COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Bennett Pit	**MINE/PROSPECTING ID#:** M-2016-085	**MINERAL:** Sand and gravel	**COUNTY:** Weld
INSPECTION TYPE: Multi Person Inspection	**INSPECTOR(S):** Peter Hays	**INSP. DATE:** May 21, 2020	**INSP. TIME:** 10:00
OPERATOR: Northern Colorado Constructors	**OPERATOR REPRESENTATIVE:** Chris Zadel, J.C. York	**TYPE OF OPERATION:** 112c - Construction Regular Operation	

REASON FOR INSPECTION: Citizen Complaint	**BOND CALCULATION TYPE:** None	**BOND AMOUNT:** $1,005,627.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Clear	**INSPECTOR'S SIGNATURE:** 	**SIGNATURE DATE:** June 5, 2020

The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.

INSPECTION TOPIC: Hydrologic Balance

PROBLEM: The complainant is concerned the one (1) 36" CMP culvert in the middle of the access road and the two (2) 20" HDPE culverts are not adequately sized for a 100-year rainfall event.

CORRECTIVE ACTIONS: Please provide a hydrologic analysis showing the 100-year, 24-hour storm rainfall-runoff results (including support for the selected storm depth and runoff parameter selection such as SCS curve numbers). The analysis must include pond routing, if appropriate, and culvert sizing analyses with the proper consideration given to tailwater conditions (especially for the two 20-inch culverts, but likely for the 36-inch culvert as well) for the access road from WCR 23 to the mining operation for Division review.

Additionally, the Division will require the Operator to provide a monitoring and maintenance plan for the culverts to prevent the potential build-up of sediment, vegetation and other debris.

CORRECTIVE ACTION DUE DATE: 8/04/20

OBSERVATIONS

The Bennett Pit was inspected by Peter Hays with the Division of Reclamation, Mining and Safety (Division/DRMS) in response to a citizen complaint (CT-1) received by the Division on May 11, 2020 from Mr. Rob Lousberg. The complaint form was forwarded to the Operator on May 12, 2020. A copy of the form is attached for reference. Three (3) maps based on the latest available image from Google Earth Pro and the observations from this inspection are attached for reference.

Mr. Chris Zadel with Northern Colorado Constructors, Inc. (NCCI), Mr. J.C. York with J&T Consulting, Inc., representing the Operator, Mr. Rob Lousberg, complainant, and Mr. Jorge Vidal with the Colorado Division of Water Resources were present during the inspection.

The complaint form submitted by Mr. Lousberg stated the following items:

- NCCI built an entrance road through wetlands raising the road up approximately six (6) feet creating a dam with three (3) culverts thirty six inches (36) in diameter or less.
- The culverts will be responsible to drain a large area during a storm event.
- The culverts will plug with cattails and other debris potentially raising the water table.
- The slurry wall is raising the water table potentially flooding Mr. Lousberg's property.

The complaint investigation started with an inspection of the south field on the Lousberg property.

Slurry Wall related flooding - Ditch Seepage:
During the inspection, Mr. Lousberg stated he was concerned the slurry wall was raising the groundwater level on his property causing the ditch running through his property to seep water from the ditch banks.

Water as observed seeping from the base of the ditch, approximately one (1) to two (2) feet from the ground elevation, along the south side of the ditch. Puddles of standing water were observed next to the ditch and adjacent to a dirt road. Mr. Lousberg stated the ditch has seeped water in the past, but not to this extent.

During the inspection, Mr. Vidal stated the ditch company was sending the maximum allowed flow of 17 CFS through the ditch. The Ditch Company typically runs the ditch at 10 CFS at this time of year.

Based on the observations from this inspection and information regarding additional water being sent through the ditch by the Ditch Company earlier than usual. The Division does not believe sufficient evidence exists to conclude the mining operation is causing the ditch water to seep out of the base of the ditch embankment.

Slurry Wall related flooding – South Field:
During the inspection, Mr. Lousberg stated he was concerned the slurry wall was raising the groundwater level on his property causing water to pond in his field.

Water was observed in the southern portion of the south field during the inspection. A pond area containing several inches of water along with wetland vegetation, soft rushes, were observed during the inspection. Mr.

Lousberg stated the field ponds water in the summer, but not typically during this time of year.

The presence of the wetland vegetation indicates the field has been saturated over the past few years, since the rush species would typically take several years to establish to the extent observed during the inspection.

The Slurry Wall Assessment dated October 12, 2017 provided by the Operator during the permitting process predicted a mounding affect west of the slurry wall at the location of the Lousberg property in the amount of one (1) foot. The report states the model results indicate groundwater levels will likely rise into the abandoned channel (slough) located on the west side of the pit. The increased water levels in the abandoned channel will not cause any additional problems because the increase is within normal expected water level fluctuation of approximately two (2) to three (3) feet and because any additional groundwater that comes to the surface will likely travel northward and recharge in the shadow of the pit (northwest corner).

Based on a review of the Google Earth Pro images available for the Lousberg property, the field typically contains areas of saturated soils or ponded water along the southern portion of the field. A series of maps based on the Google Earth Pro images with the areas of saturated or ponded water indicated with a polygon are attached. The field is saturated or contains ponded water in the 2012, 2013, two (2) 2014, 2015, 2017 and 2019 images. The best example of the typical field conditions appears to be the 2014 image showing the avoidance of the wet area in the southern portion of the field while planting a crop. Most of these images predate the issuance of the mining permit and the installation of the slurry wall.

The Operator has been collecting groundwater elevation data for the site since 2017. A copy of the most recent groundwater data collected on the morning of the inspection was provided by the Operator following the inspection. The closest monitoring well to the field is MW-RS. Monitoring data for this well is only available from April 2020 through May of 2020. The data indicates an increase in the groundwater elevation from 4.60 feet below ground elevation in April to 2.68 feet on May 21, 2020, an increase of 1.92 feet.

The groundwater data indicates a similar increase in the groundwater elevation for all of the monitored wells, including the Lewis wells which were predicted to be in the shadow area (reduced groundwater elevation) in the Slurry Wall Assessment report. The fact that all of the monitored wells are indicating similar increases in the groundwater elevation indicates the increases are season fluctuation and not caused by the slurry wall. Copies of the groundwater data and the monitoring well location map are attached for reference.

The Division will continue to require the Operator to collect and report the groundwater elevation data to the Division with the annual report. During the inspection, the Operator stated a survey crew would be on-site in a few weeks to survey the slurry wall. The Division recommends the elevation of the Lousberg south field be surveyed to allow the groundwater data collected at MW-RS to be correlated with the field elevation.

The Division does not believe sufficient evidence exists to conclude the mining operation is causing the ponding water in the south field of the Lousberg property based on the landowner's comments, the presence of establish wetland vegetation in the field, the presence of the slough between the slurry wall and the Lousberg property to relieve the groundwater mounding effect and the Google Earth images of ponded/saturated conditions in the field historically. Additionally, the field located between the Lousberg south field and the slough was dry at the time of the inspection, which the Division would expect to be saturated if groundwater levels were higher than the typical seasonal elevations.

Access Road Culverts:
The culverts associated with the access road were observed during the inspection. One (1) thirty-six (36) inch diameter culvert was observed at approximately the middle of the slough under the access road. The culvert appeared to be functioning property. The Operator has installed a ditch from the east side of the slough to the west end of the access road to allow water to flow to the west from the slough. Two (2) twenty (20) inch diameter HDPE pipes were observed at the end of the access road. Ponded water was observed on both sides of the culverts inlets and outlets. The culverts were estimated to be seventy-five (75) percent full and appeared to be undersized for the amount of water required to be conveyed under the west end of the access road.

As cited as a problem, the Division will require the Operator to provide a hydrologic analysis for the culverts by the corrective action date. Additionally, the Division will require the Operator to provide a monitoring and maintenance plan for the culverts to prevent the potential build-up of sediment, vegetation and other debris.

Availability Of Records:
The focus of this inspection was to investigate the concerns detailed in the complaint form. Based on the limited observation of the site beyond the complaint topics, the operation appeared to being conducted in accordance with the approved Mining Plan. The Operator is current with the required annual submittals of the annual report, fee, map and groundwater monitoring data.

Financial Warranty:
On April 9, 2020, the Division issued a surety increase (SI-01) to allow mining disturbance in Phase 2 (South Cell). The total required financial warranty for the site is $1,998,744.00. The Operator submitted the additional $993,117.00 as a rider to the existing corporate surety. The rider is in acceptable form and will be approved by the Division as soon as possible.

Gen. Compliance With Mine Plan:
The site was operational during the inspection. As stated above, the focus of the inspection was to investigate the concerns identified in the complaint form. The final portion of the slurry was being installed in the southwest corner of the permit boundary. The majority of the slurry wall was completed last year starting at the southern side of the permit boundary and working clockwise. The installation of the final portion of the slurry wall was delayed by winter. The Operator indicated the leak test for the slurry wall would begin soon.

Haul trucks were observed transporting material from Phase 1 (North Cell) to the processing area located west of Phase 2 (South Cell). The processing plant was not operational at the time of the inspection according to the Operator, but was expected to be operational soon. A wall of straw bales was constructed west of the processing plant to mitigate noise.

The Division will conduct a specific monitoring inspection of the site soon to observe the status of the site.

Right of Entry:
The legal right of entry is current and valid according to the Division's file.

Signs and Markers:
The required entrance sign and boundary markers were installed in accordance with Rule 3.1.12.

Topsoil:
Stockpiles of topsoil were observed during the inspection. The Division will conduct a monitoring inspection of the site soon to better document the status of the site.

GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

(AR) RECORDS---------- Y	(FN) FINANCIAL WARRANTY-------- Y	(RD) ROADS---------- N
(HB) HYDROLOGIC BALANCE---------- PB	(BG) BACKFILL & GRADING---------- N	(EX) EXPLOSIVES--------- N
(PW) PROCESSING WASTE/TAILING---- N	(SF) PROCESSING FACILITIES------- Y	(TS) TOPSOIL---------- Y
(MP) GENL MINE PLAN COMPLIANCE- Y	(FW) FISH & WILDLIFE---------- N	(RV) REVEGETATION---- N
(SM) SIGNS AND MARKERS---------- Y	(SP) STORM WATER MGT PLAN---- N	(RS) RECL PLAN/COMP-- N
(ES) OVERBURDEN/DEV. WASTE--------- N	(SC) EROSION/SEDIMENTATION--- N	(ST) STIPULATIONS------- N
(AT) ACID OR TOXIC MATERIALS------- N	(OD) OFF-SITE DAMAGE----------N	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

Inspection Contact Address
Chris Zadel
Northern Colorado Constructors
9075 Weld County Road 10
Fort Lupton, CO 80621

Enclosure – Inspection Maps, Lousberg south field maps, groundwater monitoring data from May 21, 2020, monitoring well location map.

Ec: Jared Ebert, DRMS
J.C. York, J&T Consulting, Inc.
Rob Lousberg, Complainant
Jorge Vidal, DWR

PHOTOGRAPHS

View of seepage from ditch at curve in the ditch looking west

View of seepage from ditch looking west

View of ponded water in Lousberg south field from the southeast corner of field looking west

View of ponded water in Lousberg south field from the southeast corner of field looking north

View of wetland vegetation in Lousberg south field looking south

View of slough from the access road looking south

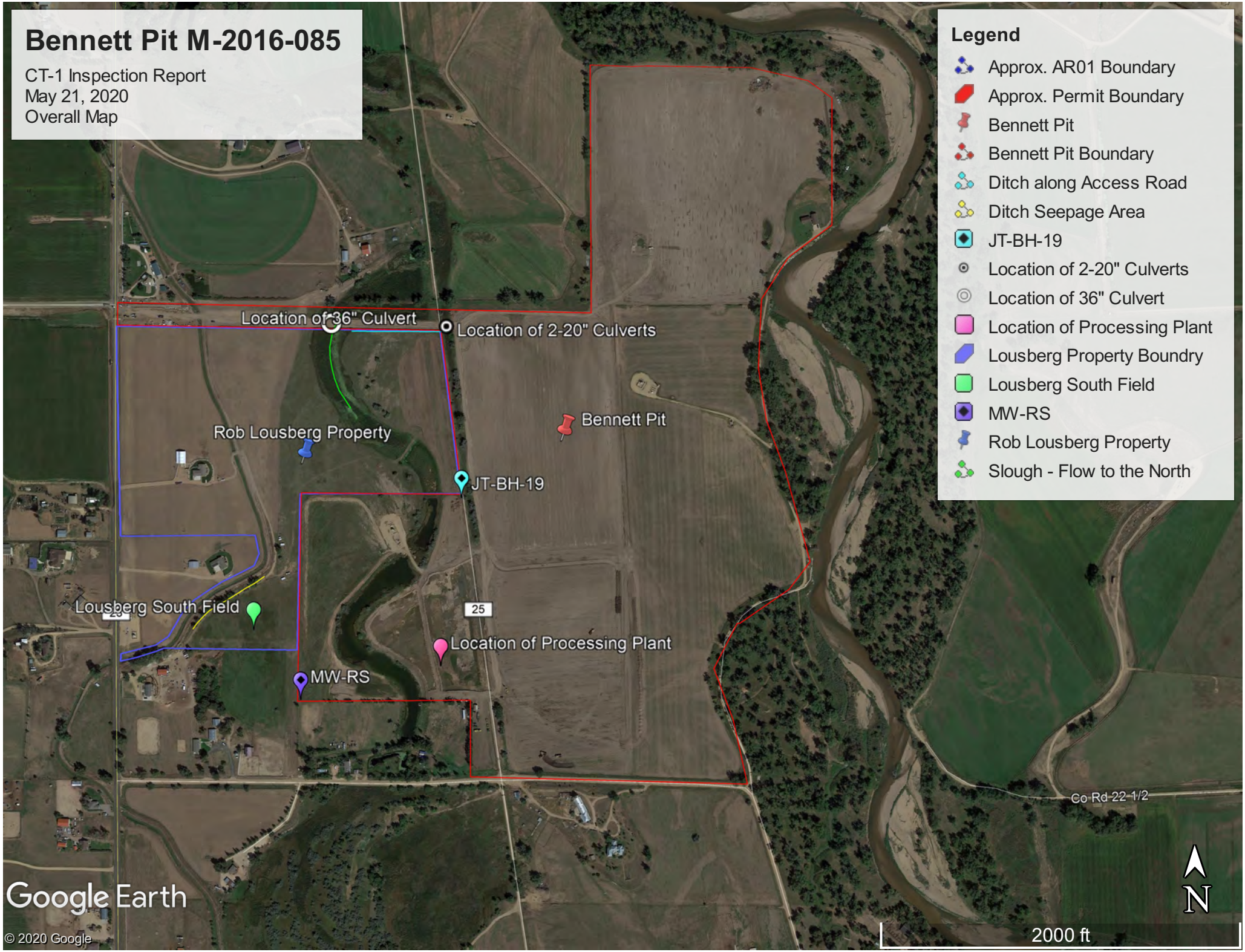
View of the 36" diameter culvert inlet

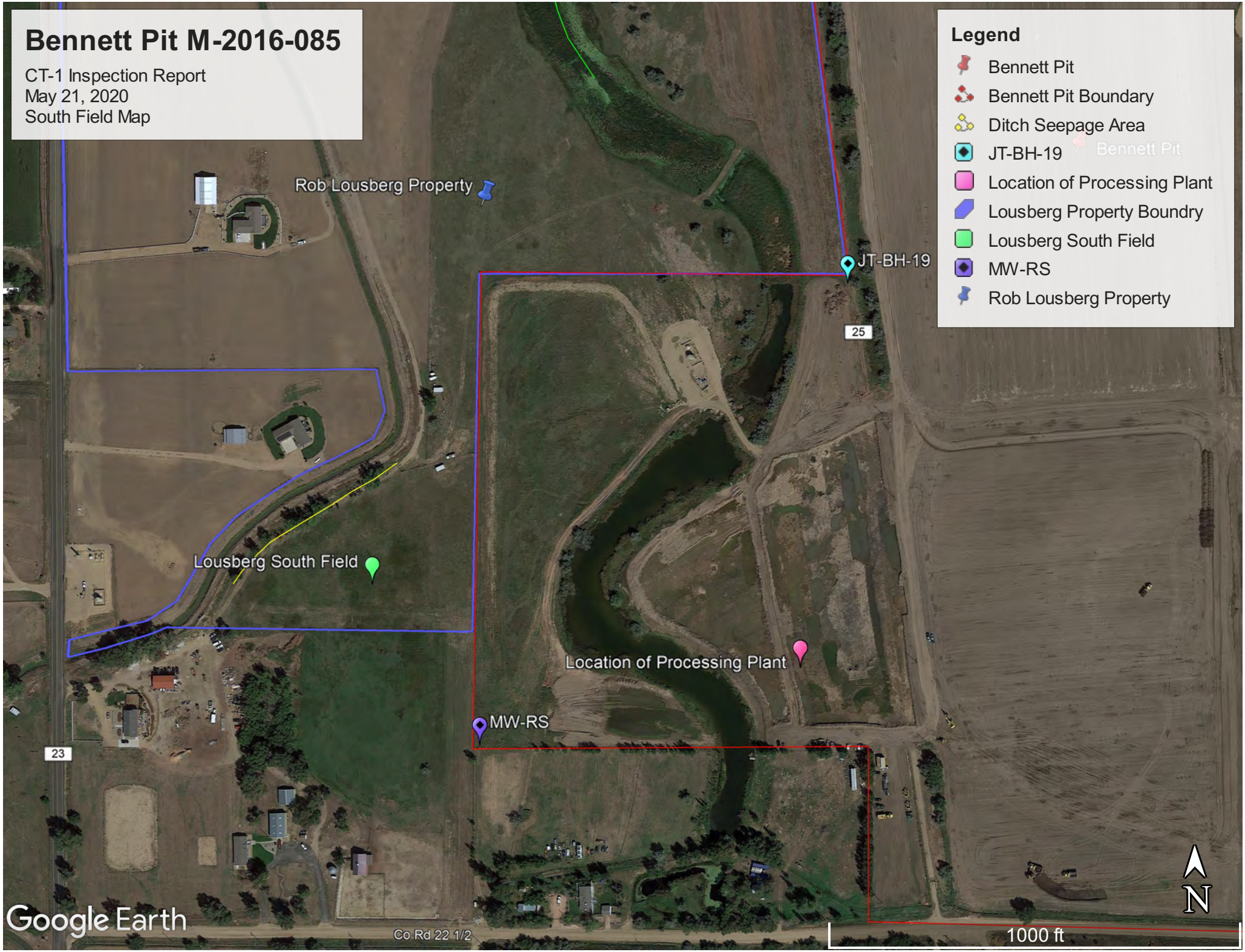
View of ditch along south side of access road from the 36" culvert looking east

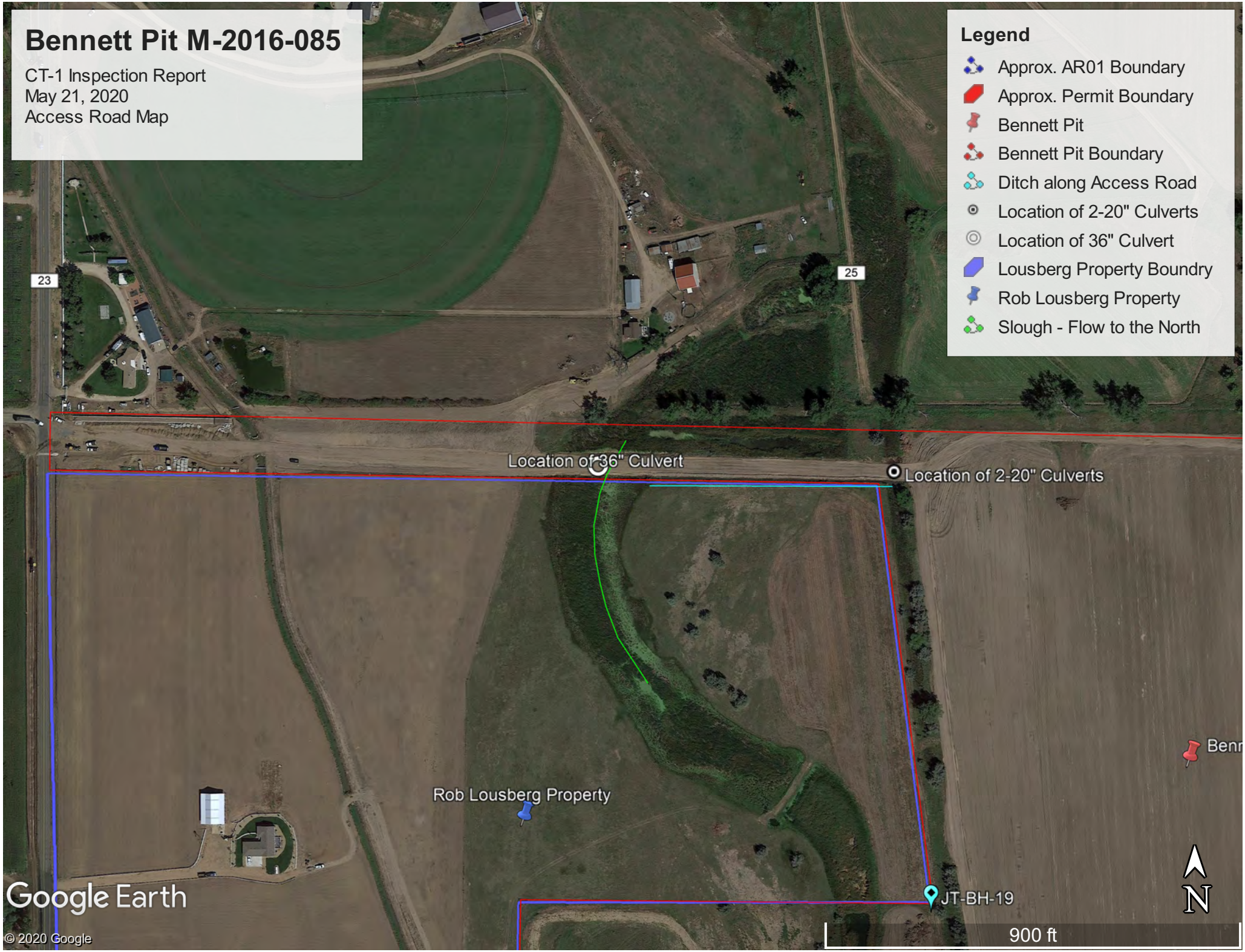
View of the inlets for the 2-20" culverts

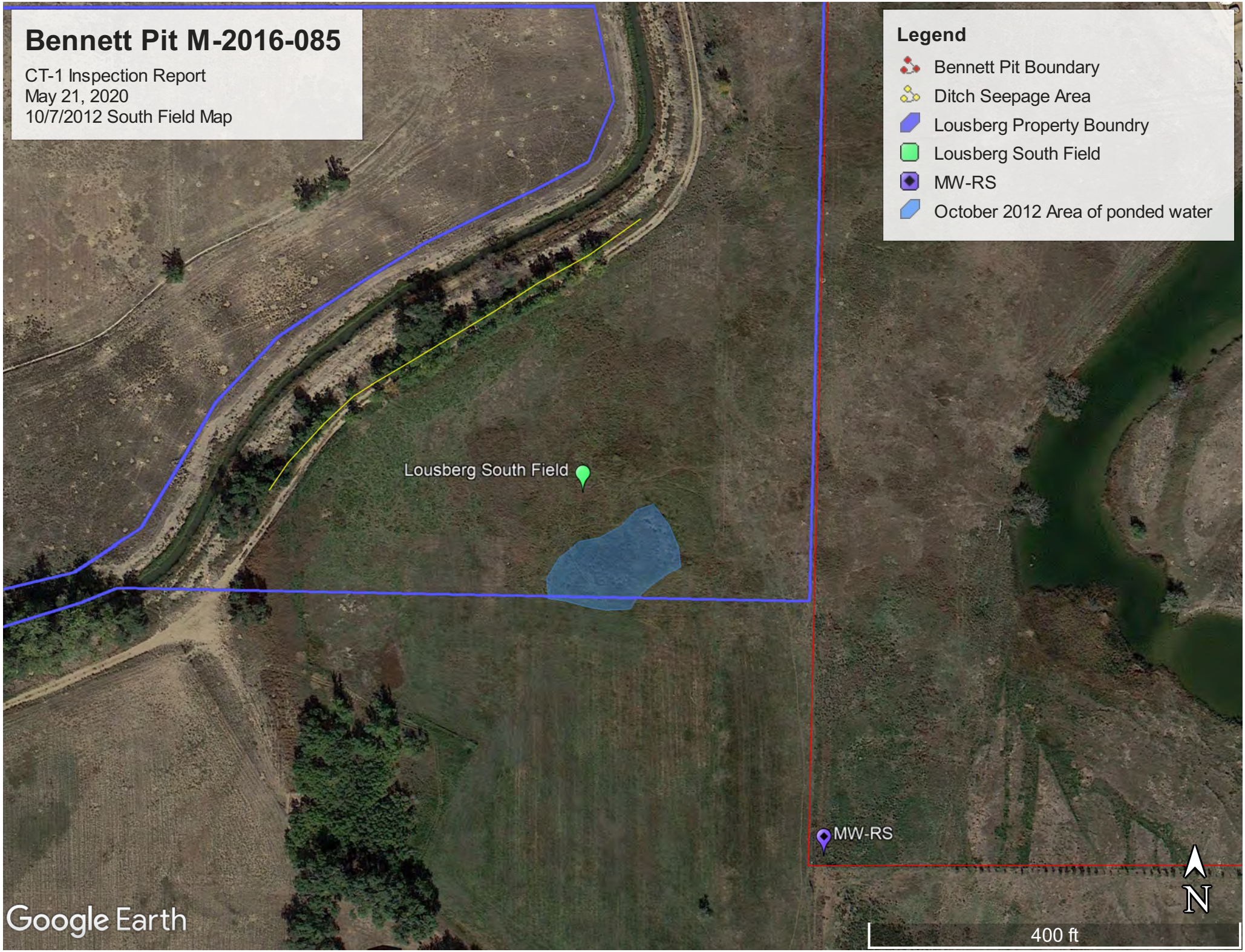
View of the outlets for the 2-20" culverts

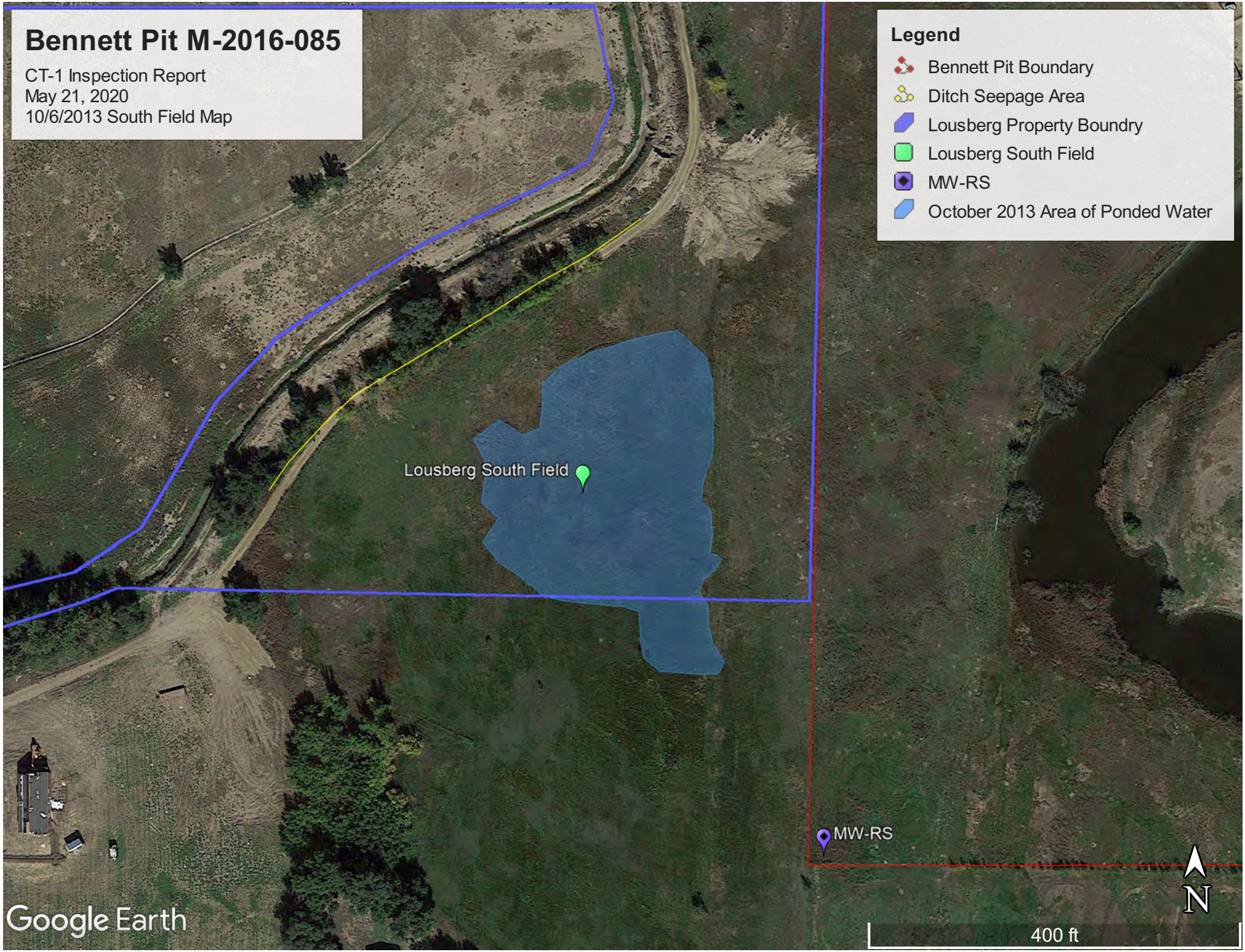
View of field (dry) between Lousberg south field and slough looking east from the fence line between the properties

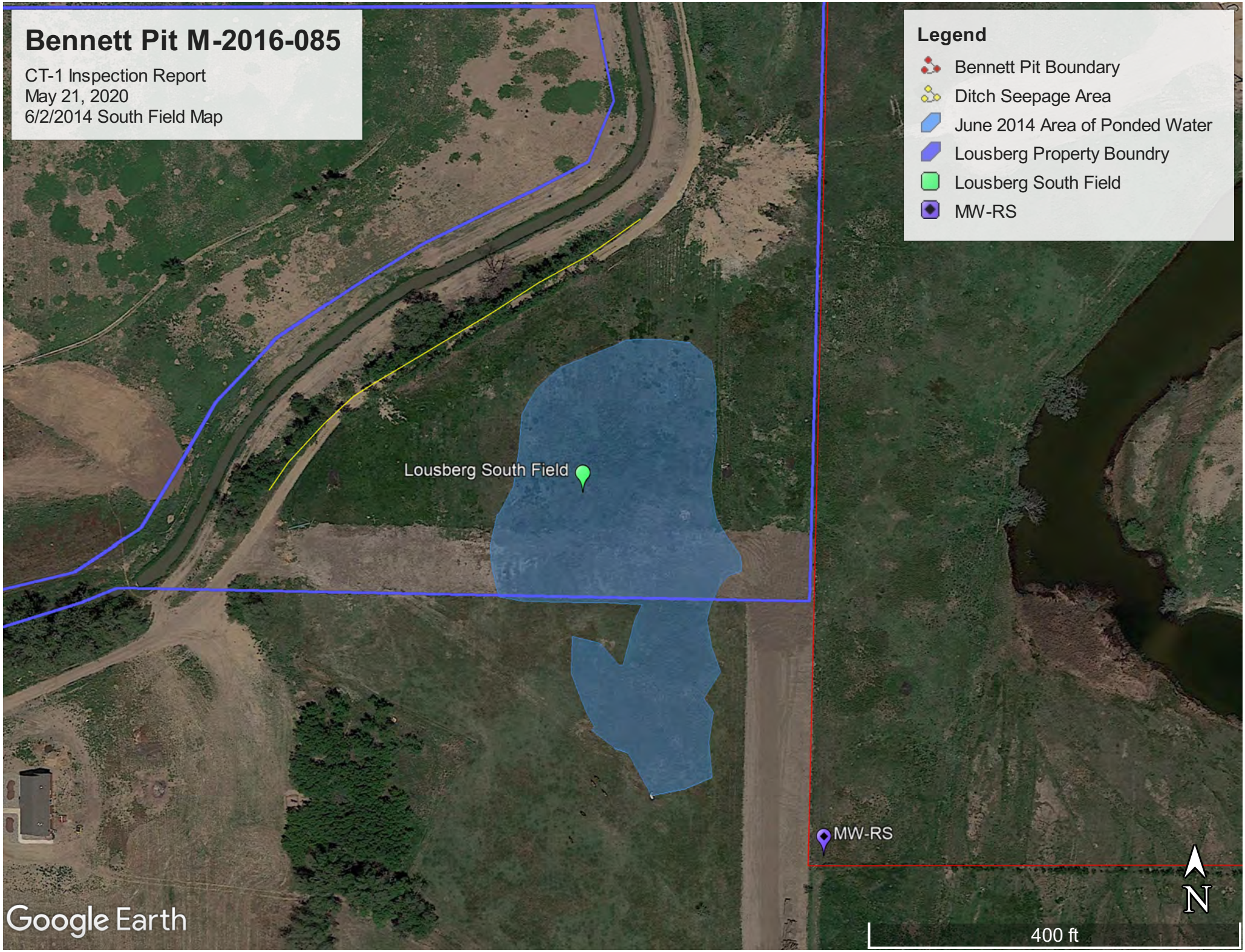

Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
Overall Map
Legend
Approx. AR01 Boundary
Approx. Permit Boundary
Bennett Pit
Bennett Pit Boundary
Ditch along Access Road
Ditch Seepage Area
JT-BH-19
Location of 2-20" Culverts
Location of 36" Culvert
Location of Processing Plant
Lousberg Property Boundry
Lousberg South Field
MW-RS
Rob Lousberg Property
Slough - Flow to the North
Location of 36" Culvert
Location of 2-20" Culverts
Rob Lousberg Property
Bennett Pit
JT-BH-19
Lousberg South Field
25
Location of Processing Plant
MW-RS
Co Rd 22 1/2
Google Earth
© 2020 Google
N
2000 ft

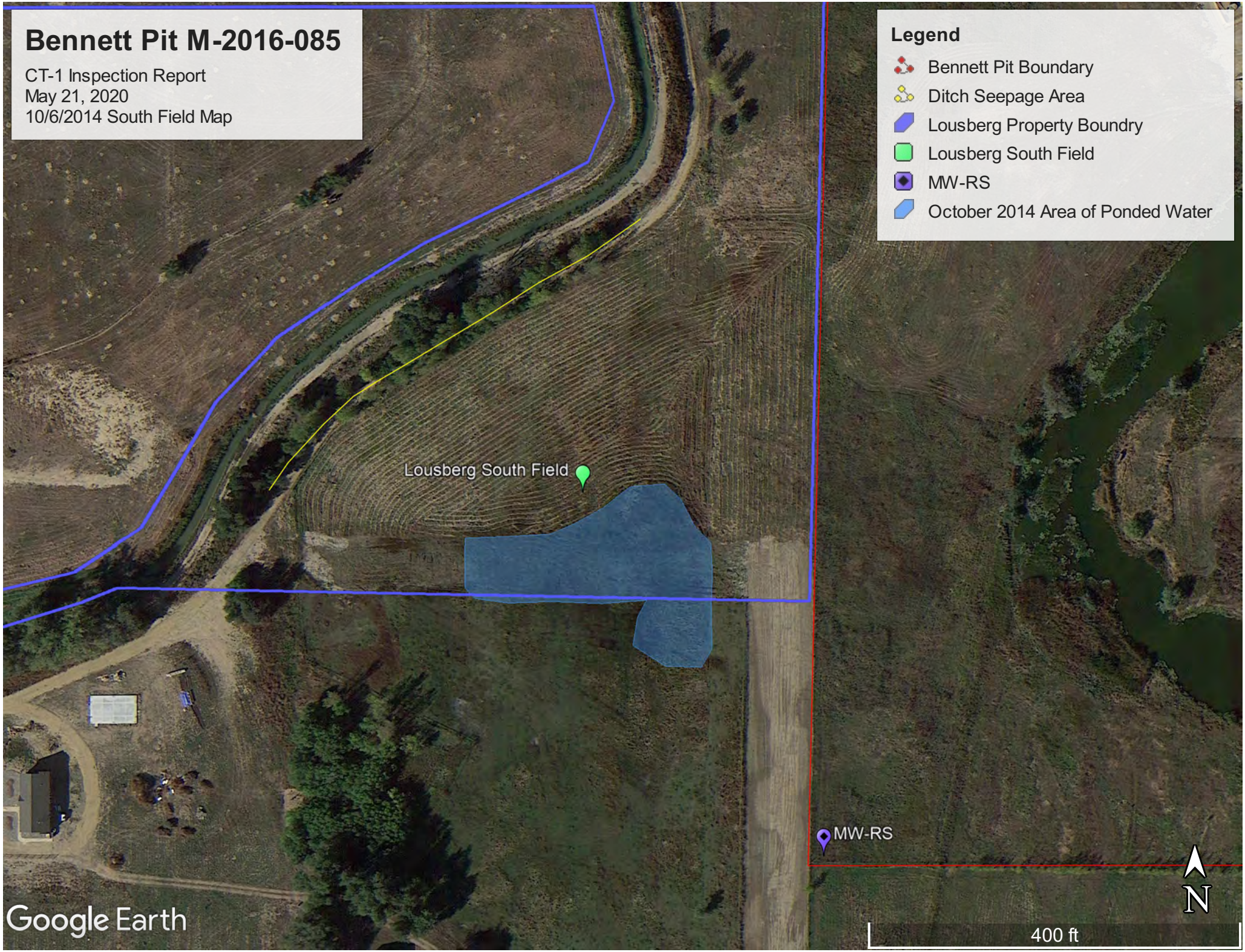

Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
South Field Map
Legend
Bennett Pit
Bennett Pit Boundary
Ditch Seepage Area
JT-BH-19
Location of Processing Plant
Lousberg Property Boundry
Lousberg South Field
MW-RS
Rob Lousberg Property
Rob Lousberg Property
JT-BH-19
25
Lousberg South Field
Location of Processing Plant
MW-RS
23
Google Earth
Co Rd 22 1/2
1000 ft
N


Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
Access Road Map
Legend
Approx. AR01 Boundary
Approx. Permit Boundary
Bennett Pit
Bennett Pit Boundary
Ditch along Access Road
Location of 2-20" Culverts
Location of 36" Culvert
Lousberg Property Boundry
Rob Lousberg Property
Slough - Flow to the North
23
25
Location of 36" Culvert
Location of 2-20" Culverts
Rob Lousberg Property
JT-BH-19
N
900 ft
Google Earth
© 2020 Google


Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
10/7/2012 South Field Map
Legend
Bennett Pit Boundary
Ditch Seepage Area
Lousberg Property Boundry
Lousberg South Field
MW-RS
October 2012 Area of ponded water
Lousberg South Field
MW-RS
N
400 ft
Google Earth

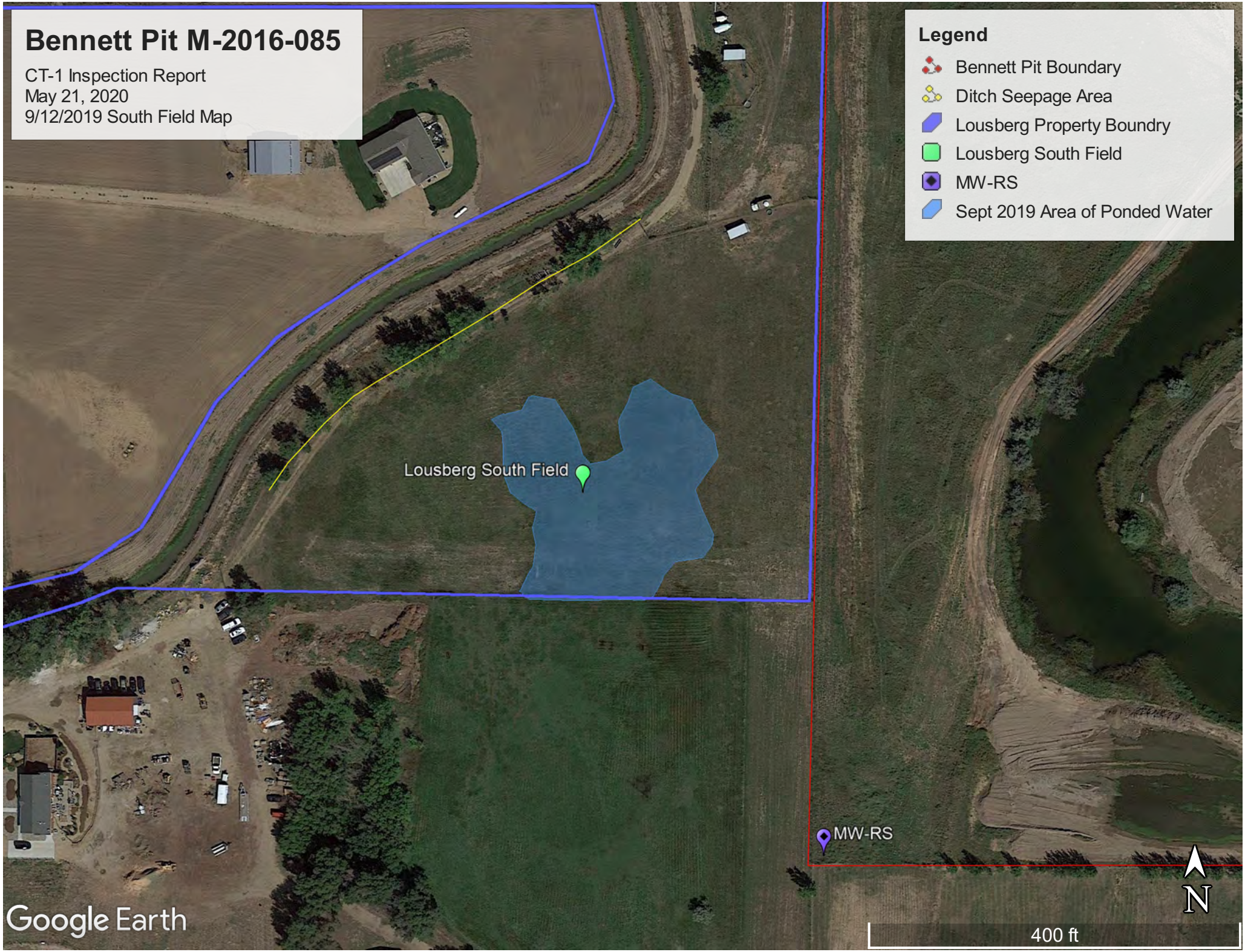

Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
10/6/2013 South Field Map
Legend
Bennett Pit Boundary
Ditch Seepage Area
Lousberg Property Boundry
Lousberg South Field
MW-RS
October 2013 Area of Ponded Water
Lousberg South Field
MW-RS
Google Earth
N
400 ft

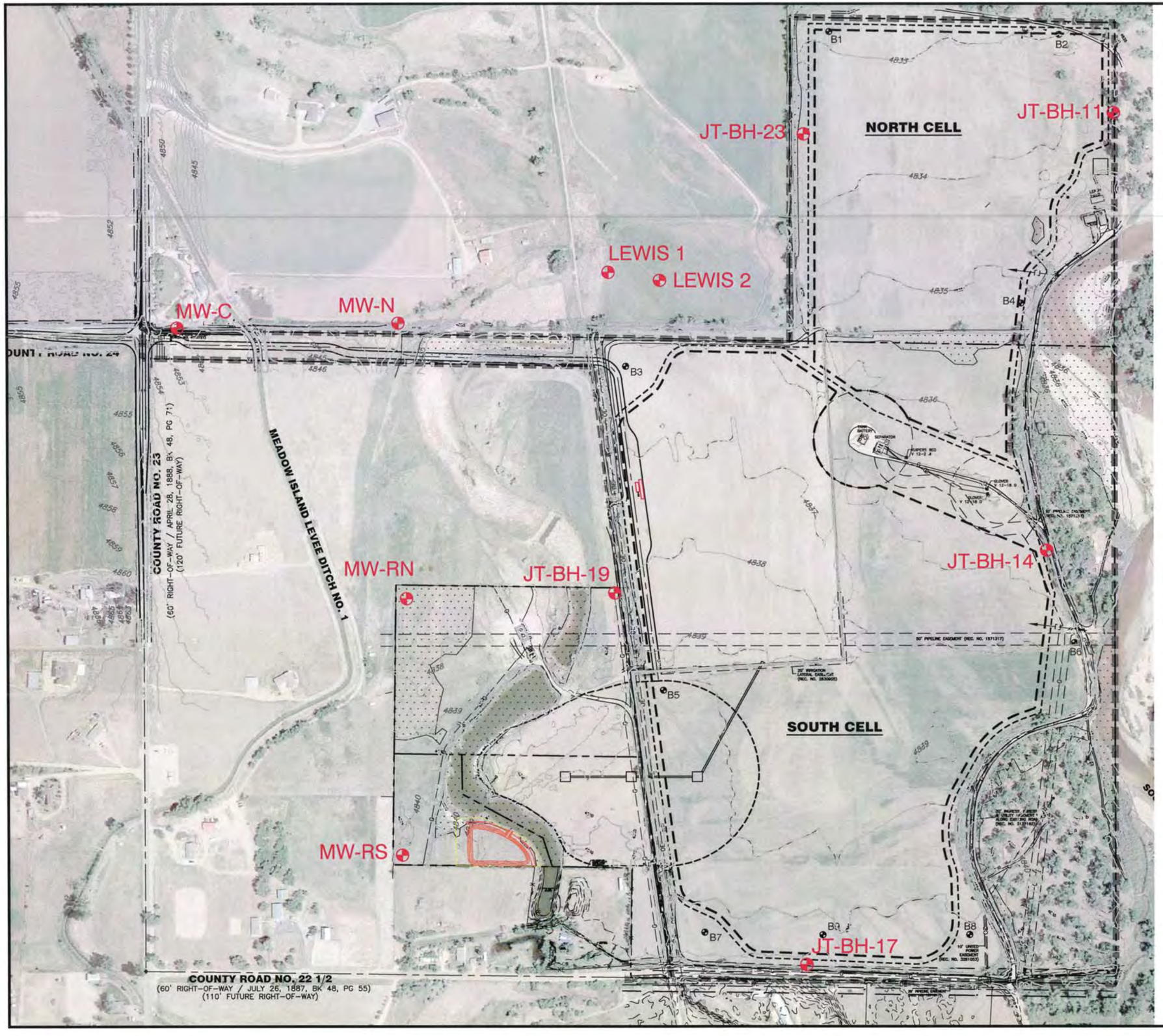

Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
6/2/2014 South Field Map
Legend
Bennett Pit Boundary
Ditch Seepage Area
June 2014 Area of Ponded Water
Lousberg Property Boundry
Lousberg South Field
MW-RS
Lousberg South Field
MW-RS
N
400 ft
Google Earth


Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
10/6/2014 South Field Map
Legend
Bennett Pit Boundary
Ditch Seepage Area
Lousberg Property Boundry
Lousberg South Field
MW-RS
October 2014 Area of Ponded Water
Lousberg South Field
MW-RS
N
400 ft
Google Earth


Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
10/9/2015 South Field Map
Legend
Bennett Pit Boundary
Ditch Seepage Area
Lousberg Property Boundry
Lousberg South Field
MW-RS
October 2015 Area of Ponded Water
Lousberg South Field
MW-RS
N
400 ft
Google Earth


Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
6/9/2017 South Field Map
Legend
Bennett Pit Boundary
Ditch Seepage Area
June 2017 Area of Ponded Water
Lousberg Property Boundry
Lousberg South Field
MW-RS
Lousberg South Field
MW-RS
Google Earth
N
400 ft


Bennett Pit M-2016-085
CT-1 Inspection Report
May 21, 2020
9/12/2019 South Field Map
Legend
Bennett Pit Boundary
Ditch Seepage Area
Lousberg Property Boundry
Lousberg South Field
MW-RS
Sept 2019 Area of Ponded Water
Lousberg South Field
MW-RS
N
400 ft
Google Earth



LEGEND:

- EXISTING CONTOURS
- EXISTING WETLAND
- EXISTING PROPERTY BOUNDARY
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING TELEPHONE
- EXISTING OVERHEAD ELECTRIC
- EXISTING EASEMENT
- MINING LIMIT
- SLURRY WALL
- PERMIT BOUNDARY

JT-BH-14 MONITORING WELL LOCATION

200 100 0 200 400 600
SCALE IN FEET

J&T Consulting, Inc.
305 N Denver Avenue - Suite D
Fort Lupton, CO 80621
Ph: 303-857-4222 Fax: 303-857-4224
www.jtconsulting.com

Bennett Gravel Pit

Monitoring Well Location Map

Northern Colorado Constructors, Inc.

REVISIONS

No	Date	By	Chk	Description

Job #	16116
Date	3.20.20
Drawn By	WSS
Designed By	TPY
Checked By	JCY
File	JT-Boring
Scale	1" = 200'

Sheet: 1 Of: 1

P:\16116 Bennett Mine Permitting\Drawings\Plan Sheets\Slurry Wall\JT-MW Map.dwg, MW, 3/20/2020 11:10:34 AM

Well Designation	JT BH-11			JT BH-14			JT BH-17			JT BH-19			JT BH-23			Lewis 1			Lewis 2			Lewis 3			MW-C			MW-N			MW-RS			MW-RN			
Description	Northeast Side			East Side			South Side			Southwest Side			Northwest Side			Northwest Side			Northwest Side			Northwest Side			Northwest Side			Northwest Side			West Side			West Side			
Top of Well Elevation (ft)	4836.78			4839.90			4843.54			4841.44			4835.99			3" Above Ground			3" Above Ground			3" Above Ground			4855.26			4842.12			4843.20			4842.12			
Ground Elevation (ft)	4834.54			4837.46			4841.21			4839.06			4833.42			Not Surveyed			Not Surveyed			Not Surveyed			4852.60			4839.21			4840.05			4840.91			
Date	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	
March 21, 2017	7.67	5.43	4829.11	8.00	5.56	4831.90	7.25	4.92	4836.29	8.58	6.20	4832.86	6.67	4.10	4829.32																						
March 28, 2017	7.00	4.76	4829.78	7.42	4.98	4832.48	7.33	5.00	4836.21	8.58	6.20	4832.86	6.33	3.76	4829.66																						
April 5, 2017	6.75	4.51	4830.03	7.25	4.81	4832.65	7.08	4.75	4836.46	8.42	6.04	4833.02	6.00	3.43	4829.99																						
April 11, 2017	7.33	5.09	4829.45	7.67	5.23	4832.23	7.58	5.25	4835.96	8.58	6.20	4832.86	6.50	3.93	4829.49																						
April 20, 2017	7.25	5.01	4829.53	7.58	5.14	4832.32	7.67	5.34	4835.87	8.42	6.04	4833.02	6.33	3.76	4829.66																						
April 27, 2017	6.92	4.68	4829.86	6.92	4.48	4832.98	7.50	5.17	4836.04	7.50	5.12	4833.94	5.67	3.10	4830.32																						
May 4, 2017	6.50	4.26	4830.28	6.08	3.64	4833.82	6.42	4.09	4837.12	5.67	3.29	4835.77	5.17	2.60	4830.82																						
May 12, 2017	6.08	3.84	4830.70	6.17	3.73	4833.73	6.33	4.00	4837.21	5.50	3.12	4835.94	3.83	1.26	4832.16																						Irrigation water at BH-23 Well
May 17, 2017	7.00	4.76	4829.78	7.00	4.56	4832.90	6.75	4.42	4836.79	5.58	3.20	4835.86	4.67	2.10	4831.32																						
May 25, 2017	5.67	3.43	4831.11	5.50	3.06	4834.40	5.67	3.34	4837.87	5.33	2.95	4836.11	4.17	1.60	4831.82																						
June 1, 2017	6.08	3.84	4830.70	5.92	3.48	4833.98	6.08	3.75	4837.46	5.50	3.12	4835.94	4.00	1.43	4831.99																						
June 7, 2017	6.08	3.84	4830.70	5.83	3.39	4834.07	6.25	3.92	4837.29	5.58	3.20	4835.86	4.42	1.85	4831.57																						
June 16, 2017	6.17	3.93	4830.61	6.08	3.64	4833.82	6.50	4.17	4837.04	5.83	3.45	4835.61	4.83	2.26	4831.16																						
June 21, 2017	6.25	4.01	4830.53	6.17	3.73	4833.73	6.33	4.00	4837.21	5.50	3.12	4835.94	5.00	2.43	4830.99																						
June 27, 2017	6.50	4.26	4830.28	6.33	3.89	4833.57	6.08	3.75	4837.46	5.33	2.95	4836.11	5.08	2.51	4830.91																						
July 5, 2017	6.50	4.26	4830.28	6.42	3.98	4833.48	6.00	3.67	4837.54	5.42	3.04	4836.02	5.00	2.43	4830.99																						
July 26, 2017	6.83	4.59	4829.95	6.67	4.23	4833.23	6.58	4.25	4836.96	5.17	2.79	4836.27	4.50	1.93	4831.49																						
August 10, 2017	6.83	4.59	4829.95	6.75	4.31	4833.15	6.75	4.42	4836.79	5.58	3.20	4835.86	4.75	2.18	4831.24																						
August 30, 2017	6.92	4.68	4829.86	6.83	4.39	4833.07	6.83	4.50	4836.71	5.92	3.54	4835.52	5.33	2.76	4830.66																						
September 5, 2017	6.92	4.68	4829.86	6.92	4.48	4832.98	6.83	4.50	4836.71	6.08	3.70	4835.36	5.58	3.01	4830.41																						
September 27, 2017	7.08	4.84	4829.70	7.00	4.56	4832.90	6.83	4.50	4836.71	6.42	4.04	4835.02	5.75	3.18	4830.24																						
October 10, 2017	7.08	4.84	4829.70	6.67	4.23	4833.23	6.83	4.50	4836.71	6.25	3.87	4835.19	5.67	3.10	4830.32																						
October 27, 2017	6.58	4.34	4830.20	6.67	4.23	4833.23	6.92	4.59	4836.62	6.42	4.04	4835.02	5.67	3.10	4830.32																						
November 10, 2017	6.50	4.26	4830.28	6.58	4.14	4833.32	6.92	4.59	4836.62	6.67	4.29	4834.77	5.50	2.93	4830.49																						
November 28, 2017	6.58	4.34	4830.20	6.67	4.23	4833.23	7.08	4.75	4836.46	7.00	4.62	4834.44	5.67	3.10	4830.32																						
December 6, 2017	6.58	4.34	4830.20	6.67	4.23	4833.23	7.17	4.84	4836.37	7.08	4.70	4834.36	5.75	3.18	4830.24	3.75	3.50		3.17	2.92		4.00	3.75														
December 13, 2017	6.67	4.43	4830.11	6.75	4.31	4833.15	7.25	4.92	4836.29	7.17	4.79	4834.27	5.83	3.26	4830.16	3.83	3.58		3.17	2.92		4.00	3.75														
January 12, 2018	6.67	4.43	4830.11	6.92	4.48	4832.98	7.58	5.25	4835.96	7.50	5.12	4833.94	6.00	3.43	4829.99	4.17	3.92		3.25	3.00		4.25	4.00														
January 31, 2018	6.75	4.51	4830.03	7.00	4.56	4832.90	7.75	5.42	4835.79	8.00	5.62	4833.44	6.08	3.51	4829.91	4.33	4.08		3.67	3.42		4.50	4.25														
February 13, 2018	6.83	4.59	4829.95	7.08	4.64	4832.82	7.75	5.42	4835.79	8.17	5.79	4833.27	6.17	3.60	4829.82	4.50	4.25		3.92	3.67		4.58	4.33														
February 27, 2018	6.83	4.59	4829.95	7.00	4.56	4832.90	8.08	5.75	4835.46	8.25	5.87	4833.19	6.25	3.68	4829.74	4.67	4.42		4.00	3.75		4.75	4.50														
March 6, 2018	6.92	4.68	4829.86	7.08	4.64	4832.82	8.08	5.75	4835.46	8.33	5.95	4833.11	6.33	3.76	4829.66	4.75	4.50		4.08	3.83		Dry	Dry														
March 20, 2018	6.92	4.68	4829.86	7.00	4.56	4832.90	7.92	5.59	4835.62	7.75	5.37	4833.69	6.08	3.51	4829.91	4.67	4.42		4.00	3.75		4.67	4.42														
April 3, 2018	6.75	4.51	4830.03	6.92	4.48	4832.98	7.83	5.50	4835.71	7.50	5.12	4833.94	5.75	3.18	4830.24	4.50	4.25		3.92	3.67		4.50	4.25														
April 19, 2018	6.83	4.59	4829.95	6.92	4.48	4832.98	7.50	5.17	4836.04	7.17	4.79	4834.27	5.50	2.93	4830.49	4.08	3.83		3.50	3.25		3.42	3.17														
May 10, 2018	6.75	4.51	4830.03	6.83	4.39	4833.07	7.33	5.00	4836.21	6.83	4.45	4834.61	5.08	2.51	4830.91	3.08	2.83		2.92	2.67		3.25	3.00														
May 24, 2018	6.67	4.43	4830.11	6.75	4.31	4833.15	7.17	4.84	4836.37	6.58	4.20	4834.86	4.75	2.18	4831.24	2.67	2.42		2.17	1.92		2.75	2.50														
June 12, 2018	6.75	4.51	4830.03	6.92	4.48	4832.98	7.08	4.75	4836.46	6.50	4.12	4834.94	5.00	2.43	4830.99	2.83	2.58		2.33	2.08		2.83	2.58														
June 27, 2018	6.75	4.51	4830.03	6.83	4.39	4833.07	7.00	4.67	4836.54	6.67	4.29	4834.77	5.17	2.60	4830.82	2.75	2.50		2.17	1.92		3.00	2.75														
July 11, 2018	6.83	4.59	4829.95	6.92	4.48	4832.98	7.08	4.75	4836.46	6.83	4.45	4834.61	5.08	2.51	4830.91	2.92	2.67		2.42	2.17		3.08	2.83														
July 25, 2018	6.75	4.51	4830.03	6.83	4.39	4833.07	6.92	4.59	4836.62	6.58	4.20	4834.86	5.00	2.43	4830.99	2.92	2.67		2.33	2.08		2.92	2.67														
August 8, 2018	6.67	4.43	4830.11	6.83	4.39	4833.07	6.83	4.50	4836.71	6.33	3.95	4835.11	4.92	2.35	4831.07	3.00	2.75		2.42	2.17		3.08	2.83														
August 20, 2018	6.75	4.51	4830.03	6.75	4.31	4833.15	6.83	4.50	4836.71	6.50	4.12	4834.94	5.08	2.51	4830.91	2.75	2.50		2.58	2.33		3.17	2.92														
September 5, 2018	6.67	4.43	4830.11	6.83	4.39	4833.07	6.92	4.59	4836.62	6.58	4.20	4834.86	5.33	2.76	4830.66	2.83	2.58		2.50	2.25		3.25	3.00														
September 17, 2018	6.75	4.51	4830.03	6.83	4.39	4833.07	6.75	4.42	4836.79	6.50	4.12	4834.94	5.25	2.68	4830.74	3.00	2.75		2.67	2.42		3.17	2.92														
October 3, 2018	6.67	4.43	4830.11	6.75	4.31	4833.15	6.83	4.50	4836.71	6.50	4.12	4834.94	5.33	2.76	4830.66	3.08	2.83		2.67	2.42		3.33	3.08														
October 18, 2018	6.67	4.43	4830.11	6.67	4.23	4833.23	6.67	4.34	4836.87	6.42	4.04	4835.02	5.33	2.76	4830.66	3.08	2.83		2.75	2.50		3.42	3.17														
November 8, 2018	6.50	4.26	4830.28	6.67	4.23	4833.23	6.75	4.42	4836.79	6.33	3.95	4835.11	5.50	2.93	4830.49	3.17	2.92		2.83	2.58		3.50	3.25														
November 20, 2018	6.67	4.43	4830.11	6.92	4.48	4832.98	6.92	4.59	4836.62	7.00	4.62	4834.44	5.83	3.26	4830.16	3.33	3.08		3.08	2.83		3.67	3.42														
December 4, 2018	6.92	4.68	4829.86	7.25	4.81	4832.65	7.33	5.00	4836.21	7.42	5.04	4834.02	6.08	3.51	4829.91	4.17	3.92		3.33	3.08		4.17	3.92														
December 18, 2018	7.17	4.93	4829.61	7.50	5.06	4832.40	7.58	5.25	4835.96	7.58	5.20	4833.86	6.17	3.60	4829.82	4.33	4.08		3.67	3.42		4.33	4.08														
January 4, 2019	7.42	5.18	4829.36	7.67	5.23	4832.23	7.83	5.50	4835.71	7.92	5.54	4833.52	6.50	3.93	4829.49	4.58	4.33		4.00	3.75		Missing															
January 18, 2019	6.67	4.43	4830.11	6.83	4.39	4833.07	8.00	5.67	4835.54	8.42	6.04	4833.02	6.00	3.43	4829.99	4.75	4.50		4.08	3.83																	
February 5, 2019	6.75	4.51	4830.03	6.92	4.48	4832.98	7.92	5.59	4835.62	8.33	5.95	4833.11	6.00	3.43	4829.99	4.67	4.42		4.17	3.92																	
February 20, 2019	6.67	4.43	4830.11	6.92	4.48	4832.98	8.00	5.67	4835.54	8.25	5.87	4833.19	6.08	3.51	4829.91	4.67	4.42		4.08	3.83																	
March 13, 2019	6.58	4.34	4830.20	7.00	4.56	4832.90	7.92	5.59	4835.62	8.25	5.87	4833.19	6.17	3.60	4829.82	4.58	4.33		4.00	3.75																	
March 27, 2019	6.58	4.34	4830.20	6.92	4.48	4832.98	7.83	5.50	4835.71	8.17	5.79	4833.27	6.08	3.51	4829.91	4.67	4.42		3.83	3.58																	
April 2, 2019	6.75	4.51	4830.03	7.08	4.64	4832.82	7.83	5.50	4835.71	8.17	5.79	4833.27	6.17	3.60	4829.82	4.50	4.25		3.92	3.67																	
April 18, 2019	6.75	4.51	4830.03	7.00	4.56	4832.90	7.58	5.25	4835.96	7.25	4.87	4834.19	5.92	3.35	4830.07	4.17	3.92		3.42	3.17																	
May 8, 2019	6.67	4.43	4830.11	6.92	4.48	4832.98	7.33	5.00	4836.21	6.67	4.29	4834.77	5.83	3.26	4830.16	3.92	3.67		3.08	2.83																	
May 22, 2019	6.75	4.51	4830.03	6.83	4.39	4833.07	7.25	4.92	4836.29	6.33	3.95	4835.11	5.67	3.10	4830.32	3.67	3.42		2.83	2.58																	
June 13, 2019	6.58	4.34	4830.20	6.75	4.31	4833.15	7.17	4.84	4836.37	5.58	3.20	4835.86	5.50	2.93	4830.49	3.33	3.08		2.58	2.33																	
June 25, 2019	6.50	4.26	4830.28	6.67	4.23	4833.23	7.00	4.67	4836.54	5.67	3.29	4835.77	5.42	2.85	4830.57	3.25	3.00		2.50	2.25																	
July 9, 2019	6.42	4.18	4830.36	6.58	4.14	4833.32	7.00	4.67	4836.54	5.50	3.12	4835.94	5.42	2.85	4830.57	3.33	3.08		2.67	2.42																	
July 23, 2019	5.33	3.09	4831.45	5.42	2.98	4834.48	5.42	3.09	4838.12	5.42	3.04	4836.02	4.58	2.01	4831.41	2.67	2.42		2.08	1.83	Irrigation during this time																
August 7, 2019	5.67	3.43	4831.11	5.75	3.31	4834.15	5.58	3.25	4837.96	5.58	3.20	4835.86	5.00	2.43	4830.99	2.83	2.58		2.25	2.00																	
August 21, 2019	6.08	3.84	4830.70	6.25	3.81	4833.65	6.17	3.84	4837.37	5.83	3.45	4835.61	5.33	2.76	4830.66	2.92	2.67		2.25	2.00																	
September 11, 2019	6.58	4.34	4830.20	6.58	4.14	4833.32	6.50	4.17	4837.04	5.92	3.54	4835.52	5.75	3.18	4830.24	2.75	2.50		2.33	2.08																	
October 4, 2019	7.17	4.93	4829.61	7.25	4.81	4832.65	6.92	4.59	4836.62	6.25	3.87	4835.19	5.67	3.10	4830.32	3.08	2.83		2.50	2.25																	
October 16, 2019	7.25	5.01	4829.53	7.17	4.73	4832.73	7.00	4.67	4836.54	6.17	3.79	4835.27	5.75	3.18	4830.24	3.33	3.08		2.75	2.50																	
October 30, 2019	7.17	4.93	4829.61	7.33	4.89	4832.57	7.08	4.75	4836.46	5.83	3.45	4835.61	5.83	3.26	4830.16	3.58	3.33		2.83	2.58																	
November 15, 2019	7.08	4.84	4829.70	7.42	4.98	4832.48	No Read	#VALUE!	#VALUE!	5.67	3.29	4835.77	6.08	3.51	4829.91	3.58	3.33		2.92	2.67																	
November 26, 2019	6.67	4.43	4830.11	7.58	5.14	4832.32	8.00	5.67	4835.54	5.83	3.45	4835.61	6.25	3.68	4829.74	3.67	3.42		3.00	2.75																	
December 16, 2019	6.50	4.26	4830.28	7.75	5.31	4832.15	8.42	6.09	4835.12	6.00	3.62	4835.44	6.50	3.93	4829.49	3.83	3.58		3.17	2.92																	
January 7, 2020	6.50	4.26	4830.28	7.92	5.48	4831.98	8.67	6.34	4834.87	6.67	4.29	4834.77	6.67	4.10	4829.32	4.92	4.67		3.92	3.67					23.33	20.67	4831.93	10.42	7.51	4831.70							
February 18, 2020	6.75	4.51	4830.03	8.08	5.64	4831.82	7.67	5.34	4835.87	7.33	4.95	4834.11	7.08	4.51	4828.91	5.17	4.92		4.42	4.17					24.00	21.34	4831.26	10.83	7.92	4831.29							
March 9, 2020	7.25	5.01	4829.53	8.50	6.06	4831.40	7.33	5.00	4836.21	8.00	5.62	4833.44	7.58	5.01	4828.41	5.42	5.17		4.67	4.42					24.58	21.92	4830.68	11.58	8.67	4830.54							
April 8, 2020	6.92	4.68	4829.86	7.17	4.73	4832.73	7.08	4.75	4836.46	8.00	5.62	4833.44	7.33	4.76	4828.66	dry	#VALUE!		dry	#VALUE!					25.08	22.42	4830.18	11.67	8.76	4830.45	7.75	4.60	4835.45	8.17	6.96	4833.95	
May 8, 2020	7.50	5.26	4829.28	7.67	5.23	4832.23	6.75	4.42	4836.79	6.17	3.79	4835.27	3.58	1.01	4832.41	2.58	2.33		1.75	1.50					22.00	19.34	4833.26	9.25	6.34	4832.87	6.50	3.35	4836.70	5.75	4.54	4836.37	
May 13, 2020	7.25	5.01	4829.53	7.58	5.14	4832.32	6.67	4.34	4836.87	5.92	3.54	4835.52	5.25	2.68	4830.74	3.17	2.92		2.50	2.25					22.00	19.34	4833.26	9.00	6.09	4833.12	6.25	3.10	4836.95	5.33	4.12	4836.79	
May 21, 2020	5.92	3.68	4830.86	7.58	5.14	4832.32	6.42	4.09	4837.12	5.67	3.29	4835.77	4.08	1.51	4831.91	2.50	2.25		1.75	1.50					21.67	19.01	4833.59	8.67	5.76	4833.45	5.83	2.68	4837.37	5.08	3.87	4837.04	