2RF – 149

Eddy State Water Treatment and Reuse Facility Application Volume 1

Solaris Water Midstream LLC

July 21, 2020

April 2020
Revised July 2020

VOLUME 1
C-147 REGISTRATION PACKAGE FOR EDDY STATE CONTAINMENTS AND RECYCLING FACILITY
Section 2, T26S, R29E, Eddy County

Fold in an outcrop of the Gatuna Formation near the Pecos River. This outcrop is approximately 2.64 miles east of the site for the Eddy State Recycling Facility.

Prepared for:
Solaris Midstream LLC
9811 Katy Freeway Suite 900
Houston, TX 77024

Prepared by:
R.T. Hicks Consultants, Ltd.
901 Rio Grande NW F-142
Albuquerque, New Mexico

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Since 1996
Carlsbad ▲ Durango ▲ Hobbs

April 23, 2020
Revised July 21, 2020

Ms. Susan Lucas Kamut
NMOCD
1220 S. St Francis Drive
Santa Fe, NM 87505
Via E-Mail

RE: Solaris Midstream, Eddy State Recycling Facility and Containments
Section 02 T26S R29E

Dear Ms. Lucas Kamut:

Hicks Consultants, on behalf of Solaris Water Midstream, LLC, submits the attached application. At the location, Solaris proposes a recycling facility, two in-ground containments with a total capacity of 1,150,000 bbl and one 60,000 bbl Above Ground Steel Tank Containment.

Volume 1 of this submission provides

- The C-147 (Revised to reflect the new location)
- Final for Construction, stamped engineering design drawings for the in-ground containments
- The following information for the in-ground containment
    - Design/construction plan for the in-ground containments
    - O&M plan and
    - Closure Plan
- Sitting criteria demonstration
- Water well logs of nearby water supply wells
- Photographs of the site and environs to aid with OCD review

The stamped drawings indicate that the NM Registered Professional Engineer affirms the design elements of the in-ground containment, some of which NMOCD considers variances from the Rule, are appropriate for this location.

While the documents contained herein will be submitted to contractors for the construction bid, there are at least three elements that may be changed. If any design elements proposed for change require a variance from the Rule, we will submit the variance in ample time for OCD review.

Volume 2 provides

- Stamped engineering drawings showing the design of the Above-Ground Storage Tank Containment
- Construction (set up) plans for the AST Containment
- Design plan
- O&M plan and
- Closure plan
- Variances relating to the AST

Volume 3 provides

a. Variances applicable to the Eddy State in-ground containments with Technical Memorandums supporting engineering variances.
b. Stamped letters from Ron Frobel PE discussing the applicability of engineering variances to a wide variety of site conditions for In-ground and AST Containments; CV included.

In addition to the statement of the design engineer referenced above, I have personally evaluated the applicability of the all other variances to the text of Rule 34 listed below. In my opinion, the design elements listed below, all of which have been previously approved by OCD, are applicable to the location of the Eddy State facility and all containments in the Permian Basin of New Mexico:

- Sonic hazing for avian protection with species calls that are specific to the Permian Basin
- Chain link or "game fence" as an alternative to the specified 4-foot barbed wire fence
- Alternative to an anchor trench for Above Ground Tank Containments
- Alternative to levee slope requirements for Above Ground Tank Containments

In compliance with 19.15.34.10 of the Rule, this submission is copied to the New Mexico State Land Office, who is the surface owner of the surface upon which the containment will be constructed.

Solaris will submit a bond in accordance with Paragraph (1) of Subsection A of 19.15.34.15 NMAC for NMOCD approval. We intend to solicit a closure bid from the selected excavation contractor after the containment is 30-50% complete. At that time, the contractor will have an excellent idea of closure costs. We have used this protocol for previous containments and believe it provides the most accurate cost estimate. Upon OCD approval of the closure cost estimate, we will work with Solaris to execute a bond for submittal to OCD prior to any use of the containment for treated produced water storage.

Should you have any questions or concerns regarding this registration or the attached C-147, please contact me.

Sincerely,
R.T. Hicks Consultants

Randall Hicks, PG
Principal

Copy: NM State Land Office
Solaris Water Midstream, LLC
OCD District 2

C-147

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-147
Revised April 3, 2017

Recycling Facility and/or Recycling Containment

Type of Facility: ☒ Recycling Facility ☒ Recycling Containment*****

Type of action: ☒ Permit ☐ Registration
☐ Modification ☐ Extension
☐ Closure ☐ Other (explain) _____

*** At the time C-147 is submitted to the division for a Recycling Containment, a copy shall be provided to the surface owner.**

Be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.

Operator: Solaris Water Midstream, LLC OGRID #: 371643

Address: 811 Katy Freeway, Suite 700 Houston, Texas 77024

Facility or well name (include API# if associated with a well): Eddy State Water Treatment and Reuse Facility

OCD Permit Number: _____(For new facilities the permit number will be assigned by the district office)

U/L or Qtr/Qtr K Section 2 Township 26S Range 29E County: Eddy

Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.

☒ **Recycling Facility:**

Location of (if applicable): Latitude_____Longitude_____.

Proposed Use: ☒ Drilling* ☒ Completion* ☒ Production* ☒ Plugging *

****The re-use of produced water may NOT be used until fresh water zones are cased and cemented***

☐ Other, ***requires permit for other uses. Describe use, process, testing, volume of produced water and ensure there will be no adverse impact on groundwater or surface water.***

☒ Fluid Storage

☒ Above ground tanks ☒ Recycling containment ☐ Activity permitted under 19.15.17 NMAC explain type_____

☐ Activity permitted under 19.15.36 NMAC explain type:_____ ☐ Other explain _____

☐ For multiple or additional recycling containments, attach design and location information of each containment

☐ **Closure Report (required within 60 days of closure completion):** ☐ Recycling Facility Closure Completion Date:_____

3.

☒ **Recycling Containment:** Two (2) in-ground containments and one (1) AST Containment

☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)

Center of Recycling Containment (if applicable) Pond Lat 32.071540 Long -103.958919 AST Lat 32.072994 Long -103.956707 (approx.) NAD 83

☒ For multiple or additional recycling containments, attach design and location information of each containment

☒ Lined ☐ Liner type: Thickness Secondary 40 mil Primary 60- mil ☐ LLDPE ☒ HDPE ☐ PVC ☐ Other _____

☐ String-Reinforced

Liner Seams: ☒ Welded ☐ Factory ☐ Other Volume: 1,150,000 BBL Ponds/60K BBL AST Dimensions See Attachment ,,1

☐ Recycling Containment Closure Completion Date:_____

4.

Bonding:

☐ Covered under bonding pursuant to 19.15.8 NMAC per 19.15.34.15(A)(2) NMAC **(These containments are limited to only the wells owned or operated by the owners of the containment.)**

☒ Bonding in accordance with 19.15.34.15(A)(1). Amount of bond $__See Transmittal Letter___ **(work on these facilities cannot commence until bonding amounts are approved)**

☐ Attach closure cost estimate and documentation on how the closure cost was calculated.

5.

Fencing:

☐ Four-foot height, four strands of barbed wire evenly spaced between one and four feet

☒ Alternate. Please specify: Game fence see attachment _____

6.

Signs:

☒ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

Justifications and/or demonstrations that the proposed variance will afford reasonable protection against contamination of fresh water, human health, and the environment.

Check the below box only if a variance is requested:

☒ *Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. If a Variance is requested, include the variance information on a separate page and attach it to the C-147 as part of the application.*

If a Variance is requested, it must be approved prior to implementation.

8.

Siting Criteria for Recycling Containment

Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells FIGURES 1-2	☐ Yes ☒ No ☐ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; written approval obtained from the municipality FIGURE 3	☐ Yes ☒ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division FIGURE 4	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map FIGURE 5	☐ Yes ☒ No
Within a 100-year floodplain. FEMA map FIGURE 6	☐ Yes ☒ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site FIGURE 7	☐ Yes ☒ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; aerial photo; satellite image FIGURE 8	☐ Yes ☒ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. FIGURES 1 and 7 - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 500 feet of a wetland. FIGURE 9 - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ☒ No

9.

Recycling Facility and/or Containment Checklist:

Instructions: Each of the following items must be attached to the application. Indicate, by a check mark in the box, that the documents are attached.

- ☒ Design Plan - based upon the appropriate requirements.
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements.
- ☒ Closure Plan - based upon the appropriate requirements.
- ☒ Site Specific Groundwater Data -
- ☒ Siting Criteria Compliance Demonstrations –
- ☒ **Certify that notice of the C-147 (only) has been sent to the surface owner(s)**

10.

Operator Application Certification:

I hereby certify that the information and attachments submitted with this application are true, accurate and complete to the best of my knowledge and belief.

Name (Print): Bradley Todd Carpenter Title: Operations Manager

Signature: Bradley Todd Carpenter Date: April 17, 2020

e-mail address Todd Carpenter <todd.carpenter@solarismidstream.com> Telephone: 432 203 9020

11.

OCD Representative Signature: _____ **Approval Date:** _____

Title: _____ **OCD Permit Number:** _____

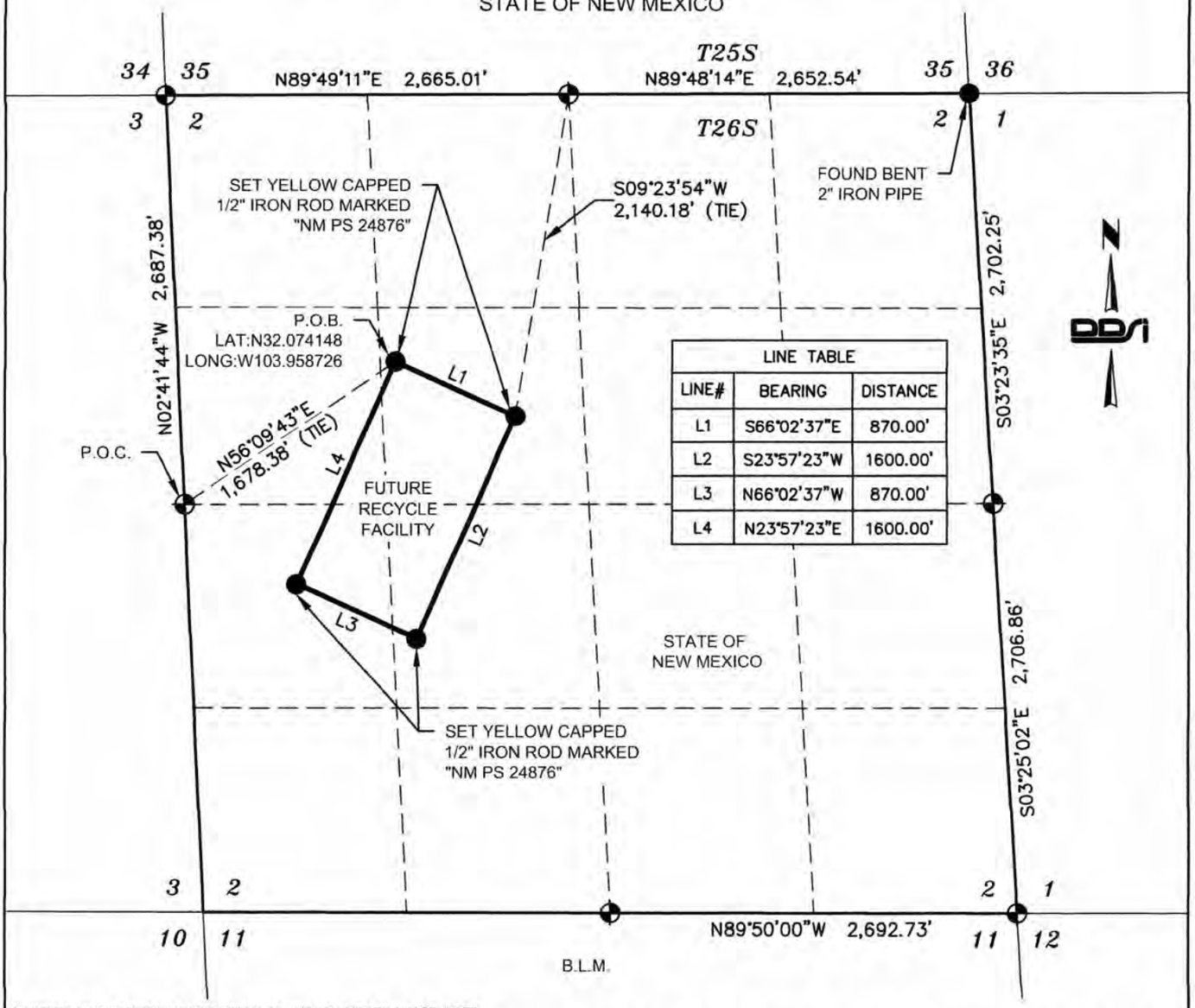
☐ OCD Conditions _____

☐ Additional OCD Conditions on Attachment

SURVEY FOR CONTAINMENT AND RECYCLING FACILITY

EXHIBIT A

SECTION 2, TOWNSHIP 26 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, NEW MEXICO
STATE OF NEW MEXICO



LINE TABLE		
LINE#	BEARING	DISTANCE
L1	S66°02'37"E	870.00'
L2	S23°57'23"W	1600.00'
L3	N66°02'37"W	870.00'
L4	N23°57'23"E	1600.00'

A METES AND BOUNDS DESCRIPTION OF AN PROPOSED LEASE AREA

BEING A 31.96 ACRE TRACT OF LAND SITUATED IN SECTION 2, TOWNSHIP 26 SOUTH, RANGE 29 EAST, N.M.P.M., IN EDDY COUNTY, NEW MEXICO, SAID LEASE AREA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 2, BEING A FOUND BRASS CAP STAMPED "U.S. GENERAL LAND OFFICE SURVEY", THENCE NORTH 56°09'43" EAST, 1,678.38 FEET TO THE POINT OF BEGINNING BEING A SET YELLOW CAPPED 1/2" IRON ROD MARKED " NM PS 24876" ; THENCE SOUTH 66°02'37" EAST, 870.00 FEET TO A SET YELLOW CAPPED 1/2" IRON ROD MARKED " NM PS 24876", BEING SOUTH 09°23'54' WEST, 2,140.18 FEET OF A FOUND BRASS CAP STAMPED "U.S. GENERAL LAND OFFICE SURVEY", SAID MONUMENT BEING THE NORTH QUARTER CORNER OF SAID SECTION 2, THENCE SOUTH 23°57'23" WEST, 1,600 FEET TO A SET YELLOW CAPPED 1/2" IRON ROD MARKED " NM PS 24876" ; THENCE NORTH 66°02'37" WEST, 870.00 FEET TO A SET YELLOW CAPPED 1/2" IRON ROD MARKED " NM PS 24876"; THENCE NORTH 23°57'23" EAST, 1,600.00 FEET TO THE POINT OF BEGINNING, AND CONTAINING 31.96 ACRES (1,392,000 SQUARE FEET) OF LAND.

BASIS OF BEARING: BEARINGS SHOWN HEREON ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983, NEW MEXICO EAST STATE PLANE ZONE 3001, US SURVEY FEET. ALL DISTANCES ARE GRID. COORDINATES SHOWN ARE IN N.A.D. 1983.

NOTES:
1. RESEARCH HAS BEEN PROVIDED BY OTHERS.
2. THIS PLAT IS FOR EASEMENT PURPOSES ONLY.
3. EASEMENTS, SETBACKS, AND OTHER ENCUMBRANCES ARE NOT SHOWN BY AGREEMENT WITH CLIENT.
4. P.O.C. = POINT OF COMMENCEMENT
5. P.O.B. = POINT OF BEGINNING
6. P.O.T. = POINT OF TERMINATION
7. MODIFICATION IN ANY WAY OF THE FOREGOING DESCRIPTION TERMINATES LIABILITY OF SURVEYOR.

LEGEND:
= DENOTES LEASE AREA
= DENOTES PIPELINE
= DENOTES FOUND CORNER AS NOTED
= DENOTES FOUND BRASS CAP MONUMENT STAMPED "U.S. GENERAL LAND OFFICE SURVEY"

EASEMENT TABLE		
SURFACE SITE LEASE	1,392,000 SQ.FT.	31.96 ACRES

SURVEYOR'S CERTIFICATE

I, CHRIS E. CARLSON, NEW MEXICO PROFESSIONAL SURVEYOR NO. 24876, DO HEREBY CERTIFY THAT THIS EASEMENT SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION IN THE NEW MEXICO SUBDIVISION ACT AND THAT THIS INSTRUMENT IS A EASEMENT SURVEY PLAT OF A EXISTING TRACT OR TRACTS.

4/7/2020

DATE OF SIGNATURE: 04/07/2020
CHRIS E. CARLSON N.M.P.S. NO. 24876

CHRIS E. CARLSON NEW MEXICO 24876 PROFESSIONAL SURVEYOR

0 500' 1000'
SCALE 1"= 1000'

DOWNTOWN DESIGN SERVICES, INC.
16 E. 16TH ST. SUITE 400
TULSA, OK 74119
Tel: 918-592-3374 Fax: 918-221-3940
www.ddsiglobal.com

NO.	REVISION DESCRIPTION	DATE	BY

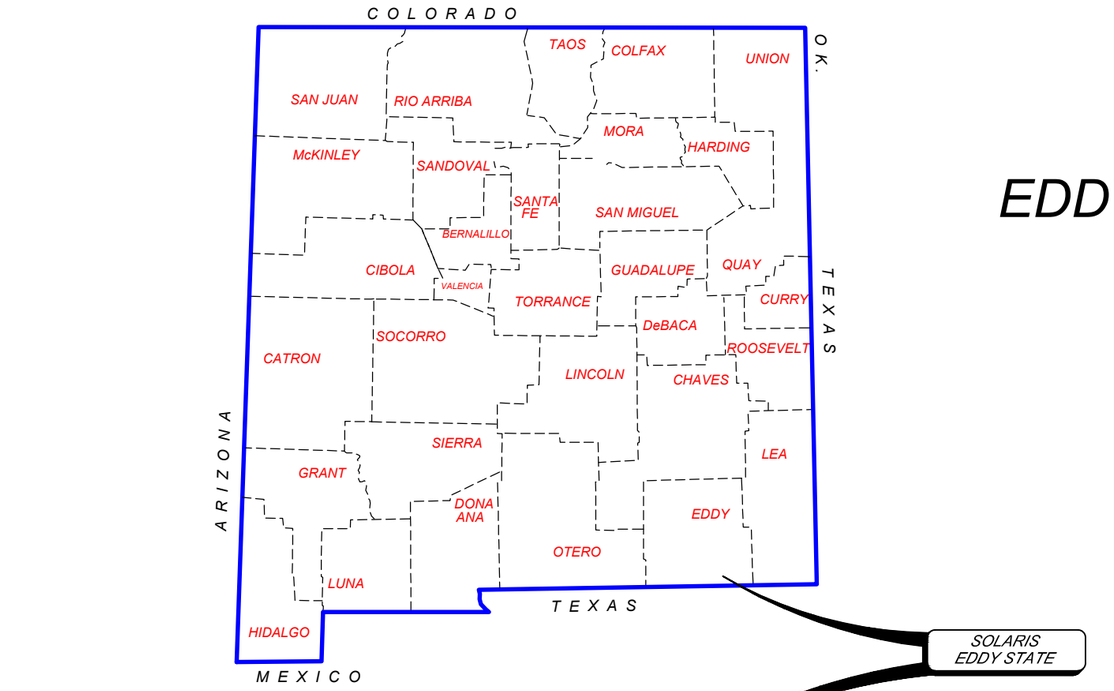
SOLARIS WATER MIDSTREAM, LLC.

EDDY STATE RECYCLE FACILITY
LOCATION OF A PROPOSED LEASE AREA IN
SECTION 2, TOWNSHIP 26 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

FIELD DATE: 04/06/2020		SURFACE SITE
DRAFTING DATE: 04/07/2020		PAGE 1 OF 1
JOB No. 2020-099	APPROVED BY: CEC DRAWN BY: DMB	TRACT: ESRF-1

G:\Shared drives\Projects\2020-099 Solaris Eddy State Recycle Facility\1. SURVEY\Exhibits\ESRF-1 Eddy State Recycle Facility Lease Area.dwg, 4/7/2020 12:16:39 PM, DWG To PDF.pc3

RECYCLING CONTAINMENT DESIGN DRAWINGS AND AVIAN SPECIES HAZING EQUIPMENT



SOLARIS WATER MIDSTREAM, LLC
EDDY STATE PRODUCED WATER TREATMENT AND REUSE FACILITY
S02, T26S, R29E
EDDY COUNTY, NM

INDEX OF SHEETS

MAGRYM
TBPELS F-19848

Magrym Consulting, Inc.
110 W. Louisiana Ave. Ste 314
Midland, TX 79701
(432) 999-2737
www.magrym.com

IFR	ISSUED FOR REGULATORY APPROVAL 07/14/20		
	NOT FOR CONSTRUCTION		
R-X	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

SOLARIS WATER MIDSTREAM

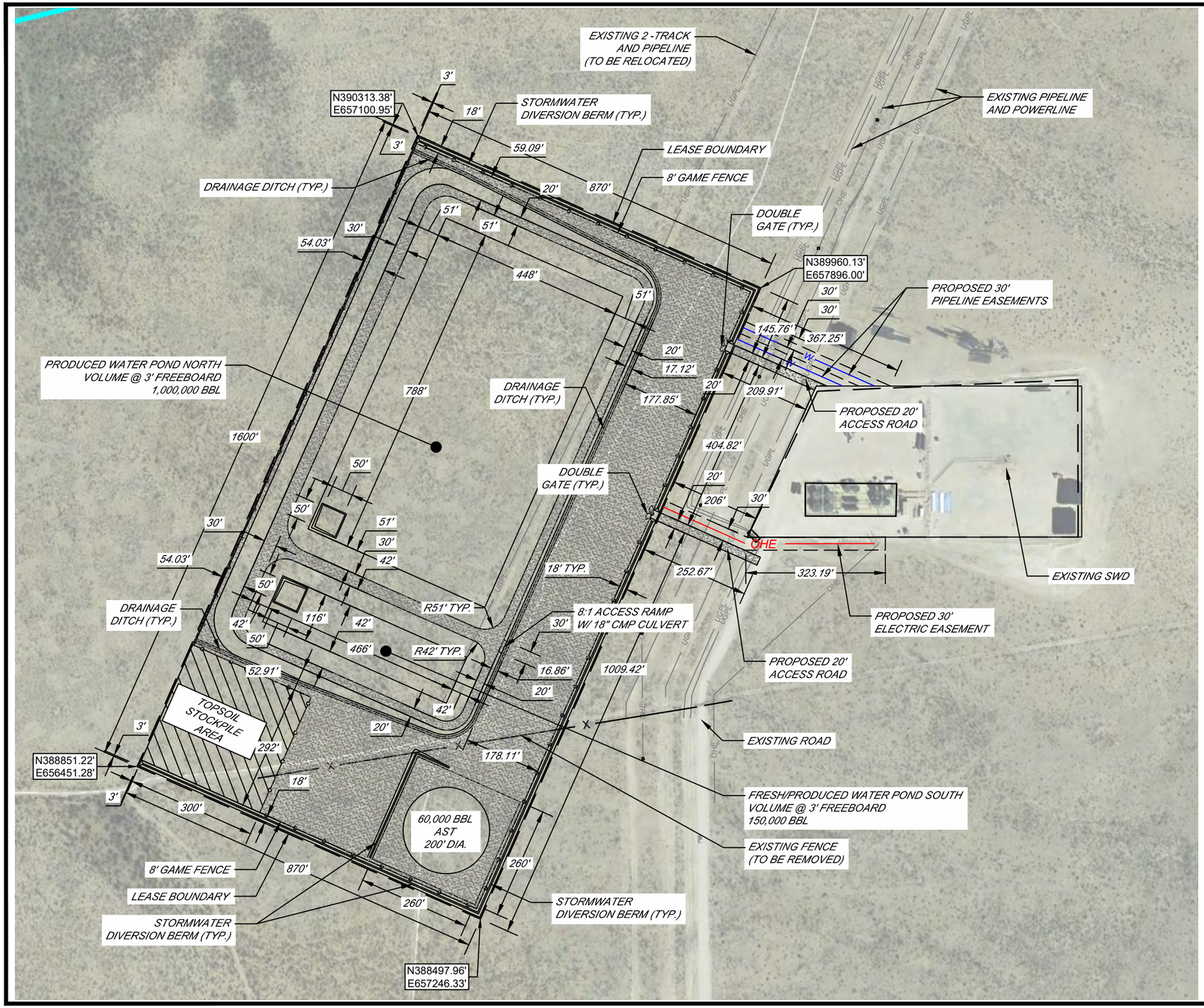
Solaris Water Midstream, LLC
907 Tradewinds Boulevard
Midland, TX 79701
432-203-9020
www.solarismidstream.com

EDDY STATE WATER TREATMENT AND REUSE FACILITY
S02, T26S, R29E
EDDY COUNTY, NM
SOLARIS WATER MIDSTREAM, LLC.

COVER SHEET

HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
PRINT DATE: 7/14/2020	DESIGNED BY: CSC
PROJECT NO. 19-172	CHECKED BY: CSC/EMH
SUBSET: COVER	SHEET: 1COVER

Drawing File: Z:\Shared\Projects\19-172 Solaris Eddy State\04_CIVIL\CADD\Design\Drawings\19-172 Cover.dwg



LEGEND

- PROPOSED 8' GAME FENCE
- EXISTING UNDERGROUND PIPELINE — UGPL
- EXISTING OVERHEAD ELECTRIC — OHE
- EXISTING FENCE — x
- PROPOSED WATERLINE — W — W
- PROPOSED OVERHEAD ELECTRIC — OHE
- PROPOSED EASEMENT
- LEASE BOUNDARY
- PROPOSED DRIVING SURFACE
- EXISTING POWERPOLE

NOTE:
COORDINATES IN STATE PLANE NM83-EF

N

SCALE 1"=250'
0 125' 250' 500'

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
07/14/2020

IFR	ISSUED FOR REGULATORY APPROVAL	07/14/20	
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R-X	DESCRIPTION	DATE	BY
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MAGRYM
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SOLARIS WATER MIDSTREAM
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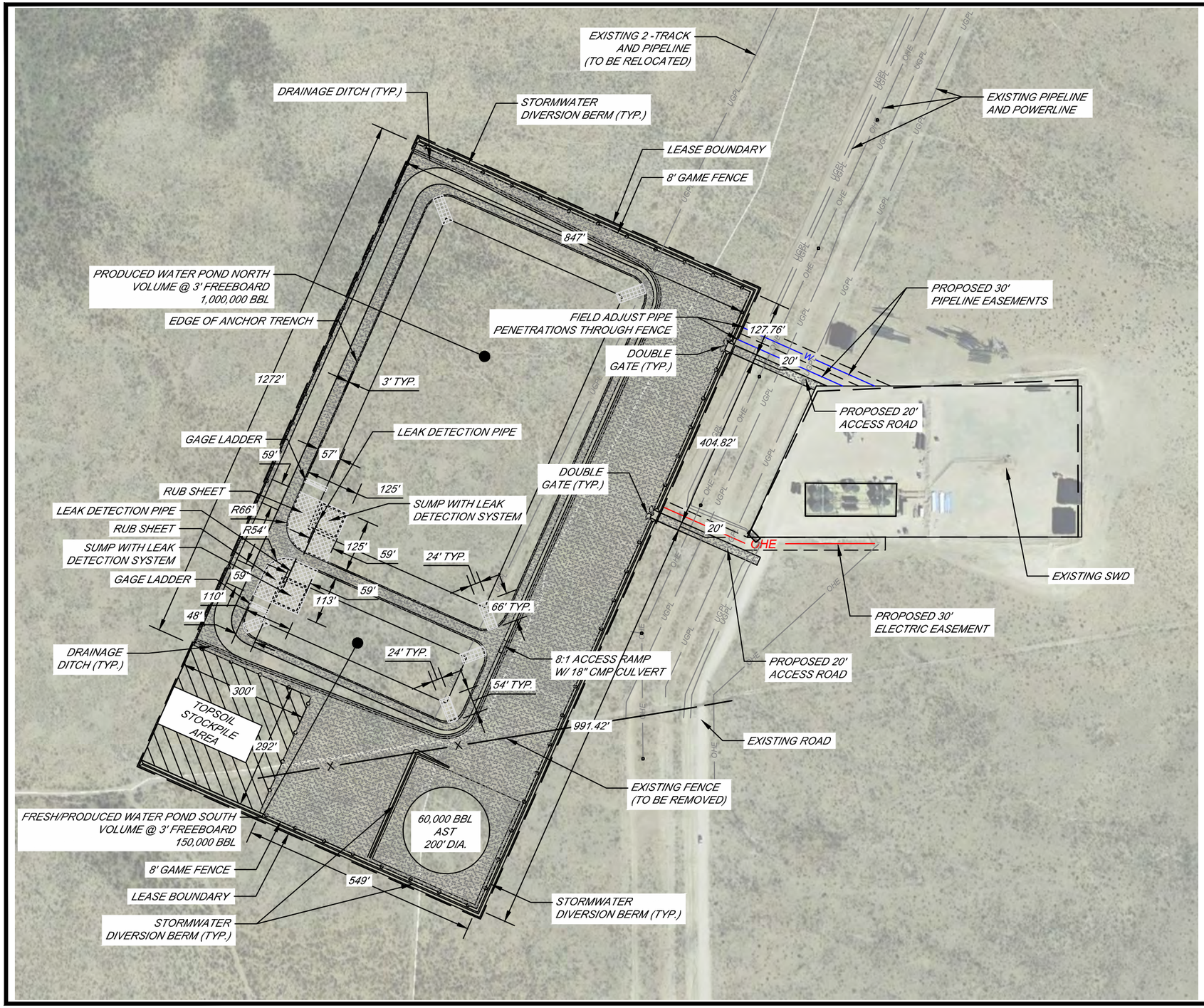
EDDY STATE WATER TREATMENT AND REUSE FACILITY
S02, T26S, R29E
EDDY COUNTY, NM
SOLARIS WATER MIDSTREAM, LLC.

SITE PLAN

HORIZONTAL SCALE: 1"=250'	VERTICAL SCALE: NTS
PRINT DATE: 7/14/2020	DESIGNED BY: CSC
PROJECT NO. 19-172	CHECKED BY: CSC/EMH
SUBSET: HORIZONTAL LAYOUT	SHEET: 1HL01

Drawing File: Z:\Shared\Projects\19-172 Solaris Eddy State\04_CIVIL\CADD\Design\Drawings\19-172 Site Plan.dwg



LEGEND

- PROPOSED 8' GAME FENCE
- EXISTING UNDERGROUND PIPELINE — UGPL
- EXISTING OVERHEAD ELECTRIC — OHE
- EXISTING FENCE — x
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- PROPOSED EASEMENT
- LEASE BOUNDARY
- PROPOSED DRIVING SURFACE
- PROPOSED RUB SHEET
- EDGE OF ANCHOR TRENCH
- EXISTING POWERPOLE

NOTE:
COORDINATES IN STATE PLANE NM83-EF

N

SCALE 1"=250'

0 125' 250' 500'

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
07/14/2020

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R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SOLARIS WATER MIDSTREAM

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www.solarismidstream.com

EDDY STATE WATER TREATMENT AND REUSE FACILITY
S02, T26S, R29E
EDDY COUNTY, NM
SOLARIS WATER MIDSTREAM, LLC.

LINER AND FENCE PLAN

HORIZONTAL SCALE: 1"=250'	VERTICAL SCALE: NTS
PRINT DATE: 7/14/2020	DESIGNED BY: CSC
PROJECT NO. 19-172	CHECKED BY: CSC/EMH
SUBSET: HORIZONTAL LAYOUT	SHEET: 1HL02

Drawing File: Z:\Shared\Projects\19-172 Solaris Eddy State\04_CIVIL\CADD\Design\Drawings\19-172 Liner & Fence Plan.dwg

GENERAL NOTES

1. ALL BOUNDARY, TOPOGRAPHIC AND UTILITY INFORMATION SHOWN ARE BASED ON SURVEY INFORMATION FURNISHED BY SOLARIS WATER MIDSTREAM, LLC.
2. THE CONTRACTOR SHALL IDENTIFY AND LOCATE UTILITY LINES, MONITORING WELLS, SURVEY MONUMENTS, AND OTHER NEARBY STRUCTURES PRIOR TO PERFORMING WORK.
3. COORDINATE INFORMATION IS BASED ON STATE PLANE COORDINATES, NEW MEXICO EAST FOOT, NAD 83. THE CONTRACTOR SHALL IDENTIFY ANY DISCREPANCIES PRIOR TO PROCEEDING WITH CONSTRUCTION.

LINER NOTES

1. INSTALLER TO SIGN SUBGRADE ACCEPTANCE FORM (PROVIDED BY OWNER REPRESENTATIVE) DAILY PRIOR TO INSTALLATION.
2. CONTRACTOR TO PROVIDE SUBMITTAL OF LINER PANEL LAYOUT.
3. A 3' DIAMETER MINIMUM PIECE OF 40MIL LINER SHALL BE EXTRUDED WELDED WHERE THE PIE SHAPED CORNER SECTIONS MEET FOR SEAM REINFORCEMENT.
4. INSTALL A FULL DOUBLE WIDTH SECTION OF BLACK OR WHITE 60 MIL TEXTURED HDPE GEOMEMBRANE RUB SHEET. EXTRUDE WELD TO LINER. WELDS SHALL BE 2" LONG AND SPACED EVERY 12" ALONG BOTH SIDES OF THE SHEET. DO NOT WELD END EDGES. SECTION SHALL EXTEND FROM SUMP AND INSTALLED INTO LINER ANCHOR TRENCH AS SHOWN.
5. CONTRACTOR SHALL PLACE SANDBAGS ON LINER DURING INSTALLATION AS REQUIRED TO PREVENT WIND UPLIFT UNTIL POND IS FILLED TO A DEPTH OF 3 FEET.
6. CONTRACTOR SHALL INSPECT GRADED SURFACE FOR DEBRIS, ROCKS OR OTHER MATERIAL THAT MAY DAMAGE THE LINER.
7. CONTRACTOR SHALL ROLL SURFACE WITH A SMOOTH ROLLER TO ELIMINATE RUTS.
8. CONTRACTOR SHALL USE BLACK 60 MIL HDPE SMOOTH GEOMEMBRANE AS THE PRIMARY LINER AND BLACK 40 MIL HDPE SMOOTH GEOMEMBRANE AS THE SECONDARY LINER.
9. LINER TO BE INSTALLED PER MANUFACTURER'S RECOMMENDING PROCEDURES (GSI INSTALLATION QUALITY ASSURANCE MANUAL AND THE GSI DROP-IN SPECIFICATIONS FOR GEOMEMBRANES.)
10. ALL SEAMS MUST BE WELDED WITH A 6" MINIMUM OVERLAP.
11. CONTRACTOR SHALL NON-DESTRUCTIVELY TEST ALL SEAMS THEIR FULL LENGTH USING AN AIR PRESSURE OR VACUUM TEST, THE PURPOSE OF THIS TEST IS TO CHECK THE CONTINUITY OF THE SEAM PER THE INSTALLATION QUALITY ASSURANCE MANUAL.
12. FOR AIR PRESSURE TESTING (ASTM 5820), THE FOLLOWING PROCEDURES ARE APPLICABLE TO THE SEAMS WELD WITH DOUBLE SEAM FUSION WELDER.
    a. THE EQUIPMENT USED SHALL CONSIST OF AN AIR TANK OR PUMP CAPABLE OF PRODUCING A MINIMUM 30 PSI AND A SHARP NEEDLE WITH A PRESSURE GAUGE ATTACHED TO INSERT INTO THE AIR CHAMBER.
    b. SEAL BOTH ENDS OF THE SEAM BY HEATING AND SQUEEZING THEM TOGETHER. INSERT THE NEEDLE WITH THE GAUGE INTO THE AIR CHANNEL. PRESSURIZE THE AIR CHANNEL TO A MINIMUM OF 30 PSI. NOTE TIME STARTS AND WAIT A MINIMUM OF 5 MINUTES TO CHECK. IF PRESSURE AFTER 5 MINUTES HAD DROPPED LESS THAN 2 PSI THE TEST IS SUCCESSFUL (THICKNESS OF MATERIAL MAY CAUSE VARIANCE).
    c. CUT OPPOSITE SEAM END AND LISTEN FOR PRESSURE RELEASE TO VERIFY FULL SEAM HAS BEEN TESTED.
    d. IF THE TEST FAILS, FOLLOW THESE PROCEDURES.
        I. WHILE CHANNEL IS UNDER PRESSURE WALK THE LENGTH OF THE SEAM LISTENING FOR A LEAK.
        II. WHILE CHANNEL IS UNDER PRESSURE APPLY A SOAPY SOLUTION TO THE SEAM EDGE AND LOOK FOR BUBBLES FORMED BY AIR ESCAPING.
        iii. RE-TEST THE SEAM IN SMALLER INCREMENTS UNTIL THE LEAK IS FOUND.
    e. ONCE LEAK IS FOUND USING ONE OF THE PROCEDURES ABOVE, CUT OUT THE AREA AND RETEST THE PORTIONS OF THE PORTIONS OF THE SEAMS BETWEEN THE LEAK AREAS PER 6A AND 6B ABOVE. CONTINUE THIS PROCEDURE UNTIL ALL SECTIONS OF THE SEAM PASS THE PRESSURE TEST.
    f. REPAIR THE LEAK WITH A PATCH AND VACUUM TEST.
13. ALL NON-DESTRUCTIVE TESTS WILL BE NOTED IN THE NON-DESTRUCTIVE LOGS.
14. LINER SHALL BE PROTECTED WITH A 10 OZ. NONWOVEN GEOTEXTILE IF ROCK OR OTHER ANGULAR MATERIALS WITH A DIMENSION GREATER THAN $\frac{3}{8}$ INCH ARE PRESENT.
15. SUMPS SHALL BE BACKFILLED WITH NON-ANGULAR MAXIMUM $\frac{3}{8}$ INCH SIZED PEA GRAVEL.
16. LINER GAS VENTS SHALL BE SPACED ALONG THE INSIDE SLOPE AT APPROXIMATELY 100 FEET ON CENTER OR MINIMUM 2 VENTS PER SIDE.
17. WHEN ANY PIPING EQUIPMENT, INLET, OR OUTLET IS IN DIRECT CONTACT WITH THE LINER, AN APRON CONSISTING OF 60 MIL HDPE MATERIAL SHALL BE INSTALLED BENEATH THE EQUIPMENT OR STRUCTURE TO PROTECT THE PRIMARY LINER SYSTEM.
18. LAY BOTH LINERS IN ANCHOR TRENCH. BACKFILL ANCHOR TRENCH IN 2 LIFTS AND COMPACT.

EARTHWORK NOTES

1. FILL FOR BERMS SHALL BE PLACED AND COMPACTED IN HORIZONTAL LIFTS WITH MAXIMUM LOOSE LIFT THICKNESS OF 12 INCHES, OR AS DIRECTED BY ENGINEER. CONSTRUCT EACH LAYER CONTINUOUSLY AND APPROXIMATELY HORIZONTAL FOR THE WIDTH AND LENGTH OF THE DIKE. FILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY DETERMINED BY THE ASTM D698 AND AT MOISTURE CONTENT WITHIN +2% TO -2% OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY A STANDARD PROCTOR SOILS TEST ON SAMPLES FROM THE SOURCE AREA.
2. FILL SHALL NOT BE PLACED AND COMPACTED WHEN THE MATERIALS ARE TOO WET TO PROPERLY COMPACT. MATERIAL WHICH IS TOO WET SHALL BE SPREAD ON THE FILL AREA AND PERMITTED TO DRY, ASSISTED BY HARROWING IF NECESSARY, UNTIL THE MOISTURE CONTENT IS REDUCED TO ALLOWABLE LIMITS. IF THE ENGINEER DETERMINED THAT ADDED MOISTURE IS REQUIRED, WATER SHALL BE APPLIED UNIFORMILY OVER THE AREA TO BE TREATED, AND GIVE COMPLETE AND ACCURATE CONTROL OF THE AMOUNT OF WATER TO BE USED. IF TOO MUCH WATER IS ADDED, THAT AREA SHALL BE PERMITTED TO DRY BEFORE COMPACTION IS CONTINUED.
3. PERFORM ONE NUCLEAR DENSITY GAGE TEST PER 2500 CY OR AS DIRECTED BY ENGINEER.
4. EARTHWORK CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF THE FINISHED COMPACTED POND BOTTOM AND SIDE SLOPES BEFORE HDPE LINE INSTALLATION, REMOVING ALL DEBRIS, SHARP OBJECTS AND GRAVEL LARGER THAN $\frac{3}{4}$ INCH.

STAGE STORAGE			
PRODUCED WATER POND NORTH ELEVATION (FT)	PRODUCED WATER POND NORTH VOLUME (BBL)	PRODUCED/FRESH WATER POND SOUTH ELEVATION (FT)	PRODUCED/FRESH WATER POND SOUTH VOLUME (BBL)
2986	0	2990	0
2987	186	2991	186
2988	807	2992	807
2989	8,727	2993	5,315
2990	47,741	2994	15,256
2991	111,279	2995	25,827
2992	176,148	2996	37,040
2993	242,356	2997	48,903
2994	309,913	2998	61,425
2995	378,829	2999	74,617
2996	449,114	3000	88,487
2997	520,775	3001	103,045
2998	593,824	3002	118,301
2999	668,269	3003	134,264
3000	744,120	3004	150,943
3001	821,386	3005	168,347
3002	900,076	3006	186,487
3003	980,201	3007	205,372
3004	1,061,770		
3005	1,144,791		
3006	1,229,275		
3007	1,315,231		

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07/14/2020

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	UNIT	QTY
1	CLEARING AND GRUBBING*	ACRE	33
2	ESTIMATED TOPSOIL (6" AVERAGE)	CUBIC YARD	25,953
3	ESTIMATED CUT (INCLUDING TOPSOIL)	CUBIC YARD	136,794
4	ESTIMATED FILL (ABOVE EXISTING GRADE)**	CUBIC YARD	110,351
5	DRAINAGE SWALE	LINEAR FEET	2,482
6	STORMWATER DIVERSION BERM	LINEAR FEET	3,653
7	8' GAME FENCE	LINEAR FEET	4,869
8	20' DOUBLE GATE	EACH	2
9	RUB SHEET 60 MIL HDPE GEOMEMBRANE (TEXTURED)***	SQUARE FEET	36,034
10	PRIMARY 60 MIL HDPE GEOMEMBRANE (SMOOTH)***	SQUARE FEET	627,163
11	200 MIL GEONET***	SQUARE FEET	627,163
12	SECONDARY 40 MIL HDPE GEOMEMBRANE (SMOOTH)***	SQUARE FEET	627,163
13	10 OZ. GEOTEXTILE***	SQUARE FEET	627,163
14	6" HDPE DR11 PIPE WITH PERFORATIONS IN SUMP	LINEAR FEET	168
15	GAGE LADDER	EACH	2
16	DRAIN ROCK	CUBIC YARD	1
17	ANCHOR TRENCH	LINEAR FEET	4,295
18	30' X 18" CMP CULVERT WITH END SECTIONS	EACH	1
19	RELOCATE EXISTING PIPELINE AND REMOVE EXISTING FENCE	LUMP SUM	1
20	BUILD LEASE ROAD	LUMP SUM	1

NOTES:

* INCLUDES LEASE ROAD AREAS.

** 12% FILL FACTOR APPLIED. CUT AND FILL QUANTITIES PERTAIN TO THE ENTIRE SITE. LEASE ROAD MATERIAL AND BERM MATERIAL ARE INCLUDED IN FILL QUANTITY.

*** COMPLETE-IN-PLACE QUANTITIES. OVERLAP, SCRAPS AND/OR OTHER QUANTITIES NOT INCLUDED.

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IFR	ISSUED FOR REGULATORY APPROVAL	07/14/20	
	NOT FOR CONSTRUCTION		

REVISIONS (OR CHANGE NOTICES)

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Solaris Water Midstream, LLC
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EDDY COUNTY, NM
SOLARIS WATER MIDSTREAM, LLC.

SUMMARY OF QUANTITIES AND GENERAL NOTES

HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 7/14/2020	DESIGNED BY: CSC
PROJECT NO. 19-172	CHECKED BY: CSC/EMH
SUBSET: HORIZONTAL LAYOUT	SHEET: 1HL03

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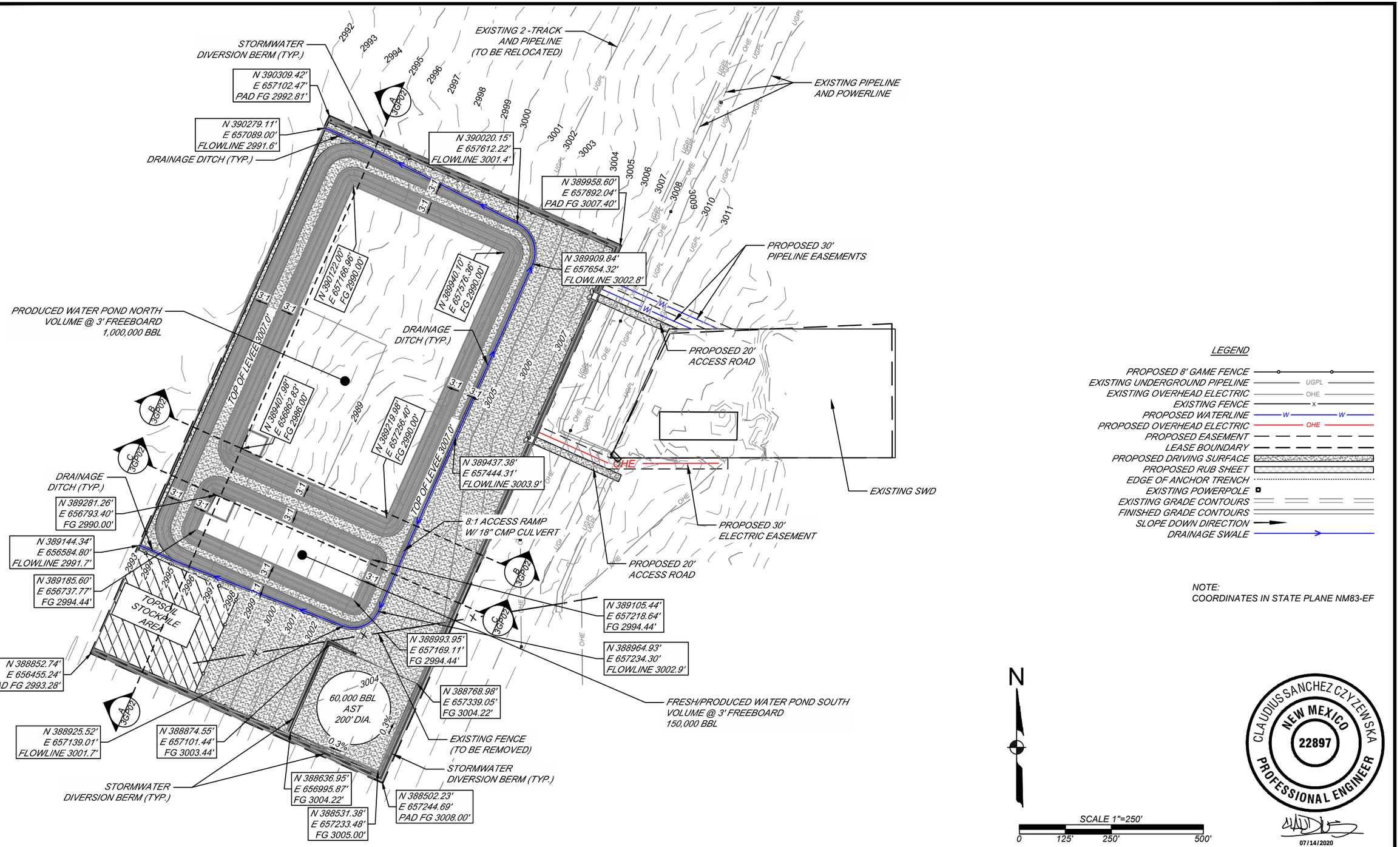

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GRADING PLAN

HORIZONTAL SCALE: 1"=250'	VERTICAL SCALE: NTS
PRINT DATE: 7/14/2020	DESIGNED BY: CSC
PROJECT NO. 19-172	CHECKED BY: CSC/EMH
SUBSET: GRADING	SHEET: 3GP01

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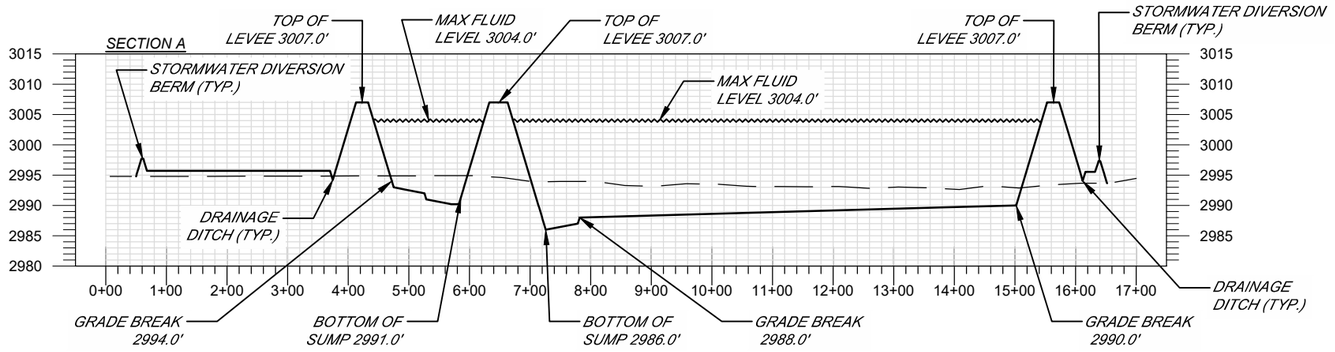

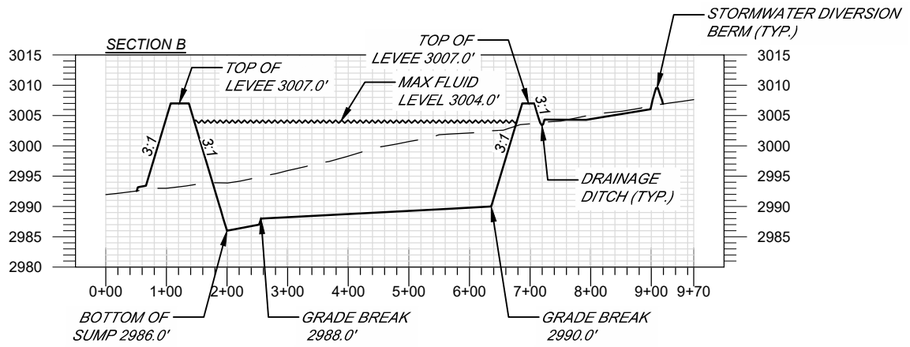

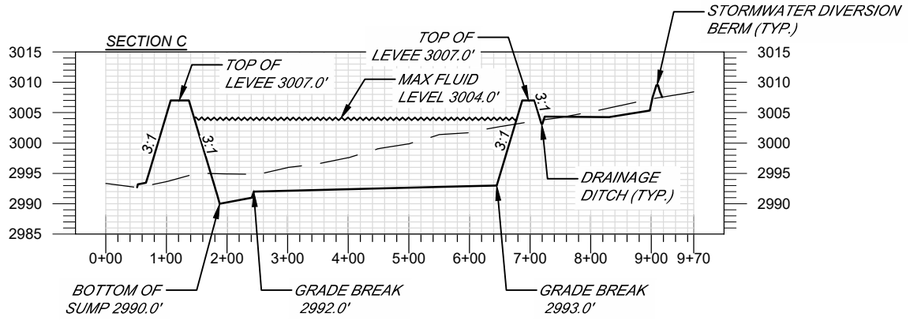

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CROSS SECTIONS

HORIZONTAL SCALE: 1"=250'	VERTICAL SCALE: 1"=25'
PRINT DATE: 7/14/2020	DESIGNED BY: CSC
PROJECT NO. 19-172	CHECKED BY: CSC/EMH
SUBSET: GRADING	SHEET: 3GP02

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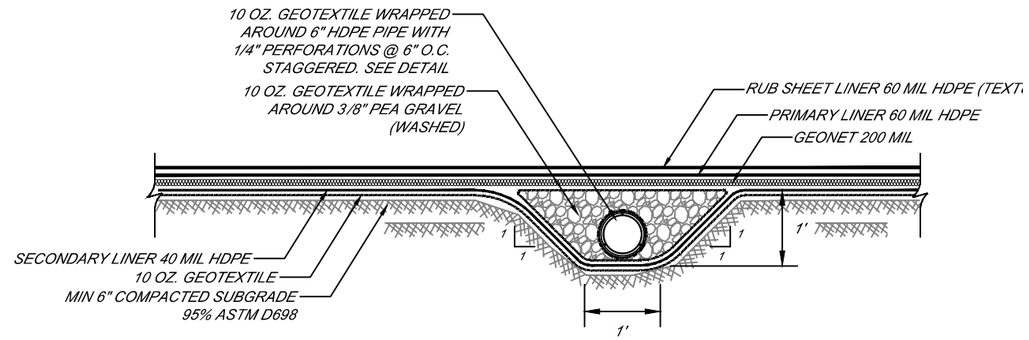
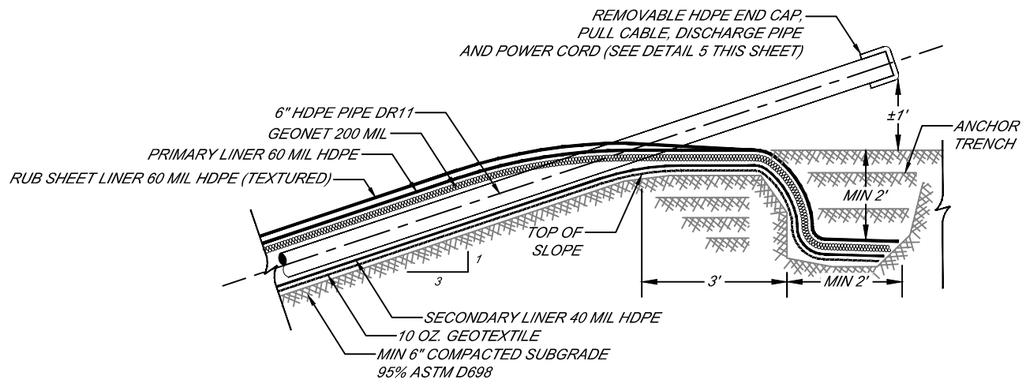


1 / 3GP03 **LEAK DETECTION SYSTEM SECTION A**
NOT TO SCALE



2 / 3GP03 **LEAK DETECTION SYSTEM PIPE RISER**
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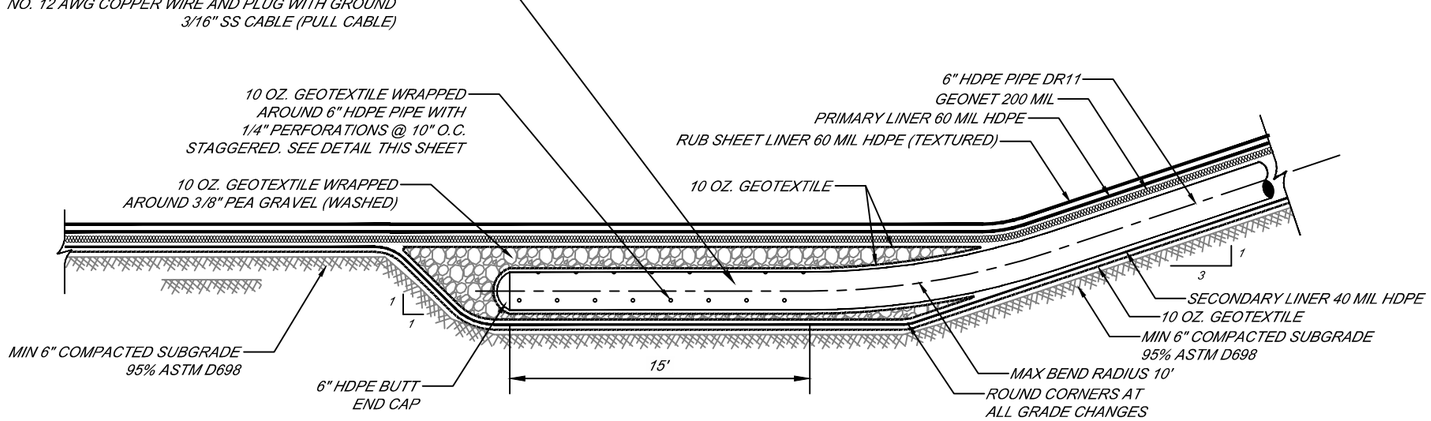

3 / 3GP03 **LEAK DETECTION SYSTEM SECTION B**
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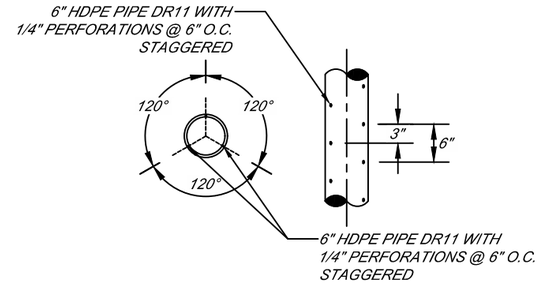
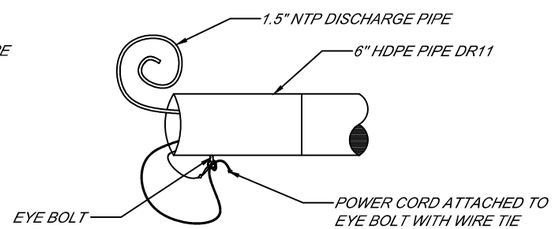


4 / 3GP03 **LEAK DETECTION SYSTEM PERFORATED PIPE**
NOT TO SCALE



5 / 3GP03 **DISCHARGE PIPE, PULL CABLE AND POWER CORD**
NOT TO SCALE

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LEAK DETECTION SYSTEM DETAILS

HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
PRINT DATE: 7/14/2020	DESIGNED BY: CSC
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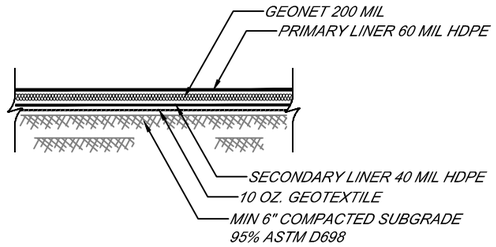
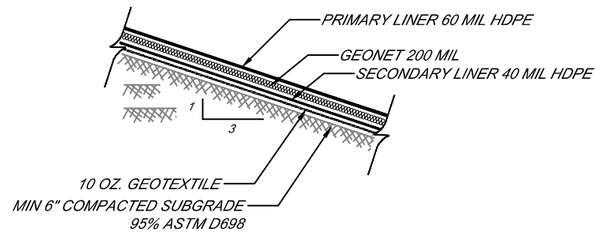


1 / 3GP04 **TYPICAL POND BOTTOM LINER**
NOT TO SCALE



2 / 3GP04 **TYPICAL POND SLOPE LINER**
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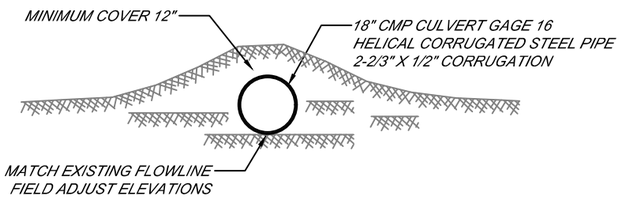
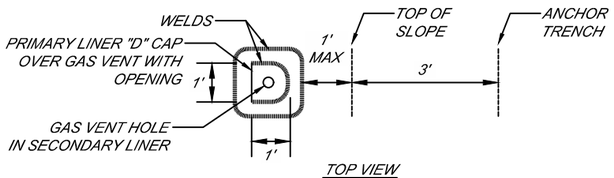
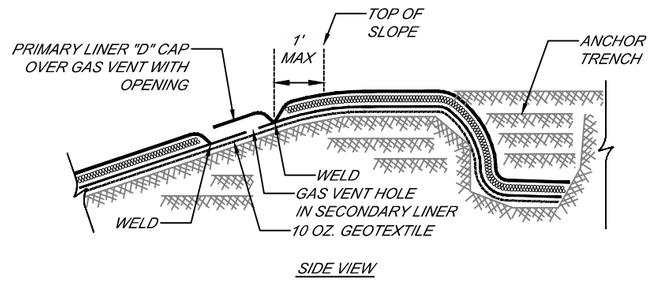


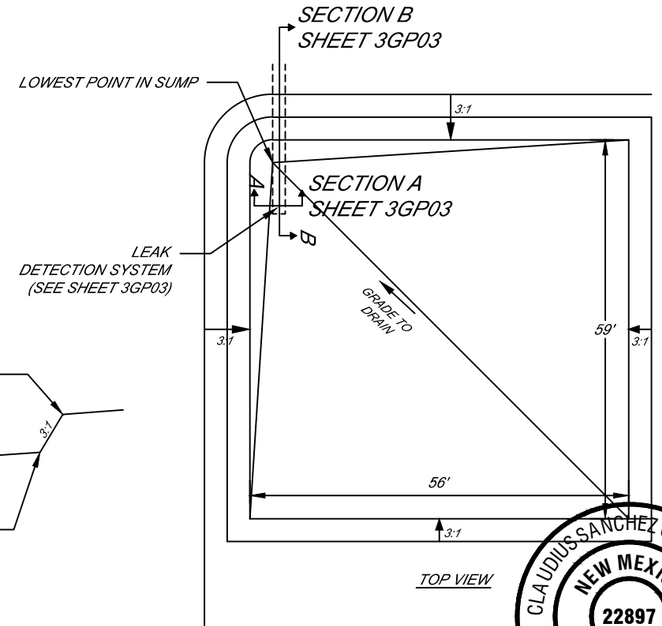
3 / 3GP04 **TYPICAL CULVERT DETAIL**
NOT TO SCALE





NOTE:
GAS VENT SPACING SHALL BE INSTALLED
PER MANUFACTURER'S RECOMMENDATIONS

4 / 3GP04 **TYPICAL GAS VENT**
NOT TO SCALE



5 / 3GP04 **SUMP DETAIL**
NOT TO SCALE

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MISCELLANEOUS DETAILS

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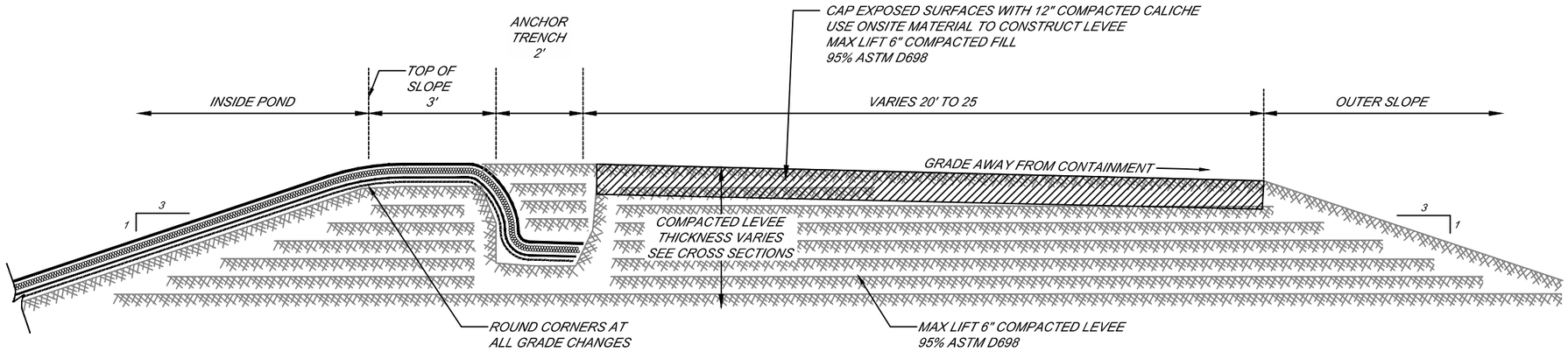

1 / 3GP05 TYPICAL LEVEE SECTION
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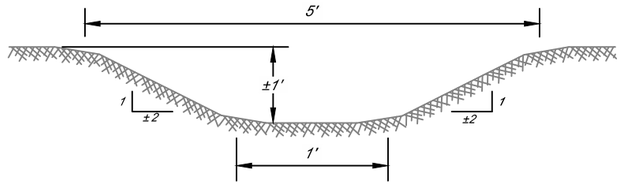
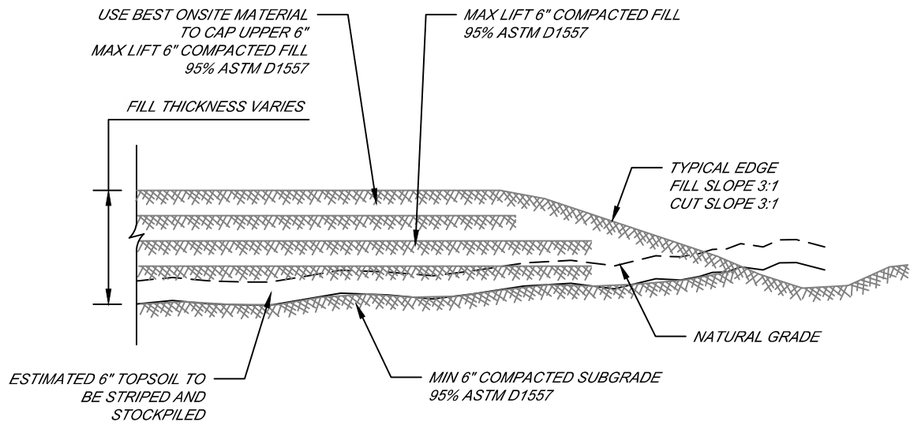


3 / 3GP05 TYPICAL DRAINAGE DICH
NOT TO SCALE



2 / 3GP05 TYPICAL PAD EDGE SECTION
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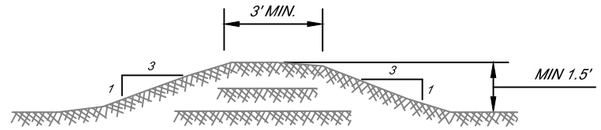

4 / 3GP05 TYPICAL EROSION PROTECTION BERM
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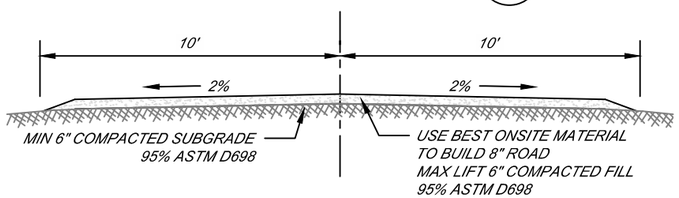

5 / 3GP05 20' LEASE ROAD SECTION

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07/14/2020

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LEVEE AND PAD DETAILS

HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
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PROJECT NO. 19-172	CHECKED BY: CSC/EMH
SUBSET:GRADING PLANS	SHEET: 3GP05

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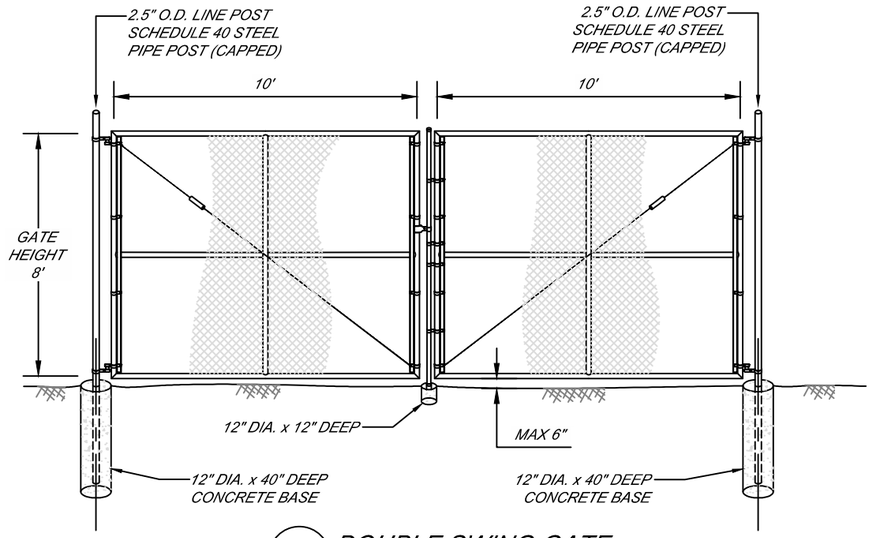

1 3GP06 **DOUBLE SWING GATE**
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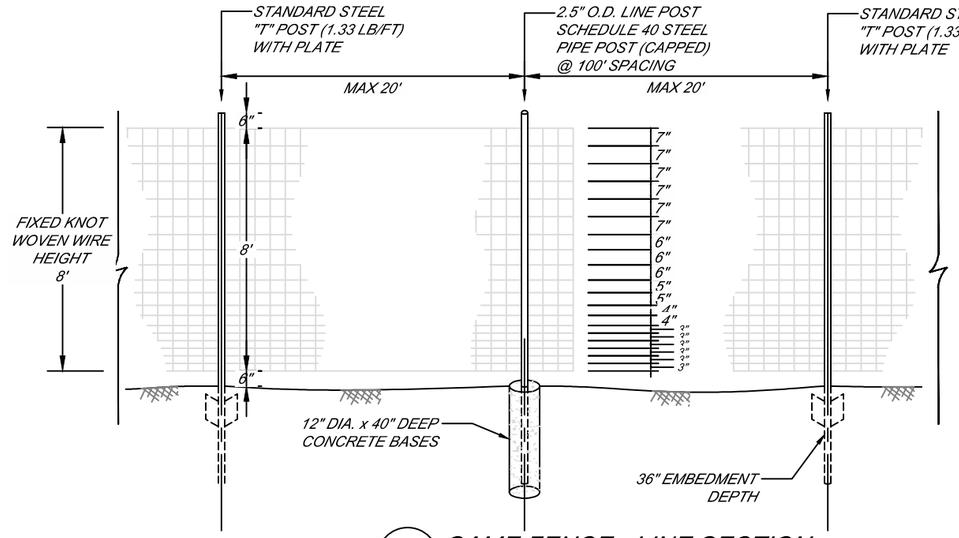

2 3GP06 **GAME FENCE - LINE SECTION**
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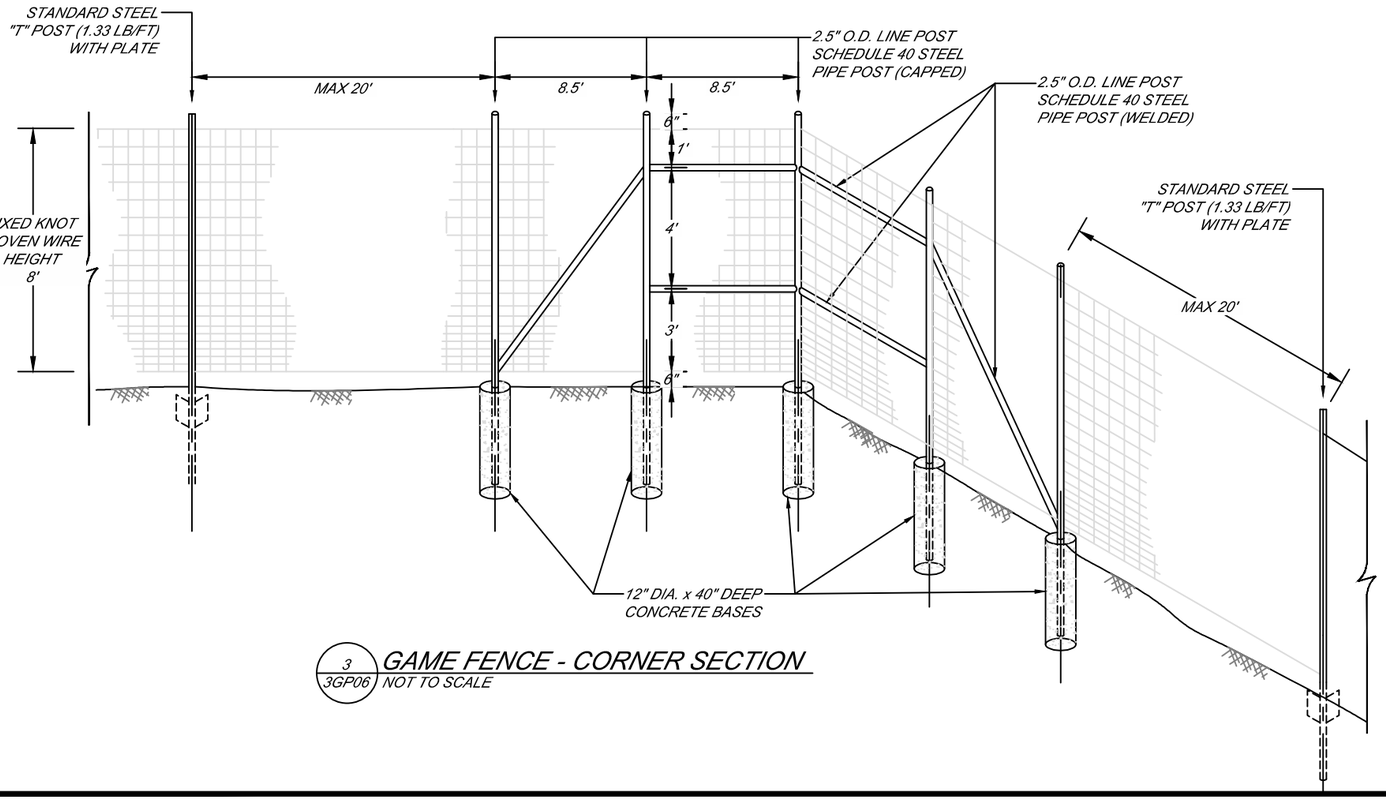

3 3GP06 **GAME FENCE - CORNER SECTION**
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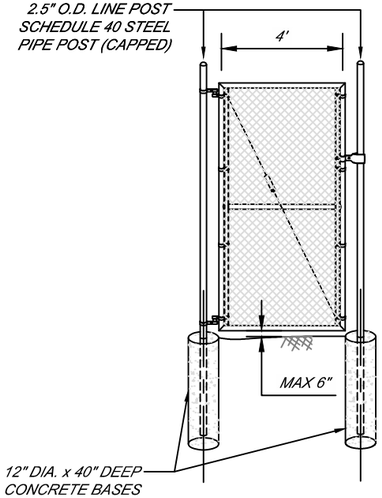

4 3GP06 **WALK GATE**
NOT TO SCALE

NOTES:
1. FOR WOVEN WIRE, TOP AND BOTTOM STRANDS SHALL BE 12½ GAUGE OR HEAVIER; INTERMEDIATE STRANDS SHALL BE 14½ GAUGE OR HEAVIER.
2. ALL WIRE SHALL HAVE CLASS III GALVANIZATION.
3. STANDARD WOVEN WIRE FENCES MAY HAVE LINE POSTS SPACED UP TO 15 FEET APART. HI-TENSILE WOVEN WIRE FENCE MAY HAVE LINE POSTS SPACED UP TO 20 FEET APART. CLOSER SPACING IS REQUIRED WHERE NEEDED FOR INCLINES OR CHANGES IN TOPOGRAPHY.
4. CONCRETE FOOTINGS SHALL HAVE TOPS CROWNED.
5. TO PREVENT WIRE FROM SLIPPING ON STEEL POST, DOUBLE WRAP ALL WIRE AROUND STEEL POST OR WELD CHAIN LINK LOOPS.

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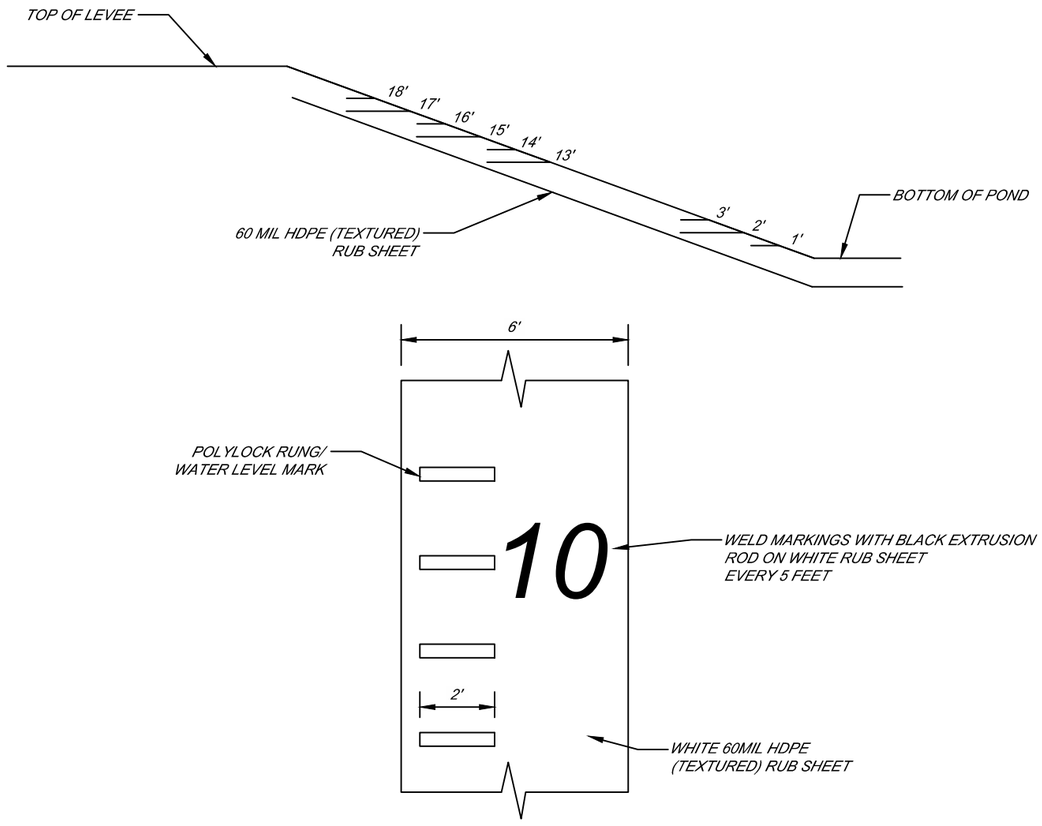
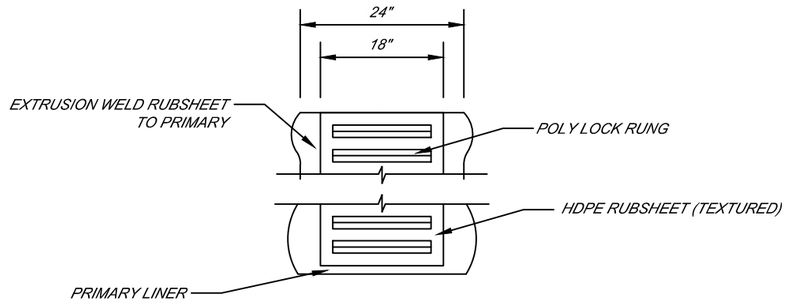
FENCE DETAILS	
HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
PRINT DATE: 7/14/2020	DESIGNED BY: CSC
PROJECT NO. 19-172	CHECKED BY: CSC/EMH
SUBSET:GRADING PLANS	SHEET: 3GP06

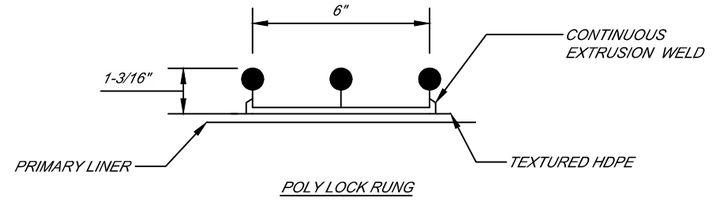
Drawing File: Z:\Shared\Projects\19-172 Solaris Eddy State\04_CIVIL\CADD\Design\Drawings\19-172 Details.dwg



1 3GP07 **WATER LEVEL MARKS**
NOT TO SCALE



ESCAPE LADDER FRONT VIEW



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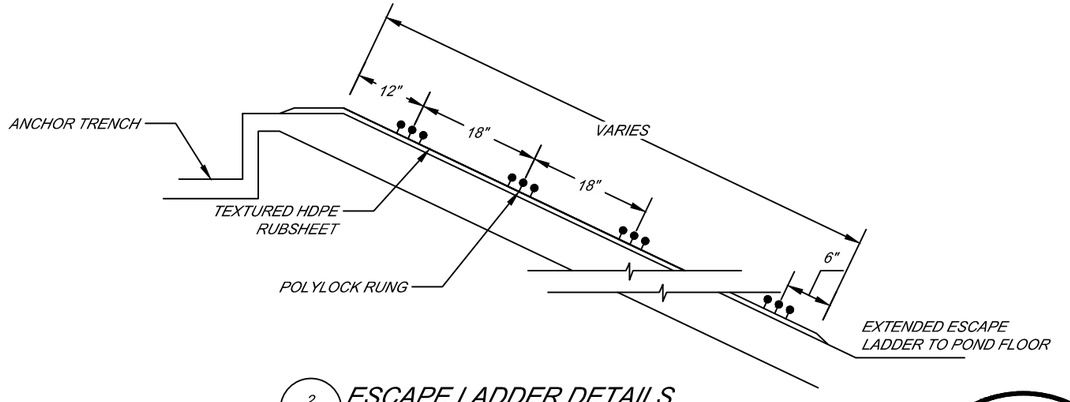

2 3GP07 **ESCAPE LADDER DETAILS**
NOT TO SCALE

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
07/14/2020

MAGRYM
TBPELS F-19848

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IFR	ISSUED FOR REGULATORY APPROVAL	07/14/20	
	NOT FOR CONSTRUCTION		
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SOLARIS WATER MIDSTREAM

Solaris Water Midstream, LLC
907 Tradewinds Boulevard
Midland, TX 79701
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EDDY STATE WATER TREATMENT AND REUSE FACILITY
S02, T26S, R29E
EDDY COUNTY, NM
SOLARIS WATER MIDSTREAM, LLC.

ESCAPE LADDER AND GAGE DETAILS

HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
PRINT DATE: 7/14/2020	DESIGNED BY: CSC
PROJECT NO. 19-172	CHECKED BY: CSC/EMH
SUBSET:GRADING PLANS	SHEET: 3GP07

Drawing File: Z:\Shared\Projects\19-172 Solaris Eddy State\04_CIVIL\CADD\Design\Drawings\19-172 Details.dwg

EFFECTIVE WIDE-AREA BIRD CONTROL!

Mega Blaster PRO
sonic bird repeller
covers 30 acres!

- NEMA Rated Case
- Crystal-Clear Digital Sounds

Mega Blaster PRO uses intermittent distress calls to create a "danger zone" that frightens infesting birds away for good.

PREDATOR cries help scare all the birds.

- *Laughing Gull*
- *Ring-Billed Gull*
- *Herring Gull*
- *California Gull*
- *Black-Headed Gull*
- *Glaucous-Winged Gull*
- *Double Crested Cormorant*
- *Marsh Hawk*

Perfect for Landfills, Airfields, Fish Farms, Farm Fields or any multi-acre facility.

Our most powerful system features two high-output amplifiers that drive our specially-designed 20 speaker tower. The intense sound output covers up to 30 acres (12 hectares).

It features solid-state electronics mounted inside a NEMA-type control box, suitable for most any application.

The generating unit mounts easily to a post or pole using the included hardware. The unit comes pre-recorded in four different configurations for the most common bird infestations.

Choose any or all of the 8 sounds, including predators to give the birds even more of a sense of danger. Customize by choosing volume and silent time between sounds.

CONFIGURATIONS AVAILABLE:

- Agricultural
  # MEGA-AG
- Crow / Raven
  # MEGA-CROW
- Woodpecker
  # MEGA-WP
- Marine / Gull
  # MEGA-MAR

Mega Blaster PRO

Complete system includes the generating unit with two built-in high-output amplifiers, 20-speaker tower with audio cables, 40 watt solar panel, battery clips and all mounting hardware.

BIRD-X

The Bird Control 'X'-Perts

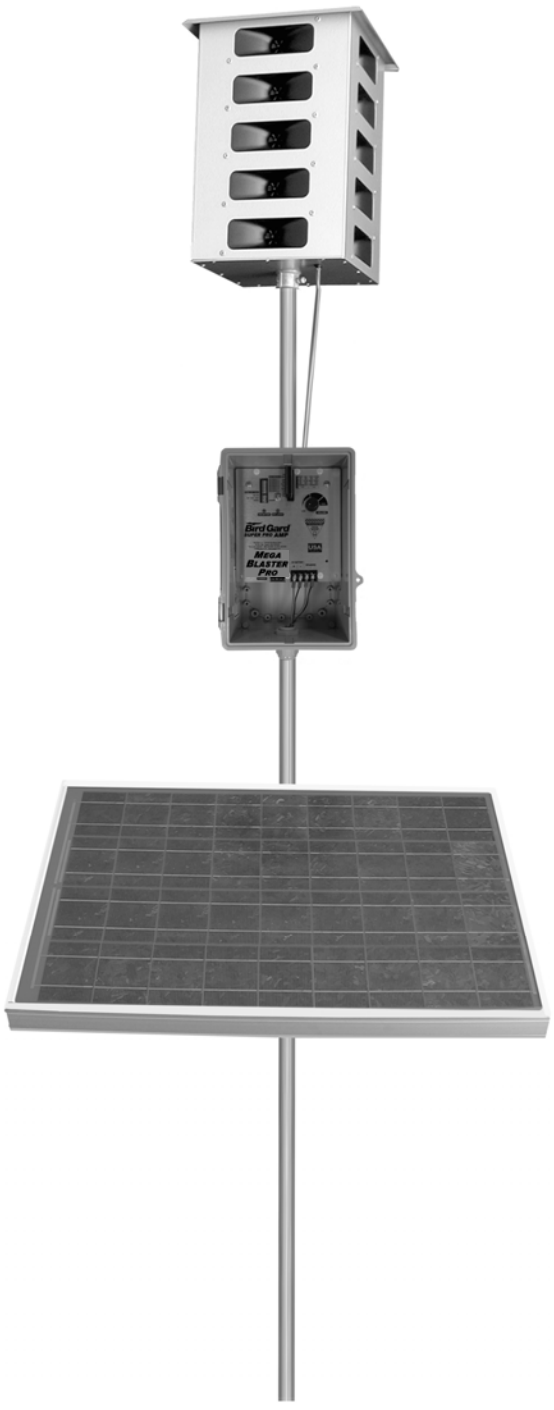
NOTE: This unit is capable of sound output up to 125 decibels. **HEARING PROTECTION IS RECOMMENDED.**

HEARING PROTECTION RECOMMENDED

MEGA BLASTER PRO

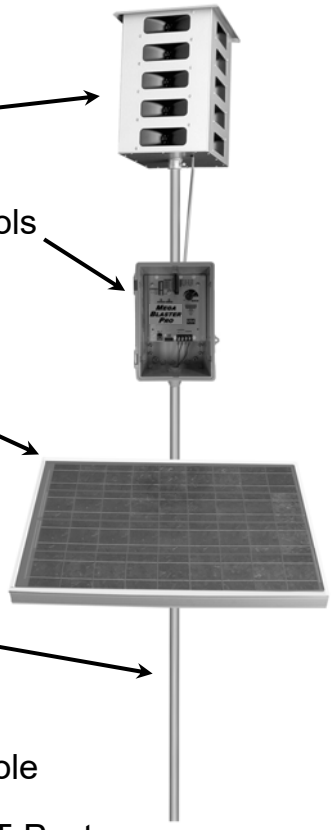
BIRD-X

User's Manual



Overview

The Bird-X Mega Blaster Pro utilizes the innate power of the natural survival instincts of birds to effectively repel them. Digital recordings of distressed and alarmed birds, along with the sounds made by their natural predators are broadcast through high fidelity weather-resistant speakers over the top of areas. This action triggers a primal fear and flee response. Pest birds soon relocate to where they can feed without feeling threatened.



Your Bird-X Mega Blaster Pro system consists of:

20-Speaker Tower broadcasts the bird sounds

Control Unit produces the bird sounds and contains all operational controls

Solar Panel recharges the 12-volt deep cycle battery

Items needed but <u>not</u> included:

(1) **Mounting Pole** or **Mast** tall enough to raise the 20-Speaker Tower at least 5 feet above the top of the areas, trees or other obstructions

(1) **12-volt Deep Cycle Battery** (RV/Marine) Group 27 or larger wet cell

(1) **T-Post** or similar (Optional) may be needed to support the mounting pole

(1) **Bailing Wire or zip-tie** (Optional) to secure the Mounting Pole to the T-Post

CAUTION: THE MEGA BLASTER PRO IS CAPABLE OF PRODUCING SOUNDS UP TO 125 DECIBELS. PROPER HEARING PROTECTION MUST BE WORN ANYTIME THE UNIT IS TURNED ON.

Bird Control Management Guidelines

An active bird control management program is a key to successfully repelling pest birds. Bird feeding patterns may take several days or weeks to break. Follow all suggestions for maximum effectiveness. Read all instructions prior to installation.

For best results:

- **It is extremely important to fully protect your entire area from birds.** Any areas not fully protected will allow birds to begin feeding at the fringes of the sound coverage. They will soon become bolder and learn the sounds are nothing to fear. This will cause the effectiveness to diminish. Complete Bird-X product coverage forces birds to leave the area entirely.
- Install the Mega Blaster Pro unit at least two weeks before birds are attracted to your area. It is much easier to keep birds away before they have found a food source than it is to repel them once they have developed a feeding pattern.
- Most birds begin feeding from the perimeter of an area. Place Mega Blaster Pro units so the sound protection covers past the edges of the area.
- Birds will often use tall trees for roosting and observation. If birds are in bordering trees it is necessary to position the units so the sound protection covers the trees as well.
- Mount the 20-Speaker Tower at least five feet above trees, areas and structures for maximum coverage. The higher the better. Sound will disperse or reflect off structures or foliage. Mount control unit out of direct sun, if possible.
- When first installed, run Mega Blaster Pro units at FULL volume and on SHORT time off periods. This ensures maximum “bird stress” and creates a hostile environment.
- Watch for changes in bird activity and adjust the location of your Mega Blaster Pro unit if needed.
- **Check the battery and unit settings often to insure continuous bird control. Be certain that the system is not turned down or has a dead battery. Field hands or harvesters may turn down the volume.**
- Changing settings and switches often helps to prevent bird habituation. Periodically change the switch settings of the eight sounds (turning them ON or OFF). NEVER turn OFF the distress calls of the target birds you are trying to repel and always keep at least one predator bird sound turned ON.
- If different bird species enter the protected area and begin causing damage contact us immediately for an updated Sound Recording Card designed to repel the new invading birds.
- Remember that the Mega Blaster Pro system is a management tool, and should be used as part of your overall bird control strategy, sometimes in conjunction with other bird control techniques and devices.

Be aware that under extreme drought or other adverse conditions, birds will disregard all deterrents and risks in order to survive

GENERAL SITING CRITERIA DEMONSTRATION AND SITE SPECIFIC GROUNDWATER DATA

8.
Siting Criteria for Recycling Containment

Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.

General siting	
Ground water is less than 50 feet below the bottom of the Recycling Containment. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells FIGURES 1-2	☐ Yes ☒ No ☐ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; written approval obtained from the municipality FIGURE 3	☐ Yes ☒ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division FIGURE 4	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map FIGURE 5	☐ Yes ☒ No
Within a 100-year floodplain. FEMA map FIGURE 6	☐ Yes ☒ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site FIGURE 7	☐ Yes ☒ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; aerial photo; satellite image FIGURE 8	☐ Yes ☒ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. FIGURES 1 and 7 - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 500 feet of a wetland. FIGURE 9 - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ☒ No

Distance to Groundwater

Figure 1, Figure 1a, Figure 2, Figure 2a, and the discussion presented below demonstrate that groundwater (fresh water, as defined by NMOCD Rules) at the location is greater than the required 50 feet below the proposed Eddy State Recycling Facility and Containment.

Hydrogeology of Eddy State Recycling Facility and Containment

The site for the Eddy State Recycling Facility and Containment is located off Pipeline Road near the southern New Mexican border with Texas. It is roughly 2.7 miles east of the Pecos River. According to the geologic map of New Mexico (Seen in Figure 2), surface unit is Quaternary age older alluvium deposits (Qoa), which are described as follows:

> Older alluvial deposits of upland plains and piedmont areas, and calcic soils and eolian cover sediments of High Plains region (middle to lower Pleistocene)—Includes scattered lacustrine, playa, and alluvial deposits of the Tahoka, Double Tanks, Tule, Blackwater Draw, and Gatuña Formations, the latter of which may be Pliocene at base; outcrops, however are basically of Quaternary deposits.

The Qoa in this area may include the Gatuña Formation beneath an upper veneer (5-20 feet) of sand and caliche. According to Ground-Water Report 3 by G.E. Hendrickson and R.S. Jones[1], the Gatuña Formation exists in large sink depressions east of the Pecos River. Powers and Holt[2] map outcrop and subcrop of the Gatuña Formation from the east side of the Pecos River to near the Eddy State Containment location. The Permian Quartermaster Formation is probably absent beneath the containment site due to Tertiary or later erosion. In this area, based on oil well data, we can assume that the underlying unit in the area is the Rustler formation. A majority of the USGS wells displayed in Figures 1 and 2 are wells whose principal water-bearing unit is Rustler and the depth to water in these wells is between 60 and 120 feet. The Rustler Formation consists of siltstone, anhydrite, gypsum, sandstone and dolomite. The Salado formation underlies the Rustler formation consistently on the east side of the Pecos River, and we can presume this is the case in the area local to the Eddy State Facility. The Salado is a halite and anhydrite unit that acts as a barrier to groundwater flow from higher aquifers to lower aquifers and vise versa. Based on well completion logs from a nearby well (Lusitano 27-34FEDCOM734H from Devon Energy), we can see that the contact between the Rustler and Salado is at 1490 feet from the surface at the location of the well.

Topography is relatively flat with some gentle upslopes in the area. Surface soil appears to be thin with underlying caliche which outcrops in some erosional channels throughout the area. Surface vegetation is sparse, consisting mainly of mesquite, catclaw, creosote, rabbitbrush, and some cacti. Majority of mesquite, catclaw, and creosote appears to be dead. Carlsbad Soil & Water Conservation District affirms that the area has been treated for invasive mesquite and creosote (See Image 1). Small patches of green moss are visible in areas that appear to experience ephemeral drainage.

[1] https://geoinfo.nmt.edu/publications/water/gw/3/GW3.pdf
[2] https://nmgs.nmt.edu/publications/guidebooks/downloads/44/44_p0271_p0282.pdf

Image 1 – Vegetation along an ephemeral drainage channel in the area of the facility. Caliche pieces can be seen in the foreground of the image.

Figure 1 and 1a is a topographic map of the state of New Mexico and associated legend that displays the following:

- The Eddy State Recycling Facility identified by a blue polygon labeled by a yellow callout box.
- Water wells from the USGS database as dark and light green, red, brown, and dark purple triangles, and green squares with an "X" through (indicating a nearby pumping well). The colors indicate the principle water bearing-unit for each well: Alluvium/Bolsom, Santa Rosa, Forty-Niner Member of the Rustler Formation, Castle Formation, and Rustler Formation. The well number as defined in the USGS database, recorded depth to water value, and date the value was recorded is displayed next to the corresponding well point.
- Miscellaneous water wells from non-public databases that were identified by field inspection or other published documents are represented by yellow, blue, and green squares with black dots at the center. The colors correspond to the depth to water recorded in the RT Hicks database. The depth to water and date the depth to water value was recorded are also displayed.
- Water wells from the Office of the State Engineer WATERS database as light blue, light green, and dark blue circles with colored triangles that represent the depth to water. Well ID as documented in the OSE WATERS database, depth to water value, and the date the value was recorded.

Figure 2 and Figure 2a is a topographic map overlain by a transparent geologic map of the state of New Mexico and a potentiometric surface map and the associated legend that displays the following:

- The Eddy State Recycling Facility identified by a blue polygon labeled by a yellow callout box.
- Water wells from the USGS database as dark and light green, red, brown, dark purple, and light blue triangles. The colors indicate the principle water bearing-unit for each well: Alluvium/Bolsom, Santa Rosa, Forty-Niner Member of the Rustler Formation, Castle Formation, Rustler Formation, and Not Defined. The well number as defined in the USGS database, recorded groundwater elevation value, and date the value was recorded is displayed next to the corresponding well point.
- Miscellaneous water wells from non-public databases that were identified by field inspection or other published documents are represented by yellow, blue, and green squares with black dots at the center. The colors correspond to the depth to water recorded in the RT Hicks database. The groundwater elevation and date the ground water elevation value was recorded are also displayed near the representative point on the map.
- Isocontours of a potentiometric surface from the RT Hicks database. USGS and Miscellaneous wells and their groundwater elevation values were used to create the potentiometric surface.

We queried the OSE database for nearby driller's logs of water wells to gain information regarding the depth to the uppermost water-bearing unit and the characteristics of the aquifer. We found the following information (see also Appendix Well Logs):

- Well C-3483 is about 3.75 miles east of the proposed containment and the well log indicates:
    - Dry sand, brown clay and sandstone appears to overlie the water-bearing unit from surface to 200 feet.
    - First encountered water is 200 feet below land surface in "hard sandstone fractures" that is underlain by gray shale
    - Below the gray shale that did not produce water is gray clay layers, gravel layers and hard sandstone with fractures, most of which produce water
- Well C-3782 was drilled in 2015, lies about 4 miles to the northeast and has a detailed well log. This well shows
    - The same dry, clayey brown sand as described above to a depth of 260 feet
    - Water is observed in brown, fine sand and silty sand from 260 feet to 380 feet
    - Saturated gray fine sandy clay or clayey sand exist from 380 feet
    - At 760 feet the lithology is dominantly clay and red.
- Well C-3507 is 3 miles east of the containment and west of the Pecos River. We did not employ this well in our evaluation

The data are too sparse to allow a confident conclusion, but these data and other data from nearby wells suggest that the Rustler is the aquifer beneath the containment and probably does not produce sufficient water for stock in this area. East of the containment it is possible

that the uppermost water bearing unit is the Gatuña Formation. Perhaps the Quartermaster is the gray silty sand/sandy clay unit observed from 320 feet 760 feet. The groundwater in this area does not appear to be under significant confining pressure based upon these available data.

Depth to Groundwater

We employed Google Earth and USGS topographic maps to identify locations of any nearby wells.

- We found no evidence of USGS-9524 in historic air photos or topographic maps
- We measured a depth to water of 134.9 feet in well just east of the ranch house to the south of the proposed containment. The grazing lessee indicated was recently drilled but did not produce sufficient water for stock and was not pumped as a result.
- We believe well USGS-9524 is mis-located in the USGS database and the correct location is an abandoned windmill at the ranch house.
- Figure 2 shows that the potentiometric surface beneath the containment is about 2880
- The upper Rustler Formation crops out about ¼ mile southeast of the proposed containment and the Quartermaster Formation is mapped at the surface about 2 miles southeast. This suggests that the veneer of alluvium beneath the site is relatively thin.
- No evidence exists of shallow alluvial water perched on the Rustler Formation

The proposed elevation of the Eddy State Containment sump is 2986 feet ASL. Thus, the estimated depth to water is (2986-2880) = 106 feet

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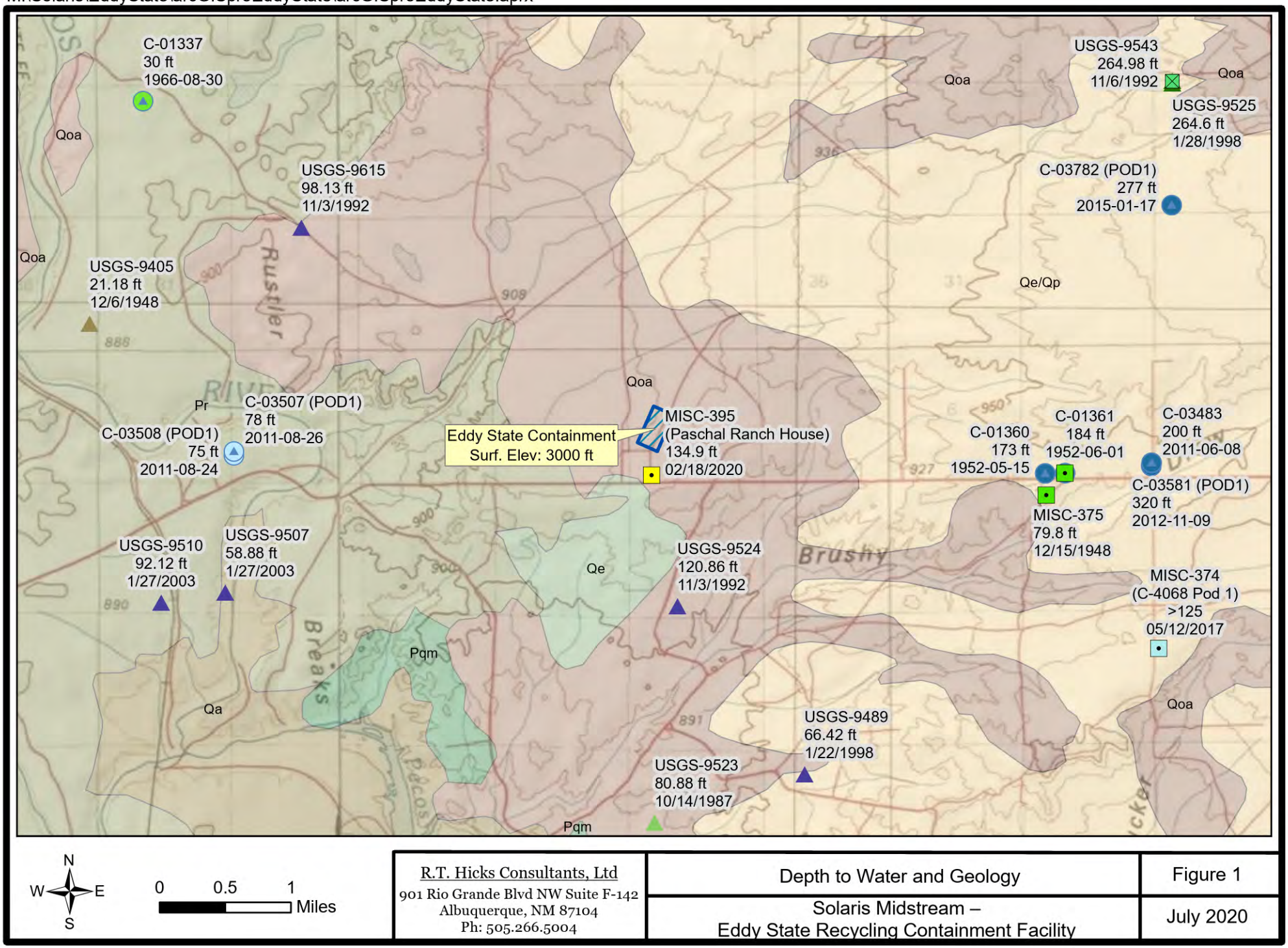

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Depth to Water and Geology

Figure 1

Solaris Midstream –
Eddy State Recycling Containment Facility

July 2020

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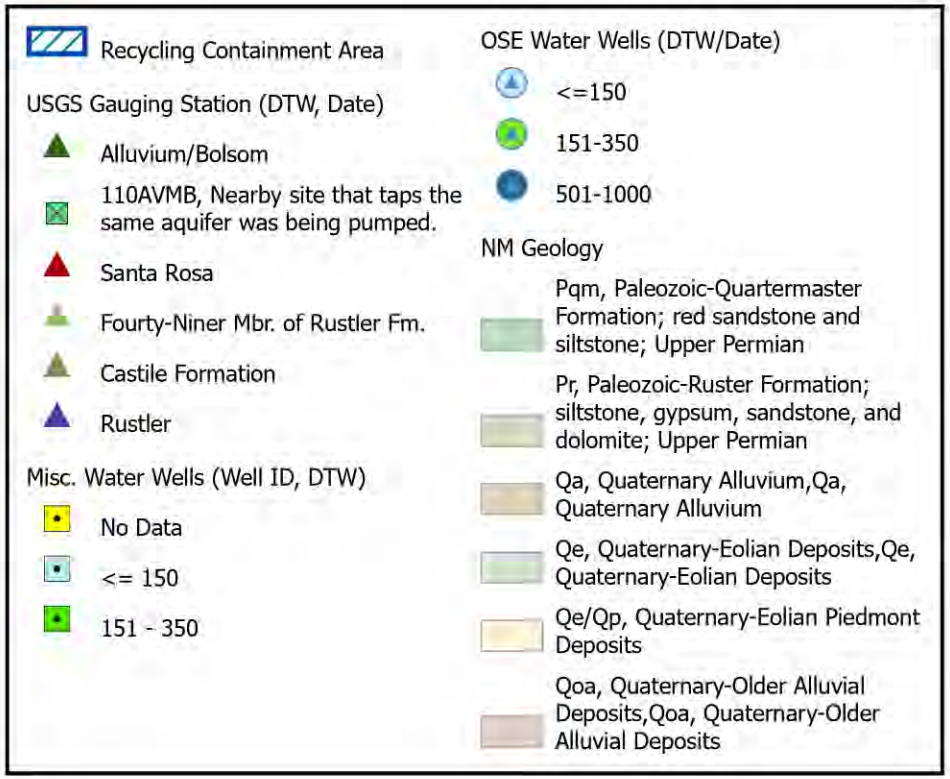

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Depth to Water and Geology Legend

Figure 1a

Solaris Midstream –
Eddy State Recycling Containment Facility

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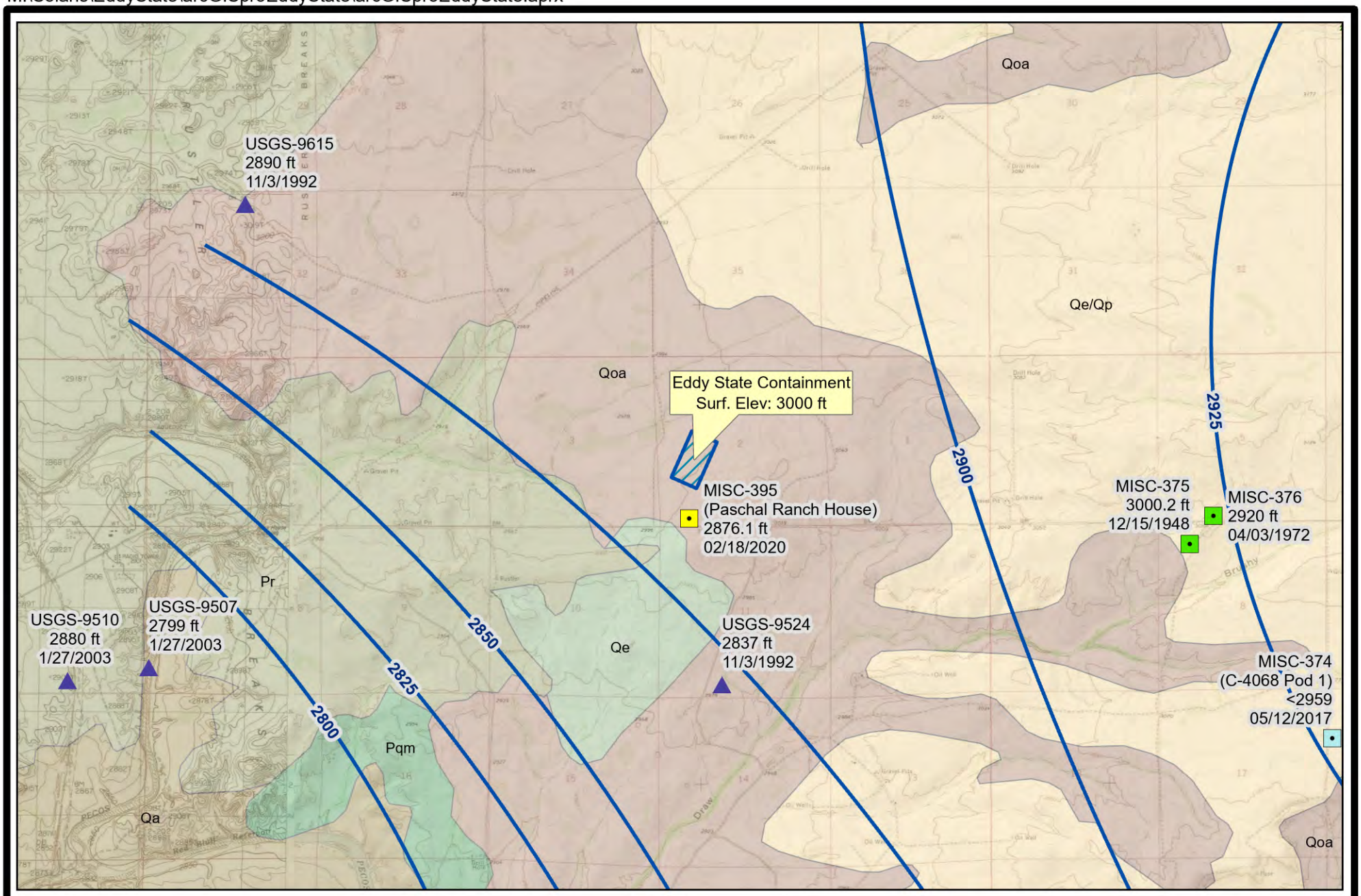

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Groundwater Elevation and Geology

Figure 2

Solaris Midstream –
Eddy State Recycling Facility

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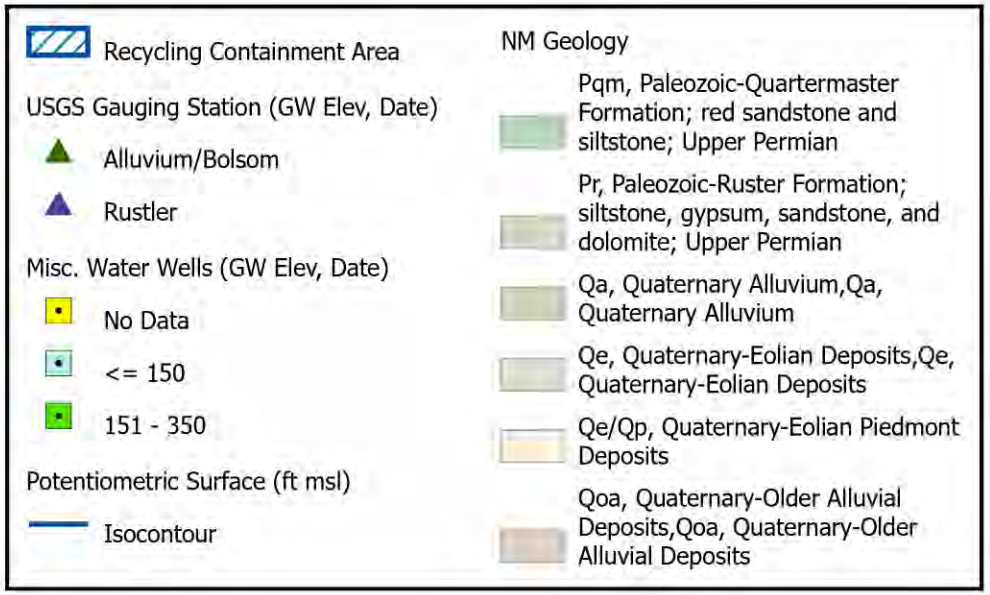

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Groundwater Elevation and Geology Legend

Figure 2a

Solaris Midstream –
Eddy State Recycling Facility

July 2020

Distance to Municipal Boundaries and Freshwater Fields

Figure 3 demonstrates that the area of interest is not within incorporated municipal boundaries or within defined municipal freshwater well fields covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended

- The closest municipality is Malaga, NM, which is about 12 miles to the north west.
- The closest mapped well field is near Carlsbad, NM, which is approximately 21.5 miles to the northwest.

Distance to Subsurface Mines

Figure 4 and our general reconnaissance of the area demonstrate the proximity of subsurface mines.

- The nearest mapped surface mine is a gravel pit and lies approximately 1.8 miles directly to the west.
- An unmapped, restored caliche pit is about 1.25 miles west-northwest of the proposed containment and is visible in Figure 8
- There are no subsurface mines in the area.

Distance to High or Critical Karst Areas

Figure 5 illustrates the Eddy State Recycling Facility's proximity to areas of high or critical karst potential.

- The proposed location for the recycling facility is wholly contained within an area considered medium karst potential by the Bureau of Land Management. The BLM map used in Figure 5 is the most recent published data that makes geologic sense.
- Our field investigation identified caliche at the surface near the containment and this caliche layer is about 10 feet thick, based upon observations at the restored caliche pit mentioned above
- The well log for the adjacent Eddy State SWD shows the top of anhydrite at 1732 feet and the surface casing to protect fresh water set at 575 feet. Thus, the first soluble, karst-forming rock unit lies between 575 feet and 1732 feet below surface.

We conclude that the soluble rock units of the Rustler that cause ground instability (e.g. anhydrite) or caverns are sufficiently deep that a classification of low karst potential may be warranted.

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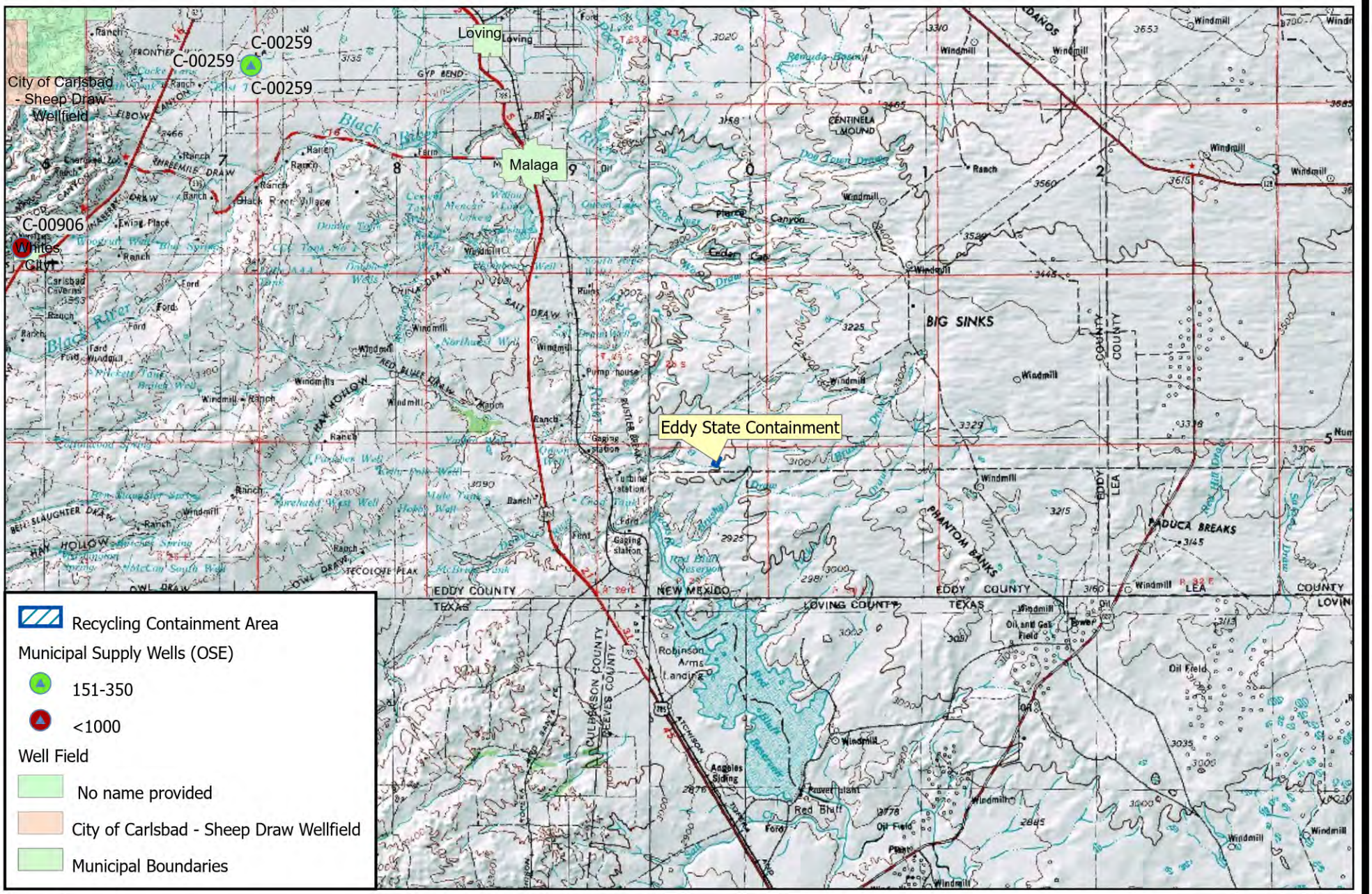

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Well Fields and Municipalities

Figure 3

Solaris Midstream –
Eddy State Recycling Facility

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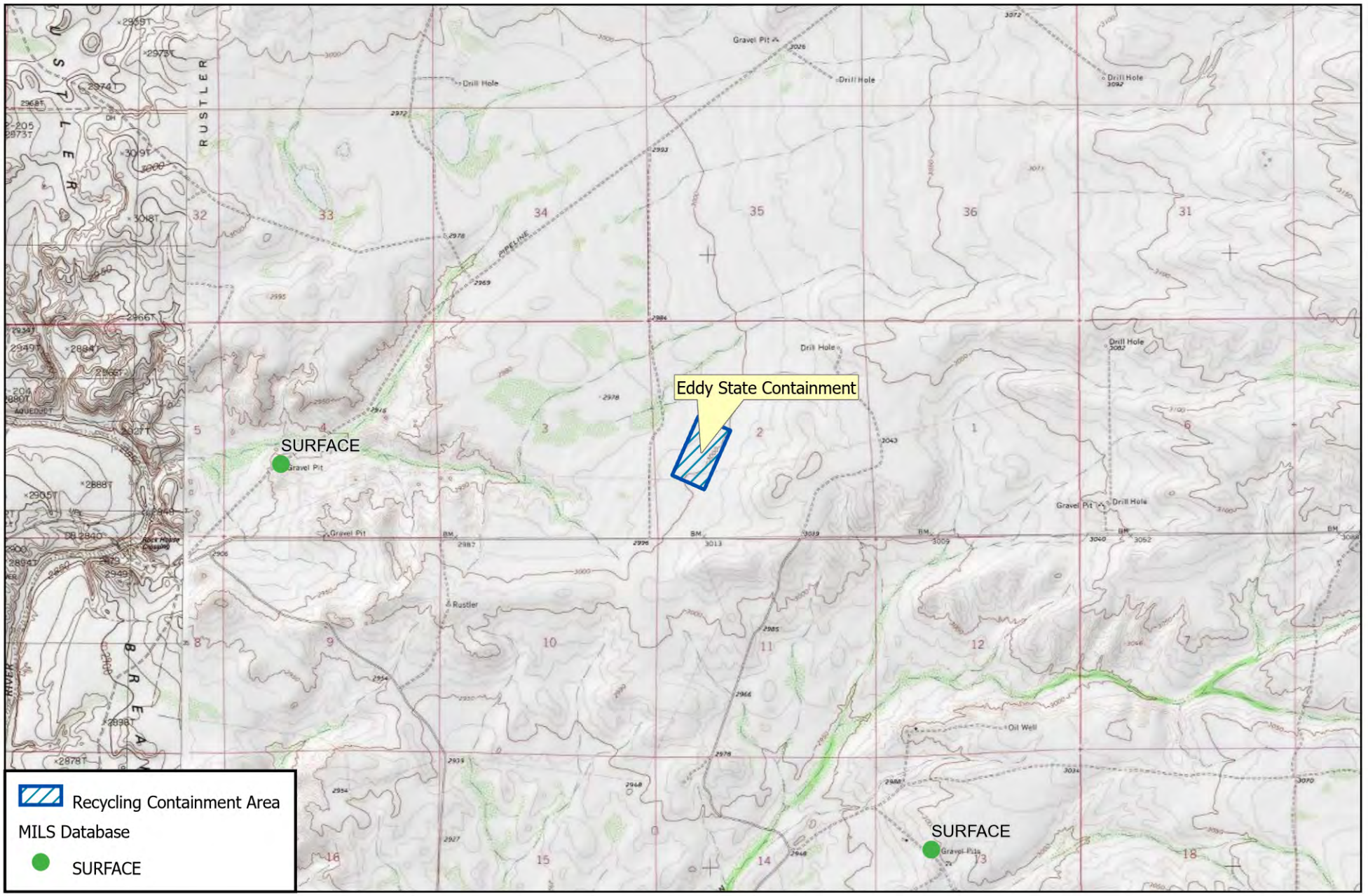

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Mines and Minerals

Figure 4

Solaris Midstream –
Eddy State Recycling Facility

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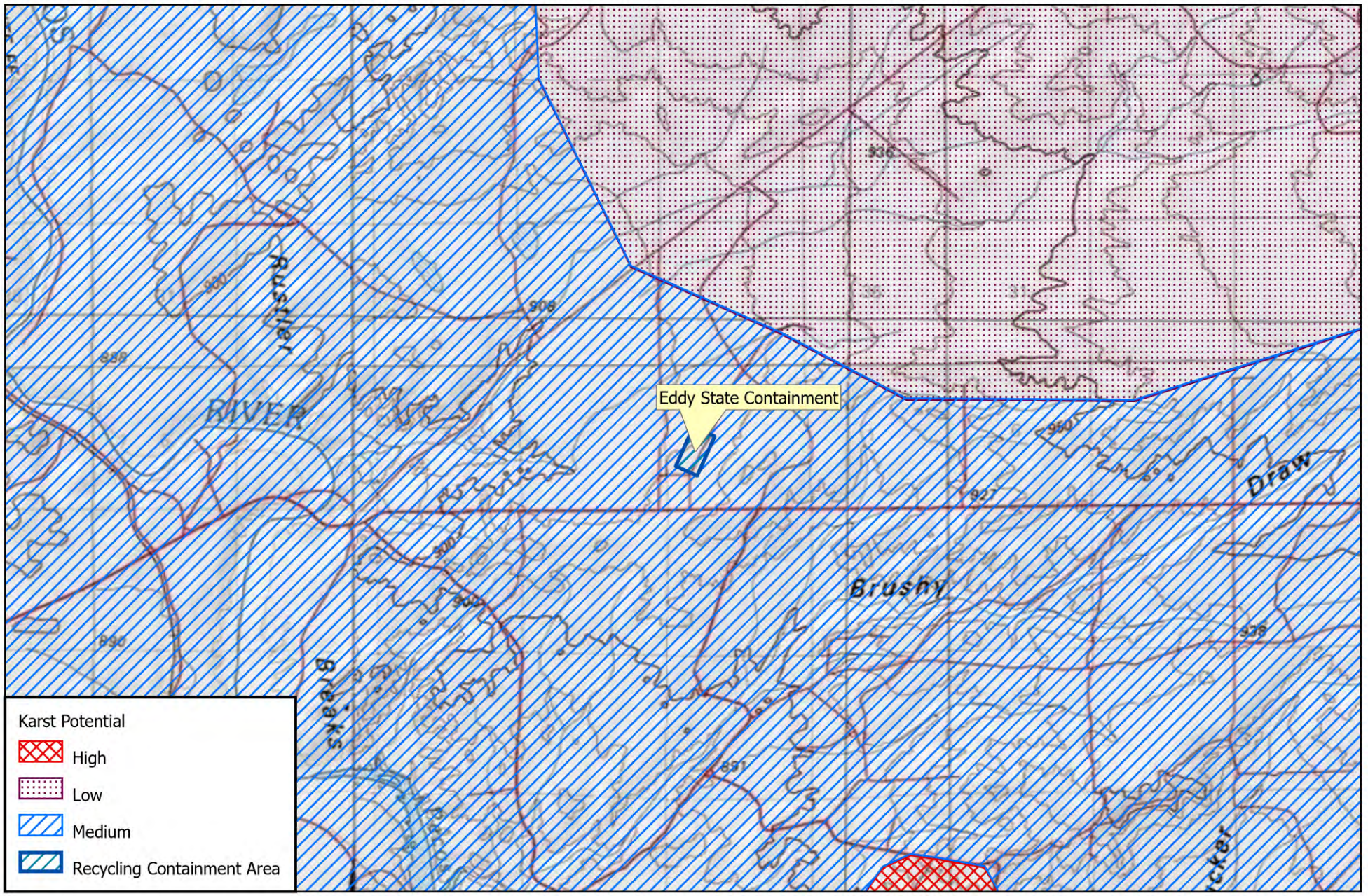

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Karst Potential

Figure 5

Solaris Midstream -
Eddy State Recycling Facility

July 2020

Distance to 100-Year Floodplain

Figure 6 and 6a demonstrate the proximity of 100-year flood plains with respect to the proposed location for the Eddy State Recycling Facility.

- The proposed location lies east of a 100-year flood plain the proposed location is not within a 100-year floodplain

Distance to Surface Water

Figure 7and 7a and the site visit demonstrate the proximity of the area of interest to a continuously flowing watercourse, lakebed, sinkhole, playa lake (measured from the ordinary high-water mark) or spring.

- The proposed location for the Eddy State Recycling Facility is about 500 feet from the nearest mapped intermittent streams
- As shown in the site photographs (Appendix Site Photographs), numerous small drainages *without* a defined bed or bank flow into the mapped watercourse from within the footprint of the proposed containment.
- Many of the natural drainages shown in Google Earth images prior to August 8,2008 have been disturbed by
    - A pipeline installed prior to 5/8/2009
    - Additional pipeline(s) installed prior to 11/5/2015
    - The lease road installed prior to the 4/22/2017 spud of the Eddy State SWD

All of these small channels that originate on a small alluvial fan at the foot of the small caliche-topped hill to the east of the proposed containment become effectively "lost" as the slope decreases to the west and some small depressions with vegetation effectively capture the overland flow. Thus, there are no drainages with a defined bed and bank that connect to the mapped watercourse.

Regardless of the fact that these small drainages that exist within the footprint of the containments are not "significant watercourses " as defined by the Rule, the stamped plans of the NM Registered Engineer will provide for a diversion of overland flow via engineered swales and erosion of the levee around the containments is effectively mitigated.

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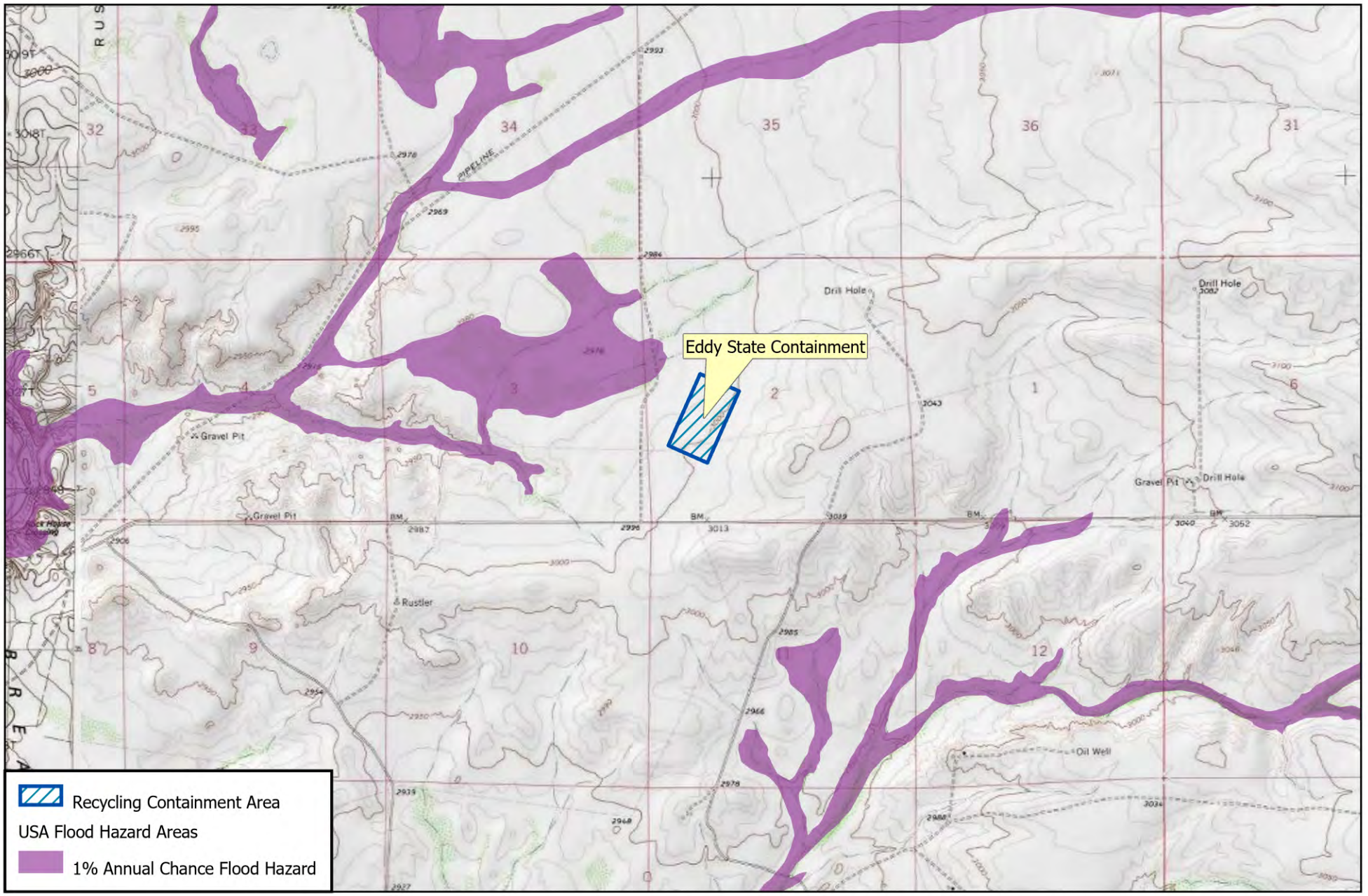

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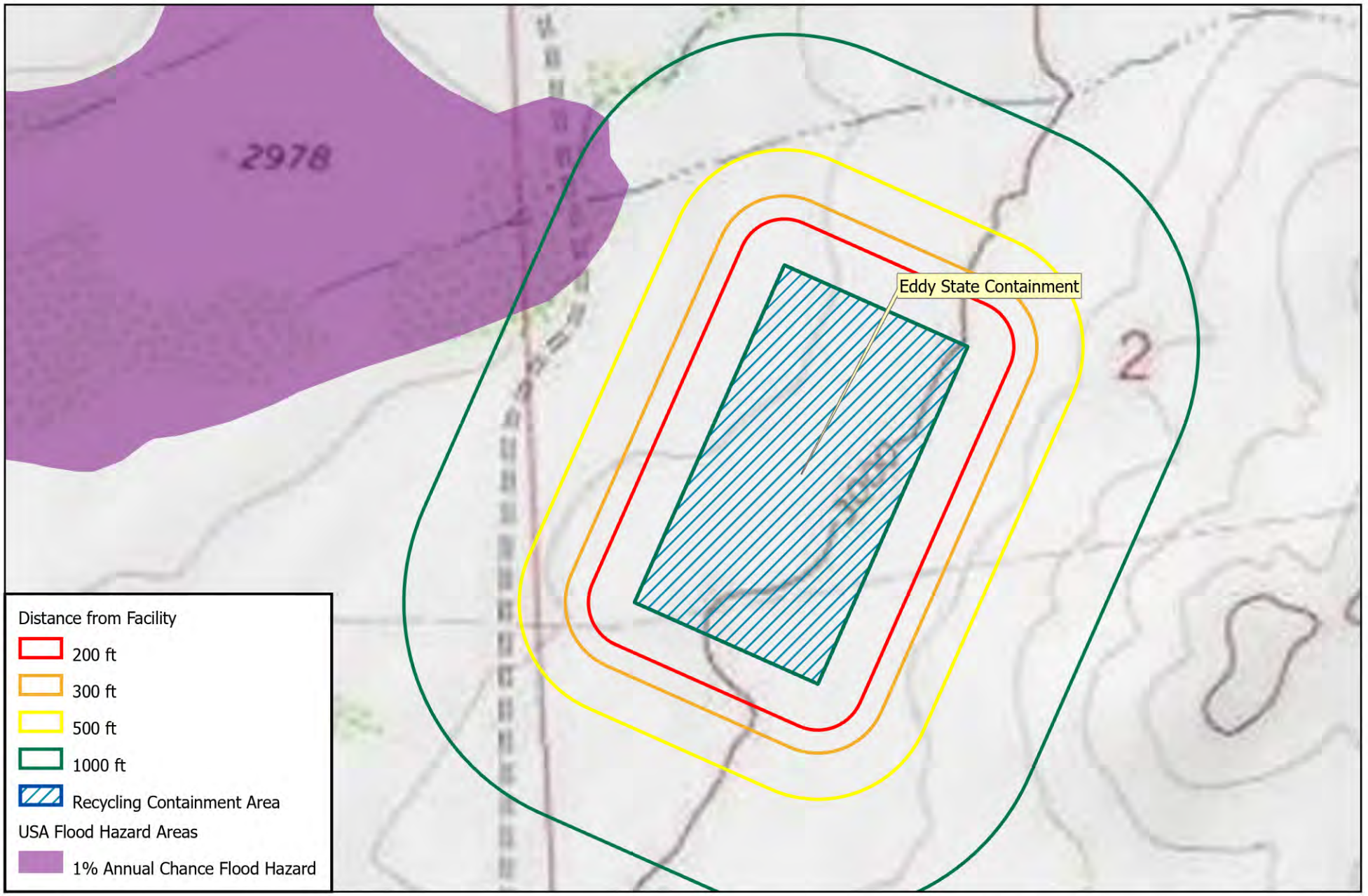
FEMA Flood Hazard Areas

Figure 6

Solaris Midstream -
Eddy State Recycling Facility

July 2020

M:\Solaris\EddyState\arcGISproEddyState\arcGISproEddyState.aprx



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Albuquerque, NM 87104
Ph: 505.266.5004

FEMA Flood Hazard Area Overlap with Facility

COG Operating -
Eddy State Recycling Facility

Figure 6a

July 2020

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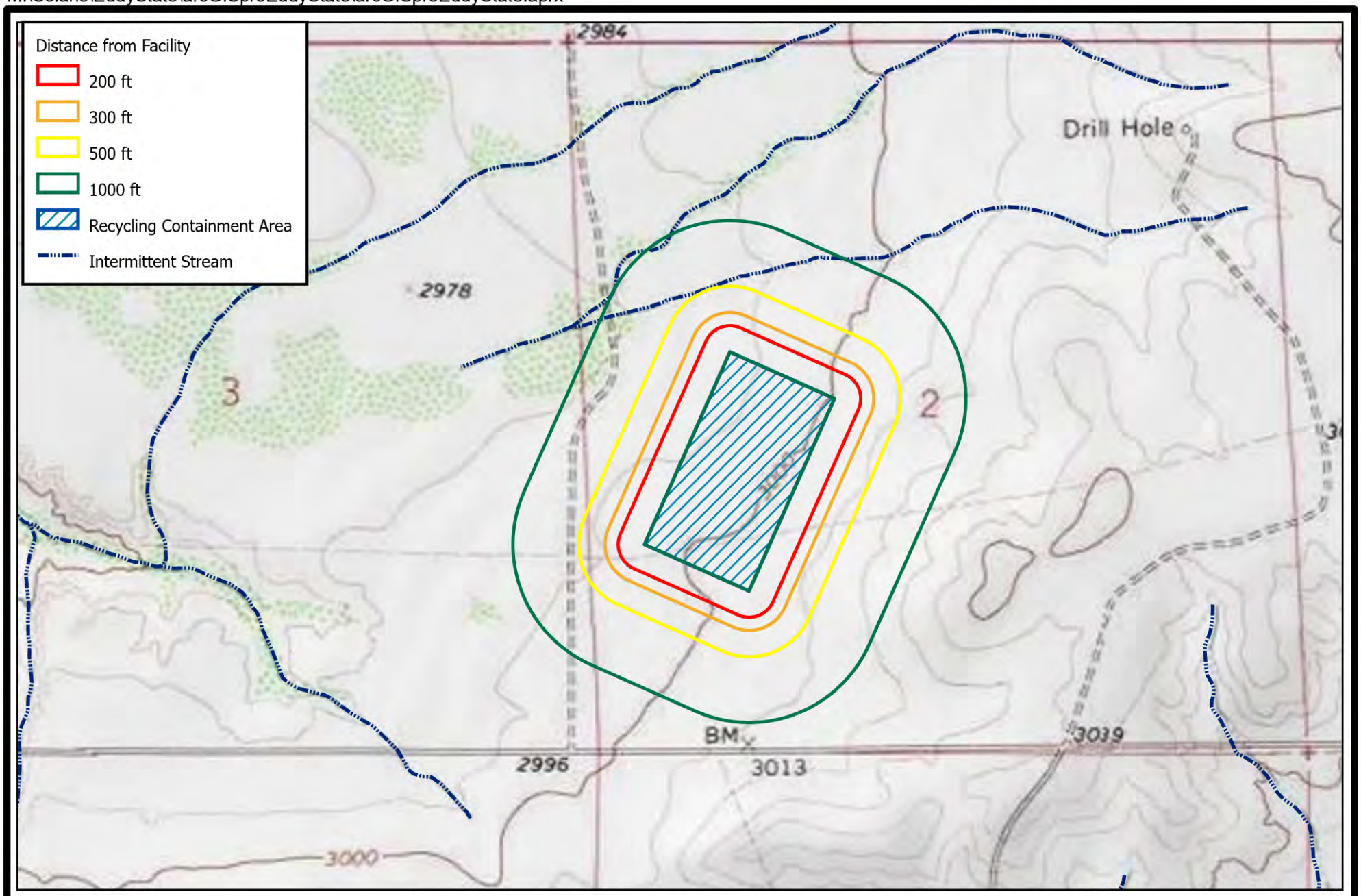
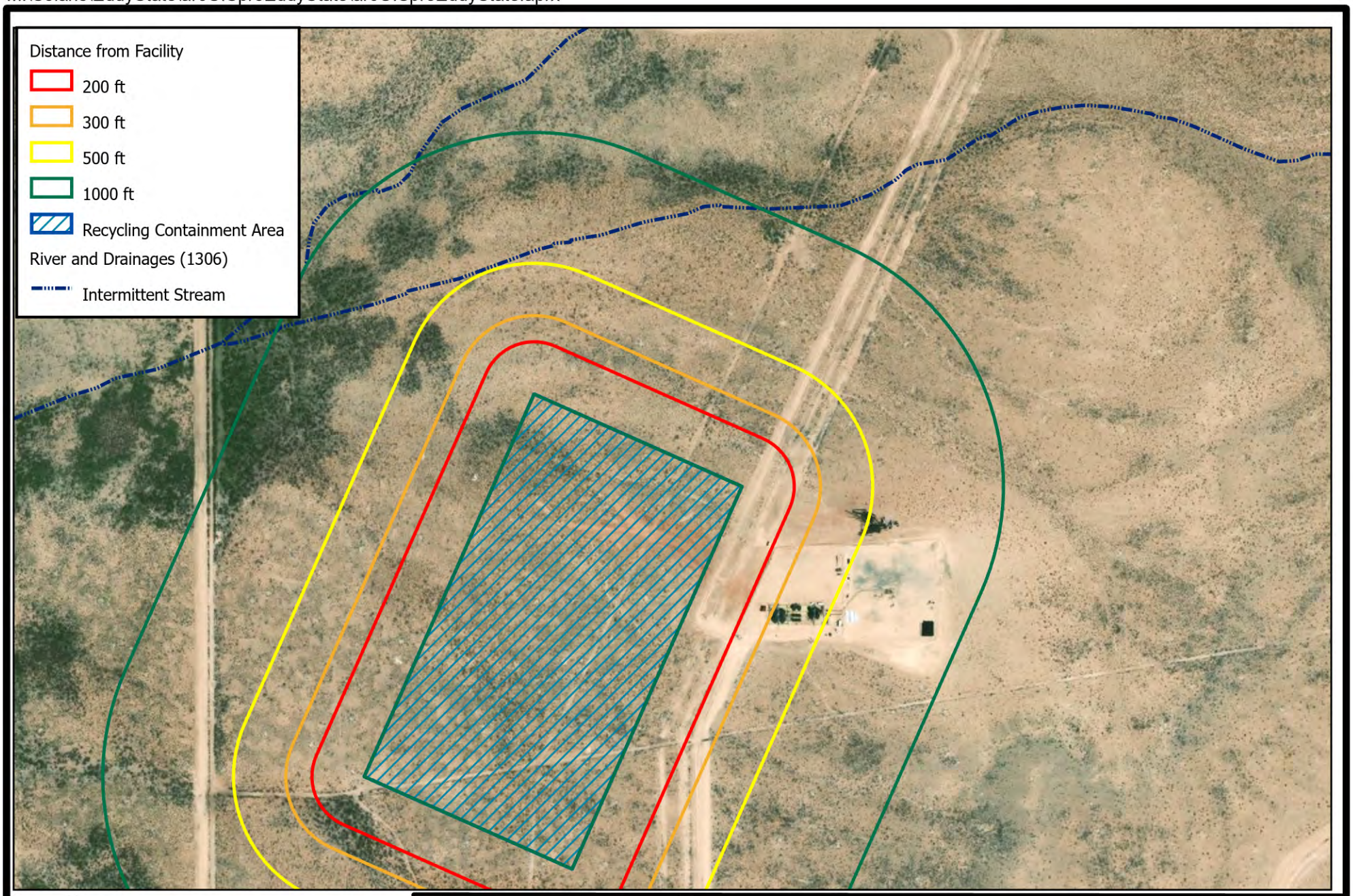


R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Surface Water Solaris Midstream - Eddy State Recycling Facility	Figure 7 July 2020

M:\Solaris\EddyState\arcGISproEddyState\arcGISproEddyState.aprx



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Albuquerque, NM 87104
Ph: 505.266.5004

Nearby Surface Water

Figure 7a

Solaris Midstream -
Eddy State Recycling Facility

July 2020

Distance to Permanent Residences or Structures

Figure 8 demonstrates the proximity of the proposed site for the Eddy State Recycling Facility to an occupied permanent residence, school, hospital, institution, church or other structure at the time of the initial application.

- The only structures near the proposed site are well pads and tank batteries.

Distance to Non-Public Water Supply

Figures 1, 7, and 7a demonstrate the area of interest's proximity to a spring or freshwater well used for domestic or stock watering purposes, in existence at the time of initial application.

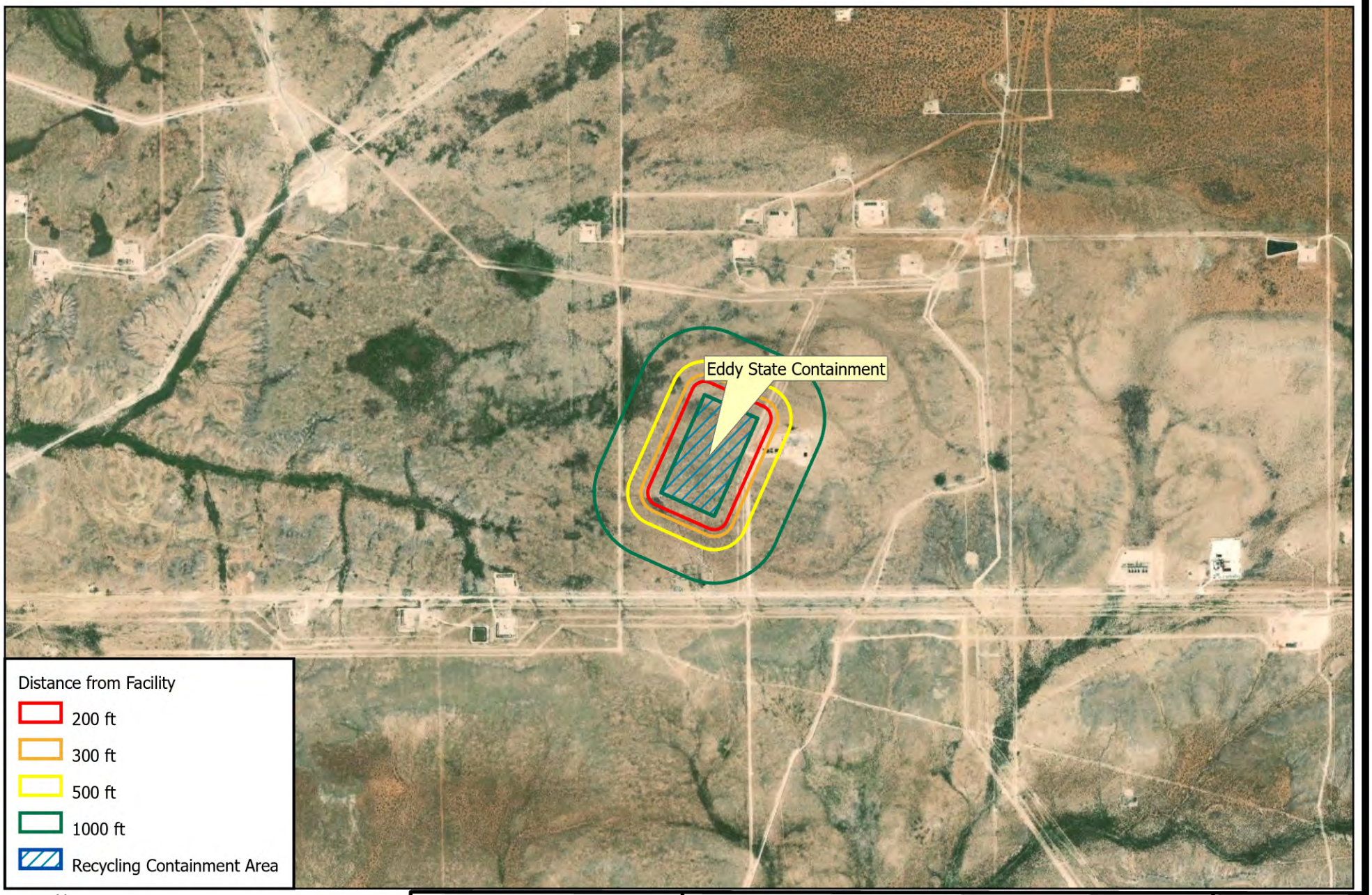
- Figure 1 shows the location of all area water wells. The nearest well is located just over 1700 feet to the south of the proposed site (MISC-395).
    - During the site visit, we encountered the lease owners and spoke with them about the well.
- No springs were identified in the area.

Distance to Wetlands

Figure 9 demonstrates the proximity of wetlands to the proposed site of the Eddy State Recycling Facility.

- The nearest mapped wetland is a riverine wetland that is approximately 2 miles due west from the proposed location of the recycling facility.

M:\Solaris\EddyState\arcGISproEddyState\arcGISproEddyState.aprx



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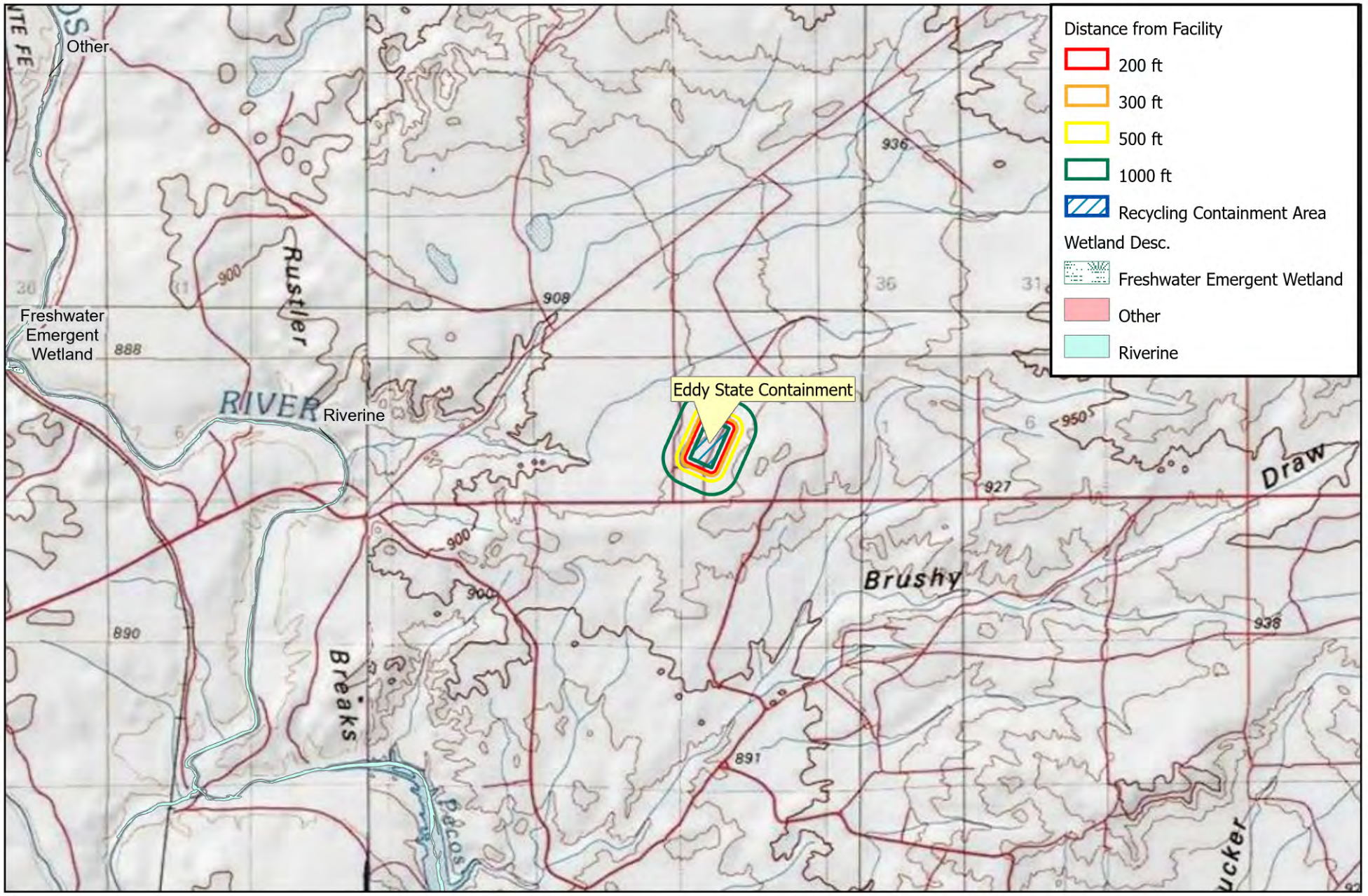
Nearby Structures

Figure 8

Solaris Midstream -
Eddy State Recycling Facility

July 2020

M:\Solaris\EddyState\arcGISproEddyState\arcGISproEddyState.aprx



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Albuquerque, NM 87104
Ph: 505.266.5004

Nearby Mapped Wetlands

Figure 9

Solaris Midstream -
Eddy State Recycling Facility

April 2020

APPENDIX OSE WELL LOGS

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER): C-3483-POD1	OSE FILE NUMBER(S): C-3483
WELL OWNER NAME(S): Gregory Rockhouse Ranch Inc. & B.L.M.	PHONE (OPTIONAL):
WELL OWNER MAILING ADDRESS: 1108 W Pierce	CITY: Carlsbad STATE: NM ZIP: 88220

WELL LOCATION (FROM GPS): LATITUDE 32 DEGREES 03 MINUTES 56.50 SECONDS N; LONGITUDE 103 DEGREES 53 MINUTES 42.20 SECONDS W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS: 0.5 miles east of EPNG well C-1361 Well Located on North Side of Pipeline ROAD, Just east of oil/gas Pad

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
NE ¼	SE ¼	SE ¼	SE ¼	05	26S ☐ NORTH ☒ SOUTH	30 ☒ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1509	Joe Roybal & Richard Beauregard	BMS Drlg

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
06-03-11	06-08-11	700'	700'	200'

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 200

DRILLING FLUID: ☐ AIR ☑ MUD ☐ ADDITIVES - SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER - SPECIFY: Top Head Drive

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
0	700	12"	PVC (Sch 40)	Glued	8"	½"	3000

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
200	255	55	Sand Stone with Fractures	35
285	320	45	& Sand	
320	360	40	Same Formation Fractures	30
510	650	140	Mix Gravel Green Clay - Not Much Water in This Formation	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: Bailer

TOTAL ESTIMATED WELL YIELD (GPM): 50+

RECEIVED 2011 JUN 10 AM 8:00 STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
C-3483	C-03483-POD1	476565

LOCATION 26.30.5.4442423 — PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☒ SUBMERSIBLE ☐ JET ☐ NO PUMP – WELL NOT EQUIPPED ☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	0	700	12"	3/8 ROUND GRAVEL		SHOVEL

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0	180	180'	SAND + BROWN CLAY	☐ YES ☒ NO
180	200	20'	SAND STONE LAYER	☐ YES ☒ NO
200	255	55'	HARD SAND STONE FRACTURES	☒ YES ☐ NO
255	265	10'	GRAY CLAY SHALE.	☐ YES ☒ NO
265	275	10	SAND GRAVEL	☒ YES ☐ NO
275	285	10	GRAY CLAY WITH GRAVEL	☐ YES ☒ NO
285	320	35'	HARD SAND STONE FRACTURES	☒ YES ☐ NO
320	360	40'	SAME FORMATION	☒ YES ☐ NO
360	445	85'	BROWN CLAY SHALE	☐ YES ☒ NO
445	510	65'	SAME FORMATION.	☐ YES ☒ NO
510	650	40'	GRAVE MIXED WITH CLAY GREEN	☒ YES ☐ NO
650	700	50'		☐ YES ☐ NO
			PERFS 180' TO 260'	☐ YES ☐ NO
			280 TO 360'	☐ YES ☐ NO
			500 TO 680'	☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST: METHOD: ☒ BAILER ☐ PUMP ☐ AIR LIFT ☐ OTHER – SPECIFY:

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:

Well Location: North Side of Pipeline Road. 0.5 miles east of El Paso Natural Gas well C-1361.

8. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER — DATE: 7-14-11

JUL 14 2011 08:

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	C-3483	POD NUMBER	C-03483-POD1	TRN NUMBER	476565
LOCATION	26.30.5.442423			PAGE 2 OF 2	

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

2011 SEP 12 P 2:35

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
2: C-03507-POD1	C 03507
WELL OWNER NAME(S)	PHONE (OPTIONAL)
M. BRAD BENNETT	
WELL OWNER MAILING ADDRESS	CITY / STATE / ZIP
P.O. BOX 51510	MIDLAND / TX / 79710

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	4	2.04	N
	LONGITUDE	104	0	50.52	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
NW ¼	NW ¼	SW ¼	SW ¼	5	26 ☐ NORTH ☒ SOUTH	29 ☒ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD 1058	CLINTON KEY	KEYS DRILLING AND PUMP SVC.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
8/26/11	8/26/11	140	140	78

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 78

DRILLING FLUID: ☑ AIR ☐ MUD ☐ ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
-2	20	12 1/4	PVC		10"	1/4	
-2	72	8 3/4	PVC	SPLINE	6"	SCH40	BLANK
75	112	8 3/4	PVC	SPLINE	6"	SCH40	.030
112	140	8 3/4	PVC	SPLINE	6"	SCH40	BLANK

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
78	79	1	GRAY SHALE	15
105	106	1	CONGLOMERATE	20

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA	TOTAL ESTIMATED WELL YIELD (GPM)
AIR	35

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER C-3507	POD NUMBER C-03507-POD1	TRN NUMBER 482722
LOCATION 26.29.5.331144		PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☐ SUBMERSIBLE ☐ JET ☑ NO PUMP – WELL NOT EQUIPPED ☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	0	20	12-1/4"	CEMENT		HAND

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0	5	5	TOP SOIL	☐ YES ☑ NO
5	10	5	RED SAND	☐ YES ☑ NO
10	25	15	CALICHE	☐ YES ☑ NO
25	50	25	RED CLAY	☐ YES ☑ NO
50	106	56	GRAY SHALE	☑ YES ☐ NO
106	110	4	GRAY CLAY	☐ YES ☑ NO
110	140	25	RED CLAY	☐ YES ☑ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST — METHOD: ☐ BAILER ☐ PUMP ☑ AIR LIFT ☐ OTHER – SPECIFY:

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:

8. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER — DATE: 9-12-11

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	C-3507	POD NUMBER	C-03507-POD1	TRN NUMBER	482722
LOCATION	26.29.5.331144				PAGE 2 OF 2

Locator Tool Report

General Information:

Application ID:29 Date: 10-19-2011 Time: 13:47:26

WR File Number: C-03507-POD1
Purpose: POINT OF DIVERSION

Applicant First Name: BRAD BENNETT
Applicant Last Name: STOCK WELL #2 (WELL LOG COORDINATES)

GW Basin: CARLSBAD
County: EDDY

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

NW 1/4 of NW 1/4 of SW 1/4 of SW 1/4 of Section 05, Township 26S, Range 29E.

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	4 Minutes	2.0 Seconds	N
Longitude:	104 Degrees	0 Minutes	50.5 Seconds	W

Universal Transverse Mercator Zone: 13N

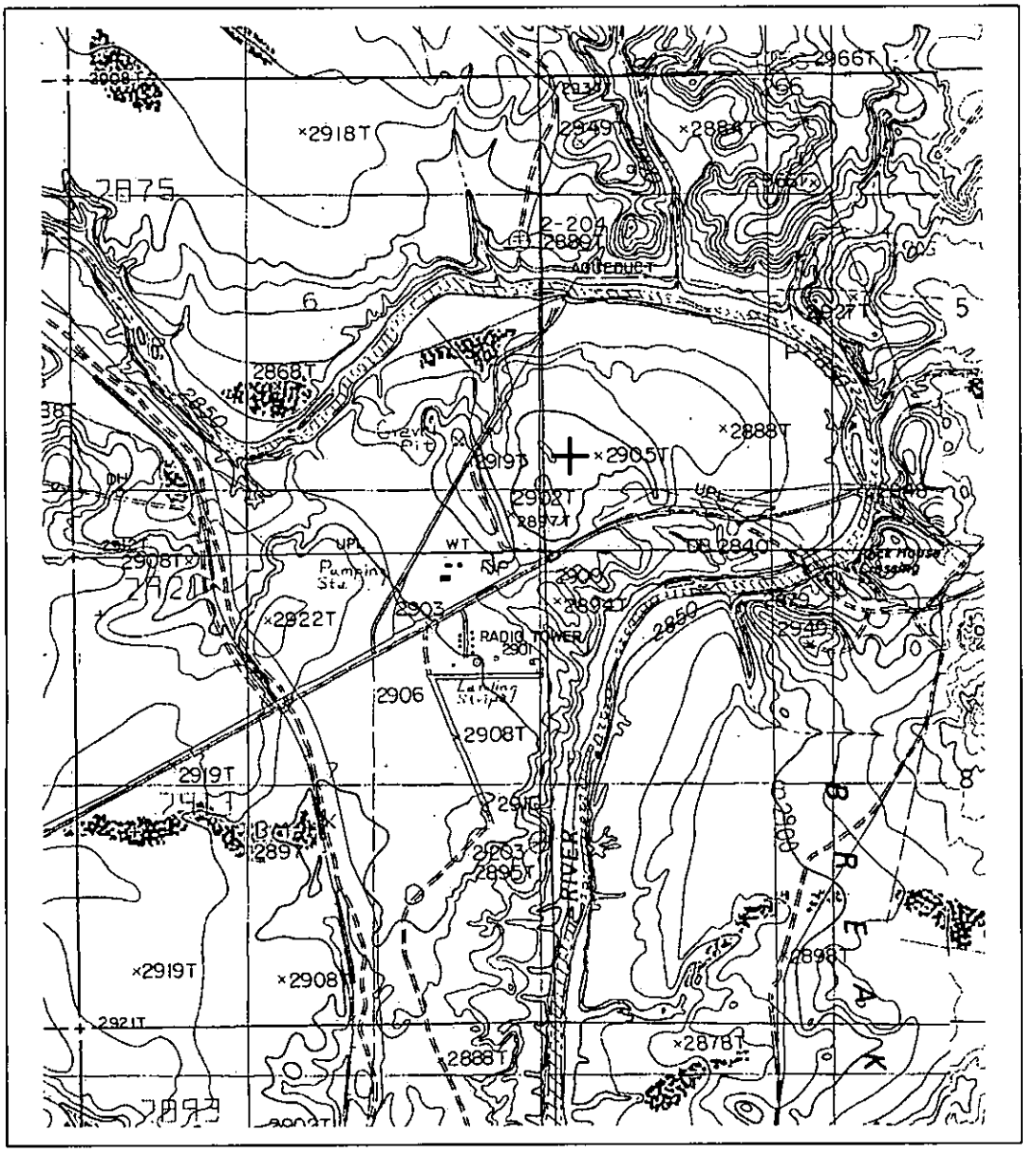
NAD 1983(92) (Meters)	N: 3,548,313	E: 593,064
NAD 1983(92) (Survey Feet)	N: 11,641,424	E: 1,945,744
NAD 1927 (Meters)	N: 3,548,112	E: 593,112
NAD 1927 (Survey Feet)	N: 11,640,764	E: 1,945,901

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 118,367	E: 195,147
NAD 1983(92) (Survey Feet)	N: 388,343	E: 640,245
NAD 1927 (Meters)	N: 118,350	E: 182,594
NAD 1927 (Survey Feet)	N: 388,286	E: 599,059

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report



WR File Number: C-03507-POD1 Scale: 1:24,574

Northing/Easting: UTM83(92) (Meter): N: 3,548,313 E: 593,064

Northing/Easting: SPCS83(92) (Feet): N: 388,343 E: 640,245

GW Basin: Carlsbad

Print Date: 10/19/2011

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2011 SEP 12 P 2:35

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER): 1: C-03508-POD1	OSE FILE NUMBER(S): C 03508
WELL OWNER NAME(S): M. BRAD BENNETT	PHONE (OPTIONAL):
WELL OWNER MAILING ADDRESS: P.O. BOX 51510	CITY: MIDLAND STATE: TX ZIP: 79710

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	4	3.60	N
LONGITUDE	104	0	50.52	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS:

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
NW ¼	NW ¼	SW ¼	SW ¼	5	26 ☐ NORTH ☒ SOUTH	29 ☒ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD 1058	CLINTON KEY	KEYS DRILLING AND PUMP SVC.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
8/24/11	8/24/11	140	140	75

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 75

DRILLING FLUID: ☑ AIR ☐ MUD ☐ ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
-2	20	12 1/4	PVC		10"	1/4	
-2	65	8 3/4	PVC	SPLINE	6"	SCH40	BLANK
65	105	8 3/4	PVC	SPLINE	6"	SCH40	.030
105	140	8 3/4	PVC	SPLINE	6"	SCH40	BLANK

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
75	76	1	GRAY SHALE	40

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: AIR

TOTAL ESTIMATED WELL YIELD (GPM): 40

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER C-3508	POD NUMBER C-03508-POD1	TRN NUMBER 482723
LOCATION 26.29.5.331123		PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☑ SUBMERSIBLE ☐ JET ☐ NO PUMP – WELL NOT EQUIPPED
☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	0	20	12-1/4"	CEMENT		HAND

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0	5	5	TOP SOIL	☐ YES ☑ NO
5	10	5	RED SAND	☐ YES ☑ NO
10	20	10	CALICHE	☐ YES ☑ NO
20	45	25	RED CLAY	☐ YES ☑ NO
45	95	50	GRAY SHALE	☑ YES ☐ NO
95	115	20	CONGLOMERATE	☐ YES ☑ NO
115	140	25	RED CLAY	☐ YES ☑ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST — METHOD: ☐ BAILER ☐ PUMP ☑ AIR LIFT ☐ OTHER – SPECIFY:

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:

8. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER — DATE: 9-9-11

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
C-3508	C-03508-POD1	492723

LOCATION 26.29.5.331123

Locator Tool Report

General Information:

Application ID:29 Date: 10-19-2011 Time: 13:51:29

WR File Number: C-03508-POD1
Purpose: POINT OF DIVERSION

Applicant First Name: BRAD BENNETT
Applicant Last Name: STOCK WELL #1 (WELL LOG COORDINATES)

GW Basin: CARLSBAD
County: EDDY

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

NW 1/4 of NW 1/4 of SW 1/4 of SW 1/4 of Section 05, Township 26S, Range 29E.

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	4 Minutes	3.6 Seconds	N
Longitude:	104 Degrees	0 Minutes	50.5 Seconds	W

Universal Transverse Mercator Zone: 13N

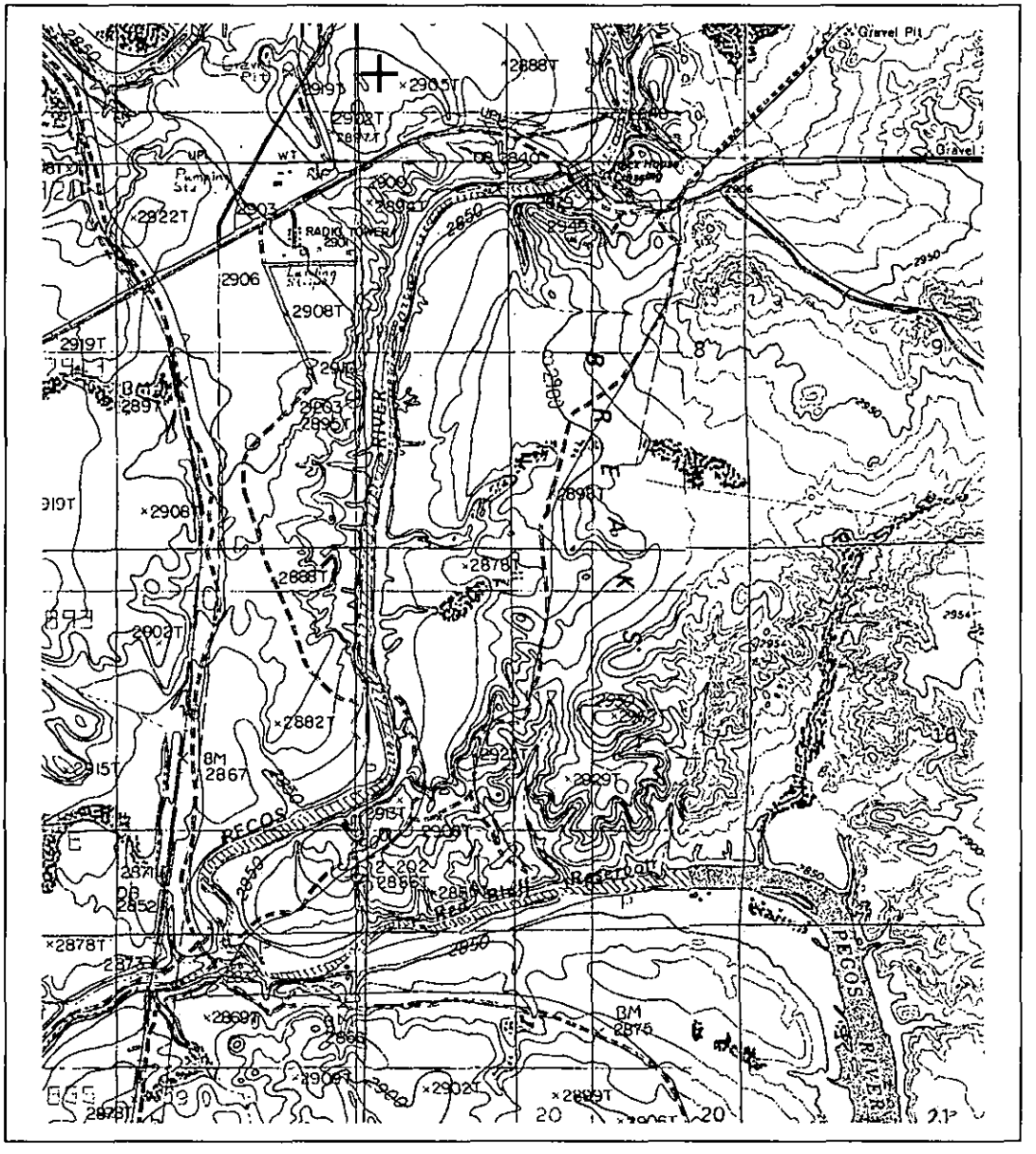
NAD 1983(92) (Meters)	N: 3,548,361	E: 593,063
NAD 1983(92) (Survey Feet)	N: 11,641,582	E: 1,945,742
NAD 1927 (Meters)	N: 3,548,160	E: 593,111
NAD 1927 (Survey Feet)	N: 11,640,922	E: 1,945,899

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 118,415	E: 195,147
NAD 1983(92) (Survey Feet)	N: 388,501	E: 640,244
NAD 1927 (Meters)	N: 118,398	E: 182,594
NAD 1927 (Survey Feet)	N: 388,443	E: 599,059

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report



WR File Number: C-03508-POD1 Scale: 1:30,245

Northing/Easting: UTM83(92) (Meter): N: 3,548,361 E: 593,063

Northing/Easting: SPCS83(92) (Feet): N: 388,501 E: 640,244

GW Basin: Carlsbad

Print Date: 10/19/2011

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
POD-1 Renumbered C-3832-POD 2	C 3782 (Exploratory) Renumbered C-3832
WELL OWNER NAME(S)	PHONE (OPTIONAL)
BOPCO, L.P.	(817) 390-8662
WELL OWNER MAILING ADDRESS	CITY / STATE / ZIP
201 N Main St Suite 2900	Fort Worth / TX / 76102

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	05	40.1	N
LONGITUDE	103	53	32.2	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

SW1/4SE1/4SW1/4SW1/4 of Section 28, Township 25 South, Range 30 East, in the NE corner of a well pad.

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
331	Joel H. Stewart	SBQ Drilling, LLC

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
01-16-15	01-17-15	805	±805	

COMPLETED WELL IS: (•) ARTESIAN ( ) DRY HOLE ( ) SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 277

DRILLING FLUID: ( ) AIR (•) MUD ADDITIVES – SPECIFY:

DRILLING METHOD: (•) ROTARY ( ) HAMMER ( ) CABLE TOOL ( ) OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	270	14.75	ASTM A53B	Welded	8.625	0.322	
270	805	14.75	304 Stainless Steel	Welded	8.625	0.25	16
0	15	19	ASTM A53B	---	16	0.25	

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3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	120	14.75	Sand Mix Ready Mix	90.36	grav. tremie meas.
120	170	14.75	Hydrated Bentonite Chips	35.90	grav. tremie meas.
170	805	14.75	6/9 Silica Sand	455.95	Tremie Pipe

FOR OSE INTERNAL USE Renumbered from C-3782-POD1

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER C-3832	POD NUMBER POD 2	TRN NUMBER 555125
LOCATION 25.30.28.3343		PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	30	30	Cemented Sand, light tan, sub-angular	○ Y ○ N	
30	40	10	Sandy Silt, light brown, sub-angular	○ Y ○ N	
40	60	20	Sandy clay, reddish brown	○ Y ○ N	
60	80	20	Silty Sand, light brown, sub-angular	○ Y ○ N	
80	250	170	Fine to Medium Sand, light tan, sub-angular to rounded	○ Y ○ N	
250	260	10	Clayey Sand, brown, sub-angular	○ Y ○ N	
260	320	60	Fine Sand, light tan, sub-angular	◉ Y ○ N	
320	380	60	Silty Sand, brownish gray, sub-angular	◉ Y ○ N	
380	410	30	Fine Sand, dark gray, sub-angular	◉ Y ○ N	
410	530	120	Clayey Fine Sand, dark gray, sub-angular	◉ Y ○ N	
530	590	60	Sandy Clay, dark gray, sub-angular	◉ Y ○ N	
590	600	10	Clayey Fine Sand, dark gray, sub-angular	◉ Y ○ N	
600	630	30	Sandy Clay, dark gray, sub-angular	◉ Y ○ N	
630	650	20	Clayey Sand, dark gray, sub-angular	◉ Y ○ N	
650	700	50	Sandy Clay, dark gray, sub-angular	◉ Y ○ N	
700	710	10	Clayey Sand, brown and gray, sub-angular	◉ Y ○ N	
710	760	50	Sandy Clay, dark gray, sub-angular	◉ Y ○ N	
760	770	10	Clay, 75% gray, 25% red	◉ Y ○ N	
770	780	10	Clay, 50% gray, 50% red	◉ Y ○ N	
780	790	10	Clay, 25% gray, 75% red	◉ Y ○ N	
790	805	15	Sandy Clay, Grayish red, 10% white sand.	◉ Y ○ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ○ PUMP ○ AIR LIFT ○ BAILER ◉ OTHER – SPECIFY: TBD by pump test

TOTAL ESTIMATED WELL YIELD (gpm): TBD

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

Pump test will be performed at a later time.
Hydrated Bentonite Chips and Sand Mix Ready Mix were placed by gravity and tagged with tremie pipe.

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2015 FEB 19 PM 2 35

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Silverio Galindo, Gabriel Armijo, Pedro Pizano

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Joel H. Stewart — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

2-13-15 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER C-3632	POD NUMBER POD 2	TRN NUMBER 555125
LOCATION 25.30.28.3343		PAGE 2 OF 2

Locator Tool Report

General Information:

Application ID:27 Date: 05-28-2015 Time: 12:01:24

WR File Number: C-03782-POD1
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO EXPLORATORY WELL DRILLERS RECORD
Applicant Last Name: RENUMBERED C-3832-POD2

GW Basin: CARLSBAD
County: EDDY

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

SW 1/4 of SE 1/4 of SW 1/4 of SW 1/4 of Section 28, Township 25S, Range 30E.

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	5 Minutes	40.1 Seconds	N
Longitude:	103 Degrees	53 Minutes	32.2 Seconds	W

Universal Transverse Mercator Zone: 13N

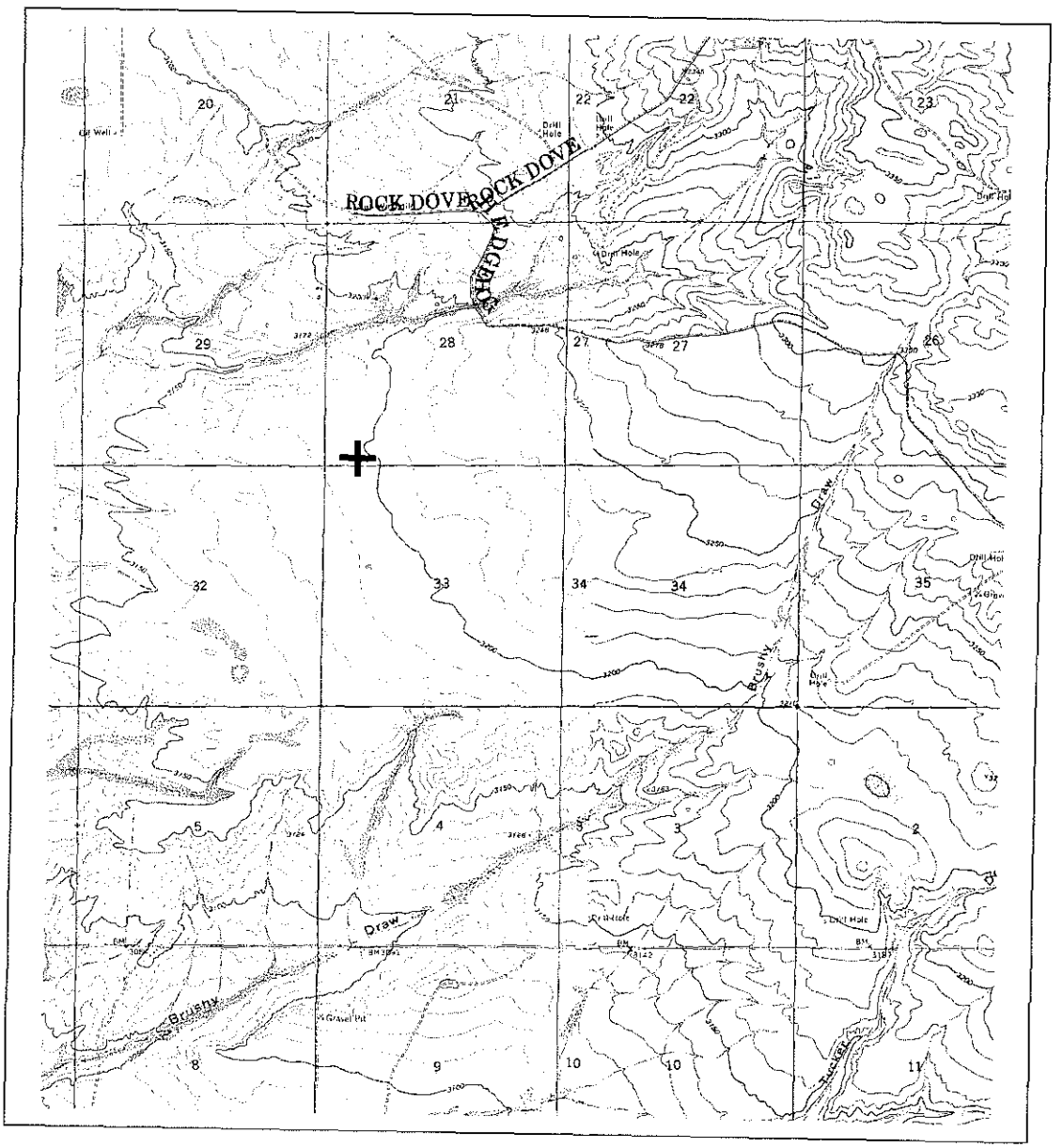
NAD 1983(92) (Meters)	N: 3,551,444	E: 604,526
NAD 1983(92) (Survey Feet)	N: 11,651,697	E: 1,983,348
NAD 1927 (Meters)	N: 3,551,243	E: 604,573
NAD 1927 (Survey Feet)	N: 11,651,036	E: 1,983,505

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 121,428	E: 206,630
NAD 1983(92) (Survey Feet)	N: 398,385	E: 677,920
NAD 1927 (Meters)	N: 121,410	E: 194,077
NAD 1927 (Survey Feet)	N: 398,327	E: 636,734

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report



WR File Number: C-03782-POD1 Scale: 1:47,832

Northing/Easting: UTM83(92) (Meter): N: 3,551,444 E: 604,526

Northing/Easting: SPCS83(92) (Feet): N: 398,385 E: 677,920

GW Basin: Carlsbad

Print Date: 05/28/2015

NM OIL CONSERVATION
ARTESIA DISTRICT

JUN 30 2018
RECEIVED

Submit To Appropriate District Office
Two Copies
District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-105
Revised August 1, 2011

1. WELL API NO. 30-015-44001
2. Type of Lease ☒ STATE ☐ FEE ☐ FED/INDIAN
3. State Oil & Gas Lease No.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

4. Reason for filing:

☒ **COMPLETION REPORT** (Fill in boxes #1 through #31 for State and Fee wells only)

☐ **C-144 CLOSURE ATTACHMENT** (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)

5. Lease Name or Unit Agreement Name: Solaris Eddy State
6. Well Number: No.2

7. Type of Completion: ☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER

8. Name of Operator: Solaris Water Midstream, LLC
9. OGRID: 371643
10. Address of Operator: 9811 Katy Freeway, Ste.900, Houston, TX 77024
11. Pool name or Wildcat: SWD; Devonian (96101)

12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	K	2	26-S	29-E		2267'	FSL	2469'	FWL	Eddy
BH:										

13. Date Spudded	14. Date T.D. Reached	15. Date Rig Released	16. Date Completed (Ready to Produce)	17. Elevations (DF and RKB, RT, GR, etc.)
4/22/2017	12/26/2017	4/29/2018	4/29/2018	3022' G.R.

18. Total Measured Depth of Well	19. Plug Back Measured Depth	20. Was Directional Survey Made?	21. Type Electric and Other Logs Run
16,876'		No	Mudlog, CET, CBL, CNL

22. Producing Interval(s), of this completion - Top, Bottom, Name: 15,663' to 16,876' - Devonian

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
20.0"	94.0#	575'	26.0"	900 sx	
13.375"	68.0#	3177'	17.5"	1300 sx	
9.875"	62.8#	11,492'	12.25"	2300 sx	
7.625"	39.0#	13,940'	8.5"	525 sx	

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
5.5"	13,622'	15,586'	380 sx	
4.25" (Xpand)	15,539'	15,657'	50 sx	

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
5.5"	0-8650'	
5.0"	8650'-13550'	
3.5"	13550'-15525'	15,530'

26. Perforation record (interval, size, and number)

Perfs: 15,663' to 15,647' (6 jspf)
Open hole 15,657' to 16,876'

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

28. **PRODUCTION**

Date First Production	Production Method (*Flowing, gas lift, pumping - Size and type pump*)	Well Status (*Prod. or Shut-in*)
N/A		Active SWD

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl	Gas - MCF	Water - Bbl.	Gas - Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (*Corr.*)

29. Disposition of Gas (*Sold, used for fuel, vented, etc.*)
30. Test Witnessed By

31. List Attachments: Current wellbore schematic; Mudlog TD- Mudlog Rec'd 10/26/18 RWP.

32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.

33. If an on-site burial was used at the well, report the exact location of the on-site burial:

Latitude Longitude NAD 1927 1983

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature: Ben Stone | Printed Name: Ben Stone | Title: Agent for Solaris Water Midstream, LLC | Date: 6/29/2018

E-mail Address: ben@sosconsulting.us

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy 1732'	T. Canyon 12800'	T. Ojo Alamo	T. Penn "A"
T. Salt	T. Strawn 13042'	T. Kirtland	T. Penn. "B"
B. Salt 2425'	T. Atoka 13326'	T. Fruitland	T. Penn. "C"
T. Yates	T. Miss 15330'	T. Pictured Cliffs	T. Penn. "D"
T. 7 Rivers	T. Devonian 15625'	T. Cliff House	T. Leadville
T. Queen	T. Silurian	T. Menefee	T. Madison
T. Grayburg	T. Montoya 17500' est	T. Point Lookout	T. Elbert
T. San Andres	T. Simpson	T. Mancos	T. McCracken
T. Glorieta	T. McKee	T. Gallup	T. Ignacio Otzte
T. Paddock	T. Ellenburger	Base Greenhorn	T.Granite
T. Blinebry	T. Gr. Wash	T. Dakota	
T.Tubb	T. Delaware Lime 3177'	T. Morrison	
T. Drinkard	T. Bone Springs 6932'	T. Todilto	
T. Abo	T. Morrow Lime 13618'	T. Entrada	
T. Wolfcamp 10160'	T. Chester Sh. 14520'	T. Wingate	
T. Penn	T. Barnett Sh. 14130'	T. Chinle	
T. Cisco (Bough C)	T. Woodford Sh. 15490'	T. Permian	

OIL OR GAS SANDS OR ZONES

No. 1, from.....to..... No. 3, from.....to.....

No. 2, from.....to..... No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....

No. 2, from.....to.....feet.....

No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology		From	To	Thickness In Feet	Lithology
13000	13330	330	LIMESTONE: OFF WH-BUF-GY					
13330	13380	50	LS/SS: WHT-CLR-MLKY-FRSTD-VFN/SLTY					
13380	13520	140	LS/SHALE: WHT-OFF WT-GY-LT GY/ BLK-DRK GY					
13520	13730	210	LIMESTONE: MOTT-LT GY-OFF WHT					
13730	14050	320	LS/SH: MOTT-WHT-OFF WT/ BLK-DRK GY-BRN					
14050	14110	60	LS/SS/SH: LT GY-OF WT-/CLR-TRNS/DRK GY-BLK					
14110	14320	210	SHALE/LS: CHRCL-BLK-DRK GY/MOTT-LT GY/BT					
14320	14360	40	SHALE/SS: DRK GR-DRK BRN/TRNSL-OFF WH					
14360	14520	160	SHALE/LS: BLK-DRK GY/OFF WHT-GY-BT					
14520	14760	240	SHALE: BLK-DRK GR-DRK GY-LT GY/VFN MICA					
14760	15100	340	SHALE/LS: LT GY-DRK GY/WHT-OFF WHT-CRM					
15100	15400	300	LS/SHALE: DRK GY-GY-OF WHT/BLK-DRK GY					
15400	15490	90	LIMESTONE: DRK GY-LT GY-OFF WHT/FN-VFN					
15490	15620	130	SHALE: BLK-DRK GR-DRK GY-LT GY/CRB-SLTY					
15620	LTD	30+	DOL: WHT-OFF WHT-TAN-BGE-CRMY/FN-VFN					

APPENDIX SITE PHOTOGRAPHS

Site Photographs

Index of photograph locations.

Site Photographs

Figure 1 – The mapped watercourse is more distinguished at slightly higher elevations. This view is to the west from the lease road/pipeline road north of the proposed containments. Maximum depth of the channel is 12 inches. Location is 32 4 29.73, -103 57 18.97

Figure 2 – About 1500 feet downhill from Figure 1, the mapped watercourse becomes braided. This image shows one of the more defined channels, which is a few inches deep. This channel may not meet the criteria of a “significant watercourse”, but it does channel stormwater. Location: 32 4 26.57, -103 57 36.62

Site Photographs

Figure 3 – View downhill, east-northeast showing "tributaries" of mapped watercourse. This dendritic pattern is typical throughout the area. Inspection was performed on a rainy day, but no water flowed through the mapped watercourse or these channels that we do not consider meeting the definition of a significant watercourse. Location:32 4 22.33, -103 57 37.94

Figure 4 – The drainage channel shown in Figure 5 becomes "lost" as the gradient changes and vegetation increases slightly. Green moss occupies small patches of the flat areas – suggesting puddling and stagnant water. Location: 32 4 9.64, -103 57 36.41

Site Photographs

Figure 5 – A small drainage channel that appears to originate at a low spot of the 2-track/fence line (see 5/18/2011 Google Earth image). This view north shows the most-defined channel segment. As shown in Figure 4, this channel terminates approximately 150 feet northwest where topography flattens.
Location: 32 4 7.54, -103 57 30.59

Figure 6 – View east-southeast from the center of a drainage channel that is disturbed due to pipeline construction. The tanks of the Eddy State SWD are at the right edge of the image. All along the pipeline, the small drainage channels have been disturbed with uphill channels appearing to carry more water than the extension of these channels downhill from the pipeline. Location: 32 4 20.60, -103 57 19.08