

DATE IN 4/18/24	SUSPENSE	ENGINEER	LOGGED IN	TYPE	APP NO. DMAm 19/115 60710
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
- [A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD
- Check One Only for [B] or [C]
- [B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR
- [D] Other: Specify _____
- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply
- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☒ Offset Operators, Leaseholders or Surface Owner
- [C] ☒ Application is One Which Requires Published Legal Notice
- [D] ☒ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached

- [3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

- [4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Nate Alleman
 Print or Type Name

Nate Alleman
 Signature

Regulatory Specialist - ALL Consulting 04/05/2019
 Title Date

nalleman@all-llc.com
 Date e-mail Address

- SWD
 - Goodnight
 372311
 Well
 - Willis G 35
 SWD #1
 Pool
 - SWD, Glori etc
 46106

ALL CONSULTING

GOVERNMENT RELATIONS • ENERGY • PLANNING • TECHNOLOGY
ENGINEERING • ENVIRONMENTAL

April 5, 2019

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

Subject: Goodnight Midstream Permian, LLC – Willis 35 G 1
Application for Authorization to Inject

To Whom It May Concern,

On behalf of Goodnight Midstream Permian, LLC (Goodnight), ALL Consulting, LLC (ALL) is submitting the enclosed Application for Authorization to Inject for the Willis 35 G 1, a proposed salt water disposal well, in Lea County, NM.

Should you have any questions regarding the enclosed application, please contact Nate Alleman at (918) 382-7581 or nalleman@all-llc.com.

Sincerely,
ALL Consulting



Nate Alleman
Sr. Regulatory Specialist

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance ☒ Disposal ☒
Storage Application qualifies for administrative approval? ☒ Yes _____ No _____
- II. OPERATOR: Goodnight Midstream Permian, LLC
ADDRESS: 5910 N Central Expressway, Suite 850, Dallas, TX 75206
CONTACT PARTY: Grant Adams PHONE: 214-444-7388(0)
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? _____ Yes ☒ No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: Nate Alleman TITLE: Regulatory Specialist - ALL Consulting
SIGNATURE: Nate Alleman DATE: 4/15/2019
E-MAIL ADDRESS: nalleman@all-llc.com
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal:

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Application for Authorization to Inject
Well Name: Willis 35 G 1

III – Well Data *(The Wellbore Diagram is included as Attachment 1)*

A.

(1) General Well Information:

Operator: Goodnight Midstream Permian, LLC (OGRID No. 372311)
Lease Name & Well Number: Willis 35 G 1
Location Footage Calls: 1462' FSL & 2087' FEL
Legal Location: Unit Letter J, S35 T25S R37E
Ground Elevation: 3,010'
Proposed Injection Interval: 4,900' – 5,250'
County: Lea

(2) Casing Information:

Type	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	12-1/4"	9-5/8"	40.0 lb/ft	1,015'	318	Surface	Circulation
Intermediate 1	8-3/4"	7"	26.0 lb/ft	4,900'	639	Surface	Circulation/ CBL
Tubing	6-3/11"	4-1/2"	20.0 lb/ft	4,880'	N/A	N/A	N/A

(3) Tubing Information:

4-1/2" (composite weight string) of fiberglass-coated tubing with setting depth of 4,880'

(4) Packer Information: Lok-set or equivalent packer set at 4,880'

B.

(1) Injection Formation Name: Glorieta

Pool Name: SWD; GLORIETA

Pool Code: 91606

(2) Injection Interval: Open-hole injection between 4,900' – 5,250'

(3) Drilling Purpose: New Drill for Salt Water Disposal

(4) Other Perforated Intervals: No other perforated intervals exist.

(5) Overlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Grayburg (3,350')

Underlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Tubb (5,933')

V – Well and Lease Maps

The following maps are included in **Attachment 2**:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 1/2-mile Well Detail List w/ Casing Information for Penetrating Wells
- Potash Lease Map
- Penetrating wells – Wellbore Diagram

VI – AOR Well List

A list of the wells within the 1/2-mile AOR is included in **Attachment 2**.

There is one well that penetrates the injection zone, it has been properly plugged and abandoned. A wellbore diagram and casing information for this well is also included in **Attachment 2**.

VII – Proposed Operation

- (1) **Proposed Maximum Injection Rate:** 25,000 bpd
Proposed Average Injection Rate: 12,500 bpd
- (2) A closed system will be used.
- (3) **Proposed Maximum Injection Pressure:** 980 psi (surface)
Proposed Average Injection Pressure: approximately 490 psi (surface)
- (4) **Source Water Analysis:** It is expected that the injectate will consist of produced water from production wells completed in the Wolfcamp and Bone Springs formations. Analysis of water from these formations is included in **Attachment 3**.
- (5) **Injection Formation Water Analysis:** The proposed SWD will be injecting water into the Glorieta formation which is a non-productive zone known to be compatible with formation water from the Wolfcamp and Bone Springs formations. Water analyses from the Bone Springs, Delaware, Devonian, and Wolfcamp formations in the area are included in **Attachment 4**.

VIII – Geologic Description

The proposed injection interval includes the Glorieta formations from 4,900' – 5,250'. This formation consist of interbedded carbonates rocks including dolomites, siltstones, and sands. Several thick sections of porous and permeable intervals are present within this formation in the area.

The freshwater formation is the Rustler at a depth of approximately 990 feet. Water well depths in the area range from approximately 40 - 901 feet below ground surface.

IX – Proposed Stimulation Program

A small cleanup acid job may be used to remove mud and drill cuttings from the formation. However, no other formation stimulation is currently planned.

X – Logging and Test Data

Logs will be submitted to the Division upon completion of the well.

XI – Fresh Groundwater Samples

Based on a review of data from the New Mexico Office of the State Engineer, 1 groundwater well (CP-00909) is located within 1 mile of the proposed SWD location; A water sample was collected on 03/08/2019.

A water well map, details of water wells within 1-mile, and any associated water analyses are included in **Attachment 5**.

XII – No Hydrologic Connection Statement

No faulting is present in the area that would provide a hydrologic connection between the injection interval and overlying USDWs. Additionally, the casing program has been designed to ensure there will be no hydrologic connection between the injection interval and overlying USDWs.

XIII – Proof of Notice

A Public Notice was filed with the Hobbs News-Sun newspaper and an affidavit is included in **Attachment 6**.

A copy of the application was mailed to the OCD District Office, landowner, and leasehold operators within 1/2-mile of the proposed SWD location. A list of the recipients, as well as delivery confirmations, are included in **Attachment 6**.

Attachments

Attachment 1: Wellbore Diagram

Attachment 2: Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 1/2-mile Well Detail List w/ Casing Information for Penetrating Wells
- Potash Lease Map
- Penetrating wells – Wellbore Diagram

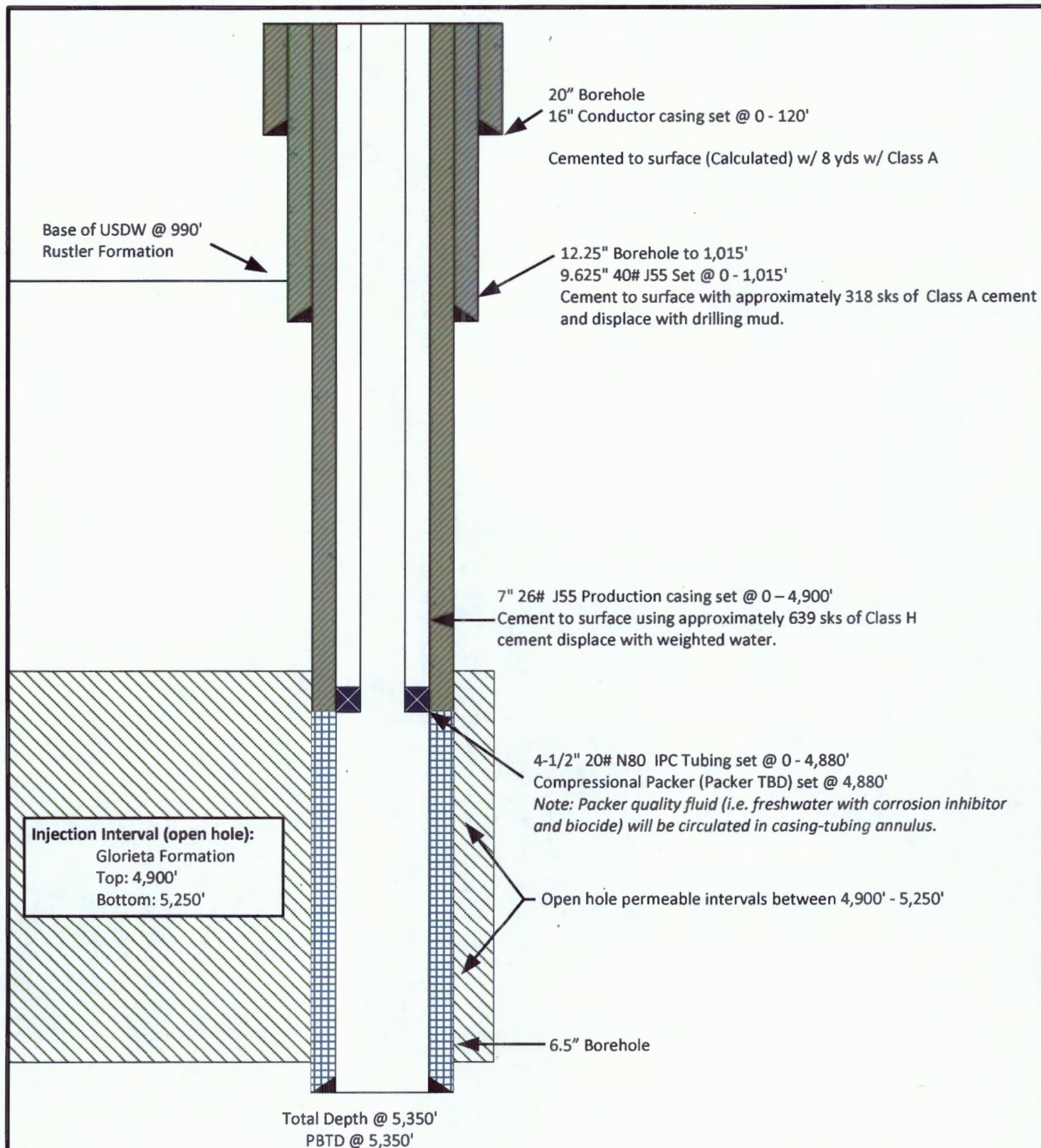
Attachment 3: Source Water Analyses

Attachment 4: Injection Formation Water Analyses

Attachment 5: Water Well Map and Well Data

Attachment 6: Public Notice Affidavit and Notice of Application Confirmations

Attachment 1
Wellbore Diagram



Note: Listed depths and cement volumes are approximates based on available information.

NOT TO SCALE

Prepared by:

ALLCONSULTING

Drawn by: Joshua Ticknor

Project Manager:
Nathan Alleman

Date: 03/27/2019

Goodnight Midstream Permian, LLC
Willis 35 G 1
Section 35, Twp 25S, Rng 37E
1,462' FSL & 2,087' FEL
Lea County, NM

A-3 and AL-2 LOK-SET Retrievable Casing Packers

Product Family No. H64630 and H64628

APPLICATION

The A-3™ LOK-SET™ packer combines advantages of a retrievable packer with the features of a permanent packer. An ability to lock down tubing forces makes the A-3 suitable for a broad range of applications, including production, injection, zone isolation, and remedial operations. The AL-2™ LOK-SET packer is similar to the A-3, and has a larger bore.

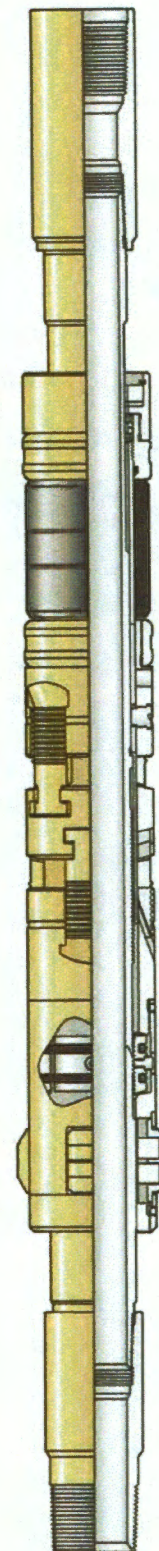
Advantages

- Holds pressure from above and below, without relying on set-down weight, tubing tension, or hydraulic hold down
- Provides tubing anchoring with tension applied, suitable for pumping wells or injection, controlling tubing forces related to change fluid temperatures
- Opposed, non-transferring, dovetail slips prevent packer movement associated with changing differential pressures, while allowing the landing of the tubing in tension, neutral or compression
- Right-hand tubing rotation controls setting and releasing
- Packing element compression locks in by ratcheting action of lock segments, which restricts rotation to one direction

Accessories

To provide a simple and reliable injection system for retrieving an injection string without having to unseat the packer:

L-10 or L-316 on-off sealing connectors. Product Family Nos. H68420 and H68422. Baker Hughes blanking plug can be used in the seating nipple profile of the on-off sealing connector to provide a means of plugging the lower zone while the tubing is being pulled.



A-3 LOK-SET
Retrievable Casing Packer
Product Family No. H64630

Retrieval Packer Systems

SPECIFICATION GUIDES

A-3" LOK-SET Retrieval Casing Packer, Product Family No. H64630

Casing			Packer				
OD		Weight *	Size	Nom ID		Max Gage Ring OD	
In.	mm	lb/ft		In.	mm	In.	mm
4	101.6	9.5-12.9	41A2	1.500	38.1	3.244	82.4
4-1/2	144.3	21.6-23.6	41A2	1.500	38.1	3.244	82.4
4	101.6	9.5	41A4	1.500	38.1	3.423	112.4
4-1/2	114.3	18.8	41A4	1.500	38.1	3.423	112.4
		13.5-17.7	41B			3.578	90.9
		11.6-13.5	43A2	1.978	50.2	3.786	96.2
		9.5-10.5	43A4			3.786	96.2
5	127.0	15-18	43B	1.978	50.2	4.140	105.2
		11.5-15	43C			4.265	108.3
5-1/2	139.7	26	43C	1.978	50.2	4.265	108.3
		20-23	45A2			4.515	114.7
		15.5-20	45A4			4.656	118.3
		13-15.5	45B			4.796	121.8
6	152.4	26	45B	1.978	50.2	4.796	121.8
		20-23	45C			5.078	129.0
		15-18	45D			5.171	131.3
6-5/8	168.3	34	45E	1.978	50.2	5.421	137.7
		24-32	45F			5.499	139.7
		24	47A2	2.441	62.0	5.671	144.0
		17-24	45G	1.978	50.2	5.796	147.2
7	177.8	17-20	47A4	2.441	62.0	5.827	148.0
		38	47A2	2.441	62.0	5.671	144.0
		32-35	47A4			5.827	148.0
		26-29	47B2			5.983	152.0
		23-26	47B4			6.093	154.8
7-5/8	193.7	17-20	47C2	2.441	62.0	6.281	159.5
		33.7-39	47C4			6.468	164.3
		24-29.7	47D2			6.687	169.9
8-5/8	219.1	20-24	47D4	2.441	62.0	6.827	173.4
		44-49	49A2	3.500	88.9	7.327	186.1
		32-40	49A4			7.546	191.7
9-5/8	244.5	20-28	49B			7.796	198.0
		47-53.5	51A2	3.500	88.9	8.234	209.1
		40-47	51A4			8.452	214.7
		29.3-36	51B			8.608	218.6

AL-2" Large Bore LOK-SET Retrieval Casing Packer Product Family No. H64626

Casing			Packer					
OD		Weight *	Size	Nom ID		Max Gage Ring OD		Max Diameter of Compressed Drag Block
In.	mm	lb/ft		In.	mm	In.	mm	In.
5-1/2	139.7	20	45A2 x 2-3/8	2.375	60.3	4.562	115.9	4.592
		15.5-17	45A4 x 2-3/8			4.656	118.3	4.750
		13	45B x 2-3/8			4.796	121.8	4.902
6	152.4	26	45B x 2-3/8	2.375	60.3	4.796	121.8	4.902

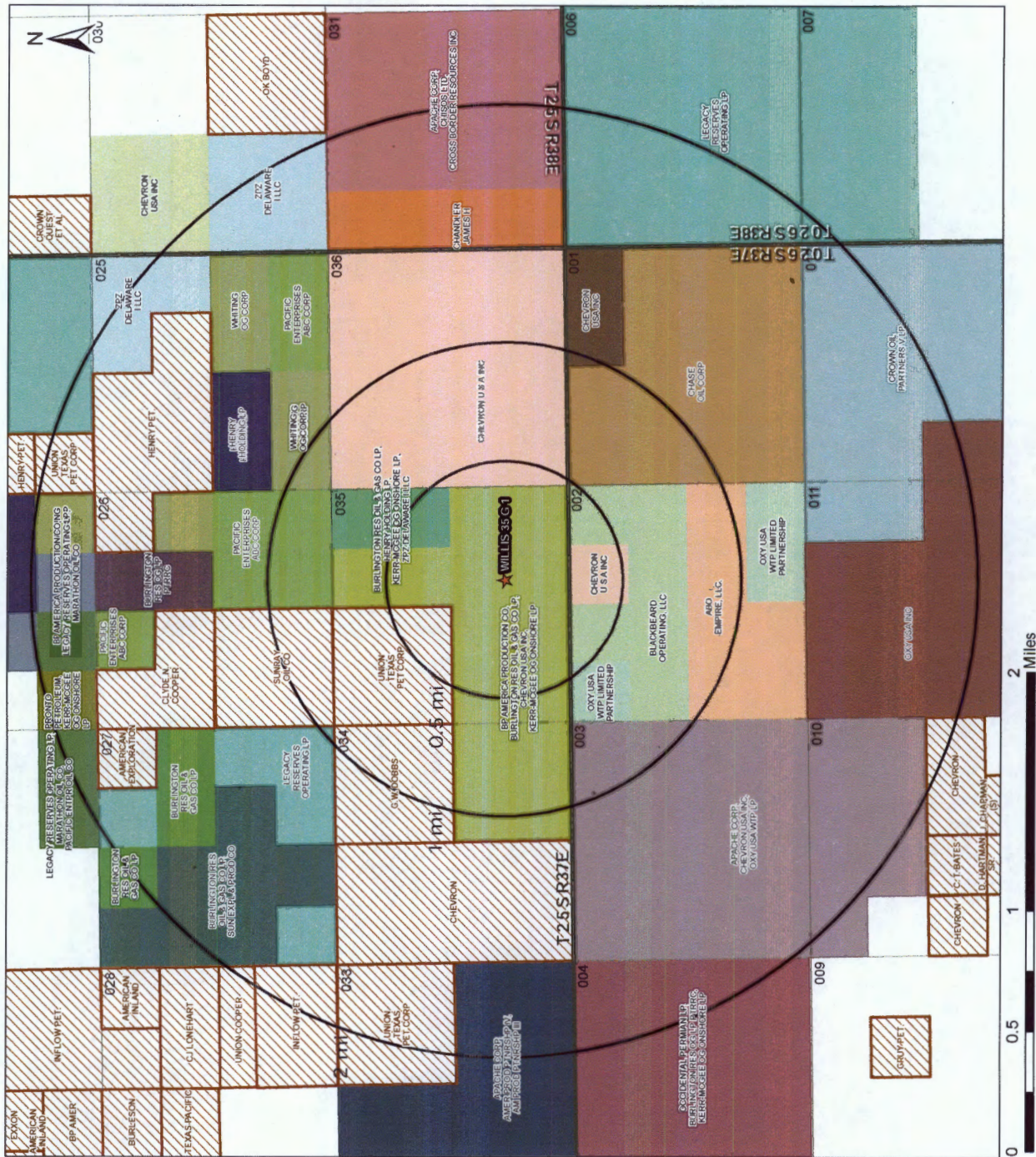
* When selecting a packer for a casing weight common to two weight ranges (same OD), choose the packer size shown for the lighter of the two weight ranges. Example: for 7-in. (177.8 mm) OD 26 lb/ft casing use packer size 47B4. Under certain circumstances the other packer size may be run, such as when running in mixed casing strings.

Repair kits, including such items as packing elements, seal rings, etc., are available for redressing Baker Retrieval Packers. Contact your Baker Hughes representative. Use only Baker Hughes repair parts.

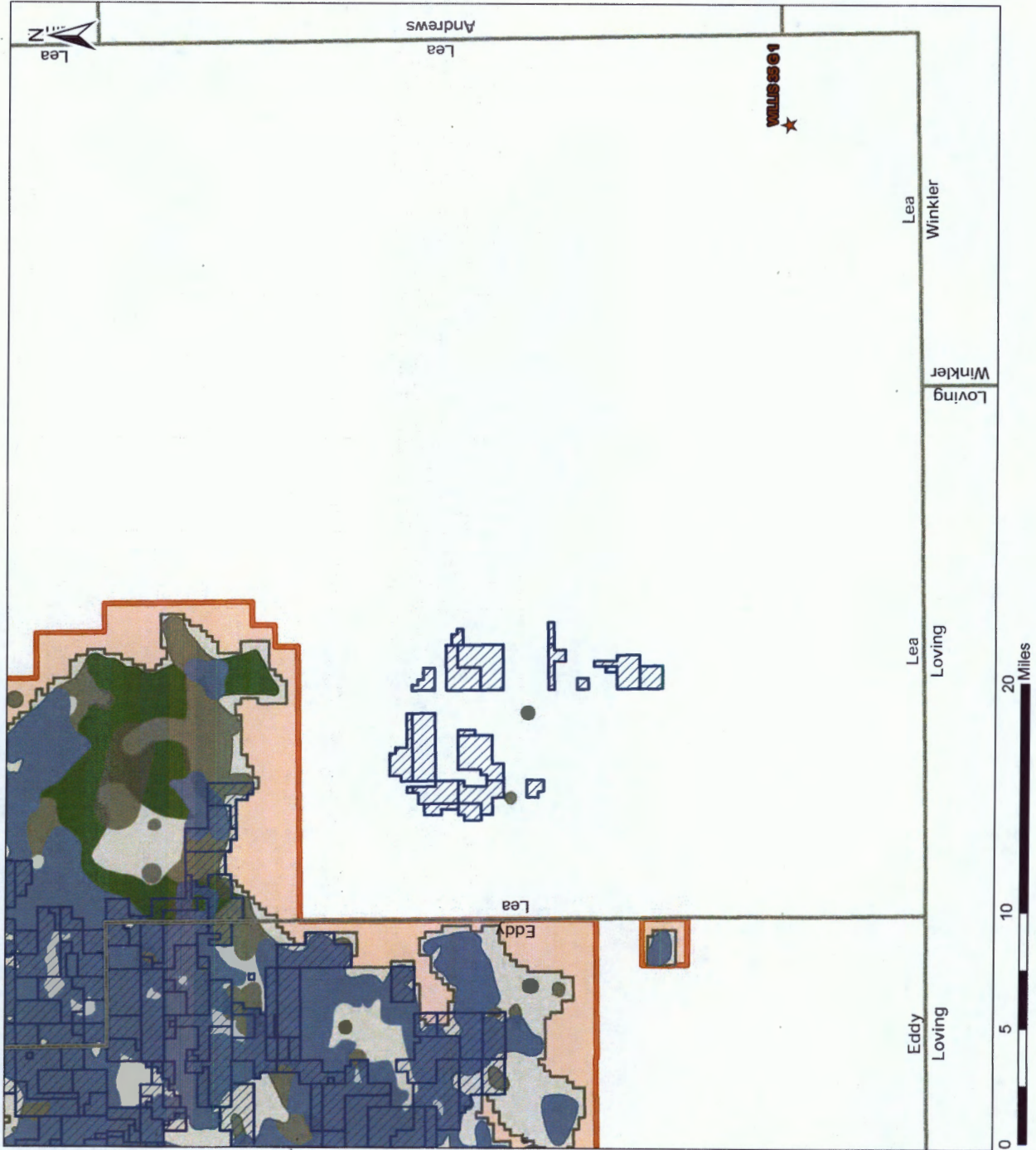
Attachment 2

Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 1/2-mile Well Detail List w/ Casing Information for Penetrating Wells
- Potash Lease Map
- Penetrating wells - Wellbore Diagrams



Mineral Lease Area of Review		WILLIS 35 G 1 Lea County, New Mexico	
Proj Mgr: Dan Arthur	April 03, 2019	Mapped by: Ben Bockelmann	
Prepared by: ALL CONSULTING			



Legend

- ★ Proposed SWD
- Potash Leases
- Ore Type - Measured
- Ore Type - Indicated
- Ore Type - Inferred
- KPLA
- SOPA

Potash Leases
Area of Review

WILLIS 35 G 1
Lea County, New Mexico

Proj Mgr:
Dan Arthur

April 01, 2019

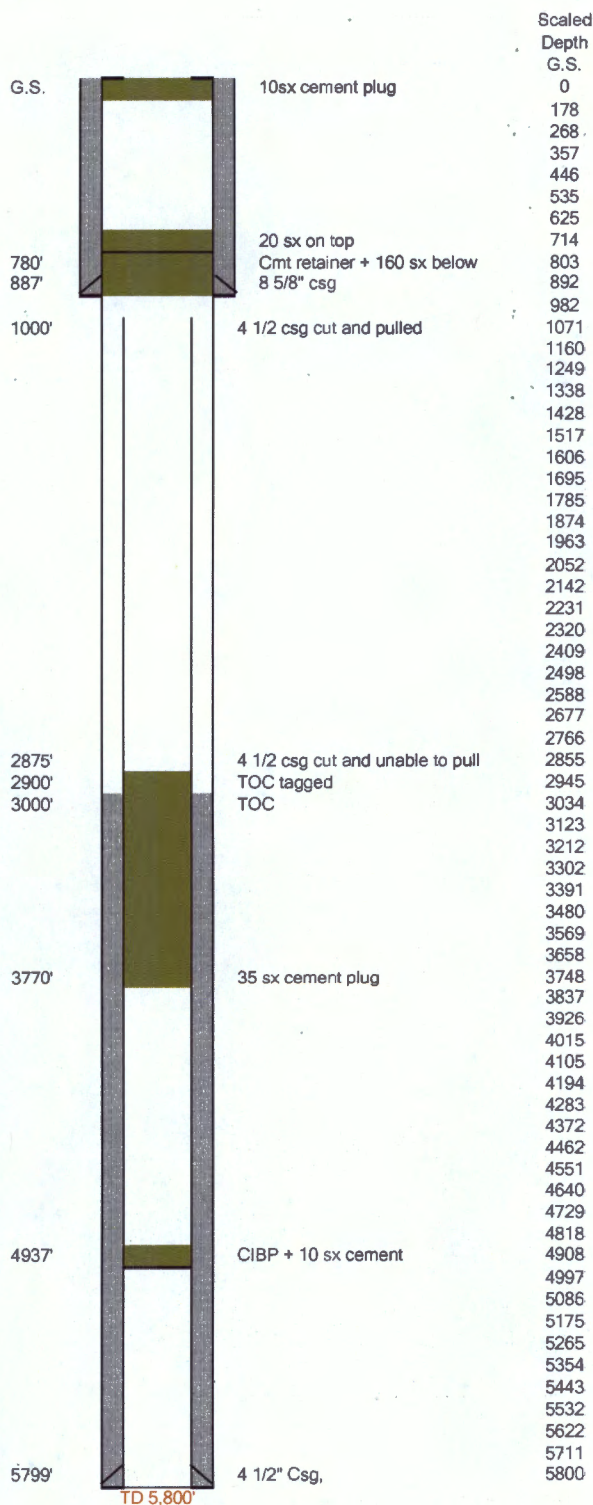
Mapped by:
Ben Bookman

Prepared by:
ALLCONSULTING

ATLANTIC RICHFIELD, GREGORY FEDERAL 001
API# 30-025-20131

Operator: ATLANTIC RICHFIELD
 FIELD: JUSTIS BLINEBRY
 LEASE: GREGORY FEDERAL
 COUNTY: LEA
 Location: 2310 FSL 330 FEL

DATE: 3/27/2019
 BY: F De Leon
 WELL: 1
 STATE: New Mexico
 Survey: I-35-25S-37E



Casing	O.D.	top	bottom	weight	Drld hole	Factor
Conductor						
Surface	8 5/8		887	24	12 1/4	0.4127
Intermediate						
Production	4 1/2		5799	10.5	7 7/8	0.2278
Perforations						

Cement	Slurry	Class	Sacks	Volume	Yield	Fillup	bottom	top
Surface		?	?					G.S.
Intermediate		?						
Intermed. DVT		?						
Production		?	?					3000
Prod. Sqz @13400		?						

Groundwater : Csg set at 88
 TD = 5800
 PBTD = 5764
 SPUD DATE: 12/29/1963
 COMP. DATE:
 CURRENT STATUS:
 DERRICK FLOOR =
 Elevation = 3015

Attachment 3
Source Water Analyses

PRODUCED WATER FROM BONE SPRING, DELAWARE, DEVONIAN, WOLFCAMP

API	SECTION	TOWNSHIP	RANGE	FORMATION	tds mg/L	chloride mg/L	bicarbonate mg/L	sulfate mg/L
3002502424	11	20S	34E	BONE SPRING	29436	16720	634	1142
3002502427	12	20S	34E	BONE SPRING	15429			
3002502427	12	20S	34E	BONE SPRING	180701	108300	1016	670
3002502429	12	20S	34E	BONE SPRING	202606	118100	5196	992
3002502429	12	20S	34E	BONE SPRING	121800			
3002502431	12	20S	34E	BONE SPRING	147229	89640	108	1038
3002531696	2	20S	34E	DELAWARE	152064	102148	404	691
3002532105	2	20S	34E	DELAWARE	296822	215237	143	294
3002532466	2	20S	34E	DELAWARE	340838	245270	229	147
3002502427	12	20S	34E	DELAWARE	214787	132700	208	1816
3002502431	12	20S	34E	DEVONIAN	33414	18570	227	1961
3002502432	13	20S	34E	DEVONIAN	45778	26440	1145	729
3002501912	16	16S	34E	WOLFCAMP	164004	102500	4204	1249
3002501922	20	16S	34E	WOLFCAMP	104541	64290	280	541
3002501922	20	16S	34E	WOLFCAMP	104033	64080	268	515
3002501922	20	16S	34E	WOLFCAMP	105175	65570	207	192
3002501925	21	16S	34E	WOLFCAMP	86355	51800	610	665
3002501928	21	16S	34E	WOLFCAMP	119102	73300	227	454
3002501928	21	16S	34E	WOLFCAMP	35422	19170	979	1949
3002501930	22	16S	34E	WOLFCAMP	30015	14800	750	3300
3002501931	22	16S	34E	WOLFCAMP	87680	53000	301	681
3002501933	28	16S	34E	WOLFCAMP	59960	35100	515	1500
3002501933	28	16S	34E	WOLFCAMP	60309	35350	586	1297
3002501940	30	16S	34E	WOLFCAMP	82422	49890	361	787
3002501944	30	16S	34E	WOLFCAMP	83960	51410	418	641
3002520222	27	16S	34E	WOLFCAMP	85457	51020	544	1201
3001542895	2	23S	31E	WOLFCAMP	119472	73173		1036

EXHIBIT F

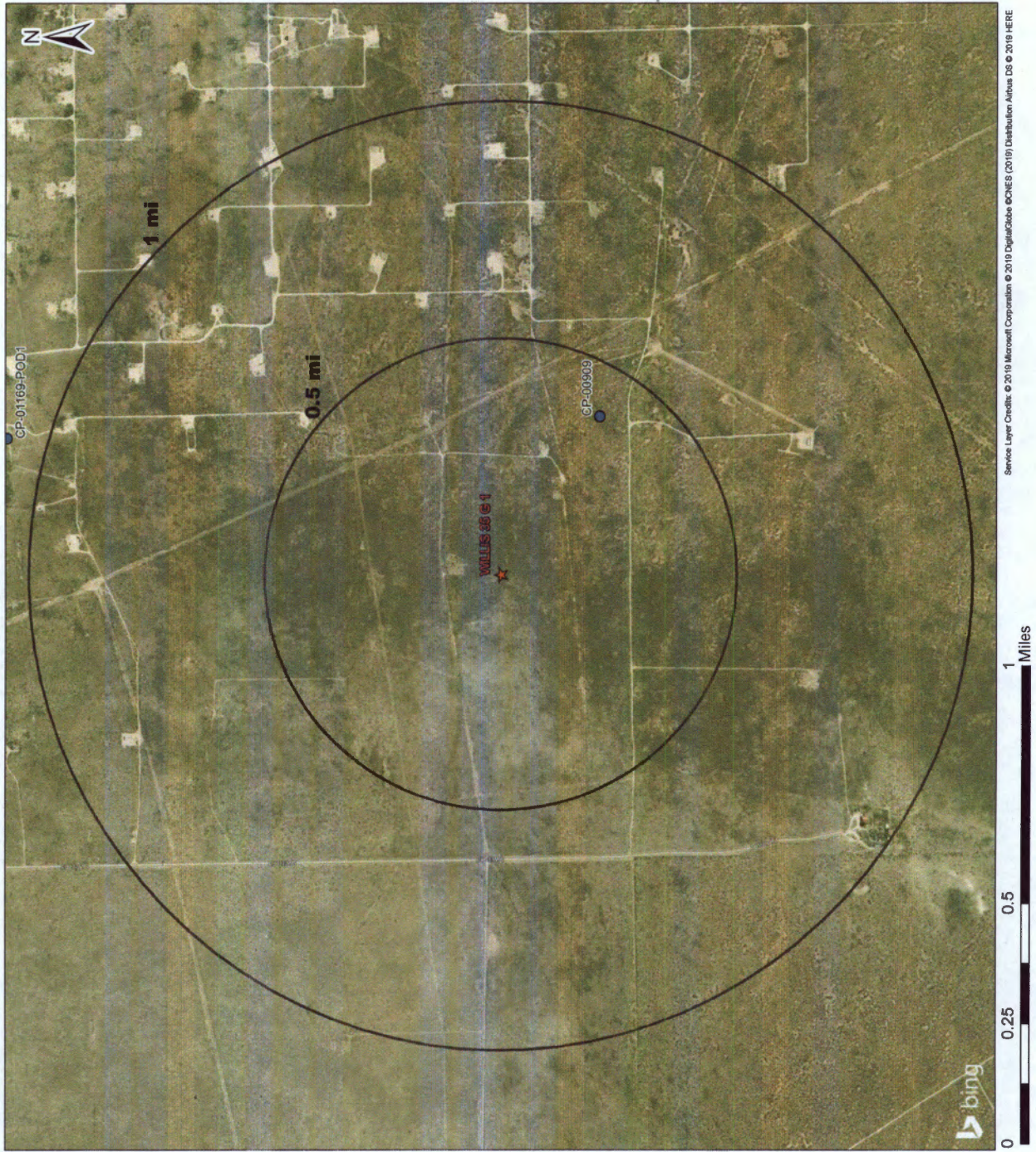
Attachment 4

Injection Formation Water Analyses

										State	Field							
LANGUE FEDERAL #001	8002511592	82.1299845	-103.1273041	14.285	37E	I	2310S	660E	LEA	NM	JUSTIS	GLORIETA	WELLHEAD	118937	67370	280	3016	TRUE
LANGUE FEDERAL #001	8002511592	82.1299845	-103.1273041	14.285	37E	I	2310S	660E	LEA	NM	JUSTIS	GLORIETA	TANK	118617	67250	274	3067	TRUE

Source: <http://gotech.nm.edu/gotech/Water/producedwater.aspx>

Attachment 5
Water Well Map and Well Data



Legend

- ★ Proposed SWD
- NMOSE PODs
- Status
- Active (2)

Water Wells Area of Review			
WILLIS 35 G 1 Lea County, New Mexico			
Proj Mgr: Dan Arthur	March 14, 2019	Mapped by: Ben Bockelmann	
Prepared by: 			

Water Well Sampling Rationale						
Goodnight Midstream Permian, LLC - Willis 35 G 1						
SWD	Water Wells	Owner	Available Contact Information	Use	Sampling Required	Notes
Willis 35 G 1	CP-00909	George Willis	575-631-8752	Livestock Watering	Yes	Sampling has been completed



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Pod number: CP: 00909
Legal Location: S35 T25S R37E

March 08, 2019

KRIS ANDERSEN
ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA, OK 74119

RE: WILLIS RANCH

Enclosed are the results of analyses for samples received by the laboratory on 03/01/19 15:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32,073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WILLIS RANCH	H900828-01	Water	01-Mar-19 14:45	01-Mar-19 15:45

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

WILLIS RANCH
H900828-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Inorganic Compounds

Alkalinity, Bicarbonate	234		5.00	mg/L	1	9030407	AC	05-Mar-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9030407	AC	05-Mar-19	310.1	
Conductivity*	1240		1.00	uS/cm	1	9030501	AC	05-Mar-19	120.1	
pH*	7.64		0.100	pH Units	1	9030501	AC	05-Mar-19	150.1	
Resistivity	8.07			Ohms/m	1	9030501	AC	05-Mar-19	120.1	
TDS*	745		5.00	mg/L	1	9030416	AC	07-Mar-19	160.1	
Alkalinity, Total*	192		4.00	mg/L	1	9030407	AC	05-Mar-19	310.1	
TSS*	5.00		2.00	mg/L	1	9030410	AC	07-Mar-19	160.2	
Turbidity	0.210		0.0100	NTU	1	9030502	AC	05-Mar-19	180.1	

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.001		0.001	mg/L	1	9030406	ms	05-Mar-19	8021B	
Toluene*	<0.001		0.001	mg/L	1	9030406	ms	05-Mar-19	8021B	
Ethylbenzene*	<0.001		0.001	mg/L	1	9030406	ms	05-Mar-19	8021B	
Total Xylenes*	<0.003		0.003	mg/L	1	9030406	ms	05-Mar-19	8021B	
Total BTEX	<0.006		0.006	mg/L	1	9030406	ms	05-Mar-19	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			97.9 %	81.3-128		9030406	ms	05-Mar-19	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C12	<2.50		2.50	mg/L	0.1	9030413	MS	05-Mar-19	TX1005	
DRO >C12-C28	<2.50		2.50	mg/L	0.1	9030413	MS	05-Mar-19	TX1005	
DRO >C28-C35	<2.50		2.50	mg/L	0.1	9030413	MS	05-Mar-19	TX1005	
Total TPH C6-C35*	<2.50		2.50	mg/L	0.1	9030413	MS	05-Mar-19	TX1005	
Surrogate: 1-Chlorooctane			93.1 %	70-130		9030413	MS	05-Mar-19	TX1005	
Surrogate: 1-Chlorooctadecane			95.8 %	70-130		9030413	MS	05-Mar-19	TX1005	

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1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

WILLIS RANCH
H900828-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Green Analytical Laboratories
General Chemistry

Bromide	1.87		0.100	mg/L	1	B903055	AES	06-Mar-19	EPA300.0	M5
Chloride*	107		10.0	mg/L	10	B903039	AES	05-Mar-19	EPA300.0	
Nitrate/Nitrite as N*	10.6		0.200	mg/L	10	B903044	LLG	07-Mar-19	EPA353.2	
Sulfate*	192		10.0	mg/L	10	B903039	AES	05-Mar-19	EPA300.0	

Total Recoverable Metals by ICP (E200.7)

Calcium*	82.8		0.100	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Hardness as CaCO ₃	371		0.662	mg/L	1	[CALC]	AES	06-Mar-19	2340 B	
Iron*	<0.050		0.050	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Magnesium*	40.0		0.100	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Potassium*	7.70		1.00	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Sodium*	102		1.00	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Strontium*	2.11		0.100	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	

Total Recoverable Metals by ICPMS (E200.8)

Arsenic*	0.0225		0.0010	mg/L	1	B903038	AES	08-Mar-19	EPA200.8	
Barium*	0.0294		0.0005	mg/L	1	B903038	AES	08-Mar-19	EPA200.8	
Chromium*	<0.0050		0.0050	mg/L	5	B903038	AES	08-Mar-19	EPA200.8	
Lead*	0.0017		0.0005	mg/L	1	B903038	AES	08-Mar-19	EPA200.8	
Manganese*	<0.0100		0.0100	mg/L	5	B903038	AES	08-Mar-19	EPA200.8	
Selenium*	0.0167		0.0010	mg/L	1	B903038	AES	08-Mar-19	EPA200.8	

SunStar Laboratories, Inc.
RSK-175

Methane	<0.0719	0.0719	1.00	ug/l	1	9030518	NV	06-Mar-19	RSK-175	
Ethene	<0.139	0.139	1.00	ug/l	1	9030518	NV	06-Mar-19	RSK-175	
Ethane	<0.164	0.164	1.00	ug/l	1	9030518	NV	06-Mar-19	RSK-175	

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

**WILLIS RANCH
H900828-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

RSK-175

Propane	0.440	0.314	5.00	ug/l	1	9030518	NV	06-Mar-19	RSK-175	J
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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

Inorganic Compounds - Quality Control
Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9030407 - General Prep - Wet Chem										
Blank (9030407-BLK1)				Prepared: 04-Mar-19 Analyzed: 05-Mar-19						
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							
LCS (9030407-BS1)				Prepared: 04-Mar-19 Analyzed: 05-Mar-19						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120			
Alkalinity, Total	260	10.0	mg/L	250		104	80-120			
LCS Dup (9030407-BSD1)				Prepared: 04-Mar-19 Analyzed: 05-Mar-19						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120	0.00	20	
Alkalinity, Total	260	10.0	mg/L	250		104	80-120	0.00	20	
Batch 9030410 - Filtration										
Blank (9030410-BLK1)				Prepared: 05-Mar-19 Analyzed: 07-Mar-19						
TSS	ND	2.00	mg/L							
Duplicate (9030410-DUP1)				Source: H900787-01 Prepared: 05-Mar-19 Analyzed: 07-Mar-19						
TSS	660	2.00	mg/L		520			23.7	52.7	
Batch 9030416 - Filtration										
Blank (9030416-BLK1)				Prepared: 05-Mar-19 Analyzed: 07-Mar-19						
TDS	ND	5.00	mg/L							

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TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 9030416 - Filtration

LCS (9030416-BS1)

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

TDS	509		mg/L	527		96.6	80-120			
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Duplicate (9030416-DUP1)

Source: H900795-01

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

TDS	94400	5.00	mg/L		95100			0.770	20	
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Batch 9030501 - General Prep - Wet Chem

LCS (9030501-BS1)

Prepared & Analyzed: 05-Mar-19

Conductivity	50200		uS/cm	50000		100	80-120			
pH	7.04		pH Units	7.00		101	90-110			

Duplicate (9030501-DUP1)

Source: H900828-01

Prepared & Analyzed: 05-Mar-19

Conductivity	1230	1.00	uS/cm		1240			0.648	20	
pH	7.66	0.100	pH Units		7.64			0.261	20	
Resistivity	8.12		Ohms/m		8.07			0.648	20	

Batch 9030502 - General Prep - Wet Chem

Blank (9030502-BLK1)

Prepared & Analyzed: 05-Mar-19

Turbidity	ND	0.0100	NTU							
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LCS (9030502-BS1)

Prepared & Analyzed: 05-Mar-19

Turbidity	38.8	0.0100	NTU	40.0		97.0	80-120			
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Duplicate (9030502-DUP1)

Source: H900828-01

Prepared & Analyzed: 05-Mar-19

Turbidity	0.220	0.0100	NTU		0.210			4.65	20	
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ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

Volatile Organic Compounds by EPA Method 8021 - Quality Control
Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9030406 - Volatiles										
Blank (9030406-BLK1)				Prepared: 04-Mar-19 Analyzed: 05-Mar-19						
Benzene	ND	0.001	mg/L							
Toluene	ND	0.001	mg/L							
Ethylbenzene	ND	0.001	mg/L							
Total Xylenes	ND	0.003	mg/L							
Total BTEX	ND	0.006	mg/L							
Surrogate: 4-Bromofluorobenzene (PID)	0.0964		mg/L	0.100		96.4	81.3-128			
LCS (9030406-BS1)				Prepared: 04-Mar-19 Analyzed: 05-Mar-19						
Benzene	0.021	0.001	mg/L	0.0200		106	86.6-118			
Toluene	0.019	0.001	mg/L	0.0200		97.0	84.5-122			
Ethylbenzene	0.020	0.001	mg/L	0.0200		102	83.9-122			
Total Xylenes	0.064	0.003	mg/L	0.0600		106	81.8-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0942		mg/L	0.100		94.2	81.3-128			
LCS Dup (9030406-BSD1)				Prepared: 04-Mar-19 Analyzed: 05-Mar-19						
Benzene	0.021	0.001	mg/L	0.0200		106	86.6-118	0.538	7.71	
Toluene	0.020	0.001	mg/L	0.0200		97.8	84.5-122	0.862	8.86	
Ethylbenzene	0.021	0.001	mg/L	0.0200		103	83.9-122	1.06	11.8	
Total Xylenes	0.064	0.003	mg/L	0.0600		107	81.8-124	1.06	11.9	
Surrogate: 4-Bromofluorobenzene (PID)	0.0944		mg/L	0.100		94.4	81.3-128			

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1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

Petroleum Hydrocarbons by GC FID - Quality Control
Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 9030413 - General Prep - Organics
Blank (9030413-BLK1)

Prepared: 04-Mar-19 Analyzed: 05-Mar-19

GRO C6-C12	ND	2.50	mg/L							
DRO >C12-C28	ND	2.50	mg/L							
DRO >C28-C35	ND	2.50	mg/L							
Total TPH C6-C35	ND	2.50	mg/L							
Surrogate: 1-Chlorooctane	4.54		mg/L	5.00		90.8	70-130			
Surrogate: 1-Chlorooctadecane	4.78		mg/L	5.00		95.6	70-130			

LCS (9030413-BS1)

Prepared & Analyzed: 04-Mar-19

GRO C6-C12	46.9	2.50	mg/L	50.0		93.8	76-107			
DRO >C12-C28	51.1	2.50	mg/L	50.0		102	78.9-117			
Total TPH C6-C35	98.4	2.50	mg/L	100		98.4	78.6-112			
Surrogate: 1-Chlorooctane	5.62		mg/L	5.00		112	70-130			
Surrogate: 1-Chlorooctadecane	5.34		mg/L	5.00		107	70-130			

LCS Dup (9030413-BS1)

Prepared & Analyzed: 04-Mar-19

GRO C6-C12	47.8	2.50	mg/L	50.0		95.6	76-107	1.81	11.7	
DRO >C12-C28	50.6	2.50	mg/L	50.0		101	78.9-117	0.947	11.5	
Total TPH C6-C35	98.7	2.50	mg/L	100		98.7	78.6-112	0.311	11.6	
Surrogate: 1-Chlorooctane	5.68		mg/L	5.00		114	70-130			
Surrogate: 1-Chlorooctadecane	5.47		mg/L	5.00		109	70-130			

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TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

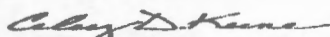
RSK-175 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9030518 - EPA 3810m Headspace										
Blank (9030518-BLK1)				Prepared & Analyzed: 06-Mar-19						
Methane	ND	1.00	ug/l							
Ethene	ND	1.00	ug/l							
Ethane	ND	1.00	ug/l							
Propane	ND	5.00	ug/l							
LCS (9030518-BS1)				Prepared & Analyzed: 06-Mar-19						
Methane	589	1.00	ug/l	656		89.8	75-125			
Ethene	1060	1.00	ug/l	1150		92.3	75-125			
Ethane	1180	1.00	ug/l	1230		96.0	75-125			
Duplicate (9030518-DUP1)				Source: H900828-01		Prepared & Analyzed: 06-Mar-19				
Methane	ND	1.00	ug/l		ND				20	
Ethene	ND	1.00	ug/l		ND				20	
Ethane	ND	1.00	ug/l		ND				20	
Propane	0.380	5.00	ug/l		0.440			14.6	20	J

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

General Chemistry - Quality Control
Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B903039 - General Prep - Wet Chem
Blank (B903039-BLK1)

Prepared & Analyzed: 05-Mar-19

Chloride	ND	1.00	mg/L							
Sulfate	ND	1.00	mg/L							

LCS (B903039-BS1)

Prepared & Analyzed: 05-Mar-19

Chloride	23.5	1.00	mg/L	25.0		94.1	90-110			
Sulfate	23.5	1.00	mg/L	25.0		93.8	90-110			

LCS Dup (B903039-BSD1)

Prepared & Analyzed: 05-Mar-19

Sulfate	24.4	1.00	mg/L	25.0		97.7	90-110	4.02	20	
Chloride	24.7	1.00	mg/L	25.0		98.9	90-110	5.04	20	

Batch B903044 - General Prep - Wet Chem
Blank (B903044-BLK1)

Prepared: 06-Mar-19 Analyzed: 07-Mar-19

Nitrate/Nitrite as N	ND	0.020	mg/L							
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LCS (B903044-BS1)

Prepared: 06-Mar-19 Analyzed: 07-Mar-19

Nitrate/Nitrite as N	1.06	0.020	mg/L	1.00		106	90-110			
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LCS Dup (B903044-BSD1)

Prepared: 06-Mar-19 Analyzed: 07-Mar-19

Nitrate/Nitrite as N	1.06	0.020	mg/L	1.00		106	90-110	0.783	20	
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Batch B903055 - General Prep - Wet Chem
Blank (B903055-BLK1)

Prepared: 06-Mar-19 Analyzed: 07-Mar-19

Bromide	ND	0.100	mg/L							
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

General Chemistry - Quality Control
Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B903055 - General Prep - Wet Chem										
LCS (B903055-BS1)				Prepared: 06-Mar-19 Analyzed: 07-Mar-19						
Bromide	2.63	0.100	mg/L	2.50		105	90-110			
LCS Dup (B903055-BSD1)				Prepared: 06-Mar-19 Analyzed: 07-Mar-19						
Bromide	2.60	0.100	mg/L	2.50		104	90-110	1.15	20	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
08-Mar-19 16:45

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch B903037 - Total Rec. 200.7/200.8/200.2

Blank (B903037-BLK1)

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

Potassium	ND	1.00	mg/L							
Iron	ND	0.050	mg/L							
Calcium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
Strontium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							

LCS (B903037-BS1)

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

Magnesium	20.9	0.100	mg/L	20.0		105	85-115			
Strontium	4.18	0.100	mg/L	4.00		105	85-115			
Sodium	3.29	1.00	mg/L	3.24		102	85-115			
Potassium	8.53	1.00	mg/L	8.00		107	85-115			
Calcium	4.21	0.100	mg/L	4.00		105	85-115			
Iron	4.15	0.050	mg/L	4.00		104	85-115			

LCS Dup (B903037-BSD1)

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

Magnesium	20.6	0.100	mg/L	20.0		103	85-115	1.84	20	
Calcium	4.13	0.100	mg/L	4.00		103	85-115	1.88	20	
Sodium	3.22	1.00	mg/L	3.24		99.3	85-115	2.22	20	
Iron	4.10	0.050	mg/L	4.00		102	85-115	1.34	20	
Strontium	4.19	0.100	mg/L	4.00		105	85-115	0.103	20	
Potassium	8.47	1.00	mg/L	8.00		106	85-115	0.723	20	

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager

Analytical Results For:

ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA OK, 74119

Project: WILLIS RANCH
Project Number: 32.073016-103.141134
Project Manager: KRIS ANDERSEN
Fax To: NA

Reported:
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Total Recoverable Metals by ICPMS (E200.8) - Quality Control
Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B903038 - Total Rec. 200.7/200.8/200.2
Blank (B903038-BLK1)

Prepared: 05-Mar-19 Analyzed: 08-Mar-19

Selenium	ND	0.0010	mg/L							
Barium	ND	0.0005	mg/L							
Lead	ND	0.0005	mg/L							
Chromium	0.0012	0.0010	mg/L							B3
Arsenic	ND	0.0010	mg/L							
Manganese	ND	0.0020	mg/L							

LCS (B903038-BS1)

Prepared: 05-Mar-19 Analyzed: 08-Mar-19

Selenium	0.246	0.0010	mg/L	0.250		98.3	85-115			
Manganese	0.0501	0.0020	mg/L	0.0500		100	85-115			
Lead	0.0493	0.0005	mg/L	0.0500		98.5	85-115			
Chromium	0.0518	0.0010	mg/L	0.0500		104	85-115			
Barium	0.0482	0.0005	mg/L	0.0500		96.5	85-115			
Arsenic	0.0492	0.0010	mg/L	0.0500		98.3	85-115			

LCS Dup (B903038-BSD1)

Prepared: 05-Mar-19 Analyzed: 08-Mar-19

Selenium	0.254	0.0010	mg/L	0.250		102	85-115	3.36	20	
Manganese	0.0486	0.0020	mg/L	0.0500		97.2	85-115	3.16	20	
Lead	0.0497	0.0005	mg/L	0.0500		99.4	85-115	0.935	20	
Barium	0.0472	0.0005	mg/L	0.0500		94.3	85-115	2.25	20	
Arsenic	0.0508	0.0010	mg/L	0.0500		102	85-115	3.34	20	
Chromium	0.0500	0.0010	mg/L	0.0500		99.9	85-115	3.73	20	

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

M5	Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference in sample.
J	Detected but below the Standard Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
B3	Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: ALL CONSULTING			P.O. #:		
Project Manager:			Company:		
Address:			Attn:		
City:			State:		
Phone #:			Fax #:		
Project #:			Project Owner:		
Project Name: WILKINS BRANCH			State:		
Project Location: 32033016/-103-14134			Zip:		
Sample Name: Redwood Farmstead			Phone #:		
FOR LAB USE ONLY			Fax #:		
Lab I.D.			Sample I.D.		
H900828			GIR		
Willis Ranch					
(G)RAB OR (C)OMP.			# CONTAINERS		
GROUNDWATER			WASTEWATER		
SOIL			OIL		
SLUDGE			OTHER :		
ACID/BASE:			ICE / COOL		
OTHER :			DATE		
TIME			3-1-14		
MATRIX			PRESERV		
SAMPLING					
BTEX					
TPH					
(RSK-LTS)					
Methane, Ethane, Propane					
Hardness					
T. Metals - Ag, Ba, Ca,					
Cr, Fe, Pb, Mg, Mn, K, Se					
Na, Sr					
Turbidity					
Anions 300 - Br, Cl, NO ₃					
TDS, TSS					
T. ALK. HCO ₃ /CO ₃					
Conductivity					

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Sampler - UPS - Bus - Other: 90.

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Phone Result: Yes No Add'l Phone #: Add'l Fax #:

Fax Result: Yes No

RSK!

Attachment 6

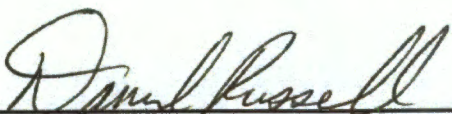
Public Notice Affidavit and Notice of Application Confirmations

Affidavit of Publication

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COUNTY OF LEA

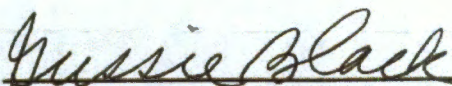
I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
April 05, 2019
and ending with the issue dated
April 05, 2019.



Publisher

Sworn and subscribed to before me this
5th day of April 2019.



Business Manager

My commission expires

January 29, 2023

(Seal)



OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of New Mexico

My Commission Expires 1-29-23

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL NOTICE APRIL 5, 2019

APPLICATION FOR AUTHORIZATION TO INJECT

NOTICE IS HEREBY GIVEN: That Goodnight Midstream Permian, LLC, 5910 N Central Expressway, Suite 850, Dallas, TX 75206, is requesting that the New Mexico Oil Conservation Division administratively approve the APPLICATION FOR AUTHORIZATION TO INJECT as follows:

PURPOSE: The intended purpose of the injection well is to dispose of salt water produced from permitted oil and gas wells.

WELL NAME AND LOCATION: Willis 35 G 1
NW 1/4 SE 1/4, Section 35, Township 26S, Range 37E
1.462' FSL & 2.087' FEL
Lea County, NM

NAME AND DEPTH OF DISPOSAL ZONE: Glorieta (4,900'
- 5,250')

EXPECTED MAXIMUM INJECTION RATE: 25,000
Bbls/day

EXPECTED MAXIMUM INJECTION PRESSURE: 980 psi
(surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objection or request for hearing should be mailed to the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505.

Additional information may be obtained by contacting Nate Alleman at 918-382-7581.
#33982

67115320

00226725

DANIEL ARTHUR
ALL CONSULTING
1718 S. CHEYENNE AVE.
TULSA, OK 74119

Willis 35 G 1 - Notice of Application Recipients				
Entity	Address	City	State	Zip Code
Landowner				
George Willis	P.O. Box 307	Jal	NM	88252
OCD District				
NMOCD District 1	1625 N. French Drive	Hobbs	NM	88240
Mineral Owner				
Bureau of Land Management Carlsbad Field Office Attention: Chris Walls	620 E. Greene Street	Carlsbad	NM	88220-6292
Leasehold Operators				
BP America Production Co	501 Westlake Park Blvd.	Houston	TX	77079
Blackbeard Operating, LLC	201 W. Wall St., Suite 900	Midland	TX	79701
Burlington Res Oil & Gas Co LP	21 Desta Drive	Midland	TX	79705
Chase Oil Corp	P.O. Box 1767	Artesia	NM	88211
Chevron U S A Inc	6301 Deauville	Midland	TX	79706
Henry Holding, LP	3525 Andrews Highway, Suite 200	Midland	TX	79703
Kerr-McGee OG Onshore LP	P.O. Box 867	Andrews	TX	79714
OXY USA WTP Limited Partnership	P.O. Box 27570	Houston	TX	77227-7570
Union Texas Pet Corp	P.O. Box 200128	Houston	TX	77216
ZPZ Delaware I LLC	2000 Post Oak Blvd., Suite 100	Houston	TX	77056
Note:				

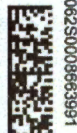
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George Willis
P.O. Box 307
Jal NM 88252-0307

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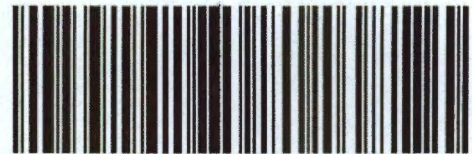
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Blackbeard Operating, LLC
201 W. Wall St., Suite 900
Midland TX 79701-4532

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1718 S. Cheyenne Ave.
Tulsa, OK 74119

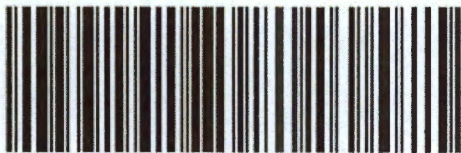
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Houston TX 77079-2604

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Burlington Res Oil & Gas Co LP
21 Desta Drive
Midland TX 79705

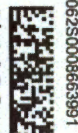
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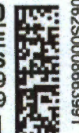
9414 8118 9956 0659 1870 07

Chase Oil Corporation
P.O. Box 1767
Artesia NM 88211-1767

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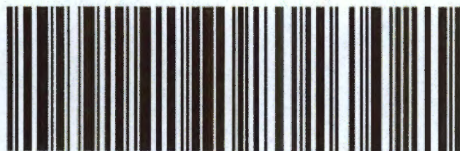
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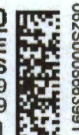
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Chris Walls
Carlsbad Field Office
Bureau of Land Management
620 E. Greene St.
Carlsbad NM 88220-6292

4-18 P

April 5, 2019

HOBBS OCD

New Mexico Oil Conservation Division - District 1
1625 N. French Drive
Hobbs, NM 88240

APR 11 2019

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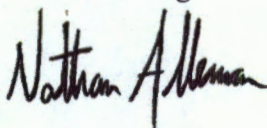
Subject: Goodnight Midstream Permian, LLC – Willis 35 G 1 – Application for Permit to Drill

To Whom It May Concern,

On behalf of Goodnight Midstream Permian, LLC (Goodnight), ALL Consulting, LLC (ALL) is submitting the enclosed Application for Permit to Drill for the Willis 35 G 1, a proposed salt water disposal well, in Lea County, NM.

Should you have any questions regarding the enclosed application, please contact Nate Alleman at (918) 382-7581 or nalleman@all-llc.com.

Sincerely,
ALL Consulting



Nate Alleman
Project Manager

*This GPS pt was
diff than what
I had in the table -
I changed it to
this loc 7-18*

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources

HOBBS OCD

Form C-101
Revised July 18, 2013

Oil Conservation Division

APR 11 2019

☐ AMENDED REPORT

1220 South St. Francis Dr.

Santa Fe, NM 87505

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APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Goodnight Midstream Permian, LLC 5910 N Central Expressway, Suite 850, Dallas, TX 75206		² OGRID Number 372311
		³ API Number
⁴ Property Code	⁵ Property Name WILLIS 35 G	⁶ Well No. 1

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
J	35	25S	37E		1462	SOUTH	2087	EAST	LEA

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
-	-	-	-		-	-	-	-	-

⁹ Pool Information

Pool Name SWD; GLORIETA	Pool Code 91606
----------------------------	--------------------

Additional Well Information

¹¹ Work Type N	¹² Well Type S	¹³ Cable/Rotary R	¹⁴ Lease Type Private Surface/ Federal Minerals	¹⁵ Ground Level Elevation 3,010'
¹⁶ Multiple No	¹⁷ Proposed Depth 5,350	¹⁸ Formation Glorieta	¹⁹ Contractor TBD	²⁰ Spud Date Upon Approval
Depth to Ground water 185' (CP-00909)		Distance from nearest fresh water well 2,070' (CP-00909)		Distance to nearest surface water 14,272' (East)

☒ We will be using a closed-loop system in lieu of lined pits

²¹ Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	12-1/4"	9-5/8"	40 lb/ft	1,015'	318	Surface
Production	8-3/4"	7"	26 lb/ft	4,900'	639	Surface
Tubing	6-3/11"	4-1/2"	20 lb/ft	4,880'	N/A	N/A

Casing/Cement Program: Additional Comments

--

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular, Pipe & Blind/Shear Rams	3,000 psi	3,000 psi	Hydril, Cameron or Equivalent

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.

Signature: *Nathan Alleman*

Printed name: Nate Alleman

Title: Regulatory Specialist - ALL Consulting

E-mail Address: nalleman@all-llc.com

Date: 4/8/2019

Phone: 918-237-0559

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

DISTRICT I
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Phone: (575) 393-6161 Fax: (575) 393-0720
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Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

HOBBS OCD

APR 11 2019

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Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code 91606	³ Pool Name SWD; GLORIETA
⁴ Property Code	⁵ Property Name WILLIS 35 G	⁶ Well Number 1
⁷ GRID No. 372311	⁸ Operator Name GOODNIGHT MIDSTREAM PERMIAN, LLC	⁹ Elevation 3010'

¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	35	25-S	37-E		1462'	South	2087'	East	Lea

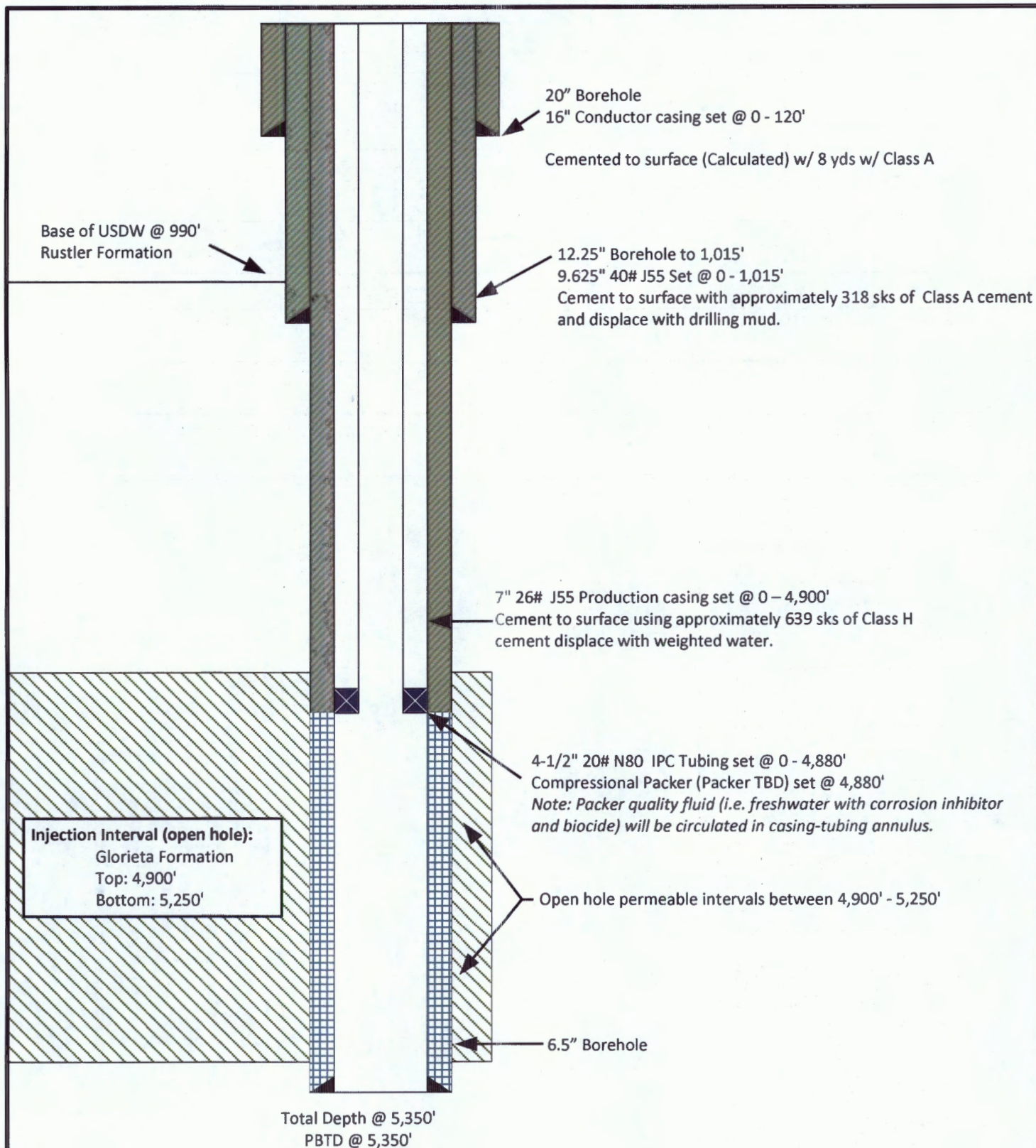
¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

16 T-25-S, R-37-E N.M.P.M. Sec. 35 Willis 35 G 1 Elev. 3010' NAD 83 NM East N = 396194.7' E = 913437.5' Lat. = 32.0835220' Long. = -103.1319129'	¹⁷OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Nate Alleman</i> 4/8/2019 Signature Date Nate Alleman Printed Name nalleman@all-llc.com E-mail Address ¹⁸SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 3-19-2019 Date of Survey <i>Michael L. Stanford</i> Signature and Seal of Professional Surveyor 10324 Certificate Number
--	--



Note: Listed depths and cement volumes are approximates based on available information.

NOT TO SCALE

Prepared by:

ALLCONSULTING

Drawn by: Joshua Ticknor

Project Manager:
Nathan Alleman

Date: 03/27/2019

Goodnight Midstream Permian, LLC
Willis 35 G 1
Section 35, Twp 25S, Rng 37E
1,462' FSL & 2,087' FEL
Lea County, NM

Goodnight Midstream Permian, LLC

Willis 35 G 1

1,462' FSL & 2,087' FEL

Section 35, Twp 25S, Rng 37E

Lea County, New Mexico

Proposed Drilling Plan for New SWD

1. Geologic Information: Permian geologic formations

The Permian Glorieta formation consist of interbedded carbonates rocks including dolomites, siltstones, and sands. Several thick sections of porous and permeable intervals are present within this formation in the area. Geologic information and depths of formation tops were obtained from surrounding wells within the area of interest. Total depth is 100 feet below the base of the Glorieta Formation. The base of the Rustler Formation and top of the Salado Formation is at approximately 990 feet plus 25 feet equals 1,015 feet to set bottom of the surface casing to protect the deepest underground sources of drinking water (USDWs).

Estimated Formation Top Depths:

Rustler	850'
Salado	990'
Grayburg	3,350'
San Andres	3,625'
Glorieta	4,900'
Total Depth	5,350'

2. Proposed Drilling Plan:

- a. Move in equipment, excavate cellar and install tinhorn, and then drill conductor hole and set and cement in conductor casing.
- b. Mobilize drilling rig and rig up drilling rig and associated equipment onsite. Set up H2S wind direction indicators and monitors; brief all personnel on Emergency Evacuation Routes and ALL Consulting Site Health and Safety Plan.
- c. Everyone onsite will have stop work authority.
- d. Perform Job Safety Analysis (JSA) meetings before each drilling shift change and prior to any subcontractor performing any task on the location. All equipment should be inspected daily and repaired or replaced as required.
- e. Drilling operations commence.
- f. Have mud logger monitoring returns. All drill cuttings and waste hauled to specified waste facility.
- g. After drilling the surface hole and setting and cementing the casing; if hydrogen sulfide (H2S) levels are detected greater than 10ppm, implement H2S Plan by ceasing operations, shut in well, employ H2S safety trailer and personnel safety devices, install flare line, etc. – refer to plan.
- h. Proper secondary containment needs to be in place. Spills need to be cleaned up immediately. Repair or otherwise correct the situation within 48 hours before resuming operations. Notify Oil Conservation Division (OCD) within 24 hours. Remediation started as soon as possible if required. Operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

Proposed Willis 35 G 1 Drilling Plan

i. Sundry forms need to be completed and filed as required by OCD.

3. **Proposed Casing Program:** Casing designed as follows:

STRING	HOLE SZ	DEPTH	CSG SZ	COND	WT/GRD	CLLPS/BRS	TNSN
						(Minimum Safety Factors)	
Conductor	20"	0-120'	16.0"	n/a	n/a	n/a	n/a
Surface	12.25"	0-1,015'	9.625"	New	40# J55	1.125/1.1	1.8
Production	8.75"	0-4,900'	7.0"	New	26# J55	1.125/1.1	1.8
Tubing	6.276"	0-4,880'	4.5"	New	20# N80 IPC	1.125/1.1	1.8
Open hole	6-1/2" hole	4,900-5,350'	n/a	n/a	n/a	n/a	n/a

Notes:

- ✓ A deviation survey will be conducted and submitted with the Well Completion Report (Form C-105)
- ✓ While running all casing strings, the pipe will be kept a minimum of 1/3 full at all times to avoid approaching the collapse pressure of casing.
- ✓ Based on well completions and geophysical logs on adjacent wells, 7.0" casing shoe is expected to be set at 4,900'. Similarly, total depth will be approximately 5,350' as determined by open hole geophysical logging and after suitable porosity and low resistivity values have been identified. Maximum open hole interval is anticipated to be from 4,900' to 5,350', but may change based upon actual wellbore determinations. A sundry notice will document such events as a C-105 well completion report filed within 60 days.

4. **Proposed Cementing Plans:**

Surface Casing: Cemented with approximately 318 sacks of Class A cement with 25% excess and circulated to the surface.

Production Casing: Cement with approximately 639 sacks of Class H cement with 25% excess and cement back to surface inside the 9-5/8" surface casing string. Cement top to be confirmed by cement bond logging after cement has cured to appropriate compressive strength.

5. **Pressure Control:** All Blowout Preventers (BOP) and related equipment will comply with well control requirements as described OCD Rules and Regulations and API RP 53, Section 17. The BOP will be either a Hydril, Cameron or equivalent. Minimum working pressure of the BOP and related equipment required for the drilling shall be 500 psi. The maximum working pressure is anticipated at 3,000 psig and the test pressure will be 3,000 psig. The OCD Hobbs district office shall be notified a minimum of 4 hours in advance for a representative to witness all BOP pressure tests. The test shall be performed by an independent service company utilizing a test plug (no cup or J-packer). The results of the test shall be recorded on a calibrated test chart submitted to the OCD district office. BOP testing shall be conducted at:

- a. Installation;
- b. After equipment or configuration changes;

Proposed Willis 35 G 1 Drilling Plan

- c. At 30 days from any previous test, and;
- d. Any time operations warrant, such as well conditions.

The BOP specifications to be used during the various phases of the drilling and casing installation are included in the table below:

Casing Size	Annular Preventer	Rams
16"	26-3/4" – 3M, with diverter	None
9.625"	11" – 5M	Pipe & Blind/Shear – 5M
7.0"	11" – 5M	Pipe & Blind/Shear – 5M

A diagram showing the representative BOP setup is included as Attachment 1.

6. **Auxiliary Well Control and Monitoring:** Hydraulic remote BOP operation and mudlogging to monitor returns.

7. **Mud Program and Monitoring:** Mud will be balanced for all operations with adjustment as needed based on actual wellbore conditions and is proposed as follows:

DEPTH	MUD TYPE	WEIGHT	FV	PV	YP	FL	pH
0-1,015'	FW Spud Mud	8.5-9.2	70-40	20	12	NC	10.0
1,015'-5,350'	Brine Mud	9.2-10.0	28-32	NC	NC	NC	10.0

Mud and all cuttings monitored with all drill cuttings recovered for disposal. Returns shall be visually and electronically monitored. In the event of H₂S, mud shall be adjusted appropriately by weight and H₂S scavengers.

8. **H₂S Safety:** This well and related facilities are not expected to have H₂S releases. However, there may be H₂S in the area. There are no private residences or public facilities in the area but a contingency plan has been developed. Goodnight Midstream Permian, LLC will have a company representative available to personnel throughout all operations. If H₂S levels greater than 10ppm are detected or suspected, the H₂S Contingency Plan will be implemented at the appropriate level.

H₂S Safety – There is a low risk of H₂S in this area. The operator will comply with the provisions of New Mexico Administrative Code (NMAC) 19.15.11 and Bureau of Land Management (BLM) Onshore Oil and Gas Order #6.

- a. Monitoring – all personnel will wear monitoring devices.
- b. Warning Sign – a highly visible H₂S warning sign will be placed for obvious viewing at the vehicular entrance point onto location.
- c. Wind Detection – two (2) wind direction socks will be placed on location.
- d. Communications – will be via cellular phones and/or radios located within reach of the driller, the rig floor and safety trailer when applicable.
- e. Alarms – will be located at the rig floor, circulating pump/reverse unit area and the flare line and will be set for visual (red flashing light) at 15 ppm and visual and audible (115 decibel siren) at 20 ppm.
- f. Mud program – If H₂S levels require, proper mud weight, safe drilling practices and H₂S scavengers will minimize potential hazards.

Proposed Willis 35 G 1 Drilling Plan

- g. Metallurgy – all tubulars, pressure control equipment, flowlines, valves, manifolds and related equipment will be rated for H₂S service if required.

The Goodnight Midstream Permian, LLC H₂S Contingency Plan will be implemented if levels greater than 10ppm H₂S are detected.

9. **Geophysical Logging and Testing:** Goodnight Midstream Permian, LLC expects to run:
 - a. Geophysical logging through the proposed injection interval will ensure the target interval remains within the Glorieta.
 - b. An open hole gamma ray, SP, compensated density- neutron and dual resistivity log suite will be run from total depth to approximately 1,015'.
 - c. A cement bond log with gamma ray and collar locator will be run (Radial, CET or equivalent) on the production casing.
 - d. No cores or drill stem tests will be conducted. (The well may potentially be step rate tested in the future if additional injection pressures are required.)
10. **Potential Hazards:** H₂S is a potential hazard. No abnormal pressure or temperatures are anticipated, but drilling operations will be prepared in the event that those conditions occur.

No loss of circulation is expected to occur with the exception of drilling into the target disposal zone. All onsite personnel will be familiar with the safe operation of the equipment being used to drill this well. The maximum anticipated bottom-hole pressure is 2500 psig and the maximum anticipated bottom-hole temperature is 210°F.

11. **Waste Disposal Management:** All drill cuttings, fluids, and other solid wastes associated with drilling and completion operations will be transported to a solid waste facility and commercial Class IID injection operation that has been approved and permitted by the Environmental Bureau of the OCD.

12. **Anticipated Drilling Commencement Date:** Upon approval of the permit for saltwater disposal (SWD), operations would begin within 30 days based on rig availability. Drilling and completion of the well will take approximately six to seven weeks. Installation of the surface facility such as the secondary containment and tank battery, plumbing, injection pump(s), and other treatment and filtering associated equipment would be occurring after the well is completed. In any event, it is not expected for the construction of the surface facility of the project to last more than 90 days, pending on availability of subcontractors and equipment lead times.

13. **Completion for Salt Water Disposal:** Subsequent to SWD permit issuance from OCD and prior to commencing any work, a Notice of Intent (NOI) sundry will be submitted to complete the well for SWD and will detail the completion workover including all work otherwise described above, any change to the procedure noted herein and to perform mechanical integrity pressure testing per BLM and OCD test procedures (including appropriate OCD notification). The tubing and packer will be set at a depth of approximately 4,880 feet and the casing/tubing annulus will be filled with freshwater and corrosion inhibitor and pressure tested to the required test pressure using the standard annulus pressure test. Anticipated daily maximum volume is 25,000 barrels of water per day (bpd) and average of 12,500 bpd at a maximum surface injection pressure of 980 psig (0.2 psi/ft to the top of the open hole injection

Proposed Willis 35 G 1 Drilling Plan

interval). If satisfactory disposal rates cannot be achieved at default pressure of .02 psi/ft, Goodnight Midstream Permian, LLC will conduct a step-rate test and apply for an injection pressure increase 50 psig below actual parting pressure achieved during the step-rate testing.

Attachment 1 – Representative BOP Setup

