

Conformity Determination Report – Pesticide Application (For Discussion Only)

Applicant: Imperial Oil Resources Ltd

Application #: 0210-05-11

Project Name: Pesticide Application Permit – Imperial Oil Resources

WORKSHOP NOTE: This application was chosen for its land use as a test case for the current drafting of the Sahtu Land Use Plan for minor land use activities. The Sahtu Land Use Plan is not currently in effect and applications are not required to conform at this time. This application is 2 years old and was developed with Draft 2 and different regulatory expectations as a guide. It is therefore unlikely to conform to the current draft. Findings of non-conformity in this report are intended as discussion tools only to illustrate where changes in process may be needed post-plan approval. They are not intended to reflect the quality of the applications themselves.

Overall Questions/Discussion

- Note that this application falls within the municipal boundary of Norman Wells and therefore the Plan is not applicable. For the purposes of testing the application, we're overlooking that and determining conformity as if the Plan applied. Pretending instead that it's just outside this (to the southeast) in the Mackenzie River SMZ.
- Really good example for discussions around where minimum thresholds and flexibility might be required.

Existing Use Exemption:

- Yes. This application is related to Imperial Oil's Lease in Norman Wells.
- The activity is exempt from the prohibitions in CR #1. All other CRs apply to the extent that they do not block the exercise of rights provided by the prospecting permit.

Overall Conformity Determination:

- The activity as proposed does not conform to the following CRs:
 - CRs #3, 4, 6
- The activity as proposed conforms to the following CRs, subject to the further Implementation Requirements identified for each. Failure or inability to adhere to the identified Implementation Requirements for each means the activity does not conform and cannot be authorized:
 - CRs #8, 9, 10
- The activity conforms as proposed to the following CRs:
 - CRs #1, 2, 5, 7, 11, 13
- The following CRs are not applicable to this activity:
 - CRs #12, 14-20

Project Description:

Imperial Oil Resources N.W.T Ltd. (IOR) retained Ace Vegetation Control Services Ltd. (Ace) to control hazardous vegetation growth in and around oil and gas production units, buildings, utilidors, flare stacks, tank farm, dike walls; and broadleaf nuisance/noxious weeds along pipeline and utilidor ROW's within Imperial Oil Lease in Norman Wells using registered herbicides. The vegetation management plan for 2009 and 2010 include:

- As growth appears selective treatment on satellites, batteries, line heaters and wells where required within the confines of each site with bare ground treatment on the mainland and on Bear and Goose Islands.
- Treat the C.P.F. flare stack and tank farm blanket spray with bare ground treatment.
- Broadleaf weed treatment within the confines of Imperial Oil Lease on a selective spot treatment basis as needed where weeds become a safety concern and fire hazard.
- Treatment of satellites and wells as required on Bear and Goose Island with bare ground treatment.
- Treat brush regrowth on the pipeline ROW's on Goose Island with broadleaf herbicides on areas where brush was cleared during winter of 2007.
- Treatment of vegetation at old Airport site to manage growth of broadleaf weeds.
- Maintain at least 30 meters from creeks or flowing water.

Bare ground treatment consists of an application of glyphosate (Vantage or Vision Max) and dicamba (Vanquish, Oracle, Banvel VM) with a surfactant Sylgard for season long control.

An on site inspection will take place to observe any potential for herbicide movement and buffer zones will be established to protect these areas. The buffers zones will have only contact herbicides (glyphosate) and 2,4-D applied for weed control.

Ace crews follow the Guidelines set out in the 3rd edition of the IVMAA (Industrial Vegetation Management Association of Alberta) Industry Standards & Good Practices.

On the well sites, satellites and utilidors, glyphosate and dicamba will be applied to provide weed control selectively to the growth as there is very little residual effect. For the CPF plant, flare stack and tank farm areas, will be blanked sprayed over growth patches to prevent any sprouting of broadleaf weeds during the balance of the growing season.

Broadleaf treatment on weeds along roadsides and green spaces will be controlled using 2,4-D, MCPA and dicamba on a selective treatment basis where required. This will leave the native grass species to grow and develop with less competition.

Brush regrowth previously cleared on Goose Island will be selectively sprayed with 2,4-D and metsulfuron methyl or dicamba. A 50 metre buffer zone (no spray area) will be left from the normal high water mark as identified by the lack of vegetation growth on the shoreline.

Equipment List: Hose and hand gun from truck mounted system and backpack sprayer.

CR #1 – Zoning

Zones Impacted: Mackenzie River SMZ

Conformity Determination: Conforms (exempt anyways)

Analysis:

- Pesticide application is not a prohibited activity in any zone.

CR #2 – Protection of Special Values

Values to be protected:

- This zone provide protection for cultural heritage areas such as grave sites and archaeological sites, recreation and subsistence use areas such as community gathering places, and harvest locations
- Protect the river and its shoreline
- Heritage Site as identified in "Places we Take Care Of" with protection recommended through designation as a National Historic Site, Heritage River or special consideration in land use planning.
- Important waterfowl breeding habitat, including CWS Migratory Bird Terrestrial Habitat Site
- Important Wildlife Area for Moose (GNWT)
- Community harvesting area for moose, furbearers, bears, fish, some boreal woodland caribou and barren-ground caribou
- Special Harvesting Area for Fish (Land Claim)

Conformity Determination: Conforms

Criteria:

- Looking for identification of the values to be protected in the zone and specific sites related to them through community engagement and TK collection, and evidence of avoidance or appropriate mitigation measures to protect those values
- Looking for mapping/identification of sites with particular values and designations (e.g. IBP sites, archaeological sites, important wildlife areas, special harvesting areas, Heritage Sites, karst features, mineral licks, etc.) and special consideration given to those sites to protect them from harm.

Description of Impacts & Mitigation:

- See descriptions under CRs #7, 8, and 10

Analysis:

- The application of pesticide to this industrial site will have limited impacts to the key values identified above given the existing land use.
- Mitigation measures and conditions to be attached to the authorization as a result of the other CRs will ensure conformity with this CR as well.

Questions/Discussion: None

Implementation Requirements: None

CR #3 – Project-Specific Monitoring

Values to be protected:

- See above under CR #2

Conformity Determination: Does Not Conform

Criteria:

- “sufficient to monitor effectiveness of proposed mitigation measures in protecting zone values and impacts to those values”
- Expect to see evidence of a monitoring program in place to ensure that the activity is not affecting the key values within SMZ
- Requires assessment of potential for impact. Where little to no impact is anticipated, monitoring may also be minimal.

Description of Impacts & Mitigation:

- No discussion of a monitoring program

Analysis:

- Some potential for impacts to water, fish, and perhaps waterfowl so there should be some form of monitoring to ensure that the pesticide doesn't make it's way into the water.
- As presented, this activity would not conform to this CR.

Questions/Discussion:

- What would be reasonable in this circumstance? Is some flexibility required?

Implementation Requirements: None

CR #4 – Community Engagement and Traditional Knowledge

Conformity Determination: Does Not Conform

Criteria:

- Looking for evidence that affected community orgs (land corps, band, RRC, public) have been adequately engaged regarding activities, locations and issues of concern, and TK
- In the future, will be looking for specific discussion on CRs that rely on community input to be fulfilled
- Looking for demonstration of how this information was considered and used in project design

Description of Impacts & Mitigation:

- Doesn't appear that any consultations were done for this

- Preliminary screening report states that signs warning the public will be posted on site indicating pesticide spraying is occurring. Residents of Norman Wells, traditional users and the SRRB will be notified of the spraying program via posted notices in the community 48 hrs before spraying begins.

Analysis:

- Would at least require documentation that the community orgs were approached and asked if consultation was desired on this – nothing was provided in available documents so the activity is deemed not to have met this requirement.

Questions/Discussion:

- Is consultation a current requirement for the proponent for this type of authorization?
- For small scale activities, if the regulator suspects from experience that the communities will not want to be engaged, the comment period during preliminary screening could be used to ascertain this – i.e. requesting a letter from the affected communities / organizations that they have no concerns and do not require a community meeting. Runs the risk of delaying the process if the community determines that it does want consultation.

Implementation Requirements: None

CR #5 – Community Benefits

Conformity Determination: Conforms

Criteria:

- Looking for a summary of community benefits or public interest benefits in the application
- ABAs or an INAC Benefits Agreement would fulfill this CR where they are required

Description of Impacts & Mitigation:

- No direct benefits to the community
- Public Interest: The presence of nuisance, noxious weeds, invasive plants and tall growing vegetation on facilities and pipeline right-of-ways can reduce and limit the safe operation and becomes a hazard when accessing for maintenance or emergency response. Public and employee safety, environmental protection, and security within the entire operating area and pipeline Rights of Way are issues that must be addressed within the process of managing problem vegetation. Vegetation that is undesirable because of legislation or hindrance on safe operations and access to facilities or inspections and in compliance with legislation will be managed. The IPM activities of IOR will be conducted to minimize risks to human health and the environment.

Analysis:

- CR only requires regulators to be informed about benefits. Application includes a summary of benefits for the public interest – that is sufficient to meet this test

Questions/Discussion:

- Is this what was envisioned with this CR?

Implementation Requirements: None

CR #6 – Community Land Use Monitors

Conformity Determination: Does Not Conform

Criteria:

- Looking for a determination on whether a monitor is required, and if so, intent to use a community monitor, evidence of community input into values to be monitored, description of appropriate role in locating values and monitoring impacts to them in the field
- Reporting requirements can be handled through terms and conditions in authorizations

Description of Impacts & Mitigation:

- No monitoring described in the application or discussions with community to determine if a monitor is required for this activity.

Analysis:

- Similar to CR #4, there is a requirement to check if this is something that the community feels needs to be monitored – this hasn't been met here.

Questions/Discussion:

- Would want to see a letter from the community saying they've been notified and don't require a monitor on this or commitment from the proponent to use either a monitor or an assistant.
- Similar to CR #4, the communities could be requested to respond during preliminary screening if a monitor/assistant is needed and the regulator could require it as a condition of authorization.

Implementation Requirements: None

CR #7 – Archaeological Sites, Historic Sites and Burial Sites

Conformity Determination: Conforms

Criteria:

- Looking for identification of sites through both PWNHC and community engagement/TK studies and evidence that such sites are being avoided by 150m, and 500m for burial sites
- If there is high potential for undocumented sites, evidence that a heritage resource assessment is carried out

Description of Impacts & Mitigation:

- No discussion of such sites or setbacks

Analysis:

- The areas on which pesticide is to be applied are areas of ongoing O&G operations, which would have been subject to such requirements previously. The application of pesticide poses no new risk to these sites so the proposed activity can be deemed to conform.

Questions/Discussion: None

Implementation Requirements: None

CR #8 – Watershed Management

Conformity Determination: Conforms, subject to implementation requirements below

Criteria:

- Need to assess potential impacts to water quality, quantity and rate of flow within SMZs or CZs
- Nothing significant would be allowed

Description of Impacts & Mitigation:

(From Preliminary Screening Report): When the herbicide is sprayed on the ground and foliage, it penetrates the soil 2-4 inches and binds to the soil particles. When it rains, any residue left on the plants that has not been absorbed by the plants is washed off to the ground and binds to the soil. The herbicides to be used are either soil active, meaning they are picked up by the roots to control certain vegetation or are contact herbicides and once they contact the soil become inactive and are degraded by microorganisms and photo degradation.

Ace will be using lower rates mitigating any potential offsite damage due to runoff or leaching. The rates of application of the herbicides are at the lowest end of the scale to obtain control of the weeds.

Ace's spraying plan includes a buffer zone of 30 metres from creeks and flowing water to reduce the risk of herbicide potentially being sprayed or moved into the water. For Goose Island, a 50 metre buffer zone (no spray area) will be left from the normal high water mark on the shoreline.

The herbicides when sprayed are in very low concentration, bind to the soil and will not drain to the river system unless the soil physically moves into the water. If the slope to the water is greater than 20%, Ace will increase the buffer depending on the slope and soil types. Non-residual herbicides like glyphosate will be used in these buffers greater than 30 metres. Once it is in contact with the soil, the herbicide is inactive and breaks down quickly. If in the event a spill occurred directly into the water the herbicide would be diluted quickly.

Analysis:

- Application is (assumed) to occur within SMZ so there is potential for impact to water quality within an SMZ.

- Detailed mitigation measures described address the key potential sources of impact

Questions/Discussion:

- Assume that many of these measures came from review org comments or preliminary screener as they were not included in application materials
- Would rely on expertise of regulator in this case to ensure conformity and apply suitable measures

Implementation Requirements:

- Regulators to apply conditions as required to protect water quality within the Mackenzie River SMZ

CR #9 – Drinking Water

Conformity Determination: Conforms, subject to implementation requirements

Criteria:

- Need to assess potential impacts to downstream drinking water sources based on Map 6 of the Plan
- Nothing significant would be allowed
- Where there is significant risk, need to see specific evidence of discussions with the community on the topic, and either a commitment to do baseline water quality collection and regular monitoring, or it would have to be a condition of authorization to require those things.

Description of Impacts & Mitigation:

- As above for CR #8

Analysis:

- Activity is within source watershed for Norman Wells and in vicinity of water intake.
- Given proximity to water intake and potential for a spill, community engagement should be done for this so they are informed of potential and risks

Questions/Discussion:

- Would rely on expertise of regulators in setting appropriate mitigation measures

Implementation Requirements:

- Regulators to apply conditions as appropriate to ensure there is no contamination of Norman Wells drinking water source watershed

CR #10 – Wildlife

Conformity Determination: Conforms, subject to implementation requirements below

Criteria:

- Looking for a statement that data was requested from appropriate organizations and discussed with community RRCs in community engagement and TK study
- Looking for evidence that key wildlife impacts are being mitigated, and particular attention to be given to special harvesting areas – if uncertain, additional measures can be imposed as conditions of authorizations where appropriate
- Looking for special consideration for protection of barren-ground caribou if in applicable area
- Look for adherence or commitment to horizontal setbacks and minimum flight altitudes for relevant species, or implement through conditions of authorizations

Description of Impacts & Mitigation:

The herbicides Ace plans to use have potential to affect fish if spilled into waters frequented by fish. To reduce the risk of herbicide potentially being sprayed or moved into the water, the spraying plan includes a buffer of 30 metres from any watercourses. For Goose Island, a 50 metre buffer zone (no spray area) will be left from the normal high water mark on the shoreline.

Ace reports the rates of herbicides they use do not pose a health risk for fish. The herbicides selected for Norman Wells are the least toxic herbicides available to control vegetation. The rates of application of the herbicides are at the lowest end of the scale to obtain control of the weeds.

The herbicides when sprayed are in very low concentration and bind to the soil. They will not drain to the river system unless the soil physically moves into the water. This is the main reason for the buffer of 30 metres of untreated soil away from the water. If the slope to the water is greater than 20%, then the buffer is increased depending on the slope and soil types. Non-residual herbicides like glyphosate will be used in these buffers greater than 30 metres because once it is in contact with the soil; the herbicide is inactive and breaks down quickly. If in the event a spill occurred directly into the water the herbicide would be diluted quickly.

Analysis:

- Part 1: The bulk of impacts to wildlife would come from the O&G operations themselves, which were previously assessed. The collection of gathering of current data in this case would not accomplish anything new. The activity is deemed to conform with this part of the CR.
- Part 2: Potential impacts include contamination of fish from a spill into the water, and potentially impacts to waterfowl or raptors that use the area for nesting. The activity is located within a Special Harvesting Area for fish (land claim) and a Migratory Bird Terrestrial Habitat Site. Impacts to these species need to be mitigated.
- Part 3 – Barren-Ground Caribou – not applicable
- Part 4 – Setbacks and Minimum Altitude – Setbacks applicable for raptors and waterfowl only

Questions/Discussion:

- Would rely on regulators/wildlife experts to include appropriate mitigation measures in these circumstances

Implementation Requirements:

- Regulators to attach any conditions necessary to mitigate impacts to fish and birds, including setbacks for raptors and waterfowl

CR #11 –Species Introductions

Conformity Determination: Conforms

Criteria:

- Looking for basic precautions to be taken to avoid introduction of species
- Where revegetation is required, that seed mixes are approved by the GNWT, ENR

Description of Impacts & Mitigation:

- See project description

Analysis:

- The activity is proposed in part to clear the site of noxious weeds and invasive plant species

Questions/Discussion: None

Implementation Requirements: None

CR #12 – Sensitive Species and Features

- Not applicable (below threshold for LUP/WL)

CR #13 – Closure and Reclamation

Conformity Determination: Conforms

Criteria:

- Part 1: Security to be calculated to cover full cost of reclamation and required by SLWB as a condition of authorization
- Part 2: Expect to see discussion of long term use of the area with community orgs and government bodies to determine an appropriate reclamation goal, and a draft closure and reclamation plan to be included to achieve that goal.
 - Generally, the goal should be for full reclamation to the extent possible/reasonable.
 - Where a decision is made to not do that in order to accommodate further use, then that should be made explicit.
 - The “Plan” does not have to be a separate document but sufficient to describe intent, especially at early stages of land use.

Description of Impacts & Mitigation:

A small amount of solid waste will be generated from this activity. Plastic pesticide containers will be triple rinsed with fresh water and the water will go into the spray tank. The rinsed plastic container will be punctured, crushed and buried in the landfill. Used cardboard and paper will be disposed of in landfill. Surplus herbicides will either be stored in a dry, warm, locked building or returned to Edmonton, as will spilled herbicide if it cannot be used.

Analysis:

- Part 1: Does not require a land use permit or water licence so Part 1 is not applicable
- Part 2: There is no trace of this activity upon completion (other than cleared vegetation which is the goal). Waste management sufficient to conform.

Questions/Discussion: None

Implementation Requirements: None

CR #14 – Permafrost

- Not applicable (below threshold of LUP/WL)

CR #15 – Climate Change

- Content not yet determined

CR #16 – 20

- Not applicable