased to report that BHP Billiton has elected to maintain a 51 percent participating interest in the Chidliak joint venture. As a result, Peregrine's ownership in the Chidliak diamond project ("Chidliak" or "the Project"), Baffin Island, Nunavut, Canada remains at 49 percent, and each partner maintains marketing rights for their pro-rata share of potential future diamond production.

Mr. Eric Friedland, CEO of Peregrine, stated "Peregrine is ideally suited to build a vertically integrated diamond company because, in addition to our substantial 49 percent ownership stake in this important and valuable asset, we have marketing rights for our share of any future diamond production. Diamond mines can be incredibly profitable, and we are pleased to have BHP Billiton as our partner, recognizing that their experience in building and operating the successful Ekati™ diamond mine, also in Canada's north, will benefit Chidliak immensely as we move the project forward together."

BHP Billiton stated "BHP Billiton has chosen to maintain its interest in Chidliak at 51 percent at this time. We look forward to continuing the exploration programme and progressing the project in partnership with Peregrine."

Chidliak is located only 120 kilometres from Iqaluit, the capital of Nunavut, Canada. To date, 50 kimberlites have been discovered and diamond results have been reported for 24. Currently six kimberlites have coarse diamond populations and are considered to have economic potential in Arctic settings. An aggressive programme is planned for the 2011 field season, which is expected to include further investigation of kimberlites with economic potential and comprehensive exploration for more diamondiferous kimberlites. The 2011 field season is expected to commence in March, 2011, with the drilling of a number of high-priority, lake-based targets, followed by a larger summer exploration programme. Peregrine is the operator of the 2011 programme.

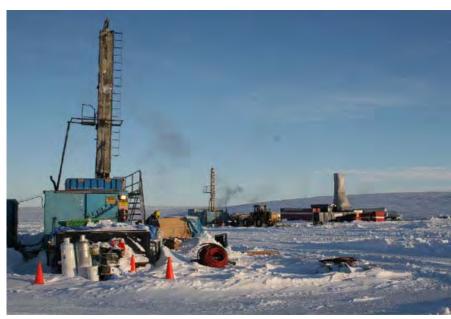
For further information, please contact Mr. Eric Friedland, CEO, Mr. Brooke Clements, President, Mr. Mike Westerlund, Vice President, Investor Relations and Corporate Communications or Peregrine Diamonds Investor Relations, at 604-408-8880 or at <a href="mailto:investorrelations@pdiam.com">investorrelations@pdiam.com</a>.

Forward-Looking Statements: This news release contains forward-looking statements. All statements, other than statements of historical fact, that address activities, events or developments that the Company believes, expects or anticipates will or may occur in the future (including, without limitation, statements relating to the proposed exploration programme, funding availability, anticipated exploration results, resource estimates, and future exploration and operating plans) are forward-looking statements. These forward-looking statements reflect the current expectations or beliefs of the Company based on information currently available to the Company. Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of the Company to differ materially from those discussed in the forwardlooking statements and, even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on, the Company. Factors that could cause actual results or events to differ materially from current expectations include, among other things, uncertainties relating to the availability and cost of funds, timing and content of work programmes, results of exploration activities, interpretation of drilling results and other geological data, world diamond markets, future diamond prices, reliability of mineral property titles, changes to regulations affecting the Company's activities, delays in obtaining or failure to obtain required project approvals, any changing budget priorities of BHP Billiton, operational and infrastructure risks, and other risks involved in the diamond exploration business. Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement, whether as a result of new information, future events or results or otherwise. Although the Company believes that the assumptions inherent in the forward-looking statements are reasonable, forward-looking statements are not guarantees of future performance and accordingly undue reliance should not be put on such statements due to their inherent uncertainty.



December 2, 2010

### Vote of confidence for Peregrine



Peregrine Diamond's drill program in the Northwest Territories. Photo courtesy of Peregrine Diamonds Ltd

Peregrine Diamonds Ltd. received positive news on Wednesday when BHP Billiton Ltd., the world's biggest mining company, decided to keep participating in its Chidliak diamond project in Nunavut. BHP will continue to hold 51% of the partnership, while Peregrine retains 49%.

Dundee Capital Markets analyst Randy Cooper called the move a "vote of confidence" in the project from BHP. He noted that Peregrine was also nominated as operator of the 2011 work program, "highlighting BHP's confidence in the Peregrine Diamonds team."

Peregrine will retain 49% of the marketing rights to the diamonds from Chidliak. This is strategically important in the long term as those rights can be use to develop a vertically integrated company, Mr. Cooper noted. BHP could have raised its stake another 7% by funding the project all the way to a bankable feasibility study, but chose not to. Instead, each partner will fund their share of the budget.