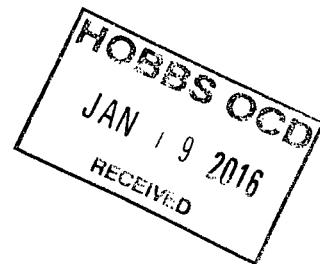


## SURFACE USE PLAN

Devon Energy Production Company, L.P.



The on-site inspection for these projects was performed on 9-1-15 by CEHMM

### **White Dove 17 Fed Com 3H**

#### **1. Existing Roads:**

- a. The well site and elevation plat for the proposed well are reflected on the "Site Map". The well was staked by Madron Surveying, Inc.
- b. All roads into the location are depicted on the "Vicinity Map". The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.
- c. Directions to Location: Please see "Site Map".

#### **2. New or Reconstructed Access Roads:**

- a. The "Site Map" shows new constructed access road, which will be approximately 822 LF from the existing Lease road.
- b. The maximum driving width of the access road will be 14 feet. The maximum width of surface disturbance when constructing the access road will not exceed 25 feet. The road will be crowned and ditched with 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 3 feet wide with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.
- c. When cutting fences separating ownership lines of the rancher(s), Devon will install cattle guards to prevent the loss of cattle. Devon will assume responsibility for any damages that occur to fences when moving a rig in or out of the area. No turnouts are planned.

#### **3. Location of Existing Wells:**

The attached "One Mile Radius Map" shows all existing and proposed wells within a one-mile radius of the proposed location.

#### **4. Location of Existing and/or Proposed Production Facilities:**

- a. In the event the well is found productive, the White Dove CTB #1 will be utilized and shared, and the necessary production equipment will be installed at the well site. This facility is located in Sec 17-T23S-R34E. See "White Dove CTB". This well will be padded with the White Dove 17 Fed Com 1H & 2H.
- b. Three-8" buried fiber pipe production flowlines & three-4" buried gas lift compression lines to carry water, oil & gas will run 800.34' from the White Dove 17 Fed Com 1H, 2H & 3H to the White Dove CTB #1. See "Flowline Plat".
- c. If necessary, the well will be operated by means of an electric prime mover. If electric power poles are needed, a plat and a sundry notice will be filed with your office.

- d. All flow lines will adhere to API standards.
- e. If the well is productive, rehabilitation plans are as follows:
  - i. A closed loop system will be utilized.
  - ii. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

**5. Location and Types of Water Supply:**

This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads described and depicted on the "Vicinity Map". On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If a poly pipeline is used, the size, distance, and map showing route will be provided to the BLM via sundry notice.

**6. Construction Materials:**

Obtaining caliche: One primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means caliche will be obtained from the actual well site. Actual amounts will vary for each pad. The procedure below has been approved by BLM personnel:

- a. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
- b. Subsoil is removed and stockpiled within the surveyed well pad.
- c. When caliche is found, material will be stock piled within the pad site to build the location and road.
- d. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
- e. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced.
- f. Neither caliche, nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat.

In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or land.

**7. Methods of Handling Waste Material:**

- a. Drill cuttings will be safely contained in a closed loop system and disposed of properly at a NMOCD approved disposal site.
- b. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
- c. The supplier will pick up salts remaining after completion of well, including broken sacks.
- d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

- e. Remaining drilling fluids will be sent to a closed loop system. Water produced during completion will be put into a closed loop system. Oil and condensate produced will be put into a storage tank and sold.
  - f. Fluids will be transported to an NMOCD approved facility and properly disposed.
8. **Ancillary Facilities:** No campsite or other facilities will be constructed as a result of this well.
9. **Well Site Layout**
- a. The Rig Location Layout attachment shows the proposed well site layout and pad dimensions.
  - b. The Rig Location Layout attachment proposes location of sump pits and living facilities.
  - c. Mud pits in the active circulating system will be steel pits.
  - d. A closed loop system will be utilized. Devon will provide a copy of the Design Plan to the BLM.
10. **Plans for Surface Reclamation:**
- a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.
  - b. The location and road will be rehabilitated as recommended by the BLM.
  - c. If the well is deemed commercially productive, caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography. See "Interim Reclamation Diagram".
  - d. All disturbed areas not needed for active support of production operations will undergo interim reclamation. The portions of the cleared well site not needed for operational and safety purposes will be recontoured to a final or intermediate contour that blends with the surrounding topography as much as possible. Topsoil will be respread over areas not needed for all-weather operations. See "Interim Reclamation Diagram".
11. **Surface Ownership**
- a. The surface is owned by the US Government and is administered by the Bureau of Land Management. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.
  - b. The proposed road routes and the surface location will be restored as directed by the BLM.
12. **Other Information:**
- a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sage bush, yucca and miscellaneous weeds. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.

- b. There is no permanent or live water in the general proximity of the location.
- c. There are no dwellings within 2 miles of location.
- d. A Cultural Resources Examination will be completed by Lone Mountain Archaeological Services, Inc. and forwarded to the BLM office in Carlsbad, New Mexico.

**13. Bond Coverage:**

Bond Coverage is Nationwide; Bond # is CO-1104 & NMB-000801.

**Operators Representative:**

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

Shelley Klingler, Program Supervisor  
Devon Energy Production Company, L.P.  
333 W. Sheridan  
Oklahoma City, OK 73102-5010  
(405) 228-8882 (office)  
(405) 206-7917 (Cellular)

Don Mayberry - Superintendent  
Devon Energy Production Company, L.P.  
Post Office Box 250  
Artesia, NM 88211-0250  
(575) 748-3371 (office)  
(575) 746-4945 (home)

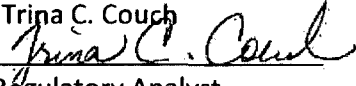
## Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production Company, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this 9th day of October, 2015

Printed Name: Trina C. Couch

Signed Name: 

Position Title: Regulatory Analyst

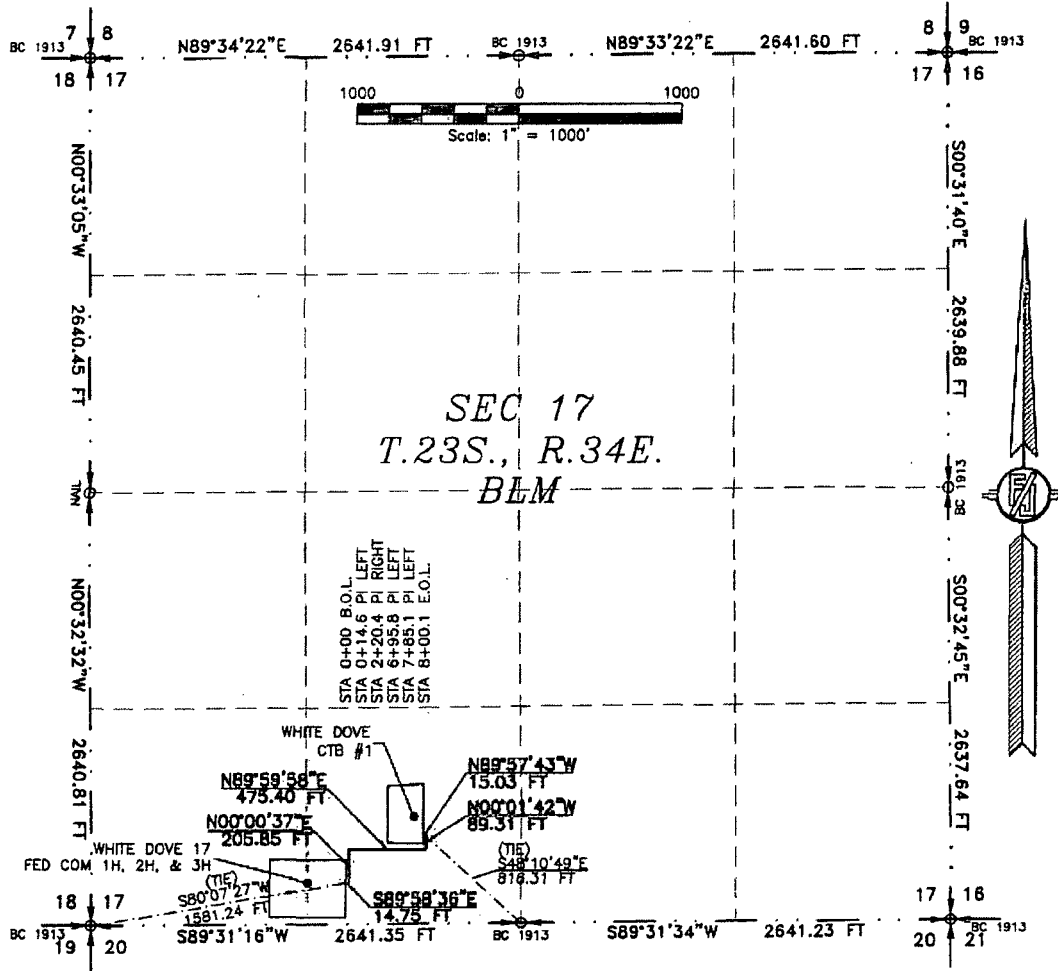
Address: 333 W. Sheridan, OKC OK 73102

Telephone: (405)-228-7203

# FLOWLINE PLAT

THREE-8" BURIED FIBER PIPE PRODUCTION FLOWLINES & THREE-4" BURIED GAS LIFT COMPRESSION LINES FROM WHITE DOVE 17 FED COM 1H, 2H, & 3H TO THE WHITE DOVE CTB #1

DEVON ENERGY PRODUCTION COMPANY, L.P.  
CENTERLINE SURVEY OF A PIPELINE CROSSING  
SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
OCTOBER 5, 2015



SEE NEXT SHEET (2-4) FOR DESCRIPTION

## 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 6 DAY OF OCTOBER, 2015

*Filmon F. Jaramillo*  
FILMON F. JARAMILLO, P.E.S. 12797

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

## 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.

SHEET: 1-4

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 4082B

### FLOWLINE PLAT

THREE-8" BURIED FIBER PIPE PRODUCTION FLOWLINES & THREE-4" BURIED GAS LIFT COMPRESSION LINES FROM WHITE DOVE 17 FED COM 1H, 2H, & 3H TO THE WHITE DOVE CTB #1

DEVON ENERGY PRODUCTION COMPANY, L.P.  
CENTERLINE SURVEY OF A PIPELINE CROSSING  
SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
OCTOBER 5, 2015

#### DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 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 SE/4 SW/4 OF SAID SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M. BEARS S80°07'27"W, A DISTANCE OF 1581.24 FEET;  
THENCE S89°58'36"E A DISTANCE OF 14.75 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;  
THENCE N00°00'37"E A DISTANCE OF 205.85 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;  
THENCE N89°59'58"E A DISTANCE OF 475.40 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;  
THENCE N00°01'42"W A DISTANCE OF 89.31 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;  
THENCE N89°57'43"W A DISTANCE OF 15.03 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE TIE2 CORNER OF SAID SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M. BEARS S48°10'49"E, A DISTANCE OF 816.31 FEET;

SAID STRIP OF LAND BEING 800.34 FEET OR 48.51 RODS IN LENGTH, CONTAINING 0.551 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 SW/4    800.34 L.F.    48.51 RODS    0.551 ACRES

#### 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 5 DAY OF OCTOBER 2015

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

#### 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.

SHEET: 2-4

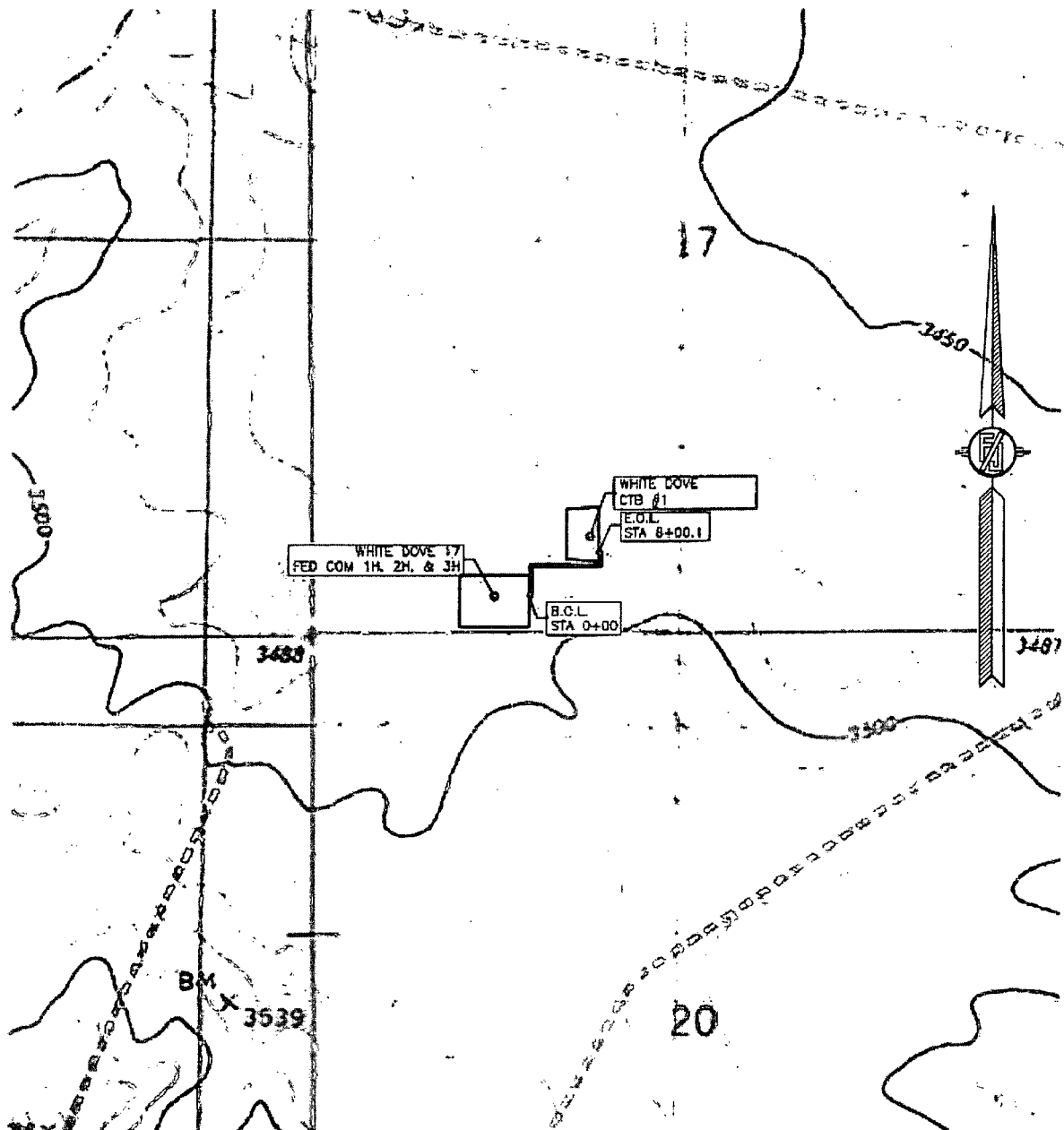
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 4082B

**FLOWLINE PLAT**

THREE-8" BURIED FIBER PIPE PRODUCTION FLOWLINES & THREE-4" BURIED GAS LIFT COMPRESSION  
LINES FROM WHITE DOVE 17 FED COM 1H, 2H, & 3H TO THE WHITE DOVE CTB #1

DEVON ENERGY PRODUCTION COMPANY, L.P.  
CENTERLINE SURVEY OF A PIPELINE CROSSING  
SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
OCTOBER 5, 2015



SHEET: 3-4

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

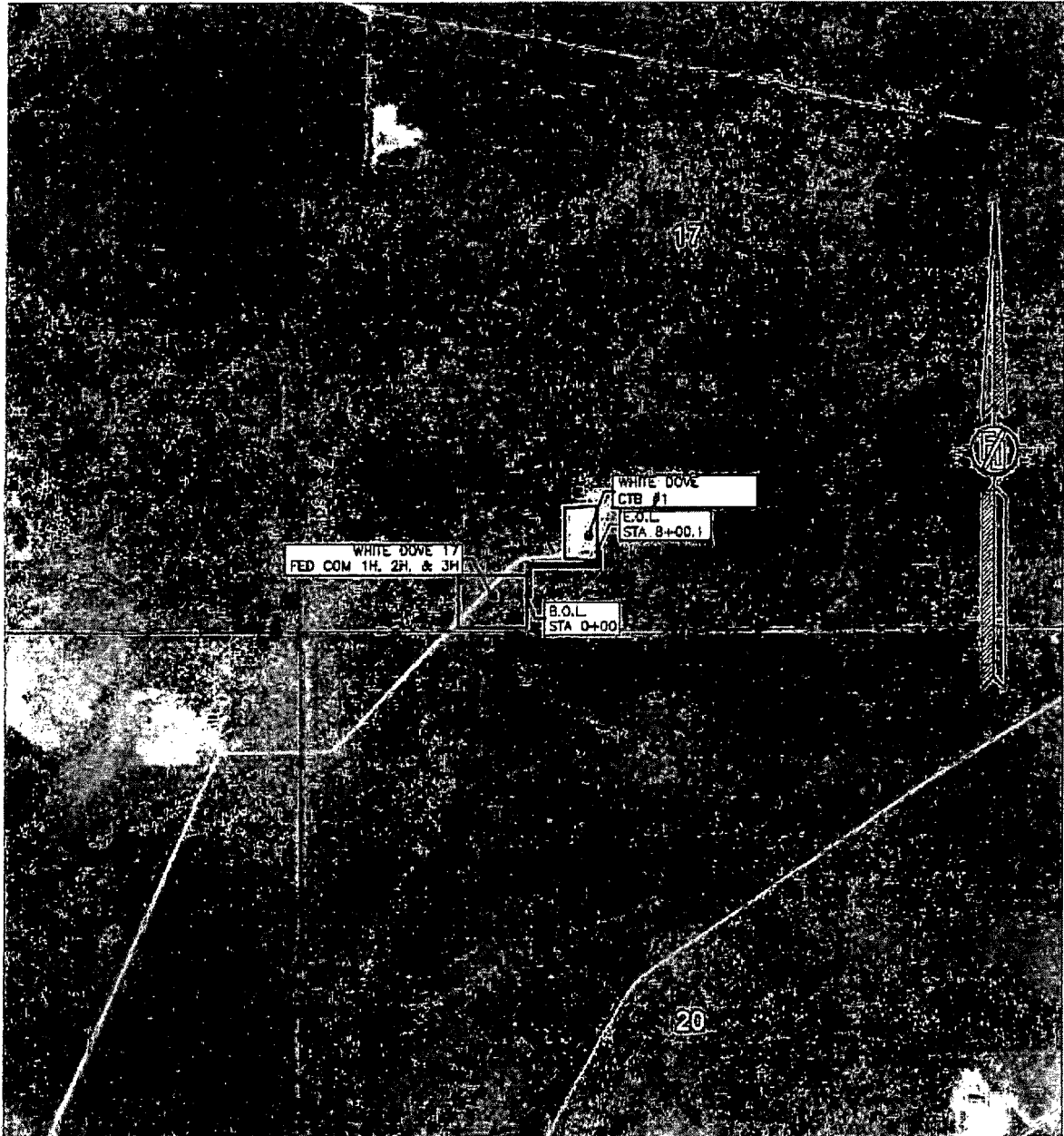
SURVEY NO. 4082B



# FLOWLINE PLAT

THREE-8" BURIED FIBER PIPE PRODUCTION FLOWLINES & THREE-4" BURIED GAS LIFT COMPRESSION  
LINES FROM WHITE DOVE 17 FED COM 1H, 2H, & 3H TO THE WHITE DOVE CTB #1

DEVON ENERGY PRODUCTION COMPANY, L.P.  
CENTERLINE SURVEY OF A PIPELINE CROSSING  
SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
OCTOBER 5, 2015



SHEET: 4-4

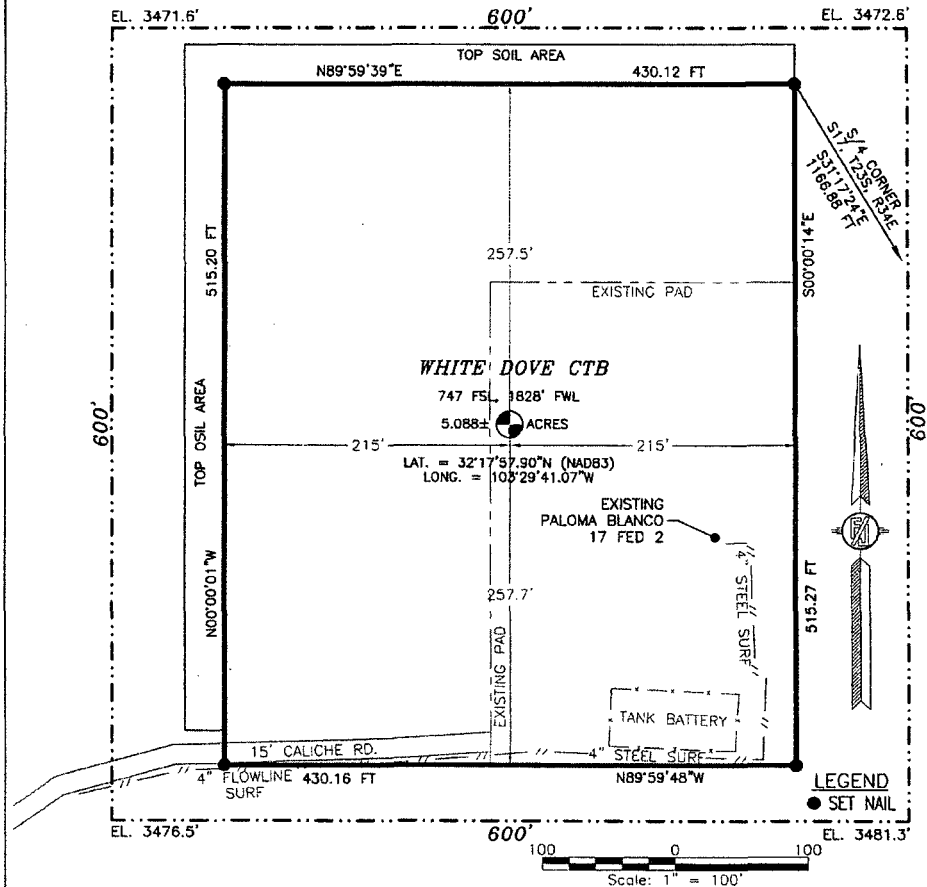
SURVEY NO. 4082B

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-5341 CARLSBAD, NEW MEXICO

WHITE DOVE CTB

DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE SE/4 SW/4 OF  
SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

JULY 16, 2015



DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN BUREAU OF LAND MANAGEMENT LAND IN THE SE/4 SW/4 OF SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

BEGINNING AT THE NORTHEAST CORNER OF THE PARCEL, WHENCE THE SOUTH QUARTER CORNER OF SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M. BEARS S31°17'24\"E, A DISTANCE OF 1166.88 FEET;  
THENCE S00°00'14\"E A DISTANCE OF 515.27 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;  
THENCE N89°59'48\"W A DISTANCE OF 430.16 FEET TO THE SOUTHWEST CORNER OF THE PARCEL;  
THENCE N00°00'01\"W A DISTANCE OF 515.20 FEET TO THE NORTHWEST CORNER OF THE PARCEL;  
THENCE N89°59'39\"E A DISTANCE OF 430.12 FEET TO THE NORTHEAST CORNER OF THE PARCEL, THE POINT OF BEGINNING;  
CONTAINING 5.088 ACRES MORE OR LESS.

GENERAL NOTES

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

DRIVING DIRECTIONS: FROM THE INTERSECTION OF STATE HIGHWAY #128 AND COUNTY ROAD #21 (DELAWARE BASIN ROAD) GO NORTH ON COUNTY ROAD #21 APPROX. 6.1 MILES TO A LEASE ROAD ON RIGHT (EAST) TURN EAST AT LEASE ROAD GO APPROX. 0.1 MILE TURN LEFT (NORTH) GO NORTH 0.8 MILE ROAD TURNS RIGHT (NORTHEAST) GO NORTHEAST APPROX. 0.8 MILE TO LOCATION

SURVEYOR CERTIFICATE

I, PIMON 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 23 DAY OF JULY 2015

*Pimon F. Jaramillo*  
PIMON F. JARAMILLO, PLS. 12797  
301 SOUTH CANAL  
(575) 234-3341

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

SURVEY NO. 4125

SHEET: 1-3

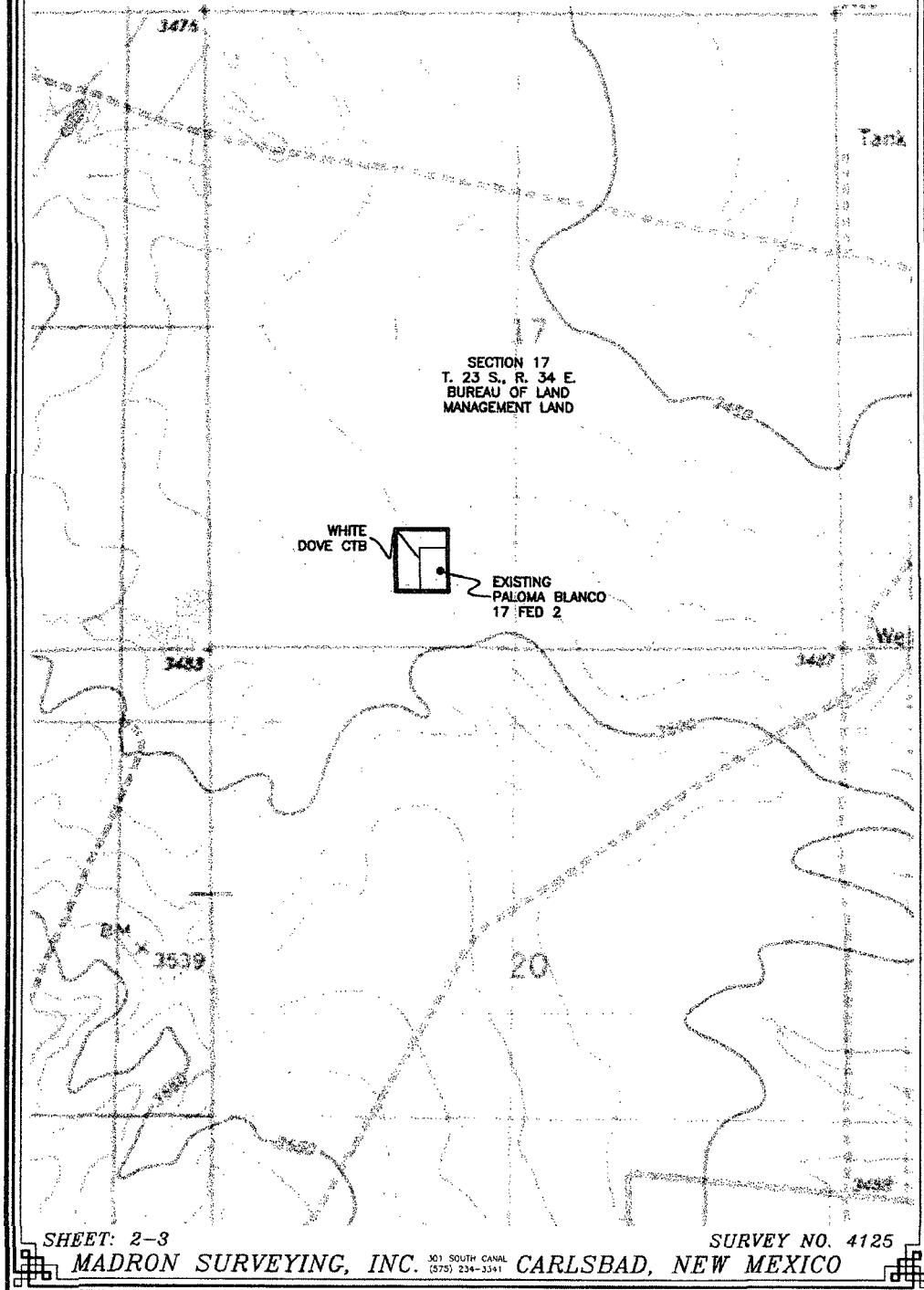
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

WHITE DOVE CTB

DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE SE/4 SW/4 OF  
SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

JULY 16, 2015

QUAD MAP



SHEET: 2-3

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

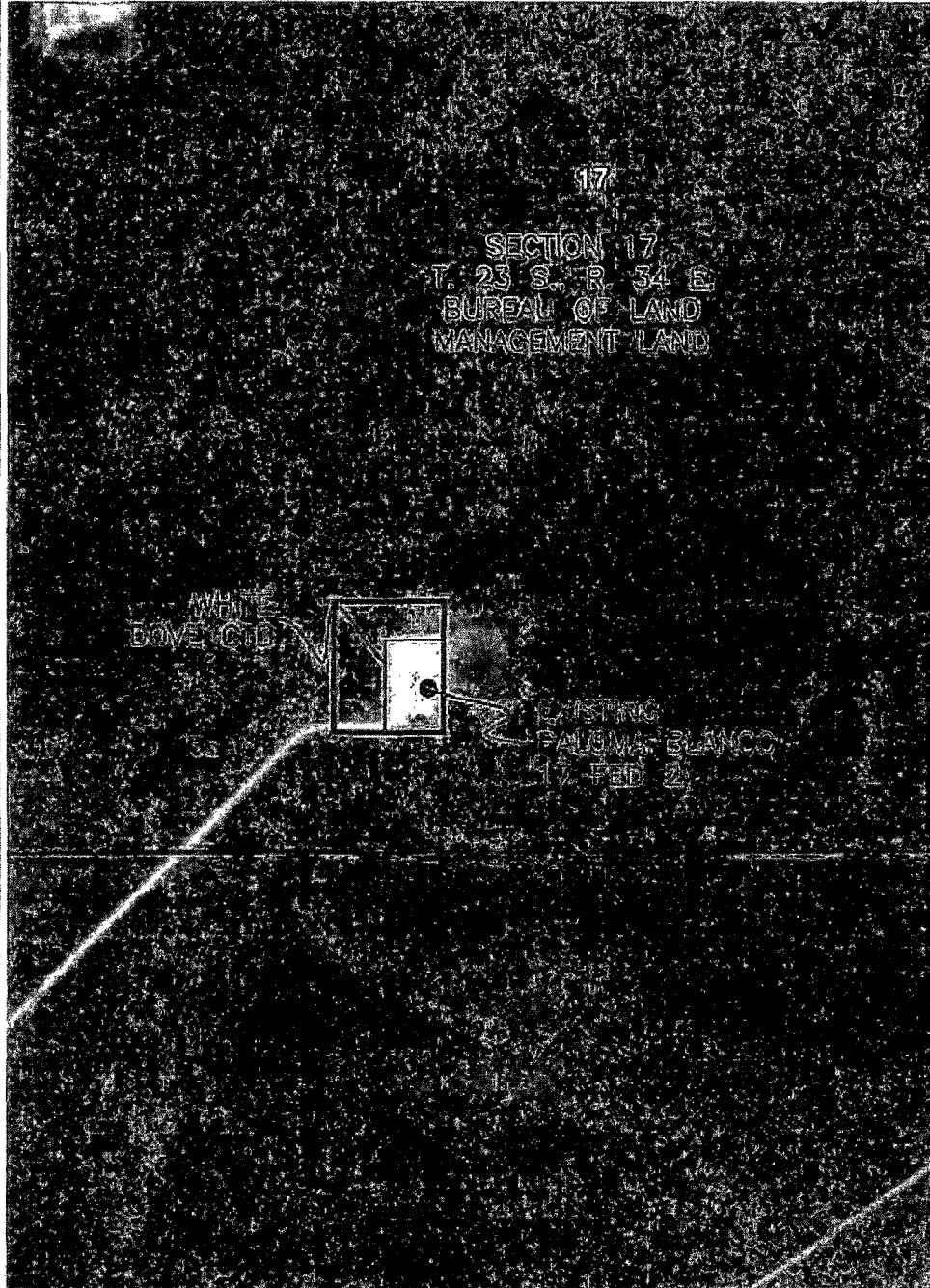
SURVEY NO. 4125

WHITE DOVE CTB

DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE SE/4 SW/4 OF  
SECTION 17, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

JULY 16, 2015

AERIAL PHOTO



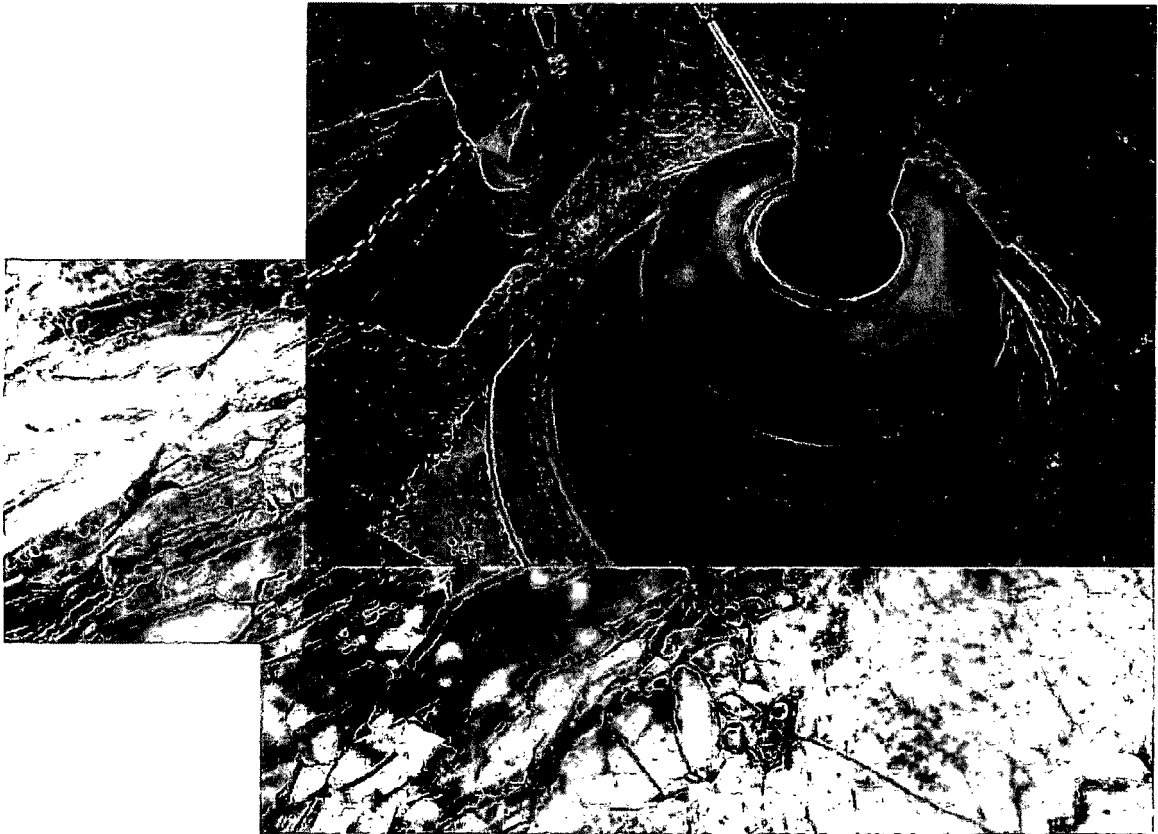
SHEET: 3-3

SURVEY NO. 4125

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



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.

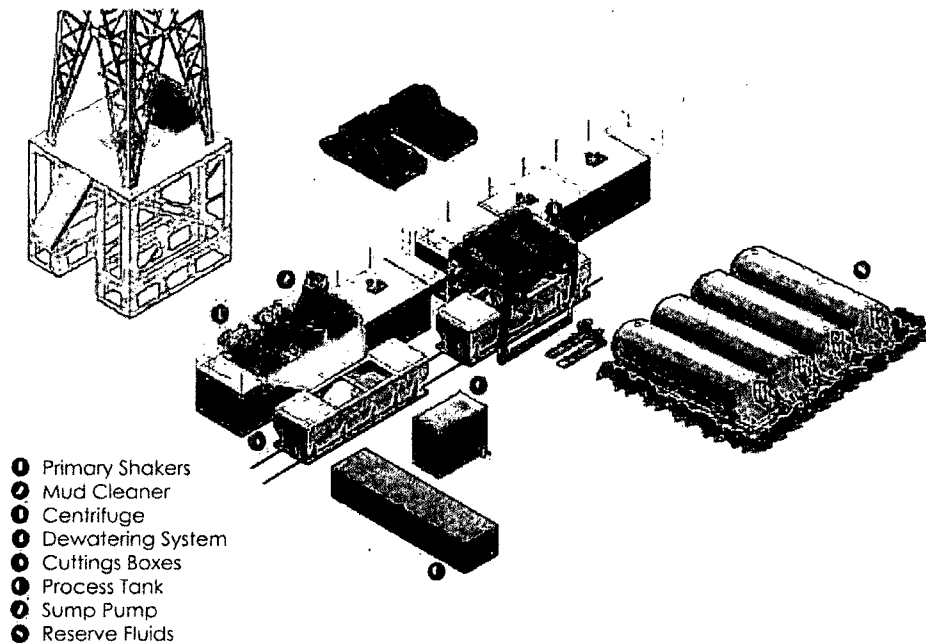
## **II. Operations and Maintenance Plan**

*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.