

Forest Carbon Initiative

Aerial Forest Fertilization Prescription

ADMINISTRATION/AREA DESCRIPTION			
Resource District	TSA/TFL/Licensee	Location	Field Work Completed by and date
Chilliwack	Fraser TSA	Anderson River - Catermole	Jeff McWilliams RPF Louis Orioux RPF Heli Feb 3 2020
Mapsheet	RESULTS Opening ID	Treatment Unit/Block	Project Number/Plan name
92H.064	1663838	Catermole1	FC0000427 (19-20)
Gross Opening(s) Area (ha)		No Treatment Area (ha)	Net Treatment Area (ha)
210.5		0.0	210.5
Stand Tending History		Aspect	Topography
N/A		N or S	Even to gently rolling
Latitude:	49°40'51.4"N	Longitude:	121°15'43.8 "W
Elevation (min):	880m	Elevation (max):	1140m

*The net treatment area accounts for areas removed for NP (natural), permanent access structures, riparian reserve zones, and areas identified as not suitable for treatment. Area estimates are based on digitized (non-traversed) treatment boundaries.

STAND DESCRIPTION ¹				
Dom/Co-Dom trees of target species expected to respond to fertilization (sph)	Live Crown % (of crop trees)	Crown Closure %		Age (yrs)
A, B: Fd1000 C-F: Fd1200-1400 (Cw) G: Fd850(Cw) H, I: Fd800 J-L: Fd600-800	A, B, G: 60-70 C-F: 80-90 H-L: 50	A, B, G: 60 C-F: 30-50 H-L: 60-80		A, B, G: 35 C-F: 25 H-L: 45
Estimate Species Composition/Inventory Component (based on volume or basal area)	Estimated Height (top height of leading species)	Total Estimated (sph)	Estimated SI ² (Fd)	Ht to Diam (DBH) Ratio
A, B: Fd80Ba10Hw10 C-F: Fd70-90 Cw5-20Hw5-20 (Ba) G: Fd70 Cw10 Hw10 (Ba,Sx) H, I: Fd90 (Ba,Sx,Hw) J-L: Fd60-70 Hw10-20 (Ba,Sx)	A, B, G: 19.5 C-F: 13 H-L: 24	A, B, G: 1400-1600 C-F: 1600-1800 H-L: 1000-1200	28-30	0.6 - 0.8

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ECOSYSTEM INFORMATION ¹						
Polygon	Net Area(ha)	Zone Subzone Variant	Site Series	Edatope Moisture/Nutrients	Slope Position	Slope Avg. % & Range
A	11.7	CWHms1	01(03,04,05)	(2)3-4(5)/B-C(D)	Mid-slope	40 (30-50)
B	21.5	CWHms1	01(03,04,05)	(2)3-4(5)/B-C(D)	Mid-slope	40 (30-50)
C	34.5	CWHms1	01(03,04,05)	(2)3-4(5)/B-C(D)	Mid-slope	40 (30-50)
D	1.4	CWHms1	01(03,04,05)	(2)3-4(5)/B-C(D)	Mid-slope	45 (35-55)
E	2.8	CWHms1	01(03,04,05)	(2)3-4(5)/B-C(D)	Mid-slope	45 (35-55)
F	2.4	CWHms1	01(03,04,05)	(2)3-4(5)/B-C(D)	Mid-slope	45 (35-55)
G	32.8	CWHms1	01(03,04,05)	(2)3-4(5)/B-C(D)	Mid-slope	40 (30-50)
H	43.4	CWHms1	01(03,04,05)	(2)3-4(5)/B-C(D)	Mid-slope	40 (30-50)
I	4.9	CWHms1	01(03,04,05)	(2)3-4(5)/B-C(D)	Mid-slope	50 (40-60)
J	23.6	CWHms1	01(05,06)	3-4(5)/B-C(D)	Mid-slope	50 (40-60)
K	3.9	CWHms1	01(05,06)	3-4(5)/B-C(D)	Mid-slope	50 (40-60)
L	27.6	CWHms1	01(05,06)	3-4(5)/B-C(D)	Mid-slope	50 (40-60)

¹ Stand and ecological descriptions and stand tending history estimates are based on VRI, RESULTS information, aerial photo review and helicopter and/or field recce assessments.

² Based on "Site Index Estimates Derived from RESULTS or field measurements and Site Index Curves or Growth Intercept data.

TREATMENT DETAILS					
Foliar Analysis: (reference any foliar analysis work) N/A Re-Treatment: (indicate if area has been previously treated; number of times; years since last treatment and fertilizer used) Aerially fertilized in 2011 with Urea.					
Polygon	Net Treatment Area(ha)	Type of Fertilizer	Prescribed Application Rate	Season/ Timing	Fertilizer Amount (kg)
A	11.7	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	5,090
B	21.5	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	9,353
C	34.5	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	15,008

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D	1.4	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	609
E	2.8	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	1,218
F	2.4	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	1,044
G	32.8	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	14,268
H	43.4	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	18,879
I	4.9	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	2,132
J	23.6	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	10,266
K	3.9	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	1,697
L	27.6	Urea	435 kg/ha	Fall or spring. Repeated every 7-10 years, up to 10 years prior to harvest.	12,006
Total Area:	210.5	Urea	435 kg/ha	Total kg:	91,570

RISK ASSESSMENT: FOREST HEALTH, WILDFIRE	
Forest Health RR<5%	
Wildfire (e.g. risk ranking) Low	
Private Property There are no private properties directly adjacent to the treatment area.	

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MANAGEMENT OBJECTIVES/IRM VALUES	
Treatment Objective(s) and Future Regime:	
The treatment objective is to increase the diameter and height growth of dominant and co-dominant Douglas-fir crop trees resulting in an increased total volume of wood per hectare. The primary benefit of the treatment is increased sequestration of CO ₂ over at least a ten-year period. A secondary benefit is an increased merchantable volume at harvest.	
Research Installations or Permanent Sample Plots:	
The treatment area does not conflict with any research installations or permanent sample plots.	
Visuals:	
The treatment area is not within a visually sensitive polygon.	
Cultural Heritage:	
A First Nations referral will be completed prior to each treatment.	
Recreation:	
The treatment area has no nearby identified recreation sites, reserves, parks or other ecological reserves.	
Wildlife/Biodiversity/Species at Risk:	
Polygon A and L are directly adjacent to a Spotted Owl Wildlife Habitat Area No Harvest Zone. Polygons J and K are 125m N of a legal OGMA.	
Range:	
The treatment area is not within an established range tenure.	
Other Resources or Tenure/Issues: (e.g. Karst; Trappers; hydro rights-of-way; weather stations)	
The treatment area is within identified Trapline TR0314T001. Fertilization is not expected to have significant detrimental effects on wildlife in the area.	
Water Bodies/Fish/Water Quality:	
Management Objectives:	
1. To maintain the water quality of streams flowing in and adjacent to this unit	

Riparian Classes	Location/Measures Prescribed/ Buffers/ Comments
Streams (NCD, S3, S4, S6)	Streams identified in the vicinity of the treatment area during field reconnaissance have been excluded from treatment. Streams found to be visible from the air during the pre-treatment aerial recce will be protected by establishing 10-20 m no treatment zones. Streams not visible from the air will be treated over. Fertilizer loading zones will not be located within Riparian Management Zones.
Wetlands W1-W5	N/A
Lakes L1-L5	N/A
Non-classifiable wetland (NCW; NCL; NCD)	N/A
Residential Water Intakes	N/A
Watersheds & Water Quality Sampling (if in community watershed)	
The treatment area is not within a community watershed.	

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LOGISTICS AND SAFETY	
General Access:	
Distance from Nearest Town (Chilliwack)	<p>Approximately 135 km from Chilliwack.</p> <p>Get on Hwy/BC-1 E and proceed (travelling through Hope) for ~110 km. Turn right on to the Anderson FSR and continue for ~2.7 km. Keep right at the junction on to R01679 A100A. Continue on this mainline (R01679 A100A, R01679 A100C) for ~7.8km. Turn left at the junction on to R01679 A100D and continue for ~3.5 km. At the junction, keep right travelling on to R01679 E0001. Continue for ~3.0km, then turn left on to R01679 EA001. Continue 150m to the bridge – DO NOT DRIVE OVER THE BRIDGE. Bridge is unsafe at this time. The treatment area is over the bridge, then along the spur road heading East.</p>
Access Condition	4x4
Access Improvements Required	None required at this time. Access and stagings should be re-confirmed prior to treatment.
Potential Staging Areas	Anderson1 - 121°20'12.7"W 49°40'33.6"N
Staging Improvements Required	None required at this time. Access and stagings should be re-confirmed prior to treatment.
Comments:	
Safety: (Distance to hospital and contact information; radio frequencies for access; any safety specific protocols; snags)	
<p>Approximately 135km to Chilliwack General Hospital.</p> <p>45600 Menholm Rd, Chilliwack, BC V2P 1P7 (604) 795-4141</p>	
STORAGE/HANDLING OF FERTILIZER	
Storage/Transport: (e.g. type of fertilizer; any regulations as far as transport; conditions of storage)	
<p>Forest-grade fertilizers are not regulated for rail or road transportation. Because of water solubility, blended fertilizer must be stored in dry containers and protected from moisture. Storage areas must be secure to prevent cattle or wildlife from eating fertilizer – small doses of the urea component of blended fertilizers are lethal to cattle and ungulates.</p>	
Accidental Spills: (e.g. ground, water)	
To be handled consistent with the applicator's spill and safety protocols.	

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FOREST FERTILIZATION PRESCRIPTION CERTIFICATION	
<p>Attachments: 1:15,000 Aerial Fertilization Prescription Map</p> <p>Plan Prepared By: Alex Ainsworth, FIT</p> <p>Date: March 11, 2020</p>	<p>RPF's Signature and Seal</p> <div data-bbox="912 373 1250 701"></div> <p>RPF Name: Louis Orioux, RPF</p> <p>Date Signed: March 27, 2020</p> <div data-bbox="1206 959 1435 1056"><p>B.A. Blackwell & Associates Ltd.</p></div>