



HESS CORPORATION  
1501 McKinney  
Houston, TX 77010

**Donald G. Bull**  
EHS Advisor  
Environment, Health, Safety – Environmental & Regulatory  
Phone: (713) 496-5759  
FAX: (732) 352-7792

September 30, 2021

Mr. Victor Schock  
North Dakota Public Service Commission  
600 E Boulevard Ave Dept. 408  
Bismarck, ND 58505

**VIA: United Postal Service**

**RE: Hess Corporation Hawkeye Pipeline Tree and Shrub  
2020 Survival Rate Report**

Dear Mr. Schock:

Attached for your review is the Hawkeye Pipeline Tree and Shrub 2021 Survival Rate Report. This report describes the 2021 survival rate for the plantings that took place in the Fall of 2018 and the final 2019 tree and shrub plantings that occurred the week of May 20, 2019. This completes the replanting 2:1 mitigation ratio requirement established by the Public Service Commission. Hess will submit one more survival rate inventory report in the Fall 2022.

If you should have any questions or comments concerning this report, please contact the undersigned at (281) 386-0407.

Sincerely,

Donald G. Bull

cc: Ms. Vicky Sund, Hess Corporation  
Mr. Shane Larson, Hess Corporation  
Mr. Brian Epperson, Hess Corporation

83 PU-15-32 Filed 10/05/2021 Pages: 21  
2021 Tree and Shrub Survival Rate Report  
Hess North Dakota Pipelines LLC  
Donald Bull

86 PU-15-31 Filed 10/05/2021 Pages: 21  
2021 Tree and Shrub Survival Rate Report  
Hess North Dakota Pipelines LLC  
Donald Bull

# **2021 HAWKEYE PIPELINE TREE AND SHRUB SURVIVAL RATE REPORT**

Field Verification: April 20-21, 2021

Report Issuance: September 30, 2021

Issued By: D. Bull (Advisor EHS-Environmental & Regulatory)

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# 2021 HAWKEYE PIPELINE TREE AND SHRUB SURVIVAL RATE REPORT

## 1.0 INTRODUCTION

Hess North Dakota Pipelines LLC (Hess) has completed construction of an approximately 26-mile- long pipeline system connecting Bakken production fields south of Lake Sakakawea to existing processing facilities north of the lake. The Hawkeye Pipeline System Project (Project) transports crude oil from the Hawkeye Oil Facility near Keene, North Dakota, and natural gas and natural gas liquids (NGL) from the existing Hawkeye Compressor Station near Charlson, North Dakota, to the existing Ramberg Truck Facility (crude oil) and the existing Silurian Compressor Station (natural gas and NGL) near Tioga, North Dakota.

Per the North Dakota Public Service Commission (PSC) Tree and Shrub Mitigation Specifications requirements identified in the PSC's Findings of Facts, Conclusions of Law and Order for the Project (Case Nos. PU-15-31 and PU-15-32), trees and shrubs shall be inventoried for replacement, replaced at a 2:1 ratio, and monitored for 3 years to determine if a 75 percent survival rate has occurred. Hess will submit annual reports to the PSC following each year's monitoring efforts. Hess understands the PSC may order additional plantings if the survival rate, after 3 years, is less than 75 percent.

## 2.0 REPLACEMENT PROCESS AND SURVIVAL RATE

On October 16, 2018, the trees and shrubs were replaced by LOWE'S Garden Center of Minot, North Dakota using the same or similar species on a 2:1 basis pursuant to the PSC Tree and Shrub Mitigation Specifications. The required tree and shrub replacements that are not to be planted on Hess Hawkeye Pipeline affected properties, from which they were removed, were planted on a separate property owned by Hess. Trees were replaced using 2-year-old saplings and shrubs with stem cuttings. Based on the 2:1 mitigation ratio, planting of at least 10,992 trees and shrubs was required. The nursery provided a surplus of 158 chokecherry trees; therefore, increasing the total tree and shrub planting amount to 11,150. Most of the trees/shrubs were installed in two distinct areas at the Hess Tioga Rail Terminal (TRT); the original area outside the fence, northwest of the TRT, and an area within the fence, in the northeast section of the TRT property. The change was necessary to increase the survival rate by lengthening the plant spacing and to utilize the fauna for wind and snow breaks. The trees and shrubs were planted utilizing a John Deere 5100e tractor accompanied with a Mechanical Transplanter CT-5 tree planter. The three private property plantings (Dilland, Halverson, and Moe) were completed on October 16 and 17, 2018 and were installed by hand.

During the week of May 20, 2019, the remaining balance of trees and shrubs were replaced by LOWE'S Garden Center of Minot, North Dakota using the same or similar species on a 2:1 basis pursuant to the PSC Tree and Shrub Mitigation Specifications. Trees were replaced using 2-year-old saplings and shrubs with stem cuttings. The nursery provided a surplus of 3 Green Ash, 23 Skunk bush Sumac, 1 Downy Hawthorn and 39 American Elm; therefore, increasing the total tree and shrub planting amount to 11,216. Unfortunately, it was a difficult growing season for the American Elm. The nursery was only able to attain 128 American Elm and therefore had to substitute 311 Boxelders for the American Elms. Most of the trees/shrubs were installed in two distinct areas at the TRT; the original area outside the fence, northwest of the TRT, and an area within the fence, in the northeast section of the TRT property. The trees and shrubs were planted utilizing a John Deere 5100e tractor accompanied with a Mechanical Transplanter CT-5 tree planter. The remaining 1,200 Green Ash trees were planted by hand on the United States Forestry Service (USFS) property (Chicken Creek) on May 14, 2019. This completes the PSC 2:1 mitigation ratio requirement for planting 10,992 trees and shrubs (Actual plantings 11,216).

During the week of April 19, 2021, an inventory of trees and shrubs was conducted to determine the health of the Fall 2018 and Spring 2019 replacement process and to ensure a greater than 75% survival rate (inspection of buds present on plants). It was determined that there was a 99% survival rate. Table 2-1 lists the species, the number of each species, the properties on which they were planted and survival rate. Appendix A presents the TRT planting configuration. Appendix B presents the USFS Green Ash planting configuration located within the Chicken Creek Watershed area and pictures. Appendix C presents the planting locations for Dilland, Halverson and Moe properties.

**Table 2-1 Fall 2018 and Spring 2019 Replacement Trees/Shrubs Installed and Survival Rate**

Landowner/Replacement Location	Tree/Shrub Type	Required Replacement	Actual Installed	Mortality
USFS	Green Ash 1	1,200	1,200	-
Dilland	Chokecherry	50	50	1
Halverson	Chokecherry	12	12	-
Moe	Chokecherry	68	68	-
	Silver Buffaloberry	56	56	2
Hess Tioga Rail Terminal Northeast Area (Inside Fence)	Green Ash 1	746	798	-
	Chokecherry	4,839	4,997	35
	American Elm 1	200	65	-
	Nannyberry 1	100	40	-
	Downy Hawthorn 1	7	8	-
	Common Juniper	22	22	-
	Redosier Dogwood 1	80	80	-
	Rocky Mountain Juniper	2	2	-
Hess Tioga Rail Terminal Northwest Area (Outside Fence)	Green Ash 1	690	641	-
	Chokecherry	2,197	2,197	44
	American Elm 1	200	63	-
	Boxelder 1	0	311	-
	Downy Hawthorn 1	1	1	-
	Nannyberry 1	100	160	-
	Silver Buffaloberry	160	160	-
	Juneberry	160	160	-
Skunk bush Sumac 1	102	125	-	
<b>Total</b>		<b>10,992</b>	<b>11,216</b>	<b>82</b>

**Mortality Rate: 1%**

**Survival Rate: 99%**

**Notes:**

1 = Plantings completed Spring 2019

158 Oversupply of Chokecherry trees from nursery

3 Oversupply of Green Ash (1436 proposed, 1439 actual)

23 Oversupply of Skunkbush Sumac (102 proposed, 125 actual)

1 Oversupply of Downy Hawthorn (8 proposed, 9 actual)

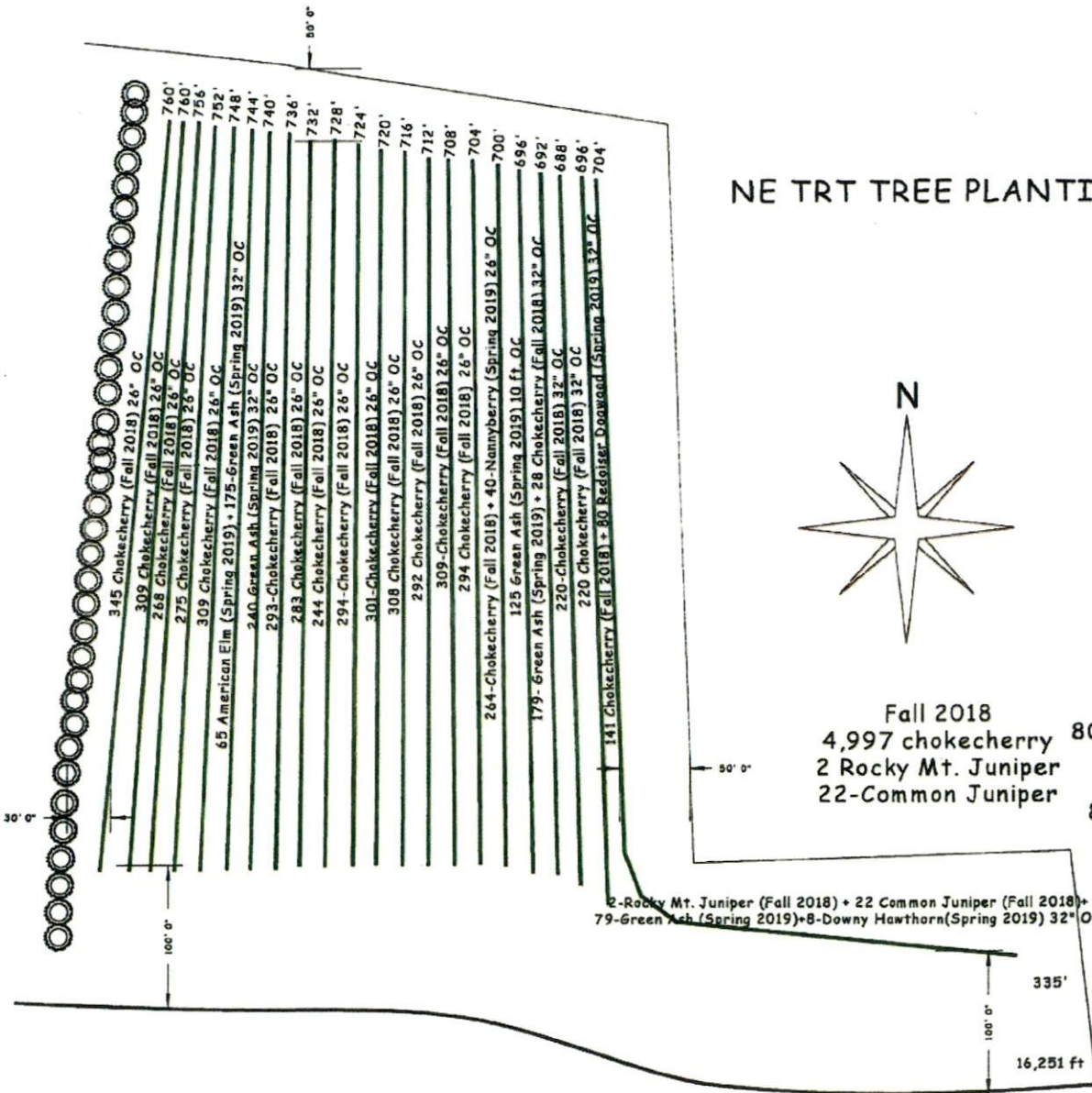
39 Oversupply. 128 American Elm available (Bad year for species), 400 American Elm proposed, 439 actual (128 American Elm, 311 Boxelder replaced the shortage of American Elm).

### **3.0 REPLACEMENT MONITORING**

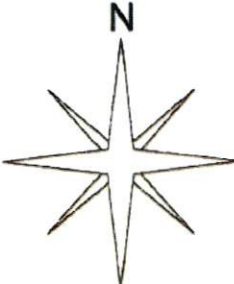
Hess completed year 3 of a 3-year survival rate inventory process for the trees and shrubs installed in 2018 and year 2 of a 3-year survival rate inventory for trees and shrubs installed in 2019. During the week of April 19, 2021 an inventory of trees and shrubs was conducted to determine the health of the Fall 2018 and Spring 2019 replacement process and to ensure a greater than 75% survival rate. It was determined that there was a 99% survival rate.

Hess has completed the third and final survival rate inventory (3 of 3) of trees and shrubs installed in 2018. The third and final survival rate inventory of the 2019 install, will be conducted and reported within the Fall of 2022.

## APPENDIX A: TIOGA RAIL TERMINAL PROPERTY

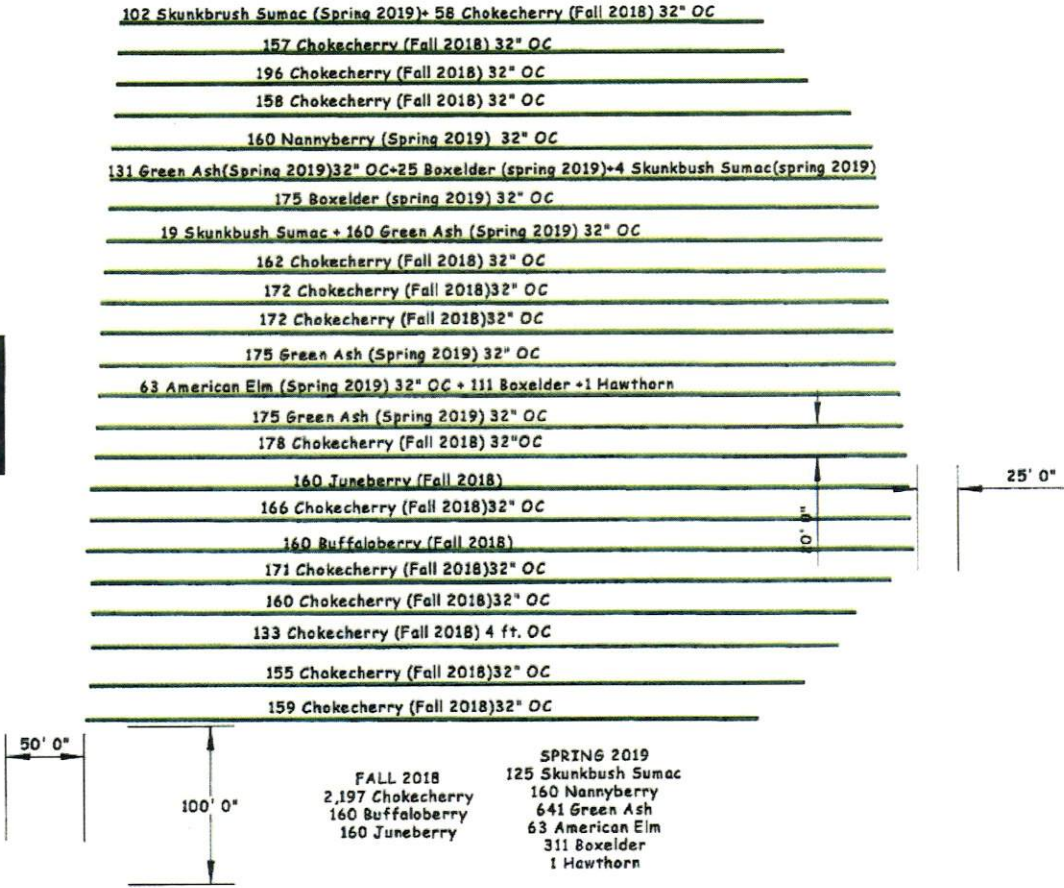


# NE TRT TREE PLANTING



- Spring 2019
  - 40-Nannyberry
  - 80-Redoiser Dogwood
  - 65-American Elm
  - 798-Green Ash
  - 8-Downy Hawthorn
- Fall 2018
  - 4,997 chokecherry
  - 2 Rocky Mt. Juniper
  - 22-Common Juniper

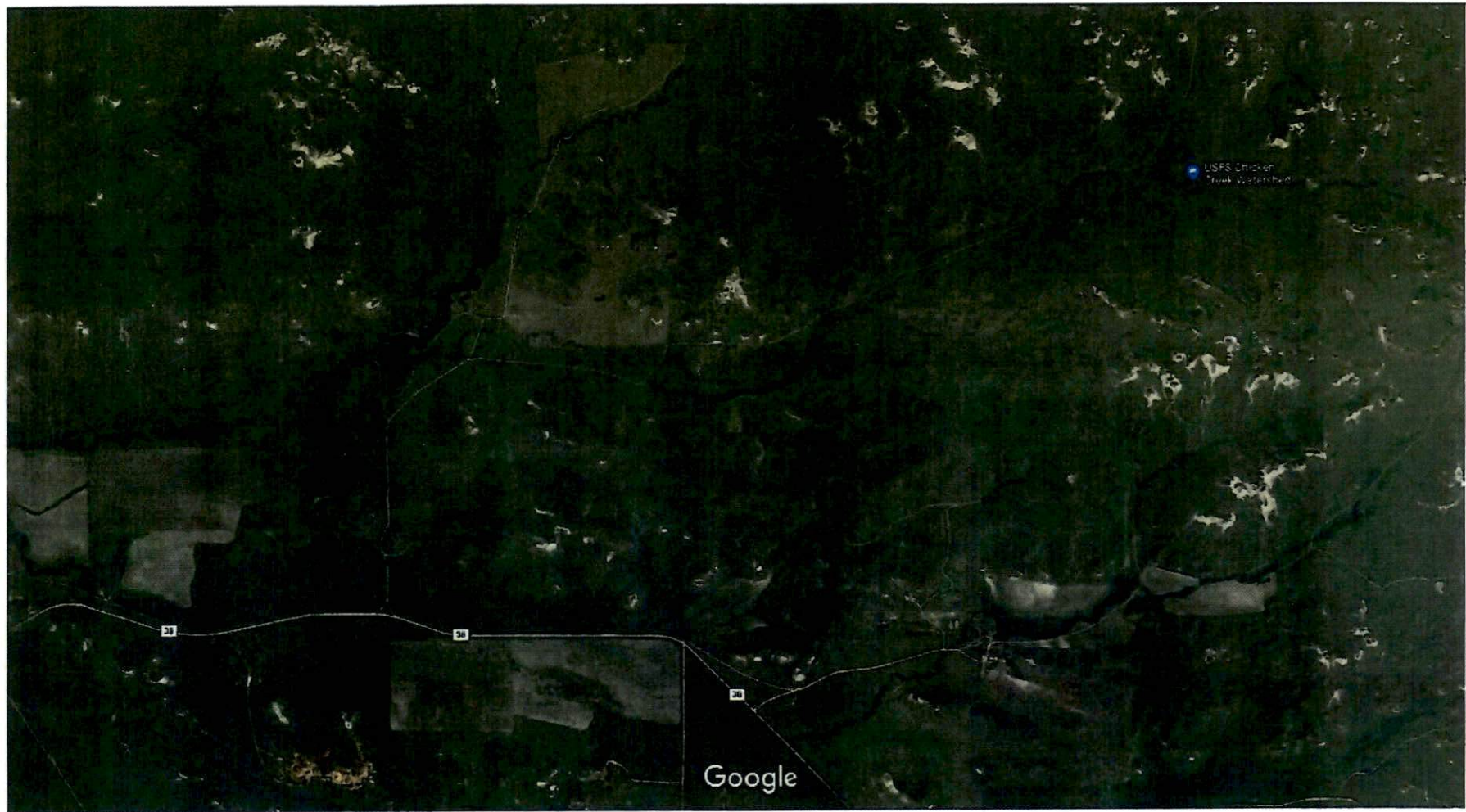
NW TRT Tree Planting





## APPENDIX B: USFS CHICKEN CREEK WATERSHED PROPERTY

Google Maps Starred places



Imagery ©2019 Google, Imagery ©2019 Landsat / Copernicus, Maxar Technologies, USDA Farm Service Agency, Map data ©2019 1000 ft

# Pasture 4-1 Chicken Creek Tree Planting

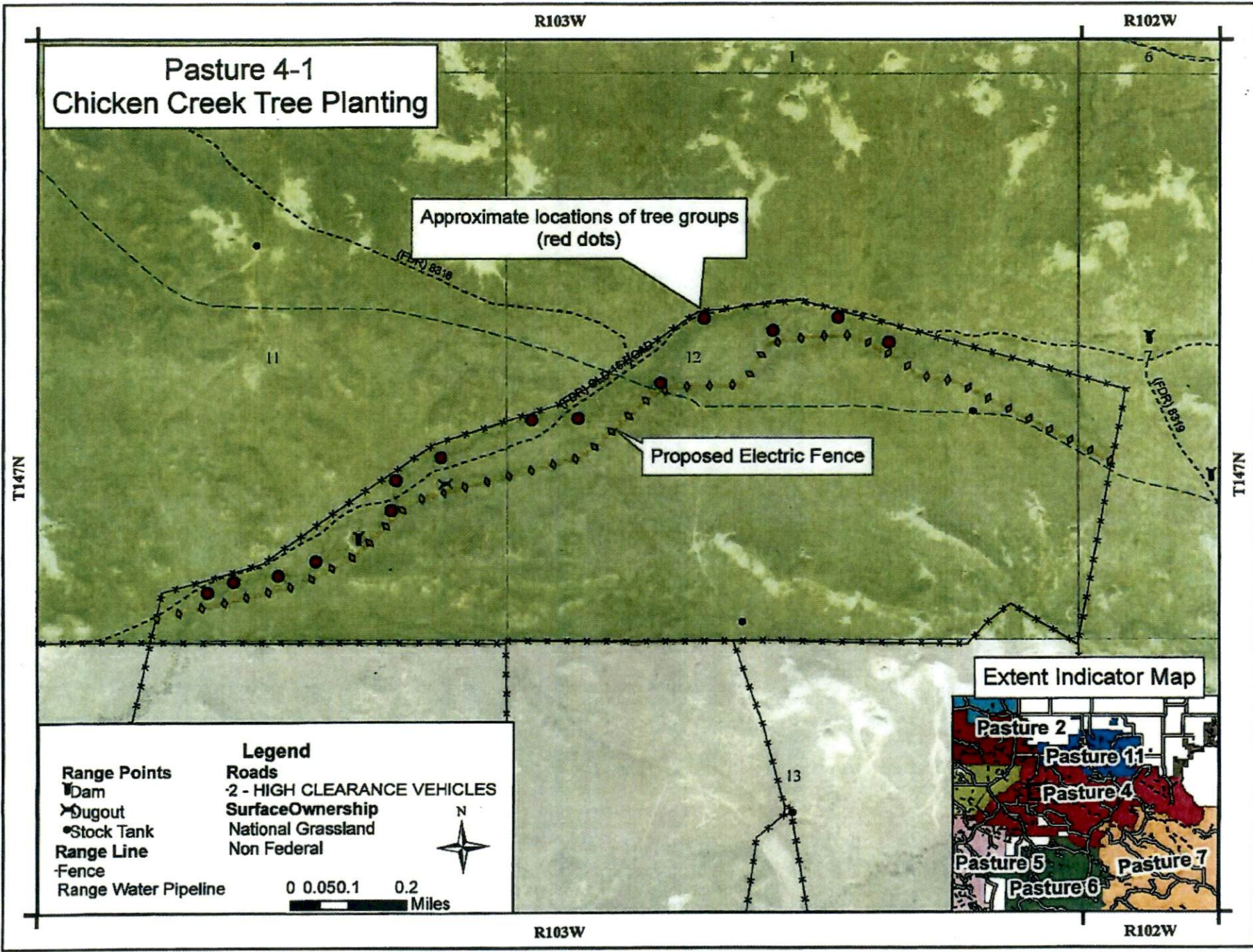
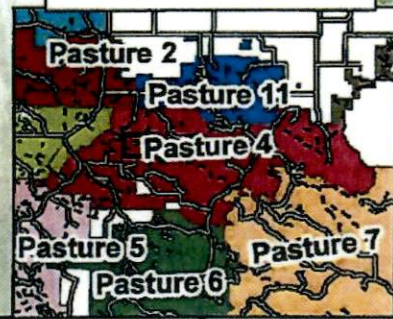
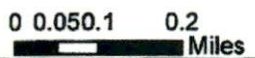
Approximate locations of tree groups  
(red dots)

Proposed Electric Fence

Extent Indicator Map

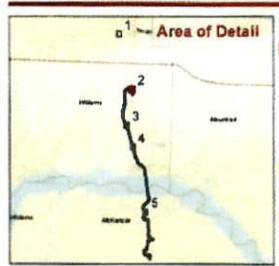
- Range Points
- Dam
- Dugout
- Stock Tank
- Range Line
- Fence
- Range Water Pipeline

- Legend**
- Roads
  - 2 - HIGH CLEARANCE VEHICLES
  - Surface Ownership
  - National Grassland
  - Non Federal





## APPENDIX C: DILLAND, HALVERSON AND MOE PROPERTIES



- Proposed Tree/Shrub Replanting Locations**
- Chokecherry
- Project Components**
- Stationing
  - Bore
  - Trench installation
  - Additional TWS
  - Permanent Easement
  - Temporary Easement



Project Location: 212016000-200-2nd REV 18  
 Williams County and  
 Maxham County, ND  
 Technical Review by BS on 2018-11-09  
 Independent Review by CRI on 2018-11-08

Client/Project:  
 Hess Hawkeye  
 Pipeline System Project

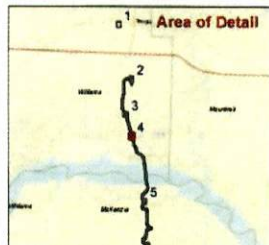
Figure No:  
**C-2**

Title:  
**Proposed Tree/Shrub  
 Replanting Locations -  
 Dillard Property Location**

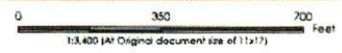
**Notes**  
 1. Coordinate System: NAD 1983 StatePlane North Dakota North  
 FIPS 5001 Feet

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- Proposed Tree/Shrub Replanting Locations**
- Chokecherry
  - Stationing
  - HDD
  - Trench Installation
  - Additional TWS
  - Permanent Easement
  - Temporary Easement



Project Location  
 Wilcox County and  
 Mountain County, ND  
 21220200-200340 REV8  
 Prepared by EIT on 2016-11-09  
 Technical Review by EIT on 2016-11-09  
 Independent Review by CH on 2016-11-09

Client/Project  
 Hess Howkeye  
 Pipeline System Project

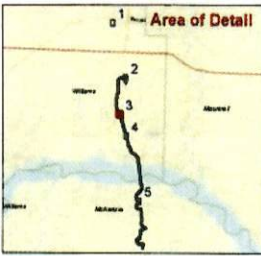
Figure No.  
**C-4**

Title  
**Proposed Tree/Shrub  
 Replanting Locations -  
 Halverson Property Location**

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane North Dakota North  
 1456 Feet

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- Proposed Tree/Shrub Replanting Locations**
- Chokecherry
  - Buffalobery, Chokecherry
- Project Components**
- Stationing
  - Trench Installation
  - Additional TWS
  - Permanent Easement
  - Temporary Easement



Project Location: 21200500-000-0-00-00  
 Willamette County and Multnomah County, OR  
 Prepared by: EIT on 2018-11-08  
 Technical Review by: EIT on 2018-11-16  
 Independent Review by: CH on 2018-11-16

Client/Project:  
 Hess Hawkeye Pipeline System Project

Figure No.:  
**C-3**

Title:  
**Proposed Tree/Shrub Replanting Locations - Moe Property Location**

Notes  
 1. Coordinate System: NAD 1983 StatePlane North Dakota North  
 FIPS 5002 Feet

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