

Location Checklist



Operator / #	HIGHPOINT OPERATING CORPORATION / 10071		
Location ID & Name	306070 ROTHE-65N63W/31SWSW		
County	WELD, CO		
Well Information	Well Name:	ROTHE #CSW-31	
	Well API #:	05-123-23945	
	Lat/Long as Drilled:	40.351780 / -104.483540	
	Plug Date & Form 6s Doc #:	12/16/2021 (Cut & Cap), 402909468	
Facility Entities	<input checked="" type="checkbox"/>	Tank Battery (Off-Site)	Pits
	<input checked="" type="checkbox"/>	Wells	<input checked="" type="checkbox"/> On-Location Flowlines (Form 42) Doc #: 402873586
		Domestic Taps	<input checked="" type="checkbox"/> Off-Location Flowlines (Form 44) Doc #: 402913529
Equipment On-Site	<input checked="" type="checkbox"/>	None	Debris
		Pit mouse/rat holes, cellars backfilled	
Access Road	<input checked="" type="checkbox"/>	Regraded	<input checked="" type="checkbox"/> Contoured
		Culverts removed	<input checked="" type="checkbox"/> Gravel removed
		Pre-Existing (Must provide supporting documentation)	
Reclamation Status	<input checked="" type="checkbox"/>	Location and associated disturbances reclaimed	
		Subsidence	
Spills or Releases (Form 19)	<input checked="" type="checkbox"/>	No	Yes
Remediation (Form 27/27A)		No	<input checked="" type="checkbox"/> Yes – Resolved 2022
On-Location Flowlines		No	<input checked="" type="checkbox"/> Yes
Off-Location Flowlines		No	<input checked="" type="checkbox"/> Yes
Inspection Corrective Actions		No	<input checked="" type="checkbox"/> Yes – Resolved 2019
Sundry Notice	Form 4 Doc # & Date:	403003120 & 05/05/2022	
	Purpose:	Final Reclamation will commence approximately 04/01/2022.	
	Comments:	Well is on crop ground, Location prepped and ready for farmer 04/01/2022	
	Attachments:	None	
Drone Information	Make & Model	DJI M300/DJI Mavic 3 Multispectral	
	Image Processing Software	Pix4dfields – RGB/Multispectral Imagery & Pix4dmatic – RGB Imagery	
	Pilot Name & FAA Certificate #	Sam Streater, #4100157	
	Date of FAA Certificate Issuance	23 Dec 2023	

**SITE-SPECIFIC QUALITY ASSURANCE
& QUALITY CONTROL AUDIT**



Final Reclamation Complete Notice – Cropland

PERMIT CLOSURE REPORT – CROPLAND

Location ID 306070

Location Name ROTHE-65N63W/31SWSW

Report Date

5 Feb 2024

Soil Sage has conducted a thorough data audit as part of our Quality Assurance and Quality Control (QA/QC) protocols. T

Crop Year and Type

Crop 2023 – Grass-Hay

Crop 2022 – Grass-Hay

Quality Assurance & Quality Control Audit

Auditor	Soil Sage
Audit Date	25 Jan 2024

Audit Methodology

The following source materials were consulted during the QA and QC audit process:

- ✓ Site Permit Closures provided by CIVITAS Resources
- ✓ Colorado Oil & Gas Information System – COGIS Database
- ✓ On-site Evaluation and Proprietary Soil Sage Drone Imagery data collection
- ✓ Review of legacy imagery for site location and facility parameters

All pertinent data, imagery, and materials are included at the end of this report.

Site Description

Name	ROTHE-65N63W/31SWSW		
Location ID	306070		
Operator / #	HIGHPOINT OPERATING CORPORATION / 10071		
Field	WATTENBERG / 90750		
County, State	WELD, CO		
Lat/Long	40.351780 / -104.483540		
	Planned Location	X	As Drilled
Facility Status	CL	Location	SWSW 31 5N63W
Facility Status Date	12/16/2021		
Facility Entities	X	Tank Battery	Pits
	X	Wells	X Off-Location Flowlines (Form 44)
		Domestic Taps	X On-Location Flowlines (Form 42)
		Electric Utilities	
Equipment on Site	X	No	Yes
		If yes, list:	
		Pit mouse/rat holes, cellars backfilled	
Access Road	X	Regraded	X Contoured
		Culverts Removed	X Gravel Removed
		Pre-Existing: must provide supporting documentation	
Environment Incidents & Remediation		None	Spill or Release (Form 19)
	X	Remediation (Form 27/27A)	
Variance Requests	No Variance Requests were detected during this QA & QC Audit.		
Inspection Corrective Actions (CA)s	<p>Corrective Actions (CA)s were detected during the QA & QC Audit.</p> <p>CA Overall Status: 1 of 1 Completed</p> <p>CA-Approving Inspection Doc # & Date: 696101700 & 12/12/2019</p> <ul style="list-style-type: none"> ○ Inspector: Bret Evins <p>Form FIRR Doc # & Submittal Date: 402183166 & 09/04/2019</p> <ul style="list-style-type: none"> ○ Overall Status: CAC ○ Originating Field Inspection Report (FIR) Doc #: 696101258 ○ CA#: 130041 Date Completed: 09/13/2019 <p>Weed removal and control has been completed to comply with Rule 603.f.</p> <p>ECMC Decision: Approved</p>		

	<p>Complete ECMC Inspection Search Results: Link</p>
Sundry Notice (Form 4)	Form 4s were detected during the QA & QC Audit. See individual scout card data for details.
On Location Flowlines (Form 42)	Form 42s were detected during the QA & QC Audit. See individual scout card data for details.
Off-Location Flowlines (Form 44)	<p>Form 44 Doc # & Date: 402913529 & 04/21/2022</p> <ul style="list-style-type: none"> ○ Purpose: Off-Location Flowline Abandonment Verification ○ Abandonment Date: 12/07/2021 ○ ECMC Approval Date & Signee: 04/21/2022 by Julie Murphy ○ Operator Comments: Flowline abandoned in place in compliance with rule 1105.e. requirements Line identifier: Rothe_5N-63W-31_SWSW_05056331cc_05056331cc_01M. ○ Note: This Form 44 contains data for three Off-Location Flowlines. Below is the information for the Off-Location Flowline associated with this location. <p>Flowline Facility Information</p> <ul style="list-style-type: none"> ○ ECMC Flowline ID: 476908 ○ Operator Flowline ID: Rothe_5N-63W-31_SWSW_05056331cc_05056331cc_01M ○ Status & Date: AC & 04/21/2022 ○ Flowline Type: Wellhead Line ○ Type of Fluids Transported: Multiphase ○ Start Point Location ID: 306070 ○ Start Point Riser Lat/Long: 40.351778 / -104.483554 (Rothe #CSW-31 well) ○ Equipment at Start Point: Well ○ End Point Location ID: 463359 ○ End Point Riser Lat/Long: 40.350648 / -104.487519 (Rothe Production Facilities) ○ Equipment at End Point Riser: Separator
Site Investigation and Remediation Workplan (Form 27/27A)	<p>Remediation Project #: 20400</p> <p>Form 27A Supplemental Docs # & Date: 403109001 & 07/19/2022</p> <ul style="list-style-type: none"> ○ Purpose: Decommissioning of oil and gas facilities ○ Lat/Long of Remediation: 40.351780 / -104.483540 ○ Operator Comments: None

	<ul style="list-style-type: none"> ○ ECMC Comments: Based on the information presented no further remedial action is necessary at this time and the COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required. The surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements. ○ ECMC COAs: None ○ Closure Request Approved: 07/19/2022 by Bob Chesson ○ Final Resolution: Case Resolved on 07/19/2022 <p>Form 27 Initial Doc# & Date: 402760337 & 10/12/2021</p> <ul style="list-style-type: none"> ○ Purpose: Decommissioning of oil and gas facilities, wellhead cut/cap and off-location flowline abandonment ○ Operator Comments: This Form 27 Intent is submitted prior to decommissioning multiple related assets: - Cut/cap of the Rothe CSW-31 well (05-123-23945) - Abandonment in place of off-location flowline Rothe_5N-63W-31_SWSW_05056331cc_05056331cc_01M 476908) See attached Site Map for details. ○ Attachments: Site Map Doc #402829608
<p>Field Inspection Form (Form INSP)</p>	<p>Form INSP Doc # & Date: 696101700 & 12/12/2019</p> <ul style="list-style-type: none"> ○ Status Summary: This is a Follow Up Inspection ○ Inspected Facilities: Well Rothe CSW-31 ○ Inspection Status: TA ○ Inspection Date & Inspector: 12/12/2019 by Bret Evins ○ Comments: I observed: Well(s): 1: Temporarily Abandoned TA. Battery: Shut-down Inactive. Centralized Battery serves 3 Location IDs (323124, 305177, 306070). (3: wells ; 2: Shut-In SI, 1: Temporarily Abandoned TA). Refer to Field Inspection doc. #696101253 and/or Location ID #323124 for Battery / Facility, Equipment info. Follow-up to Field Inspection Report doc. #696101258 dated 09/03/2019. During this inspection, the following prior possible compliance issues appear to be addressed: 1.) Weed encroachment at wellsite. Refer to Rule 603.f for guidance. Remove,

	<p>manage, & control weeds around wellsite. Comply with Rule 603.f. Corrective Action date: 09/16/2019. * Weeds NOW appear mitigated at wellsite. See photos #1, 2. During this inspection, NO New/Current possible compliance issues were observed.</p> <ul style="list-style-type: none"> ○ Attachments: Inspection Photos Doc #696101701 <p>Form INSP Doc # & Date: 696101258 & 09/11/2019</p> <ul style="list-style-type: none"> ○ Status Summary: Corrective Action Response Requested ○ Inspected Facilities: Well Rothe CSW-31 ○ Inspection Status: TA ○ Inspection Date & Inspector: 09/03/2019 by Bret Evins ○ Comments: I observed: Well(s) - 1: Shut-In Sl. Battery: Shut-down Inactive Centralized Battery serves 3 Location IDs (323124, 305177, 306070). Refer to Field Inspection Doc. #696101253 and/or Location ID #323124 for Battery / Facility, Equipment info. 1: Corrective Actions observed. 1.) Weed encroachment at wellsite. Refer to Rule 603.f for guidance. Remove, manage, & control weeds around wellsite. Comply with Rule 603.f. Corrective Action date: 09/16/2019. See photo #1. A follow up on this site inspection will be conducted to ensure the compliance issues have been corrected to comply with COGCC rules. ○ Corrective Actions: Weed encroachment at wellsite. Refer to Rule 603.f for guidance. Remove, manage, & control weeds around wellsite. Comply with Rule 603.f. See photo #1. Weed encroachment at wellsite. Remove, manage, & control weeds around wellsite. Comply with Rule 603.f. CA Date: 09/16/2019 ○ Attachments: Inspection Photos Doc #696101261
<p>COGIS Tank Facilities Information (Scout Card)</p>	<p>No Tank Battery documents were detected during this QA/QC Audit. However, the Tank Battery is referenced in Field Inspection Form Doc #696101700 as “Centralized Battery serves 3 Location IDs (323124, 305177, 306070). Refer to Field Inspection Doc. #696101253 and/or Location ID #323124 for Battery / Facility”</p>
<p>COGIS Well Information (Scout Card)</p>	<p>Well Name: ROTHE #CSW-31 API#: 05-123-23945 FACILITY ID: 285058</p> <ul style="list-style-type: none"> ○ Status & Date: PA & 12/16/2021 ○ Lat/Long As Drilled: 40.351780 / -104.483540

	<ul style="list-style-type: none"> ○ Form 6 Doc # & Date: 402909468 & 09/02/2022 ○ Form 42 Doc # & Date: 402873586 & 12/09/2021 Purpose: Start of Plugging Operations – 48-hour notice required. Anticipated duration: 11/24/21-11/26/21 ○ Form 4 Doc # & Date: 403003120 & 05/05/2022 Purpose: Final Reclamation will commence approximately 04/01/2022. Comments: Well is on crop ground, Location prepped and ready for farmer 04/01/2022.
--	--

ECMC Abbreviations: [Location & Facility Status Codes](#), [Inspection Types & Statuses](#) and [ECMC Help](#).

Audit Key Findings – Designation Land Use Observations

PREVIOUS LAND USE	CURRENT LAND USE
Reference Imagery for Infrastructure: USDA NAIP 2011; DRCOG 2004	Remotely Sensed Imagery: 22 Jun 2023
Designation: Oil & Gas Facility	Designation: Cropland

The following imagery sources were reviewed during this audit:

EarthExplorer, DRCOG 2002 - 2014, NAIP Imagery 2011, 2013, 2015, 2017, 2019, 2021, ESRI Maxar and Remotely Sensed Imagery Sep 2022

Site Observation Notes

No additional information.

Closure Information

Rothe #CSW-31 well (API #[05-123-23945](#)) is located in Weld County, Colorado near the intersection of County Road 61 and County Road 50. There is an Off-Location Flowline between this well and the production facilities at Location ID [463359](#).

There was a Corrective Action at this location in 2019 due to weed encroachment at the wellsite. This was resolved in 2019 and an ECMC inspection approved the CA in 2019.

In 2021, a Form 27 Initial was submitted for decommissioning of oil and gas facilities, wellhead cut/cap and off-location flowline abandonment, under Remediation Project #[20400](#). Remediation Project #[20400](#) was closed in a Form 27 Supplemental on July 19th 2021.

Rothe #CSW-31 well (API #[05-123-23945](#)) was cut and capped December 16th, 2021. The access road was reclaimed at this time. The related facility, Location ID [463359](#), was closed and reclaimed around the same time.

Soil Sage drone imagery confirms that no equipment was left on site at this location after reclamation activities occurred.

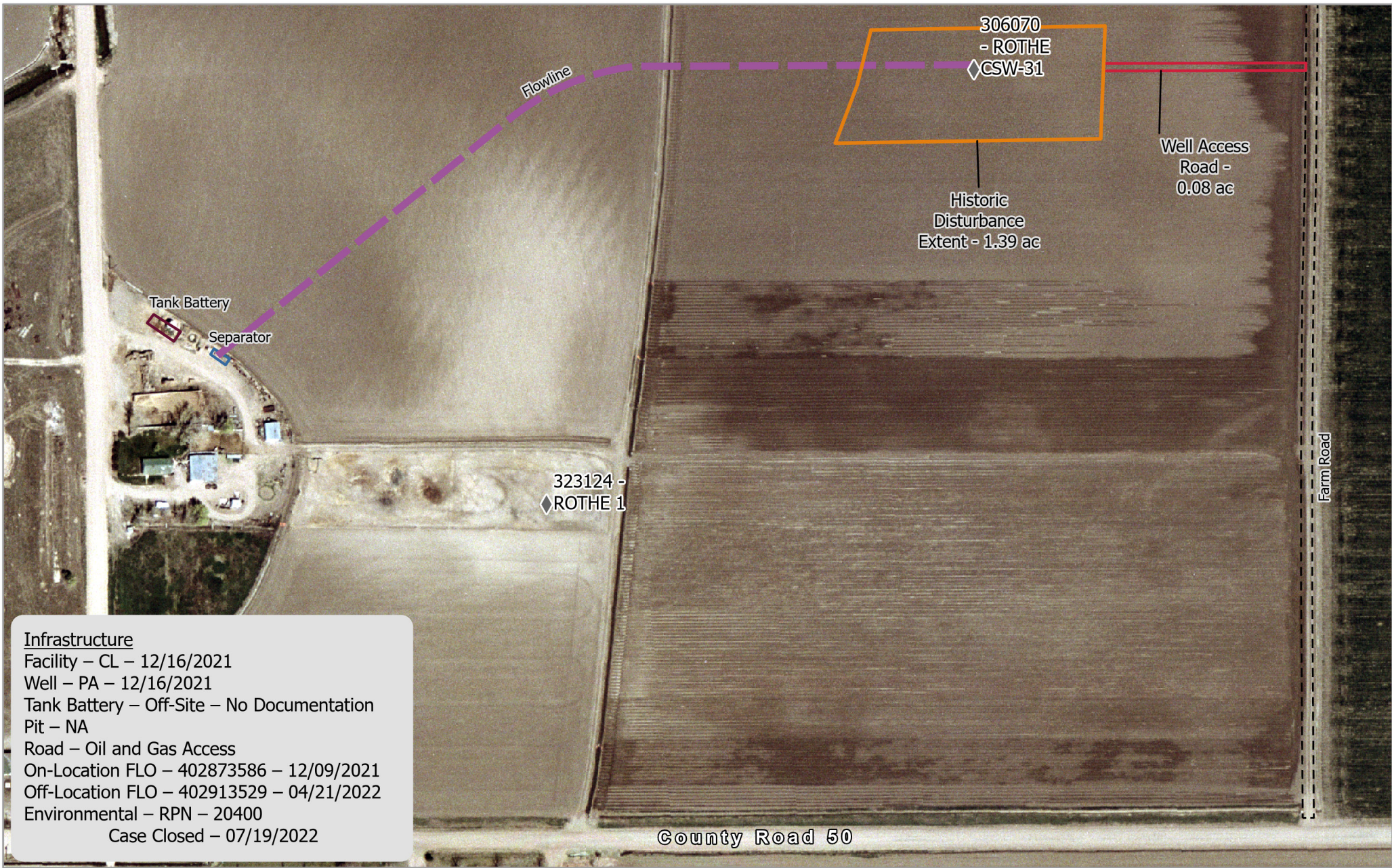
Summary Acreage Table

Description	Acres
Historic Disturbance Extent	1.47
Access Road	0.08
Flowline	Not Included
Tank Battery	Off-Site (Loc ID 463359)
Well Pad	1.39

Drone Information

Make	DJI
Model	M300/Mavic 3 Multispectral
Image Processing Software	Pix4dfields – RGB/Multispectral Imagery & Pix4dmatic – RGB Imagery
Pilot Name	Sam Streeter
Pilot FAA Certificate Number	4100157
Date of FAA Certificate Issuance	23 Dec 2023

Pre-Infrastructure Overview



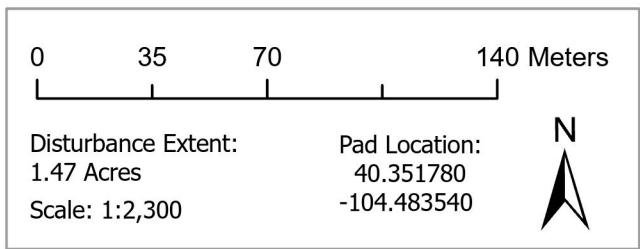
Infrastructure

Facility – CL – 12/16/2021
 Well – PA – 12/16/2021
 Tank Battery – Off-Site – No Documentation
 Pit – NA
 Road – Oil and Gas Access
 On-Location FLO – 402873586 – 12/09/2021
 Off-Location FLO – 402913529 – 04/21/2022
 Environmental – RPN – 20400
 Case Closed – 07/19/2022

**CIV - 306070- ROTHE CSW-31
 Map Extent - Pre-Infrastructure
 Overview**

Imagery: DRCOG
 Imagery Date: 13 Apr 2004
 Map Date: 05 Feb 2024
 Datum: WGS 1984 UTM Zone 13N
 POC: Soil Sage

- ◆ Wells
- Flowline
- ▭ Historic Disturbance Extent
- ▭ Well Access Road
- ▭ Tank Battery
- ▭ Separator



Service Credits - Maxar, Microsoft

Pre-Plugging Active Operations Location Overview



Infrastructure
 Facility – CL – 12/16/2021
 Well – PA – 12/16/2021
 Tank Battery – Off-Site – No Documentation
 Pit – NA
 Road – Oil and Gas Access
 On-Location FLO – 402873586 – 12/09/2021
 Off-Location FLO – 402913529 – 04/21/2022
 Environmental – RPN – 20400
 Case Closed – 07/19/2022

CIV - 306070- ROTHE CSW-31
Map Extent - Pre-Plugging Overview

Imagery: USDA NAIP
 Imagery Date: 2011
 Map Date: 05 Feb 2024
 Datum: WGS 1984 UTM Zone 13N
 POC: Soil Sage

◆ Wells	Well Access Road
▲ Remediation	Tank Battery
— Flowline	Separator
▭ Historic Disturbance Extent	

0 35 70 140 Meters

Disturbance Extent: 1.47 Acres
 Scale: 1:2,300

Pad Location: 40.351780
 -104.483540

N



Service Credits - Maxar, Microsoft

Post-Plugging and Abandonment Location Overview



Infrastructure
 Facility – CL – 12/16/2021
 Well – PA – 12/16/2021
 Tank Battery – Off-Site – No Documentation
 Pit – NA
 Road – Oil and Gas Access
 On-Location FLO – 402873586 – 12/09/2021
 Off-Location FLO – 402913529 – 04/21/2022
 Environmental – RPN – 20400
 Case Closed – 07/19/2022

CIV - 306070- ROTHE CSW-31
Map Extent - Post-Plugging Overview

Imagery: RS Orthomosaic, Maxar
 Imagery Date: 22 Jun 2023, 1 Aug 2020
 Map Date: 05 Feb 2024
 Datum: WGS 1984 UTM Zone 13N
 POC: Soil Sage

◆ Wells	▭ Historic Disturbance Extent
▲ Remediation	▭ Well Access Road
📷 Photo Points	▭ Tank Battery
— Flowline	▭ Separator

0 35 70 140 Meters

Disturbance Extent: 1.47 Acres
 Scale: 1:2,300

Pad Location: 40.351780
 -104.483540

N



Service Credits - Maxar, Microsoft

Cardinal Directional Drone Photos & Reference Area Photos

Site Investigation and Photos Date

31 Jan 2024

Drone Photo Height

350 feet

Cardinal directional photos of the site. Reference overview map.



In View – Well, Access Road, Flowline

NORTH – 40.350768 / -104.483538



In View – Well, Access Road, Flowline

EAST – 40.351773 / -104.484792



In View – Well, Tank Battery, Access Road, Flowline

EAST – 40.350823 / -104.488522



In View – Well, Access Road, Flowline

SOUTH – 40.352834 / -104.483021



In View – Well, Tank Battery, Access Road, Flowline

WEST – 40.351780 / -104.482203



In View – Well, Tank Battery, Access Road, Flowline

EAST – 40.350827 / -104.488546



In View – Well, Tank Battery, Access Road, Flowline

EAST – 40.350821 / -104.488521



In View – Tank Battery, Flowline

SOUTH – 40.351882 / -104.487671



In View – Tank Battery, Flowline

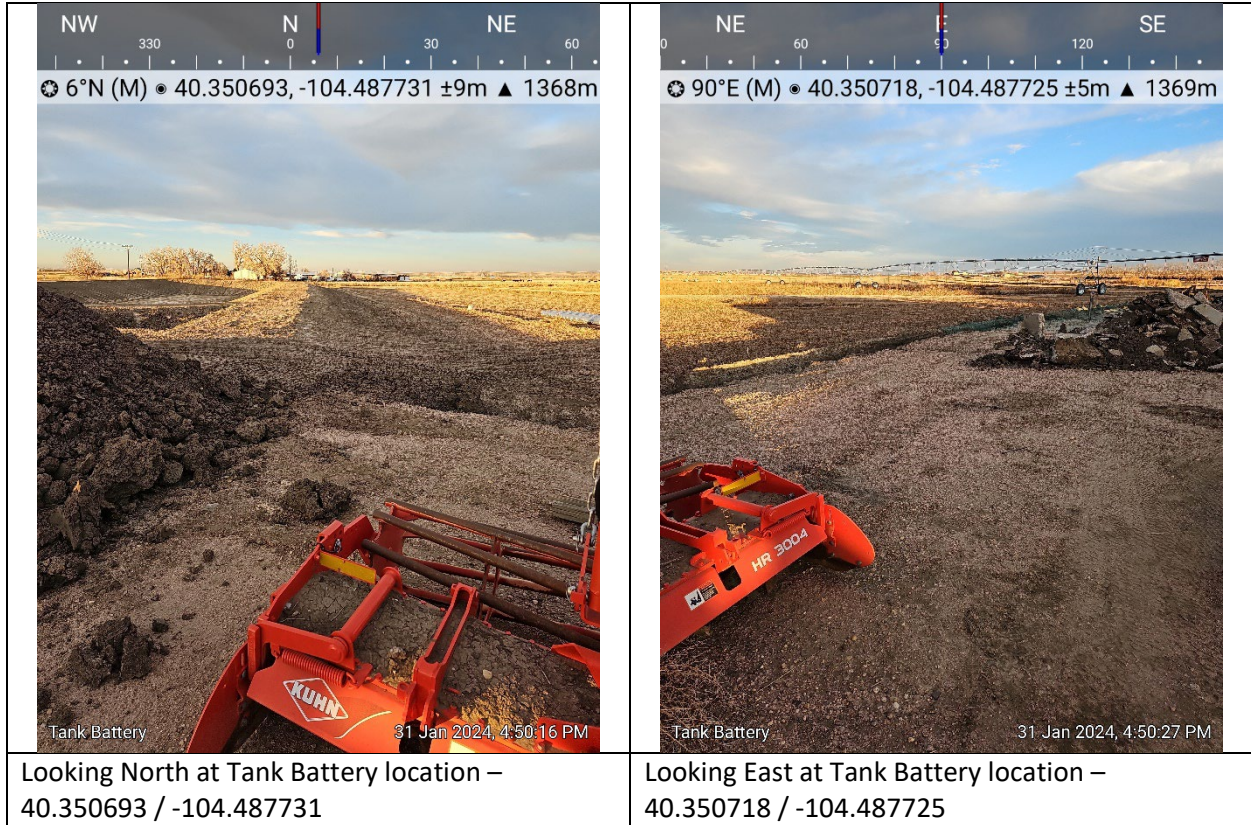
WEST – 40.350772 / -104.486764

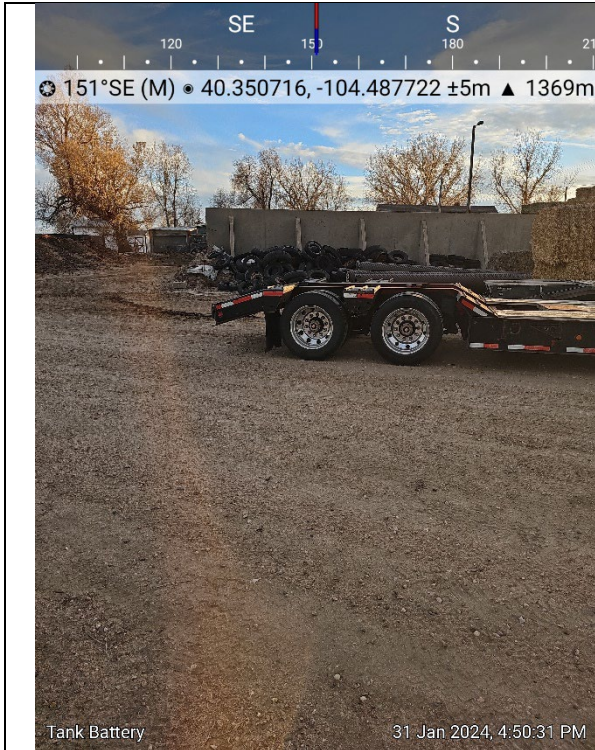
Off-Location Tank Battery Adjacent to Cropland – Handheld Photographic Evidence

Site Investigation and Photos Date

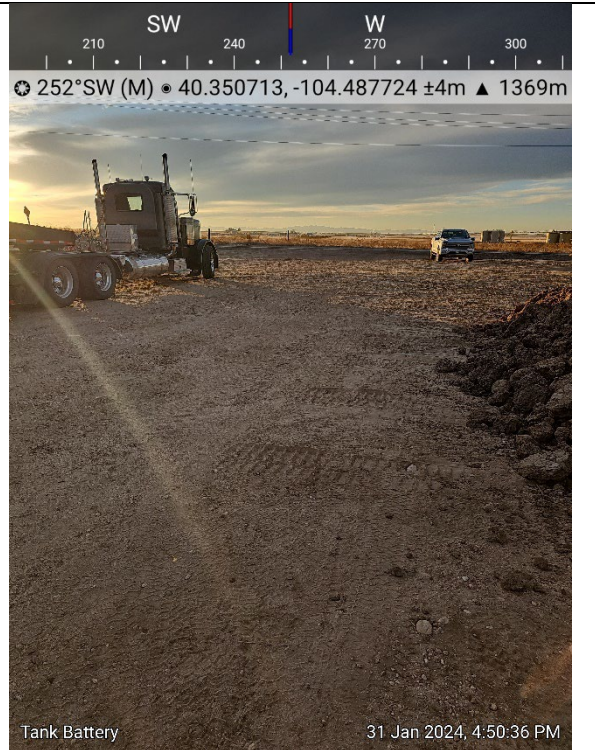
31 Jan 2024

No handheld photos taken at wellhead due to crop.





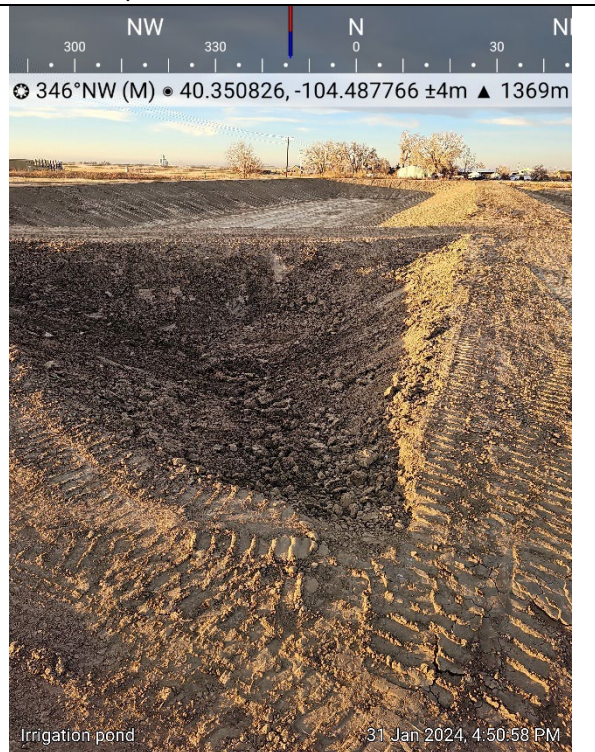
Looking South at Tank Battery location –
40.350716 / -104.487722



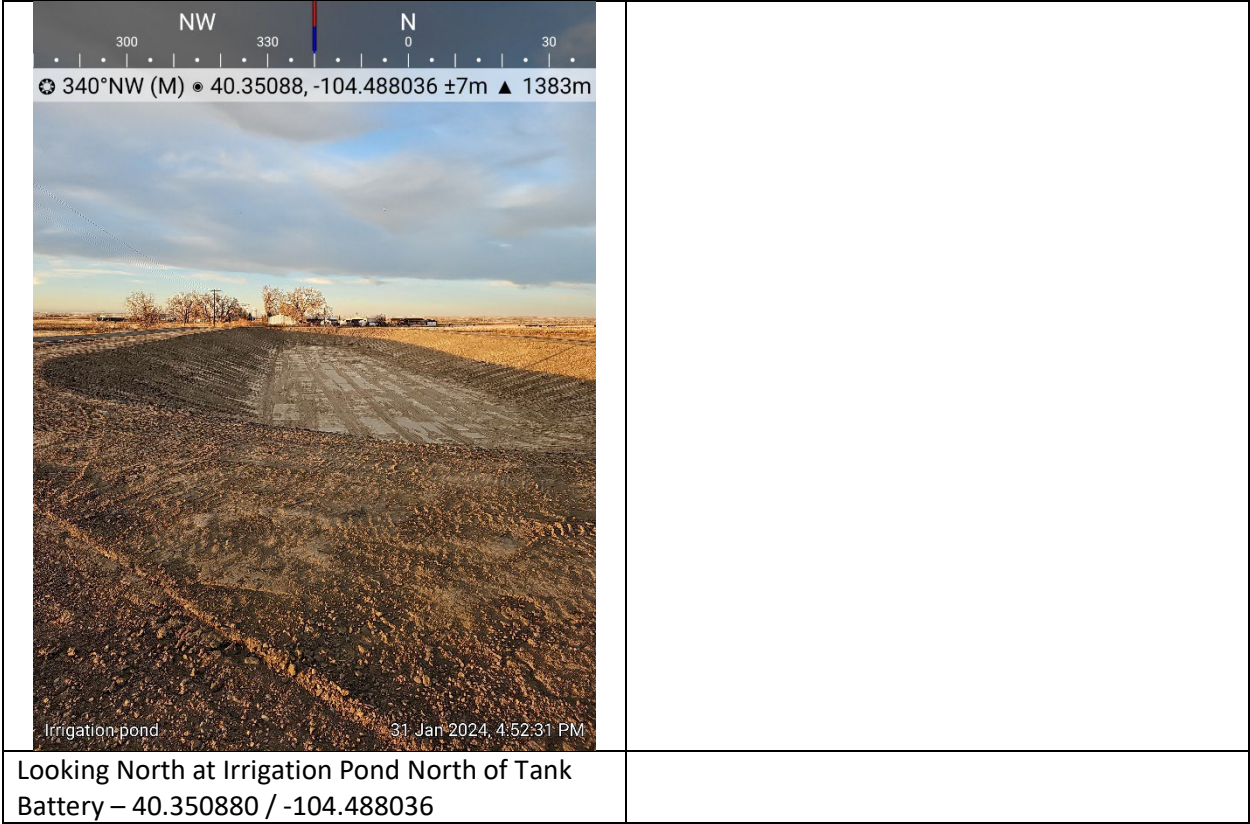
Looking West at Tank Battery location –
40.350713 / -104.487724



Ditch near Tank Battery Location –
40.350746 / -104.487716



Looking North at Irrigation Pond North of Tank
Battery – 40.350826 / -104.487766



Cardinal Directional Drone Photos Showing No Equipment Remaining

Site Investigation and Photos Date

18 Aug 2022

Drone Photo Height

300 feet

Cardinal directional photos of the site. Reference overview map.



In View – Well, Access Road, Flowline

NORTH – 40.349800 / -104.483708



In View – Well, Access Road, Flowline

EAST – 40.351571 / -104.485776



In View – Well, Access Road, Flowline

SOUTH – 40.353279 / -104.483644



In View – Well, Tank Battery, Access Road, Flowline

WEST – 40.351578 / -104.480609



In View – Well, Tank Battery, Access Road, Flowline

EAST – 40.350871 / -104.489391



In View – Tank Battery, Flowline

SOUTH – 40.352280 / -104.487724



In View – Tank Battery, Flowline

WEST – 40.350816 / -104.485889

Cardinal Directional Drone Photos & Reference Area Photos

Site Investigation and Photos Date

22 Jun 2023

Drone Photo Height

150 feet

Cardinal directional photos of the site. Reference overview map.



In View – Well, Access Road, Flowline

NORTH – 40.351179 / -104.483565



In View – Well, Access Road, Flowline

EAST – 40.351759 / -104.484037



In View – Well, Access Road, Flowline

SOUTH – 40.352629 / -104.483408



In View – Well, Access Road, Flowline

WEST – 40.351749 / -104.482772



In View – Well, Access Road, Flowline

NORTH – 40.351624 / -104.483551



In View – Well, Access Road, Flowline

EAST – 40.351804 / -104.483756



In View – Well, Access Road, Flowline

SOUTH – 40.351892 / -104.483540



In View – Well, Access Road, Flowline

WEST – 40.351762 / -104.483545



In View – Tank Battery, Flowline

EAST – 40.350860 / -104.488478



In View – Tank Battery, Flowline

SOUTH – 40.351629 / -104.487773



In View – Tank Battery, Flowline

WEST – 40.350837 / -104.486887

ATTACHMENTS

Maps and Figures

Area Maps

Pre-Infrastructure Overview

Elevation & Contours

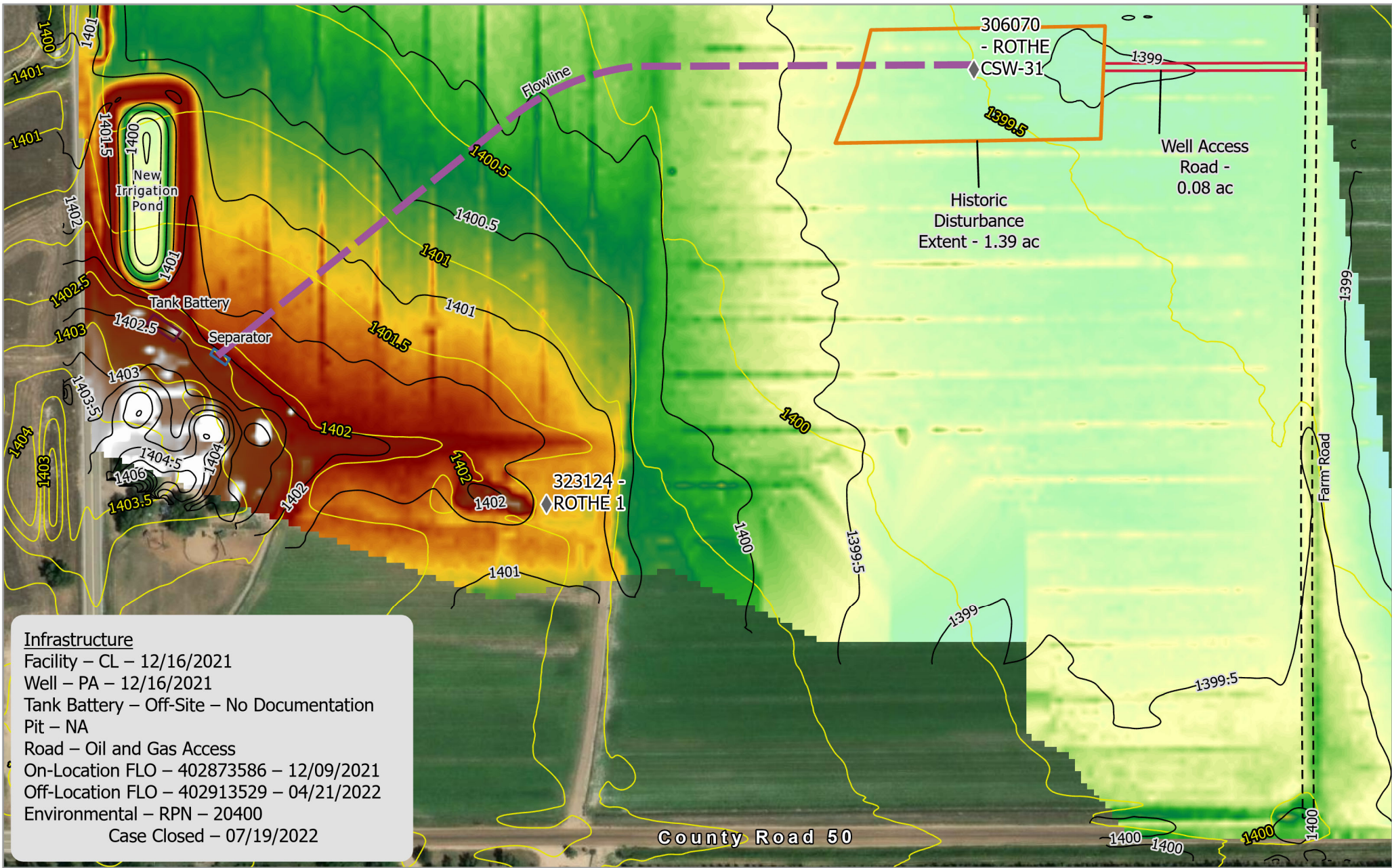
Hydrology

Year 1

Background Information

Natural Resources Conservation Service (NRCS) Map Unit Description

Reference Soil Document



Infrastructure

- Facility – CL – 12/16/2021
- Well – PA – 12/16/2021
- Tank Battery – Off-Site – No Documentation
- Pit – NA
- Road – Oil and Gas Access
- On-Location FLO – 402873586 – 12/09/2021
- Off-Location FLO – 402913529 – 04/21/2022
- Environmental – RPN – 20400
- Case Closed – 07/19/2022

**CIV - 306070- ROTHE CSW-31
Map Extent - Elevation & Contours**

Imagery: RS DSM, CWCB
 Imagery Date: 31 Jan 2024, 2018
 Map Date: 05 Feb 2024
 Datum: WGS 1984 UTM Zone 13N
 POC: Soil Sage

◆ Wells	▭ Tank Battery
~ 0.5 Meter Contours (2024)	▭ Separator
~ 0.5 Meter Contours (2018)	Elevation
— Flowline	Meters
▭ Historic Disturbance Extent	1411
▭ Well Access Road	1398

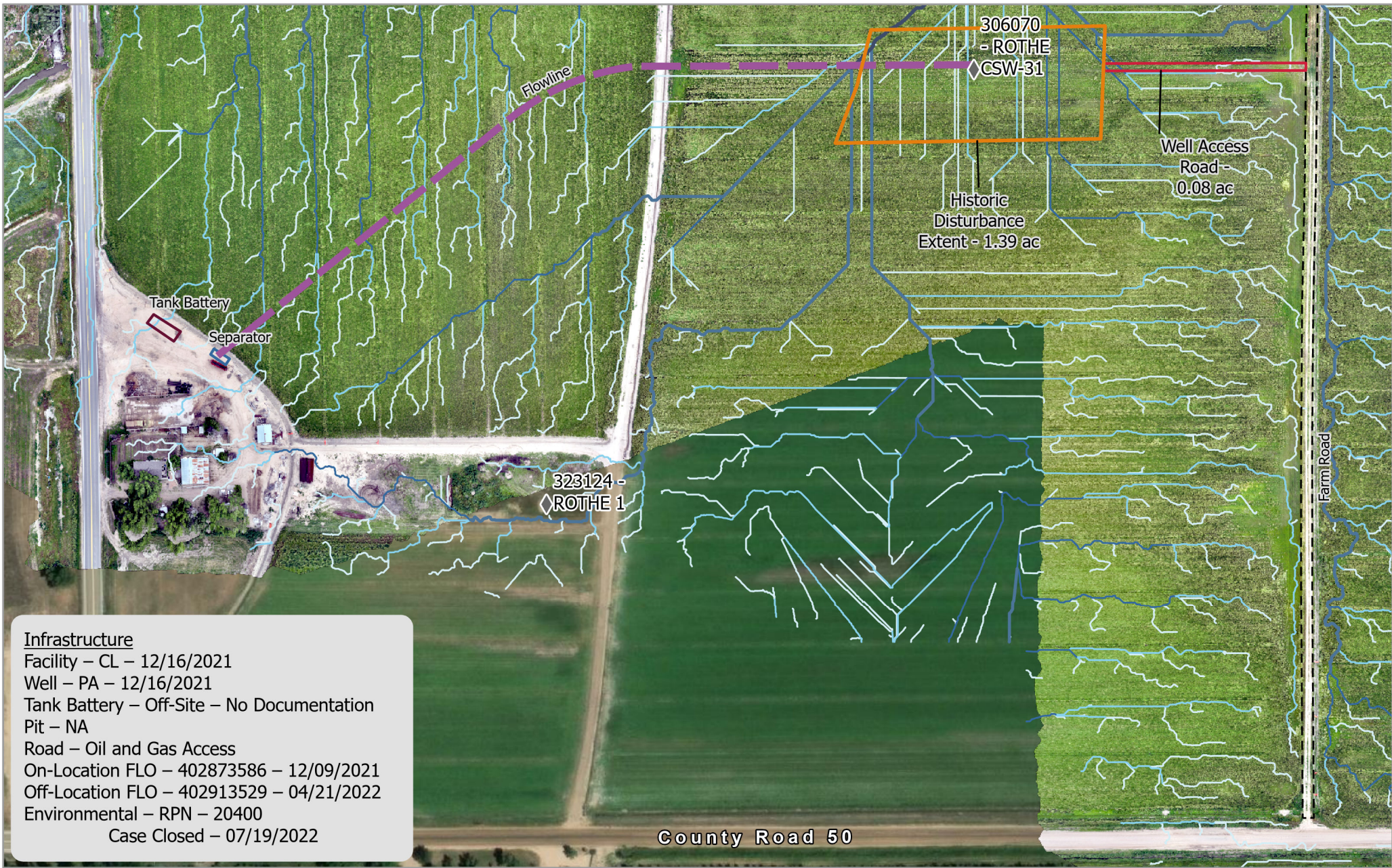
0 35 70 140 Meters

Disturbance Extent: 1.47 Acres
 Pad Location: 40.351780
 Scale: 1:2,300 -104.483540

N



Service Credits - Maxar, Microsoft



Infrastructure

- Facility – CL – 12/16/2021
- Well – PA – 12/16/2021
- Tank Battery – Off-Site – No Documentation
- Pit – NA
- Road – Oil and Gas Access
- On-Location FLO – 402873586 – 12/09/2021
- Off-Location FLO – 402913529 – 04/21/2022
- Environmental – RPN – 20400
- Case Closed – 07/19/2022

**CIV - 306070- ROTHE CSW-31
Map Extent - Hydrology**

Imagery: RS DSM, Orthomosaic, Maxar
 Imagery Date: 31 Jan 2024, 22 Jun 2023, 1 Aug 2020
 Map Date: 05 Feb 2024
 Datum: WGS 1984 UTM Zone 13N
 POC: Soil Sage

Legend	
◆ Wells	Stream Order
— Flowline	1
▭ Historic Disturbance Extent	2
▭ Well Access Road	3
▭ Tank Battery	4
▭ Separator	5

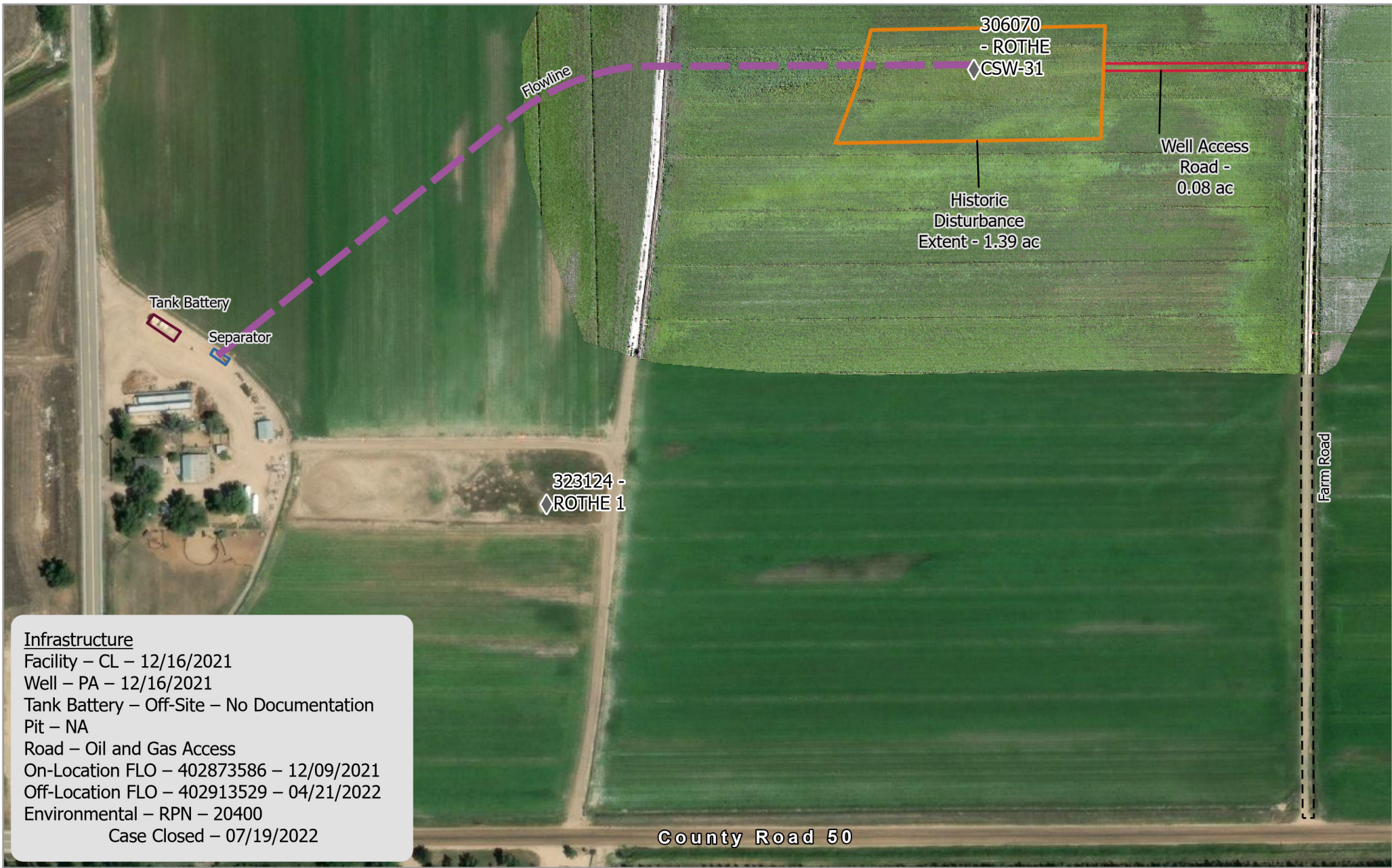
0 35 70 140 Meters

Disturbance Extent: 1.47 Acres
 Scale: 1:2,300

Pad Location: 40.351780
 -104.483540



Service Credits - Maxar, Microsoft

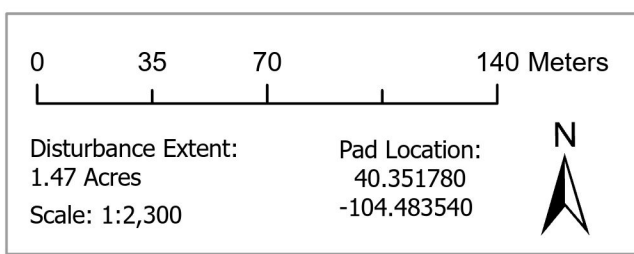


Infrastructure
 Facility – CL – 12/16/2021
 Well – PA – 12/16/2021
 Tank Battery – Off-Site – No Documentation
 Pit – NA
 Road – Oil and Gas Access
 On-Location FLO – 402873586 – 12/09/2021
 Off-Location FLO – 402913529 – 04/21/2022
 Environmental – RPN – 20400
 Case Closed – 07/19/2022

CIV - 306070- ROTHE CSW-31
Map Extent - Year 1

Imagery: RS Orthomosaic, Maxar
 Imagery Date: 18 Aug 2022, 1 Aug 2020
 Map Date: 05 Feb 2024
 Datum: WGS 1984 UTM Zone 13N
 POC: Soil Sage

- ◆ Wells
- Flowline
- ▭ Historic Disturbance Extent
- ▭ Well Access Road
- ▭ Tank Battery
- ▭ Separator



Service Credits - Maxar, Microsoft

Soil Properties

USDA Soil Description

Reference Soil Information

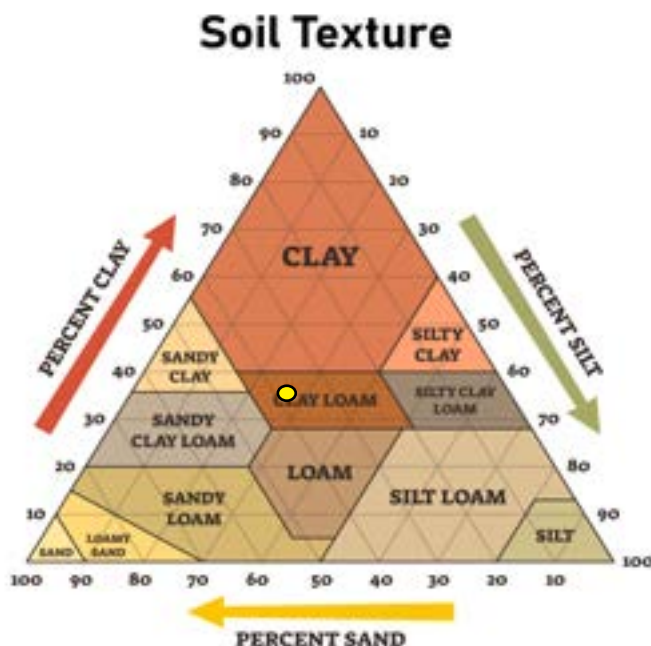
The location of the site is contained within one soil type, Nunn clay loam.

Map Unit 41 Reference Soil information - Nunn clay loam

This soil is formed from pleistocene aged alluvium and/or eolian deposits. Landform is terraces, with the Clayey Plains Ecological Site. Soils are well drained with a high water holding capacity, and slope 0-1 percent.

Depth (in)	Physical			Chemical			
	Texture	Bulk Density	Partical Size Percent sand, silt, clay	pH	EC	SAR	OM%
0-10	Clay Loam	1.39	39-27-34	7.4	0.5	0.0	1.50
10-20	Clay Loam	1.37	32-30-38	7.6	0.5	0.0	1.50
20-30	Clay Loam	1.41	36-28-36	7.8	0.5	0.0	1.20
30-40	Clay Loam	1.51	46-31-22	8.4	0.5	0.1	0.31
40-50	Loam	1.53	47-31-22	8.4	0.5	0.1	0.25
50 +	Loam	1.54	48-28-24	8.5	0.5	0.1	0.25

Soil Texture Triangle reflect the 0-10 in depth Erosion Potential (10 inches)



- K Factor, Whole soil - .32. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

- Wind Erodibility Group – 6. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

There is a general relationship of soil bulk density to root growth based on soil texture. Bulk densities ideal for root growth are less than 1.60 g/cc for sandy textures, less than 1.40 g/cc for loamy textures, and less than 1.10 g/cc for clayey textures. Bulk densities that restrict root growth are greater than 1.80 g/cc for sandy textures, 1.65 g/cc for loamy textures, and 1.47 g/cc for clayey textures.