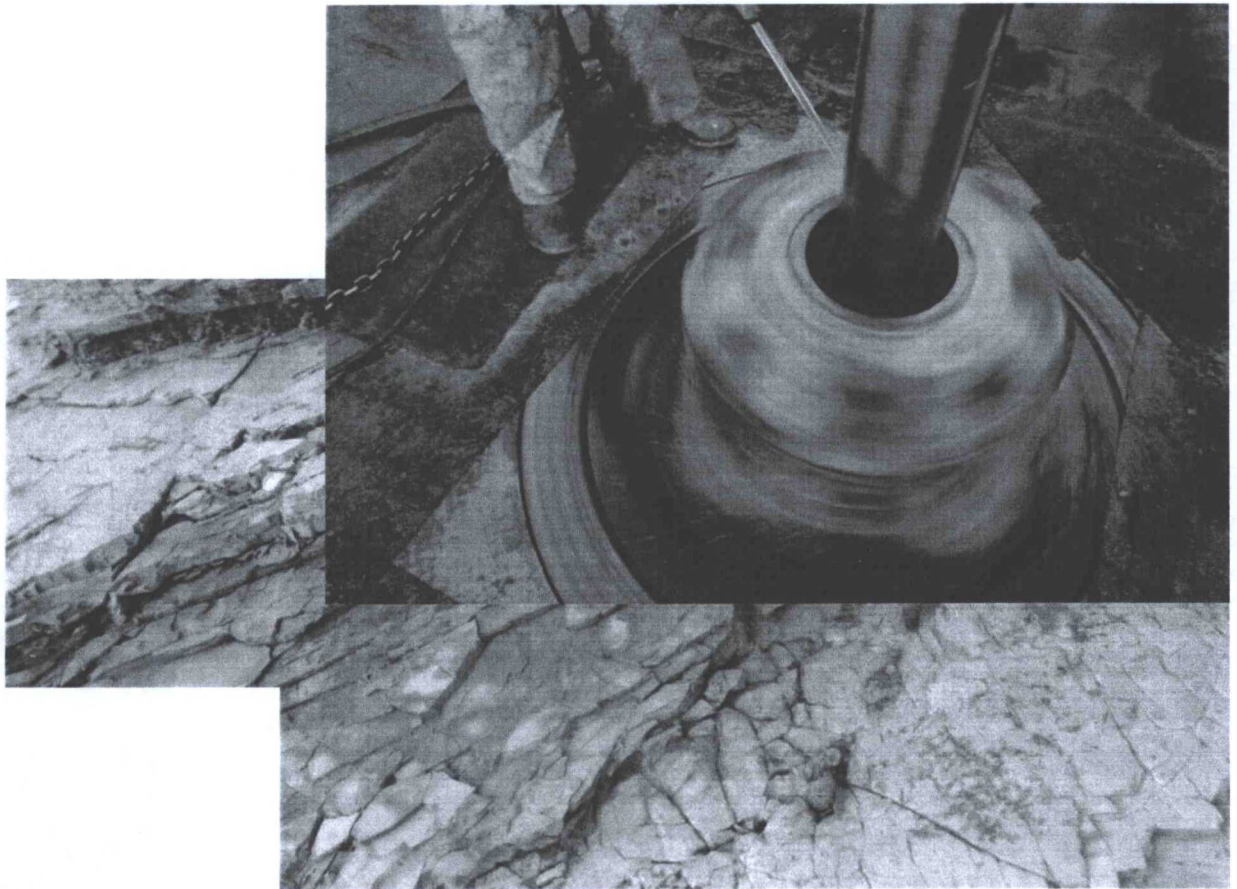




Commitment Runs Deep



Design Plan  
Operation and Maintenance Plan  
Closure Plan

SENM - Closed Loop Systems  
June 2010

## **I. Design Plan**

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

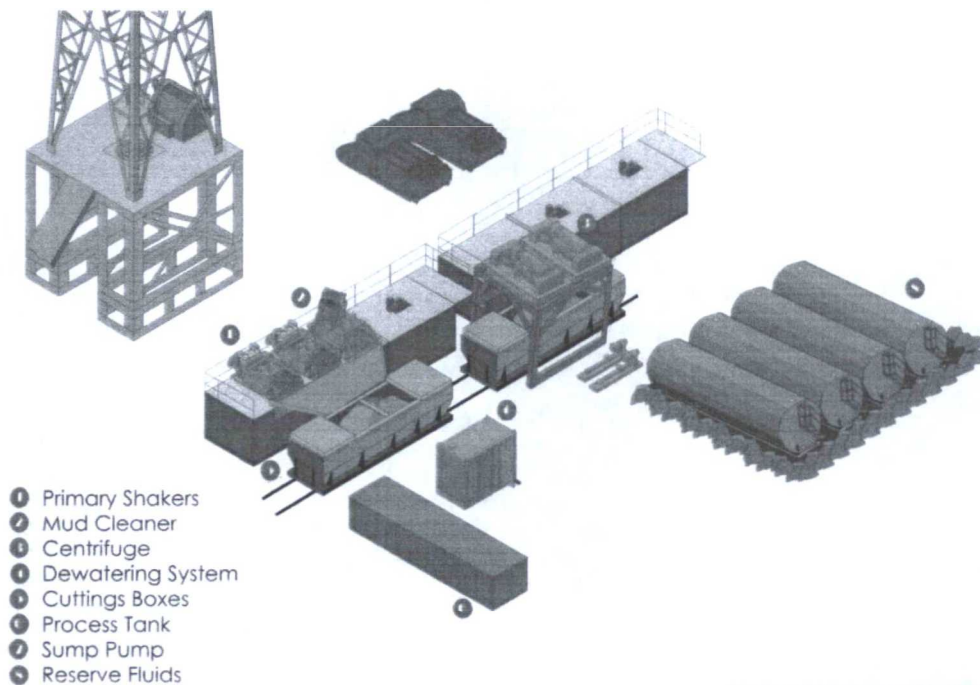
## **II. Operations and Maintenance Plan**

*Primary Shakers:* The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

**Mud Cleaner:** The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Closed Loop Schematic



**Centrifuges:** The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

**Dewatering System:** The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The



dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

*Cuttings Boxes:* Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

*Process Tank: (Optional)* The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

*Sump and Sump Pump:* The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

*Reserve Fluids (Tank Farm):* A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

### **III. Closure Plan**

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.



Fluid Technology

ContiTech Beattie Corp.  
Website: [www.contitechbeattie.com](http://www.contitechbeattie.com)

Monday, June 14, 2010

RE: Drilling & Production Hoses  
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental Contitech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory.

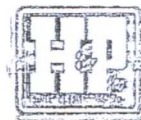
Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson  
Sales Manager  
ContiTech Beattie Corp

ContiTech Beattie Corp,  
11535 Brittmoore Park Drive,  
Houston, TX 77041  
Phone: +1 (832) 327-0141  
Fax: +1 (832) 327-0148  
[www.contitechbeattie.com](http://www.contitechbeattie.com)







## QUALITY DOCUMENT

\*6728 Szeged, Budapesti út 10. Hungary • H-6701 Szeged, P. O. Box 152  
none: (3662) 566-737 • Fax: (3662) 566-738

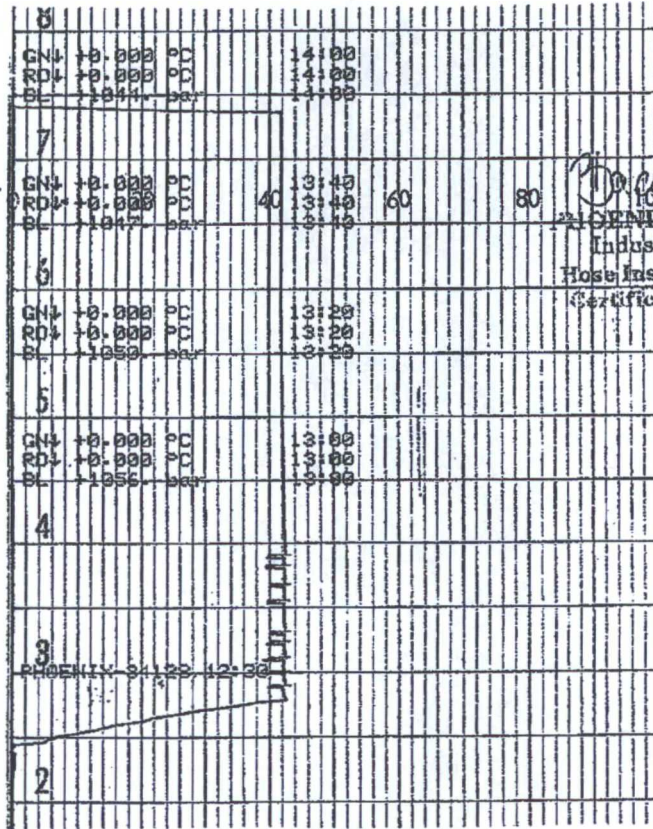
**SALES & MARKETING:** H-1092 Budapest, Ráday u. 42-44. Hungary • H-1440 Budapest, P. O. Box 26  
Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • [www.taurusemerge.hu](http://www.taurusemerge.hu)

**PHOENIX RUBBER  
INDUSTRIAL LTD.**

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 552	
PURCHASER: Phoenix Beattie Co.				P.O. N° 1519FA-871	
PHOENIX RUBBER order N° 170466		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N° 34128		NOMINAL / ACTUAL LENGTH: 11,43 m			
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature  <div style="text-align: center;">See attachment. (1 page)</div>					
↑ 10 mm = 10 Min. → 10 mm = 25 MPa					
COUPLINGS					
Type	Serial N°	Quality	Heat N°		
3" coupling with 4 1/16" Flange end	720 719	AISI 4130	C7626		
		AISI 4130	47357		
API Spec 16 C Temperature rate: "B"					
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
Date:	Inspector	Quality Control			
29. April. 2002.		PHOENIX RUBBER Industrial Ltd. Hose Inspection and Pressure Test			

14094-65

40920-0-00015 N8006



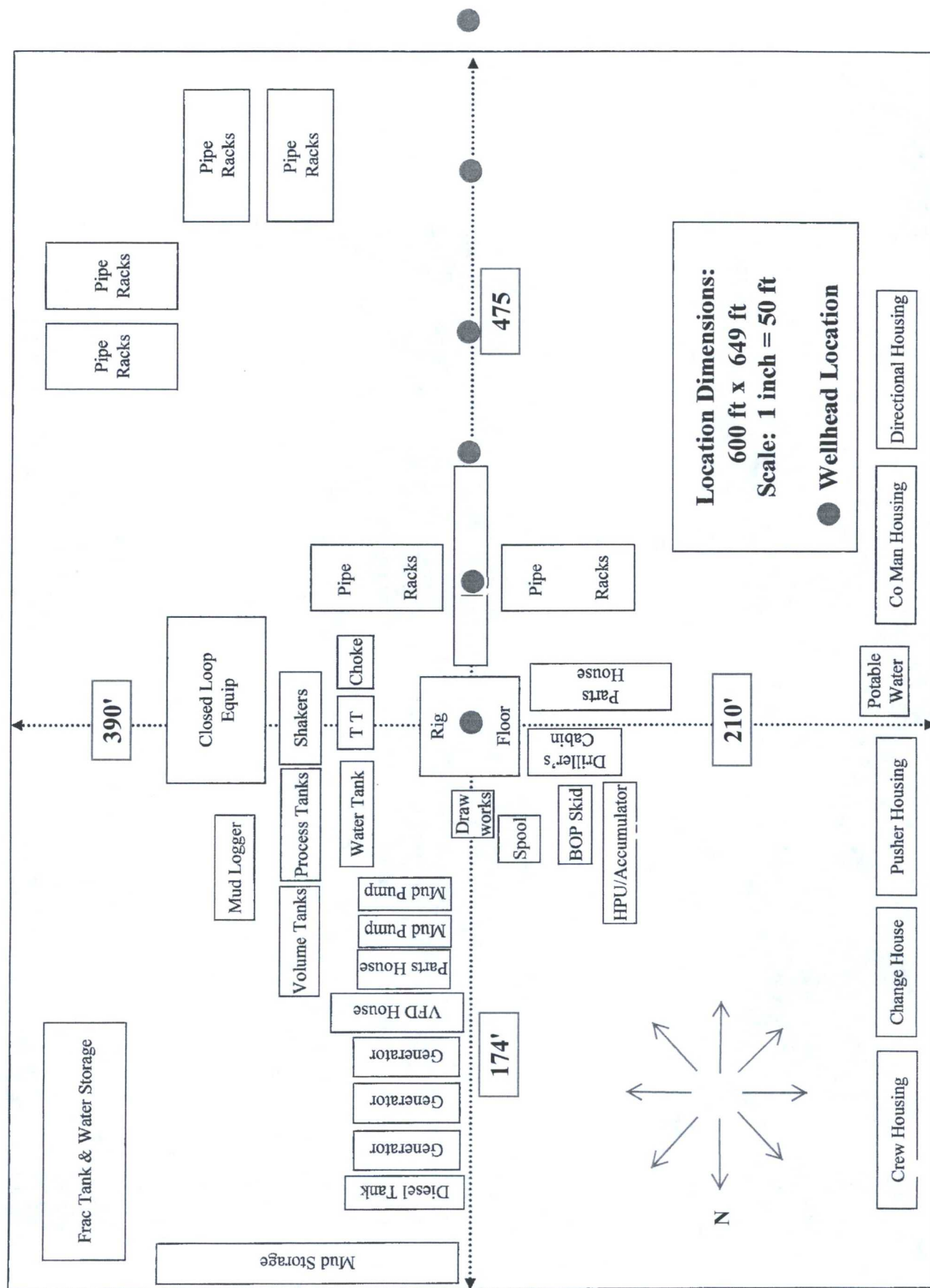
*[Signature]*  
**PHOENIX RUBBER**  
 Industrial Ltd.  
 Hose Inspection and  
 Certification Dept.

VERIFIED TRUE CO.  
 PHOENIX RUBBER CO.



## 6 WELL PAD

# Cotton Draw Unit 327H

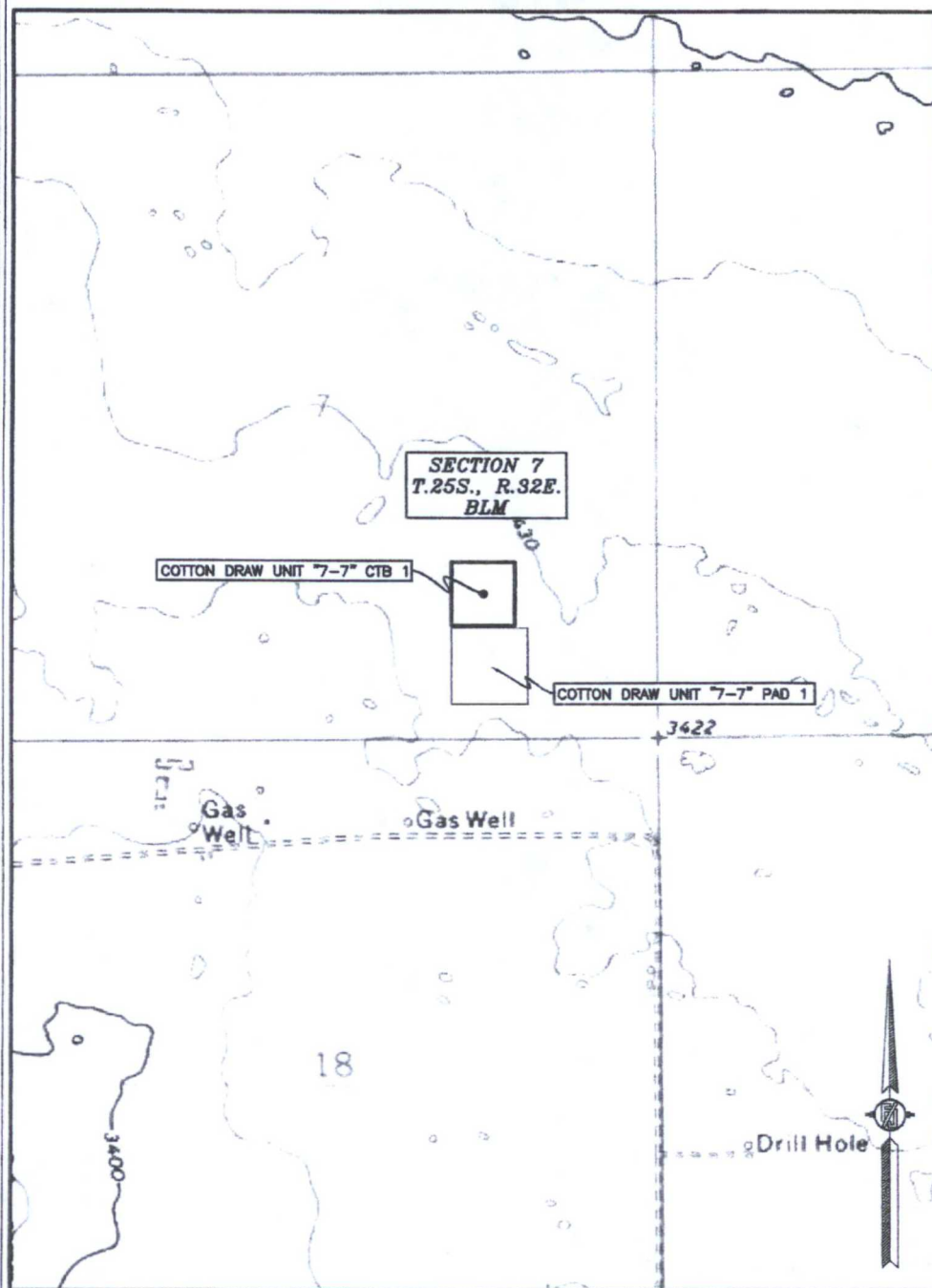


COTTON DRAW UNIT "7-7" CTB 1 (AA000062044)

DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE SW/4 SE/4 & SE/4 SE/4 & NW/4 SE/4 & NE/4 SE/4 OF  
SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

APRIL 7, 2016

QUAD MAP



SHEET: 2-3

SURVEY NO. 4311C

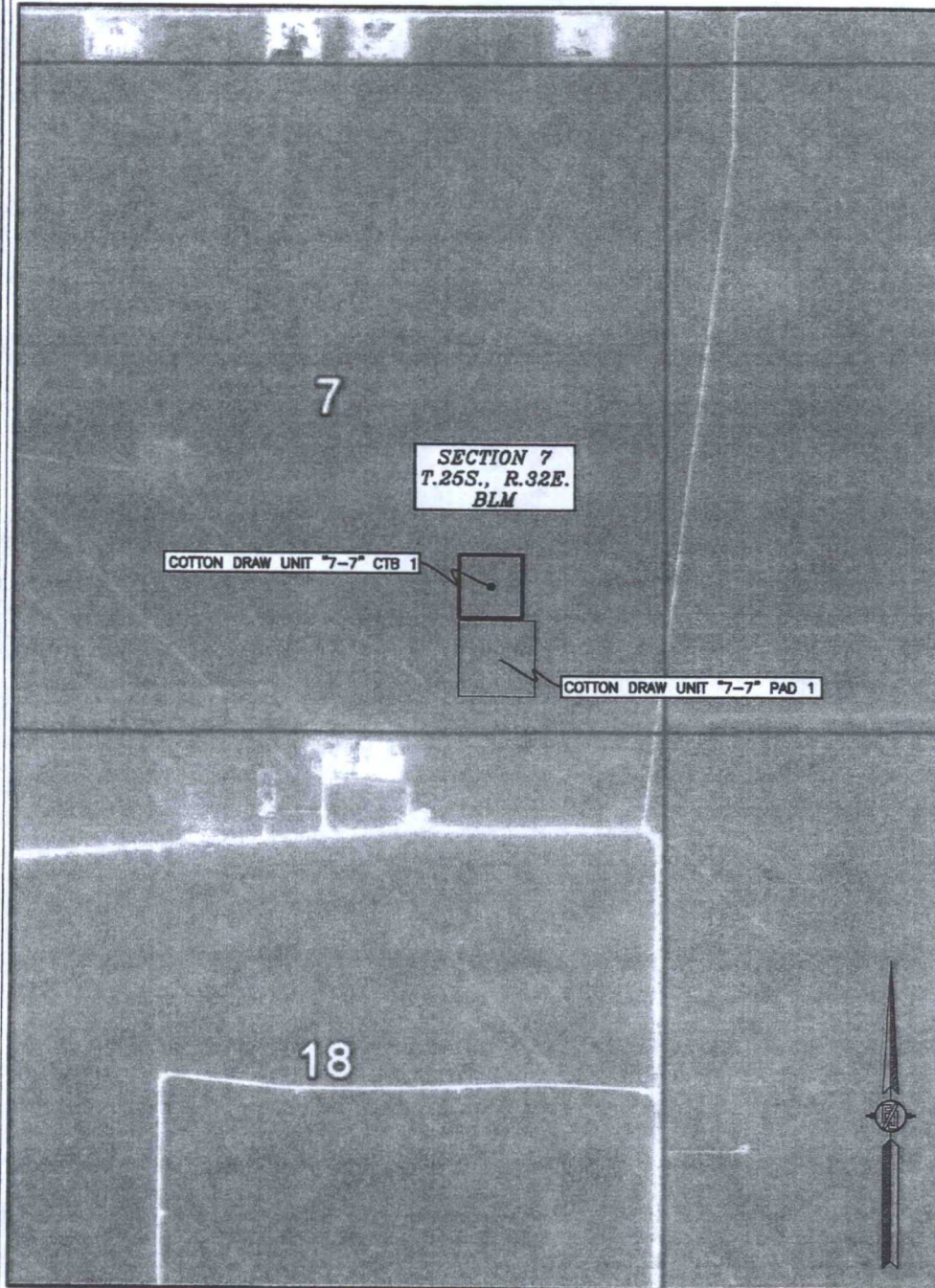
MADRON SURVEYING, INC. 301 SOUTH CANAL, CARLSBAD, NEW MEXICO  
(505) 234-3341

COTTON DRAW UNIT "7-7" CTB 1 (AA000062044)

DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE SW/4 SE/4 & SE/4 SE/4 & NW/4 SE/4 & NE/4 SE/4 OF  
SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

APRIL 7, 2016

AERIAL PHOTO



SHEET: 3-3

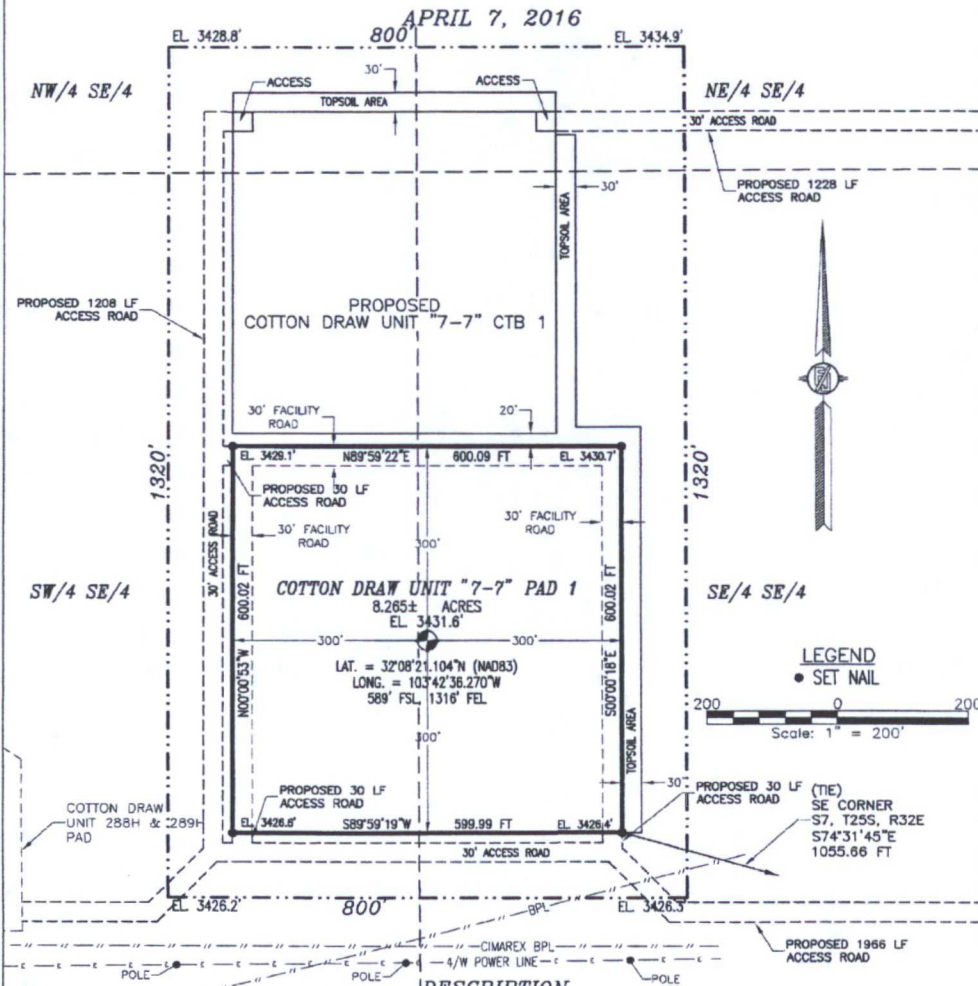
SURVEY NO. 4311C

MADRON SURVEYING, INC. 301 SOUTH CANAL (375) 234-3341 CARLSBAD, NEW MEXICO



DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE SE/4 SE/4 & SW/4 SE/4 OF  
SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

APRIL 7, 2016



### DESCRIPTION

BEGINNING AT THE SOUTHEAST CORNER OF THE PARCEL, WHENCE THE SOUTHEAST CORNER OF SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S74°31'45"E, A DISTANCE OF 1055.66 FEET;  
THENCE S89°59'19"W A DISTANCE OF 599.99 FEET TO THE SOUTHWEST CORNER OF THE PARCEL;  
THENCE N00°00'53"W A DISTANCE OF 600.02 FEET TO THE NORTHWEST CORNER OF THE PARCEL;  
THENCE N89°59'22"E A DISTANCE OF 600.09 FEET TO THE NORTHEAST CORNER OF THE PARCEL;  
THENCE S00°00'18"E A DISTANCE OF 600.02 FEET TO THE SOUTHEAST CORNER OF THE PARCEL, TO THE POINT OF BEGINNING;  
CONTAINING 4.321 ACRES IN THE SE/4 SE/4 & 3.944 ACRES IN THE SW/4 SE/4 FOR A TOTAL OF 8.265 ACRES MORE OR LESS.

### GENERAL NOTES

- 1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A PAD
- 2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83)

**DRIVING DIRECTION:** FROM THE INTERSECTION OF STATE HIGHWAY 128 & CR 1 (ORLA HIGHWAY) GO SOUTH ON CR 1 APPROX. 6.2 MILES TO MONSANTO ROAD (RIGHT TURN) TURN WEST ON MONSANTO ROAD GO APPROX. 2.1 MILES ROAD TURNS RIGHT (NORTH) GO NORTH APPROX. 0.9 MILE ROAD TURNS LEFT (WEST) GO WEST APPROX. 25'. TURN RIGHT (NORTH) GO NORTH APPROX. 928' TO A PROPOSED ROAD LATH ON LEFT (WEST). FOLLOW PROPOSED ROAD LATHS WEST APPROX. 1018'. TURN RIGHT GO NORTH 30' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

**SHEET: 1-3**

MADRON SURVEYING, INC. 304 SOUTH CARMEL (575) 234-3341 CARLSBAD, NEW MEXICO

### SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT ~~THIS SURVEY AND PLAT~~ MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 21 DAY OF APRIL 2016

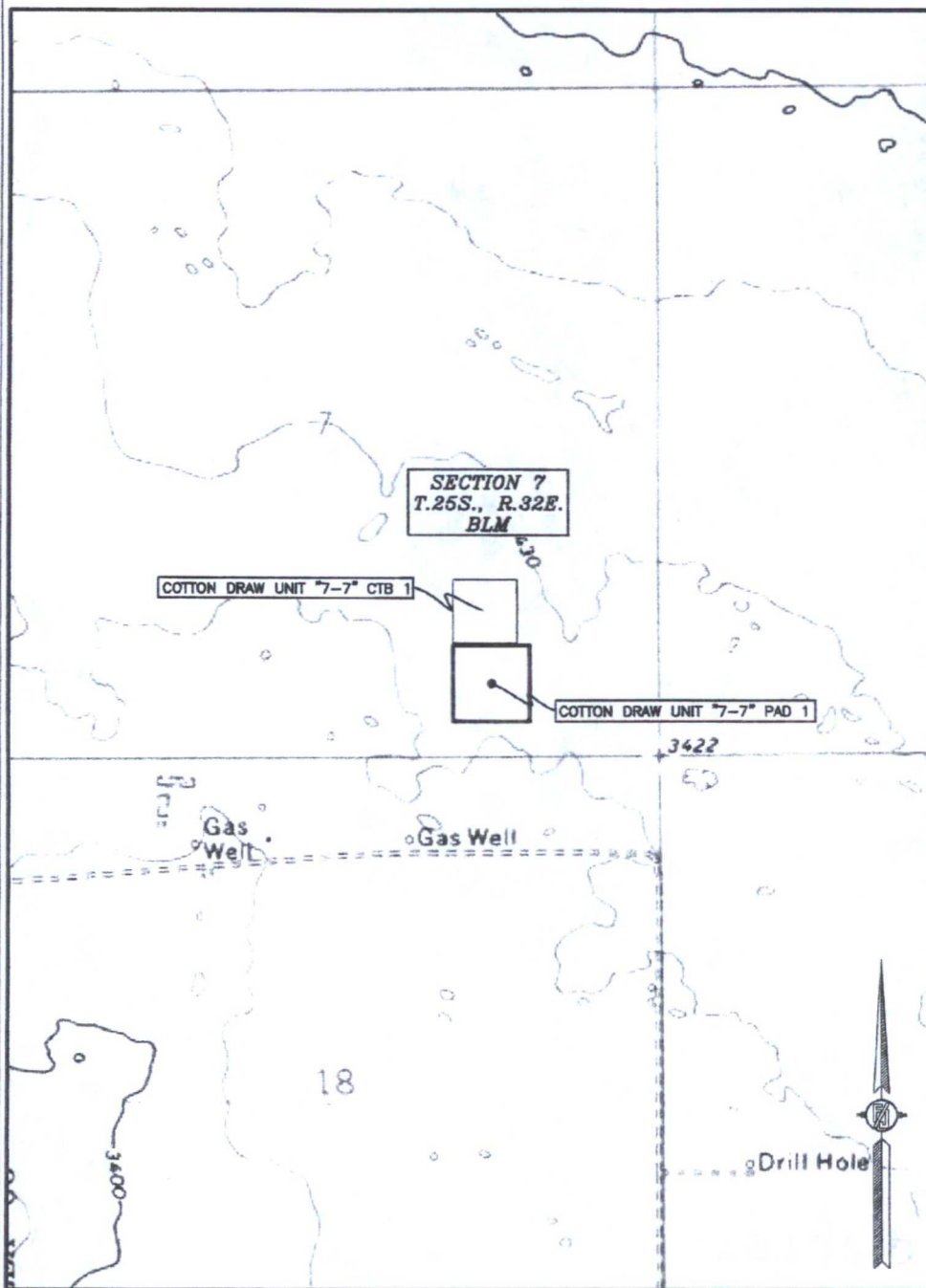
MADRON SURVEYING, INC  
301 SOUTH CANAL  
CARLSBAD, NEW MEXICO 88220  
Phone (575) 234-3341

MADRON SURVEYING, INC  
301 SOUTH CANAL  
CARLSBAD, NEW MEXICO 88220  
Phone (575) 234-3341

SURVEY NO. 4290C

DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE SE/4 SE/4 & SW/4 SE/4 OF  
SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

QUAD MAP



*SHEET: 2-3*

*SURVEY NO. 4290C*

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

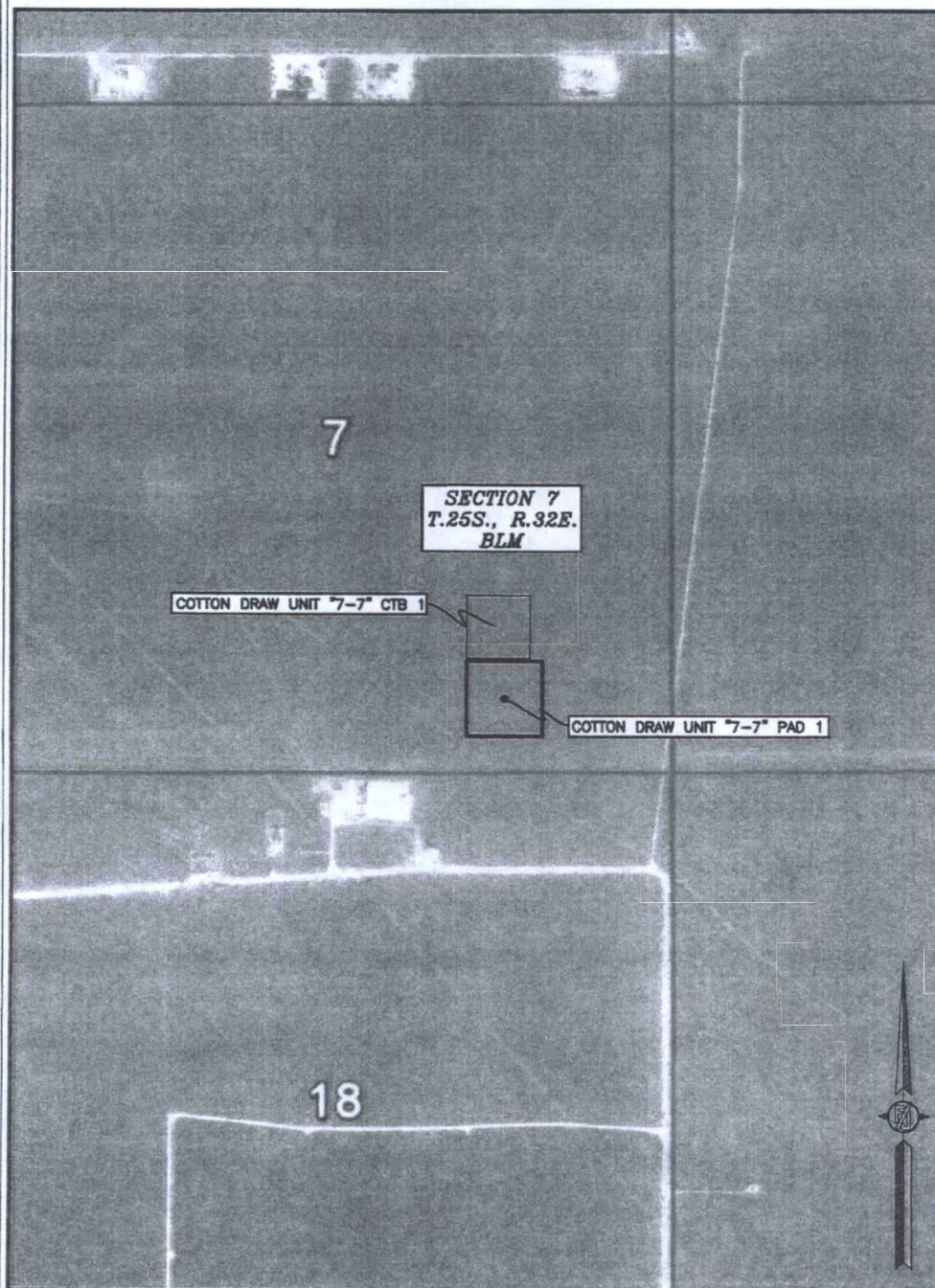


COTTON DRAW UNIT "7-7" PAD 1 (AA000060044)

DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE SE/4 SE/4 & SW/4 SE/4 OF  
SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

APRIL 7, 2016

AERIAL PHOTO



SHEET: 3-3

MADRON SURVEYING, INC. 301 SOUTH CANAL (978) 234-3341 CARLSBAD, NEW MEXICO

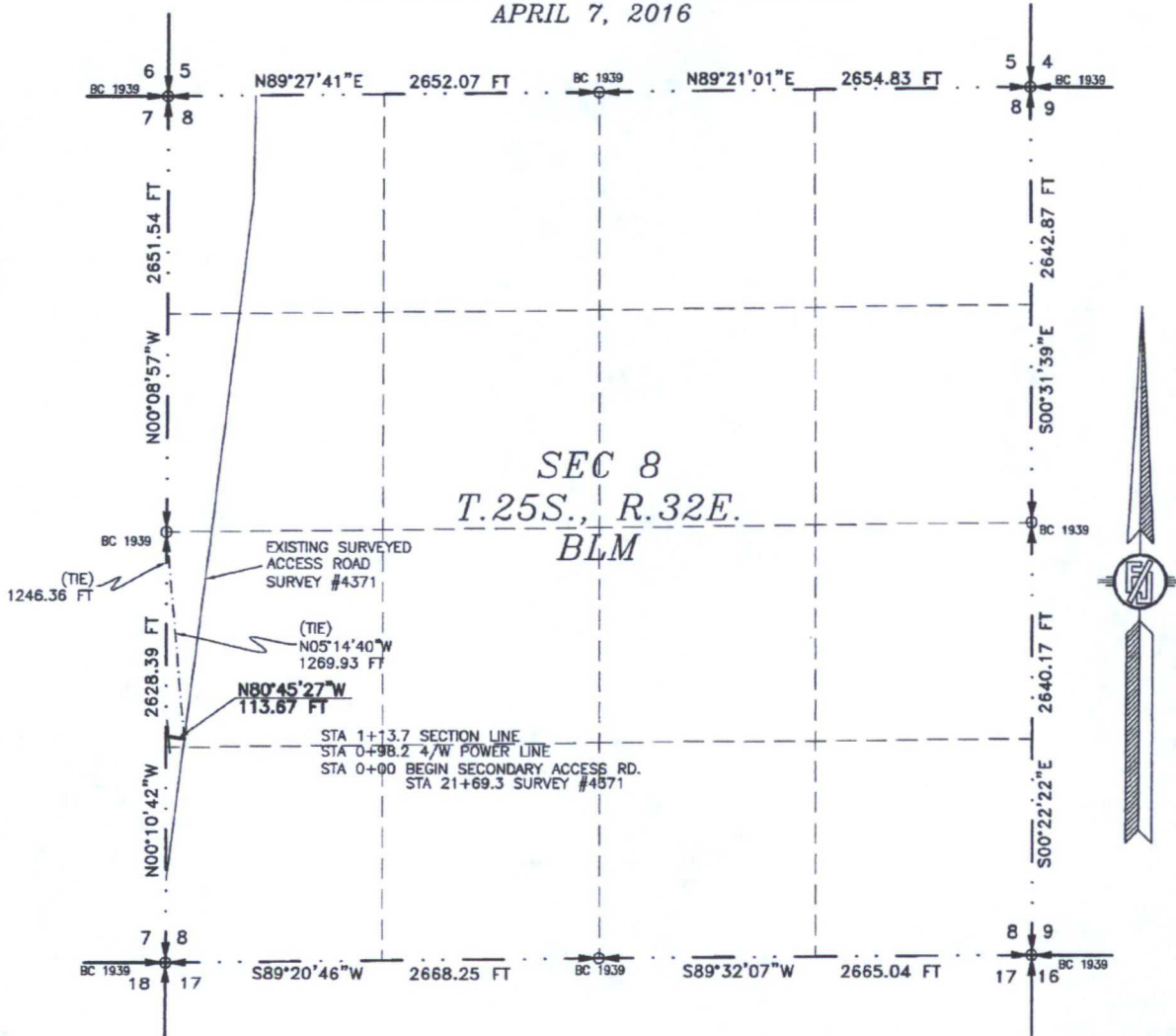
SURVEY NO. 4290C



# ACCESS ROAD PLAT (AA000060044)

ACCESS ROAD TO THE COTTON DRAW UNIT 7-7 PAD 1, COTTON DRAW UNIT 7-7 CTB 1, AND THE COTTON DRAW UNIT 288H & 289H

DEVON ENERGY PRODUCTION COMPANY, L.P.  
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING  
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
APRIL 7, 2016



SEE NEXT SHEET (2-10) FOR DESCRIPTION

## GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

## SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 21 DAY OF APRIL 2016

*[Signature]*  
FILMON F. JARAMILLO P.L.S. 12797

MADRON SURVEYING, INC.  
301 SOUTH CANAL  
CARLSBAD, NEW MEXICO 88220  
Phone (575) 234-3341

SHEET: 1-10

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

SURVEY NO. 4347E

**ACCESS ROAD PLAT (AA000060044)**

ACCESS ROAD TO THE COTTON DRAW UNIT 7-7 PAD 1, COTTON DRAW UNIT 7-7 CTB 1, AND THE  
COTTON DRAW UNIT 288H & 289H

**DEVON ENERGY PRODUCTION COMPANY, L.P.  
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING  
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
APRIL 7, 2016**

**DESCRIPTION**

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 SW/4 OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N05°14'40"W, A DISTANCE OF 1269.93 FEET;  
THENCE N80°45'27"W A DISTANCE OF 113.67 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N00°10'42"W, A DISTANCE OF 1246.36 FEET;

SAID STRIP OF LAND BEING 113.67 FEET OR 6.89 RODS IN LENGTH, CONTAINING 0.078 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 SW/4 113.67 L.F. 6.89 RODS 0.078 ACRES

**GENERAL NOTES**

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

**SURVEYOR CERTIFICATE**

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,  
NEW MEXICO, THIS 21 DAY OF APRIL 2016

*[Signature of Filmon F. Jaramillo]*  
FILMON F. JARAMILLO, P.L.S. #12797

MADRON SURVEYING, INC.  
301 SOUTH CANAL  
CARLSBAD, NEW MEXICO 88220  
Phone (575) 234-3341

SHEET: 2-10

**MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO**

**SURVEY NO. 4347E**