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Guidelines for the Control of Drug and Alcohol Onboard Ship

(Second edition June 2020)

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The Oil Companies International Marine Forum (OCIMF)
Vision: A global marine industry that causes no harm to people or the environment.

Mission: To lead the global marine industry in the promotion of safe and environmentally responsible transportation of crude oil, oil products, petrochemicals and gas, and to drive the same values in the management of related offshore marine operations.

We do this by developing best practices in the design, construction and safe operation of tankers, barges and offshore vessels and their interfaces with terminals and considering human factors in everything we do.

Terms of Use

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Definitions and abbreviations

Accuracy check (breath alcohol) The process of verifying that the device is performing accurately according to the manufacturer's instructions. This includes calibration the device periodically (e.g. every 30 days) and immediately after a positive alcohol screening/confirmation test.

Adulterant A substance that acts alone or in combination with other substances to prevent the detection of the drugs or drug metabolites, or that affects the reagents in either the screening or confirmatory drug test.

Aftercare The essential care, help, and/or supervision given to individuals who have successfully completed a treatment programme, and who are re-integrating into work and life.

Alcohol A consumable liquid containing ethanol (e.g. beer, wine, spirits). Includes powdered alcohol that can be reconstituted into an alcoholic drink.

Alcohol Testing Form (ATF) A standard form to document the collection and result of an alcohol screening and/or confirmation test result.

Aliquot (sample) A fractional part of a specimen used for testing, representing the whole specimen.

Chain of Custody (COC) Procedures to account for the integrity of each specimen or aliquot by tracking the handling and storage from point of specimen collection to final disposition of the specimen and its aliquots.

Collection agency A business entity that provides drug and alcohol specimen collection, secured storage and transportation of a specimen to a laboratory. Collection agencies are often contracted by either vessel and terminal operator or Third-Party Administrators (TPAs) working on behalf of an operator.

Collection kit A single use kit appropriate for the type of specimen (i.e. blood, hair, oral fluid, urine).

Collection site A place where individuals present themselves for the purpose of providing a specimen for analysis. Often this is performed at the field/worksite by an employer or mobile site collector in a private setting, or at a medical clinic or collection facility by a collector.

Collector/collecting officer A person trained, and who has demonstrated proficiency, to collect specimens from donors.

Company An organisation that engages a marine or vessel operator to provide services that require the use of this document.

Concentration Mass of a substance in a defined volume.

Confirmation or confirmatory test (drug or alcohol)
Drug: a second analytical procedure performed on a different aliquot of the original drug specimen to identify and quantify the presence of a specific drug or drug metabolite, typically using gas or liquid chromatography with mass spectroscopy.

Alcohol: a breath test using an Evidential Breath Testing Device (EBT) or a blood test analysed by a laboratory.

Contractor A company or company employee providing services in a direct business agreement with a vessel or terminal operator.

CPL Conforming Products List

Custody and Control Form (CCF) The form to document the collection, custody and transport of a drug or blood alcohol specimen from the time the specimen is collected until it is received by the laboratory.

Cut-off The value used to establish and report a specimen as negative or positive for the presence of a drug or alcohol or as adulterated, substituted, or invalid. Often expressed as a concentration (i.e. mass of a substance in a defined volume).

Designated Employer Representative (DER) or Programme Administrator (PA) Vessel or terminal operator employees who are responsible for administrating the drug and alcohol program, liaising with drug and alcohol testing service agents (laboratory, collection agency, collectors) and are authorised by the vessel or terminal operator to receive test results and make decisions regarding test results. For remote work sites some of these duties may be delegated to site supervisors/managers or other people in authority.

Dilute specimen (urine) A urine specimen with creatinine and specific gravity values that are lower than expected but are still within the physiologically producible ranges of human urine.

Donor The individual from whom a specimen is collected.

Drug panel A group of drugs (or specific drugs) specified for testing.

Drug testing Testing via validated methods for the presence of selected prohibited substances in the specimen equal to or above a designated cut-off.

EAP Employee Assistance Programme

Evidential Breath Testing (EBT) A test for the presence of alcohol, the results of which are accurate enough to be used as admissible evidence in a court of law. EBT devices are approved to high standards and are suitable for use by trained personnel in the workplace when carrying out pre-enrolment testing, random testing, post-incident testing and reasonable suspicion testing.

Fatal flaw An error that results in a significant break of chain of custody or collection procedures that cannot be corrected and results in a cancelled test (e.g. missing or damaged tamper evidence seals, CCF and specimen ID do not match, missing collector name and signature on CCF, not enough specimen for analysis).

First aid Medical attention usually administered immediately after the injury occurs and at the location where it occurred. For a list of first aid treatments, refer to USA OSHA 1904.7 (b)(5)(ii).

High-consequence near miss Any incident that had the potential to cause serious injuries to self or others, environmental, and/or significant property damage.

Illicit drug All drugs, narcotics, and intoxicants for which possession or misuse is illegal under local/country law.

Invalid result The result reported by a laboratory when a positive, negative, adulterated or substituted result cannot be established for a specific drug or Specimen Validity Test (SVT).

IPIECA The global oil and gas industry association for environmental and social issues

IOGP International Association of Oil & Gas Producers

Laboratory A laboratory certified to the requirements of this guideline or to the requirements of the relevant jurisdiction for performing legally compliant blood alcohol and drug testing.

Laboratory negative result The result reported by a laboratory when a specimen is a valid specimen and contains no drug or the level of the drug is less than the cut-off for the drug or drug class.

Laboratory positive result The result reported by a laboratory when a specimen contains a drug or drug metabolite equal to or greater than the cut-off.

Limit of Detection (LOD) In a retest analysis this identifies the lowest concentration at which an analyte (e.g. a drug/metabolite or adulterant) can be definitively identified, but the concentration cannot be accurately calculated (for quantitative assays).

Marine Safety Sensitive (MSS) employee Any employee who may be permanently or temporarily assigned a Marine Safety Sensitive position.

Marine Safety Sensitive (MSS) position A position where job performance can affect the safety of the employee and others, and can be defined as:

- Any vessel or terminal operator employee or contractor working on operator premises, whether ashore or at sea, whose job responsibilities are such that a lapse by the MSS employee could increase the probability of a fatality or serious injury, or an event that could substantially and adversely impact the environment, operator assets or the community.

MSS positions should include those that require the exercise of independent action and can result in direct and immediate irreversible effects where:

- An individual's action is taken independently and is not subject to review, modification or control by another person, a supervisor or a system.
- An individual's action is not subjected to checks and balances that could or would override or change the individual's action.
- There is little, if any, time delay between an individual's action and the resulting effect such that others cannot reasonably intervene to override or change the action.

Medical Review Officer (MRO) A licensed physician who has formal training/certification in the MRO role for receiving and reviewing all laboratory non-negative drug results to determine whether an employee has a verified negative or positive test result, and for reporting the test result to the operator/DER.

Non-negative result A specimen that is reported by the laboratory as positive for drug(s)/drug metabolite(s), adulterated, substituted and/or invalid.

Non-Safety Sensitive (NSS) employee Any employee who is not an MSS employee.

OCIMF Oil Companies International Marine Forum

On-site screening A screening test using a single-use test device, sometimes called a field screen device, at a collection site, which is used to differentiate a negative specimen from one that requires further testing for alcohol, drugs or drug metabolites. Any non-negative drug screen result should be sent to a laboratory for a confirmatory test. Alcohol on-site screening tests may be confirmed at the collection site using an EBT, or a blood specimen can be sent to a laboratory for confirmation.

Paraphernalia Equipment, product or material primarily for use in manufacturing, compounding, converting, concealing, processing, preparing, using or introducing a drug into the human body. This includes any product or device that may be used to tamper with, adulterate, or substitute a test sample, or otherwise interfere with the process or integrity of the result.

POCT Point of Collection

Post-incident test A drug and alcohol test conducted following a qualifying incident when any employee's actions contributed to the incident or cannot be completely dismissed as a contributing factor.

Pre-enrolment test A drug and alcohol test compliant with this guideline that is conducted before an MSS Employee enters a random pool.

Prescription drug A regulated pharmaceutical medicine that requires authorisation by a physician or other qualified healthcare professional before it can be legally obtained in the jurisdiction where personnel are working. The term is used to differentiate from over-the-counter drugs, which can be obtained without authorisation.

Prohibited substance Examples of prohibited substances typically found in operators policies include:

- Alcohol
- Marijuana in any form, even if legal in the local/country jurisdiction
- Potentially impairing medications (e.g. prescription drugs, over-the-counter medication or herbal medicine) used:
  - Without a prescription
  - In a manner inconsistent with the prescription or directions for usage
  - Without disclosure in line with to section 6 of this guideline (MSS employees only)
- Illicit drugs that are not or cannot be prescribed, or mind-altering substances including all forms of naturally occurring and synthetic drugs (e.g. synthetic cannabinoids, stimulants and hallucinogens) that would inhibit the ability of an employee to perform work safely.

Qualifying incident When an employee or contractor is involved in any of the following events on vessel or terminal operator premises:

- A person sustains injuries requiring more than first aid.
- A person involved in a high consequence near miss.
- An environmental incident, process safety incident, community impact, or property damage incident, as determined by the vessel or terminal site supervisor/manager.
- A driver is involved in a motor vehicle accident requiring significant repair and/or causing disabling damage to the vehicle.

Random pool The pool or grouping of MSS employees designated for random testing.

Random test Unannounced testing of MSS employees using a random selection process (e.g. random number table or computer random number generator) to select one or more individuals or vessels from all the operator MSS employees/vessels in the pool of eligible MMS employees/ operator vessels.

Reasonable suspicion test (also known as 'for cause' or 'reasonable cause' or 'reasonable grounds' testing) A drug and alcohol test conducted when any operator employee exhibits signs and behaviours of drug and alcohol abuse/misuse.

Refusal to test The following conduct by an employee should be considered a refusal to test:

- Refusing or failing to appear for any drug or alcohol test within a specified time, as determined by the operator, after being directed to do so by the operator.
- Failing to remain at the testing site until the testing process is complete.
- Failing to provide a specimen for testing (note: ensure an appropriate shy bladder or shy lung protocol).
- Failing to attempt to provide a specimen for testing. (Note: ensure an appropriate shy bladder or shy lung protocol).
- Failing to provide a sufficient specimen without an adequate medical explanation.
- Failing or declining to take a second drug and alcohol test as directed by the operator or collector.
- Failing to undergo a medical examination or evaluation, as directed by the operator or the MRO as part of the verification process.
- Submitting an adulterated or substituted specimen or attempting to adulterate or substitute a specimen.
- Failing to co-operate with the procedure when a monitored collection or direct observation urine collection is required and legally allowed.
- Refusing or failing to notify the operator promptly that the employee was involved in a serious marine incident without justification.
- Failing to cooperate with any part of the testing process, such as delaying the collection, testing or verification process, or attempting to obstruct or manipulate the testing process.

Screening/initial test (drug, alcohol or a Specimen Validity Test (SVT))
A screening/initial test used to differentiate a negative specimen from one that requires further testing (i.e. a confirmation test) for alcohol, drugs or drug metabolites. A screening/initial SVT is the first test used to determine whether a sample is adulterated, diluted, substituted or invalid.

Serious injury Injuries or illnesses causing significant physical body damage, which may cause an absence from work. This may include:

- Fracture
- Significant laceration/penetration
- Amputation
- Significant second-degree burn (blistering)
- Severe strain and sprain
- Dislocation
- Punctured ear drum or moderate-to-severe hearing loss
- Significant visual impairment

Supervisor/manager A person at a work site who is in a position of authority. The supervisor/manager is often responsible for co-ordinating required collection for any type of testing (on site, off site, random, post-incident, reasonable suspicion/cause etc), receiving notification from collections where immediate actions are required, and works closely with operator DER.

Specimen Bodily fluid or material collected from a donor at the collection site for the purpose of a drug or alcohol test.

Specimen Validity Test (SVT) Initial tests performed by the collector or laboratory and confirmation tests performed by the lab to determine whether a specimen is adulterated, diluted, substituted or invalid. SVT recommendations are specified in section 12.

Stand-down The immediate removal of an employee from performing work on an operator worksite/vessel pending the outcome of a drug or alcohol test (see section 10 for specific circumstances).

Standard Operating Procedure (SOP) A written document giving the detailed steps for a specific task (e.g. collecting a drug specimen, administering a screening drug test with a POCT device, administering an alcohol test, laboratory analysis of a given drug or drug metabolite, etc).

SME Subject Matter Expert

Substituted specimen A specimen that has been submitted in place of the operator employee's urine, as confirmed by creatinine and specific gravity values that are outside the physiologically producible ranges of human urine.

Terminal operator A terminal company's employee or contractor providing the ship/shore interface with a vessel operator. This includes vessel loading and discharging, fuel supply, etc.

Third-Party Administrator (TPA) A business entity that administers drug and alcohol testing programmes on behalf of the vessel or terminal operator (could include co-ordination of a random testing programme, specimen collection, laboratory analysis with an approved lab, medication reviews with an approved medical provider, MRO reviews, and results communication with DER).

USCG United States Coast Guard

Vessel operator The owner of the ship, or any other organisation or person such as the manager or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner and who, on assuming such responsibility, has agreed to take over all the associated duties and responsibilities.

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European Guidelines for Workplace Drug and Alcohol Testing in Hair (European Workplace Drug Testing Society)

European Guidelines for Workplace Drug Testing in Urine (European Workplace Drug Testing Society)

European Guidelines for Workplace in Oral Fluid (European Workplace Drug Testing Society)

Urine Specimen Collection Guidelines (United States Department of Transportation – Office of Drug and Alcohol Policy and Compliance)

Oil and Gas contractor drug and alcohol testing guidelines (The Global Oil and Gas Industry Association for Environmental and Social Issues (IPIECA) and International Association of Oil & Gas Producers (IOGP))

1 Executive summary

The Oil Companies International Marine Forum (OCIMF) and the maritime industry in general recognise the potentially serious impact and risks associated with the use and abuse of alcohol, drugs or other impairing substances by maritime personnel.

Research has shown that a properly designed random workplace drug and alcohol testing programme can mitigate the risk of inappropriate drug and alcohol use and reduce workplace incidents and accidents. The overall objective of *Guidelines for the Control of Drug and Alcohol Onboard Ship* is to provide guidance for workplace alcohol and drug testing, and to identify employees prescribed medication that could potentially impair their work and who need to be passed fit for duty.

This guideline applies to operators of marine vessels and terminal operators associated with ship and shore operations. It does not address drug and alcohol testing associated with substance abuse treatment, return to work and aftercare testing.

The guideline identifies best practices for the following programme areas:

Drug and alcohol programme management (section 2)

Elements of drug and alcohol policy (section 3)

Position categories and drug and alcohol testing recommendations (section 4)

Medication disclosure (section 5)

Alcohol programme and testing recommendations (section 6)

Drug specimen collection (section 7)

Custody and control forms (section 8)

Stand-down (section 9)

Drug panel (section 10)

Laboratory and drug specimen validity recommendations (section 11)

Drug test review process (section 12)

Oil and gas companies in contract with vessel and terminal operators can refer to this guideline for their drug and alcohol programme requirements. Vessel operators and marine terminal operators can use it to meet the OCIMF guidelines.

This guideline replaces OCIMF's *Guideline for the Control of Drugs and Alcohol Onboard Ship* from June 1995. In part, this guideline is contestant with the *Oil and Gas Contractor Drug and Alcohol Testing Guidelines (IPIECA, IOGP).*

This document provides general guidance. In all cases, legal and other professional advice should be sought on the individual circumstances, including a review of legal authority in the country or jurisdiction where workplace drug and/or alcohol testing may take place. These guidelines do not replace or supersede local/country laws. If these guidelines conflict with local law, the local law requirements should be followed.

2 Drug and alcohol programme management

Vessel and terminal operators are responsible for:

- Developing and implementing workplace drug and alcohol policies that provide:
  - Clear procedures and guidelines
  - Employee education
  - Supervisor/manager training
  - Drug and alcohol testing
  - Management of Marine Safety Sensitive (MSS) employees
  - Fitness-for-duty assessments for those prescribed medications
  - Provisions for substance abuse assessment, treatment, evaluation and aftercare
- Complying with the contracting company's mandated drug and alcohol program testing requirements when they differ from OCIMF guidelines.

Two checklists for meeting these responsibilities are below. The checklists are general and capture only key elements. For more detailed information, check with your drug and alcohol programme professional or Third-Party Administrator (TPA).

Checklist 1: Developing and implementing a workplace drug and alcohol programme

Item	Check item	In compliance Yes/No	Notes/comments
1	Identify who in your organisation will own and/or administer your drug and alcohol policy.		
2	Consider the following resources to assist you in developing and implementing your policy and testing programme: • Legal support knowledgeable in the applicable country or jurisdictional laws • Drug and alcohol programme professional/Subject Matter Expert (SME) • Human resource professional • Occupational medicine physician/medical service provider. • Certified laboratory to conduct screening/ confirmation testing. • Medical Review Officer (MRO) – may be an in-house physician, contracted by the operator or provided/ selected by the TPA. • Designated Employer Representative (DER)/ Program Administrator (PA) • Collector/collection agency • TPA • Supervisor/managers		
3	Identify any local/country or regional laws/ requirements that may impact policy and testing programme elements. This may require the expertise of local/in country personnel familiar with local/ country laws and customs.		
4	Develop your drug and alcohol policy as well as a separate guideline for policy implementation (section 4).		

Item	Check item	In compliance Yes/No	Notes/comments
5	Communicate your drug and alcohol policy to all employees.		
6	Identify, where applicable, a TPA to administer the alcohol and drug programme. Operators remain responsible for compliance with the guideline.		
7	Train supervisors and managers on the drug and alcohol policy guidelines.		
8	Designate and document each MSS position and employees who occupy these positions. This list should be reviewed periodically (section 5 and appendix A).		
9	Identify and establish required relationships with your testing laboratory. This may be co-ordinated by the TPA. Many laboratory forensic scientists are competent in workplace drug testing and can serve as SMEs for drug testing (section 12).		
10	Finalise drug panel. Adopt the core panel and select optional drugs/analytes if they are a risk in your operation. Consider the regions of operation and home countries of staff when selecting optional drugs/analytes. Consult with drug and alcohol programme professional/SMEs and/or laboratory scientists/TPA (section 11).		
11	Establish an alcohol confirmation cut-off for which impairment is assumed and would constitute a policy violation. OCIMF strongly recommends an alcohol confirmation cut-off equal to or greater than 0.04g/dL of blood (0.04g/210L of breath) (section 7).		
12	Implement and follow a mandatory stand-down procedure (section 10).		
13	Select specimen types for drug (e.g. hair, oral fluid, urine) and alcohol testing (oral fluid, breath or blood) (section 5).		
14	Have a medication disclosure programme in place (section 6).		
15	Train vessel and terminal operator supervisors/ managers to take immediate action/stand-down in the event of a refusal to test and non-negative test result when alcohol testing occurs or drug POCT devices are used (section 10).		
16	Train the DER/PA and operator supervisors/managers on their programme responsibilities and the requirements of random testing notification, post-incident testing, and reasonable suspicion/cause testing. Reasonable suspicion/cause testing training should cover the physical, behavioural, speech and performance indicators of probable drug and alcohol misuse/abuse.		
17	Arrange to have collector resources available at ports/locations where drug and alcohol testing may be needed (e.g. random, post incident and reasonable suspicion testing, etc). This function may be coordinated by a TPA.		

Item	Check item	In compliance Yes/No	Notes/comments
18	Decide if a urine drug POCT will be used for any test reason or for remote site testing (section 5).		
19	For vessels operating outside immediate access to a shoreside collection site or collector (i.e. more than 90 minutes), the operator should equip these vessels/worksites with the necessary drug and alcohol testing equipment (e.g. Evidential Breath Test (EBT) and drug collection kits/urine POCT) and provide collector training to at least two crew positions who are onboard each vessel at any time (i.e. Masters/Captains and first mates, chief and assistant engineers). Ensure collection equipment is properly maintained and within the expiry date. Ensure collectors receive periodic collector training (around every three to five years). Collectors who are not collecting on a regular basis should be trained more frequently.		
20	Ensure your MSS employees are entered in a random pool and that random selections are performed at the necessary frequency (section 5).		
21	Ensure vessel and terminal operators are trained on procedures to follow when an operator receives a fitness-for-duty concern from an MRO. Inform the operator that the MSS should not resume work until medical clearance/fitness-for-duty determination is received from a medical physician familiar with the responsibilities of the job.		
22	Retain and have available for review records reflecting compliance with the guidelines (appendix E). These records must be retained for a minimum of three years or as defined by local/country regulations.		
23	Have a process in place to ensure confidentiality of all records related to your drug and alcohol programme. Ensure no personal records are released without a specific consent from the employee or where legally required.		

One of the goals of the OCIMF guideline is to provide drug and alcohol programme recommendations that oil companies can use when contracting terminal and vessel operators.

Companies or local/country laws may have specific requirements that differ from what is recommended in the OCIMF guideline. The following checklist is to help vessel and terminal Operators identify those areas where differences are often found.

Checklist 2: Meeting company contractual obligations

	Programme area	Check item	Differences Yes/No?	Action required
1	Policy – alcohol use	Controlled use of alcohol on board marine vessels?		
2	Return to work post policy violation	Prohibitions on an employee returning to work following a policy violation/ rehabilitation?		
3	Drug panel	Drug panel and cut-off values?		
4	Alcohol levels	Alcohol screening and confirmation cut-off values?		
5	Specimen type for drug testing	Specimen type (urine, oral fluid, hair) used for drug testing?		
	Use of Custody and Control Form (CCF)s	Are specific CCFs required to be used (e.g. United States Coast Guard (USCG) required testing)		
6	Random drug testing	Random testing rate and testing requirements?		
	Forced/manual random drug testing	Forced/manual random testing?		
7	POCT drug testing	Use of drug testing POCT required or permitted?		
8	Stand-down requirements	Stand-down requirements for MSS and NSS employees?		
9	Post-incident testing	When is post-incident testing required? Is it consistent with the definition of a qualifying incident? **Note:** international flag vessels experiencing a USCG-defined incident (serious marine incident) in USA territorial waters must perform a post-incident drug and alcohol test in accordance with USCG specimen collection and testing requirements.		

3 Elements of a drug and alcohol policy

It is recommended that all vessel and terminal operators have a drug and alcohol use policy. Since these policies have implications under human rights, employment, criminal, occupational safety and health, and data privacy laws/legislation, it is strongly recommended that they are developed under the guidance of a legal professional, drug and alcohol programme professional, human resources professional, and an occupational health/medicine physician. These specialists should be familiar with your work environment and have a strong working knowledge of best practices and current trends.

The details of the policy, the potential risks associated with the use of alcohol and drugs, the available resources and its implication should be clearly communicated with all employees during orientation/induction training. MSS employees should be educated on the requirements of their positions when initially enrolled in an MSS position and then periodically (e.g. annually). Managers and supervisors should receive supervisor awareness training and be periodically reminded of their responsibility to understand and execute key provisions of the policy (e.g. adherence/support of work rules, post-incident and for cause testing, stand-down requirements).

The policy should include the following:

- Apply to all staff in the organisation for reasonable suspicion and post-incident testing. MSS employees will also be subjected to pre-enrolment and random testing and to medication disclosure.
- Identify prohibited substances covered by this policy. It is key to keep these categories broad to capture new and emerging drugs (i.e. natural occurring and synthetic drugs, herbal medications including medical authorisation for cannabis, and recreational marijuana where legalised). Refer to section 2 for a definition of prohibited substances.
- Identify prohibited activities and work rules. Examples include:
  - Using, distributing/selling or possessing alcohol or illicit drugs or unprescribed controlled drugs or drug paraphernalia/contraband on operator workplaces
  - Being under the influence of any prohibited substance on operator workplaces
  - Being unfit for work because of the use of drugs or alcohol
  - Continuing to work having had a confirmed positive for alcohol or a confirmed MRO positive for drugs
  - Refusal to test
  - Adulterating or substituting a drug or alcohol specimen
  - Obstructing the collection or testing process
  - Failure to co-operate with an inspection
  - Failure to promptly proceed to a collection site and provide specimens when told to do so
- The operator position regarding the use of alcohol on board vessels/on operator-owned or controlled property. When alcohol use on board vessels is allowed, there should be written guidelines on its use and control.
- Unannounced searches for drugs and alcohol on operator-owned or controlled property.
- Employee Assistance Programme (EAP) for confidential assessment and treatment/referral for employees who voluntarily/self-disclose a drug or alcohol use problem.
- Drug and alcohol testing programme. Generally, specify the type of testing the company will conduct to detect or deter the use of drugs and alcohol, and the employees/positions requiring testing.
- Consequence of a breach of policy – disciplinary actions up to and including termination. Note that the availability of treatment/rehabilitation services following a policy violation is purely a company choice or decision unless, under certain circumstances, required by local/country laws or human rights legislation (e.g. Canada).

Detailed information on developing a drug and alcohol policy can be found in the *Canadian Model for Providing a Safe Workplace, Version 6.0,* a best practice guide from the Construction Owners Association of Alberta (COAA) and Energy Safe Canada.

4 Position categories and drug and alcohol testing recommendations

Position categories

An MSS position is defined as any vessel or terminal operator employee or contractor working on operator premises, whether ashore or at sea, whose job responsibilities are such that a lapse could increase the probability of a fatality or serious injury, or of an event that could substantially and adversely impact the environment, operator assets or the community (see section 2 for further information).

Any employee not assigned to an MSS position is defined as Non-Safety Sensitive (NSS).

Vessel and terminal operators shall identify and maintain a current list of positions that are classified as MSS and this list should be periodically reviewed, e.g. annually. An example template is included as appendix A.

Vessel and terminal operators should also maintain a current list of employees who occupy or who can be temporarily assigned to an MSS position. The MSS position and MSS employee lists should be readily accessible for inspection and review.

Testing recommendations

Drug and alcohol testing that is in line with this guideline should be performed for all testing reasons. The following testing is recommended for all employees:

Test reason	Pre-enrolment	Random (individual or group)	Post-incident	Individual reasonable suspicion	Group suspicion
MSS	Y	Y	Y	Y	Y
NSS			Y	Y	Y

Table 4.1: *Recommended testing for all operator employees*[1]

[1] This guideline does not address testing performed as part of an addiction treatment programme, return to work testing and ongoing aftercare testing.

Pre-enrolment testing

- MSS employees should be included in the random pool before starting marine safety sensitive work.
- A pre-enrolment drug and alcohol test is required for entry into a random pool unless a negative drug and alcohol test result was obtained from any category of test (e.g. pre-employment, post-incident, reasonable suspicion) using a drug panel that meets or exceeds the requirement of this guideline within the previous six months.

Random testing – general requirements

An MSS employee shall be subject to random selections for unannounced drug and alcohol testing.

On entering a random pool, an MSS employee should maintain continuous membership in the pool. Any break in service (failure to appear as a member in consecutive random pool selections) will require a new pre-enrolment test to re-join a random pool.

Random drug and alcohol tests should be unannounced. Advanced notification is not provided to the employee.

Operators can use urine, hair and oral fluid for random drug testing. The recognised detection times, and the key advantages and disadvantages for each specimen type, is summarised in table 4.2.

An operator may select employees by individual or by group (e.g. vessel, shift/crew).

Random testing by individual or by group should at the minimum satisfy the annual random drug testing rate (percentage of employees tested per year) and the selection frequency by specimen type in table 4.2.

	Urine	Oral fluid	Hair
Annual random drug testing rate	50%	50%	25-35%
Selection frequency	Minimum once in three months	Minimum once in three months	Minimum once in three months
Specimen type advantages (+) and disadvantages (-)	+ Most common drug specimen matrix used for workplace drug testing + Detection time 3-4+ days - Special collection/ washroom facilities required - Collections are not directly monitored by the collector; opportunity for employee to substitute or adulterate specimens	+ All collections are directly monitored + Special collection facilities not required - Indication of relatively recent exposure: detection time generally <1-2 days	+ All collections are directly monitored + Special collection facilities not required + Detection time 90 days with repeated drug use +Reduced random testing rate - Not recommended for post-incident or reasonable suspicion testing

Table 4.2: *Recommended random testing rate and selection frequency*

Random testing should be evenly spread throughout the year and not be predictable (e.g. once every quarter).

Individual random testing

Recommendations for designing an individualised random testing programme include:

- The random testing programme should meet the random testing rates in table 4.2.
- A vessel and terminal operator should maintain and generate random selections using a scientifically valid method (e.g. random number table or computer-based random number generator) matched to a unique MSS employee personal identifier.
- Appropriate safeguards should be used to ensure that the identity of an MSS employee cannot be determined until after the employee is actually selected (i.e. the name of the employee is not known until after the random selection occurs).
- Each MSS employee should have an equal chance of being selected in each random selection period.
- Each MSS employee is to be included in each random selection period, even if previously selected for random testing.
- MSS employees should be subjected to testing regardless of the workday or work shift. The selection of days and shifts should vary to reduce the predictability of testing.
- MSS employees should arrive at collection site within two hours of notification. The reason for any delay beyond two hours should be documented and assessed for validity.

Vessel/group random testing

An MSS employee may be subject to random selection for unannounced testing for drug and alcohol by vessel/group. Recommendations for designing a vessel/group random testing programme include:

- An operator should develop objective criteria for vessel random testing to achieve an annual drug random testing rate specified in table 4.2. Appendix B gives an example of vessel testing to satisfy the 50% (urine and oral fluid) and 25-35% (hair) annual random testing rates and to evenly distribute random testing throughout the year.

- A vessel operator should maintain and generate random vessel selections using a scientifically valid method (random number table or computer-based random number generator) matched to a unique vessel identifier. Appropriate safeguards should be used to ensure that the identity of a vessel that could potentially be selected for random testing cannot be determined until after it has been selected.
- Each operator's vessel/group should have an equal chance of being selected in each random selection period. Each operator's vessel is required to participate in each random selection period, even if the vessel has been previously randomly selected for testing.
- All MSS employees assigned to the vessel should be tested on the day the vessel is scheduled for testing.
- Employees are to arrive at collection site(s) within two hours of notification. The reason for any delay beyond two hours should be documented and assessed for validity.

Post-incident testing

If the performance of a employee or contractor contributed to a qualifying incident, or cannot be completely discounted as a contributing factor, the operator should immediately stand-down the personnel.

Post-incident drug and alcohol testing of an employee or contractor is strongly recommended after a qualifying incident.

Drug and alcohol testing are to be conducted as soon as possible after the qualifying incident. If longer than two hours but within eight hours, both the alcohol and drug test should be conducted and the reason for delay validated and documented. Beyond eight hours no alcohol test is warranted.

Only oral fluid or urine specimens are to be used for a post-incident drug test.

The operator is to provide verification of a negative drug and alcohol test results before an employee or contractor can return to work on the premises/vessel.

International flag vessels experiencing a USCG-defined incident (serious marine incident) in USA territorial waters must perform a post-incident drug and alcohol test in accordance with USCG specimen collection and testing requirements.

Reasonable suspicion testing

Reasonable suspicion drug and alcohol testing is to be conducted when an employee or contractor shows signs or behaviours of drug or alcohol abuse. Wherever practicable, behavioural indicators should be documented and at least two supervisory employees corroborate the presence of the indicators identified.

Drug and alcohol testing are to be conducted as soon as possible once reasonable suspicion is determined. If longer than two hours but within eight hours, the test should be conducted and the reason for delay validated and documented.

Only oral fluid or urine specimens are to be used for a reasonable suspicion/cause drug test.

The operator is to provide verification of negative drug and alcohol test results before an employee or contractor can return to work on the premises/vessel.

Unannounced group testing

Unannounced group testing of employees may be required without notice for a group on operator premises/vessels, based on evidence of the presence of prohibited substances or contraband. Group testing is to be limited to the likely affected area.

5 Medication disclosure

An operator should implement a medication disclosure programme that ensures employees in MSS positions who use medication (e.g. prescription drugs, over-the-counter medication, herbal medicines) that may impact their ability to safely perform their duties are assessed for fitness for duty before starting work. The following conditions apply:

- The medication has been obtained in a manner consistent with applicable laws and regulations.
- MSS employees have notified the operator that they will be in possession of, or using, medication with effects that may impact their ability to safely perform their duties. In locations where disclosure of a specific medication is prohibited, the operator will require the employee to obtain a medical evaluation for fitness for duty as determined by a qualified physician.
- The operator's licensed health professional has assessed the capability or fitness for duty of the employee to safety perform their duties.

Note: Medical conditions, medications, test results, and records should be strictly confidential, to be viewed only by an appropriately licensed healthcare practitioner and MRO. The Operators DER or A&D Programme Administrators are permitted to communicate test results, as needed, to employee managers or supervisors as either a drug and alcohol policy violation but should not communicate the actual details of the test results (i.e. John Doe tested positive for marijuana with a confirmed level of 75 mg/ml) as in many jurisdictions this is considered confidential medical information. In the maritime industry, medication disclosure is often provided to the vessel operator representative/medic at crew intake. Operators should ensure this practice is conducted in accordance with laws of the respective jurisdiction.

6 Alcohol programme and testing recommendations

6.1 Programme recommendations

It is recommended that an operator's alcohol programme:

- Prohibit any employee or contractor from using alcohol within four hours before working. Operators may choose a longer period (eight or 12 hours)
- Conduct an alcohol test anytime a drug test is done
- Stand-down employees:
  - With a confirmation alcohol test showing greater than or equal to 0.02g/210L of breath (greater than or equal to 0.02g/dL of blood)
  - If an operator employee screens greater than or equal to 0.02g/210L of breath (or equivalent for oral fluid) and the confirmation test is pending laboratory confirmation (i.e., blood or urine test)
- For policy violations, establish an alcohol confirmation cut-off for which impairment is assumed and would constitute a policy violation. Typically, greater than or equal to 0.04g/210L of breath (greater than or equal to 0.04 g/dL of blood) is used for workplace alcohol confirmatory tests.

6.2 Alcohol testing

Alcohol screening tests can be either breath or oral fluid. But it is recommended that confirmation tests are performed preferably by breath or by blood. A urine alcohol confirmation test is not recommended because urine collection procedures (as outlined in the document) are complex, urine is also subject to interference (high glucose level). Urine alcohol tests should only be performed if a blood specimen for blood alcohol confirmation cannot be collected or shipped and an EBT cannot be performed (see appendix G).

Specifications for alcohol testing devices

- Alcohol screening devices should be either:
  - Listed on the USA National Highway Traffic Safety Administration's (NHTSA) conforming products list of screening devices
  - An oral fluid or breath alcohol testing device that is equivalent to FDA-cleared (required for all USA-based POCT)
  - CE marked with a minimum cut-off of 0.02g/dL of blood or 0.02g/210L of breath
  - Any device that is approved for confirmation breath testing as indicated below
- Alcohol confirmation breath testing devices should:
  - Be approved by one or more of the following appropriate authorities:
    - Listed on USA National Highway Traffic Safety Administration's conforming products list for EBT devices
    - European Norme EN 15964
  - Provide a printed result
  - Assign a unique number to each test
  - Print the instrument name, the serial number and time of the test on the printout.

6.3 Alcohol technicians

Only technicians/collectors meeting the recommendations of this section should perform breath or oral fluid alcohol testing on employees. A technician/collector does not have to be a medical professional unless required by local law.

A technician/collector is to be trained according to the manufacturer's instruction on any devices used. A technician/collector is to maintain documentation of training and demonstrated competency. For confirmation alcohol blood collections, a collector is to be a trained phlebotomist/healthcare professional and trained in the completion of a CCF or an Alcohol Testing Form (ATF) (see section 9).

6.4 Alcohol test procedures

The vessel and terminal operator shall require the collector or collection agency to have Standard Operating Procedures (SOPs) for alcohol testing. Key elements to include in these SOPs are:

- Documenting all tests on CCF or ATF following procedures for completing the forms:
  1. The collector signs the test results
  2. Have the employee sign the test result
  3. Provide a copy to the employee
  4. Provide a copy to the vessel or terminal operator, DER or site supervisor/manager
- For breath alcohol testing devices using sensors/detectors, conducting and documenting an accuracy check no less than every 30 days.
- For single-use disposable testing devices, check that the expiration date is within the shelf-life of the device.
- Performing the screening test according to the manufacturer's instructions:
  - If the screening test result is negative by breath or oral fluid (i.e. less than 0.02 g/210L in breath or equivalent), document the result on either an ATF or CCF and conclude testing.
  - If the screening test is presumptively positive by breath or saliva (i.e. equal to or greater than 0.02g/210L in breath or equivalent), a confirmation test is required.
  - Wait no less than 15 minutes and no longer than 30 minutes before conducting the confirmation test, not allowing the employee to eat, drink, smoke, chew or put anything in their mouth. If the time between the screening and confirmation test is greater than 30 minutes, the confirmation test should still be conducted and reason for the delay documented.

- If the confirmation alcohol test is by breath (EBT), perform the confirmation test according to manufacturer instructions:
  - If the confirmation test result is negative (i.e. less than 0.02g/210L in breath (or equivalent)), attach the printed results to the ATF or a drug test CCF and conclude testing.
  - If the confirmation test result is positive (i.e. equal to or greater than 0.02g/210L in breath or equivalent), perform an accuracy check to ensure the device is in working order and attach the printed results to the ATF or a drug test CCF.
- If the confirmation test is by blood, collect the blood specimen as follows:
  - Use a blood collection tube for a specimen container
  - Clean the skin with non-alcohol disinfectant
  - Draw blood with a sterile (alcohol-free) needle or syringe
  - Add the sample to the blood tube via the needle. Do not remove stoppers.
  - Slowly invert the tubes completely at least five times to insure proper mixing of the anticoagulants. Do not shake vigorously.
  - Complete a CCF for the blood specimen. Prepare the specimen for shipment to the laboratory, noting the site where the blood was drawn and the time and date of collection.
  - Prepare the specimen for shipment to the laboratory and distribute the copies of the CCF
  - Seal vials with tamper-evident labels. If the CCF does not have an integrated specimen seal (i.e. tamper-evident tape) printed with the same unique specimen identifier on both the form and seal, a separate secure seal is to be used for each specimen container, capable of uniquely identifying and linking the specimen with the form.
  - Use packaging materials that satisfy current applicable courier and customs regulations.
- If the confirmation test is by urine, follow the urine alcohol confirmation procedure as follows:
  - Urine alcohol confirmation requires a second, separate urine specimen and a second CCF. The most common error is collecting a single urine specimen and then requesting both a urine alcohol and drug analysis on the same specimen with the same CCF. This is a serious collector error and the urine alcohol result is not valid and should be cancelled.
  - Urine alcohol confirmation should be used:
    1. If an employee has screened positive for alcohol using a breath or oral fluid alcohol screening device.
    2. If a blood specimen for blood alcohol confirmation cannot be collected or shipped AND an EBT cannot be performed.
  - For urine alcohol confirmation, collect a second, completely new urine specimen from the employee. Complete the second collection after asking the employee to completely empty the bladder and waiting for at least 20 minutes.
  - If only one urine specimen is collected and analysed for both drug and urine alcohol, this is a serious collector error. The urine alcohol result is considered invalid and cannot be used to calculate alcohol-concentration level at the time of the collection.
  - Only a urine alcohol analysis performed on a completely separate, second urine specimen collected following the procedure below is considered valid and can be used to calculate the alcohol-concentration level at the time of the collection.

6.5 Procedure

1. The urine drug test has been completed and the CCF and specimen have been sealed up for shipment to the lab.
2. The employee completely empties the bladder after providing the first urine specimen to the collector for the urine drug test.
3. The employee should wait at least 20 minutes after completely emptying the bladder before giving the second, separate urine alcohol specimen to the collector.

The employee should be monitored by the collector or a company representative during the waiting period. During the 20-minute waiting period, it is recommended the employee drinks up to 8oz or 240ml of water. The employee should remain in a monitored waiting area until the second urine specimen has been collected.

4. The collector then prepares for a second, separate, urine alcohol collection, using a new CCF and a second specimen collection kit.
5. When the employee is able to provide at least 30ml of urine, the urine alcohol confirmation specimen is collected.
6. After the collector checks 'urine alcohol' on the CCF in step 1, section F, the collector completes the collection following the procedures for a drug alcohol collection.

A urine specimen's alcohol concentration depends on all of the urine present in the bladder from the time of last know urination to the current urination. The start time of the last urination should be verified.

7 Drug specimen collection

7.1 Specimen type

Operators can use urine, hair and oral fluid/saliva for drug testing specimens. The recognised detection times and most appropriate use for each specimen type are summarised in table 7.1.

	Urine	Oral fluid/saliva	Hair
Detection time frame	Most drugs 2-3 days	1-2 days	90 days (repetitive use)
Use	Pre-enrolment, random, post-incident, reasonable suspicion/ cause	Pre-enrolment, random, post-incident, reasonable suspicion/ cause	Pre-enrolment, random

Table 7.1: *Recognised detection time and best use for each specimen type*

7.2 Collector training

Drug specimen collectors do not have to be medical professionals unless required by local law.

A collector should be trained in all steps necessary to complete a collection correctly and how to complete and transmit the CCF and specimen, including:

- Collection procedures and use of kits for each specimen type (i.e. blood, hair, oral fluid, urine)
- Following the manufacturer's instructions for POCT devices for drug testing
- Collection site preparation
- Donor identification
- Instructions for unusual collections (e.g. shy bladder, dry mouth, and shaven head)
- Fatal flaws
- Integrity testing of the specimen and action required
- Donor privacy
- Specimen handling and storage
- Packaging of specimens to be shipped to the laboratory

In addition, if visually read POCT devices are used, a collector is required to satisfactorily complete a colour-blindness test.

A collector is to maintain documentation of current training and demonstrated competency.

Collection procedures

The collector shall have direct access to written or electronic SOPs for drug collection.

Specimen type	Recommended procedures
Urine	USA Department of Transportation, Urine Specimen Collection Guidelines (49 CFR Part 40). European Workplace Drug Testing Society, European Guidelines for Workplace in Urine.
Oral fluid	European Workplace Drug Testing Society, European Guidelines for Workplace Testing in Oral Fluid. All oral fluid collection devices should have built in volume indicators.
Hair testing	European Workplace Drug Testing Society, European Guidelines for Workplace Drug and Alcohol Testing in Hair.
Urine POCT Not recommended for use if the documented performance does not meet or exceeds the performance criteria specified in appendix D.	The collector should follow urine collection procedures for a laboratory urine specimen. Additional steps include: • The collector should be trained and demonstrate proficiency in reading the results displayed on the device. • The devices should be handled as specified in the manufacturer's instructions. • If the collector detects the presence of any drug or specimen integrity issues, they should follow the procedures for urine collection. • Recording the POCT result on the CCF (as well as device lot number and expiratory date), and in the event of a non-negative result, immediately notify the DER/PA or operator site supervisor/manager. • 10% of all negative POCT field specimens should be submitted to a certified/accredited laboratory for verification of negative test results (e.g. any specimen ID number ending in 0). The results of quality control checks should be documented. Any discrepancies should be investigated. • Disposing of all negative test specimens according to local/country requirements.

7.4 Employer notification

The collector should notify the DER/PA or operator site supervisor/manager of the following situations:

- An onsite screening drug test result is non-negative
- A refusal to test
- A failure to complete the collection process
- The employee admits to drug use
- Any unusual circumstances are present

8 Custody and control forms

A CCF is used to document the collection, custody and transport of a drug or blood alcohol specimen from the time the specimen is collected until it is received by the laboratory. CCFs are usually supplied by the testing laboratory. They are provided in a three to five-part form with a copy provided to the donor, laboratory (which should be shipped with the specimen) and collector. If additional copies are available, they usually are designated for the employer DER/PA and the MRO. In addition, electronic CCFs can be used.

A CCF is to be completed by the collector for every drug test (including screening drug tests using POCT) and every blood or urine alcohol confirmation test.

Screening and confirmation alcohol test results should be documented on either a drug CCF or an ATF. For confirmation alcohol tests using a breath alcohol device, result and zero blank printouts should be either attached to the drug CCF or the ATF.

The CCF should have the recommended minimum information:

1. A unique specimen ID to link the form to the specimen container (both human readable and barcode format).
2. Peel off tamper-evident seals/labels to be attached to each specimen container or envelope showing the unique specimen number that links the CCF to the specimen container, in human readable and barcode format.
3. Identification unique to the donor (use of company ID, driver's licence or other recognised ID number). For data privacy concerns, a unique donor ID is preferred over the employee's name.
4. Collection site/location/vessel.
5. Confirmation of specimen integrity (varies according to the type of specimen being collected, i.e. urine or oral fluid).
6. Date and time of specimen collection.
7. Signature of specimen collector and the name and contact information of the collector/ collection agency.
8. Statement of informed consent, including donor name, signature and date. (Note that to protect donor privacy this information should be printed on only the donor's and MRO's copies of the CCF. This is particularly important if the CCF identifies a test result (POCT or alcohol test result).
9. Name of testing laboratory.
10. Required laboratory testing. Can be by panel number or by drug/drug metabolite.
11. Names and signatures of all individuals who had custody of the specimen during the collection process.
12. If an alcohol screen/EBT alcohol confirmation test is performed with a drug test, the alcohol result may be documented/recorded on the CCF. One option is to record the alcohol results on the drug CCF with an indication of device manufacturer/model type and lot number used.
13. POCT results are to be recorded on the CCF as either negative or non-negative with identification of the device used, lot number and expiratory date.
14. The CCF should be labelled 'Private' if required by local/country law and/or contains a test result.
15. Medication should be listed on the CCF in the remarks section only if required by local law, or if the donor would like to disclose this information.

9 Stand-down recommendations

It is recommended that operators implement and follow a mandatory stand-down procedure. It is important that supervisors/managers are aware of stand-down requirements and subsequently communicate findings to the DER/PA.

For POCT drug testing:

a. **For reasonable suspicion and post-incident test reasons:** an employee who screens non-negative using a POCT device should immediately stop working on the worksite/vessel until a negative result on that specimen is received.

b. **For non-negative random tests:** if the non-negative POCT result is for a prescription drug, previously disclosed, cleared and documented by the operator's licensed medical professional, the employee may continue working on the worksite/vessel pending results from the MRO.

For laboratory drug testing:

a. **For post-incident testing:** where there is reasonable suspicion of substance abuse/misuse an MSS employee should immediately stop performing duties on the worksite/vessel until a negative result is received.

b. **Option 1 for post-incident testing:** an NSS employee may continue working on the worksite/vessel.

c. **Option 2 for post-incident testing:** an NSS or MSS employee should immediately stop working on the worksite/vessel until a negative result is received.

d. **For reasonable suspicion testing:** an NSS or MSS employee should immediately stop working on the worksite/ vessel until a negative result is received.

For alcohol testing:

- With a confirmation alcohol test showing greater than or equal to 0.02g/210L of breath (greater than or equal to 0.02g/dL of blood)
- If an employee screens greater than or equal to 0.02g/210L of breath (or equivalent for oral fluid) and the confirmation test is pending laboratory confirmation (i.e. blood or urine alcohol test)
- The employee admits to alcohol abuse/recent use

For all testing:

- A refusal to test
- The employee discloses drug use

10 Drug panel

An operator's drug programme will specify groups of drugs or specific drugs with screening and confirmation levels that at a minimum meet the core drug panel in table 10.1. Operators should consult with their drug and alcohol programme professional and laboratory scientific advisors to determine if any of the optional analytes, or any other analytes not listed in tables 10.1 and 10.2, should be added to their drug panel to reflect country/regional workplace drug-use risks. For vessels manned by crew members from more than one region, it is recommended to include the higher-risk optional analytes from all represented regions.

Operators should include their drug panel in all tests except for government-regulated testing requirements.

The recommended screening and confirmation cut-off levels for urine, oral fluid and hair specimens are in appendix C.

Initial test drug/drug class	Confirmatory test drug/analyte
Amphetamines	Amphetamine
Methamphetamine	Methamphetamine, MDA, MDMA
Marijuana/metabolite	Marijuana/metabolite
Cocaine/metabolite	Cocaine/metabolite
Opiates	Codeine, morphine
Synthetic opiates	Hydrocodone, hydromorphone (additionally dihydrocodeine in Europe and South America)
Oxycodones	Oxycodone, oxymorphone
6-Acetymorphine (1) (6-AM)	6-AM
Benzodiazepines (2)	Alprazolam, nordiazepam, oxazepam, temazepam, diazepam, clonazepam, lorazepam

Table 10.1: *Core drug panel*

The operator should request the laboratory to test for 6-AM (in addition to opiates) whenever a urine POCT test for opiates is non-negative in the field.

The operator should consult with the laboratory to identify any additional benzodiazepines that should be included because analytes are prevalent in their operating region or staffing home countries.

Initial test drug/ drug class	Confirmatory test drug analyte	North America	South America	Europe	AP	Australia/ New Zealand	Africa and Middle East
Phencyclidine (PCP)	Phencyclidine	X (2)	X+	X+	X++	X+	X++
Fentanyl	Fentanyl and derivatives	X	X++	X++	X++	X	X++
Ketamine	Ketamine, norketamine	X+	X++	X	X	X	X++
Synthetic cannabinoids (spice)	(3)	X+	X++	X	X++	X	X+
Synthetic stimulants	(3)	X+	X++	X	X++	X	X+
Methadone	Methadone/metabolite	X	X+	X (4)	X++	x	X++
Buprenorphine	Buprenorphine/ metabolite	X	X++	X (4)	X++	X+	X++
Khat		X++	X++	X++	X+	X++	X+

Table 10.2: *Optional analytes*

1. Optional analytes: the operator may recommend testing for one of more optional analytes. Check with your local/ country laws/legislation and with regional/country laboratory/experts to determine if these or other drugs should be included for workplace testing.
   a. X indicates there is evidence/data that the drug(s) are present in the region and are considered in workplace drug testing.
   b. X+ indicates the drugs are rarely seen (relatively low prevalence rate) and not typically considered in workplace drug testing/legislation.
   c. X++ indicates insufficient data available at the time of publication.
2. Required by USA Department of Transportation, Rule 49 CFR Part 40, January 1, 2018. More often than not, PCP is included in workplace drug testing in the USA and Canada. In recent years there has been an increasing number of laboratory positive tests for PCP in USA workplaces.
3. For synthetic cannabinoids and stimulants, work with laboratory or other experts to identify the drugs to test for and corresponding cut-off levels.
4. Recommended by European Workplace Drug Testing Society, 2015 European Urine and Oral Fluid, and 2019 Hair Workplace Testing Guidelines.

Drug overview

Detailed information about the drugs referenced in this guideline document can be found at www.drugfree.org.

11 Laboratory and drug specimen validity recommendations

11.1 Laboratories

Laboratory accreditation

Drug testing should be done at a laboratory certified and/or accredited by a recognised international, national or regional organisation that is able to provide formal recognition that the testing laboratory is competent to carry out workplace drug testing to a forensic standard. Recognised accreditations include current versions of:

- USA Health and Human Services/SAMSHA, National Laboratory Certification Program (NLCP), North America
- College of American Pathologists Forensic Laboratory (CAP-FDT) accreditation
- International Standard ISO/IEC 17025: General Requirements for the competence of testing and calibration laboratories. Accreditation to the ISO/IEC 17025 will usually be provided by a forensic organisation such as the ANSI-ASQ National Accreditation Board (ANAB) or the United Kingdom Accreditation Services (UKAS). Other national accreditation bodies are also used such as National Association of Testing Authorities (NATA) Australia.
- Joint Australian and New Zealand Standard AS/NZ 4308:2008 Procedures for specimen collection and the detection and quantification in urine
- Joint Australian and New Zealand AS/NZ 4760:2019 Procedures for specimen collection and the detection and quantification of drugs in oral fluid (this standard requires the use of oral fluid POCT screening

Alternatively, drug testing may be done at a laboratory that is accredited to the ISO/IEC 17025 or ISO 15189 standard and maintains in possession a certified letter from the laboratory director stating that it meets and will maintain compliance with the following criteria.

- Two independent analytic methods are used for determining a positive result:
  - A screening process, usually an immunoassay screen, on one portion of the original specimen
  - A confirmatory test, usually gas or liquid chromatography, in combination with mass spectrometry on a different portion of the original specimen
- Specimen validity testing is performed that is appropriate to the specific specimen tested, including reliably identifying specimens that are adulterated or substituted
- The testing methodology reliably discriminates between specimens that contain drug(s) at or above the specified cut-off levels of the recommended drug panel and those that do not
- Chain of Custody (COC) procedures (including both specimens and aliquots) are used throughout the laboratory
- Quality control procedures include:
  - Internal open and blind controls
  - Enrolment in an external blind and blind quality assurance/proficiency testing programme for drug testing services offered
- Personnel qualifications are documented and competency assessments are performed annually
- Laboratory safety procedures are implemented to protect the health and safety of employees and visitors
- Quality improvement and quality management are an integral part of laboratory operations
- Document-control procedures are implemented

- Records and specimen management procedures are implemented
- Method validation and verification is performed, and records maintained
- Internal and external facility and on-site inspections/audits occur at least once every two years and records are available for review
- Security of specimens, records, and the testing area/facility is maintained

Regional recommendations for laboratory accreditation

- **USA:** a laboratory should be accredited either by CAP-FDT (all specimen types) or the National Laboratory Certification Program for urine-testing laboratories.
- **Australia and New Zealand:** a laboratory should be accredited to the AS/NZ 4308 (urine) and the AS/NZ 4760 (oral fluid).

Testing recommendations

All screening tests should be performed using an appropriate and validated technique. Any positive screening test should be confirmed using a laboratory chromatographic technique in combination with mass spectrometry.

Regional recommendations for testing

USA: FDA 510 (k) clearance of assays and/or devices is recommended for the testing of specimens.

European Union: CE marked assays/or devices are recommended for the testing of specimens.

11.2 Specimen validity testing

Urine

The validity tests in table 11.1 should be performed and reported on every urine specimen.

Validity test
pH
Oxidizing adulterants (e.g. nitrates, chromium VI)
Creatinine
Specific gravity when the creatinine is less than 20mg/dL or 2.0mmol/L (depending on the standard used by the chosen testing laboratory)

Table 11.1: *Validity tests to be carried out on all urine specimens*

To report a urine specimen as a dilute specimen, invalid specimen, adulterated/substituted specimen or as having failed specimen integrity, confirmatory testing on a second aliquot should be performed using a well-recognised technology as indicated in table 11.2.

Confirmatory test	Testing technology
pH	pH meter
Oxidizing adulterant	Ion-chromatography or ICP-MS (as applicable)
Creatinine	Colorimetric/spectrophotometry
Specific gravity	
Dilute	3-place (preferably 4-place, with printout) digital refractometer
Substituted	4-place digital refractometer with printout
Invalid	Spectrophotometry

Table 12.2: *Confirmation test and the corresponding testing technology*

Oral fluid

SVT should be performed by the laboratory and reported on every oral fluid specimen. SVT testing helps ensure that an adequate volume of a sample has been collected, even with devices that incorporate a sample adequacy indicator. In the USA, IgG and albumin are the two most commonly used SVT markers. Other analytes typically found in oral fluid are also acceptable.

Hair

No SVT is recommended.

11.3 Blood testing (for alcohol confirmation)

Laboratories should test blood specimens for ethanol (alcohol) using a validated gas chromatograph confirmation method with a cut-off of at least 0.02g/dL (i.e. 20mg/dL).

12 Drug test review process

12.1 MRO review recommendations

An operator may choose to have all employee drug results reviewed by an MRO.

As a minimum, an MRO review is recommended for:

- Non-negative laboratory results
- An alleged inability to provide a specimen

12.2 MRO qualifications

An MRO should:

- Be a physician with a licence and/or certification to practise medicine, prescribe medications, and diagnose and treat medical conditions.
- Have participated in a formal education programme relevant to workplace drug testing, drug pharmacology and pharmacokinetics.
- Have clinical experience in controlled substances abuse disorders, including detailed knowledge of alternative medical explanations for laboratory confirmed drug test results.
- Be knowledgeable about issues relating to adulterated and substituted specimens as well as the possible medical causes of specimens that have an invalid result.

12.3 MRO review process

For non-negative results, the process should include:

- Authenticating the employee's identity
- Reviewing the external chain of custody for fatal flaws
- Reviewing the confirmed laboratory test result
- The opportunity for the employee to speak to the MRO
- When deemed appropriate by the MRO, the opportunity for the employee to request a re-analysis of the original specimen

If, after five calendar days after receipt of the laboratory report, no contact with the employee has been made, the MRO should report the result to the DER/PA.

MRO staff members or assistants who are not physicians may assist the MRO in the review process.

12.4 MRO actions

It is recommended that following a review of non-negative test results, the MRO should take the following steps:

- For a fatal flaw, cancel the test and inform the DER to order a new collection.
- For a confirmed laboratory positive result, verify the result as MRO positive unless the employee presents a legitimate medical/metabolic explanation for the presence of the drug/metabolite in the specimen.
- For a confirmed laboratory positive result, verify the result as MRO negative if the employee presents a legitimate medical explanation for the presence of the drug/metabolite in the specimen.
- If, during the MRO review process, concerns about fitness for duty are found, including medical conditions or impairing medications, inform the DER/PA to order a medical examination and a have a fitness-for-duty assessment performed.
- For a confirmed laboratory positive result of marijuana, for an alleged medical marijuana use or exposure, but not due to a legitimate prescription – e.g. Marinol® (dronabinbol), Sativex® (delta-9 THC and cannabidiol), Cesamet® (nabilone) – verify the result as MRO positive but offer to report the alleged legitimate use of marijuana to the DER/PA.
- For a confirmed laboratory adulterated or substituted result, verify the result as a refusal to test because of adulteration or substitution unless the employee presents a legitimate explanation for the presence of the adulterant or substitution in the specimen.
- For a confirmed laboratory adulterated or substituted result, cancel the test if the employee presents a legitimate explanation for the presence of the adulterant in the specimen. If allowed under local/country law and custom, inform the DER/PA to order a new collection under direct observation.
- For a laboratory invalid result, cancel the test. If allowed under local/country law and custom, inform the DER/PA to order a new collection under direct observation.
- If a valid test result cannot be produced due to legitimate medical reasons and a negative test is required, inform the DER/PA to order a new drug test using an alternative specimen type.
- If the employee requests re-analysis of the specimen, the MRO will arrange for re-analysis at Limit of Detection (LOD) at a laboratory in compliance with this guideline. If there is insufficient specimen for re-analysis, contact the DER/PA for instruction.

In the case of an alleged inability to provide a specimen, the recommended MRO actions are:

- Inform the DER/PA in a confidential manner of the employee's alleged inability to provide a specimen and direct the DER/PA to order a medical examination of the employee
- Ensure that all communications with the DER/PA are kept confidential

Recommended review process for drug tests without an MRO review

If an MRO review of the laboratory drug test result is not required (as in section 12.1) the following action is recommended:

- Review the external chain of custody for completeness.
- Review the laboratory result:
  - For a laboratory negative result, report as negative. No further action is recommended
  - For all laboratory negative-dilute results, report as negative. No further action is recommended
  - For specimens rejected for testing/fatal flaw, order a new collection

Appendix A: Marine safety sensitive position list template

Any position not listed below is defined as an NSS position, including management and/or supervisory personnel.

The following positions will be classified as MSS:

Marine Safety Sensitive list for_____

The above list may be updated by the operator as deemed necessary.

Appendix B: Vessel random testing

Example: vessel random selection plan to achieve target annual random testing rates for urine, oral fluid and hair drug testing		
	Urine and oral fluid testing	**Hair testing**
Number of operator vessels	Number of vessels to be randomly selected for testing to achieve a 50% annual random test rate[1]	Number of vessels to be randomly selected for testing to achieve a 25%-35% annual random test rate[1]
1 to 2 (2)	1 every 6 months	1 every 6 months
3 (2)	1 every 4 months	1 every 6 months
4 (2)	1 every quarter	1 every 4 months
5 to 6 (2)	2 every 4 months	1 per quarter
7 to 8 (2)	3 every 4 months	1 to 2 per quarter
9 to 12	3 per quarter	1 to 2 per quarter
13 to 16	4 per quarter	2 per quarter
17-20	5 per quarter	3 per quarter
21-24	6 per quarter	3 to 4 per quarter
25-28	7 per quarter	4 per quarter
29-32	8 per quarter	5 per quarter
33-36	9 per quarter	5 to 6 per quarter
38-40	10 per quarter	6 per quarter
43-44	11 per quarter	6 to 7 per quarter
45-48	12 per quarter	7 per quarter
> 48	Number of operator vessels/4. Always round up to the next largest whole number	((Number of operator vessels x 2)X0.3)/4

[1] Based on the assumption that each operator has two crews to staff each vessel. Adjustments may be needed for smaller or larger crew/vessel ratios.

(1) Operators with fewer vessels will likely need to exceed the target annual random test rate to ensure testing remains unpredictable over the calendar year.

	Number of crews to test annually to achieve a 50%, 35% and 25% annual random testing rate						
Operator vessel count	**Operator crews (assuming two crews per vessel)**	**Number of crews to test annually to achieve 50%, 35% and 25% annual random testing rate**			**Effective rate at 50%**	**Effective rate at 35%**	**Effective rate at 25%**
		50%	**35%**	**25%**			
1	2	1	1	1	50.00%	50.00%	50.00%
2	4	2	2	1	50.00%	50.00%	25.00%
3	6	3	3	2	50.00%	50.00%	33.33%
4	8	4	3	2	50.00%	37.50%	25.00%
5	10	5	4	3	50.00%	40.00%	30.00%
6	12	6	5	3	50.00%	41.67%	25.00%
7	14	7	5	4	50.00%	35.71%	28.57%
8	16	8	6	4	50.00%	37.50%	25.00%
9	18	9	7	5	50.00%	38.89%	27.78%
10	20	10	7	5	50.00%	35.00%	25.00%
11	22	11	8	6	50.00%	36.36%	27.27%
12	24	12	9	6	50.00%	37.50%	25.00%
13	26	13	10	7	50.00%	38.46%	26.92%
14	28	14	10	7	50.00%	35.71%	25.00%
15	30	15	11	8	50.00%	36.67%	26.67%
16	32	16	12	8	50.00%	37.50%	25.00%
17	34	17	12	9	50.00%	35.29%	26.47%
18	36	18	13	9	50.00%	36.11%	25.00%
19	38	19	14	10	50.00%	36.84%	26.32%
20	40	20	14	10	50.00%	35.00%	25.00%
21	42	21	15	11	50.00%	35.71%	26.19%
22	44	22	16	11	50.00%	36.36%	25.00%
23	46	23	17	12	50.00%	36.96%	26.09%
24	48	24	17	12	50.00%	35.42%	25.00%
25	50	25	18	13	50.00%	36.00%	26.00%
26	52	26	19	13	50.00%	36.54%	25.00%
27	54	27	19	14	50.00%	35.19%	25.93%
28	56	28	20	14	50.00%	35.71%	25.00%

	Number of crews to test annually to achieve a 50%, 35% and 25% annual random testing rate						
Operator vessel count	**Operator crews (assuming two crews per vessel)**	**Number of crews to test annually to achieve 50%, 35% and 25% annual random testing rate**			**Effective rate at 50%**	**Effective rate at 35%**	**Effective rate at 25%**
		50%	**35%**	**25%**			
29	58	29	21	15	50.00%	36.21%	25.86%
30	60	30	21	15	50.00%	35.00%	25.00%
31	62	31	22	16	50.00%	35.48%	25.81%
32	64	32	23	16	50.00%	35.94%	25.00%
33	66	33	24	17	50.00%	36.36%	25.76%
34	68	34	24	17	50.00%	35.29%	25.00%
35	70	35	25	18	50.00%	35.71%	25.71%
36	72	36	26	18	50.00%	36.11%	25.00%
37	74	37	26	19	50.00%	35.14%	25.68%
38	76	38	27	19	50.00%	35.53%	25.00%
39	78	39	28	20	50.00%	35.90%	25.64%
40	80	40	28	20	50.00%	35.00%	25.00%
41	82	41	29	21	50.00%	35.37%	25.61%
42	84	42	30	21	50.00%	35.71%	25.00%
43	86	43	31	22	50.00%	36.05%	25.58%
44	88	44	31	22	50.00%	35.23%	25.00%
45	90	45	32	23	50.00%	35.56%	25.56%
46	92	46	33	23	50.00%	35.87%	25.00%
47	94	47	33	24	50.00%	35.11%	25.53%
48	96	48	34	24	50.00%	35.42%	25.00%
49	98	49	35	25	50.00%	35.71&	25.51%

Where vessel counts are on the smaller side, there may not be a selection every quarter. At the 50% rate this happens at vessel counts smaller than three. At the 25% rate this happens at vessel counts smaller than seven. At the 35% rate this happens at vessel counts below five. Also, in smaller populations, a smaller vessel count can lead to satisfaction of the required percentage early in the year. In these situations, to continue the deterrence effect of random testing, an additional selection can be done, or ensuring that selections are not always made in the first quarter of the year. This will allow the programme to be effective even at the smaller population.

At the 25% and 35% rates, the actual random testing rate may be substantially higher than the desired rate for smaller vessel counts. This is a rounding situation where to achieve the minimum percentage, there is an additional selection that is needed to achieve the minimum percentage. This situation lessens as the vessel count grows.

Appendix C: Drug screening and confirmation cut-off values

To be added or referenced IPIECA/IOGP cut offs values

Appendix D: Performance verification for POCT devices

This guideline allows the use of POCT that meets the recommended performance verification and criteria for POCT devices. These devices are particularly useful for post-incident or reasonable suspicion testing when a vessel is out at sea or when working in a remote area.

POCT devices used for any testing must meet the following criteria:

- Panel drug test at screening levels equivalent to, or lower than, laboratory screening cut-off levels (see appendix C)
- Provide field/collector specimen validity tests (e.g. pH, creatinine and adulteration for urine testing)
- Have either FDA 510 (k) clearance (recommended for all USA point of care testing) or the CE mark (in Europe)

Any POCT device should have documentation of performance around the cut-off, by an accredited/certified laboratory, to reliably differentiate blind specimens that are within plus and minus 50% of the cut-off value for each drug or drug metabolite, within + 50% of the cut-off at least 90% of spiked specimens must report positive (minimum ten specimens):

- Within – 50% of the cut-off at least 90% of spiked specimens should report negative (minimum ten specimens)
- Should be performed for each new device lot number

As of May 2019, no oral fluid POCT device meets the screening recommendations in this guidance document, so the currently available oral fluid devices should not be used.

Appendix E: Records to be retained

The operator should retain the following list of records that support compliance with this guideline and have them readily available for review:

- A copy of the CCF and alcohol and drug test results
- MSS position list (see appendix A)
- A list of employees in the random pool (MSS)
- A report detailing the annual random testing percentage
- A list of selection days and the completion status of individual/vessel selections
- Collection agency or collector information which may include collection certification and/or training
- Electronic or hard copy records of supervisor/manager training
- DER contact information
- TPA contact information (if used)
- MRO name and contact information
- Laboratory contact information for all testing laboratories used, as well as the drug panel information for each testing reason/pool

Additional records that should be retained include:

- A list of all employees, groups or vessels randomly selected on each random selection day
- Dates of each of the following:
  - Reasonable suspicion tests
  - Post-incident tests
  - Unannounced group tests (and test reason – suspicion or deterrence)
  - Contraband inspections
- Accuracy check log, calibration records, and manufacturer's certification for EBT
- The laboratory confirmation of field screening device result (positive, negative, or invalid specimen)
- Written procedure for ensuring employees who are disqualified from work continue to be excluded from operator work at any location

Appendix F: Statistical reporting

Parameter	Target/notes
Random percentage (%) testing rate (number of random tests performed divided by the average number of employees in the random pool)	Example: urine or oral fluid quarterly cumulative expectations: 1Q – 12.5% 2Q – 25% 3Q – 37.5% 4Q – 50%
Are 10% of drug field screening devices being sent to lab for results validation?	Should be yes (for operators using POCT)
Number of the following year-to-date by operator: • Random tests • Reasonable suspicion tests • Post-incident tests • Unannounced group tests • Inspections	Should be prepared to discuss action taken following positive tests
Total positivity rate for all policy violations (MRO positive/refusal to test) and by: • Test type (random, post-incident, reasonable-suspicion, unannounced group) • Each drug/drug class • Alcohol violations	Should have test data for the prior three years

The operator should update the data quarterly.

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