April 2021

Volume 1

C-147 Registration Package for
Buffalo 12 Containment & Recycling Facility
Section 30, T26-S, R32-E, Lea County

- **Transmittal Letter**
- **C-147**
- **Survey and Driving Directions**
- **AST Operations and Closure Plans**
- **Siting Criteria Demonstration**
- **Appendices**

Prepared for:
Chisholm Energy Operating, LLC
Ft. Worth, Texas

Prepared by:
R.T. Hicks Consultants, Ltd.
901 Rio Grande NW, Ste F-142
Albuquerque, New Mexico 87104

R. T. HICKS CONSULTANTS, LTD.

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

April 7, 2021

Mr. Mike Bratcher
NMOCD - District 2, Supervisor811 S. First St.
Artesia, NM 88210Via E-Mail

Ms. Victoria Venegas
NMOCD - District 2 811 S. First St.
Artesia, NM 88210Via E-Mail

RE: 1RF-464, Chisholm Energy Operating, LLC, Buffalo 12 AST Containment
Section 30, T26-S, R32-E, Lea County, C-147 Volume 1 and Volume 2

Dear Mr. Bratcher and Ms. Venegas:

On behalf of Chisholm Energy Operating, LLC, R.T. Hicks Consultants is pleased submit a permit for the above-referenced project that consists of one (1) AST Containment. We appreciate your timely review and have modified the original submission to meet your comments and answer your questions. Both documents will be transmitted to OCD via the OCD.Online portal.

Volume 1 contains:

- C-147 form signed by the operator,
- Survey showing the location of the AST Containment pad and driving directions,
- AST Operations and Closure Plans (verbatim from the approved Zia Hills AST Containments),
- Siting Criteria Demonstration.

Hicks Consultants affirms that:

- The location meets all siting criteria in the Rule and the location meets thespecified setback criteria,
- An auger boring to 80 feet for a conductor pipe of an oil well on the same pad asthe proposed containment was a dry hole,
- We conducted a foot survey to check that all setback criteria are met,
- The Operation and Maintenance Plan and Closure Plan are consistent with theRule and previously approved by OCD.

Volume 2 contains information specific to the design and construction of the proposed AST and variance requests to cause the AST to conform to Rule 34. Specifically, you will find:

- Engineering drawings for the proposed 40,000 bbl. AST Containment (RockwaterTank) are fully consistent with plans previously approved by OCD,
- The Design/Construction Plan verbatim from the approved Zia Hills ASTContainment
- The manual for AST set up from Select Energy Services
- Variances for AST Storage Containments – all of which have been approved by OCD previously.

In compliance with 19.15.34.10 of the Rule, the original submission was copied to BLM

Carlsbad who is the representative of the owner of the surface upon which the containments will be constructed (i.e., the United States). In order to avoid clogging the BLM email, we will alert Mr. Robert Gomez of BLM that the document and communications with OCD will be available on line.

If you have any questions or concerns regarding this registration or the attached C-147, please contact me. As always, we appreciate your work ethic and attention to detail.

Sincerely,
R.T. Hicks Consultants

Randall T. Hicks PGPrincipal

Copy: Chisholm Energy Operating, LLC

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: : Chisholm Energy Operating LLC OGRID #: 372137

Address: 801 Cherry St Suite 1200 Unit 20 Fort Worth TX, 76102

Facility or well name (include API# if associated with a well): Buffalo 12 Recycling Facility and Containment

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

U/L or Qtr/Qtr ____O_____ Section 12 Township 19S Range 33E County: Lea

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

2.

☒ **Recycling Facility:**

Location of (if applicable): Latitude 32.66860 Longitude -103.612516 NAD83 (Approximate)

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:**

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

Center of Recycling **See Attachment** *(adjacent):* (if applicable) Latitude 32.66860 Longitude --103.612516 NAD83 (Approximate)

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

☒ Lined ☐ Liner type: Thickness **See Attachment**: HDPE ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other

Primary liner 2 x 30 mil LLDPE ; Secondary liner 40 mil LLDPE . SEE DESIGN DRAWINGS ☐ String-Reinforced

Liner Seams: ☒ Welded ☐ Factory ☐ Other _ Volume: SEE DESIGN DRAWINGS bbl Dimensions: (Inside dimensions) SEE DESIGN

☐ 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 $_____ **(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___ _____

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. See Volume 2

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 FIGURES 5a-e	☐ 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): Jennifer Elrod Title: Regulatory

Signature: Jennifer Elrod Date: 04/07/2021

e-mail address jelrod@chisholmenergy.com Telephone: 817 953 3728

11.

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

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

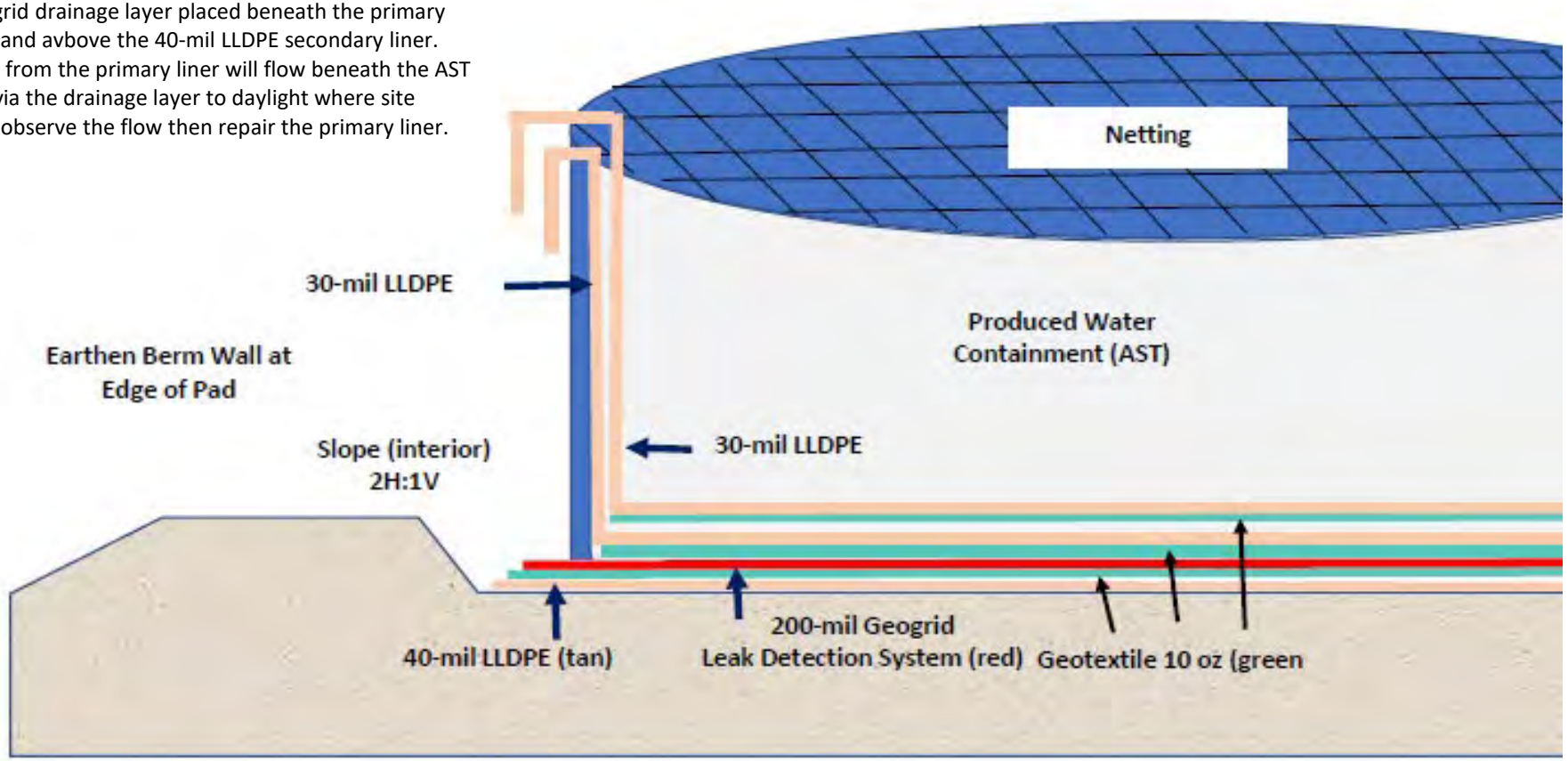
☐ OCD Conditions _____

☐ Additional OCD Conditions on Attachment

Leak Detection Systems

Select Energy employs a proprietary leak detection system between the two 30-mil LLDPE that comprise the primary liner. This system monitors seepage from the uppermost 30-mil LLDPE liner.

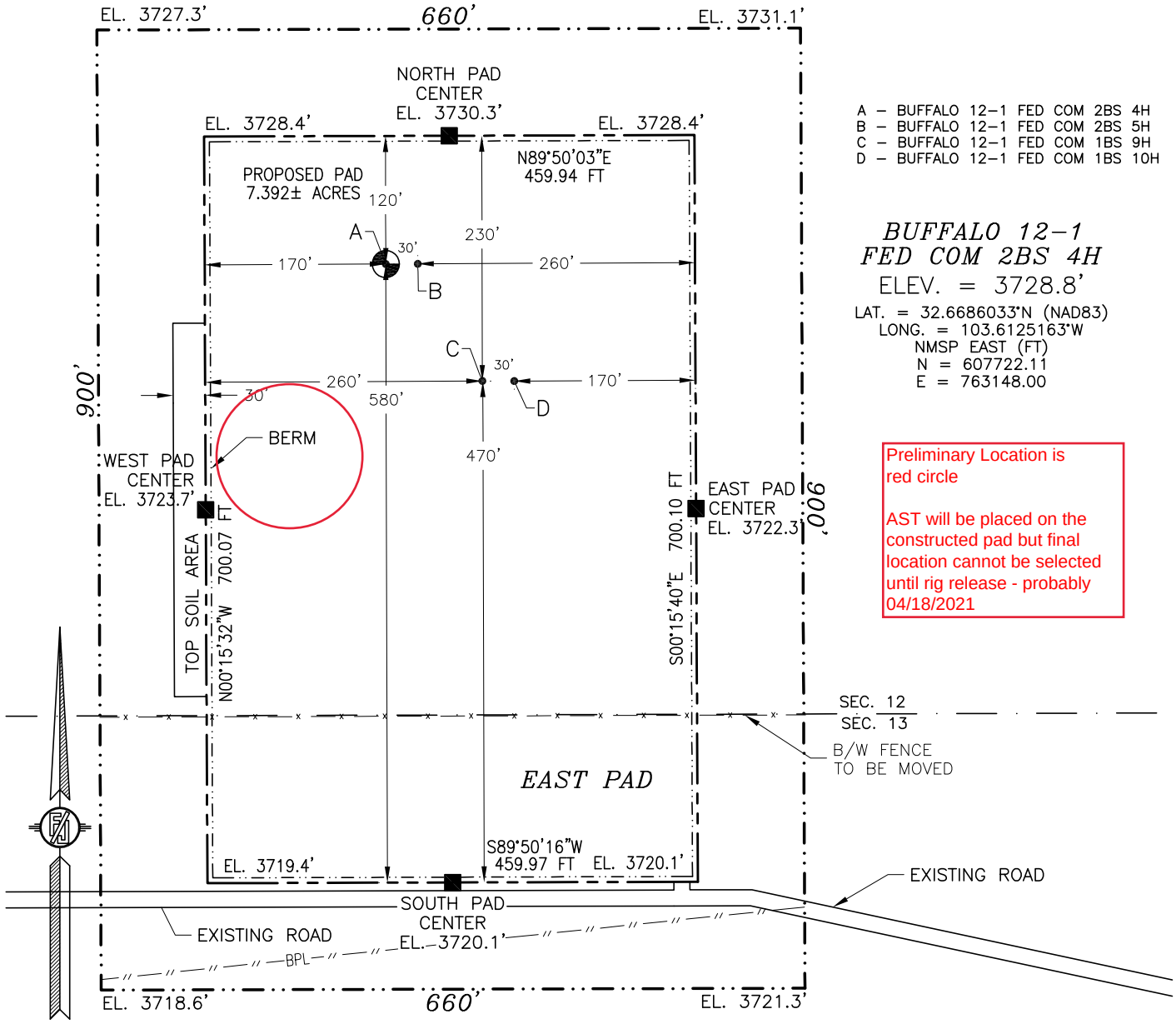
The leak detection system that complies with Rule 34 is the 200-mil geogrid drainage layer placed beneath the primary liner system and avbove the 40-mil LLDPE secondary liner. Any seepage from the primary liner will flow beneath the AST steel frame via the drainage layer to daylight where site workers can observe the flow then repair the primary liner.



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 505-266-5004	**Select AST Schematic**	**Plate 1**
	Chisholm Energy Operating - Buffalo 12	**Mar-21**

SECTION 12, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE



A – BUFFALO 12–1 FED COM 2BS 4H
B – BUFFALO 12–1 FED COM 2BS 5H
C – BUFFALO 12–1 FED COM 1BS 9H
D – BUFFALO 12–1 FED COM 1BS 10H

BUFFALO 12–1 FED COM 2BS 4H

ELEV. = 3728.8'

LAT. = 32.6686033°N (NAD83)
LONG. = 103.6125163°W
NMSP EAST (FT)
N = 607722.11
E = 763148.00

Preliminary Location is red circle

AST will be placed on the constructed pad but final location cannot be selected until rig release - probably 04/18/2021

015 75 150 300
SCALE 1" = 150'

DIRECTIONS TO LOCATION

FROM U.S. HIGHWAY 62–180 AND STATE ROAD 176 GO EAST ON U.S. HIGHWAY 62–180 7.6 MILES, TURN LEFT ON PAVED SMITH RANCH ROAD, GO NORTHWEST 2.1 MILES, TURN RIGHT ON CALICHE ROAD AND GO NORTHEAST 2.02 MILES, TURN LEFT AND GO NORTH 1.9 MILES, TURN LEFT AND GO WEST 0.45 OF A MILE, THEN GO WEST 308' THEN NORTHWEST 1765', THEN WEST 65', THEN NORTH 15' (TOTAL OF 2153') TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

12797
FILIMON F. JARAMILLO, PLS 12797

CHISHOLM ENERGY OPERATING, LLC
BUFFALO 12–1 FED COM 2BS 4H
LOCATED 423 FT. FROM THE SOUTH LINE AND 1380 FT. FROM THE EAST LINE OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

JUNE 5, 2020

SURVEY NO. 5737F

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

Survey For Containment and Recycling Facility

SECTION 12, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP

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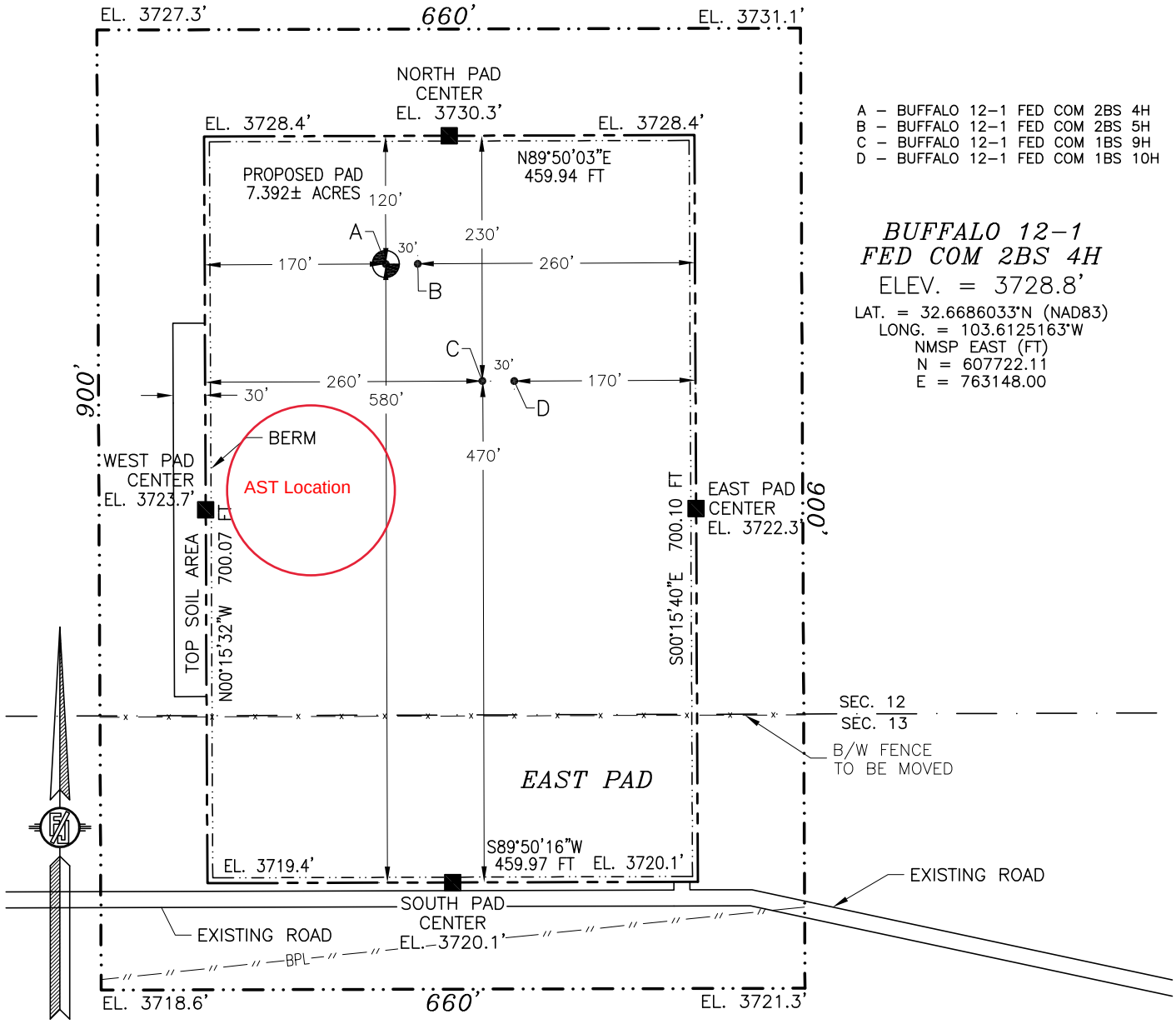

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C – BUFFALO 12–1 FED COM 1BS 9H
D – BUFFALO 12–1 FED COM 1BS 10H

BUFFALO 12–1 FED COM 2BS 4H

ELEV. = 3728.8'

LAT. = 32.6686033°N (NAD83)
LONG. = 103.6125163°W
NMSP EAST (FT)
N = 607722.11
E = 763148.00

015 75 150 300

SCALE 1" = 150'

DIRECTIONS TO LOCATION

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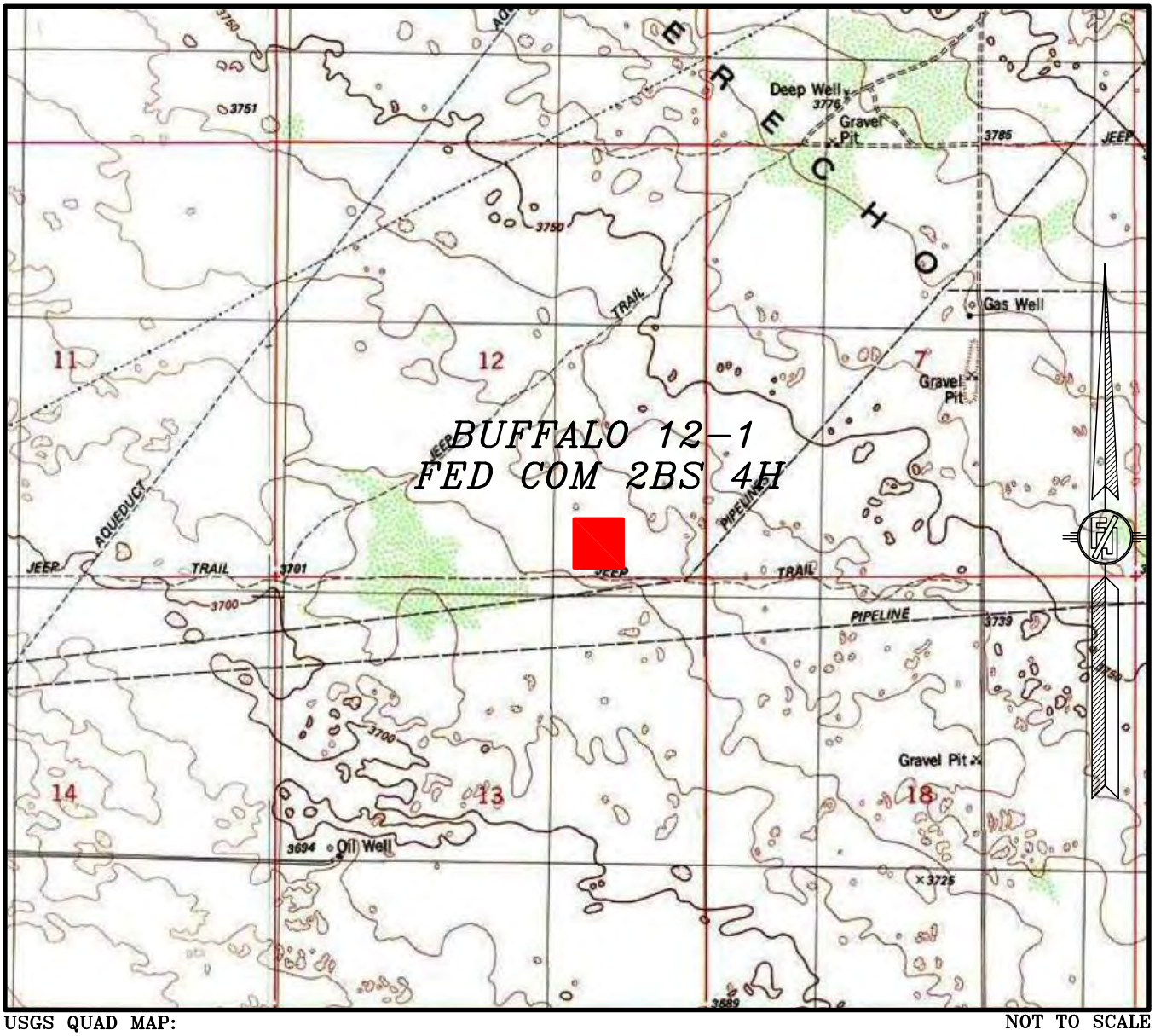
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 12, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
IRONHOUSE WELL

NOT TO SCALE

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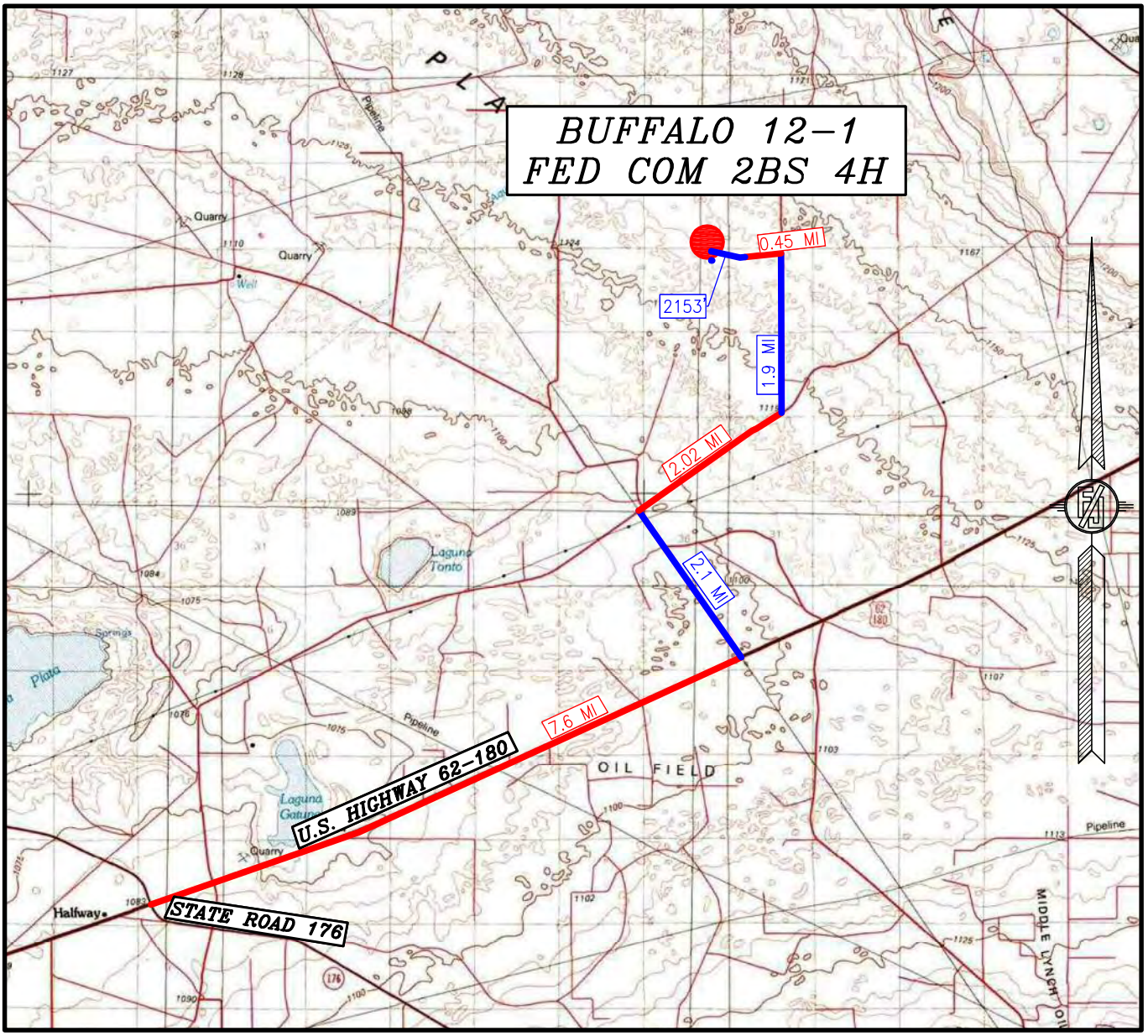
SECTION 12, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION
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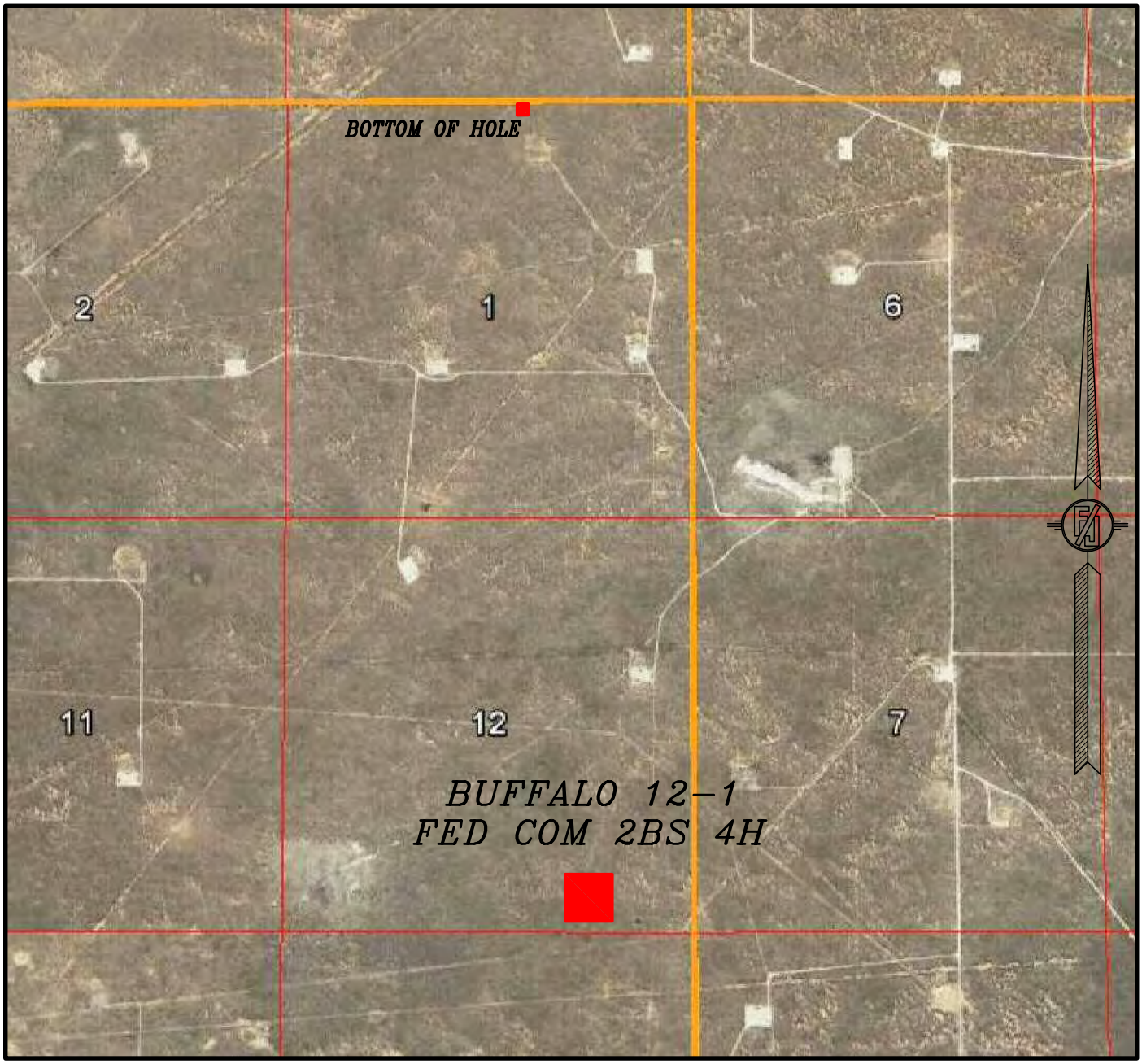
SECTION 12, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEBRUARY 2017

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JUNE 5, 2020

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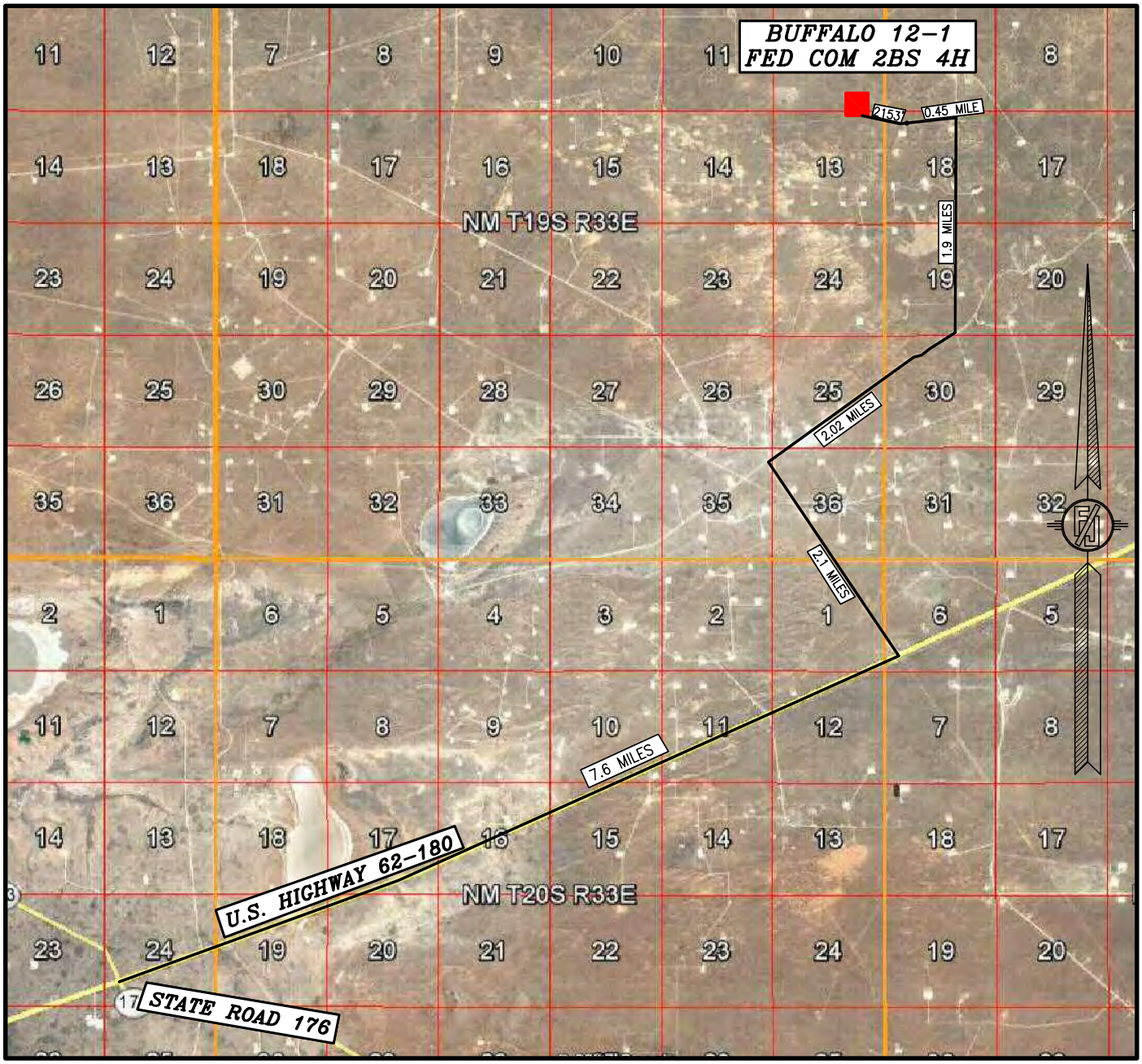
SECTION 12, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

ACCESS AERIAL ROUTE MAP



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JUNE 5, 2020

SURVEY NO. 5737F

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

AST Operations and Closure Plans

General Specifications

This plan provides additional protocols to cause the proposed recycling containments (AST Containments) to conform to NMOCD Rules.

The operator will maintain and operate the recycling containments and facility in accordance with the following plan to contain liquids and maintain the integrity of the liner to prevent contamination of fresh water and protect public health and the environment.

- The operator will use the treated produced water in the containments for drilling, completion (stimulation), producing or processing oil or gas or both. If other uses are planned, the operator will notify the OCD though the submission of a modified C-147.
- For all exploration and production operations that use produced water, the operator will conduct these activities in a manner consistent with hydrogen sulfide gas provisions in 19.15.11 NMAC or NORM provisions in 19.15.35 NMAC, as applicable.
- The operator will address all releases from the recycling and re-use of produced water in accordance with 19.15.29 NMAC.
- The operator will not discharge into or store any hazardous waste in the recycling containments, but they may hold fluids such was freshwater, brackish water, recycled and treated water, water generated by oil or gas processing facilities, or other waters that are gathered for well drilling or completion. The recycling facility will not be used for the disposal of produced water. The operator will maintain the containments free of miscellaneous solid waste or debris.
- The operator will verify that no oil is on the surface of the contained fluid. If oil is observed, the oil shall be removed using an absorbent boom or other device and properly disposed at an approved facility. An absorbent boom or other device will be maintained on site.
- The operator will install and use a header and diverter described in the design/construction plan in

19.15.34.10 B
Recycling containments may hold produced water for use in connection with drilling, completion, producing or processing oil or gas or both.

19.15.34.8 A
(5) All operations in which produced water is used shall be conducted in a manner consistent with hydrogen sulfide gas provisions in 19.15.11 NMAC or NORM provisions in 19.15.35 NMAC, as applicable.

19.15.34.8 A
(6) All releases from the recycling and re-use of produced water shall be handled in accordance with 19.15.29 NMAC.

19.15.34.10 B
Recycling containments may hold produced water for use in connection with drilling, completion, producing or processing oil or gas or both. Such fluids may include fresh water, brackish water, recycled and treated water, fluids added to water to facilitate well drilling or completion, water produced with oil and gas, flowback from operations, water generated by an oil or gas processing facility or other waters that are gathered for well drilling or completion but may not include any hazardous waste.

19.15.34.9 G
Recycling facilities may not be used for the disposal of produced water.

19.15.34.13 B
(1) The operator shall remove any visible layer of oil from the surface of the recycling containment
(7) The operator shall install, or maintain on site, an oil absorbent boom or other device to contain an unanticipated release.

19.15.34.13 B
(3) The injection or withdrawal of fluids from the containment shall be accomplished through a header, diverter or other hardware that prevents

order to prevent damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes during injection or withdrawal of liquids.

damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.

- *Pursuant to a variance*, the operator will maintain at least 2-feet of freeboard in each AST containment. Under extenuating circumstances, which will be noted on the inspection log as described below, the operator may temporarily exceed the freeboard mandate.

19.15.34.13 B
(2) The operator shall maintain at least three feet of freeboard at each containment.

- If the liner develops a leak or if any penetration of the liner occurs above the liquid's surface, then the operator will repair the damage or initiate replacement of the liner within 48 hours of discovery (and immediately notify BLM) or will seek a variance from the division district office within this time period.
- If visible inspection suggests that the liner developed a leak or if any penetration of the liner occurs below the liquid's surface, then the operator will remove all liquid above the damage or leak line within 48 hours of discovery. The operator will also notify the district division office within this same 48 hours (and immediately notify BLM) of the discovery and repair the damage or replace the liner.

19.5.34.13 B
(4) If the containment's primary liner is compromised above the fluid's surface, the operator shall repair the damage or initiate replacement of the primary liner within 48 hours of discovery or seek an extension of time from the division district office.
(5) If the primary liner is compromised below the fluid's surface, the operator shall remove all fluid above the damage or leak within 48 hours of discovery, notify the division district office and repair the damage or replace the primary liner.

- In the event of a leak due to a hole in the liner, the following steps will be followed:
    1. If the source of the fluid is uncertain, comparative field tests may need to be performed on both the water in the containment and that which may have been released (e.g. pH, conductance, and chloride).
    2. If the fluid is found to be coming from the containment, determine the location from which the leak is originating.
    3. Mark the point where the water is coming out of the tank.
    4. Locate the puncture or hole in the liner.
    5. Empty the containment to the point of damage in liner.
    6. Clean area of liner that needs to be repaired.

7. Cut out piece of material (patch or tape) to overlay liner.
8. Either weld the patch to the injured area in the liner or apply tape over the rupture.
9. Make sure rupture is completely covered.
10. Monitor as needed.

Water should NEVER go below 12 inches at the lowest level of the tank to prevent impact from high winds.

If the tank is drained, it should be secured from wind impacts and the liner inspected and reposition (to provide sufficient slack during filling) prior to refilling, per direction of SOP.

The operator will report releases of fluid in a manner consistent with NMAC 19.15.29, as well as immediately notify BLM.

The operator will inspect and remove, as necessary, surface water run-on accumulated in the secondary containment

Monitoring, Inspections, and Reporting

Inspections are to routinely be performed, as well as when the ASTs are emptied and prior to refilling.
An "Inspection Form" meeting requirements according to NMAC 19.15.34, as well as BLM COA, is to be filled out during these routine inspections and is included at the end of this section.

Weekly inspections consist of

- reading and recording the fluid height of staff gauges, freeboard
- recording any evidence that the AST Containment surface shows visible oil,
- visually inspecting the containment's exposed liners
- checking the leak detection system for any evidence of a loss of integrity of the primary liner.
- inspect any diversion ditches and berms around the containment to check for erosion and collection of surface water run-on.

- inspect the leak detection system for evidence of damage or malfunction and monitor for leakage.
- Inspect the containment for dead migratory birds and other wildlife. Within 30 days of discovery (24 hours if federally protected), report the discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.

19.15.34.12 E
Netting. The operator shall ensure that a recycling containment is screened, netted or otherwise protective of wildlife, including migratory birds. The operator shall on a monthly basis inspect for and, within 30 days of discovery, report the discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.

As stated above, if a liner's integrity is compromised, or if any penetration of the liner occurs, then the operator will take appropriate action within 48 hours as noted above, including immediate notification of BLM.

Monthly, the operator will:

- Report to the division the total volume of water received for recycling, with the amount of fresh water received listed separately, and the total volume of water leaving the facility for disposition by use on form C-148.
- Record sources and disposition of all recycled water.

Additional monitoring to identify hazards that may have developed, changes in site conditions, tank use and to enable early detection of structural issues such as uneven tank panel settlement, soil settlement, liner damage, insufficient liner slack, or leaks. If changes are noted, they should be communicated to the AST contractor (WWS Manager/Field Supervisor)

The operator will maintain a log of all inspections and make the log available for the appropriate Division district office's review upon request.

Cessation of Operations

If less than 20% of the total fluid capacity is utilized

every six months, beginning from the first withdraw, operation of the facility has ceased and the division district office will be notified. The division district may grant an extension not to exceed six months to determine the cessation of operations and the operator may request a *variance from this mandate to close for good cause and has been included in Volume 3*.

The operator will remove all fluids from the recycling facility within 60 days of cessation of operations. An extension, not to exceed 2 months, may be granted by the district division for the removal of fluids from the facility.

The breakdown of the containments follows the reverse order of the setup steps presented in the set-up manual

19.15.34.13 C
A recycling containment shall be deemed to have ceased operations if less than 20% of the total fluid capacity is used every six months following the first withdrawal of produced water for use. The operator must report cessation of operations to the appropriate division district office. The appropriate division district office may grant an extension to this determination of cessation of operations not to exceed six months.

19.15.34.14 A
Once the operator has ceased operations, the operator shall remove all fluids within 60 days and close the containment within six months from the date the operator ceases operations from the containment for use. The division district office may grant an extension for the removal of all fluids not to exceed two months.

Inspection Form

Date: _____

Chisholm Energy Buffalo 12 AST Containment

Tank ID: _____

Weekly inspection/Fluid level must be maintained > 1 foot

Fluid Level: _____ Tank contents: _____

Inspection Task	Results		Remarks, Observations, and/or Remedial Actions
Visible Oil on Surface	☐ None Observed	☐ Yes, Describe Action	
An absorbent boom or similar device is located on site to remove visible oil from surface.			
At least 2 ft of freeboard	☐ Yes	☐ No, Measure Freeboard	
Evidence of surface water run-on	☐ None Observed	☐ Yes, Describe	
Check for excessive erosion of perimeter berms.			
Birds or wildlife in net or screen	☐ None Observed	☐ Yes, Describe	
Within 30 days of discovery (immediately if federally protected species, report dead birds or wildlife to the appropriate agency (USFWS, NMDGF) and to NMOCD district division office.			
Damage to netting or screen	☐ None Observed	☐ Yes, Describe	
Rupture of Liner	☐ None Observed	☐ Yes, Describe	
If rupture is above fluid level, repair within 48 hours. If below fluid level, remove fluid above within 48 hours, notify NMOCD district division office, and repair. Immediately notify BLM of any leak			
Clips or clamps properly securing liner	☐ Yes	☐ No, Describe	
If low level, enough liner slack on panel wall	☐ Yes	☐ No, Describe	
Uneven gaps between panels	☐ None Observed	☐ Yes, Describe	
Signs of tank settlement	☐ None Observed	☐ Yes, Describe	

Erosion of soil surrounding tank (10 ft radius)	☐ None Observed	☐ Yes, Describe	
Running water on the ground	☐ None Observed	☐ Yes, Describe	
Unusual ponding of fluid inside berm	☐ None Observed	☐ Yes, Describe	
Field test (pH, Cl-, conductance, etc.) ponded fluid and compare to fluid in tank. If tank is determined as the source, locate and repair rupture within 48 hours. Notify NMOCD district division office and repair. Immediately notify BLM.			
Rust or corrosion on panels, stairs, or hardware	☐ None Observed	☐ Yes, Describe	
Damage to any hardware	☐ None Observed	☐ Yes, Describe	

Additional Observations or Actions: _____

Inspected by: _____

Closure Plan

After operations cease, the operator will remove all fluids and commence reclamation efforts immediately. Final reclamation to be completed within 3 months from the date the operator ceases operations from the containment for use.

The surface owner will impose a closure design that conforms to their needs for the site. The operator understands that a variance will be submitted to OCD to allow for any alternative closure protocol (BLM requirements will supersede OCD rules if equal or better for protection of freshwater, human health and the environment).

The containments are expected to contain a small volume of solids, the majority of which will be windblown sand and dust with some mineral precipitates from the water.

The operator will notify the division district and BLM (phone or email) before initiating closure of the containments and/or facility.

Excavation and Removal Closure Plan – Protocols and Procedures

1. Residual fluids in the containments will be sent to disposal at a division-approved facility.
2. The operator will remove all solid contents and transfer those materials to the following division-approved facility:
   Disposal Facility Name: R360
   Permit Number NM 01-0006
3. If possible, geomembrane textiles and liners that exhibit good integrity may be recycled for use as an under liner of tank batteries or other use as approved by OCD.
4. Disassemble the recycling containment infrastructure according to manufacturer's recommendations
5. After the disassemble of the containments and removal of the contents and liners, soils beneath the tanks will be tested as follows
   a. Collect a five-point (minimum) composite from beneath the liner to include any obviously stained or wet soils, or any other evidence of impact from the containments for laboratory analyses for the constituents listed in Table I of 19.15.34.14 NMAC.
   b. If any concentration is higher than the parameters listed in Table I, additional delineation may be required, and closure activities will not proceed without Division

19.15.34.14 B
The operator shall close a recycling containment by first removing all fluids, contents and synthetic liners and transferring these materials to a division approved facility.

19.15.34.14 C
The operator shall test the soils beneath the containment for contamination with a five-point composite sample which includes stained or wet soils, if any, and that sample shall be analyzed for the constituents listed in Table I below.
(1) If any contaminant concentration is higher than the parameters listed in Table I, the division may require additional delineation upon review of the results and the operator must

approval.

c. If all constituents' concentrations are less than or equal to the parameters listed in Table I, then the operator will backfill the facility as necessary using non-waste containing, uncontaminated, earthen material and proceed to reclaim the surface to pre-existing conditions.

receive approval before proceeding with closure.
(2) If all contaminant concentrations are less than or equal to the parameters listed in Table I, then the operator can proceed to backfill with non-waste containing, uncontaminated, earthen material.

Reclamation and Re-vegetation

The operator will reclaim the surface to safe and stable pre-existing conditions that blends with the surrounding undisturbed area. "Pre-existing conditions" may include a caliche well pad that existed prior to the construction of the recycling containment and that supports active oil and gas operations.

19.15.34.14 E
Once the operator has closed the recycling containment, the operator shall reclaim the containment's location to a safe and stable condition that blends with the surrounding undisturbed area. Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. The disturbed area shall then be reseeded in the first favorable growing season following closure of a recycling containment. The operator shall substantially restore the impacted surface area to the condition that existed prior to the construction of the recycling containment.

Areas not reclaimed as described herein due to their use in production or drilling operations will be stabilized and maintained to minimize dust and erosion.

For all areas disturbed by the closure process that will not be used for production operations or future drilling:

a. The operator will reclaim the containment's location to a safe and stable condition that blends with the surrounding undisturbed area.
b. Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.
c. The disturbed area shall then be reseeded with BLM defined seed mixture within the first 3 months following closure of a recycling containment in accordance with BLM requirements.

19.15.34.14 G
The re-vegetation and reclamation obligations imposed by federal, state trust land or tribal agencies on lands managed by those agencies shall supersede these provisions and govern the obligations of any operator subject to those provisions, provided that the other requirements provide equal or better protection of fresh water, human health and the environment.

Federal, state trust land, or tribal lands may impose alternate reclamation and re-vegetation obligations that provide equal or better protection of fresh water, human health, and the environment. Re-vegetation and reclamation plans imposed by the surface owner will be outlined in communications with the OCD.

19.15.34.14 F
Reclamation of all disturbed areas no longer in use shall be considered complete when all ground surface disturbing activities at the site have been completed, and a uniform vegetative cover has been established

The operator will notify the division when the site meets the surface owner's requirements or exhibits a uniform vegetative cover that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy

percent (70%) of pre-disturbance levels, excluding noxious weeds. (As surface owner, BLM will determine satisfactory completion of reclamation).

Closure Documentation

Within 60 days of closure completion, the operator will submit a closure report (Form C-147) to the District Division, with necessary attachments to document all closure activities are complete, including sampling results and details regarding backfilling and capping as necessary.

In the closure report, the operator will certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in the closure plan.

that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds.

19.15.34.14 D
Within 60 days of closure completion, the operator shall submit a closure report on form C-147, including required attachments, to document all closure activities including sampling results and the details on any backfilling, capping or covering, where applicable. The closure report shall certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in division rules or directives.

SITING CRITERIA DEMONSTRATION

Discussion
Figures

Distance to Groundwater

Figure 1a, 1b and 2, their associated legends, 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 Buffalo 12 Above-Ground Storage Tank Containment (Buffalo 12 AST). Specifically, the estimated depth to water is greater than 80 feet.

Geology of Buffalo 12 AST Containment

The proposed site for the Buffalo 12 AST is located approximately 29 miles due west of Hobbs, New Mexico and 5 miles north of 62/180. The area near the proposed AST containment is relatively flat with a surface covering of low sand dunes stabilized with vegetation consisting of native grasses, mesquite, and yucca. According to the New Mexico State Geologic Map (Figures 1 and 2), the Buffalo 12 AST is in an area where the surface unit is Quaternary age piedmont deposits overlain by Quaternary age eolian deposits (Qe/Qp).

The Ogallala Formation is present northeast of the AST location and erosion has either removed or reworked the Ogallala from beneath the site. The USGS reports that wells nearest to the AST location are completed in Alluvium/Bolson deposits (i.e., piedmont) or the underlying Chinle/Santa Rosa Sandstone, according to their database. In the southwest corner of Figures 1a and 1b is a small outcrop of the upper Chinle Formation (T(r)cu).

According to Ground Water Report #6[1], the elevation of the contact between the alluvial deposits and underlying Chinle (red beds) at the AST site is approximately 3660 feet ASL, as shown in Figure 1b. Because the elevation of the AST site is 3729 feet ASL, the base of the alluvial deposits would be about 70 feet below surface. We examined well log data from the NM OSE database for wells near the location, and identified two well logs of interest:

- CP-1672, about 6 miles southeast, which indicates the red bed/alluvial contact is 68 feet below the surface (3715 ASL) resulting in an elevation of the contact of 3647 and
- CP-677, about 8 miles northwest, suggesting the red bed/alluvium contact is about 116 feet below surface (3770 feet AST surface), which calculates to an elevation of the top of the red beds of 3654.

Figure 1b shows the elevation of the red bed contact at Well CP-1672 as 3675 ft ASL and at CP-677, the elevation of the contact is about 3650. The 1961 report is obviously not perfect, but it remains an excellent source of reasonable data. In addition to the two referenced OSE well logs, Ready Drill provided us with data from the 80-foot auger boring from an oil well at the location that suggests alluvial material is at least 80-feet deep at the location.

[1] https://geoinfo.nmt.edu/publications/water/gw/6/GW6.pdf

Depth to Water Data and Nearby Wells

Figure 1 is a topographic map overlain by transparent geologic map of the state of New Mexico and associated legends that displays the following:

- A green circle with a call out showing the location of the Buffalo 12 AST.
- Water wells from the USGS database as green, cyan, and purple triangles. The colors indicate the principal water-bearing unit for each well: Alluvium/Bolsom, Ogallala, and Chinle, respectively. The well number as defined in the database, recorded depth to water value, and the date the water level measurement was recorded is displayed next to the corresponding well point.
- Miscellaneous water wells from public and non-public databases were identified by field inspection or other published documents are represented by yellow, cyan, and green squares with black dots in the center. The colors correspond to 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, green, dark blue, and beige circles with colored triangles in the center. These symbols indicate the depth to water measured in the well. Well ID and documented in the OSE Waters database, depth to water value, and the date the value was recorded is displayed next to the corresponding well point.

Depth to groundwater in wells nearest to the Buffalo 12 AST in wells that were measured by professionals during static condition range from 177 to 231 feet in Chinle wells (northwest and southeast along the elevation contour) and about 90 feet in alluvial wells located about 4 miles south (and downhill). The on-site auger boring was a dry hole, thus depth to water at the site is at least 80 feet below surface.

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

- The Buffalo 12 Site is represented by the green circle and call out.
- Water wells from the USGS database as green, cyan, and purple triangles. The colors indicate the principal water-bearing unit for each well: Alluvium/Bolsom, Ogallala, and Chinle, respectively. The well number as defined in the database, recorded depth to water value, and the date the groundwater elevation was recorded is displayed next to the corresponding well point.
- Miscellaneous water wells from public and non-public databases were identified by field inspection or other published documents are represented by yellow, cyan, and green squares with black dots in the center. The colors correspond to the depth to water and date the depth to water value was recorded are also displayed.

In the area of the Buffalo 12 AST, two groundwater zones are present. Wells completed in the alluvial deposits occur about 4 miles south of the location and wells that draw groundwater from the underlying Chinle or Santa Rosa occur throughout the mapped area, exclusive of the northeastern quadrant (Ogallala Aquifer). Mixing data from these two groundwater units results in a somewhat puzzling map. Therefore, we elected to avoid

drawing a potentiometric surface. With a high degree of certainty, based upon the data, we conclude:

- Depth to groundwater is at least 80 feet based upon the site-specific drilling record.
- The elevation of the groundwater surface of the Chinle/Santa Rosa zone is about 3530 feet ASL, plus or minus 50 feet.
- Data from well logs and Ground Water Report #6 (Figure 1b) demonstrate the contact between the alluvial material and underlying red beds (Chinle) is about 3660.
- The alluvial material beneath the Buffalo 12 AST is dry
- The depth to the shallowest groundwater zone (Chinle) is about (3729-3530=) 199 feet, plus or minus 50 feet.

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 nearest freshwater well field is 12.1 miles to the northwest and is owned by the Continental Oil (L-2770) and probably supplies one or more natural gas processing plants.
- The nearest municipality is the City of Hobbs, which is about 25 miles due east.

Distance to Subsurface Mines

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

- The Buffalo 12 site is not in an area where subsurface mines exist.
- The nearest surface mines identified in the MILS database are 0.9 miles to the northeast and southeast.

Distance to High or Critical Karst Areas

Figure 5 illustrates the Buffalo 12 site absence of mapped areas of high or critical karst potential.

- The Buffalo 12 site is not located within high or critical karst potential areas.
- Our field investigation saw no evidence of karst features such as sinkholes.

Distance to 100-Year Floodplain

Figure 6 demonstrates the absence of 100-year flood plains with respect to the proposed location for the Buffalo 12 AST site.

- The nearest 100- year flood plain is in and around the City of Hobbs.
- Our field investigation found no evidence of flooding potential.

Distance to Surface Water

Figure 7 and the site visit demonstrate the that the Buffalo 12 AST site is outside of the setback distances for a continuously flowing watercourse or the next lower order tributary, lakebed, sinkhole, playa lake (measured from the ordinary high-water mark) or spring.

- The nearest surface water feature is Laguna Tonto, a lake/pond about 2.39 miles to the southeast.
- No watercourses or springs were mapped or observed near the site.

Distance to Permanent Residences or Structures

Figure 8 demonstrates that the proposed site for the Buffalo 12 AST is not within the setback distances of 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 the well pads and pipelines.
- The site foot survey identified new oilfield structures not shown on Figure 8.

Distance to Non-Public Water Supply

Figures 1 and 7 demonstrate the Buffalo 12 location is not within the setback distances of 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, C-02313, is located approximately 1.37 miles to the west of the proposed site.
- No domestic water wells are located within 1,000 feet of the recycling area.
- No springs were identified in the area.
- The facility is not within 500 feet of a spring or freshwater well used for domestic or stock watering purposes, in existence at the time of initial application.

Distance to Wetlands

Figure 9 demonstrates that the proposed site of the Buffalo 12 site is not within the 300-foot setback distance of a wetland.

- The nearest mapped wetland is Laguna Tonto, freshwater pond that is about 5 miles to the southwest.
- The site foot survey found no evidence of wetlands.

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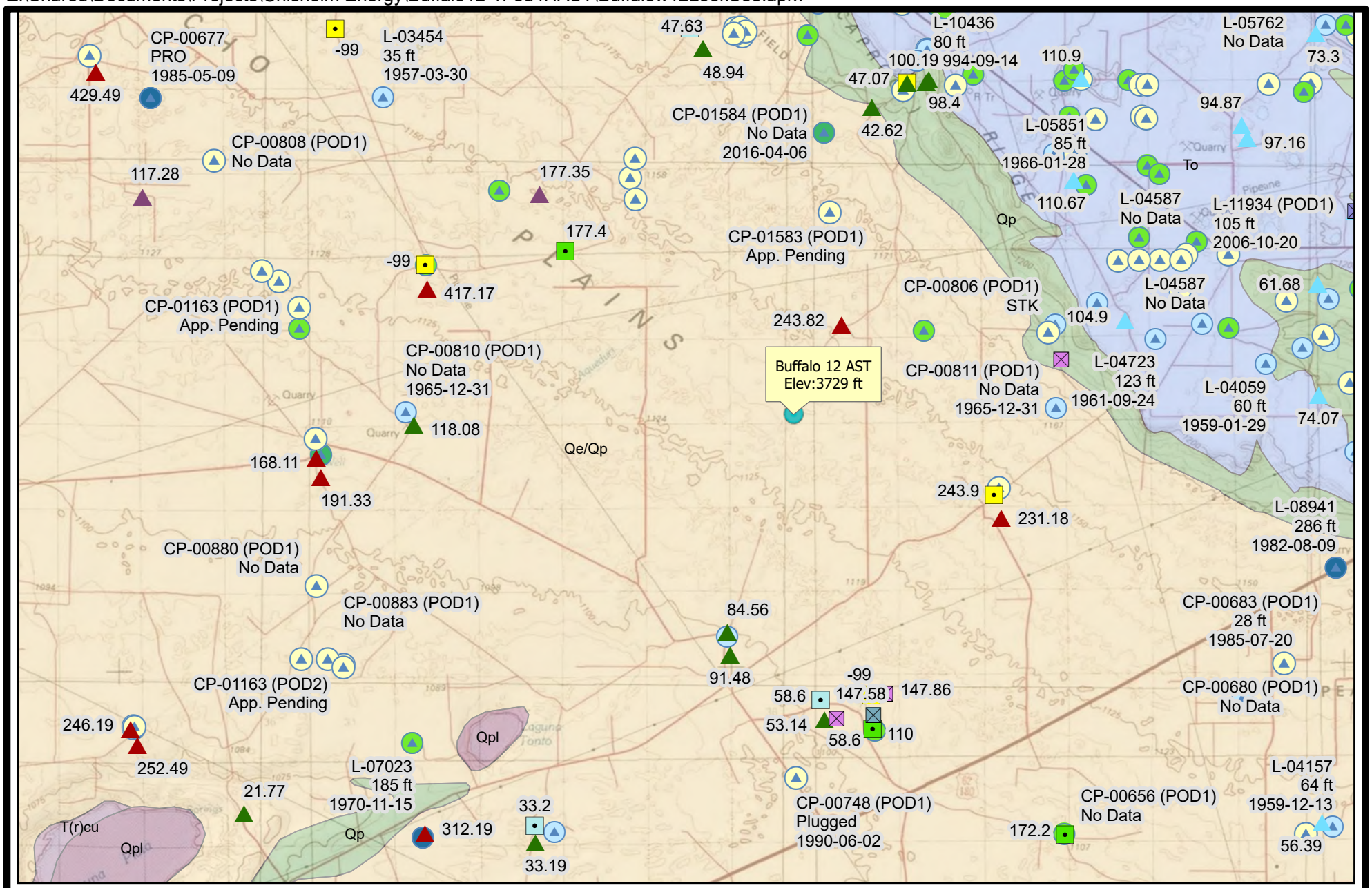

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R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Buffalo 12 AST Containment Nearby Wells	Figure 1a
	Chisholm Energy Operating LLC	March 2021

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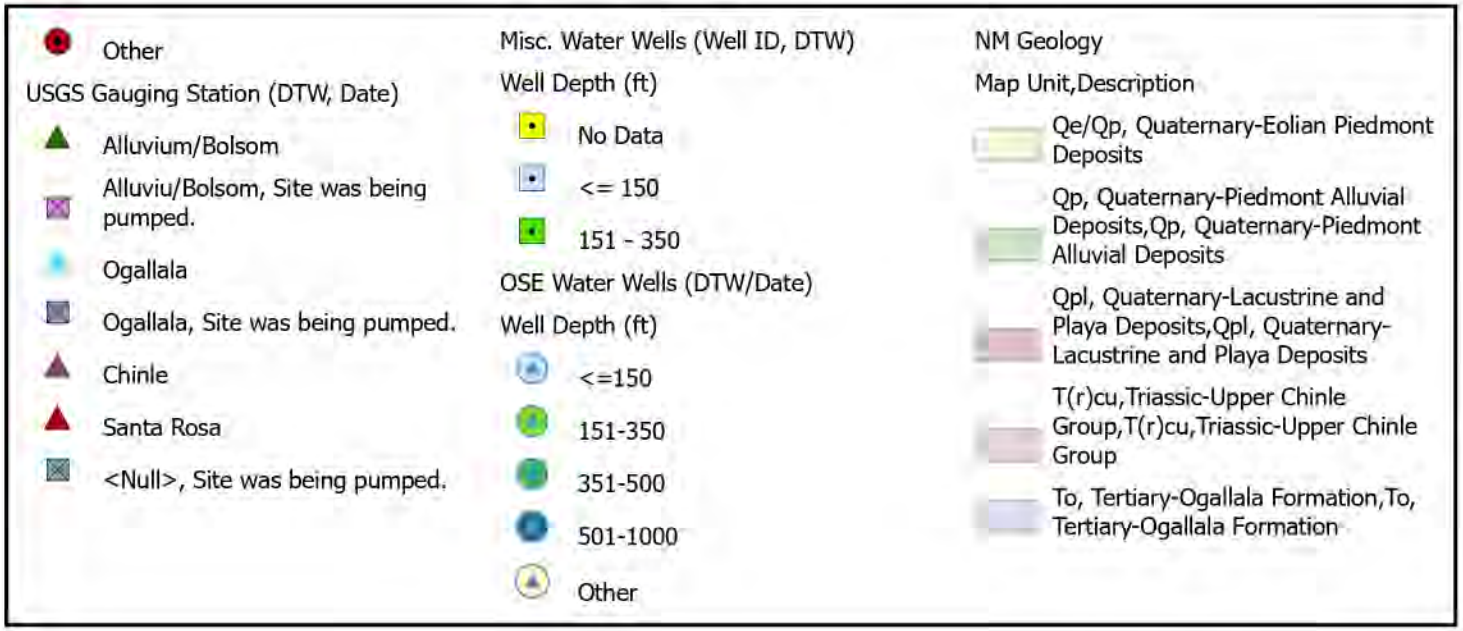

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R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Buffalo 12 AST Containment Nearby Wells Legend

Figure 1a

Chisholm Energy Operating LLC

March 2021

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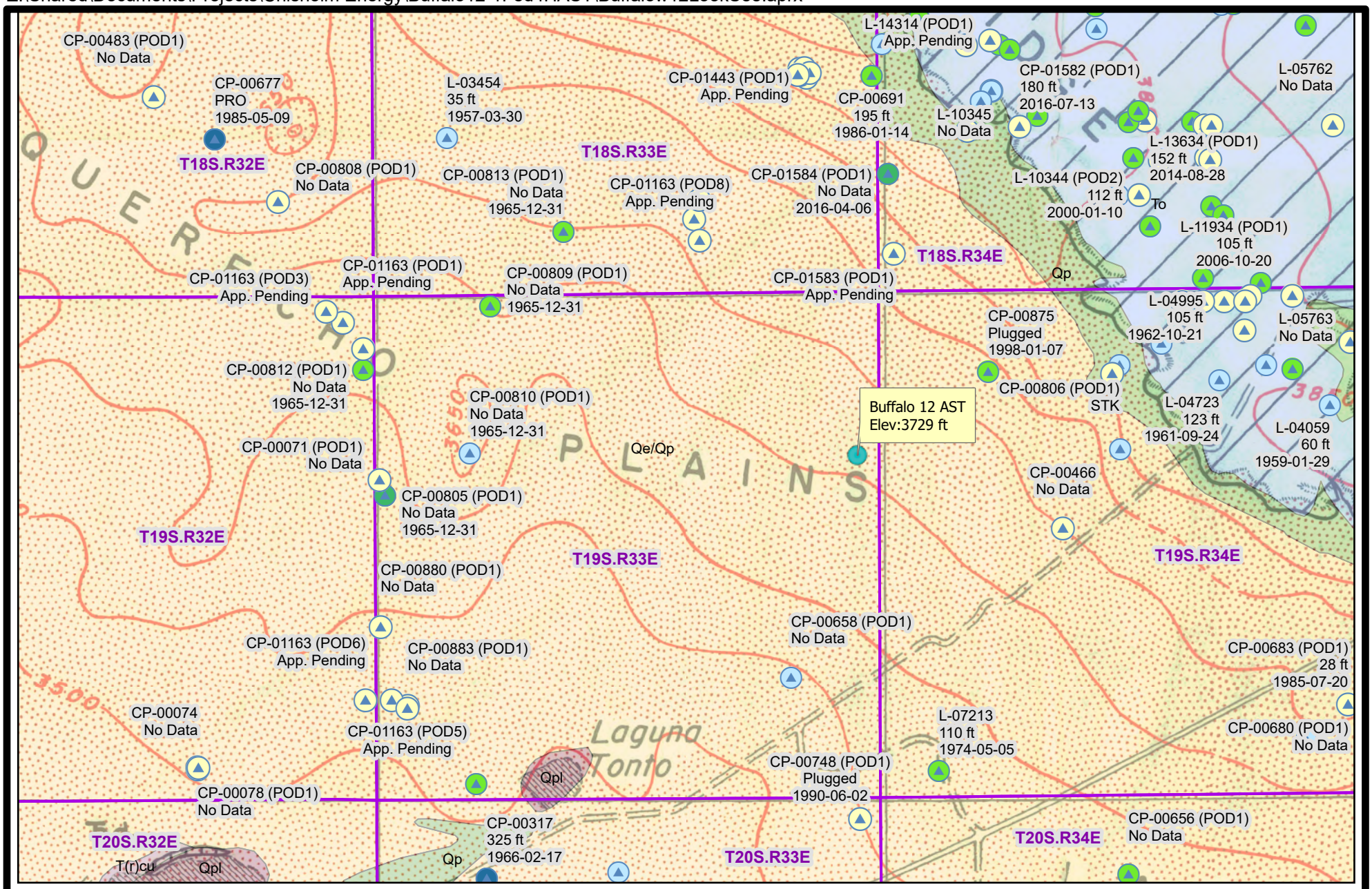

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R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Buffalo 12 AST Containment Top of Redbeds

Figure 1b

Chisholm Energy Operating LLC

March 2021

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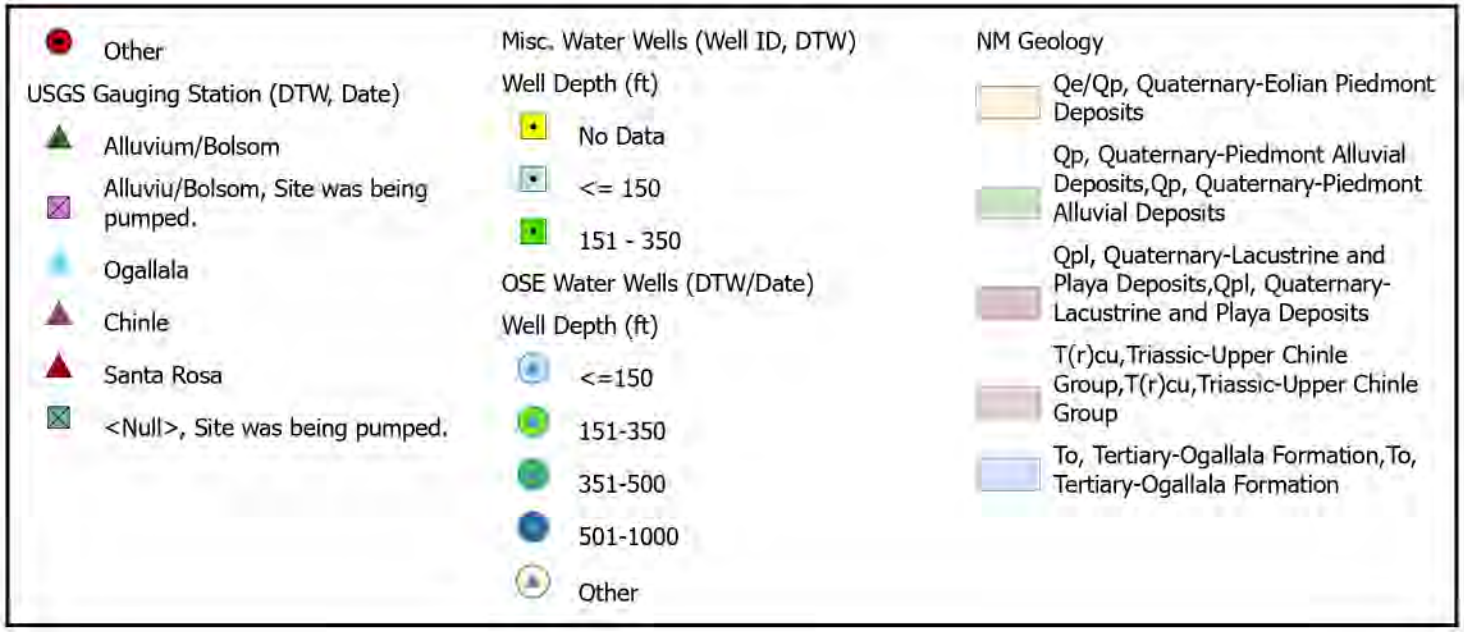

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901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Buffalo 12 AST Containment Top of Redbeds Legend

Figure 1b

Chisholm Energy Operating LLC

March 2021

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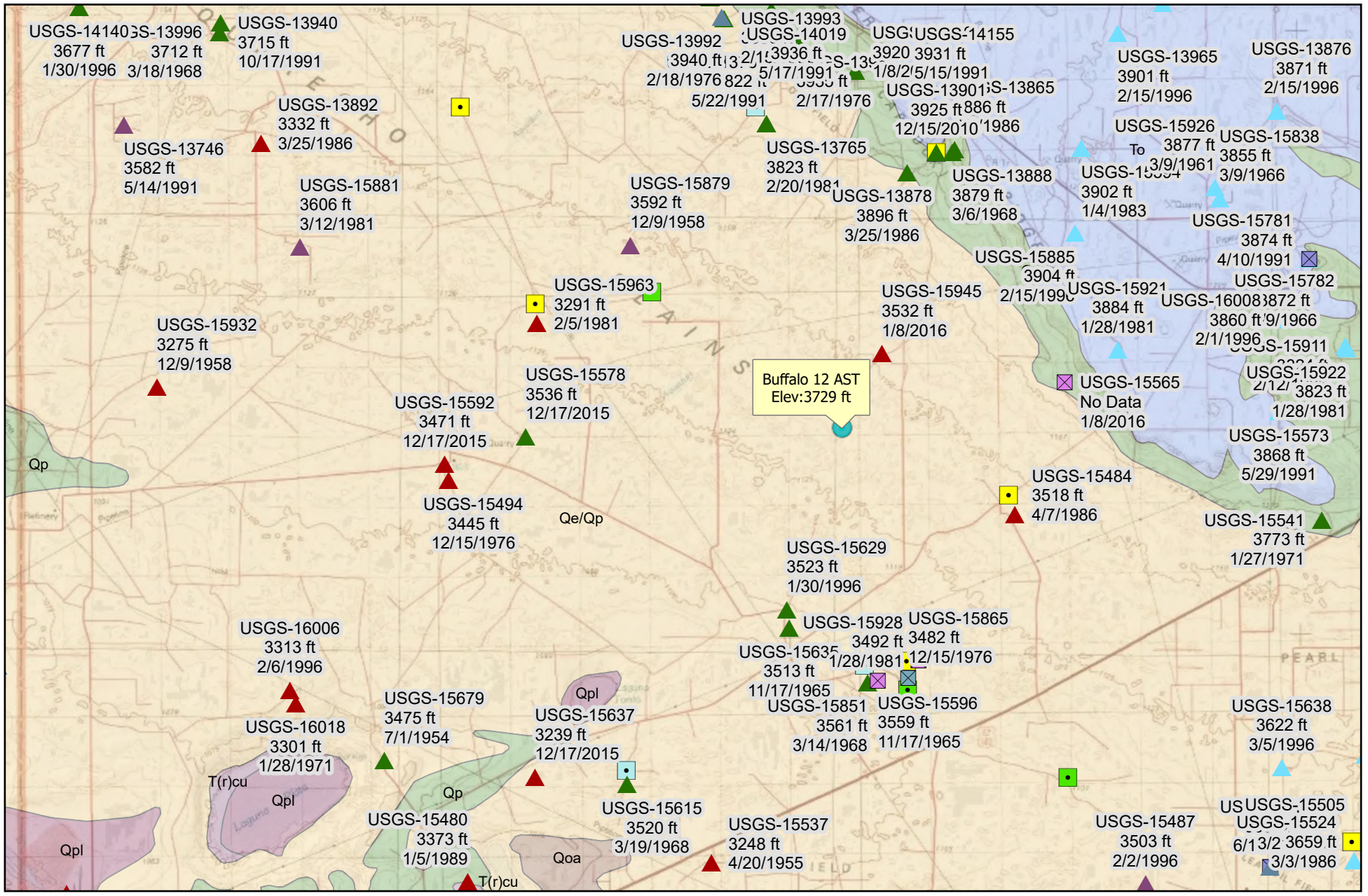

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901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Buffalo 12 AST Containment Groundwater Elevation	Figure 2
Chisholm Energy Operating LLC	March 2021

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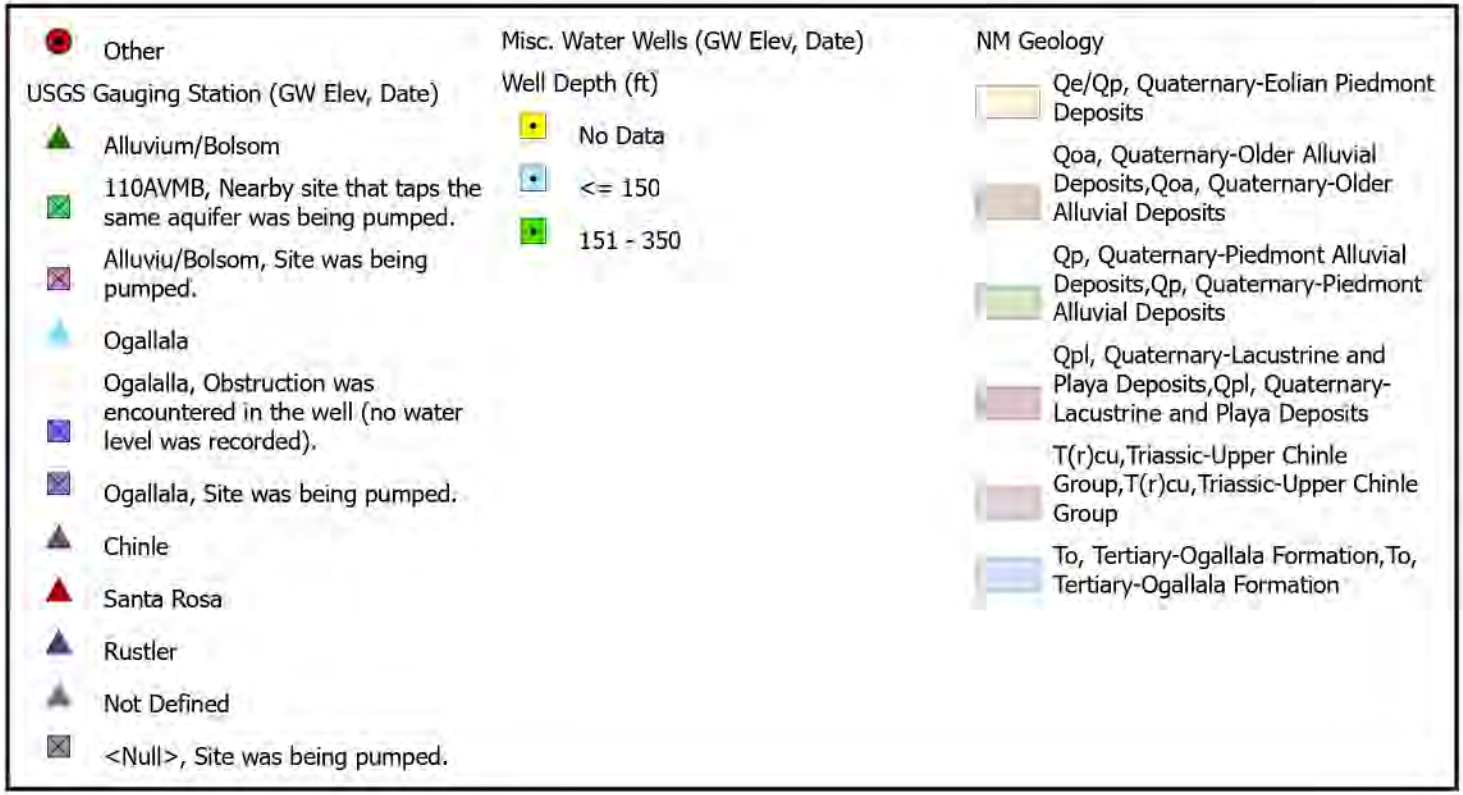

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901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Buffalo 12 AST Containment Groundwater Elevation Legend

Figure 2

Chisholm Energy Operating LLC

March 2021

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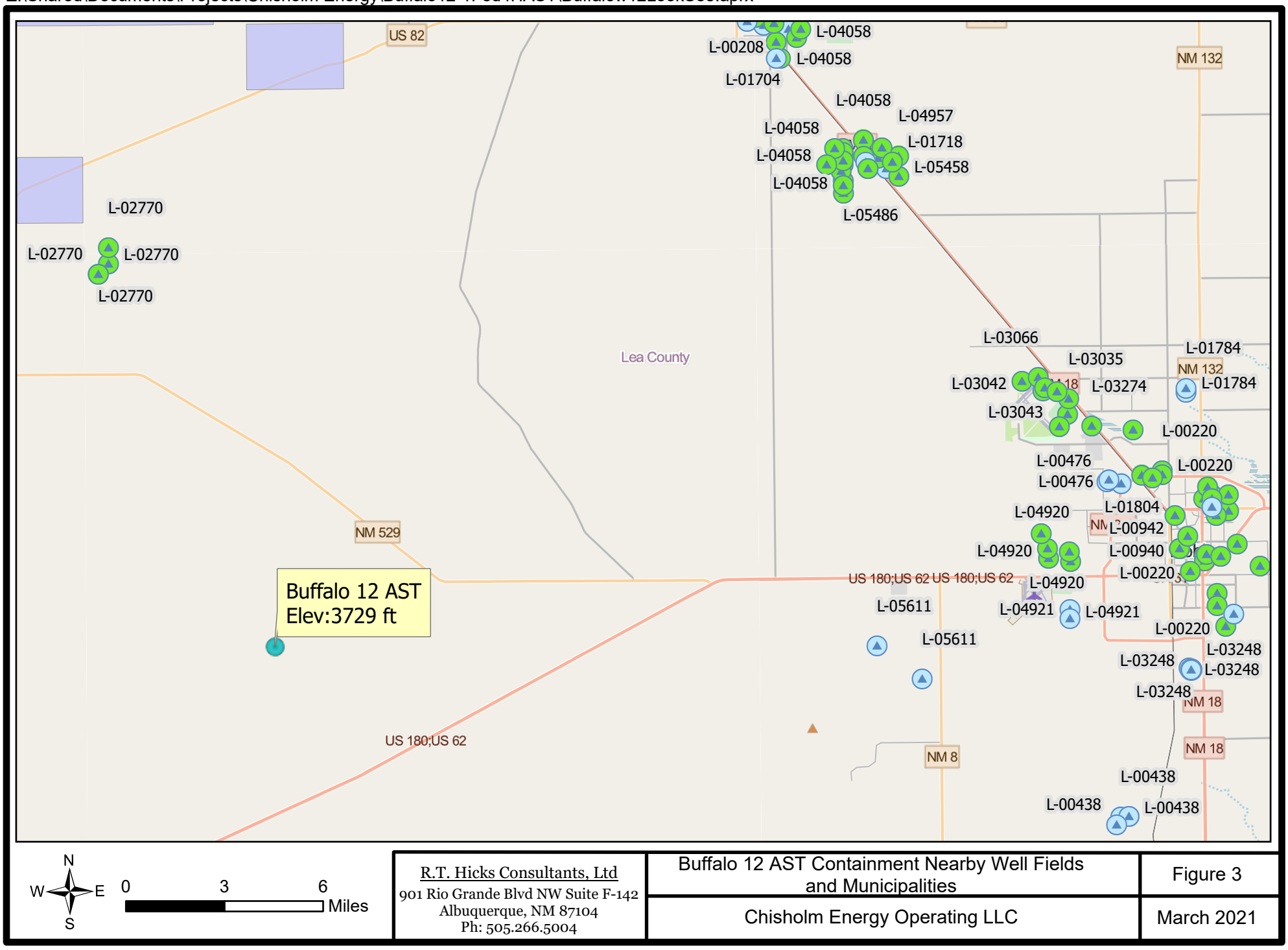

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Buffalo 12 AST Containment Nearby Well Fields and Municipalities	Figure 3
	Chisholm Energy Operating LLC	March 2021

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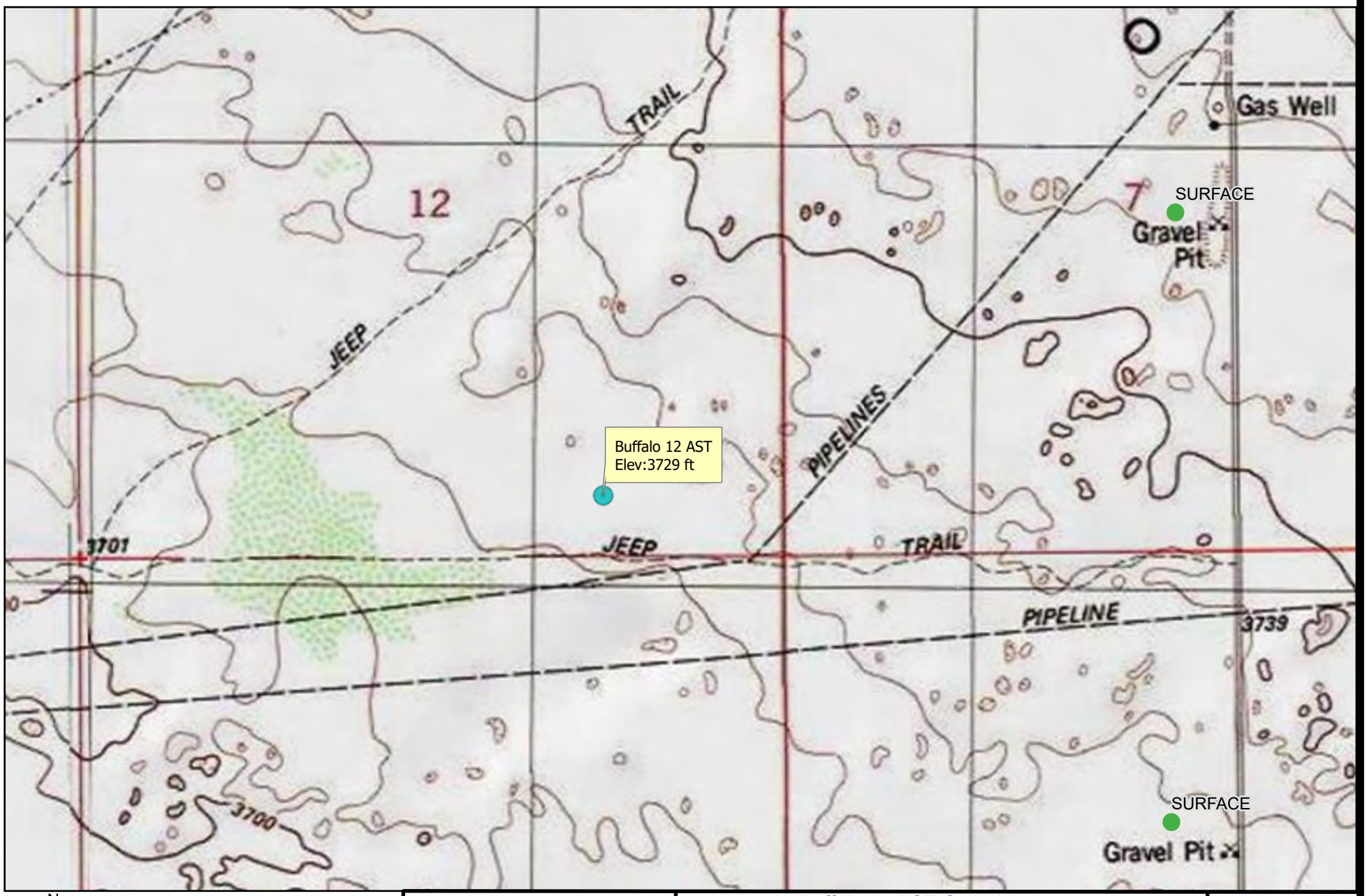

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R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Buffalo 12 AST Containment Nearby Mines	Figure 4
	Chisholm Energy Operating LLC	March 2021

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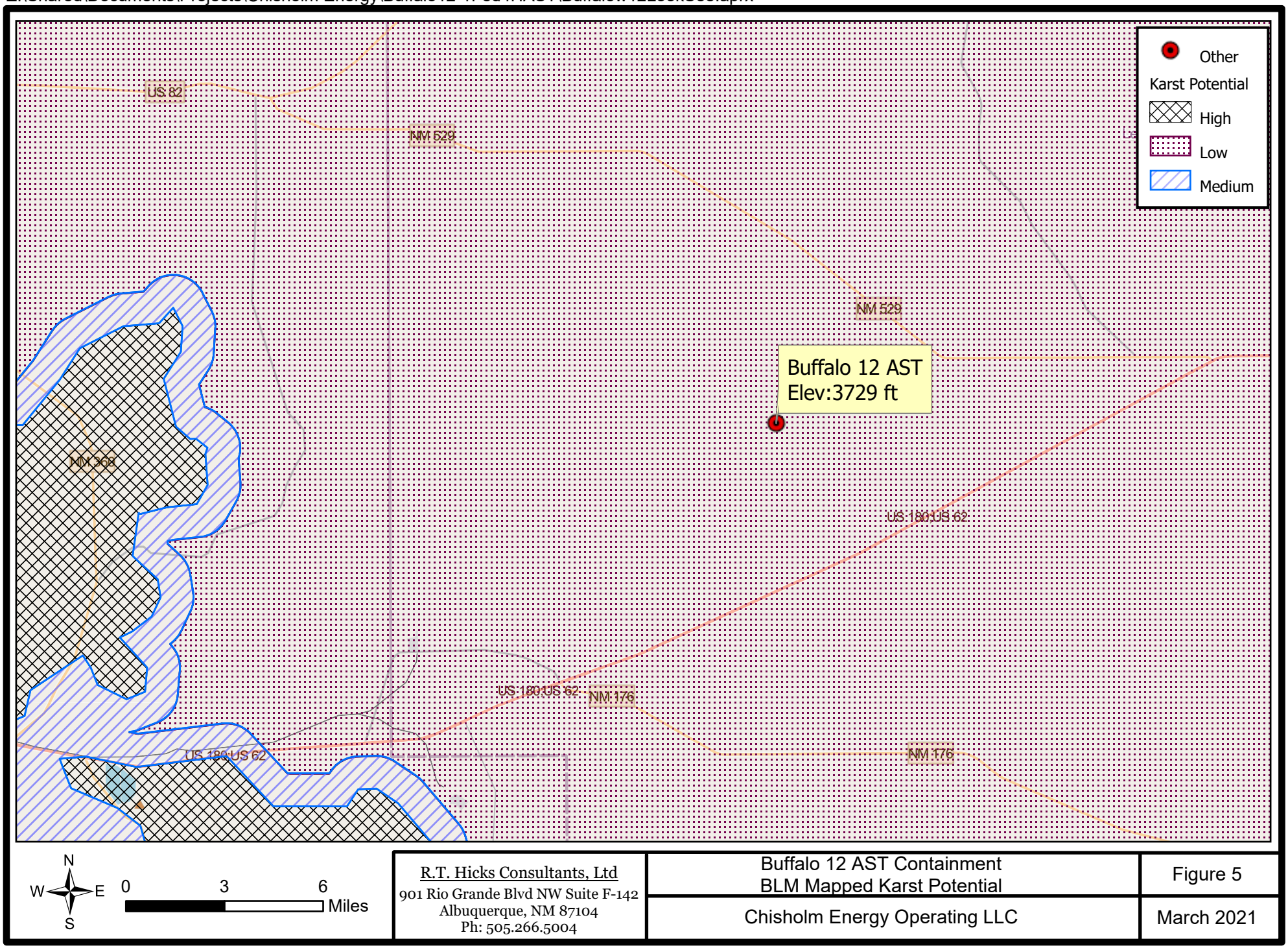

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Buffalo 12 AST Containment BLM Mapped Karst Potential	Figure 5
	Chisholm Energy Operating LLC	March 2021

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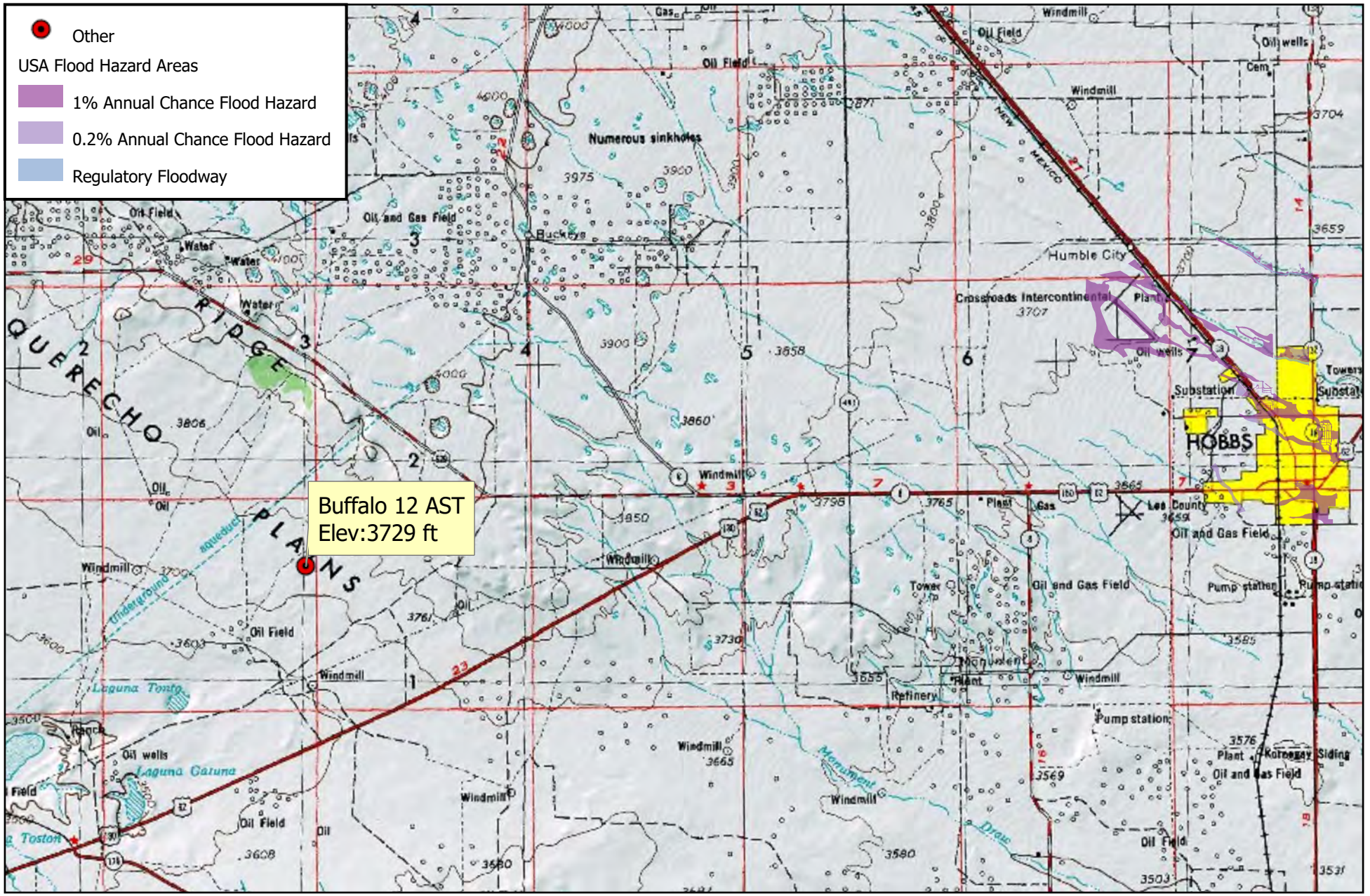

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R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Buffalo 12 AST Containment Nearest Flood Hazard Areas	Figure 6
Chisholm Energy Operating LLC	March 2021

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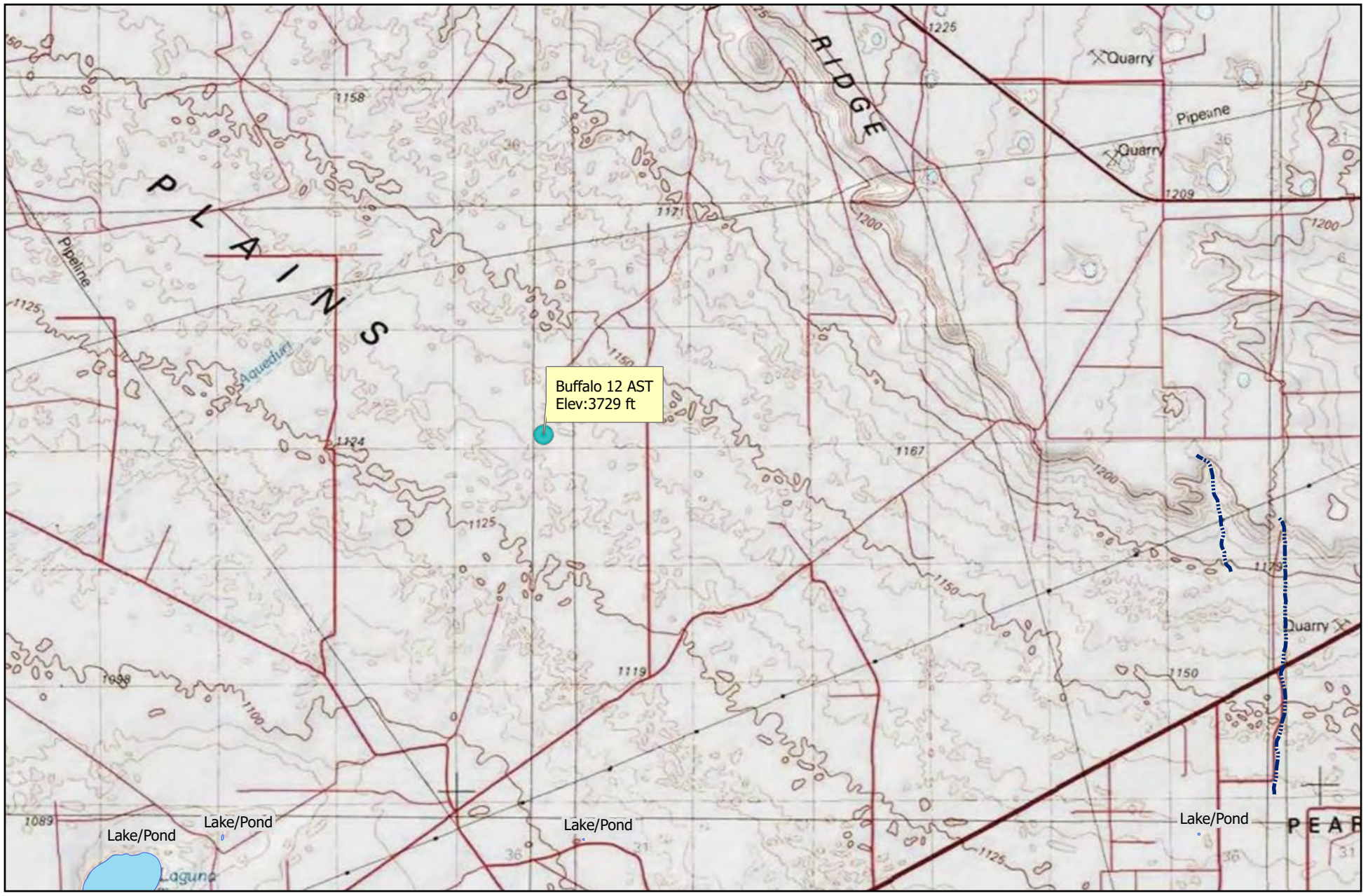

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R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Buffalo 12 AST Containment Nearest Surface Water	Figure 7
	Chisholm Energy Operating LLC	March 2021

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Feet

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Buffalo 12 AST Containment
Nearby Structures

Figure 8

Chisholm Energy Operating LLC

March 2021

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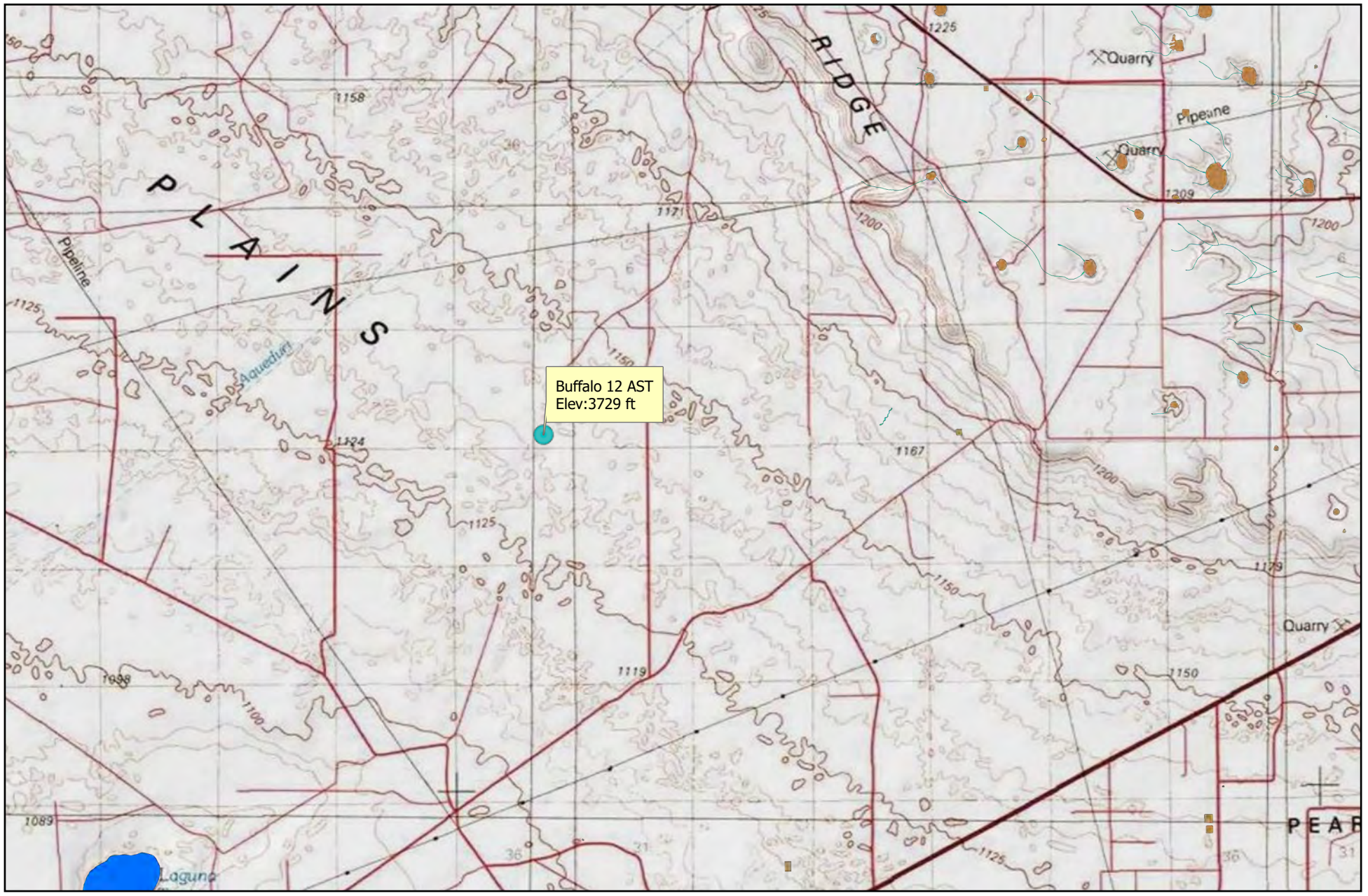

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Buffalo 12 AST Containment Nearest Mapped Wetlands	Figure 9
	Chisholm Energy Operating LLC	March 2021

APPENDIX WELL LOGS

r@rthicksconsult.com

From: Jerid Hight <jhight@byrdoilfield.com>
Sent: Thursday, March 11, 2021 8:48 AM
To: Randall Hicks; Chad
Cc: readydrill_chad@hotmail.com; 'Joel Hall'
Subject: RE: Chisum - Buffalo 4h and 5H - Lea Co NM - need some data if you have it

The Buffalo 4h and 5h was a sand and clay mix. The hole was dry all the down to 80ft and no mud was used on this drill.

Let me know if anything else is needed

Thanks

JERID HIGHT
BYRD OILFIELD SERVICES
OPERATIONS MANAGER
JHIGHT@BYRDOILFIELD.COM
(325) 669-4480 CELL
(432) 385-7635 OFFICE

From: Randall Hicks <r@rthicksconsult.com>
Sent: Thursday, March 11, 2021 7:10 AM
To: Jerid Hight <jhight@byrdoilfield.com>; Chad <chad@readydrill.com>
Cc: readydrill_chad@hotmail.com; 'Joel Hall' <JHall@chisholmenergy.com>
Subject: Chisum - Buffalo 4h and 5H - Lea Co NM - need some data if you have it

Chad

Chisholm told me that Byrd drilled the 2 ratholes at the location shown in the attached maps – and I hope you may have had a hand in that project.

We are seeking some data that would help us determine that the depth to groundwater at/near this location is greater than 50 feet. I am hoping that a work ticket, invoice, penetration rate log, driller's notes or something else may help us in this effort.

In the past, we were able to use a work ticket that showed the depth of the boring and that drilling mud was not used in the rathole. The work ticket combined with an email from Ready Drill that said “we did not encounter water during the drilling of the rathole” may be all that we need.

Call me with any questions and thanks in advance.

I hope you are well and please stay safe.

Randall T. Hicks PG
R.T.Hicks Consultants LTD
901 Rio Grande Blvd. NW F-142
Albuquerque, NM 87104

505-238-9515 (mobile and best contact)
505-266-5004 (office land line)

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

2017 SEP -6 PM 4:05

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD 1 (Site BL-2)	N/A	CP-1672

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Trainer Partners LTD c/o Atkins Engineering Assoc	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
2904 W. 2nd Street	Roswell	NM	88201

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	37	7.8	N
	LONGITUDE	103	31	16.2	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

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
8/29/2017	8/29/2017	N/A	100.80	Dry

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

STATIC WATER LEVEL IN COMPLETED WELL (FT): Dry

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY: Switched to Air Rotary at 44 ft bgs

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger (HSA) and Air Rotary

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 (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
-	-	± 6.00	N/A	N/A	N/A	N/A	-

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	10	±6.00	Baroid Hole Plug/Bentonite Chips	±2.1	from surface
10	44	±6.00	Native Fill	±6.7	from surface
44	100.80	±3.125	Native Fill	±3.6	from surface

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. CP-1672	POD NO. 1	TRN NO. 610609	
LOCATION 19S.34E.36.131		WELL TAG ID NO. —	PAGE 1 OF 2

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	9		Sand, medium to coarse grain sand, fine roots, brown, dry	Y ✓ N	
9	19		Sandy loam, fine grain sand, light brown, dry	Y ✓ N	
19	20		Sand, very fine to fine grain sand, caliche streaks, brown, dry	Y ✓ N	
20	20.5		Caliche, tan, dry	Y ✓ N	
20.5	24		Sand, very fine to fine grain sand, caliche streaks, brown, dry	Y ✓ N	
24	29		Sandy loam, fine to medium grain sand, light brown, dry	Y ✓ N	
29	34		Sandy clay, fine grain sand, caliche streaks, brown, hard, dry	Y ✓ N	
34	44		Lean clay, brown, some black mottling, dry	Y ✓ N	
44	48		Clay, brown to red, hard, dry	Y ✓ N	
48	68		Sandy clay, coarse grain sand, 5-10mm rounded gravel, brown to red, hard, dry	Y ✓ N	
68	100.80		Clay, red to brown, hard, dry/*@ 88-93 ft bgs: some caliche streaks	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

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: Dry. Borehole was not converted to a monitoring well.
See attached Plugging Record for details.

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

Guadalupe Leyba

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:

Jackie D. Atkins — 09/06/2017

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO. CP-1672	POD NO. 1	TRN NO. 610609	
LOCATION 19S.34E.36.131		WELL TAG ID NO. —	PAGE 2 OF 2

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

475430

Section 1. GENERAL INFORMATION

(A) Owner of well T X O Prod. Owner's Well No. _____
Street or Post Office Address c/o Glenn's Water Well Service, Inc.
City and State Box 692 Tatum, New Mexico 88267

Well was drilled under Permit No. CP-677 and is located in the:

a. _____ ¼ W½ ¼ NW ¼ NW ¼ of Section 26 Township 18-S. Range 32-E. N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor Glenn's Water Well Service License No. WD 421

Address Box 692 Tatum, New Mexico 88267

Drilling Began 5/9/85 Completed 5/9/85 Type tools Rotary Size of hole 7 7/8 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 700 ft.

Completed well is [X] shallow [ ] artesian. Depth to water upon completion of well _____ ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
			Dry Hole	

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
	well was pluged	with sand	and mud		

Section 5. PLUGGING RECORD

Plugging Contractor _____
Address _____
Plugging Method _____
Date Well Plugged _____
Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received May 15, 1985

Quad _____ FWL _____ FSL _____

File No. CP-677 Use OWD Location No. 18.32.26.11143

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	12	12	sand-loose
12	24	12	clay
24	47	23	caleche
47	58	11	sand
58	84	26	sandy clay
84	102	18	red clay sticky
102	116	14	sand and gravel
116	142	26	red clay sticky
142	315	173	brown clay
315	325	10	purple clay
325	378	53	red clay
378	408	30	pink red clay
408	440	32	brown shale and blue streaks
440	500	60	brown shale-grainey
500	530	30	sand rock -fine
530	545	15	brown shale
545	605	60	sand rock-medium
605	616	11	brown shale
616	675	59	sand rock
675	700	25	red shale

Section 7. REMARKS AND ADDITIONAL INFORMATION

MAY 15 8 28 AM '05
STATE ENGINEER
ROSWELL, NM

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Corky Gomez
Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

APPENDIX SITE PHOTOGRAPHS

Figure 1- View east from NW corner of pad showing 1-4 foot high stabilized dunes. North side of pad is in the "cut".

Figure 2- View south from NW corner of pad. Rig is drilling a Stetson well on south side of pad.

Figure 3 - View south to SW corner of pad showing lease road and in background stabilized dunes and buried pipeline. South side of pad is built in "fill".

Figure 4 - View northeast from SW corner of pad with lease road in foreground and built-up pad. Rig is drilling one of the Stetson wells on the south side of the pad.

Figure 5- View south near SW corner of pad showing stabilized low dunes. Buried pipeline shown in Figure 2 is in upper right corner of image.