



Basic Impact Analysis (BIA)

**Segment C Highway 430 Rehabilitation, Mattie Mitchell's
to Rocky Harbour Newfoundland and Labrador**

Gros Morne National Park

August 2015

GMNP-2015-010



1. PROJECT TITLE	Segment C Highway 430 Rehabilitation, Mattie Mitchell's to Rocky Harbour Newfoundland and Labrador	
2. PROJECT LOCATION (Park, Site, Canal, NMCA)	Gros Morne National Park	
3. PROJECT SITE(S)	Highway 430 from Mattie Mitchell's to the Lobster Cove Head exit.	
4. PROPONENT	Parks Canada	
5. PROPONENT CONTACT INFORMATION	Darren Nicolle (Western Newfoundland and Labrador Field Unit Projects Manager) Gros Morne National Park Rocky Harbour, NL. Tel. 709-458-3568 cell 709-458-7110. Email Darren.Nicolle@pc.gc.ca	
6. PROJECT DATES	Planned Commencement August 12, 2015	Planned Completion September 30, 2016
7. INTERNAL PROJECT FILE #	GMNP-2015-010	
8. PROJECT DESCRIPTION		
<p>Complete highway restoration is planned for 15.2kms of route 430, beginning ~0.8 km south of the Mattie Mitchell Trailhead parking area, proceeding northward to the Lobster Cove Head exit past Rocky Harbour. Phase 1 of this project begins in 2015 with geotechnical test drilling into the existing road bed. Approximately 30 bore holes will be drilled into the paved roadbed to depths greater than 30cm for subgrade investigations and to collect cores for lab analyses along the route. All additional highway work will follow in 2016, including the installation of 2 new highway culverts where Mattie Mitchel Brook flows into Deer Arm estuary, road corridor shrub and tree clearing, ditching, culvert replacements, guiderail replacement and pavement resurfacing. Two highway intersections will be widened to create centre lanes for traffic to safely exit from route 430; 1) at the Rock Harbour Swimming Pool Complex and 2) another at the Spring Lane turn off to the Town of Rocky Harbour. An asphalt plant may be set up in the park at Codnox rock quarry. This site may also be used to source rock for this project.</p>		
9. VALUED COMPONENTS LIKELY TO BE AFFECTED		
<p>Environmental</p> <ul style="list-style-type: none"> • roadside vegetation and wildlife habitat • freshwater and estuarine flora and fauna (e.g. fish) <p>Visitor Experience</p> <ul style="list-style-type: none"> • highway traffic <p>Cultural</p> <ul style="list-style-type: none"> • Affects to cultural resources are not anticipated from this project. 		
10. EFFECTS ANALYSIS		
<p><u>Environmental Effects Analysis</u></p> <p>Geotechnical Test Drilling</p> <ul style="list-style-type: none"> • There may be potential for overflow of concrete used to refill the bore holes to run-off into roadside ditches. <p>Drilling and Blasting</p> <ul style="list-style-type: none"> • Removing tree vegetation during the migratory songbird breeding period can destroy nests and affect nestling survival. 		





- Sediment run-off from loose gravel could adversely affect water quality and aquatic flora and fauna habitats when work occurs nearby streams and waterbodies.

Roadside Ditching

- Water quality and fish habitat are major concerns associated with soil movement. Siltation runoff could adversely impact aquatic flora and fauna and their habitats where ditches connect with streams and waterbodies.
- Clearing existing vegetation may reduce the surface roughness, thereby increasing surface water runoff velocities and volumes.

Road Corridor Brush-Clearing

- Removing roadside shrub and tree vegetation during the migratory songbird breeding period can destroy nests and affect nestling survival.
- Brush cutting stimulates plant resprouting which attracts foraging moose to the highway corridor.
- Cumulative petroleum based residue from chainsaw bar lubricants when brush and tree cutting ~13 hectares of highway corridor has potential for adverse effects to the natural environment; to surface water runoff in particular.

Guiderail Replacement

- Siltation run-off from disturbed soil from post-hole digging and backfilling could adversely impact aquatic flora and fauna habitats where work occurs nearby streams and waterbodies.

Sign-Island Installation

- Siltation run-off from soil backfill in ditches could adversely impact aquatic flora and fauna habitats where work occurs nearby streams and waterbodies.

Cold Planing Asphalt Pavement

- Milled asphalt includes various petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) and heavy metals that are hazardous to human health and can leach into the natural environment causing significant adverse impacts. Storage and recycled use of this material is a concern.

Roadbed Upgrading

- Sediment run-off from loose gravel along road shoulders could adversely affect water quality and aquatic flora and fauna habitats when work occurs nearby streams and waterbodies.

Road Surface Paving

- Greenhouse gas emissions and hazardous air pollutants are released from hot-mix paving.

Culvert Installations

- Water quality and habitat for fish and macro-invertebrates are concerns associated with soil movement. Silt run-off from roadbed excavations could adversely impact estuarine aquatic flora and fauna.

Visitor Experience Effects Analysis

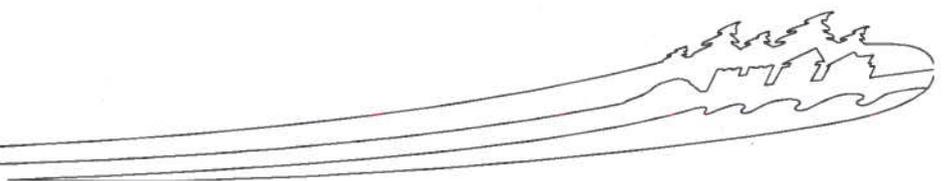
- Work may cause temporary delays to visitor traffic.
- Work may cause temporary effects to visitor experience from changes in views, restricted access to some areas, noise from work activities, and the presence of machinery and workers on site.

11. MITIGATION MEASURES

Environmental Mitigation Measures

Geotechnical Test Drilling

1. Ensure that none of the concrete mix and patching used to refill roadbed test bores can flow outside the paved surface.
2. Dumping of any excess (left-over) concrete mixtures will not be permitted in the park.





Drilling and Blasting

3. If cutting vegetation is required for expanding the quarry, it shall not be done during the nesting period (June-July) to avoid disturbing songbird nesting habitat.
4. Reduce runoff velocities at hills by installing silt trapping barriers where necessary to filter-out suspended sediments.

Roadside Ditching

5. Install silt fence or temporary rock check dams at culverts until runoff sediments can be permanently prevented from entering streams and waterbodies.
6. Construct measures to interrupt slopes to reduce runoff velocities and siltation problems associated from exposed soil.
7. Reduce runoff velocities at hills by installing silt trapping barriers to filter-out suspended sediments.
8. Install permanent measures to filter runoff at steep slopes and where ditches are culverted directly into streams and waterbodies.
9. To prevent sediment runoff from entering streams, ditching must not occur within 30 metres of streams and water bodies. If needed, install turn-outs (i.e. tail ditches) where grades exceed 5% when approaching streams.
10. Fueling of all equipment must not occur within 100 metres of streams and water bodies.
11. Special attention must be given to avoid damaging fossils when ditching along a roadside rock face at Deer Arm. At least one complete 500,000,000 old trilobite fossil is located in the ditch at the base of the rock face; others occur further up this rock slope (location > UTM 21U 439653 5489204 NAD 83). Parks Canada will mark the location of the fossil site before work begins. If necessary, hand tools instead of heavy equipment will be required for ditching at the fossil site.

Sign-Island Installation

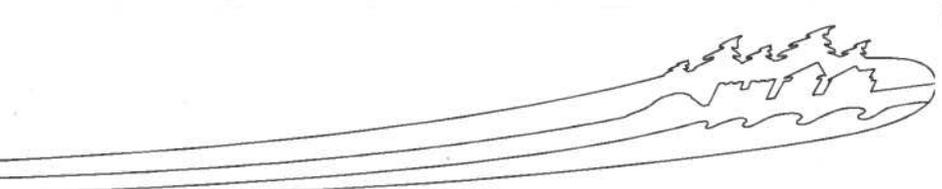
12. Install silt fence or temporary rock check dams at culverts until runoff sediments can be permanently prevented from entering streams and waterbodies.

Road Corridor Brush-Clearing

13. To avoid disturbing songbird nesting habitat, cutting vegetation must not occur during the nesting period (June and July).
14. To avoid attracting wildlife, workers must insure that no food items are discarded or left at the work site or anywhere in the national park. Failure to comply with this direction may result in prosecution under section 24(2) of the *Canada National Parks Act*.
15. To provide thermal shade protection of aquatic habitat, canopy vegetation must not be cut within 10 metres of freshwater streams and water bodies; longer buffers may be required at steepest grades.
16. To protect the environment from cumulative effects of petroleum based chainsaw bar lubricating oil, a nontoxic bio-based alternative (e.g. vegetable oil) must be used instead.
17. To prevent sites from petroleum contamination, all maintenance and re-fueling of chainsaws and bush-cutters must occur at least 30 metres away from any waterbody, and not where spills could flow into the ground.
18. Spill containment kits must be readily available at all work sites with personnel trained in their use.
19. Cut trees and shrubs must be removed from the site. Shrubs may either be dragged from sight into forest edges or be mechanically chipped and evenly dispersed on site.
20. Open fires will not be permitted in the park.
21. Ensure the work site is properly signed and traffic controlled for visitor safety.
22. Limit cutting to a standard distance to minimize effects to viewsapes along road corridors.
23. To reduce the visual effects of cutting along the road corridor, remove brush while the work proceeds; or it can be mechanically chipped and distributed evenly on-site.
24. Inform the public of scheduled work through local media.
25. All flagging tape used to mark the road corridor cutting limits must be removed once the cutting is completed.

Guiderail Replacement

26. All work must be restricted to the road shoulder.
27. Minimize the disturbed area to reduce siltation and erosion.





28. All removed/replaced materials (e.g. posts, cables, guiderails, etc.) must be disposed of at an approved location off-site and eventually removed from the park.

Cold Planed Asphalt

- 29. Stockpiling or disposal of milled asphalt will not be permitted in the national park. Any access milled material will be recycled primarily for surfacing fish station access roads in the park or mixed with aggregate to construct road shoulders.
- 30. Ensure trucks are properly loaded and tarped to minimize expulsion of milled asphalt during transport.

Asphalt Paving

- 31. Disposal of any unused asphalt materials will not be permitted anywhere in the park.
- 32. Spill containment kits must be readily available at all work sites with personnel trained in their use.
- 33. To avoid attracting wildlife, workers must insure that no food items are discarded or left at the work site or anywhere in the national park. Failure to comply with this direction may result in prosecution under section 24(2) of the *Canada National Parks Act*. Culvert removal and installation

Culvert Removal and Installation

- 34. All replaced culverts that cannot be recycled for use in other park projects must be disposed of at an approved site outside the park's boundaries.
- 35. Install permanent measures to filter runoff at steep slopes and where ditches are culverted directly into streams and waterbodies.
- 36. All replaced stream culverts must be placed at-grade to maintain (or restore) fish passage. Where necessary, structures must be installed in culverts to reduce stream velocities to accommodate fish passage.
- 37. All new and replaced culverts must be installed at grade to maintain or restore fish passage.

Visitor Experience Measures

- 38. In the interest of visitor safety, elements of this project will require temporary highway traffic delays. Safely maintain one highway lane open with traffic control personnel in place during all aspects of this project.
- 39. Protect the public from safety hazards at all work sites and equipment storage areas.

12. CONSIDERATION OF THE NEED FOR PUBLIC PARTICIPATION & ABORIGINAL CONSULTATION

12 a) Need for public participation? NO X YES _____
 12 b) Aboriginal consultations required? NO X YES _____

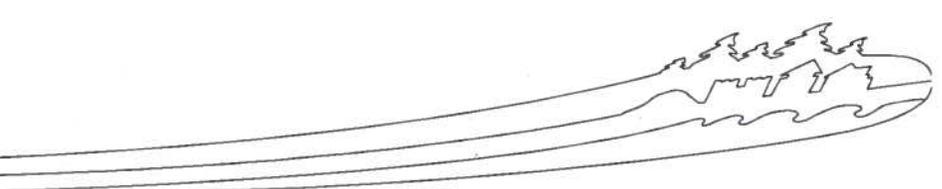
13. EFFECT SIGNIFICANCE

If unabated, residual effects by surface runoff from ditching, culvert replacements, highway resurfacing, etc. could cause significant adverse effects to aquatic flora and fauna where connected to streams and waterbodies.

14. SITE INSPECTION

- Site inspection required
- Site inspection not required

Staff from Parks Canada Resource Conservation and Asset Management, Highway Engineering Services–East and Public Works and Government Services Canada will conduct periodic inspections during all phases of this project to insure that measures to mitigate potential adverse environmental effects are being met and functioning.





15. SPECIES AT RISK MONITORING

There are no Species at Risk or Critical Habitats as defined under SCHEDULE 1 of SARA involved in this project.

16. SARA NOTIFICATION N / A

17. EXPERTS CONSULTED
Include Parks Canada experts. Add as many entries as necessary for the project.

Department/Agency/Institution:	Date of Request: YYYY-MM-DD
Expert's Name:	Title:
Contact Information:	
Expertise Requested: Indicate the discipline or subject area in which expertise was sought.	
Response: Summarize the expert's response to the request (append correspondence as required and add to attachment list in Section 21).	

18. DECISION
NOTE: If the project is identified as likely to cause significant adverse effects, CEAA 2012 prohibits approval of the project unless the Governor in Council (Cabinet) determines that the effects are justified in the circumstances. A finding of significant effects therefore means that the project CANNOT go ahead.

Taking into account implementation of mitigation measures outlined in the analysis, the project is:

Not likely to cause significant adverse environmental effects.

Likely to cause significant adverse environmental effects.

19. SIGNATURES AND APPROVAL

EA Author *(Add additional signature blocks for multiple authors as required.)*

Name: Randy G. Thompson	Title: Resource Management Officer II / Environmental Assessment Specialist
Signature <i>Randy G. Thompson</i>	Date <i>January 29/2016</i>

DECISION APPROVAL

Name: Geoffrey Hancock	Title: Western Newfoundland and Labrador Field Unit Superintendent
Signature <i>Geoffrey Hancock</i>	Date <i>Feb 1/16</i>

20. REFERENCE LIST

Specifications for Highway 430-Segment C Rehabilitation, Public Works and Government Services Canada (PWGSC), Gros Morne National Park, Rocky Harbour, Newfoundland and Labrador.



**21. ATTACHMENT LIST**

Specifications for Highway 430-Segment C Rehabilitation, Public Works and Government Services Canada (PWGSC), Gros Morne National Park, Rocky Harbour, Newfoundland and Labrador.

22. ADDITIONAL CONSIDERATIONS / COMMENTS

- Gros Morne National Park is a designated UNESCO World Heritage Site, recognized for its outstanding universal values and exceptional natural beauty. Maintaining these values is a priority required in all developments in and around the park area.
- Parks Canada Resource Conservation staff, the Highway Engineering Services Engineer or Gros Morne Asset Manager must be contacted immediately should any unforeseen environmental hazards or adverse environmental affects occur.
- If any archeological artifacts or significant geological finds (e.g. fossils) are discovered during this project, the contractor must stop work immediately and contact Parks Canada Resource Conservation staff, the Highway Engineering Services Engineer or the Gros Morne Asset Manager before proceeding.
- Contractors must adhere also to the Environmental Procedures outlined in the Public Works and Government Services Canada SPECIFICATIONS FOR HIGHWAY 430 – SEGMENT C – REHABILITATION, GROS MORNE NATIONAL PARK, ROCKY HARBOUR, NL. Project No. 678.
- If this project continues into the park's moose reduction season, no-hunting restrictions will be required for the safety of workers.

23. TRACKING SYSTEM

The project must be registered in the [Parks Canada Interim Tracking System](#) within the fiscal year the project took place.





Appendix 1 Environmental Impact Analysis Tools: Effects Identification Matrix
Use the matrix to identify potential impacts.

A. Direct Effects (during preparation/construction phases)														
		Components potentially directly affected by the proposed project												
		Natural Resources					Cultural Resources		Visitor Experience					
		Air	Soil & landforms	Water (Freshwater and marine)	Flora (terrestrial)	Fauna (terrestrial)	None known	None known	Visitor access & services	Recreational/Accomm. opportunities	Viewscapes and soundscapes	Visitor Safety	Essence of place	
Phase	Examples of Associated Activities													
Project Components	Preparation / construction	Storage of materials	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Brush clearing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Demolition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Ditching	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Excavation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Grubbing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Backfilling	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use of machinery	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Transport of materials/ equipment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Set up of temporary facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
		Paving	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Drilling and Blasting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
		Cold Planning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Sign-Island Installation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>





A. Direct effects continued (during operation/implementation/decommissioning phases)													
		Components potentially affected by the proposed project											
		Natural Resources					Cultural Resources		Visitor Experience				
		Air	Soil & landforms	Water (fresh and marine)	Flora (terrestrial)	Fauna (aquatic and terrestrial)	None known	None known	Visitor access & services	Recreational & Accommod. opportunities	Viewscaapes and soundscapes	Visitor Safety	Essence of place
Phase	Associated Activities												
Operation/Implementation/D ecommissioning	Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Vehicle Traffic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Cold Planning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Drilling and Blasting	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Sign-Island Installation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Use of machinery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

