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Document History

Date	Approved by	Change Summary
February 2020	David Reaich	Usability Mapped – Issued for Use

About this Standard.

Purpose

The purpose of this standard is to provide the requirements for managing waste on ConocoPhillips Canada (CPC) sites to ensure:

- proper disposal
 - reduced risk and liability
 - compliant documentation of streams for type, risk, appropriate handling
 - audited facility disposal selection.
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1. Waste Classification.

Waste Classification Process

The waste classification process incorporates a review of various company and regulatory resources including:

- Canadian Association of Petroleum Producers (CAPP) Waste Profile Sheets.
- Safety Data Sheets (SDS)
- Site specific procedures and manuals or guides
- Process knowledge and industry experience
- Lab analyses
- Directive 58
- Alberta User Guide for Waste Managers
- British Columbia Hazardous Waste Reference Guide
- BC Oil and Gas Waste Regulations (OGWR)

Waste classes categorize waste streams based on composition and handling procedures to develop general waste management procedures.

Waste Classification

All waste is assigned a waste class as follows:

Waste Class	Properties
Dangerous oilfield waste (DOW)	Materials that potentially constitute a high degree of hazard to public health and the environment. See next table below.
Non-dangerous oilfield waste (non-DOW)	Materials that are biologically or chemically reactive in the natural environment. Examples include paper, wood, household garbage, animal waste and digested sewage sludge.
Inert	Materials that do not undergo any significant physical, chemical or biological transformation. Examples include glass, most metals, concrete and brick materials, broken clay and chinaware, most plastics and manufactured rubber products.



NOTE: Waste is to be assigned a potential risk as well as disposal options (i.e. recycle, treat, dispose etc.)

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Dangerous Oilfield Waste (DOW) Properties

Properties of Dangerous Oilfield Waste (DOWs) are:

Property	Description
Flammability	<ul style="list-style-type: none"> Flashpoint less than 61°C.
Spontaneous combustion	<ul style="list-style-type: none"> Waste can reach auto-ignition temperature.
Water Incompatibility	<ul style="list-style-type: none"> Generates flammable or explosive gases in contact with water.
Oxidizing Potential	<ul style="list-style-type: none"> Waste contributes oxygen for combustion
Toxicity	<ul style="list-style-type: none"> Oral toxicity LD50 not greater than 5,000 mg/kg. Dermal toxicity LD50 not greater than 1,000 mg/kg. Inhalation toxicity LC50 not greater than 10,000 mg/m3 at normal atmospheric pressure.
Corrosivity	<ul style="list-style-type: none"> pH value less than 2.0 or greater than 12.5
PCB Content	<ul style="list-style-type: none"> PCBs concentration is = or > 50 mg/kg
Leachate Toxicity	<ul style="list-style-type: none"> Waste is a liquid or solid that passes a 9.5-mm mesh, or can be reduced by grinding in a mortar and pestle to a particle size that passes a 9.5-mm mesh Waste contains 100 mg/L or higher any substance listed in Table 1 of the Schedule to the Alberta Users Guide for Waste Managers The leachate contains any substance and associated concentration listed in Table 2 of the Schedule to the Alberta Users Guide for Waste Managers The leachate contains any of the following substances in a concentration greater than 0.001 mg/L: <ul style="list-style-type: none"> hexachloro-dibenzo-p-dioxins pentachloro-dibenzo-p-dioxins tetrachloro-dibenzo-p-dioxins

Examples of Dangerous Oilfield Waste

Examples of Dangerous oilfield waste are found in the Alberta Users Guide for Waste Managers, published by Alberta Environment as follows:

- Waste types listed in Table 3
- Commercial products or off-specification products listed in Part A or Part B of Table 4
- See also, containers as identified in AER Directive 58, Section 5.3, Dangerous Oilfield Waste Containers.

2. Waste Storage & Segregation

Storage Areas

The design and location of waste storage areas must include the following:

- Secondary containment
- Secure and weatherproof (as necessary)
- Spill kits to sufficiently respond to an event reasonably expected to occur
- Waste containers arranged allowing safe collection and storage.

Label requirements

Label requirements for waste containers must include the following:

- Name of waste
- Waste Classification (i.e. DOW, or non-DOW)
- Potential defenses, handling instructions, and warnings
- Be visible and legible.

Waste Container Design

Waste container design should consider:

- chemical composition of the waste (e.g. acids)
- physical properties of the waste (e.g. sharp, size, weight)
- protection to personnel (e.g. defenses for vapours and fumes)
- installing lids
- bear proofing when storing food wastes or other wildlife attractants.

Waste Container Handling

When using or handling waste containers, consider the following defenses:

- Inspect containers prior to use for signs of damage.
- Replace containers that are full
- Have surplus (empty) containers available
- Do not clean and reuse empty containers.

Storage Duration

Storage duration of waste is as follows:

- Temporary wastes (e.g. from spills or turnaround) must not exceed a period of three months.
- Waste is not be stored for longer than one year.

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Waste Segregation

When storing waste, the following waste segregation requirements apply:

- Store incompatible wastes separately (i.e. keep pyrophoric waste away from flammable waste.)
 - Do not mix different wastes unless specifically evaluated, approved, and documented.
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3. Transportation and Disposal

3.1. Transportation.

Documentation Requirements - Transport to Central CPC storage

When transporting waste to a centralized CPC storage area (i.e. from a wellsite to plant location), the following documentation requirements apply:


- Complete manifesting or CPC TDG shipping document
- Use the CAPP Permits for Equivalent Level of Safety


 **NOTE:** CPC personnel are not permitted to transport waste directly to a waste receiver.

Waste Manifests

Except for domestic waste, all waste generated by CPC must be tracked using waste manifests or shipping documents for the respective waste classes as follows:

Province	Waste Class		
	DOW	Non-DOW	Inert
AB	AER manifest	AER manifest or other shipping document	Recycle docket or other shipping DOCUMENT
BC	Movement document/manifest	Other shipping document	

 **NOTE:** Waste manifest must be completed using the classification from the Analysis Database.

 **NOTE:** All waste manifests require CPCs certification declaration label to be used when transporting waste that meets the classification of a dangerous good. CPC representative must sign the Consignor’s Declaration.

Waste Tracking

CPC representatives or delegates perform waste tracking as follows:

- Retain the generator copy at the field site.
- Field site obtains final copy from the receiver.
- Discrepancies must be reconciled within 60 days.

Waste Generator
codes

Waste generator codes are as follows:

Province	ConocoPhillips Canada Operations Ltd.	ConocoPhillips Canada Resources Corp
AB	OXL9	A5G3
BC	BCG 08704	BCG 08704

3.2. Waste Disposal

Disposal of DOW

Dangerous oilfield wastes (DOW) must be disposed of at approved waste receiving facilities within the generating province.

If transport to another province is required contact the Environmental Ops team.



WARNING: Do not dispose of DOW in municipal landfills.

Disposal of non-DOW

Non-dangerous oilfield waste (non-DOW) or “Class 2” wastes must be disposed of as follows:

- At approved waste receiving facilities.

3.3. Approved Waste Receivers

Approved Waste Receivers

All waste generated by CPC must be disposed of at an approved waste receiver and disposal location. A list of approved waste receivers is available on the HSE website.

Approval Process for new Waste facilities

The following waste receiver approval process applies when a new vendor is required based on business needs:

- If a new facility is operated by a previously approved vendor, refer to the latest vendor level audit. New facility is added to the CPC Approved Waste Receiver List.
- If the new facility is receiving a contract for the first time, Environmental Ops will initiate the Waste Receiver Audit Process.


3.4. Waste Receiver Audits

Pre-Audit of New Facilities

A pre-audit of new facilities is required to validate business need and assess if alternatives are available. The pre-audit will evaluate:

- if the vendor is required for a new waste stream
- minimization to reduce/eliminate the stream
- other approved facilities
- Operational, cost and E&SD implications to disposal

The pre-audit results will determine advancement to audit process.




NOTE: Audit team should be Ops Services Waste Specialist and supervisor, HS Coordinator, and EOps Coordinator.

New Facility Audit

A new facility audit is required when a new waste receiver addition is confirmed. An audit team with lead auditor is selected and will review the following:

- Waste handling procedures.
- Site facilities and operations.
- Regulatory permits and compliance.
- Environmental (land zoning, geology, hydrogeology etc.)
- Community relations. (complaints, legal action, media etc.)
- Financial and insurance mechanisms.

A summary report will be submitted to the Environmental Ops Manager for approval and addition of vendor to the approved list.



NOTE: Findings from the audit must be resolved within 12 calendar months of the audit.

Existing Facility Audits

Vendor level audits will be conducted every 5 years. Audits of facilities will be completed as needed on a rotating basis determined by risk. Contact Environmental Ops Coordinator for further information.

4. Waste Minimization.

Minimizing Waste

Options to minimize waste streams should be considered as follows:

- Reduce and reuse
- Recycle
- Treat waste
- Assess and execute minimization opportunities through committees.



NOTE: The ops services waste specialist may conduct knowledge sharing with other operations on an established frequency.

5. Waste Tracking.

Waste Tracking

Tervita and Collective Waste tracks CPC waste and reports on the quantities and characteristics of generated wastes including:

- DOW
- Non-DOW
- Final treatment and disposal methods if known.

The Environmental Operations Team will:

- Prepare CPC waste disposition and tracking records.
 - Prepare waste disposition reports as requested by regulatory authorities.
 - Submit waste information for annual corporate reporting.
 - Support supply chain as needed to develop and maintain waste vendor contracts and relationships
 - Evaluate the suitability of waste facilities
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6. Definitions of Waste

6.1. Glossary and Characteristics of Waste.

Acronyms	
AER	Alberta Energy Regulator
ARO	Asset Retirement Obligation
Decomm	Decommissioning
DOW	Dangerous Oilfield Waste
ELM	Environmental and Liability Mgmt
HSE	Health, Safety and Environment
MSDS	Material Safety Datasheet
Non-DOW	Non-dangerous Oilfield Waste
PCB	Polychlorinated Biphenyl
PPE	Personal Protective Equipment

Characteristics of Waste	Identification of the Waste’s Physical, Chemical and Toxicological Characteristics.
Transportation of Dangerous Goods Act and Regulations (TDG)	The Transportation of Dangerous Goods (TDG) Act and Regulations divide waste streams into nine classifications of dangerous goods and it controls the movement of dangerous goods on public roads. The TDG Act outlines the responsibilities of shippers, carriers and receivers of dangerous goods; it implements the TDG documentation requirements as well as labelling and placarding requirements.
Upstream oilfield waste	An unwanted substance or mixture of substances that results from the construction, operation/production, oil and gas batteries, gas plants, crude oil terminals, compressor stations, pipelines, gas gathering systems, heavy oil sites, oil sands or other related facilities, and remediation or reclamation of well sites.
Waste	Waste is any unwanted substance or object, which is intended to be disposed of, or is required to be disposed of.
Waste tracking	A system for monitoring and recording the generation, handling, treatment and disposal of waste.

6.2. Definitions.

Definitions	
Characterization of waste	Identification of the waste’s physical, chemical and toxicological characteristics.
Classification of waste	Determination, as per regulatory requirements, that oil sands waste is hazardous, by the designation “dangerous oilfield waste” (DOW) or non-hazardous, by the designation “non-dangerous oilfield waste (non-DOW).
Dangerous oilfield waste (DOW)	Oilfield waste exhibiting one or more properties as illustrated in Table 4.1a and Table 4.1b of AER’s Directive 058. These properties may include flammability, spontaneous combustion potential, water incompatibility, oxidizing potential, toxicity, corrosivity, PCB content and leachate toxicity.
Hazardous waste	Those wastes which, due to their nature and quantity, are potentially hazardous to human health and/or the environment and which require special disposal techniques to eliminate or reduce the hazard. This is the term used in any non-Alberta operation (similar to DOW in BC).
Inert waste	Any solid waste that, upon disposal to land, is not reasonably expected to undergo physical, chemical and/or biological changes to such as extent as to produce substances that may cause an adverse effect. Examples include demolition debris, concrete, asphalt, glass, cement returns, scrap metal, and dry timber or wood that has not been chemically treated.
Generator of waste	The responsible party for the waste stream from the creation of the waste (cradle) to the final disposition, generally with retained liability for the waste in landfill (grave).
Manifesting	The use of documentation which must accompany shipments of dangerous oilfield waste or hazardous waste on public roads to assist first responders in the event of an accident and to confirm the proper shipment of wastes.
Non-dangerous oilfield waste (non-DOW)/ Non-Hazardous Waste:	Materials are that are biologically or chemically reactive in the natural environment. Examples include paper, wood, household garbage, animal waste and digested sewage sludge. Oilfield wastes that don’t fit the definition of DOW.
Tracking	Process by which CPC monitors the handling, movement, treatment and disposal of waste. Both manifesting and tracking are required to ensure the quantities and characteristics of all generated wastes, as well as their final treatment and disposal methods are known by the generator.

References.

Reference the following documents as required:

Document Name	Document ID
Canadian Association of Petroleum Producers (CAPP) Waste Profile Sheets.	
Alberta AER Directive 058: Oilfield Waste Management Requirements for the Upstream Petroleum Industry AER Directive 050: Drilling Waste Management AER Directive 051: Injection and Disposal Wells, Well Classifications AER Directive 055: Storage Requirements for the Upstream Petroleum Industry Waste Control Regulation, Alta, Regulation 192/1996	
British Columbia Oil and Gas Waste Management Regulation Drilling and Production Regulation	
CPC Approved Waste Receiver List	
Corporate ConocoPhillips Waste Management Standard	
Safety Data Sheets (SDS)	
Transportation of Dangerous Goods Regulations	