4585 Coleman Street
PO Box 1157
Bismarck, ND 58502-1157
701 355 8400
kljeng.com

Memorandum

Date: 6/27/2022

To: Steve Morrey, Savage Services

From: KLJ: Cassie Foster

RE: Savage Services
Savage Petroleum Hub Interconnect
Tree and Shrub Mitigation Monitoring
Williams County, North Dakota

INTRODUCTION:
Savage Services (Savage) received the North Dakota Public Service Commission (PSC) Route Permit on March 1, 2017, to construct a crude oil pipeline and facility near Trenton, North Dakota (Case No. PU-16-753). Construction of the proposed project commenced and concluded in 2017. Upon completion of construction, reclamation efforts along the pipeline corridor commenced. The reclamation efforts included final grading, seeding and miscellaneous reclamation activities. These activities were completed in 2017. As a requirement of the Permit, planting of trees and shrubs was to be completed to offset impacts from the project.

A tree and shrub count was completed along the project corridor prior to and after construction activities in 2017. The count was completed to determine the number and species of trees and shrubs removed, as well as the location/landowner where the trees and shrubs were removed. Once impacts were identified, a Tree and Shrub Mitigation Plan was completed to describe how tree and shrub impacts would be mitigated. The original mitigation plan was submitted to the PSC in March 2017. The PSC reviewed the mitigation plan and determined that all the trees and shrubs, including excess species, would need to be mitigated.

During the spring of the 2018 growing season, trees and shrubs were to be planted on private lands, as agreed upon by landowners.

MONITORING:
Per the mitigation plan, tree and shrub plantings are to be inspected annually for three years. A report of each annual inspection would be submitted to the Commission by October 1 of each year, documenting the condition of plantings and any woodland work completed. If after the third annual report the survival rate is less than 75%, the mitigation plan will be reviewed, and additional plantings may be required. The 2017 mitigation plan identified 212 trees were to be

replaced; therefore, the project would need to have 159 trees surviving at the end of the third year to reach a 75% survival rate. ***Please refer to Figure 1*** for a table of trees removed and proposed to be replaced.

Jesse Bolei (KLJ) conducted a field survey on June 14, 2022 to document tree reestablishment per the approved mitigation plan.

RESULTS:
As previously reported, no trees were replanted by Savage; however, natural recruitment of trees from adjacent seed stock and reestablishment from root balls left in place during grubbing activities have allowed 392 trees (324 cottonwood, 62 green ash, and 6 Russian olive) to reestablish within the previously disturbed area. ***Please See Figure 2*** for reestablishment success.

Savage proposes to monitor the trees naturally reestablished again in 2023 and provide a follow up report by October 1, 2023. If you have any questions regarding these surveys, please feel free to call me at 701-355-8748 or email at cassie.foster@kljeng.com.

Cassie Foster - KLJ

Common Name	Number Observed	Number Removed	2:1 Ratio for Replanting
Boxelder	1	0	-
Peachleaf willow	2	0	-
Russian olive	4	0	-
Chokecherry	9	0	-
Siberian elm	9	0	-
Green ash	26	14	28
Eastern cottonwood	92	92	184
Total	143	106	212

Figure 1, Proposed Tree Mitigation Requirements

Species	Cottonwood				Green Ash	Russian Olive	
Size	Seedling	1" DBH	2" DBH	3"DBH	1" DBH	2" DBH	Total Trees
Total	56	74	153	41	62	6	392
		Total for each species		324	62	6	

Figure 2, 2022 Tree Establishment

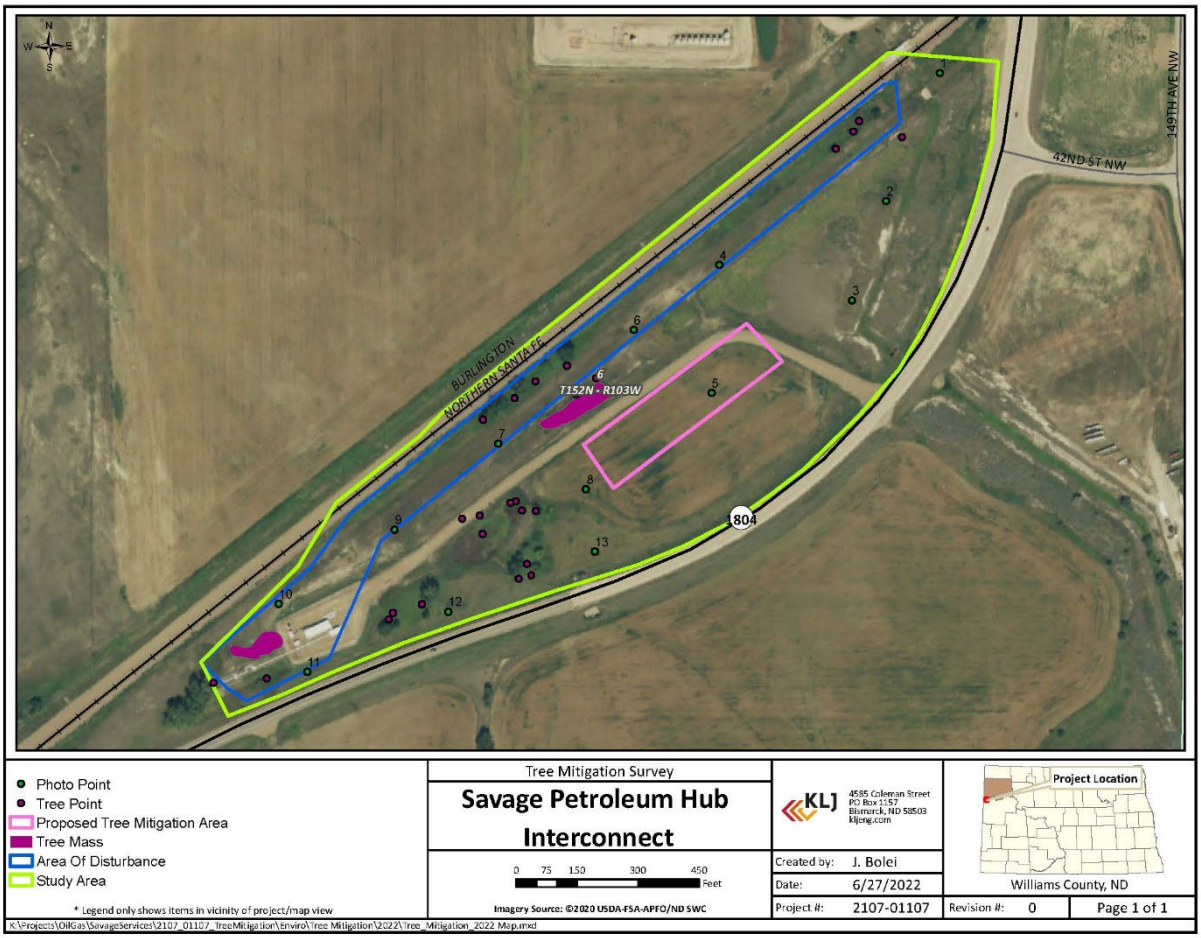
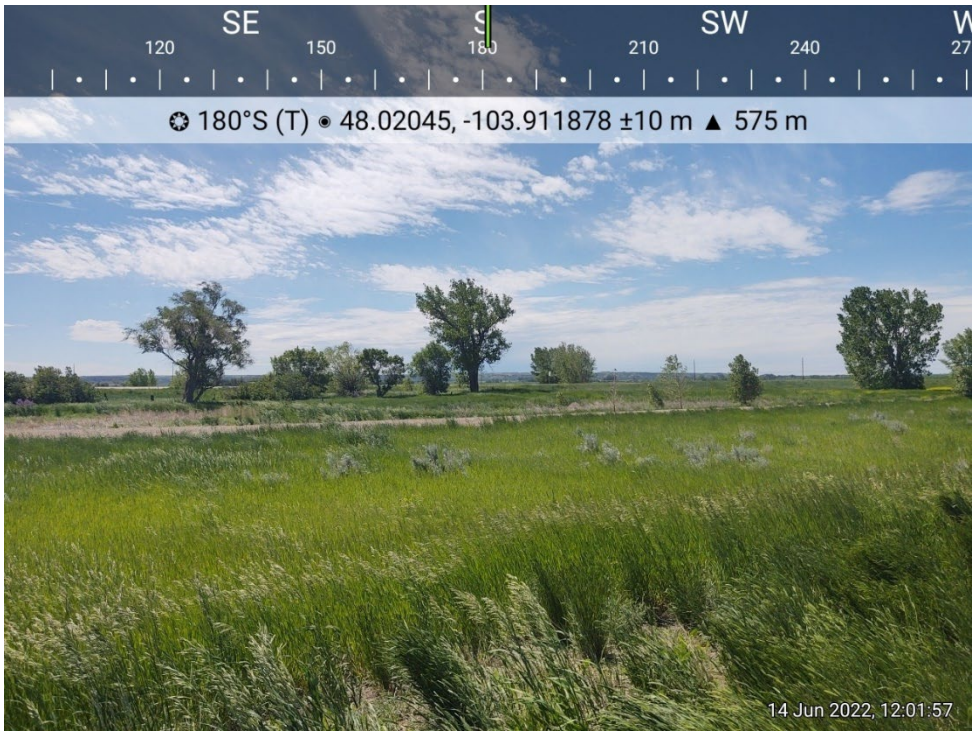


Figure 3: Tree Establishment Map

Selected Photos from the Study Area-Additional Photos Available Upon Request

Study Area Photo Point 4, View West



Study Area Photo Point 7, View South

Study Area Photo Point 1, View West

Study Area Photo Point 11, View West

Study Area Photo Point 13, View South

Study Area Photo Point 7, View South