
NUTRIENT MANAGEMENT PLAN

FRUITFUL ORCHARDS INC

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Prepared for the 2024 season, dated March 15, 2024

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EMERGENCY PROCEDURES & CONTACT INFORMATION

In the event of a spill, the following actions should be taken:

1. Stop the source of the spill/leak
 - Stop and turn off all pumps, valves, and siphons from the structure
 - Move liquid fertilizer into another structure if necessary
 - Plug or close the source of the spill/leak if possible
2. Contain the spill/leak
 - Prevent the movement of liquid fertilizer across the soil surface by constructing an earthen berm using agricultural equipment, such as backhoes or front-end loaders on tractors
 - Try to prevent entry into water bodies, ditches, or seasonally-high water tables
 - Plug drainage intakes and tile drain outlets
 - Contact any contractors and/or equipment operators that may assist in containing the spill/leak (see the contact table below)
3. Report the spill/leak to the Provincial Emergency Program (PEP)/Emergency Management British Columbia (EMBC)
 - If spill/leak is greater than:
 - 50 kg of granular fertilizer
 - 50 L of liquid fertilizer
 - 200 kg of solid manure
 - Be prepared to provide:
 - The contact information for:
 - The individual making the report
 - The responsible person in relation to the spill
 - The owner of the substance spilled
 - The date and time of the spill
 - The location of the spill site
 - A description of the spill site and the surrounding area
 - A description of the source of the spill
 - The type and quantity of the substance spilled
 - A description of the circumstances, cause, and adverse effects of the spill
 - Details of any actions taken and planned to contain the spill/leak
4. Clean up the spill/leak
 - If possible, pump the contained liquids into a functional storage facility
 - Use absorbent materials to soak up the liquid fertilizer (e.g., sawdust mulch, sand, soil amendments)
 - Check tile drains and other drainage pipes/pathways for contamination (use a pump to clear out contaminated lines if necessary)
5. Review the [Spill Reporting Factsheet](#) and document the spill/leak and actions taken

Name	Type of contact	Phone number
Provincial Emergency Program (PEP)/Emergency Management British Columbia (EMBC)	Spill Reporting	1-800-663-3456
	Municipality contact	
	Fire Department	
	On farm Equipment Operator	
	Excavation Contractor	
	Manure Hauler	
	Septic Tank Pumping Truck	
	Neighbour	
	Neighbour	
	Neighbour	

*In the event of other emergencies, call 911 immediately.

APPLICATION SCHEDULE SUMMARY

Field: Gala		Area: 5.2 acres	Crop: Apple
Nutrient Source	Application Timing	Method	Rate
Compost	Spring 2024	Banded	11 yards ² /ac
Custom apple orchard blend (15-15-8+)	April 2024	Banded	200 lb/ac

Field: Ambrosia		Area: 9.3 acres	Crop: Apple
Nutrient Source	Application Timing	Method	Rate
Custom orchard blend (19-5-17+)	April 2024	Banded	300 lb/ac
Sulphate of potash (0-0-50-17S)	April 2024	Banded	150 lb/ac
Liquid urea (23-0-0)	May 2024	Fertigation	40 L/ac
Liquid urea (23-0-0)	June 2024	Fertigation	40 L/ac

Field: Skeena		Area: 4.6 acres	Crop: Cherry
Nutrient Source	Application Timing	Method	Rate
Custom cherry orchard blend (22-5-12+)	April 2024	Banded	250 lb/ac
Sulphate of potash (0-0-50-17S)	April 2024	Banded	200 lb/ac

Field: Lapins		Area: 9.2 acres	Crop: Cherry
Nutrient Source	Application Timing	Method	Rate
Custom orchard blend (13-16-10+)	April 2024	Banded	200 lb/ac
Sulphate of potash (0-0-50-17S)	April 2024	Banded	100 lb/ac
Custom orchard blend (13-16-10+)	June 2024	Banded	100 lb/ac
Urea (46-0-0)	September 2024	Foliar	20 lb/ac

Field: Red Haven		Area: 2.9 acres	Crop: Peach
Nutrient Source	Application Timing	Method	Rate
Custom orchard blend (13-16-10+)	April 2024	Banded	125 lb/ac
Urea (46-0-0)	April 2024	Banded	100 lb/ac
Urea (46-0-0)	May 2024	Banded	100 lb/ac
Urea (46-0-0)	June 2024	Banded	50 lb/ac

FARM DESCRIPTION

Fruitful Orchards Inc is a tree fruit farm located at 310 Road 14, Oliver, BC. The farm is owned by Johnny Applesprout, who employs one full-time employee, and hires contract labourer's during the harvest season.

LOCATION

As defined by the Agricultural Environmental Management Code of Practice (AEM Code), the farm is located in the following high-risk areas:

VULNERABLE AQUIFER RECHARGE AREA:

Starting July 15, 2024, all horticulture operations ≥ 5 ha, will require a nutrient management plan if post-harvest nitrate soil tests are greater than or equal to 100 kg N/ha (89 lb N/ac) for any field.

PHOSPHORUS-AFFECTED AREA:

Starting July 15, 2024, all agricultural operations ≥ 5 ha, will require a nutrient management plan if soil test phosphorus levels are greater than or equal to 200 ppm (Kelowna extractant) for any field.

FARMSTEAD AND CROP PRODUCTION AREAS

Farm Details	Total Acreage	Spreadable Acreage
Total Farm Size	31.2	-
Apple Production	14.5	14.5
Cherry Production	13.8	13.8
Peach Production	2.9	2.9
Total Crop Acreage	31.2	31.2

Spreadable area is the total crop production area that can receive nutrient applications. Minimum setbacks for applying nutrient sources adjacent to watercourses is specified at 1.5 m for commercial fertilizer, or 3 m for other nutrient sources. Due to the existence of headlands and farm roadways, all crop production area is observed to be >1.5 m from the top bank of the existing natural watercourse. Therefore, no restrictions on spreadable acreage from watercourses.

All drinking water sources were observed to be > 30 m from the crop production area receiving nutrients. The location of these drinking water sources does not affect the spreadable area. The total area receiving nutrients is equal to the total cropland at 31.2 acres.

FERTILIZER HANDLING & STORAGE

A storage structure at the north end of the farm houses both fertilizer (liquid and granular) and pesticides, stored in separate rooms. The storage structure has a concrete floor and only stores roughly the fertilizer needed for the current season's application. An irrigation well is shown to be 12 m from the storage structure. The natural watercourse is measured to be > 15 m from the fertilizer storage structure.

Granular fertilizers are loaded onto a trailer to be moved around the farm at the time of application. Loading of the fertilizer into the spreader takes place along the field headlands, over imperfectly drained sandy loam. While the proximity of the natural watercourse and the storage structure is >15 m, the severity of risk associated with liquid fertilizer spill is high.

COMPOST HANDLING & STORAGE

Compost has been used in the Gala apple field for the last 3 years as an alternative nutrient source and to improve soil quality. The compost is picked up from a local compost facility located in Oliver, using a 1-ton truck and trailer. The trailer holds approximately 10 yards of compost and is then brought to the farm. The compost is stored in the trailer until it can be manually applied in the field by shoveling directly out of the trailer and applying a scoop around the base of each tree.

NUTRIENT APPLICATION SUMMARY

APPLE

Granular fertilizer application begins two weeks before bud break, typically late April. The fertilizer is banded along the tree rows using a pull behind fertilizer spreader. The majority of the crop's fertilizer requirements are applied in this first application. Split applications are occasionally applied in sandy soils with half applied in April and the other half applied in June after fruit set is known. The second application will be reduced or skipped if a light crop is set to avoid excessive vigor that year.

Compost has recently been used (last 3 years) as a nutrient source and soil amendment in the Gala apple field. The compost is banded along the tree rows using a pull behind mulch spreader at approximately 10 yards/ac, and is done so before bud break, usually during the month of April.

Liquid applications can begin once the irrigation system is operational, usually late April to early May. Fertigation is applied weekly, for up to 10 weeks, tapering off by mid-July. Only the Ambrosia field is setup for fertigation and will receive liquid urea applications through a fertilizer injector located at the northern end of the property.

Supplemental foliar fertilizers are applied with a pull behind airblast sprayer and are used to correct micronutrient deficiencies during the growing season.

CHERRY

Granular application begins two weeks before bud break, typically in early May. The fertilizer is side banded to the tree rows using a pull behind fertilizer spreader. The majority of the crop's fertilizer is applied in this first application. Split applications are occasionally applied in sandy soils with half of the planned fertilizer application occurring in April, and the other half in May or June. The second application will be reduced or skipped if a light crop is set to avoid excessive vigor that year.

Currently no fertigation system is set up for use in the cherry orchards.

Supplemental foliar fertilizers are applied with a pull behind airblast sprayer and are used to correct micronutrient deficiencies during the growing season. Foliar applications will also be utilized for post-harvest fall nitrogen applications to help build up reserves for critical early growth in the next season

PEACH

Granular fertilizer application begins just after bud break, typically in early May. The fertilizer is side banded to the tree rows using a pull behind fertilizer spreader. The fertilizer applications are split throughout the season. Following the first application in early May, another banded application is applied at a peak rate in June, and then tapers off with a final application in early July.

Currently no fertigation system is set up for use in the Peach orchard.

Supplemental foliar fertilizers are applied with a pull behind airblast sprayer and are used to correct micronutrient deficiencies during the growing season.

CROP PRODUCTION & IRRIGATION SUMMARY

APPLE

Gala (1995) – 5.2 acres

This field was planted in 1995 at 5 ft x 10 ft spacing (871 trees/ac), on a B9 rootstock, using a tall spindle training system. Perennial grass cover crop is maintained throughout the orchard, with a weed free section along the tree row. Trees are pruned every year during the late winter, with organic material left in the alleyways and mulched using a flail mower. Irrigation is supplied through drip irrigation, while the use of overhead sprinklers is for evaporative cooling.

Harvest for Gala begins around late August to mid-September. Based on historical yield from 2019 to 2023, an average expected yield of approximately 11.5 tons/ac can be assumed in 2024.

Ambrosia (2016) – 9.3 acres

This field was planted in 2016 at 2 ft x 10 ft spacing (2178 trees/ac), on a M9 rootstock, using a super slender spindle training system. Perennial grass cover crop is maintained through the apple field, with a weed free section along the tree row. Trees are pruned annually, with organic material left in the alleyways and mulched using a flail mower. Irrigation is supplied through drip irrigation, while the use of overhead sprinklers is for evaporative cooling.

Harvest for Ambrosia begins around the end of September to early October. Using historical yield from 2019 to 2023, and estimating for increasing production, an average expected yield of approximately 16.0 tons/ac can be assumed in 2024.

Skeena (2002) – 4.6 acres

This field was planted in 2002 at 10ft x 15ft spacing (290 trees/ac) on Mazzard rootstock, and is trained using the Steep Leader system. Wild grasses and weeds are present along the alleyways and are controlled using a flail mower during the growing season. Trees are pruned every year, with organic material left in the alleyways and mulched using a flail mower. Irrigation is supplied through micro-jet sprinklers.

Harvest for Skeena begins around late June to early July. Using historical yield from 2019 to 2023, an average expected yield of approximately 6.2 tons/ac can be assumed in 2024.

Lapins (2019) – 9.2 acres

This field was planted in 2019 at 8ft x 16ft spacing (340 trees/ac) on Mazzard rootstock, and is trained to a central leader system. A perennial grass mix is present as a ground cover between the rows and is maintained using a flail mower during the growing season. Trees are pruned annually, with organic material removed from the alleyways. Irrigation is supplied through micro-jet sprinklers.

Harvest for Lapins begins around late June to early July. This will be the second year of harvests. Given the producers experience and Lapins' expected growth potential, a yield of approximately 5.0 tons/ac can be assumed in 2024.

Red Haven (2015) – 2.9 acres

This field was planted in 2015 at 10 ft x 15 ft spacing (290 trees/ac) with seedling rootstock. Perennial grass cover crop is maintained through the field, with a weed free section along the tree row. Trees are pruned annually, with organic material left in the alleyways to be mulched using a flail mower. Irrigation is supplied through micro-jet sprinklers.

Harvest for Red Haven begins around late July. Using historical yield from 2019 to 2023, an average expected yield of approximately 10.2 tons/ac can be assumed in 2024.

APPLICATION NOTES

There is a natural stream bisecting the property, with meandering flow southward. The property is gently sloped southward (1 – 2%), with the southern portion of the property sloped (2 – 4%) east, north-eastward towards the natural stream. The southern portion of the property is at low to moderate risk of nutrient runoff; however, phosphorus use in tree fruits is not significant.

No drain tiles are present on either property.

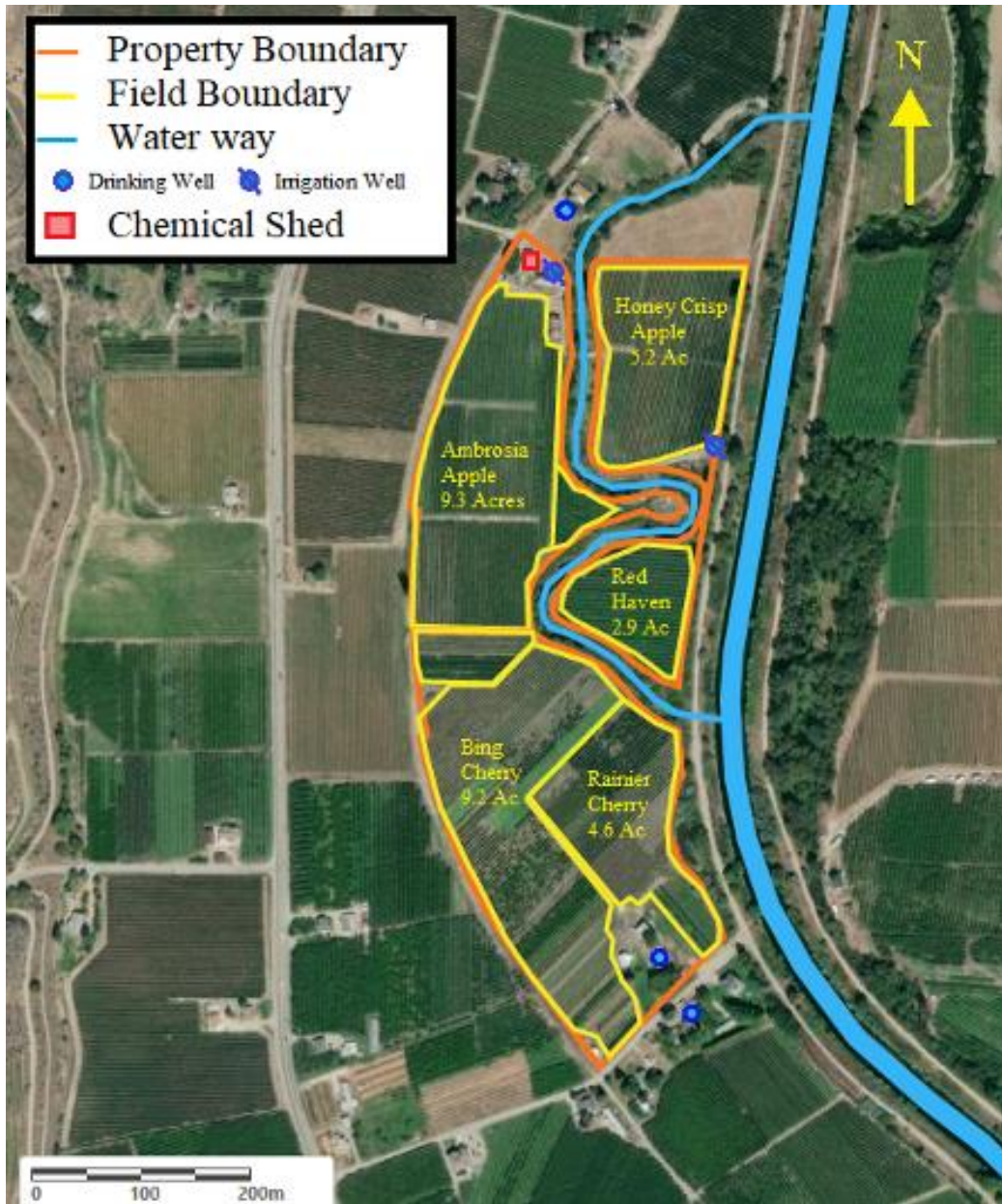
SETBACKS

Minimum required setbacks from drinking water sources for commercial fertilizer and manure are 3.0 m and 30 m respectively. All observed drinking water wells are located > 30 m from any field, and will likely not affect setbacks.

Minimum required setbacks from natural streams for commercial fertilizer and manure are 1.5 m and 3.0 m respectively; Low slope, soil type, present cover crop, nutrient application timing, and nutrient form all provide a low-risk surface runoff. Increasing minimum setbacks between nutrient application and the waterway banks from 1.5 m is not required.

FARM MAPS

PROPERTY AND FIELD MAP



Field Name	Crop	Total Acreage	Spreadable Acreage
Gala	Apple	5.2	5.2
Ambrosia	Apple	9.3	9.3
Skeena	Cherry	4.6	4.6
Lapins	Cherry	9.2	9.2
Red Haven	Peach	2.9	2.9
Total Crop Acreage		31.2	31.2

SOIL CLASSIFICATION MAP



Soil ID	Soil Name	Soil Classification	Soil Texture	Drainage Class
1	KINNEY	Gleyed Regosol	Loam	Imperfectly Drained
2	CHOPAKA	Rego Humic Gleysol	Silt Loam	Poorly Drained
3	RATNIP	Orthic Dark Brown Chernozem	Sandy Loam	Well Drained
4	STEMWINDER	Rego Dark Brown Chernozem	Loam	Well Drained

SURFACE FEATURE MAP



DRINKING WATER WELLS SETBACK MAPS



FERTILIZER STORAGE MAPS



NUTRIENT INVENTORY

All compost and fertilizer are imported to the farm for use as nutrients. No nutrient sources are expected to be produced or exported during the time period described in this nutrient management plan. The following tables outlines the total nutrient requirement, per product, for this farm enterprise over the 2024 growing season:

Material	Total Amount Required in 2024
Custom apple orchard blend (15-15-8+)	471.74 kg
Custom orchard blend (19-5-17+)	1265.52 kg
Custom cherry orchard blend (22-5-12+)	521.63 kg
Custom orchard blend (13-16-10+)	1416.34 kg
Sulphate of potash (0-0-50-17S)	1467.36 kg
Urea (46-0-0)	412.31 kg
Liquid urea (23-0-0)	744 L

Material	Material Source	Annual Amount	Land-applied	Amount Remaining
Compost	Municipal Compost	37 tons	38 tons (104%)	None

FIELD SUMMARIES

GALA (1995) – 5.2 ACRES

Crop	Yield	Previous crop ploughed down (N credit)
Apple	11.5 ton/ac	none (no N credit)

Soil Test Results: October 2023		Soil test P & K Method: A & L Canada (Bray-1 and Mehlich 3)	
Nitrate-N: 18 ppm	Phosphorus: 18 ppm (Low)	Potassium: 300 ppm (High)	pH: 5.7
Field Comments: 5 ft x 10 ft Tree Spacing, B9 Rootstock, Annual pruning mulched between rows			

Nutrient Application Plan: 2024

Nutrient Source	Application Timing	Method	Rate
Compost	Spring 2024	Banded	11 yards ² /ac
Custom apple orchard blend (15-15-8+)	April 2024	Banded	200 lb/ac

	Agronomic Balance (lb/ac)			Crop Removal Balance (lb/ac)		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
Apple	-45	-65	0	-64	-6	-28
Compost	14	35	57	25	50	57
Custom apple orchard blend (15-15-8+)	30	30	16	30	30	16
Balance	-1	0	73	-9	74	45

NOTES AND CONSIDERATIONS:

- Starting in early Apply, prior to bud break, band compost along the tree row. The compost will provide a wide range of nutrients; however, since the crop requirement for potassium is met, the 73 lb/ac adds no benefit to the crop.
- Starting in late April, band custom apple orchard blend along the tree row.
- The current soil pH was measured at 5.7, which is considered low for BC apple production, and should be maintained between 6.0 – 7.0. Low pH may limit certain nutrient uptake and result in poor tree growth. Recommend applying lime to raise the soil pH
- 2023 post-harvest soil and tissue levels for nitrogen were average. Keep nitrogen inputs consistent with previous season

Additional 2023 Test Results – A&L Laboratories Canada

Analysis	Sampling Date	Field	Nitrogen	Phosphorous	Potassium
Leaf Analysis	August 1, 2023	Gala	2.0 % (Med)	0.25 % (Med)	2.1 % (High)
Fruitlet Analysis	July 21, 2023	Gala	0.042 % (Med)	0.0084 % (Med)	0.139 % (High)

AMBROSIA (2016) – 9.3 ACRES

Crop	Yield	Previous crop ploughed down (N credit)
Apple	16 ton/ac	none (no N credit)

Soil Test Results: October 2023		Soil test P & K Method: A & L Canada (Bray-1 and Mehlich 3)	
Nitrate-N: 26 ppm	Phosphorus: 44 ppm (Med)	Potassium: 149 ppm (Med)	pH: 6.3
Field Comments: 2 ft x 10 ft Tree Spacing, M9 Rootstock, Annual pruning mulched between rows			

Nutrient Application Plan: 2024

Nutrient Source	Application Timing	Method	Rate
Custom orchard blend (19-5-17+)	April 2024	Banded	300 lb/ac
Sulphate of potash (0-0-50-17S)	April 2024	Banded	150 lb/ac
Liquid urea (23-0-0)	May 2024	Fertigation	40 L/ac
Liquid urea (23-0-0)	June 2024	Fertigation	40 L/ac

	Agronomic Balance (lb/ac)			Crop Removal Balance (lb/ac)		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
Apple	-96	-19	-123	-96	-8	-53
Custom orchard blend (19-5-17+)	57	15	51	57	15	51
Sulphate of potash (0-0-50-17S)	0	0	75	0	0	75
Liquid urea (23-0-0)	23	0	0	23	0	0
Liquid urea (23-0-0)	23	0	0	23	0	0
Balance	7	-4	3	7	7	73

NOTES AND CONSIDERATIONS:

- Starting in late April, band custom orchard blend and sulphate of potash along the tree row.
- Starting mid-May, begin to fertigate liquid urea weekly at a rate of 4 – 6 L/ac per week, for a total of 32 – 48 L/ac per month, tapering off by mid-July (approximately 8 weeks).
- 2023 post-harvest soil and tissue levels for nitrogen were high. Keep nitrogen inputs consistent with previous season. After a tissue test has determined the level of nitrogen in the tree and fruit load is determined, nitrogen requirements can be adjusted as needed with liquid urea through fertigation.
- Soil potassium levels are approaching low levels, and potassium deficiency has been shown to be more common in high density fertigated orchards, especially when drip irrigated.

Additional 2023 Test Results – A&L Laboratories Canada

Analysis	Sampling Date	Field	Nitrogen	Phosphorous	Potassium
Leaf Analysis	August 1, 2023	Ambrosia	2.4 % (Med)	0.21 % (Med)	1.3 % (Med)
Fruitlet Analysis	August 15, 2023	Ambrosia	0.049 % (Med)	0.0081 % (Med)	0.090 % (Med)

SKEENA (2002) – 4.6 ACRES

Crop	Yield	Previous crop ploughed down (N credit)
Cherry	6.2 ton/ac	none (no N credit)

Soil Test Results: October 2023		Soil test P & K Method: A & L Canada (Bray-1 and Mehlich 3)	
Nitrate-N: 30 ppm	Phosphorus: 45 ppm (Med)	Potassium: 126 ppm (Med)	pH: 6.7
Field Comments: 10 ft x 15 ft Tree spacing, Mazzard rootstock, Annual pruning mulched between rows			

Nutrient Application Plan: 2024

Nutrient Source	Application Timing	Method	Rate
Custom cherry orchard blend (22-5-12+)	April 2024	Banded	250 lb/ac
Sulphate of potash (0-0-50-17S)	April 2024	Banded	200 lb/ac

	Agronomic Balance (lb/ac)			Crop Removal Balance (lb/ac)		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
Cherry	-54	0	-120	-54	-5	-32
Custom cherry orchard blend (22-5-12+)	55	12	30	55	12	30
Sulphate of potash (0-0-50-17S)	0	0	100	0	0	100
Balance	1	12	10	1	7	98

NOTES AND CONSIDERATIONS:

- Starting in late April, band a single application of the custom cherry orchard blend, and sulphate of potash along the tree row.
- 2023 post-harvest soil and tissue levels for nitrogen were high, suggesting over application of nitrogen in the previous growing season. Reduce nitrogen inputs compared with previous season. After a tissue test has determined the level of nitrogen in the tree and fruit load is determined, nitrogen requirements can be adjusted as needed with liquid urea through fertigation or foliar applications.
- Soil potassium levels are considered low. Correct by adding 120 pounds of potassium per acre. Verify the nutrient levels the following year to see if further amendments are needed.

Additional 2023 Test Results – A&L Laboratories Canada

Analysis	Sampling Date	Field	Nitrogen	Phosphorous	Potassium
Leaf Analysis	August 1, 2023	Skeena	3.2 % (Med)	0.32 % (High)	1.0 % (Low)

LAPINS (2019) – 9.2 ACRES

Crop	Yield	Previous crop ploughed down (N credit)
Cherry	5.0 ton/ac	none (no N credit)

Soil Test Results: October 2023		Soil test P & K Method: A & L Canada (Bray-1 and Mehlich 3)	
Nitrate-N: 22 ppm	Phosphorus: 12 ppm (Low)	Potassium: 175 ppm (Med)	pH: 6.1
Field Comments: 8 ft x 16 ft Tree spacing, Mazzard rootstock, Annual pruning mulched between rows			

Nutrient Application Plan: 2024

Nutrient Source	Application Timing	Method	Rate
Custom orchard blend (13-16-10+)	April 2024	Banded	200 lb/ac
Sulphate of potash (0-0-50-17S)	April 2024	Banded	100 lb/ac
Custom orchard blend (13-16-10+)	June 2024	Banded	100 lb/ac
Urea (46-0-0)	September 2024	Foliar	20 lb/ac

	Agronomic Balance (lb/ac)			Crop Removal Balance (lb/ac)		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
Cherry	-44	-37	-82	-44	-4	-26
Custom orchard blend (13-16-10+)	26	32	20	26	32	20
Sulphate of potash (0-0-50-17S)	0	0	50	0	0	50
Custom orchard blend (13-16-10+)	13	16	10	13	16	10
Urea (46-0-0)	9	0	0	9	0	0
Balance	4	11	-2	4	44	54

NOTES AND CONSIDERATIONS:

- Starting in late April, band a single application of the custom orchard blend and sulphate of potash along the tree row. Band a second application the custom orchard blend late May along the tree row to meet the remaining nitrogen requirement.
- Considering the 2023 tissue levels for nitrogen were low, this field likely would have benefited from a fall foliar nitrogen application. If tissue test results for nitrogen remain low, foliar apply 20 lb/ac of a low biuret urea (CO(NH₂)₂) in 400 L/ac.
- Soil and tissue potassium results are approaching low levels. Correct by adding 80 – 120 pounds of potassium per acre. Verify the nutrient levels the following year to see if further amendments are needed.
- Soil phosphorus levels are low. A single application of 40 lb/ac will provide enough phosphorus for a few years
- The current soil pH was measured at 6.1, which is just within the normal range for BC cherry production, and should be maintained between 6.0 – 7.0. Recommend applying lime to raise and maintain adequate soil pH

Additional 2023 Test Results – A&L Laboratories Canada

Analysis	Sampling Date	Field	Nitrogen	Phosphorous	Potassium
Leaf Analysis	August 1, 2023	Lapins	1.9 % (Low)	0.10 % (Low)	3.1 % (Med)

RED HAVEN (2015) – 2.9 ACRES

Crop	Yield	Previous crop ploughed down (N credit)
Peach	10.2 ton/ac	none (no N credit)

Soil Test Results: October 2023		Soil test P & K Method: A & L Canada (Bray-1 and Mehlich 3)	
Nitrate-N: 16 ppm	Phosphorus: 17 ppm (Low)	Potassium: 278 ppm (High)	pH: 6.7
Field Comments: 10 ft x 15 ft Tree spacing, Seedling rootstock, Annual pruning mulched between rows			

Nutrient Application Plan: 2024

Nutrient Source	Application Timing	Method	Rate
Custom orchard blend (13-16-10+)	April 2024	Banded	125 lb/ac
Urea (46-0-0-)	April 2024	Banded	100 lb/ac
Urea (46-0-0-)	May 2024	Banded	100 lb/ac
Urea (46-0-0)	June 2024	Banded	50 lb/ac

	Agronomic Balance (lb/ac)			Crop Removal Balance (lb/ac)		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
Peach	-122	-24	0	-28	-4	-42
Custom orchard blend (13-16-10+)	16	20	12	16	20	12
Urea (46-0-0-)	46	0	0	34	0	0
Urea (46-0-0-)	46	0	0	46	0	0
Urea (46-0-0)	23	0	0	34	0	0
Balance	9	-4	12	103	16	-30

NOTES AND CONSIDERATIONS:

- Nitrogen should be applied in split applications throughout the growing season. Band apply the first nitrogen (urea) split application and custom orchard blend along the tree row starting late April. Apply the second nitrogen application in early June, and then taper off with a final application in early July.
- After a tissue test has determined the level of nitrogen in the tree and fruit load is determined, additional nitrogen requirements can be applied as needed through foliar applications.

Additional 2023 Test Results – A&L Laboratories Canada

Analysis	Sampling Date	Field	Nitrogen	Phosphorous	Potassium
Leaf Analysis	June 15, 2023	Red Haven	2.9 % (Med)	0.28 % (Med)	1.7 % (Med)

PLAN RECOMMENDATIONS

NUTRIENT APPLICATIONS

The previous application schedule includes suggested nutrient application rates by season and field. The following general strategies are recommended:

APPLE

- Nitrogen is best applied as a soil application early in spring. The nitrogen is then available very early to help the tree during critical growth and fruit development stages. Nitrogen applications to the soil should not exceed end of May so that soil nitrogen levels are low by the time the fruit is colouring in late summer.
- Assuming leaves and pruning material are recycled in the orchard, fruit extraction generally correlates well with nutrient demand in established orchards
- Apply nitrogen in a 2 – 3 ft band under the drip line
- Higher density plantings with dwarf trees require less nitrogen per tree, but similar per acre requirements
- The effectiveness of foliar sprays will depend on the environmental conditions at the time of application. The most important considerations are:
 - Don't apply with temperatures below 19C or above 28C
 - High wind reduces drying time of the droplet and reduces absorption
 - Relative humidity. Low humidity influences droplet size and persistence in the leaf surface

CHERRY

- For products that are more readily available, spread the application starting at petal fall up to a month prior to harvest. Excessive nitrogen applied close to harvest can reduce coloring and delay harvest. If trees are too vigorous, or there is a low crop (due to frost or pollination problems), the rate should be adjusted.
- Fertigation can help to reduce losses due to volatilization and better distribution to the target crop, especially in sandy soils. If applied dry to the ground, irrigate right after the application to allow solubilization and movement into the soil profile.
- In the fall, foliar application of nitrogen will help to build reserves for the next season. Soil application of nitrogen during the fall is not recommended.
- Phosphorus availability is reduced in soil pH below 6.5 and above 7.5. Managing the pH will benefit overall nutrient availability.
- If root uptake of potassium is limited, foliage sprays can be temporarily justified, but would not solve the problem.
- Assuming leaves and pruning material are recycled in the orchard, fruit extraction generally correlates well with nutrient demand in established orchards

PEACH

- For products that are more readily available spread the application starting at petal fall up to a month prior to harvest. Excessive nitrogen applied close to harvest can reduce coloring and delay harvest. If trees are too vigorous, or there is a low crop (due to frost or pollination problems), the demand should be adjusted.

- Fertigation can help to reduce losses due to volatilization and better distribution to the target crop, especially in sandy soils. If applied dry to the ground, irrigate right after the application to allow solubilization and movement into the soil profile.
- In the fall, foliar application of nitrogen will help to build reserves for the next season. Soil application of nitrogen during the fall is not recommended.
- Phosphorus availability is reduced in soil pH below 6.5 and above 7.5. Managing the pH will benefit overall nutrient availability.
- If root uptake of potassium is limited, foliage sprays can be temporarily justified, but would not solve the problem.
- Assuming leaves and pruning material are recycled in the orchard, fruit extraction generally correlates well with nutrient demand in established orchards

COMPOST ESTIMATES

Book values were used to estimate poultry manure nutrient content. Before compost applications, use containers to collect a sample to be sent for laboratory analysis. Having the compost nutrient analysis will allow for more accurate application recommendations when the plan is updated next year.

YIELD RECORDS

During harvest, maintain yield records specific to each field and variety. A combination of yield records, foliar test results, fruitlet tests, and post-harvest soil test results can be used to calculate the crop nutrient removal and increase the accuracy of updated versions of this nutrient management plan.

SOIL SAMPLING

For established fields, take soil samples for post-harvest nitrogen after crop harvest, before December 15th or the ground freezes. Each field's soil should be sampled to a 30 cm depth at 15 cm intervals and analyzed for post-harvest nitrate. Data from post-harvest nitrate testing (PHNT) can be used to determine if nitrogen was over- or under-applied, and to monitor changes in pH, phosphorus, potassium, calcium and magnesium. Samples should be collected at the same time of year in order to compare results.

Basic spring fertility soil samples can also be used; however, they are not as useful as tissue samples for determining nutrient status of most minerals in fruit trees.

Soil post-harvest nitrate and soil phosphorus tests are required every 3 years for each field. Records of soil testing should be kept for at least 5 years. Due to high post-harvest nitrate levels in 2023, the following fields require PHNT soil samples in 2024:

- Ambrosia
- Skeena

FOLIAR TISSUE SAMPLING

Leaf analysis is the best method to determine nutrient needs in tree fruit. Samples should be taken from late July to early August to compare to the standard values for tree fruits. Samples can be taken at other times during the growing season but, in this case, comparative samples should be obtained from the area of concern and one from a "good" area to assess results. For the best interpretation, take leaf samples at the same stage of plant development each year and monitor year to year trends in nutrient

status. Samples should also be taken from the same variety, the same age group, on the same rootstock, with the same vigour of trees in similar soil and management conditions.

FRUITLET SAMPLING

Like soil and leaf analysis, fruitlet analysis can be a valuable tool when making decisions about feeding programs in apple orchards. Because the concentrations of certain minerals in apple fruit are correlated with various aspects of quality, fruitlet analysis results can be used as a guide to produce higher quality fruit. Optimum fruitlet mineral levels differ by variety, timing of sample collection and methods of preparation and analysis. Sampling must be done in a way that ensures the fruitlet mineral data are comparable year over year. The recommendation for BC is based on sampling six weeks prior to anticipated harvest.

UPDATING THIS NUTRIENT MANAGEMENT PLAN

Following soil sampling in fall of 2024, and foliar tissue sampling in late July to August, this plan should be reviewed and updated to more accurately reflect soil nutrient levels, expected yields, and crop nutrient uptake.

STRATEGIES TO MEET REGULATORY REQUIREMENTS

Before any nutrient applications in October, February, or March, an application risk assessment must be completed, preferably within 24 hours before application. BC Application Risk Management (ARM) tool can be used for this.

No nutrient applications should be made during high-risk conditions. This includes strong, divergent windy conditions, storm events, when the water table is high and close to the surface, or flooding.

RECORDKEEPING FOR NUTRIENT APPLICATION AND CROP YIELDS

Nutrient application records including type, rate, time and location must be noted and kept on record for 5 years. In addition, crop yields for the fields where nutrient sources are applied must be kept on record for 5 years. The record keeping sheets found in your .nmp file can be used to record rates during nutrient application and crop yields during harvest.

DISCLAIMER

The author of this plan, Rick Amundsen, is not responsible for actions taken that deviate from this plan. Additionally, this plan should not be considered an exhaustive list of actions for nutrient management on this farm. The owner and operators of this farm are responsible for following all local, provincial, and federal rules relating to nutrient management.

APPENDICES

APPENDIX A: A&L CANADA LABORATORIES SOIL TEST RESULTS

SOIL TEST REPORT															
Sample Number	Depth	Lab Number	Organic Matter %	Phosphorus Bray-P1 ppm	Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm	pH	CEC meq/100g	Percent Base Saturations					
										% K	% Mg	% Ca	% H	% Na	
Gala	15 cm	61309	4.5	18	300	233	1164	5.7	16.8	2.1	3.0	15.5	78.7	0.6	
Ambrosia	15 cm	61310	1.2	44	149	143	1612	6.3	19.4	3.5	6.5	15.5	74.1	0.4	
Skeena	15 cm	61311	3.7	45	136	316	1294	6.7	16.4	1.8	4.2	13.4	80.3	0.3	
Lapins	15 cm	61312	4.1	12	175	295	1323	6.1	17.0	2.6	7.3	19.1	70.5	0.5	
Red Haven	15 cm	61313	2.9	17	278	111	956	6.7	17.7	3.2	2.4	12.5	80.7	1.2	

Sample Number	Sulphur S ppm	Nitrate Nitrogen NO ₃ ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Saturation % P	Aluminum AL ppm	K/Mg ENR	Sodium Na ppm
Gala	18	18 M	16.5	23	104	6.3	0.1	3 L 16.3 ST	1871	0.70	33 18
Ambrosia	21	26 H	13.2	14	122	2.2	0.2	10 H 16.1 ST	1338	0.54	91 24
Skeena	17	30 H	14.4	21	128	3.5	0.2	6 M 7.7 ST	1373	0.43	37 18
Lapins	14	22 M	19.6	16	94	1.9	0.2	6 M 6.3 ST	1356	0.36	30 22
Red Haven	9	16 M	4.1	9	123	1.9	0.1	7 M 8.4 ST	1418	0.31	79 13

APPENDIX B: A&L CANADA LABORATORIES FOLIAR TEST RESULTS

Crop	Sampling Date	Field	Nitrogen	Phosphorous	Potassium
Apple	August 1, 2023	Gala	2.0 % (Med)	0.25 % (Med)	2.1 % (High)
Apple	August 1, 2023	Ambrosia	2.4 % (Med)	0.21 % (Med)	1.3 % (Med)
Cherry	August 1, 2023	Skeena	3.2 % (Med)	0.32 % (High)	1.0 % (Low)
Cherry	August 1, 2023	Lapins	1.9 % (Low)	0.10 % (Low)	3.1 % (Med)
Peach	June 15, 2023	Red Haven	2.9 % (Med)	0.28 % (Med)	1.7 % (Med)

APPENDIX C: COMPOST ANALYSIS

All results are provided on an as-received (wet weight) basis

Source of Material	Material Type	Moisture (%)	Total N (%)	NH ₄ N (ppm)	P (%)	K (%)	NO ₃ N (ppm)
Municipal compost	Compost	70	0.76	396	0.20	0.43	112

APPENDIX D: A&L CANADA LABORATORIES FRUITLET TEST RESULTS

Sampling Date	Field	Nitrogen	Phosphorous	Potassium
July 21, 2023	Gala	0.042 % (Med)	0.0084 % (Med)	0.139 % (High)
August 15, 2023	Ambrosia	0.049 % (Med)	0.0081 % (Med)	0.090 % (Med)

APPENDIX E: HISTORICAL YIELD RECORDS

Grower Provided Total Historical Yield (ton)					
Year	Gala	Ambrosia	Skeena	Lapins	Red Haven
2018	56.3	84.8	27.9	-	-
2019	54.1	101.6	30.1	-	2.0
2020	63.6	125.0	25.9	-	10.0
2021	64.2	127.1	29.0	-	21.0
2022	64.7	137.5	27.6	-	30.0
2023	56.6	144.3	29.8	10.3	29.3

Grower Provided Total Historical Yield (lb/ac)					
Year	Gala	Ambrosia	Skeena	Lapins	Red Haven
2018	10.8	9.1	6.1	-	-
2019	10.4	10.9	6.5	-	0.7
2020	12.2	13.4	5.6	-	3.4
2021	12.3	13.7	6.3	-	7.2
2022	12.4	14.8	6.0	-	10.4
2023	10.9	15.5	6.5	1.1	10.1

APPENDIX F: SOIL DRAINAGE CLASSES

Code	Class	Description
VR	Very rapidly drained	Water is removed from the soil very rapidly in relation to supply. Excess water flows downward very rapidly if underlying material is pervious. There may be very rapid subsurface flow during heavy rainfall provided there is a steep gradient. Soils have very low available water storage capacity (usually less than 2.5 cm) within the control section and are usually coarse textured, or shallow, or both. Water source is precipitation.
R	Rapidly drained	Water is removed from the soil rapidly in relation to supply. Excess water flows downward if underlying material is pervious. Subsurface flow may occur on steep gradients during heavy rainfall. Soils have low available water storage capacity (2.5-4 cm) within the control section, and are usually coarse textured, or shallow, or both. Water source is precipitation.
W	Well drained	Water is removed from the soil readily but not rapidly. Excess water flows downward readily into underlying pervious material or laterally as subsurface flow. Soils have intermediate available water storage capacity (4-5 cm) within the control section, and are generally intermediate in texture and depth. Water source is precipitation. On slopes subsurface flow may occur for short durations, but additions are equaled by losses.
MW	Moderately well drained	Water is removed from the soil somewhat slowly in relation to supply. Excess water is removed somewhat slowly due to low perviousness, shallow water table, lack of gradient, or some combination of these. Soils have intermediate to high water storage capacity (5-6 cm) within the control section and are usually medium to fine textured. Precipitation is the dominant water source in medium to fine textured soils; precipitation and significant additions by subsurface flow are necessary in coarse textured soils.
I	Imperfectly drained	Water is removed from the soil sufficiently slowly in relation to supply, to keep the soil wet for a significant part of the growing season. Excess water moves slowly downward if precipitation is the major supply. If subsurface water or groundwater, or both, is the main source, the flow rate may vary but the soil remains wet for a significant part of the growing season. Precipitation is the main source if available water storage capacity is high; contribution by subsurface flow or groundwater flow, or both, increases as available water storage capacity decreases. Soils have a wide range in available water supply, texture, and depth, and are gleyed phases of well drained subgroups.
P	Poorly drained	Water is removed so slowly in relation to supply that the soil remains wet for a comparatively large part of the time the soil is not frozen. Excess water is evident in the soil for a large part of the time. Subsurface flow or groundwater flow, or both, in addition to precipitation are the main water sources; there may also be a perched water table, with precipitation exceeding evapotranspiration. Soils have a wide range in available water storage capacity, texture, and depth, and are gleyed subgroups, Gleysols, and Organic soils.
VP	Very poorly drained	Water is removed from the soil so slowly that the water table remains at or on the surface for the greater part of the time the soil is not frozen. Excess water is present in the soil for the greater part of the time. Groundwater flow and subsurface flow are the major water sources. Precipitation is less important except where there is a perched water table with precipitation exceeding evapotranspiration. Soils have a wide range in available water storage capacity, texture, and depth, and are either Gleysolic or Organic.



March 2021

Spill Reporting

Report spills immediately

If a spill occurs, or is at imminent risk of occurring, responsible persons (spillers) must ensure that it is immediately reported to the Provincial Emergency Program (PEP)/ Emergency Management British Columbia (EMBC) by calling **1-800-663-3456**.

Section 91.2 of *Environmental Management Act* (EMA) identifies the requirements for spill reporting. The [Spill Reporting Regulation](#) (SRR) prescribes the information that is required, as well as the time and manner in which it is required, when reporting spills.

This Fact Sheet is designed to provide information for responsible persons on their reporting obligations should they be in possession, charge, or control of a substance when it spills or is at imminent risk of spilling.

The SRR identifies three reports that responsible persons must make based on specific criteria: Initial Report; Update to Minister Report; and End-of-Spill Report. Responsible persons may also be required to make a fourth report, a Lessons-Learned Report, if ordered to do so by a director. The purpose of these reports is to ensure that the Ministry of Environment and Climate Change Strategy (the ministry) has the appropriate information necessary to assess spill impacts and fulfil oversight and regulatory roles and responsibilities.

Responsible Person

A responsible person has possession, charge or control of a substance or thing when a spill of the substance or thing occurs or is at imminent risk of occurring.

Definition of a Spill

A spill is defined by the *Environmental Management Act* as the introduction into the environment, other than as authorized and whether intentional or unintentional, of a substance or thing that has the potential to cause adverse effects to the environment, human health, or infrastructure.

Initial Report

Section 4 of the SRR outlines the information required in the Initial Report. An Initial Report must be made immediately if any of the following occur or is at imminent risk of occurring:

- 1. If the volume spilled, or likely to be spilled, is equal to or greater than the minimum quantity outlined in the SRR, the spill is reportable.** A list of substances and their reportable quantities is available in Appendix 2: Prescribed substances and quantities for immediate spill reporting of this Fact Sheet.
- 2. If the spill enters, or is likely to enter, a body of water, the spill is reportable.** A body of water is defined in the SRR and includes both marine and fresh bodies of water whether or not they usually

contain water or ice, as well as streams, lakes, ponds, rivers, creeks, springs, aquifers, ravines, gulches, wetlands, and glaciers. The requirement to report a spill of a listed substance of any quantity also includes spills that enter a ditch that is not self-contained and connects to a body of water.

The Initial Report must be made immediately to EMBC by calling 1-800-663-3456. Anyone can make the Initial Report; however, the responsible person must ensure the report has been made and all the information outlined in section 4 of the SRR has been reported. (Appendix 1)

Natural Gas
A release of natural gas is reportable if: <ol style="list-style-type: none">1. The spill is caused by a breakage in a pipeline or fitting operated above 100 pounds per square inch (psi) that results in a sudden release of natural gas; and2. The amount of the spill is, or is likely to be, equal to or greater than 10 kilograms (kg).

Update to Minister Report

Section 5 of the SRR outlines the requirement for the submission of Update to Minister Reports. Responsible persons must provide an Update to Minister Report:

1. **As soon as possible on request of the minister.**
2. **At least once every 30 days after the date that the spill began** until such time that an End-of-Spill Report is required.
3. **At any time that the responsible person has reason to believe that information that was previously reported as part of the Initial Report, as outlined in Appendix 1, was or has become inaccurate or incomplete.**

If the Update to Minister Report is requested by the Minister or if the spill lasts more than 30 days and the Update to Minister Report is required, an email will be sent by the ministry to the responsible person with instructions on how to complete the report form and how it must be submitted.

If the responsible person believes information previously reported as part of the Initial Report was or has become inaccurate or incomplete, the responsible person can contact the Environmental Emergency Program at SpillReports@gov.bc.ca, stating the Dangerous Goods Incident Report number in the subject line, to advise that an Update to Minister Report is required. Instructions on how to complete the report form and how it must be submitted will be sent to the responsible person by email.

End-of-Spill Report

Section 6 of the SRR outlines the requirement for the submission of End-of-Spill Reports. Responsible persons must submit a written report to the ministry within 30 days following the emergency response completion date of a spill, see information box below. An End-of-Spill Report is required when:

1. **The volume spilled is equal to or greater than the minimum quantity outlined in the SRR.** A list of substances and quantities for immediate spill reporting (is provided in Appendix 2.);
2. **The spill enters, or is likely to enter, a body of water-** 'body of water' is defined in the SRR.

The accountability to adhere to the requirements set out in the SRR is that of the responsible person. All reports, other than the Initial Report, are to be sent to the Environmental Emergency Program at SpillReports@gov.bc.ca.

Emergency Response Completion Date

The emergency response completion date is defined in section 8 of the SRR as the date that all the following criteria are met:

1. The Incident Command Post is disestablished.
2. The source of the spill is under control and is neither spilling nor at imminent risk of spilling.
3. Emergency actions to stabilize, contain, and remove the spill have been taken.
4. The waste has been removed from the spill site.
5. All evacuation notices have expired or been rescinded.
6. All equipment, personnel, and other resources used in emergency spill response actions have been removed from the spill site, other than resources required for sampling, testing, monitoring, assessing the spill site, or for recovery and restoration of the spill site.

Lessons-Learned Report

Section 7 of the SRR outlines the requirements of a Lessons-Learned Report. Within six months following the emergency response completion date of a spill, the director may order a Lessons-Learned Report from the responsible person. This report must be submitted to the director in the manner and form specified by the director. For additional information on the Lessons-Learned Report, please see the Lessons-Learned Fact Sheet.

B.C. Oil and Gas Commission Equivalency

Responsible persons regulated by the B.C. Oil and Gas Commission (the Commission) under the [Emergency Management Regulation](#) must provide an Initial Report to EMBC, but are exempt from the following requirements in the SRR:

- Section 5 Update to Minister Report;
- Section 6 End-of-Spill Report; and
- Section 7 Lessons-Learned Report.

Fines and Penalties

It is the responsibility of regulated persons, responsible persons and the owners of substances or things to understand and comply with EMA and its associated regulations.

This document is solely for the convenience of the reader and is intended to assist in understanding the legislation and regulations, not replace them. It does not contain and should not be construed as legal advice. Current legislation and regulations should be consulted for complete information.

Failure to be in compliance can result in convictions of fines and imprisonment, as outlined in *EMA* and its associated regulations.

Additional Fact Sheets

Fact sheets on other relevant topics are published by the Environmental Emergency Program (EEP) and available at:

www.gov.bc.ca/spillresponse

The complete list of available Fact Sheets:

- 01 Regulated Person
- 02 Responsible Person
- 03 Spill Reporting
- 04 Lessons-Learned Report
- 05 Cost Recovery
- 06 Requirement to Provide Information
- 07 Spill Contingency Planning
- 08 Testing Spill Contingency Plans
- 09 Recovery Plan

For more information, contact the
Environmental Emergency Program
at: SpillReports@gov.bc.ca

Appendix 1: Initial Report content

Report information	Description
1. Contact information of the individual making the report	First and last name, phone number, and email address
2. Contact information of the responsible person	First and last name, phone number, and email address
3. Contact information for the owner of the substance spilled	First and last name, phone number, and email address
4. Location, date, and time of the spill	Provide as much location specific information as possible, including: general directions, description of how to approach the area, latitude and longitude if available, street address, and the date and time in 24-hour clock format
5. Description of the spill site and surrounding area	Provide a description of the receiving environment of the spilled material (for example, the area is wooded and the ground is soft; there are sensitive riparian areas that are at risk of contamination)
6. A description of the source of the spill	The container from which the material spilled (for example, fishing vessel, above- or below-ground storage tank, tanker truck, pipeline, or railcar)
7. Type and quantity of the substance spilled	An estimate of the amount of product spilled and a description of the product type, including product name, UN number, and Safety Data Sheet [SDS] (for example, diesel, UN 1202, 50 liters). If unknown, a description of the spill (for example, sheen or slick approximately 20 meters by 20 meters)
8. Cause and impact of the spill	The circumstances leading to the spill; the immediate cause as well as any contributing factors. May be a combination of the activity and the incident (for example, motor vehicle accident, derailment, equipment failure, fire, human error, intentional/unauthorized release, natural occurrence, or unknown)
9. Details of the actions taken or proposed	Provide any necessary/ helpful details of the actions taken or planned (for example, what steps have been taken to contain the spill, which responders have been deployed, and when they will be on scene)
10. The details of further action contemplated or required	Provide any necessary/ helpful details regarding next steps, including response actions, deployment of additional resources, and monitoring activities
11. The names of agencies on scene	Any persons, government, federal government, local government, or Indigenous agencies
12. The names of other persons or agencies advised concerning the spill	Any persons, government, federal government, local government, or Indigenous agencies

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Appendix 2: Prescribed substances and quantities for immediate spill reporting¹

Item	Column 1 Substance Spilled	Column 2 Specified Amount
1	Class 1, Explosives as defined in section 2.9 of the Federal Regulations²	50 kg, or less if the substance poses a danger to public safety
2	Class 2.1, Flammable Gases, other than natural gas, as defined in section 2.14 (a) of the Federal Regulations	10 kg
3	Class 2.2 Non-Flammable and Non-Toxic Gases as defined in section 2.14 (b) of the Federal Regulations	10 kg
4	Class 2.3, Toxic Gases as defined in section 2.14 (c) of the Federal Regulations	5 kg
5	Class 3, Flammable Liquids as defined in section 2.18 of the Federal Regulations	100 L
6	Class 4, Flammable Solids as defined in section 2.20 of the Federal Regulations	25 kg
7	Class 5.1, Oxidizing Substances as defined in section 2.24 (a) of the Federal Regulations	50 kg or 50 L
8	Class 5.2, Organic Peroxides as defined in section 2.24 (b) of the Federal Regulations	1 kg or 1 L
9	Class 6.1, Toxic Substances as defined in section 2.27 (a) of the Federal Regulations	5 kg or 5 L
10	Class 6.2, Infectious Substances as defined in section 2.27 (b) of the Federal Regulations	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
11	Class 7, Radioactive Materials as defined in section 2.37 of the Federal Regulations	Any quantity that could pose a danger to public safety and an emission level greater than the emission level established in section 20 of the Packaging and Transport of Nuclear Substances Regulations, 2015 (Canada)
12	Class 8, Corrosives as defined in section 2.40 of the Federal Regulations	5 kg or 5 L
13	Class 9, Miscellaneous Products, Substances or Organisms as defined in section 2.43 of the Federal Regulations	25 kg or 25 L

¹ If the spill enters, or is likely to enter, a body of water, it is reportable regardless of the quantity
² Federal regulations refer to the Transportation of Dangerous Goods Regulations under the *Transportation of Dangerous Goods Act 1992*
³ Hazardous Waste Regulation refers to B.C. Reg. 63/88

14	Waste containing dioxin as defined in section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
15	Leachable toxic waste as defined in section 1 of the Hazardous Waste Regulation	25 kg or 25 L
16	Waste containing polycyclic aromatic hydrocarbons as defined in section 1 of the Hazardous Waste Regulation	5 kg or 5 L
17	Waste asbestos as defined in section 1 of the Hazardous Waste Regulation	50 kg
18	Waste oil as defined in section 1 of the Hazardous Waste Regulation	100 L
19	Waste that contains a pest control product as defined in section 1 of the Hazardous Waste Regulation	5 kg or 5 L
20	PCB wastes as defined in section 1 of the Hazardous Waste Regulation	25 kg or 25 L
21	Waste containing tetrachloroethylene as defined in section 1 of the Hazardous Waste Regulation	50 kg or 50 L
22	Biomedical waste as defined in section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
23	A hazardous waste as defined in section 1 of the Hazardous Waste Regulation and not covered under items 1 – 22	25 kg or 25 L
24	A substance, not covered by items 1 to 23, that can cause pollution	200 kg or 200 L
25	Natural gas	10 kg, if there is a breakage in a pipeline or fitting operated above 100 psi that results in a sudden and uncontrolled release of natural gas

APPENDIX H: RECORD KEEPING SHEETS

Field: Gala	Area: 5.2 ac	Crop: Apple	Actual Yield:
2024 Plan		2024 Records	
Nutrient Source	Application Timing	Rate	Notes or modifications to plan
Compost	Spring 2024	11 yards ² /ac	
Custom apple orchard blend (15-15-8+)	April 2024	200 lb/ac	

Field: Ambrosia	Area: 9.3 ac	Crop: Apple	Actual Yield:
2024 Plan		2024 Records	
Nutrient Source	Application Timing	Rate	Notes or modifications to plan
Custom orchard blend (19-5-17+)	April 2024	300 lb/ac	
Sulphate of potash (0-0-50-17S)	April 2024	150 lb/ac	
Liquid urea (23-0-0)	May 2024	40 L/ac	
Liquid urea (23-0-0)	June 2024	40 L/ac	

Field: Skeena	Area: 4.6 ac	Crop: Cherry	Actual Yield:
2024 Plan		2024 Records	
Nutrient Source	Application Timing	Rate	Notes or modifications to plan
Custom cherry orchard blend (22-5-12+)	April 2024	250 lb/ac	
Sulphate of potash (0-0-50-17S)	April 2024	200 lb/ac	

Field: Lapins	Area: 9.2 ac	Crop: Cherry	Actual Yield:
2024 Plan		2024 Records	
Nutrient Source	Application Timing	Rate	Notes or modifications to plan
Custom orchard blend (13-16-10+)	April 2024	200 lb/ac	
Sulphate of potash (0-0-50-17S)	April 2024	100 lb/ac	
Custom orchard blend (13-16-10+)	June 2024	100 lb/ac	
Urea (46-0-0)	September 2024	20 lb/ac	

Field: Red Haven	Area: 2.9 ac	Crop: Peach	Actual Yield:
2024 Plan		2024 Records	
Nutrient Source	Application Timing	Rate	Notes or modifications to plan
Custom orchard blend (13-16-10+)	April 2024	125 lb/ac	
Urea (46-0-0)	April 2024	100 lb/ac	
Urea (46-0-0)	May 2024	100 lb/ac	
Urea (46-0-0)	June 2024	50 lb/ac	