

	LEASE AND RIGHT-OF-WAY ALL-HSE-PRC-162	Retention Code: CG01 - CA
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1.0 Purpose

The purpose of this procedure is to set ConocoPhillips Canada (CPC) expectations around lease management at CPC operated facilities.

2.0 Procedure-Specific Roles and Responsibilities

2.1. Line Management

- Ensure implementation of this procedure.

2.2. Workers

- Identify and eliminate sources of contaminant releases.
 - For guidance and assistance in interpreting and implementing this procedure, consult the local Field HSE Specialist or the Environmental Operations Team.

3.0 Procedure

3.1. Housekeeping

3.1.1. Signage

- All facilities (includes completed wells, facilities, LPG facilities, oil loading/unloading facilities) must have a sign posted in a conspicuous location at the primary entrance of the lease that identifies:
 - Licensee name
 - Legal location
 - 24-hour emergency telephone number
 - A warning symbol of either: Flammable (sweet locations) or Poisonous (sour locations ≥ 10 ppm H₂S)
 - If multiple wells exist on one surface location, identify the bottom-hole location of each well at the wellhead.
 - Within British Columbia and Saskatchewan, Well Engineering Operations (WEO) will affix a permanent identification sign prior to the drilling rig leaving the location.
 - Within Alberta, a permanent sign will be in place prior to completions leaving the lease.
 - Buildings, vessels, fences, and piping must be appropriately labeled according to WHMIS.

3.1.2. Fencing and Security

All operating equipment in areas with vehicle traffic must be protected with warning signs or traffic guards.

3.1.2.1. Alberta

- All batteries where H₂S concentration is higher than 10 mol/kmol located within 800 m of populated areas, must have a small mesh industrial type fence that is at least 2 m high that completely encloses the battery and be equipped with a gate that is locked when the battery is unattended.
- For sour batteries located elsewhere, a minimum four strand barbwire fence with a gate or cattle guard is required.
- All wells with pumping units located within 800 m of the boundaries of populated areas must be enclosed with a steel mesh fence at least 2 m high, with the mesh no greater than 130 cm² and equipped with a gate that is locked when the well is unattended.
- Sour batteries include those to which any well with H₂S content in excess of 10 mol/kmol (1%) produced gas.
- On suspended wells, chain and lock wellhead valves or remove valve handles.

3.1.2.2. British Columbia

- Fencing or other access control measures must be in place to prevent unauthorized access to the well or facility if:
 - The well or facility is located within 800 m of a populated area, or
 - A populated area is within the emergency planning zone for the well or facility.

3.1.2.3. Saskatchewan

- All facilities and well sites must be fenced if it is reasonable to expect that they will come in contact with livestock, children and/or the public.
- If livestock are to be moved in to a new area, a fence must be constructed at the landowner's request.
- In order to receive Energy and Resource's waiver for fencing requirements, the licensee must provide land owner's consent or provide application to the appropriate field office as to why a fence should not be constructed.

3.1.3. Leases

- General housekeeping practices applicable to facility and well sites:
- Ensure that areas exposed to fire hazards (i.e. dikes and firewalls) are kept free of weeds or other vegetation and any other combustible materials.
- Keep facilities clean (i.e. no oil, salt water or other stains) by:
- Providing drip trays, enviro-boxes or similar devices at locations that are chronic sources of leaks or spills, such as vessel drain lines, pig traps or truck loading lines.

- Inform the appropriate CPC department of any vessels, buildings, or other equipment that requires decommissioning, removal and subsequent environmental assessment and cleanup.

3.2. Industrial Surface Runoff Management

This section refers to surface water that flows on-site or is generated on-site through rainfall, snowmelt etc., and must be managed in a way that is compliant with regulations and avoids potential erosion and contamination to the surrounding environment.

3.2.1. Site Drainage

3.2.1.1. All Sites

- All CPC sites must manage surface water in compliance with the relevant provincial regulation and approval requirements. The following conditions apply to all CPC sites:
 - All CPC sites must manage surface water runoff to prevent contaminated water from leaving the lease and entering the surrounding environment
 - In accordance with regulations, this means that any contamination on site should be dealt with as soon as possible to prevent surface water contamination and offsite releases
 - Off-lease water with the potential to run onto the lease shall be prevented from entering the lease through appropriate lease planning, construction and development, and the use of berms and dikes, as needed. Should off-lease water enter the lease, it should be directed away from areas of potential contamination and contained for testing and release, or transport to a registered CPC approved waste receiving facility.

3.2.1.2. Sites within 100 m of a Water Body

- Sites located within 100 m of the high water mark of a water body must have a lease dike or alternative control measures.
- The AESRD and Environment Canada consider a water body or wetland as any area of land that is covered in water or saturated for a period of time.
- Sites located within 100m of a water body must have a waiver, indicating regulatory approval for this variance
- The licensee or operator shall comply with Oil and Gas Conservation Rules section 8.060 requirements

Note: For existing facilities where there is no dike, contact Regulatory Affairs for assistance in determining mitigation measures.

- 3.2.1.3. Sites with an Alberta Energy Regulator (AER) Registration for compressor and pumping stations and sweet gas processing plant
 - At compressors, pumping stations, sweet gas processing plants, and single well batteries constructed after September 1996 that are registered under the Alberta Energy Regulator Code of Practice, one of the following must be incorporated into the design and operation of the facility:
 - Control of industrial runoff from the plant developed area using ditching or berms so that industrial runoff is only released from the site at points where there are facilities or site features for the containment of spills of process liquids or industrial wastewater, such as culverts with valves or small pits for the containment and recovery of any spills.
 - Installation of an industrial runoff pond for collection of industrial runoff from the plant developed area designed to control the rainfall resulting from a 1-in-10 year, 24 hour rainfall.
 - Containment area liners must be constructed as outlined in WCG-MEC-STD-391 Storage Systems Design, Construction and Maintenance.
- 3.2.1.4. Sites Operating with Approvals or Permits
 - Sites that operate under an **Approval or Permit** are required to manage surface water run-off and run-on in accordance with all conditions outlined in the facility approval.

3.3. Surface Water Release

3.3.1. Testing Surface Runoff

- 3.3.1.1. All Sites
 - Untested surface water from catchment ponds or low-lying areas must not be discharged off the developed portion of the lease.
 - Collected waters on all CPC sites must be tested and meet the following criteria prior to being released in a controlled fashion to adjacent lands:

Parameter	Concentration
Chloride	< 500 mg/L
pH	AB: 6.0 – 9.0 BC: 6.5 – 8.5 SK: 6.0 – 8.0
Hydrocarbon	No visible sheen
total extractable hydrocarbons** (BC only)	< 15 mg/L

Other chemical contamination	None
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**** Note 1:** Testing for total extractable hydrocarbons is only required when testing prior to pumping from the secondary containment for a refined fuel storage tank.

Note 2: Sites operating under a permit or approval must comply with section 3.3.1.2

Note 3: Testing for sites that do not operate under any Approval or Registration may be field tested, except where testing for total extractable hydrocarbons.

Note 4: Water contained in secondary containment around aboveground tanks is considered contaminated and should be trucked out for disposal. Where areas choose to pump this water off lease or off the developed portion of the lease, it must be tested by laboratory analysis first to confirm it is free of contaminants. Where water will be released on the developed portion of the lease, field analysis must be completed prior to release.

3.3.1.2. Sites Operating with Approvals or Permits

- Sites that operate under an approval or permit are required to retain, test and seek approval for discharge of any precipitation/runoff from the process area in accordance with all conditions outlined in the facility approval or permit.
- Collected waters on CPC sites registered under the Alberta Energy Regulator Code of Practice must be must be tested by a Canadian Association for Laboratory Accreditation Inc (CALA) accredited laboratory prior to release.
- A representative grab sample consisting of a composite sample from four locations at least 0.25 m deep or four sub-samples from the discharge hose must be collected and meet the following **additional** criteria prior to discharge.

Parameter	Concentration
Total suspended solids	AB: [25] mg/L BC: <130 mg/L SK: <700mg/
Chemical Oxygen Demand	[50] mg/L
Ammonia Nitrogen	[5] mg/L
Electrical Conductivity	BC: < 2dS/m SK: <1 dS/m
Oil and Grease	BC: <10mg/L
Microtox EC50(15)	SK: >75%.

3.3.2. Before Releasing Surface Water

- Landowner/occupant consent for release onto their property must be obtained.
- The release must not contribute to soil erosion.
- Water released must not be released directly into any watercourse.
- Water from secondary containments surrounding above-ground storage tanks (ASTs) must not be discharged off lease or off the developed portion of the lease unless the water has been submitted for laboratory analysis and the results have confirmed that the parameters do not exceed the limits in section 3.3.1.2 (Sites Operating with Approvals or Permits).
- Water from secondary containments surrounding ASTs must not be discharged on lease unless requirements of section 3.3.1.1 Note 3 (All Sites) have been met.

3.3.3. Managing Contaminated Water

- Water with contaminants exceeding the limits in 3.3.1.1 (All Sites) or 3.3.1.2 (Sites Operating with Approvals or Permits) must not be released into the environment.
 - It should be sent to an approved facility for treatment and/or disposal or, if possible, treated on site, re-tested and then released if it meets guidelines.
- Runoff must not be disposed of by deep well injection, unless it is used to maintain reservoir pressure or there is written permission from the AER.

3.4. Surface Water Release Records

All testing results need to be recorded, along with other information on the Surface Water Release Form, in accordance to the CPC DRM.

3.4.1. Laboratory Analyses

Sites providing samples for laboratory analysis must ensure the following information is contained in the reports:

- Place and time of sampling.
- Type of sample collected.
- Name of the person who collected the sample.
- Dates analyses of the sample were performed.
- Names of the laboratory and person who performed the analyses of the sample.
- Analytical techniques, procedures, or methods used.
- Results of the analyses.

3.5. Vegetation Management

Pipeline rights-of-way and lease roads must be inspected and maintained in accordance with the Western Canada Business Unit Pipelines Operation and Maintenance Manuals (POMM) and the Oil

Sands Pipeline Integrity Management Program. Brush growing along rights-of-way must be controlled in a manner that allows for monitoring of the right-of-way.

Vegetation management on leases and right-of-ways is generally required to establish vegetation following construction, maintain access, control/mitigate weeds, erosion control through soil stabilization, promote restoration to native vegetation, meet land-owner and/or license approval requirements and to support designated land use in the area.

Where specific regulatory requirements are more stringent than those in this procedure, the requirements of the local regulations must be followed.

3.5.1. Vegetation Control Methods

3.5.1.1. Natural Competition

- Establishing sustainable native grass cover is the preferred method of vegetation control in all areas that do not require bare ground for safety or operational reasons.
- Long-term benefits include:
 - Ease of maintenance.
 - Aesthetic appeal.
 - Soil-holding capability.
 - Reduced soil erosion potential.
 - Closer approximation to local native vegetation (expedites closure).
 - Reduces risk of contamination.

3.5.1.2. Mechanical Control

- Mechanical control is the second preference after natural competition.
- Mechanical control may be needed to cut or mow tall and dense vegetation for ease of access and/or to manage weeds.
- Mowing is the best example and should be used on accessible areas that are large enough to warrant cutting.

3.5.1.3. Chemical Control

- Herbicide application is the third choice for vegetation management.
- Herbicide application is, however, required in some cases such as the control of noxious weeds, where other methods are not adequate.
 - Only CPC approved chemicals listed in Table 3 must be used.
 - CPC employees must not apply herbicides.
 - Herbicides must be applied by contractors in accordance with the matrix below. Refer to Table 1 in Appendix B.

- Refer to Table 2 in Appendix B for considerations that must be made when selecting appropriate chemicals for vegetation control measures.
- In order to use a herbicide that is not listed under the CPC Approved Herbicides table, please refer to the process outlined in the CPC Controlled Products procedure (ALL-HSE-PRC-153).

3.5.1.4. Prohibited Herbicides

- Herbicide mixtures containing the following active ingredients are considered to be highly carcinogenic, extremely persistent and and/or water soluble and are not permitted for use in ConocoPhillips Canada (CPC) vegetation control programs:
 - **Amitrole** (Amerol, Amino Triazole, Amitrol, Amizine, Amizol, Azolan, Azole, Cytrol, Diurol, and Weedazol).
 - **Picloram** (Tordon 101, Tordon 22K and Grazon).

3.5.1.5. Herbicide Application

The following must be taken into consideration when herbicides are applied on CPC sites:

- Drift of spray is to be prevented through the use of the proper method and equipment (or shutdown if wind speed exceeds the ability to control spray drift).
- Aerial spraying of brush must not be conducted:
 - Within 30 m of the boundary of a municipality, provincial park, or national park.
 - Where specific permission has been granted.
 - In any urban or resort area.
 - Within a reasonable distance of a dwelling, not less than 30m.
 - On rights-of-way, within, traversing or adjacent to private property, including Indian Reserves, without first obtaining permission.
 - Into, on, or over an open body of water or within 30 m of open water/wetlands.
- Areas adjacent to gardens, planted trees, or susceptible field crops should be sprayed while dormant (late fall or winter) or avoided and controlled mechanically.
- A 15 m buffer strip should be left unsprayed wherever a power line or pipeline crosses a numbered highway.

- Herbicide for woody plant control must not be applied where the woody plants being controlled exceed the lesser of height. Do not exceed maximum allowable spray heights of:
 - specified on a herbicide label; or
 - specified as follows:
 - 1.
 - height right-of-way adjacent to a road; or
 - 4 m height on right-of-way adjacent to a numbered highway;
 - 2.5 m on a cross-country right- of- way.

3.5.1.6. Vegetation Management in British Columbia

- A Pest Management Plan (PMP) (generally for a 5 year period) must be developed and registered with the Ministry of Environment for the management of vegetation on more than 20 ha a year of public land that is used by ConocoPhillips Canada.
- The PMP must be registered by submitting a Pesticide Use Notice to the Ministry of Environment.
- The Integrated Pest Management Act (IPMA) and Regulations (IPMR) stipulate the information to be included in a PMP and the Pesticide Use Notice.

3.5.1.7. Notifications

- In Alberta and Saskatchewan, landowners must be contacted prior to any spray program to discuss herbicides selected, for lease and right of way vegetation management that is adjacent to or traverses their land.
- The Alberta Energy Regulator (AER) must be notified 2 working days prior to application of herbicides in areas designated as Green Areas.
- Contact the AER office closest to the area where the herbicide will be applied.

Notification Requirements for British Columbia:

Activity	Public	Notice provided to Significantly affected parties	Ministry of Environment
Development of PMP	Newspaper notices in nearby communities twice in a 2 week period prior to submitting. [IMPR sec. 61]	45 days before finalization of PMP [IPMR sec. 61.(2)]	Pesticide Use Notice after public consultation during development [IMPR sec. 59]

Activity	Public	Notice provided to Significantly affected parties	Ministry of Environment
Pesticide application	With each application, notices posted at entrances to treatment areas and remaining for at least 14 days after application. [IPMR sec. 64]	As agreed to during consultation if agreements were made. [IPMR sec. 28]	Annual Notice of Intent to Treat 21 days before first use of pesticide [IPMR sec. 42]

3.5.1.8. Exceptions

- Various circumstances including requests by regulators, landowners, local governments, specific plant species may necessitate consideration of using alternative herbicides or vegetation control methods.

3.5.2. Selecting a Contractor

The following is to be considered when selecting a contractor for chemical vegetation control:

- The contractor complies with the Industry Standard and provincial Code of Practice (i.e. methods and equipment used, selects the most target-specific control method, prevents worker hazards, and strives to minimize spills, releases or over-application).
- The contractor has the appropriate training and certification for the region and for the project.
- The contractor uses proper methods and equipment that suits the conditions, meets job specifications, and minimizes contamination of the target and surrounding area.
- The contractor completes an application record at the end of each herbicide application and provides a copy to the CPC field office for retention.

3.5.3. Due Diligence

- Communicate ConocoPhillips Canada’s policies on vegetation management to the contractor and be aware of the regulatory requirements for herbicide use in the area. For guidance and assistance, consult the local Environmental Operations Team.
- Inform the contractor of any nearby sensitive sites (e.g. sensitive crops, native vegetation, parklands, highly erodible soils, drainage ditches, ponds, organic growers) that may be affected by herbicide use.

3.5.4. Records

- By April 30 of the following year the contractor should send CPC a spreadsheet of their previous year’s herbicide program.
 - This spreadsheet should include location, date, name of the herbicide applied, name of the pest and purpose for which the herbicide was applied, application rate, total

quantity, method of application and if the herbicide was applied within 30 m of an open body of water/wetland.

- At the end of the herbicide application, obtain a copy of the contractor's application record. The records must indicate:
 - Name of the company for whom the herbicide was applied.
 - Location where the herbicide was applied.
 - Year, month, day and time at which the herbicide was applied.
 - Name of the pest and purpose for which the herbicide was applied.
 - Approved common name or trade name of the herbicide and the *Pest Control Products Act* (Canada) registration number.
 - Application rate and total quantity of the herbicide applied.
 - Method of application.
 - Meteorological conditions prevailing at the time of application including temperature, humidity, precipitation and approximate wind speed and direction.
 - Location and distance of any herbicide used or applied within 30 horizontal meters of an open body of water.
- For **Saskatchewan**, additional information required in the application records includes:
 - The size of the area where the herbicide was applied.
 - The quantity and method of disposal of surplus herbicide containers.
 - The details of remedial measures taken to respond to herbicide spills or of the clean-up of herbicide spills.

Note: A record of the location and distance of any herbicide used or applied within 30 m of an open body of water is not required in Saskatchewan.

3.5.5. Records – Pest Management Plans (British Columbia)

The following information must be retained for each treatment location and day of use:

- Name and address of the owner or manager of the treatment location.
- If the use was performed as a service, the name and license number of the licensee who performed the service or if the use was not performed as a service, the name and certificate number of the certified applicator that used the pesticide or supervised the use.
- If a permit was required for the use or the class of pesticide, the permit number.
- The date and time of the pesticide use.
- The name of the pest targeted by the use or the purpose of the pesticide use.

- The trade name of each pesticide used and its registration number under the federal Act.
- For each pesticide used the method and rate of application and the total quantity used.
- If the use was outdoors, the prevailing meteorological conditions including temperature, precipitation and velocity and direction of the wind.
- Advice given to the owner or manager of the treatment area in relation to the following:
 - Safe re-entry time.
 - The number of days before a crop can be harvested safely.
 - Additional precautions that should be taken to minimize exposure to the pesticide.

The Annual report submitted for the Pesticide Management Plan for a calendar year must be submitted to British Columbia Ministry of Environment by January 31 in the next calendar year. The report must include:

- The name and address of the licensee, permit holder or confirmation holder; and their license, permit or confirmation number.
- The following information for each pesticide used in the calendar year:
 - Trade name.
 - Registration number under the federal Act.
 - Active ingredient.
 - Amount in kilograms.
- The total area treated.

4.0 References

Alberta

- Alberta Agriculture and Food. Crop Protection (2012)
- Alberta Energy Resources Conservation Board (ERCB): Manual 001: Facility and Wellsite Inspections
- AER Directive 013: Suspension Requirements for Wells (2007)
- AER Directive 055: Storage Requirements for the Upstream Petroleum Industry (2001)
- AER Directive 056: Energy Development Applications and Schedules (2011)
- AER Directive 066: Requirements and Procedures for Pipelines (2011)
- AER (administered by): Oil and Gas Conservation Act (2006), and Oil and Gas Conservation Regulation (2007)
- AER (administered by): Pipeline Act (2006), and Pipeline Regulation (2005)

British Columbia

- OGC: Petroleum and Natural Gas Act (2007), and Drilling and Production Regulations (2004)

- OGC: Oil and Gas Activities Act (2008), and Pipeline Regulation (2004)
- Ministry of Environment: Integrated Pesticide Management Act and Regulations

Saskatchewan

- Saskatchewan Environment. Waste Dangerous Goods Storage Requirements
- Saskatchewan Economy. Oil and Gas Conservation Regulations (2005)
- Government of Saskatchewan. Weed Control Act (2010)
- Saskatchewan Agriculture and Food. Noxious Weeds Regulations (1986)
- Saskatchewan Agriculture and Food. Herbicide Considerations for Dry Conditions (2005)
- Saskatchewan Agriculture and Food. Integrated Weed Management (2005)
- Saskatchewan Agriculture and Food. Pesticide Safety Handbook (1995)

Federal

- National Energy Board. National Energy Board Onshore Pipeline Regulations (2013).

ConocoPhillips Canada Standards

- Intrinsic Environmental Sciences Inc. A Screening-level Risk Categorization of Herbicides Final Report (April 2012).

5.0 Document Retention

Records must be retained in accordance with ConocoPhillips’ Document Retention Schedule.

Record	Owner	Classification	Retention
Surface Water Release Form (ALL-HSE-FRM-2015)	Business Unit	HE18	Expiration of License /Operations +10 years
Laboratory Analyses	Business Unit	HE12	10 years
A detailed record of all chemicals applied to the soil for vegetation management.	Business Unit	HE15	10 years

Appendix A – Definitions

Terms that are important to understanding this procedure are defined below:

Assistant – An assistant that has been trained according to the training checklist only.

Authorized Assistant – An assistant that has completed the training checklist and passed an examination recognized by the Director.

Green Area – Includes public land that is primarily forested, and is managed for timber production, oil/gas development, watershed, wildlife and fisheries, recreation and other uses. It is not suitable for agricultural development other than grazing.

Water Body – Any location where water flows or is present, whether the flow or the presence of water is continuous, seasonal, intermittent, or occurs only during a flood. This includes, but is not limited to, the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh, slough, muskeg, and other natural drainage, such as ephemeral draws, wetlands, riparian areas, flood plains, fens, bogs, coulees, and rills. Or other natural body of water or a canal, drainage ditch, reservoir, dugout or other man made surface.

Appendix B – Chemical Control

Table 1: Provincial certification and supervision requirements for herbicide application

	Applicator	Authorized Assistant	Assistant
Alberta	Can apply class of herbicide for which they are authorized by their Applicator certificate, without supervision. May supervise a maximum of 6 assistants (including authorized and not authorized) at any one time.	Can work under the supervision of an Applicator. That Applicator is not required to be physically present on site and may only supervise a maximum of 6 assistants (authorized and not) at any one time.	Can work under the supervision of an Applicator. The Applicator must be present at each application site at least once per day and each time the herbicide, application equipment or calibration are changed. The Applicator may only supervise a maximum of 6 assistants (authorized and not) at any one time.
British Columbia	Can apply class of pesticide for which they are authorized by their Applicator certificate, without supervision. May supervise a maximum of 4 assistants at any one time.	N/A	Can work under the supervision of an Applicator. The Applicator must be present at all times (must maintain continuous auditory or visual contact). Cannot apply restricted pesticides (only the Applicator can). The Applicator may only supervise a maximum of 4 assistants at any one time.
Saskatchewan	Can apply class of herbicide for which they are authorized by their Applicator certificate, without supervision.	N/A	Can work under the direct supervision of an Applicator. The Applicator must be present at all times (must maintain continuous auditory or visual contact). <i>The number of assistants is not regulated within Saskatchewan.</i>

Table 2: Considerations for herbicide selection

Vegetation Type	What plant species/noxious weeds you are trying to control?
Toxicity	Choose herbicides with the low acute toxicity to avoid harmful effects on humans and animals.
Persistence	Persistent herbicides can cause long-term liability. Choose herbicides with a residual time less than one year.
Mobility	Mobile herbicides can leach into the root zone, subsurface soil and groundwater and create long-term liabilities. Mobility is enhanced in porous sandy soils. Choose herbicides that have low mobility.
Volatility	Highly volatile herbicides can harm nearby plants. Select herbicides with lower vapor pressures.
Site Conditions	Site specific conditions such as; compact soils, coarse textured soils, lateral movement of herbicides in clay soils, nearby compatible vegetation, slopes, soil relocation, proximity to water shall factor into the selection of herbicides.
Agricultural Land Use	Herbicide selection shall consider impact on adjacent agricultural land uses to account for impacts on crops, soil fertility, and grazing livestock.
Forested Areas	Vegetation management in forested areas can vary from management activities in agricultural areas. The AER may conduct inspections of leases in forested areas to determine if weed control activities are necessary on CPC lands.
Roads/Infrastructure	Municipalities and counties frequently conduct weed control activities on roadways and rights-of-way adjacent or connected to CPC lease roads. Whenever possible, CPC weed control activities should coordinate with these activities. Selective herbicides that allow grass growth shall be used in roadside ditches maintained by CPC.

CPC’s screening process for herbicide selection is based on potential impacts to human health (oral-toxicity, and carcinogenicity) and exposure potential (bioaccumulation, mobility and persistence).

Table 3: CPC Approved Herbicides

Risk Category	Active Ingredient	Trade Name Examples	Comments	Type of Herbicide	Use Approved For
Low	Glyphosate	Roundup, Glyphos, Vantage	Irritant, very low mammalian toxicity, leaching capacity is low.	Non-Selective Non-Residual Herbicides	For weed control within lease and in facility areas where all vegetation growth must be suppressed.
Moderate-Low	Clopyralid	Transline, Lontrel	Slight toxicity to bees, use with caution in areas where bees are raised.		
	Imazapyr	Arsenal	Avoid when soils are permeable and groundwater table is shallow.		
Moderate-High	Triclopyr	Garlon	Highly mobile. Low soil persistence.	Selective for broadleaf weeds and woody species.	Effective for brush control while not affecting conifer and most
	Flumioxazin	Chateau, SureGuard, BroadStar, Payload	Highly mobile. Low soil persistence.	Selective Residual Herbicides	For weed control within lease and facility areas on where plants have developed resistance to other herbicides or are difficult
	Aminopyralid	Milestone	Manure from cows grazed on fields within 3 days of treatment may have residues.		
	Metsulfuron methyl	Escort	For use on non-crop areas.		
High	Dicamba	Dycleer, Vanquish	May persist longer under with low soil moisture and rainfall (half-life > 12 weeks).	Selective Non-Residual Herbicide	Appropriate for ditch or right-of-way application to retain grassy vegetation but control noxious weeds
	2,4-D	2-4-D	Moderate toxicity and highly mobile. Most commonly used herbicide in the world.		
	Pronamide	Kerb, Proyzamide, RH-315, Benzamide	High toxicity. Soil persistent.		
	MCPA	MCPA	Soil persistent. Precautions required in areas with shallow water tables.	Selective Non-Residual Herbicide	Appropriate for ditch or right-of-way application to retain grassy vegetation but control noxious weeds

Selective – Only susceptible vegetation is affected.

Non-Selective – All vegetation is affected.

Residual – Persists in the soil for more than one growing season.

Appendix C – Revision Record

Page#	August 10, 2015	Previous Information	Change Assessment
8	Refer to CPC Controlled Product Procedure to use an herbicide that is not listed under the CPC Approved Herbicides table	Referred to Management of Change Process to add an herbicide to the approved list	Low