

WorkSafeBC and ESC Pre-Drilling Season Update

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Dec 8, 2023



Agenda

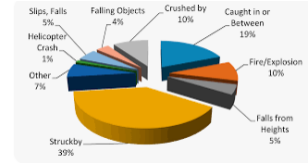
- **Introductions**
- **Oil and Gas Sector Update**
- **Risk Management Basics for O/G**
- **Risk Management Basics for O/G**
- **Field Issues / Incidents and compliance challenges**
- **Sector Questions**
- **New Reg Update/First Aid**
- **Questions?**





Sector Update

Oil and Gas Injury/Serious injury rates (5years)



Time loss claims

Year	All BC # Time-Loss Claims	Oil & Gas # Time-Loss Claims	All BC # Person Years	Oil & Gas # Person Years	All BC Injury Rate	Oil & Gas Injury Rate
2018	53,744	49	2,369,820	12,626	2.3	0.4
2019	55,080	58	2,430,221	14,390	2.3	0.4
2020	49,786	67	2,253,896	15,129	2.2	0.4
2021	55,647	100	2,405,002	20,182	2.3	0.5
2022	62,562	164	2,525,532	31,040	2.5	0.5
2023	41,894	75			***	***
Totals	318,713	513	11,984,471	93,367		

Serious injury claims

Year	All BC # Serious Injury Claims	Oil & Gas Serious Injury Claims	All BC % Serious Injury	Oil & Gas % Serious Injury	All BC Serious Injury Rate	Oil & Gas Serious Injury Rate
2018	7,054	18	13 %	37 %	0.3	0.1
2019	7,294	17	13 %	29 %	0.3	0.1
2020	6,699	22	13 %	33 %	0.3	0.1
2021	7,593	25	14 %	25 %	0.3	0.1
2022	7,510	45	12 %	27 %	0.3	0.1
2023	3,406	11	8 %	15 %	***	***
Totals	39,556	138				

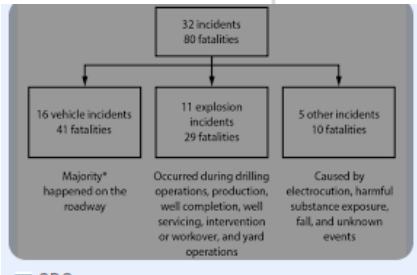
Accident Type (last 5 years)

Oil & Gas - Accident type			
Accident Type	Mapped Accident Type	Count	Percent
SLF	Overexertion	92	14.8 %
	Exposure to Toxic Substa	78	12.5 %
	Fall on Same Level	59	9.5 %
	Struck By	56	9.0 %
	Fall from Elevation	55	8.8 %
	MVI	46	7.4 %
		36	5.8 %
	Caught In	28	4.5 %
	Involuntary motion	25	4.0 %
	Other Accidents	24	3.9 %
	Other Bodily Motion	24	3.9 %
	Exposure to Noise	20	3.2 %
	Repetitive Motion	18	2.9 %
	Industrial and Other Vel	16	2.6 %
	Unknown Mapped Code	14	2.2 %
	Exposure to Heat, Cold	11	1.8 %
	Acts of Violence, Force	9	1.4 %
	Struck Against	6	1.0 %
	Matter in Eye	3	0.5 %
	Air/Rail/Water Transpor	1	0.2 %
	Contact with Electricity	1	0.2 %
	Rubbed, Abraded	1	0.2 %
		Total	623
Total		623	100.0 %



Source of Injury (last 5 years)

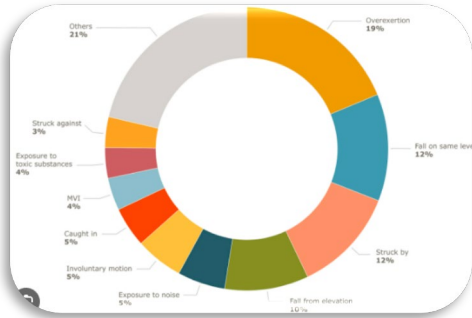
Oil & Gas - Source of injury			
Source of Injury	Mapped Source Of Injury	Count	Percent
SLF	Floors, Walkways, Ground	93	14.9 %
	People	85	13.6 %
	Land Vehicles	64	10.3 %
	Infectious and Parasitic	62	10.0 %
		36	5.8 %
	Machinery	34	5.5 %
	Building Materials incl. V	32	5.1 %
	Handtools	32	5.1 %
	Atmospheric, Environme	30	4.8 %
	Unknown Mapped Code	27	4.3 %
	Containers	26	4.2 %
	Machine and Vehicle Acc	18	2.9 %
	Miscellaneous	16	2.6 %
	Fasteners, Connectors, F	12	1.9 %
	Minerals	12	1.9 %
	Structures and Structural	11	1.8 %
	Chemicals and Chemical	10	1.6 %
	Skids and Pallets	8	1.3 %
	Scrap, Waste, Debris	3	0.5 %
	Bundles, Packages, Rolls	2	0.3 %
	Instruments and Equipm	2	0.3 %
	Ladders	2	0.3 %
	Apparel and Textiles	1	0.2 %
Cases, Cabinets, Racks, S	1	0.2 %	
Furniture and Fixtures	1	0.2 %	
Miscellaneous Parts and	1	0.2 %	
Nonstruct., Insul., Prote	1	0.2 %	
Water Vehicles	1	0.2 %	
Total	Total	623	100.0 %



Oil and Gas/Nature of Injuries (last 5 years)

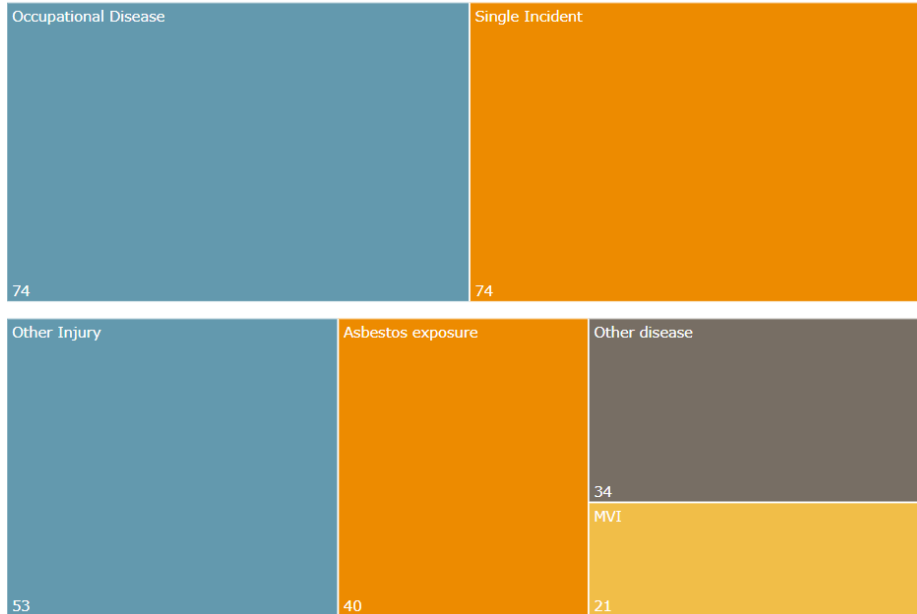
Oil & Gas - Nature of injury

Nature Of Injury	Mapped Nature Of Injury	Count	Percent
SLF	Other Strains	163	26.2 %
	Fractures	83	13.3 %
	Respiratory Inflammation	63	10.1 %
	Back Strain	58	9.3 %
	Concussion	36	5.8 %
	Contusion	30	4.8 %
	Hearing Loss	29	4.7 %
	Laceration	21	3.4 %
	Mental disorder	21	3.4 %
	Unknown Mapped Code	19	3.0 %
	Hernia	14	2.2 %
	Dislocation	12	1.9 %
	Amputation	11	1.8 %
	Abrasion	8	1.3 %
	Bursitis and Related	6	1.0 %
	Exposure to Cold	6	1.0 %
	Chemical Burns	6	1.0 %
	Heat Burns	5	0.8 %
	Tendinitis, Tenosynovitis	5	0.8 %
	Carpal Tunnel Syndrome	5	0.8 %
	Other Injuries	4	0.6 %
	Radiation	3	0.5 %
	Asbestosis	3	0.5 %
	Cancer	2	0.3 %
	Multiple Injuries	2	0.3 %
	Other Occupational Disease	2	0.3 %
Dermatitis	1	0.2 %	
Electrocution	1	0.2 %	
Exposure to Heat	1	0.2 %	
Poisoning	1	0.2 %	
Total	623	100.0 %	



2023 year to Date accepted Fatal Claims

Total number of work-related death claims is: 148, where number of work-related deaths with the same injury year, death year and accepted year is: 30



Oil and Gas 7040 subsector accepted claims in 2023

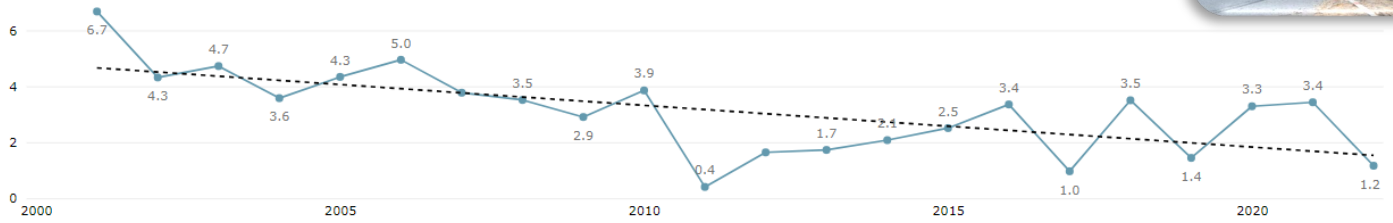


Oil and Gas work related Fatalities 7040 CU subsectors

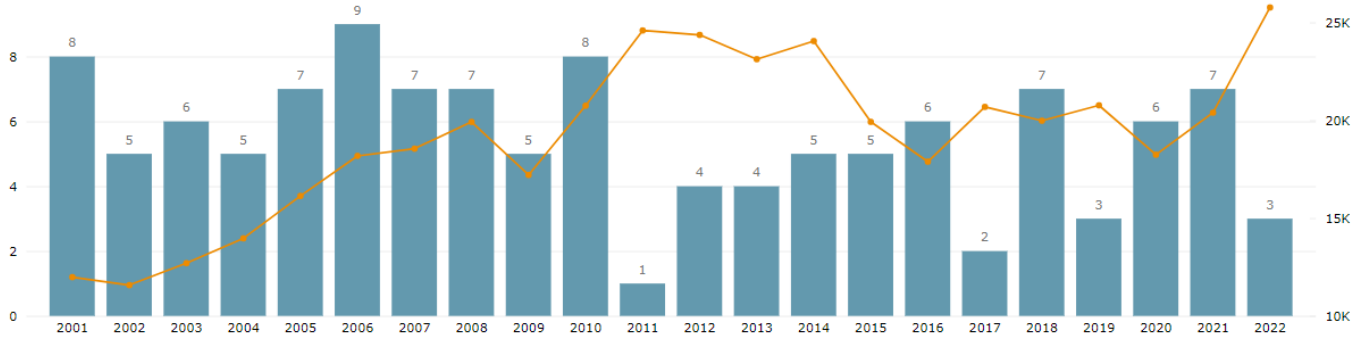
WORK SAFE BC Work-Related Deaths: Data for planning health and safety in B.C.



Work-related deaths (per 10,000 workers) by industry



Number of workers (person-years) vs. work-related death count

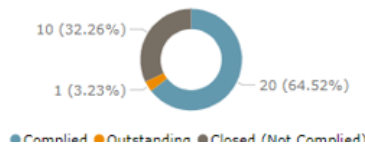


Regional Oil and Gas Inspections 2023-year to date

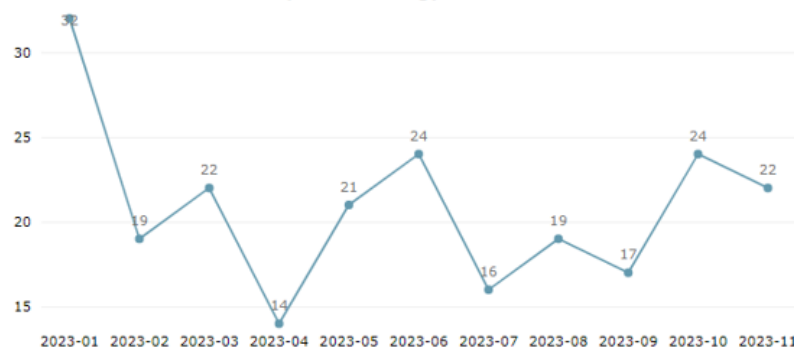
Key Project Measures

Inspection Reports	296
Employer Locations Inspected	143
Annual Inspection Target	211
Inspection Strategy Focus Count	230
Initiating Inspection Reports	230
Inspections with Potential for HRV Order(s)	22
Follow-up Inspection Reports	66
Compliance Agreements	
Orders Cited	237
Orders with Potential for HRV Regulation	13.1%
Orders to Stop Use	15
Orders to Stop Work	4
Orders to Stop Operations	
Temporary Cessation of Work	2
Citation Warnings	
Citation Imposed	
Warning Letters Sent	6
Penalties Imposed	5
Consultation Reports	22
Education Reports	
Notice of Incidents	
In Progress Sanctions	

Orders with Potential High Risk Violation



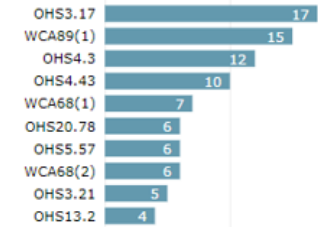
Inspection Strategy Focus Count



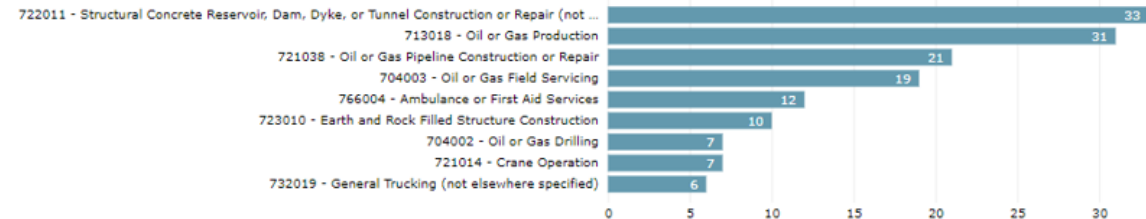
Regulation Level

Regulations - Level 2

Top 10 Regulations - Level 2



Top 10 CU Inspection Activities



Note: When viewing measures "By Project", the measures are calculated by project per document and will count the same document multiple times if there are multiple project codes specified on the document. Also, if a document has multiple projects belonging to the same project grouping, it will count each project within the project grouping, i.e. if an Inspection Report has 3 projects all belonging to the Agriculture project grouping, that Inspection Report will count as 3 when the 'Project Grouping' filter is set to "Agriculture" and the 'Project Name' filter is set to "All".

Inspection data limited to Oil and Gas CU's

WORK SAFE BC High Risk Strategies and Industry Initiatives Report

Project Grouping

Project

Project Grouping

Oil & Gas

Is Current Year

Yes

Date

1/1/2023

11/30/2023

Clear Filters

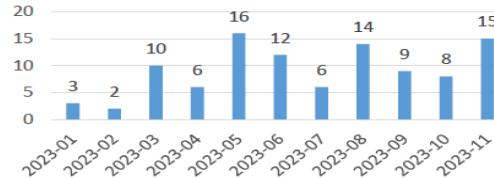
Inspection and Other Activities Output

Inspection Annual Target	126
Initiating Inspection Reports	101
% Annual Target Completed	80%
Inspection Strategy Focus Count	101
Employer Locations Inspected	60
Inspections with Potential for HRV Order(s) (#)	12
Inspections with Potential for HRV Order(s) (%)	12%
% Initiating Inspections without any cited orders	61%
Follow-up Inspection Reports	40
Inspection Report	141
Consultation Report	7
Education Report	

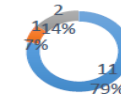
Enforcement

Orders Cited	92
Orders with Potential for HRV Regulation	14
Orders to Stop Use	2
Orders to Stop Work	1
Orders to Stop Operation	
Temporary cessation of work	7
Warning Letters	5
Citation Warnings	
Citation Imposed	
Penalties Imposed	2
Compliance Agreement	
In Progress Sanctions	

Number of Initiating Inspections by Month

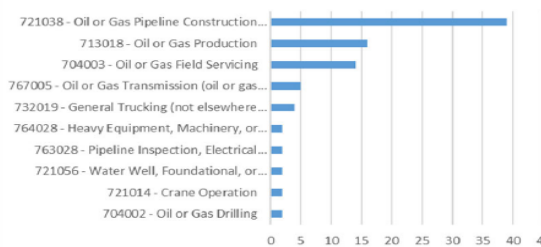


Orders with Potential High Risk Violations

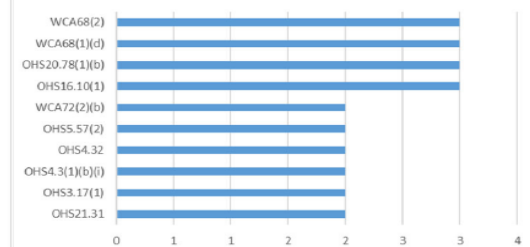


Compiled Outstanding Closed (Not Compiled)

Top 10 CU Inspection Activities



Top 10 Regulations





2024 Oil and Gas Strategy Overview

Oil and Gas Initiative 2021-2024

What will WSBC be focusing upon over the next year and into the future?



Oil and Gas 2021-2024 Initiative Focus

Problem

The Oil and Gas Initiative is designed to focus on areas of concern within the oil and gas sector that is generating serious injury claims.

Primary goal

Prevent serious, fatal and repetitive injuries in the following areas: (adding a focus upon the reduction of time loss injuries, which will include a strong emphasis upon MSI injury reduction at all sites)

- Fire and explosions across the oil and gas sector, with particular emphasis upon well servicing and waste disposal
- Control of hazardous energy (includes static electricity)
- Pressure management/Control which includes flow piping systems
- Manual free falling (**Supervision to the level of Risk**)
- Pipeline construction (mechanisms of injury)
- Occupational exposures



Oil and Gas 2021-2024 Initiative Focus Continued



Focus

Additional year has been added into the original 3 year time frame

-Conduct targeted inspections within the focus areas **(the inspections will include Risk Management Basics-risk assessment and effective controls)**

-Support the development tools and resources relating to safe work procedures in high-risk operations

-Support and partner with Energy Safety Canada and industry trade associations to see that their initiatives align with mitigation measures relating to strategic focus areas

-Deliver key messaging and information to employers and workers through the HSA and sector associations



Risk Management Basics

Risk Management Basics in Oil and Gas Operations

		Potential severity			
		Minor	Moderate	Major	Extreme
Chance	Rare	Low	Low	Medium	Medium
	Unlikely	Low	Medium	Medium	Medium
	Moderate	Medium	Medium	Medium	High
	Likely	Medium	Medium	High	High
	Very likely	Medium	High	High	High

December 8, 2023

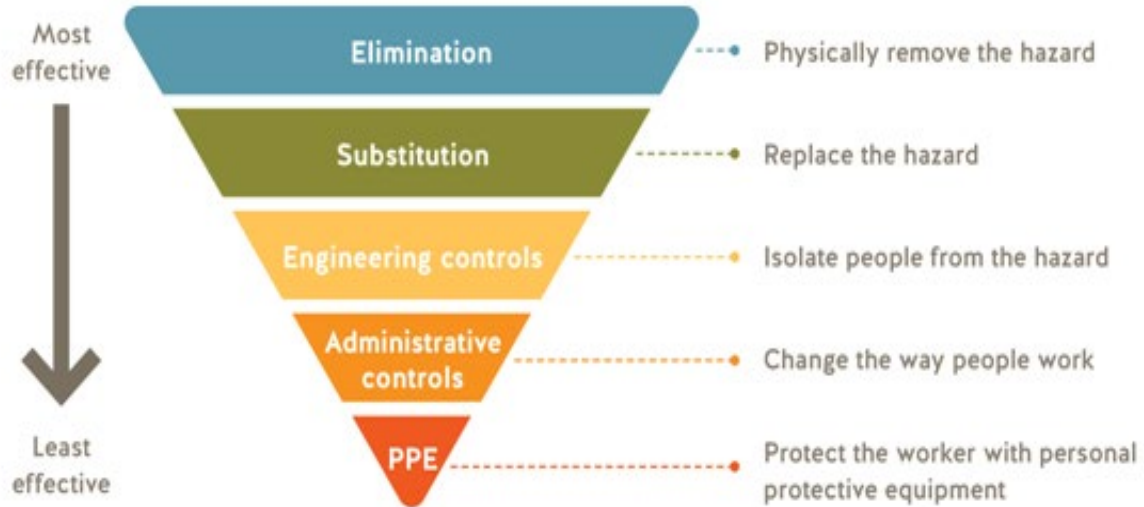
RMB

- The RMB approach was launched in 2022 to directly align with WorkSafeBC's 2022-2024 strategic priority to prevent workplace injury, disease and death by engaging employers and workers in workplace health and safety
- **Flowing from Existing OHSR 23.5**
- Step 1) Identify Worksite Hazards/ discussion with Supervisors and Workers- Assess the risks (classify the risks)
- Step 2) Identify/Implementation of Control measures based upon the hierarchy of controls
- Step 3) Communicate-does everyone know what you are doing and why?
- Step 4) Monitor and update as needed



RMB

Hierarchy of controls



RCA (Risk Control Assessment) oil and gas all sites

WORK SAFE BC High Risk Strategies and Industry Initiatives Report

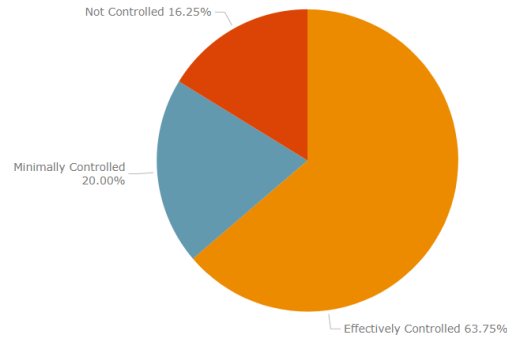
Is Current Year

Yes

Date

1/1/2022 11/22/2022

Clear Filters



# Effectively Controlled	# Minimally Controlled	# Not Controlled	# Total	% Effectively Controlled
51	16	13	80	63.75 %

RMB Enforcement Approach

- Inspections are not exclusively consultative or educational in nature
- Orders are to be written where there are violations found related to the elements of the risk management basics inspections
- Additional enforcement tools can be utilized where appropriate (e.g. citation warnings, citations, Warning Letter's or Sanctions etc.)





Field Issues

Occupational Disease – Exposure Control Plans (ECP's)

-**Occupational Disease** continues to expand in impacts and scope (Occupational Disease fatalities continue to eclipse traumatic injury claims each year)-**As of December 2023=148 fatalities- 74/50% traumatic injury and 74/50% Disease**

-**Areas for monitoring and ECP development:** Silica, Lead, **Solar**, Hydrocarbon based drilling fluids, Diesel Exhaust, Benzene, Mercury, Hearing Loss, NORMS, H2S and all designated substances require ECP's (**sensitizers like SPC 888 for pipe coating**)

-**Welders & welders helpers need to be wearing appropriate respiratory protection (selection criteria)**

-**MSI risk assessments and risk control OHSR 4.47-53**

(Part 5.48-5.59 for an outline of what is required around site surveys, monitor and development of ECP's)

-**With the continued dominance of Occupational Disease deaths in BC this will be an area of expanded focus in 2024 and on.**



Fires/Explosions and Controlling Ignition Sources



Recent incidents with fires/explosion indicate that this **RISK is not always being adequately Assessed and Controlled:**

-This means **assessing all potentials** for the generation and release of **flammable vapors and materials**. Type of activity i.e. Fracing, drawing down on tanks, hot oiling etc

-**What are you planning to do** (scope of work)? What permits and monitoring is needed; what equipment is needed? What personnel is needed?

-How could vapors/flammable gas be generated and/or released during the work?

-How are we monitoring the hazardous atmosphere? What type of monitors are we using? Training of workers

-Are ignition sources being adequately controlled including static electricity? Is there a vac truck drawing fluid from a tank?

-**This is more than checking the boxes on a checklist!**

OHSR 23.5, 5.27, 5.28 WCAct 21 and WCAct 24



Compliance-Grounding and Bonding

Oil and Gas sites-**critical issue to controlling ignition sources.**

-Employers and workers knowing the difference

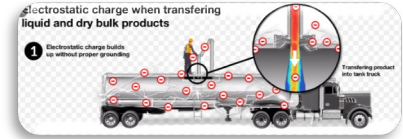
-Providing **appropriate grounding onsite** whether a temporary work location or permanent

-**Testing** the ground-differential instrument for checking bonding-also proper calculations required to ensure the ground is adequate).

-Location of the **bonding attachment points** so that operators are fully aware of where and how to attach their equipment to the grounding and bonding system

-Operators then **validating** the bond-testing with an appropriate OM meter (also what is the maximum allowable resistance when testing)

-**Training / education of workers** in what's required and what are hazards associated with failing to do a proper job and what to do if the system at site is not adequate. **OHSR 5.27, 5.28, 23.6, 23.74**



Compliance issues-General

Traffic Control on secondary Highways

Compliance with Part 18 new traffic control requirements- failing to do proper risk assessments to develop traffic management plans for the site, lack of proper signage (rig moves and pipeline construction using sandwich boards), training of workers in the new traffic control requirements (**see Part 18**)

Key principle of Traffic Control:

18.3.3 Order of control measures (1) An owner and an employer each must, to the extent practicable, eliminate the risk of worker exposure to traffic in a work zone by isolating the work zone using constructed detours, alternative routes, barriers or other effective measures.



Emergency Washing Facilities

5.85 Where required

The employer must ensure that appropriate emergency washing facilities are provided within a work area where a worker's eyes or skin may burn or irritate

5.88 Risk assessment

The employer must ensure that the selection of emergency washing facilities is based upon an assessment of the risks present in the workplace, according to [Table 5-2](#)

5.90 Transient worksites

The employer must ensure that portable self-contained units are provided, where it is not practicable to provide a permanent water supply at transient worksites such as construction sites.

(2) The employer must ensure that portable self-contained units at these transient worksites are capable of delivering a minimum flush duration of 15 minutes (or more if required by the nature of the material) if there is a high or a moderate risk of injury to the eyes or skin



Excavation Work Requirements

20.78 Work standards

(1) Subject to this section, excavation **work must be done in accordance with the written instructions of a qualified registered professional if**

(a) the excavation is more than 6 m (20 ft) deep,

(b) an improvement or structure is adjacent to the excavation, (most common omission)

(c) the excavation is subject to vibration or hydrostatic pressure likely to result in ground movement hazardous to workers, or

(d) the ground slopes away from the edge of the excavation at an angle steeper than a ratio of 3 horizontal to 1 vertical.

(2) Despite subsection (1), excavation work described in that subsection must be done in accordance with the written instructions of a professional engineer if the excavation requires or uses support structures.

(3) The written instructions required by this section must

(a) be certified by the qualified registered professional concerned,

(b) be available at the site, and

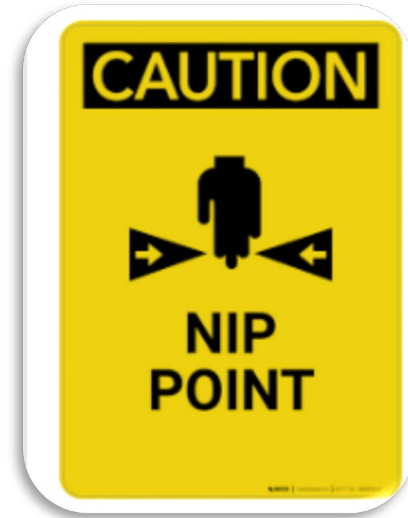
(c) specify the support and sloping requirements, and the subsurface conditions expected to be encountered.



Recent slate of Hand Injuries/Amputations

In BC in the past 6 months there has been at least 3 serious Hand Injuries/Amputations:

- **Safeguarding** of nip points / crushing potential
- **Use of the proper tools** for the bolt-torquing operations
- **OHS regs that apply:** OHS 12.2 –protection from contact with Hazardous parts, points of operation or ejection, 12.4 Effectiveness of safeguards, 4.3 (1)(2)



ATV/UTV incidents

In BC in 2023 there have been 4 fatalities and 1 disabling incident with ATV's and UTV's (across sectors

-Common issues:

- 1-Excess Speed
- 2-Exceeding slope limitations
- 3-Not wearing Helmets
- 4-Not wearing seatbelts
- 5-Training
- 6-Lack of oversight and supervision
- 7-Safe guarding front floorboards and doors against protruding objects (J-poke)

OHS requirements-16.4,5- 16.21, 16.33, 16.40 and 41



Sector Questions

- **WorkSafeBC Inspectional Focus areas 2024 into the future-** last few years have been dominated by Pipeline activities in BC (CGL and TMX). The recent uptake in Upstream activity to meet contract obligations will see more inspections in these areas.
- **What is needed to resurrect equipment that has been moth ball for a number of years?** – plan what does the manufacture say is required? What do standards require (CSA, ANSI, API, ASME, CAOEC etc)
- **The equipment must meet all required specifications and certifications as outlined by the Manufacturer or PEng as per OHS 4.3, 4.4, 4.8 (1)(2)**



Compliance-First Aid Services, Supplies and Equipment and Written Procedures

What is needed based upon a **site assessment of the workplace** (5 items to consider) and no less than the Tables in Schedule 3-A **(this is not being done or done properly.)**

The employer **MUST** also develop written First aid Procedures (**6 items-** displayed in conspicuous locations at the worksite). Note: special procedures are required if air transport is the primary means of transport **(Many ERP's are missing elements)**

See the complete Guidelines for First aid:

<https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-03#998F33D891434F2D915491565A68E1F9>

-see the conditions for using an MTC in place of a dressing station or First aid room, also an MTC MUST be attached to the vehicle chassis OHSR 3.16-17 & 17.10 / attached to vehicle frame in accordance Manufactures specs. Not being done consistently and properly

-First aid attendants lacking adequate Communicable disease and Blood Borne pathogens training and ECPs



**2024: Occupational first aid
regulatory changes**

Amendments to Part 3 of the OHSR

- Amendments to regulatory requirements relating to the provision of occupational first aid were approved in April 2023.
- These changes will take effect November 1, 2024, to give employers time for implementation, arrange required training, and obtain equipment as required.



Objective of these regulatory amendments

- Existing First Aid requirements listed in *Schedule 3-A* of the OHSR have been in place relatively unchanged for almost 20 years.
- There have been improvements in both first aid training and equipment.
- Two new standards relating to FA issued by the CSA (Canadian Standards Association):
 - CSA Z1210-17 First aid training for the workplace — Curriculum and quality management for training agencies;
 - CSA Z1220-17 First aid kits for the workplace;
 - Goal to harmonize nationally.
- Amendments strengthen the requirements with particular focus on high-risk industries in remote area.



Key changes

- Employers' duty:
 - Provide at least the supplies, facilities, and first aid attendants required by *Schedule 3-A*, or at a higher level as dictated by risk assessment.
 - In consultation with workers, perform a written risk assessment for each workplace to determine any additional equipment, supplies, facilities, attendants, and services necessary to ensure injured workers can be promptly provided first aid and transported to medical treatment.
- Some additional considerations:
 - Whether the workplace is "remote" — meaning it is more than 30 minutes surface travel time from the nearest ambulance station.
 - Whether the workplace is "less accessible" — meaning it cannot be safely accessed by ambulance, or it includes one or more hazardous work areas that cannot be safely accessed by ambulance personnel.

FIRST AID ASSESSMENT WORKSHEET

Company Name: _____
Operating Location: _____

ASSESSMENT

1a Assigned Hazard Rating (see [Schedule 3-A](#)) Low Moderate High

1b Job Functions, Work Processes and Tools

Typical of industry? Yes No

1c Potential Types of Injuries

Typical of industry? Yes No

1d Rating Adjustment (if more than 1 hazard, check appropriate) Low Moderate High

2 Surface Travel Time to Hospital Greater than 20 min 20 min or Less

3 Total Number of Workers per Shift (include locations within and outside of premises)

4 Barriers to Reach Medical Aid

ASSESSMENT RESULTS (according to Schedule 3A)
(different units may require different first aid services)

Supplies, Equipment and Facilities Required

Level of First Aid Attendants

Transportation Required

ASSESSMENT VALIDATION

Assessment Date

Change in Business Operation

Members Consulted (name and position)

Supervisor Name

Date/Signature

Emergency transportation and barriers to first aid

- In workplaces where emergency transportation is required under *Schedule 3-A*, written first aid procedures will need to identify how workers will be accessed and moved if there are **barriers to first aid**.
 - Barriers to first aid include anything that could potentially limit or delay a worker's access to first aid and transportations, including physical obstacles, hazards, or accessibility challenges that the FA attendant may encounter
 - any specialized equipment and training for the crew to overcome these barriers will need to be identified.
- Drills will now be required annually or whenever first aid procedures change, to ensure these workplace specific procedures are effective.



New terminology

- Terminology for the certification of first aid attendants is changing to align with CSA Z1210-17 :
 - from current Level 1, Level 2, and Level 3, to
 - Basic, Intermediate, and Advanced.
- These naming convention changes will not affect the validity of first aid certificates currently held by attendants, and the Regulation allows for a three-year transition period to ensure current first aid certificates remain valid until their current expiry date.
- However, the number of required first aid attendants and their level of training may now be different as per the amended *Schedule 3-A*, so employers need to anticipate changes coming into effect.

AVPU <small>(Alertness level of casualty)</small>	Alert: is the casualty alert? Voice: does the casualty respond to voice? Pain: does the casualty respond to pain? Unresponsive: is the casualty unresponsive to any stimulus?
SAMPLE <small>(Signs and symptoms)</small>	Signs and symptoms. Allergies. Medications. Past medical history. Last oral intake. Events leading up to the illness or injury.
BBB <small>(Breath, Bleed, Bones)</small>	Breathing Bleeding Bones
DRABC <small>(Danger, Response, Airway, Breathing, CPR)</small>	Danger Response Airway Breathing CPR
DRABCD <small>(Danger, Response, Airway, Breathing, CPR, Defibrillate)</small>	Danger Response Airway Breathing CPR Defibrillate
DRSABC <small>(Danger, Response, Shout for help)</small>	Danger Response Shout for help

Guidelines and resources

- A guideline to Part 3 reflecting the changes will be published in the first part of 2024.
- Additional resources, including guidance on conducting first aid assessments and developing written procedures are under development.
- Details of the upcoming changes, including explanatory notes, are available on our website:
 - [Part 3 – Minimum Levels of First Aid.](#)



Additional Areas to Consider



-**Mental Health Safety**-fastest growing area of Occupational Health concerns and issues, what are you doing to support your workers especially in these trying times?

Questions?

