Massachusetts Department of Conservation and Recreation Division of Water Supply Protection, Office of Watershed Management

Forest Management Project Summary

Project Title: Jucket Hill Chestnut Oak

DWSP Harvest Permit Number: 2059 DWSP Proposal ID: PE-22-03

DCR Forest Cutting Plan File Number: 024-42844-24

Site Information

Watershed: Quabbin Town(s): Belchertown

Acres: 71.4

Nearest Road: Jucket Hill Road Natural Heritage Atlas overlap?: No

Public Drinking Water Supply Watershed?: Yes

Forest Types: Chestnut oak Heath, White Pine Oak, White Pine

ACEC?: No

Soils: Charlton-Hollis-Rock outcrop complex, Canton fine sandy loam

Wetland Resources: Yes

Vernal Pools: Yes

Harvest Information

Harvest Start Date: 7/1/2025 Harvest End Date: 8/25/2025 Number of Wetland Crossings: 0 Number of Stream Crossings: 0

Best Management Practices Applied

Stream Crossings: None

Filter Strips: Yes, Variable Width

Wetland Crossings: None Harvesting in Wetlands: None

DWSP Forester supervising this harvest

Name: Richard G MacLean Forester License #: 467 Phone #: 857-263-0211

Email: richard.maclean@mass.gov

Narrative

General Description/Forest Composition/History:

Stand One is the focus of this proposal, a 14-acre chestnut oak stand with a dense highbush blueberry and black huckleberry heath understory (Vaccinium corymbosum; Gaylussacia baccata). This habitat type is both regionally uncommon and rare within the Quabbin reservation. While the overstory majority is a combination of chestnut oak, eastern white pine and northern red oak, smaller size classes are slight majority red maple and white pine. Chestnut oak saplings are present but are being browsed down, and red maple and eastern white pine saplings are quickly outpacing and overtopping them. At present the stand is positioned to transition to a more generalist red maple and white pine stand. The understory is predominantly high bush blueberry / black huckleberry heath, with pockets of tall dense mountain laurel (Kalmia latifolia). The stand also contains some ledge and surface bolder, which will require careful operation during treatment. Firewood thinning occurred in the western half of the stand in harvests in 1992 (Quabbin lot 0612).

Stand Two is an eastern white pine/oak forest, 21.9-acres, at the southern end of the proposal. This stand is composed of eastern white pine and northern red oak, with minor components of red maple, black birch, chestnut oak, black oak, white oak, and yellow birch. Like much of the region northern red oak is a minor component of the smaller size classes with generalist eastern white pine, and red maple making up most of the under and midstory. The stand stretches from Juckett Hill Rd. In the west to steep southeast facing slopes in the east and is bordered to the south by oak-hardwood forest and previous harvests regenerating to white pine along the road. To the north, the stand is bordered by the two white pine stands included in this proposal (Four, Six) and the chestnut oak stand (One) to the northeast. Most of the chestnut oak in Stand Two is clustered adjacent to the chestnut oak stand (One). The understory transitions from low density woody vegetation with red maple and black birch seedlings to higher density blueberry and black huckleberry heath adjacent to the chestnut oak/heath stand (One). Most of the stand was thinned in the 1980's (Quabbin lots 0385, 0485, 0492A) but has not had any regenerative silviculture. This stand has most of the stone walls present in this proposal.

Stand Three covers 22.1 acres, at the northeastern corner of the proposal. The stand is composed of eastern white pine, chestnut oak, northern red oak, and minor components of red maple, and black oak. This stand is primarily growing on the east by southeast facing slopes of the proposal, with a third of the stand occupying the ridge top. The stand is bordered by steep slopes to the southeast, a utility right-of-way to the northeast, oak/hardwood forest to the northwest, and the eastern white pine hardwood stand (Five) and chestnut oak stand (One) to the southwest. Chestnut oak is a stronger component throughout the easterly slopes than in Stand Two, with a reduced presence on the ridgetop. Similarly, the understory composition is a dense blueberry and huckleberry heath on the slopes, with pockets of dense mountain laurel, transitioning to a dispersed heath on the ridgetop. The sapling/seedling composition is primarily chestnut oak, white pine, and red maple on the slopes, with chestnut oak seedlings reducing but still present on the ridgetop and black birch seedlings picking up. This stand has not been harvested since the establishment of the Quabbin Reservation.

Stand Four is an 11.5-acre white pine stand at the top of the ridge. This stand would have recently been better classified as a white pine / hemlock type, but the majority of the large diameter hemlock stems have succumbed to hemlock woolly adelgid (Adelges tsugae) leaving the stand dominated by larger diameter eastern white pine, with minor components of northern red oak, red maple, chestnut oak, black oak, white oak, and black birch. Aside from patches of eastern white pine seedlings, often collocated with hemlock snags, much of the stand is pine/hemlock duff with little regeneration. This stand is bordered to the west by northern hardwoods (outside of proposal) to the west and north by oak / white pine (Stand Five), to the west by chestnut oak (Stand One), and to the south by white pine oak (Stand Two). Stand Five is 6.7 acres of white pine overstory in a narrow north south oriented block along Juckett Hill Road. This stand is dominated by eastern white pine, with minor components of northern red oak, and red maple and black oak. Eastern white pine is distributed across all size classes and is the majority of both pole and saw log sized stems. Eastern white pine seedlings are present in patches but much of the stand has little regeneration present. Northern red oak is only present in the canopy, and in very few scattered seedlings. The stand is bounded by Juckett Hill Road to the west, a northern hardwood stand to the north and east (not a component of this proposal), and the larger white pine / oak stand (One) to the south.

Site Selection

To prepare for anticipated changes in species suitability with climate change, this proposal seeks to promote chestnut oak, a regionally uncommon species expected to be well suited to future conditions. Chestnut oak in Stand One can serve as a seed source/reserve for the surrounding area, improving overall forest resilience into the future. Unfortunately, regeneration in this stand is dominated by eastern white pine and red maple, and if left unmanaged the site is likely to transition to a white pine-hardwood stand with chestnut oak as a much smaller component. Our target for this stand is to continue the current chestnut oak overstory dominance and improve relative abundance of the chestnut oak regeneration. After treatment chestnut oak should retain its relative dominance of overstory basal area, and chestnut oak saplings should represent at least a third of sapling sized stems. Blueberry/Huckleberry heath will continue to be the dominant understory cover and expanded into pockets of currently dense mountain laurel.

Stands Two & Three are even aged eastern white pine oak stands with relatively even distributions of overstory eastern white pine and oak species, including chestnut oak. The southeastern aspect of the stand increases the vulnerability of the site to hurricane wind disturbance, and emergent white pine are particularly vulnerable to windthrow. To improve age diversity of the stand, increasing stand resilience to windthrow, as well as help increase the chestnut oak seed source/reserve of Stand One, the desired future condition for the stands are a patch mosaic of age classes.

Stands Four & Five currently have little species diversity and are dominated by eastern white pine. Both stands similarly have little established regeneration, and without some reduction in the overstory will have very little age or species diversity moving forward. Monoculture stands are more prone to pest and pathogen related mortality, and without well established and

distributed regeneration in the understory these stands are vulnerable to forest cover disruption within time scales of human concern. The desired future condition of these stands is an increased diversity of age classes, distributed throughout the stand, with regeneration composition that is not dominated by eastern white pine. Additionally, reducing the crowded eastern white pine crown density will help build resistance to fungal pathogens which are currently a growing concern in New England white pine stands.

Silvicultural Objectives

Stand One. The initial harvest will establish an irregular extended shelterwood system, reducing the total number of trees but retaining a large number of oaks to serve as seed sources and provide varied light conditions. Retention will favor chestnut oak primarily and other oak species secondarily. Harvest will require whole tree removal to reduce fuel loads prior to prescribed fire. Prescribed fire will be applied to the stand at least two growing seasons after harvest to further select for oaks over red maple and white pine.

Stand Two will be treated with a group selection system harvesting a third of the stand at first and return harvest. Regeneration openings will vary in size from 0.75 to 1.2 acres in size with retention focused on healthy oaks. Adjacent to the focus chestnut stand (One) a 2-acre opening will be placed with retention solely focused on chestnut oak and a fire break established on the western edge to facilitate its inclusion with prescribed burning of the chestnut oak stand.

Stand Three will receive a similar silvicultural treatment to Stand One. A 2-acre regeneration opening will be placed adjacent to Stand One with a fire break established to the east for its inclusion in prescribed burning of the chestnut oak stand and expansion of the heath. With more chestnut oak throughout this stand it will be a primary target for retention and release.

Stand Four will be treated with an irregular extended shelterwood system. The number of canopy trees will be reduced favoring surviving eastern hemlock (for wildlife values) and best formed/healthiest eastern white pine (preferring larger diameters for maintaining biological legacies). Retention will be chosen to best release existing white pine seedlings and aggregated to maximize light on pine/hemlock duff currently missing regeneration. All standing snags will be retained in this stand.

Stand Five. The very northern end of Stand Six at Juckett Hill road will host the main landing. The rest of the stand will be treated with a shelterwood prep cut, reducing the total number of trees but retaining enough to provide shade and seed. Retention will favor well-formed canopy dominant or codominant hardwoods, then well-formed dominant or codominant white pine and will be retained in clusters to reduce windthrow and maximize light availability.

Cultural Resources

Along Juckett Hill Rd the proposed area contains a foundation and there are walls throughout the roadside white pine stand, and the western portion of the white pine oak and white pine hardwood. Walls are conspicuously absent from the chestnut oak and white pine/oak stands of the southeasterly facing slopes, and the Quabbin Reservoir 'Taking Sheets' indicate that much of this area without stone walls was used as woodland. Much of the proposed area is described as 'woodland' in the Quabbin taking sheets.

Rare or Endangered Species

The chestnut oak stand understory is mostly dominated by a blueberry/huckleberry heath community with pockets of dense mountain laurel. The chestnut oak/heath forest is a statewide rare habitat. Avoiding management at this site is likely to result in the loss of this habitat type as eastern white pine and red maple regeneration begin to dominate the site.

Figures

Figure 1. **Forest Cutting Plan**

06-18-24A09:26 RCVD

For	est	Cutting	Plan

and Notice of Intent under M.G.L. Chapter 132 – The Forest Cutting Practices Act, 304 CMR 11.00

For DCR U	lse Only:		
	624-42844-24	Case No.	NIA
Date Rec'd		Nat. Hert.	No
Earliest Start	7/5/24	Pub. Dr. Wat.	Quabbin
River Basin	Chicopee	ACEC	NO
Gen. Obj.	LT	-	

Town Belchertown					Landowner		·		
			3		Name DCR Div Wa	ter Suppl	y Protec	tion	
Road Jucket Hill Rd					Mailing Address 485	Ware Rd			
Acres 72	Propo	osed Star	t Date Sur	mmer 2024					
Vol. MBF 135.2 V	ol. Cds	175	Vol. Ton	s <u>383</u>	Town, State, Zip Belch	nertown,	MA, 010	07	
					Phone 413323	37221			
Plan Preparer					Ch61 61A 61B	Stew	*Cas	e #	
					FSC CR CR CR I	Holder			
Name Richard G Ma	acLean				Licensed Timber	. Hawsa	-4	k	
Address 485 Ware Rd					Licensed Timber	Harve	ster		
					Name Chris	topher	Pirner		
Town, State, Zip Belc		1A, 010	07		Address152 (Williams	ville	Road	
101/10/00/00/00	263-0211				Town, State, ZipH				2
Type of Preparer LF						8-928			
*Mass. Forester Licens	Company and the	0.15.00.15			Mass. Lic. Harvester #				
*Required for land und	er Ch61, Cl	161A or	Forest St	ewardship	**This information may be s work begins.	upplied after	the plan is	approved, b	out bef
Stream Crossing	gs				Harvesting in \	Vetlan	ds		
			TOTAL TO	T = 1					
Indicate location on map	SC-1	SC-2	SC-3	SC-4	Indicate location on map	HW-1	HW-2	HW-3	HW
				-	Forest Type (see pg 2)		-		
Type of Crossing					Acres to be Harvested				
Existing Structure					Recid Recal Area		-	-	
Existing Structure Type of Bottom					Resid. Basal Area (>50%?)				
Existing Structure Type of Bottom Bank Height (ft)									
Existing Structure Type of Bottom Bank Height (ft) Stabilization									
Existing Structure Type of Bottom Bank Height (ft)	ngs					ter Con	nment	:s	
Existing Structure Type of Bottom Bank Height (ft) Stabilization	ngs	WC-2	WC-3	WC-4	(>50%?)	ter Con	nment	:s	
Existing Structure Type of Bottom Bank Height (ft) Stabilization Wetland Crossin		WC-2	WC-3	WC-4	(>50%?)	ter Con	nment	cs	
Existing Structure Type of Bottom Bank Height (ft) Stabilization Wetland Crossin Indicate location on map		WC-2	WC-3	WC-4	(>50%?)	ter Con	nment	is.	-
Existing Structure Type of Bottom Bank Height (ft) Stabilization Wetland Crossin Indicate location on map Length of Crossing		WC-2	WC-3	WC-4	(>50%?)	ter Cor	nment	is.	
Existing Structure Type of Bottom Bank Height (ft) Stabilization Wetland Crossin Indicate location on map Length of Crossing Mitigation Stabilization		WC-2	WC-3	WC-4	(>50%?)	ter Con	nment	:s	-
Existing Structure Type of Bottom Bank Height (ft) Stabilization Wetland Crossin Indicate location on map Length of Crossing Mitigation		WC-2	WC-3	WC-4	(>50%?)	ter Con	nment	:s	
Existing Structure Type of Bottom Bank Height (ft) Stabilization Wetland Crossin Indicate location on map Length of Crossing Mitigation Stabilization		WC-2	WC-3	WC-4	(>50%?)	ter Con	nment	:s	

Products to be Harvested*

Species	Mbf/Cds		Mbf/Cds
White Pine	126.7	Red Maple	.8
Red Pine		Sugar Maple	
Pitch Pine		Red Oak	2.7
Hemlock		Black Oak	1.6
Spruce	11	White Oak	0.2
Other Sftwd.		Other Hdwd.	2.3
White Ash	12.8	Total Mbf	135.2
Beech		Cordwood (Cds)	175
White Birch		SW Pulp (Tons)	383
B & Y Birch	.9	HW Pulp (Tons)	
Black Cherry		Chips (Tons)	

*Note: Volumes indicated in the Plan are as reported by the plan preparer and have not been independently verified by the service forester upon approval. Mbf = thousand board feet.

Cutting Standards

Indicate location on map	ST	-1	ST	-2	ST	-3	ST	-4
Forest Type	ОМ	~	WO	▼	WP	~	WP	•
Acres	1-	4	4	1	10)	7	7
Landowner Objective	L.	Т	L'	Γ	L-	Γ	L.	Т
Designation of Trees	СТ	~	СТ	~	CT	~	CT	-
Type of Cut	OT		SE	~	SE	•	SH	•
Source of Regeneration	AD	-	SE	~	SE	~	SE	v

Land	lowner	Signa	ture
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Forest Types

Hemlock Hem/Hdwd

НН

OM RM

Mixed Oak

Red Maple

WP White Pine WK WP/Hem

The most important information on a cutting plan is the Landowner's objective, as this will determine which trees will be harvested and which will remain; this decision will also determine the future condition of the forest for decades to come. After having read the Massachusetts Forest Cutting Plan Information Sheet on page one, indicate your objective by checking the appropriate box below.

■ LT – Long-term Forest Management

Planned management of the forest to achieve one or more of the following objectives: produce immediate and maximize long-term income, enhance wildlife habitat, improve recreational opportunities, protect soil and water quality, or produce forest specialty products.

ST - Short-term Harvest

Harvest of trees with the main intention of producing short-term income with minimal consideration given to improving the future forest condition, which often results in a forest dominated by poor quality and low value species.

I (we) have read the Massachusetts Cutting Plan Information Sheet, and am aware of my (our) management options.

I (we) hereby certify that I (we) have the legal authority to carry out the operation described above.

I (we) certify that I (we) have notified the Conservation Commission in the town in which the operation is to take place and the abutters of record within two hundred feet of the area to be harvested.

I (we) understand that the volumes in this plan have not been independently verified by the service forester

upon approval and will report final values and volumes to the Director or his/her agent if the final figures differ from those reported.

1	6-15-24
signature of landowner(s)	Date

Determination and Status Final Report and Comments Disapproved Expires I hereby certify that the afore described Forest Cutting Plan Approved and all relevant statutes have been substantially complied with. 6/18/26 Cutting Plan \checkmark Signature of Service Forester/Director's Agent Signature of Service Forester/Director's Agent Ser. For. Ints. Expires 1 2 Extension App 2 Dis 2 Amendment

Intermediate Harvests:

Commercial Thin

Type of Cut
Shelterwood In
Seed Tree C7

SH

ST

Source of Regeneration

AD Advanced SE Natural Seed PL Plant

CO Coppice DS Direct Seed

OT Other

WH	WP/Hdwd	BC	Blck Cherry	BE	Beech	SB	Stand Boundary	CC	Clear Cut	NT	Non Com Thin
WO	WP/Oak	BB	Bee/Bir/Map	SF	Spruce/Fir	OT	Other	SE	Selection	Non	-Standard Syster
RP	Red Pine	OH	Oak/Hdwd	SM	Sugar Maple	Land	lowner Objective	SA	Salvage	HG	Highgrade*
SR	Red Spruce	OR	N Red Oak	PP	Pitch Pine	LT	Long-term Mgt.	SN	Sanitation	DL	Diameter Limit*
						ST	Short-term Har.			OT	Other*
	*If C	ther (OT) or a no	n-sta	andard syste	m is t	ised an explanat	ion m	ist be given	on atta	ched narrativ

Designation of Trees
CT Cut Tree
LT Leave Tree

tive page

Forest Cutting Plan

Narrative Page (Effective Date: 3/15/16)

Use this page to provide further explanation or if Other (OT) was used in any category on pages 3 or 4. Landowner

Town

File Number

Use this Section to provide further explanation or if Other (OT) was used in any category in the Best Management Practices Section on Page 3.

ST-1 is a chestnut oak / huckleberry heath being treated for restoration and expansion into ST-2. To release existing chestnut oak regeneration basal area is being reduced to 30-40 sq ft per acre favoring oak species and removing white pine and red maple. All white pine, red maple, or black birch stems are to be removed. Mechanical harvest will be followed by prescribed fire to further control mesic species and favor oak regeneration.

Throughout: BLUE - cut tree | ORANGE - retention tree, an orange dot is a retention tree in any stand, an orange line denotes the edge of a group selection opening.

Use this Section to describe the types of trees to be harvested and/or retained if Other (OT) was used for "Designation of Trees" in the Stand Treatment Section on page 4. Additional narrative description may be added on a separate page.

	Describe Tre	es to be Cut		Describe Tre	Describe Trees to be Left			
Stand No.	Species	Size	Quality	Species	Size	Quality	Cut	Left
ST-1	WHITE PINE	sawlog	moderate	RED OAK	sawlog	moderate	10	90
	RED MAPLE	pole-saw	low	CHESTNUT OAK	sawlog	low	50	50
				SCARLET OAK	sawlog	moderate	10	90
						10		
	NAME OF THE	16						

Use this Section to describe how Chapter 132 requirements will be met if a non standard system (HG, DL, or OT) was used for the "Type of Cut" in the Cutting Standards Section on page 4.

Stand No.

Regeneration (ex. AD, SE)

How will Regeneration be obtained/protected?

If using AD - Describe the species present and how the regeneration will be protected If using SE - Describe the source of the seed and the number of seed trees/acre

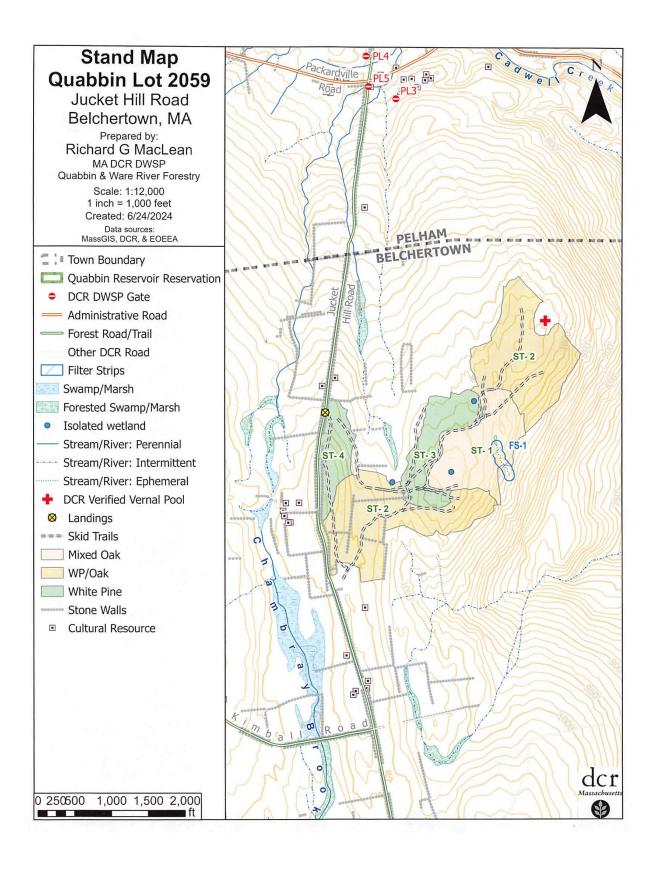
ST-1	AD	Chestnut oak regeneration is abundant but being shaded out by mesic red maple and white pine saplings. Mechanical removal of mesic species will be follow by prescribed fire.
		Seed source is being retained distributed throughout the stand.
_		

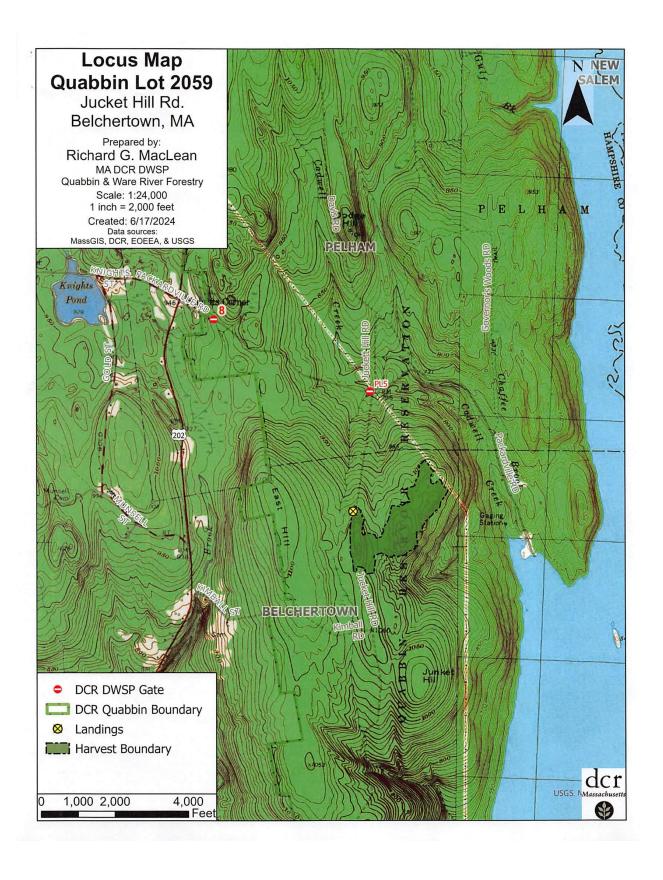
Stand No.

Desired Future Condition

	Describe what the stand is expected to look like five years from the harvest, including the condition of the overstory & understory
ST-1	The stand is to be treated with prescribed fire 3-5 years post harvest. 30-40 square feet per acre of sawlog sized chestnut, red, and scarlet oak will still be present distributed through the stand. Chestnut oak, and other oak
	regeneration will be present, abundant, and well distributed in a dense cover of eastern huckleberry.

Regeneration & Future Condition







COMMONWEALTH OF MASSACHUSETTS

FILE # <u>024-42844-2</u>4

Department of Conservation and Recreation
Division of State Parks and Recreation

FOREST CUTTING PLAN CERTIFICATE



Post this in a conspicuous place within the area in which	5 Ware Rd
This certifies that DCR-DWSP Bel (Name of Owner)	(Address) in accordance with the
provision of M.G.L. Chapter 132, Section 40-46, filed in _	Amherst F.O. with the Dept. of Conservation
and Recreation, Division of State Parks and Recreation, a VICKS HILL Rd	Notice of Intent to cut forest products upon the
Approval Date 7/3 24 Director's Agent Jacob Macko	ISSUED BY: Tank Jugar
DCR Phone No. (857) 202-2824	Priscilla E. Geigis, Director Division of State Parks and Recreation

Figure 2: Photo Point 1

Figure 2a: Pre-harvest photo, 7/2024.





Figure 3: Photo Point 2

Figure 3a: Pre-harvest photo, 7/2024.



