OCD Artesia

ATS-15-1039

Form 3160-3
(August 2007)

SECRETARY'S POTASH

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM-0531277A

6. If Indian, Allotee or Tribe Name
NA

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
NA

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☑ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Gnome East SWD #1

2. Name of Operator R360 Permian Basin, LLC

9. API Well No.
~~NA~~ 30 015 43801

4507 Carlsbad Hwy, Hobbs NM (SWD-1610)

3a. Address 3 Waterway Square Place, Suite 110
The Woodlands, TX 77380

3b. Phone No. *(include area code)*
832-442-2200

10. Field and Pool, or Exploratory
SWD; Devonian

4. Location of Well *(Report location clearly and in accordance with any State requirements *)*

At surface N 32 16' 23.59", W 103 51' 33.93"

At proposed prod. zone N 32 16' 23.59", W 103 51' 33.93"

11. Sec., T. R. M. or Blk. and Survey or Area
Sec.26, T 23S, R30 E 1659 FSL, 268 FWL

14. Distance in miles and direction from nearest town or post office*
20 miles east of Loving NM

12. County or Parish
Eddy

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
3000' South

16. No. of acres in lease

17. Spacing Unit dedicated to this well
NA

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
500 feet Southwest of Forty Niner Ridge 26 Fed

19. Proposed Depth
16,550'

20. BLM/BIA Bond No. on file
~~NMB929591818~~ NMB001255

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
Surface 3,351' ASL, Injection 15,550' GL, TD 16,550' GL

22. Approximate date work will start*

23. Estimated duration
90 Days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature C.S. Ruane — Name *(Printed Typed)* Chris Ruane — Date 4-8-2015

Title
Director of Engineering

Approved by *(Signature)* /s/George MacDonell — Name *(Printed Typed)* — Date MAY 16 2016

Title FIELD MANAGER — Office CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached. APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

NM OIL CONSERVATION
ARTESIA DISTRICT
MAY 19 2016

RECEIVED

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

5/24/16

5/24/16

R360 Environmental Solutions Inc.

Gnome East SWD #1

Operator Certification

I hereby certify that I, or persons under my direct supervision, have inspected the 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 R360 Permian Basin LLC, 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.

Executed this 8th day of September, 2015.

Signed: 

Printed Name: Chris Ruane
Position: Director of Engineering
Address: 3 Waterway Square Place, Suite 110
The Woodlands, Texas 77380
Telephone (832) 442-2204
Email: chrisr@wasteconnections.com

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 Rd., 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 Department

OIL CONSERVATION DIVISION

1223 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30015 43801	96101	SWD; Devonian

Property Code	Property Name	Well Number
316252	GNOME EAST SWD	1

OGRID No.	Operator Name	Elevation
289936	R360	3351

Surface Location

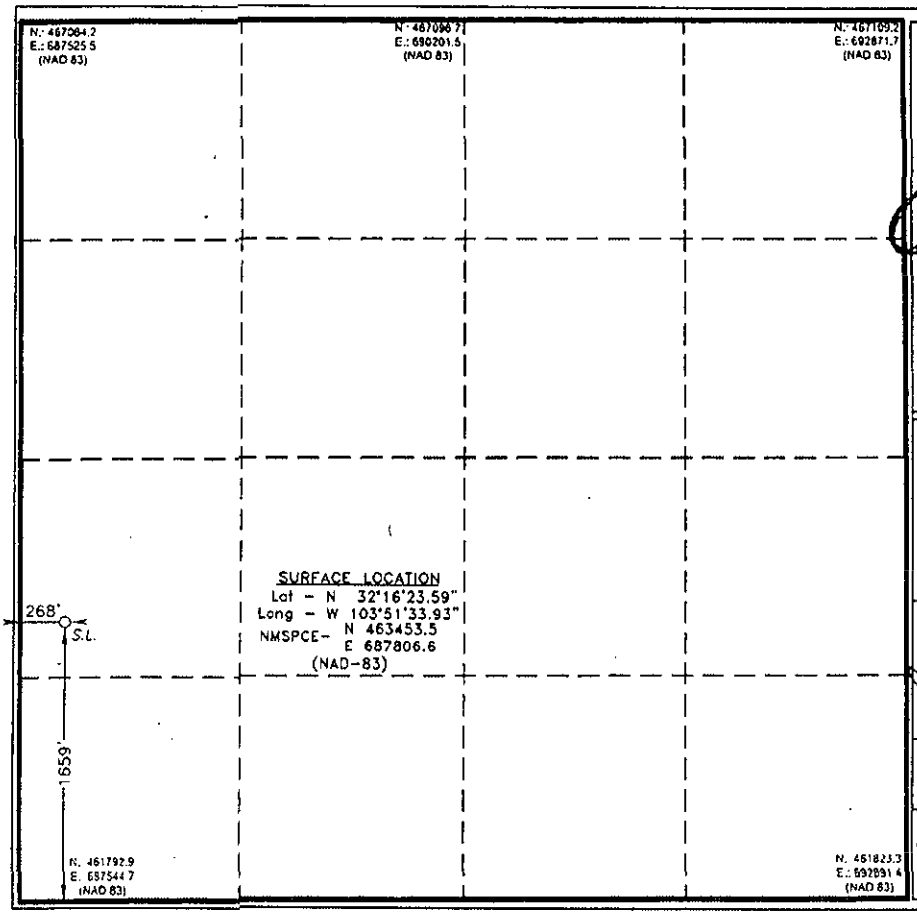
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
L	26	23 S	30 E		1659	SOUTH	268	WEST	EDDY

Bottom 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/EAST LINE	County

Dedicated Acres	Joint or Infill	Consolidation Code	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



OPERATOR 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.

Signature Date

Chris Ruane 9-8-15

Printed Name

Email Address

SURVEYOR 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 supervison, and that the same is true and correct to the best of my belief.

Date Surveyed

Signature & Seal of Professional Surveyor

NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate Number 7977

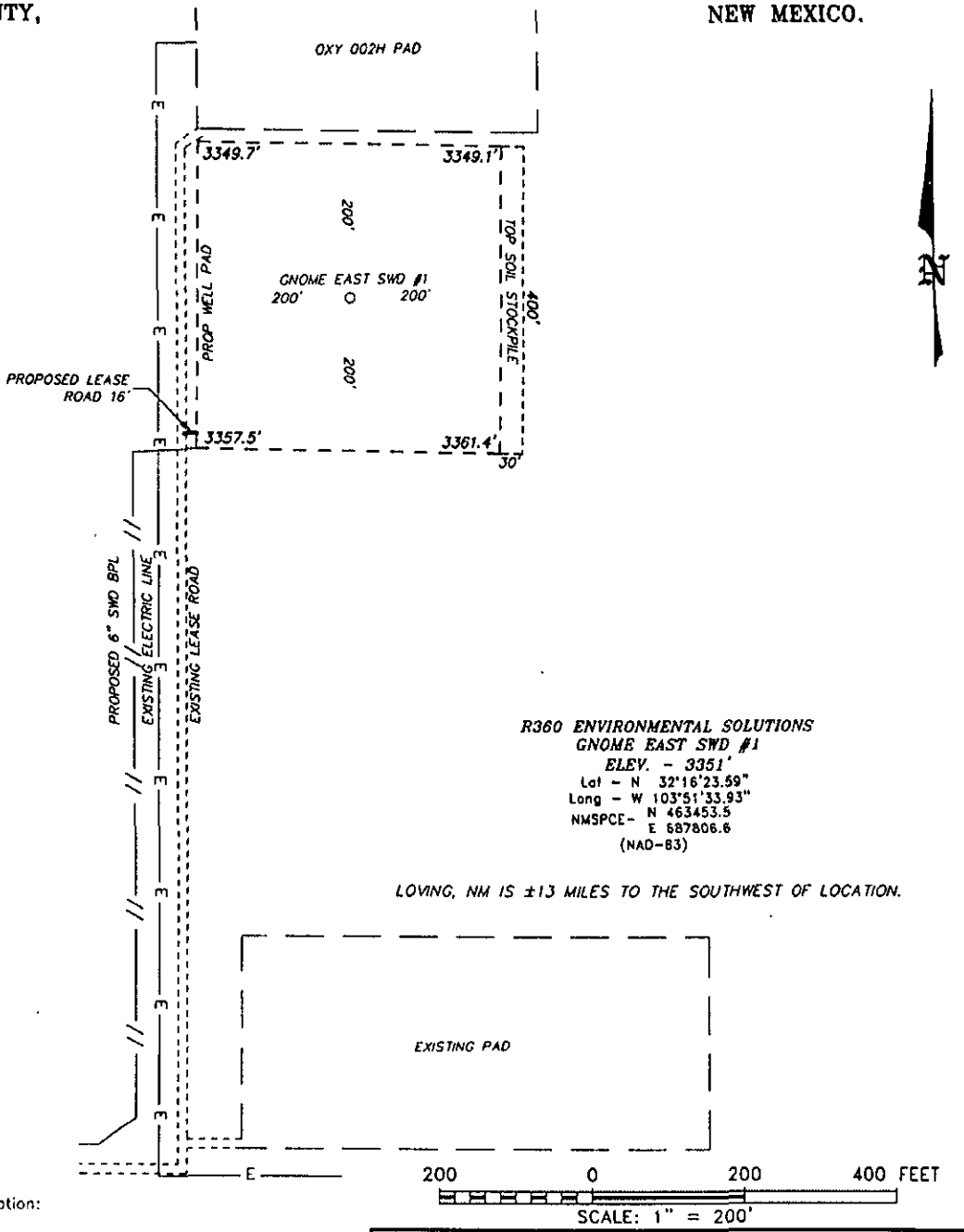
0' 500' 1000' 1500' 2000'

SCALE: 1" = 1000'

WO Num.: 31652

SECTION 26, TOWNSHIP 23 SOUTH, RANGE 30 EAST. N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



R360 ENVIRONMENTAL SOLUTIONS
GNOME EAST SWD #1
ELEV. - 3351'
Lat - N 32°16'23.59"
Long - W 103°51'33.93"
NMSPCE- N 463453.5
E 687806.6
(NAD-83)

LOVING, NM IS ±13 MILES TO THE SOUTHWEST OF LOCATION.

Directions to Location:

FROM INTERSECTION OF STATE HWY 128 & CO 795, GO SOUTH ON 795 0.5 MILES, CONTINUE SOUTH ON CALICHE ROAD 3.9 MILES, THEN EAST 0.5 MILES, NORTH 0.2 MILES TO PROPOSED LOCATION DUE EAST.

R360 ENVIRONMENTAL SOLUTIONS

REF: GNOME EAST SWD #1 / WELL PAD TOPO

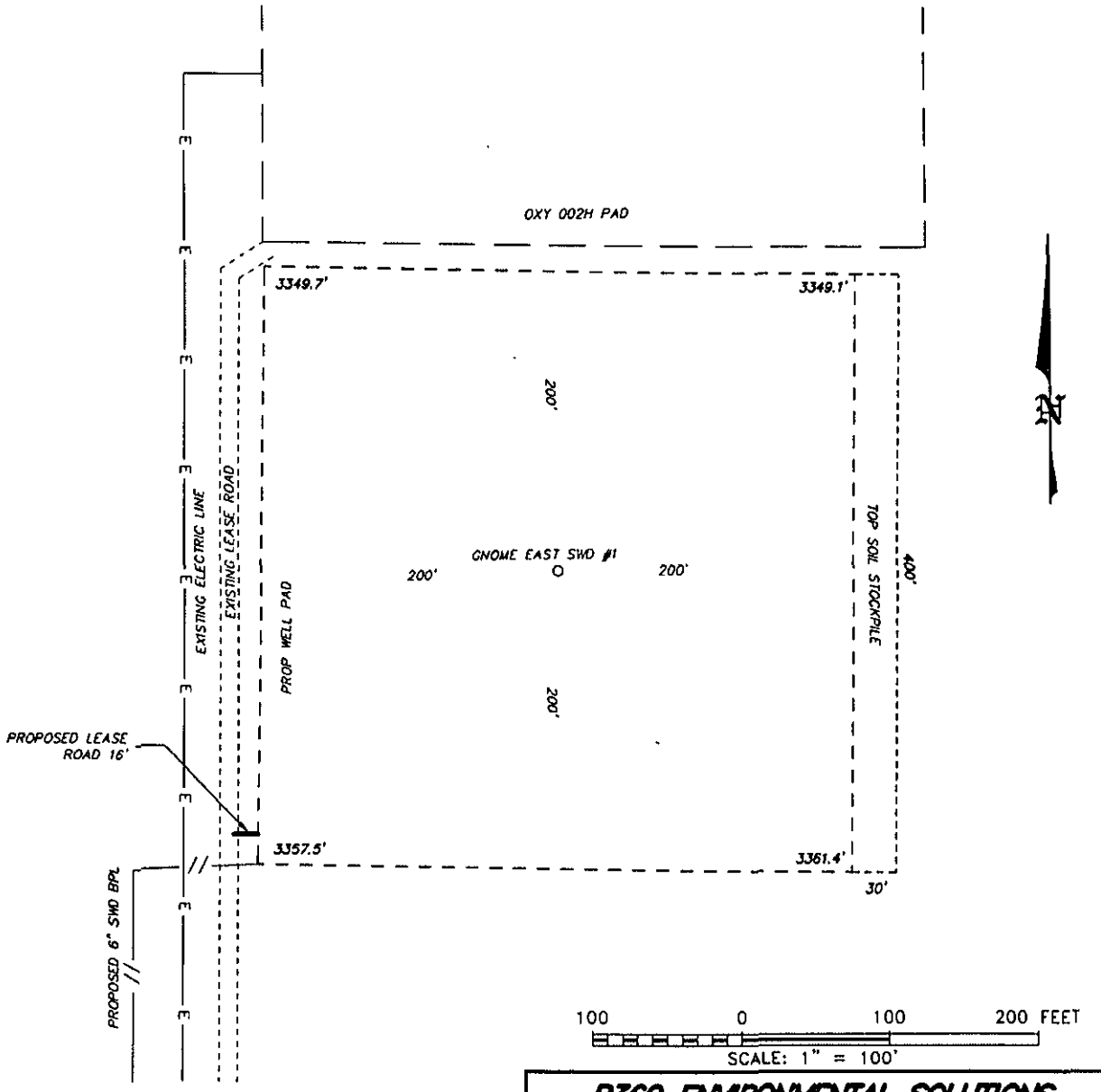
THE GNOME EAST SWD #1 LOCATED 1659' FROM THE SOUTH LINE AND 268' FROM THE WEST LINE OF SECTION 26, TOWNSHIP 23 SOUTH, RANGE 30 EAST. N.M.P.M., EDDY COUNTY, NEW MEXICO.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: 31652	Drawn By: K. NORRIS	Date: 06-10-2015	Survey Date: 06-08-2014	Sheet 1 of 1 Sheets

SECTION 26, TOWNSHIP 23 SOUTH, RANGE 30 EAST. N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



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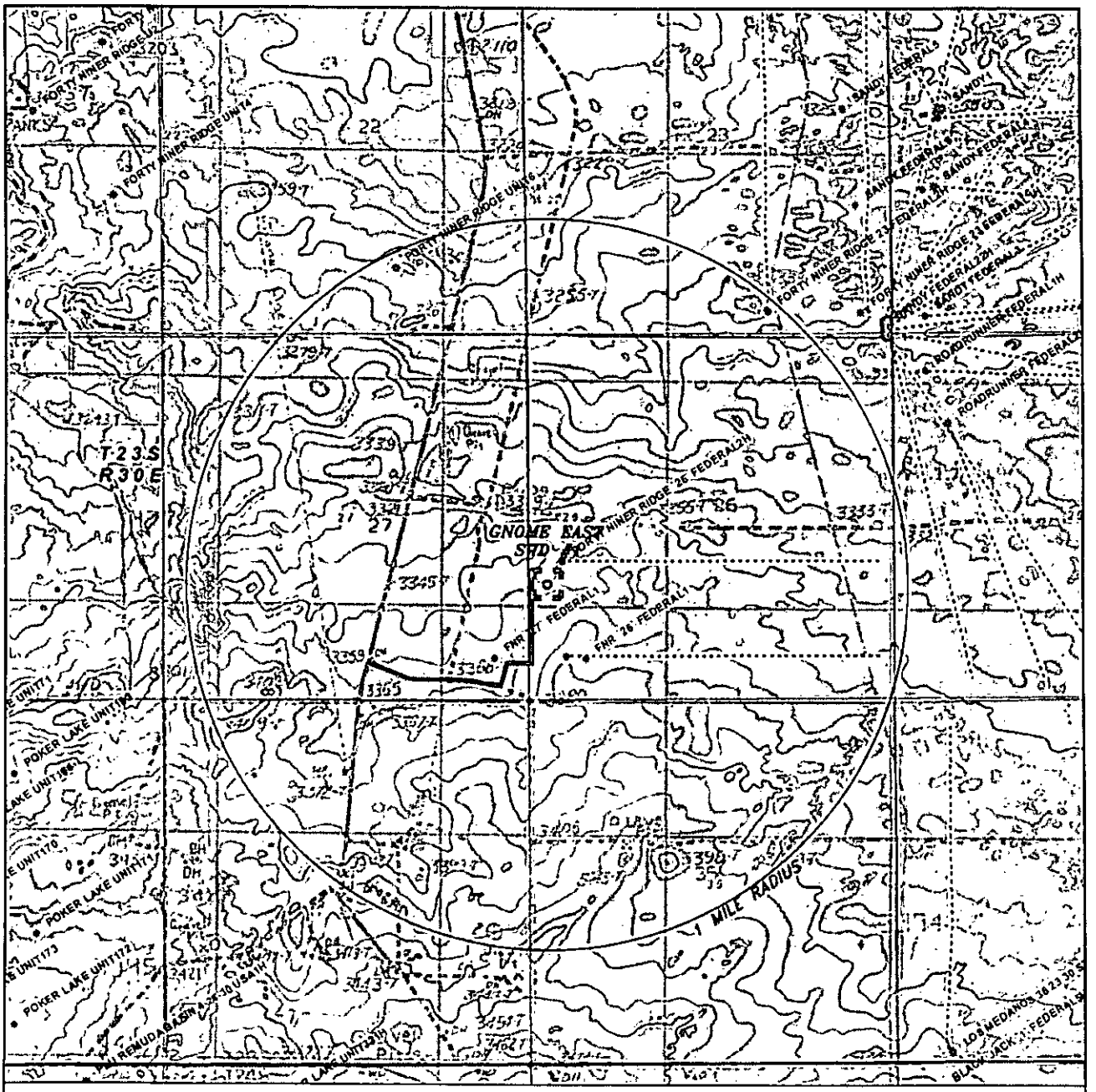

GNOME EAST SWD #1

Located 1659' FSL and 268' FWL

Section 26, Township 23 South, Range 30 East,

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0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

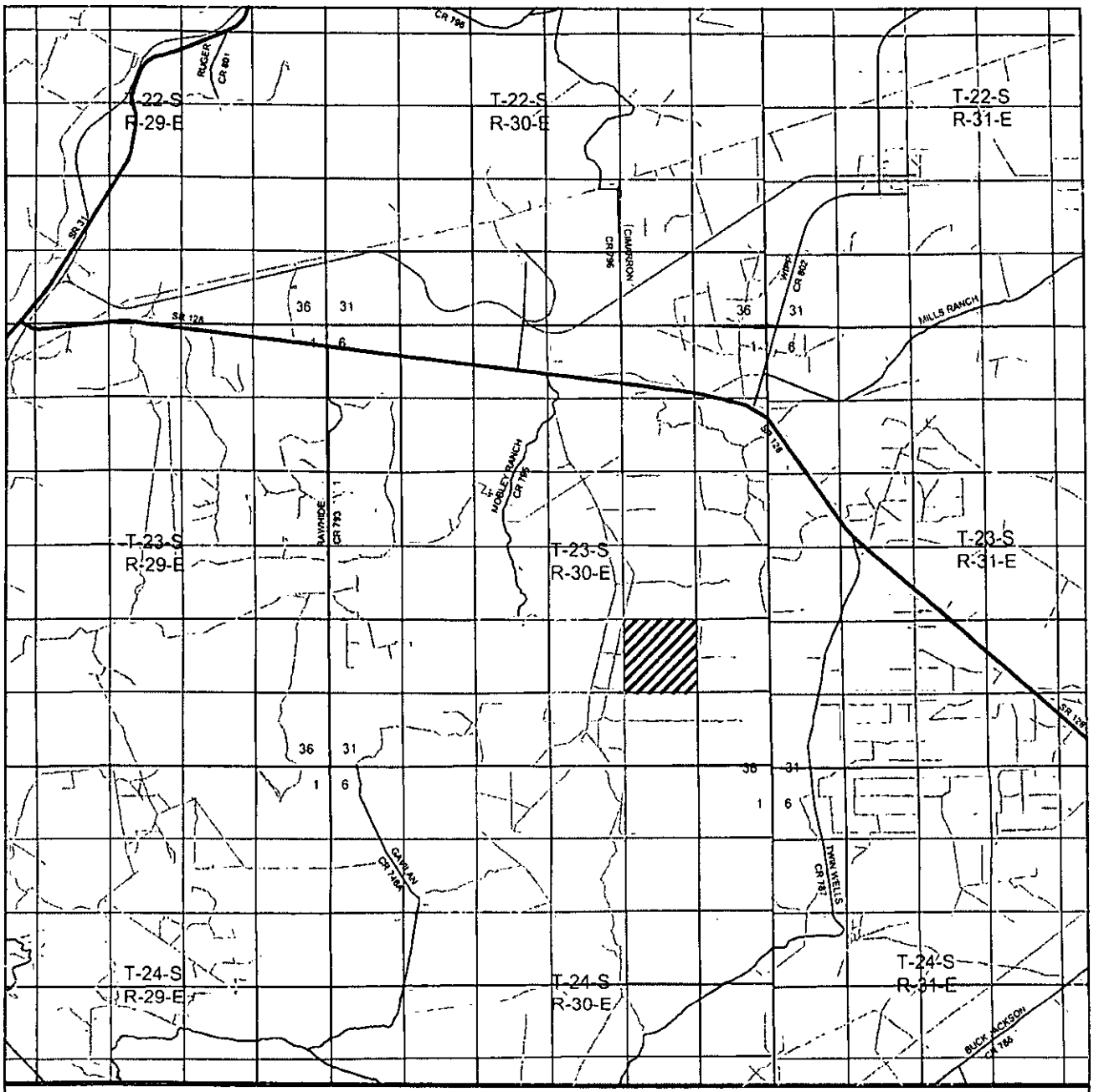
W.O. Number: KAN 31652

Survey Date: 06-08-2014

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

N

R360 ENVIRONMENTAL SOLUTIONS



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0 1 MI 2 MI 3 MI 4 MI
SCALE: 1" = 2 MILES

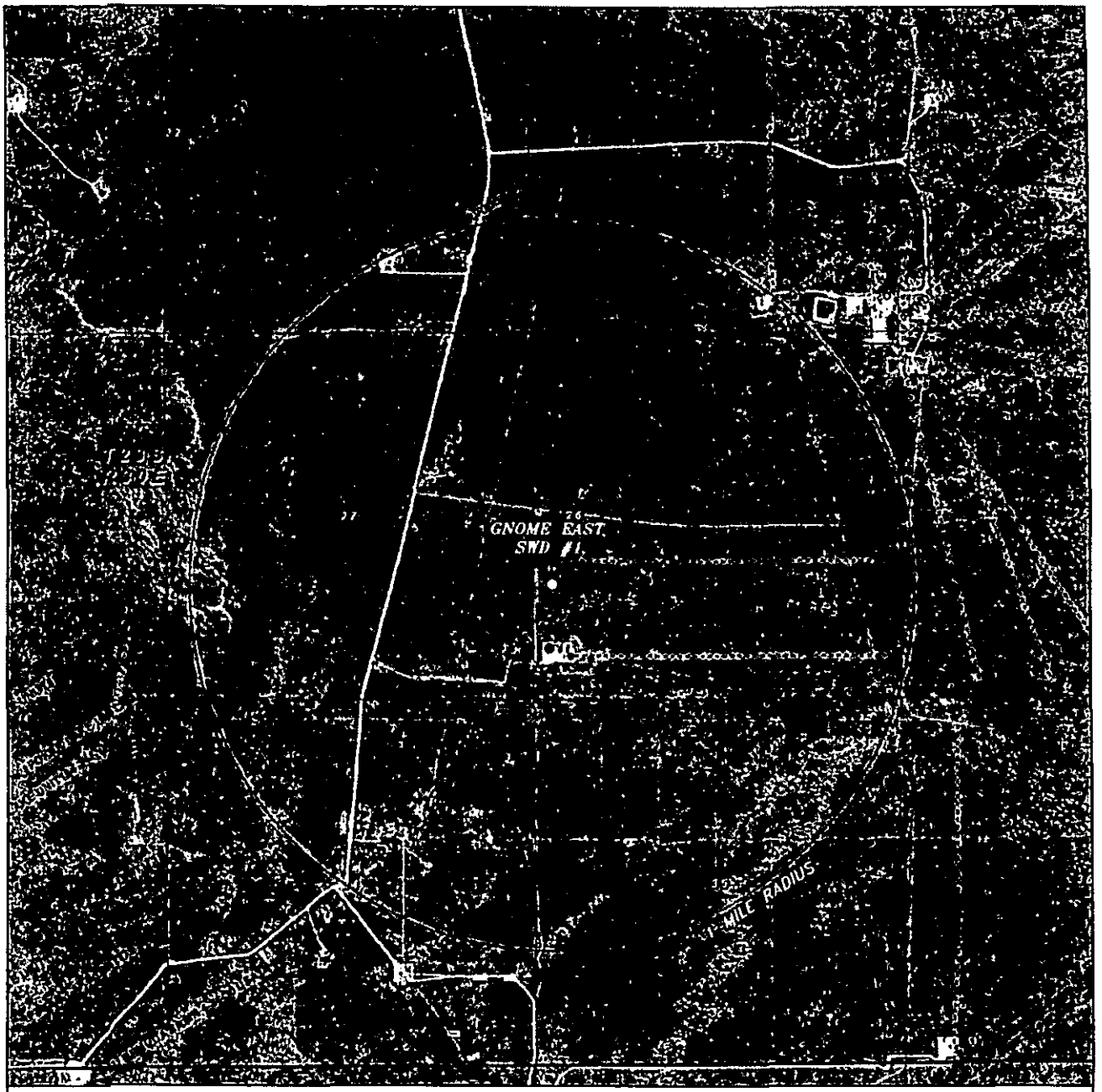
W.O. Number: KAN 31652

Survey Date: 06-08-2014

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

N

R360 ENVIRONMENTAL SOLUTIONS



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0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

W.O. Number: KAN 31652

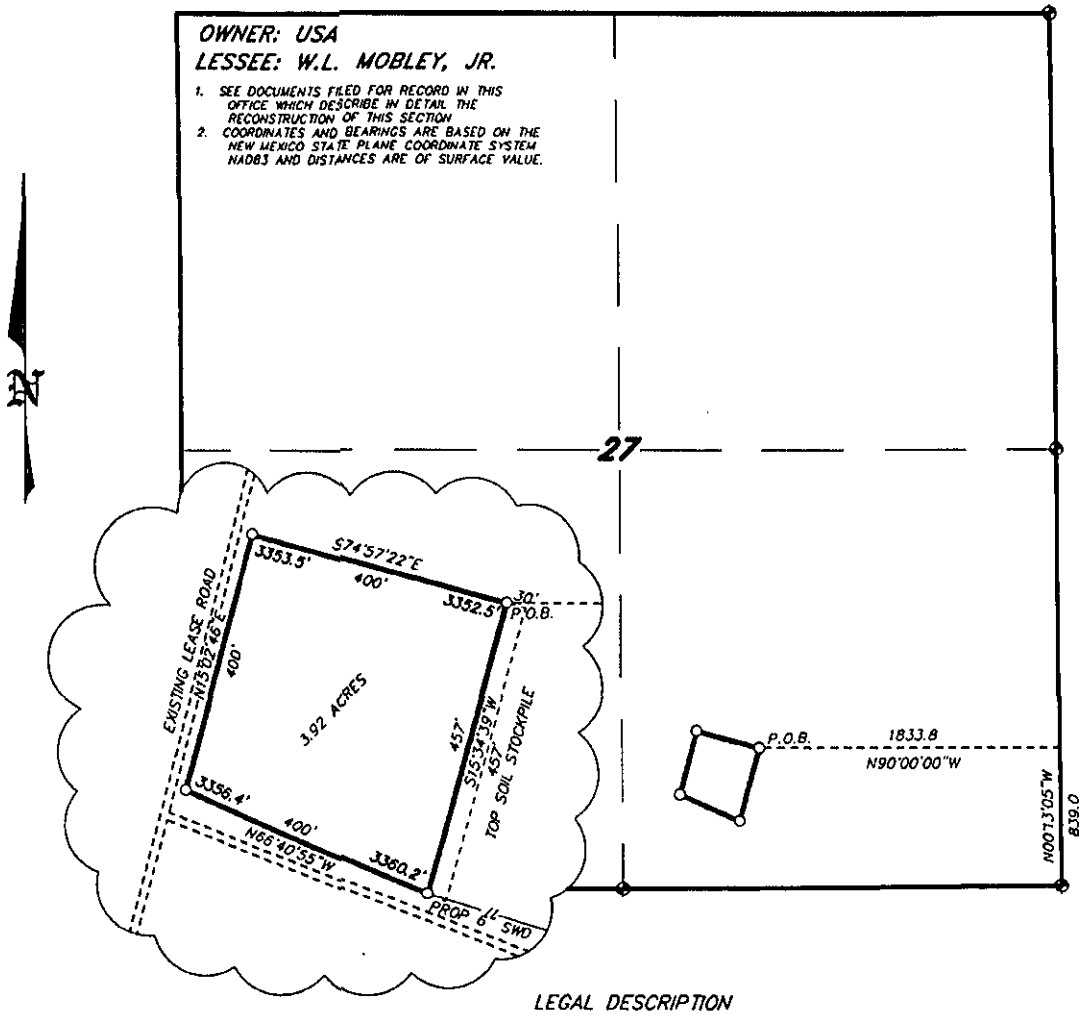
Survey Date: 06-08-2014

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

N

R360 ENVIRONMENTAL SOLUTIONS

SECTION 27, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



LEGAL DESCRIPTION

A TRACT OF LAND LOCATED IN SECTION 27, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHICH LIES N.00°13'05"W., 839.0 FEET AND N.90°00'00"W., 1833.8 FEET FROM THE SOUTHEAST CORNER OF SAID SECTION 27; THENCE S.15°34'39"W., 457.0 FEET; THENCE N.66°40'55"W., 400.0 FEET; THENCE N.15°02'46"E., 400.0 FEET; THENCE S.74°57'22"E., 400.0 FEET TO THE POINT OF BEGINNING. SAID TRACT OF LAND CONTAINING 3.92 ACRES, MORE OR LESS.

1000 0 1000 2000 FEET

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES — No. 7977
No. 5074

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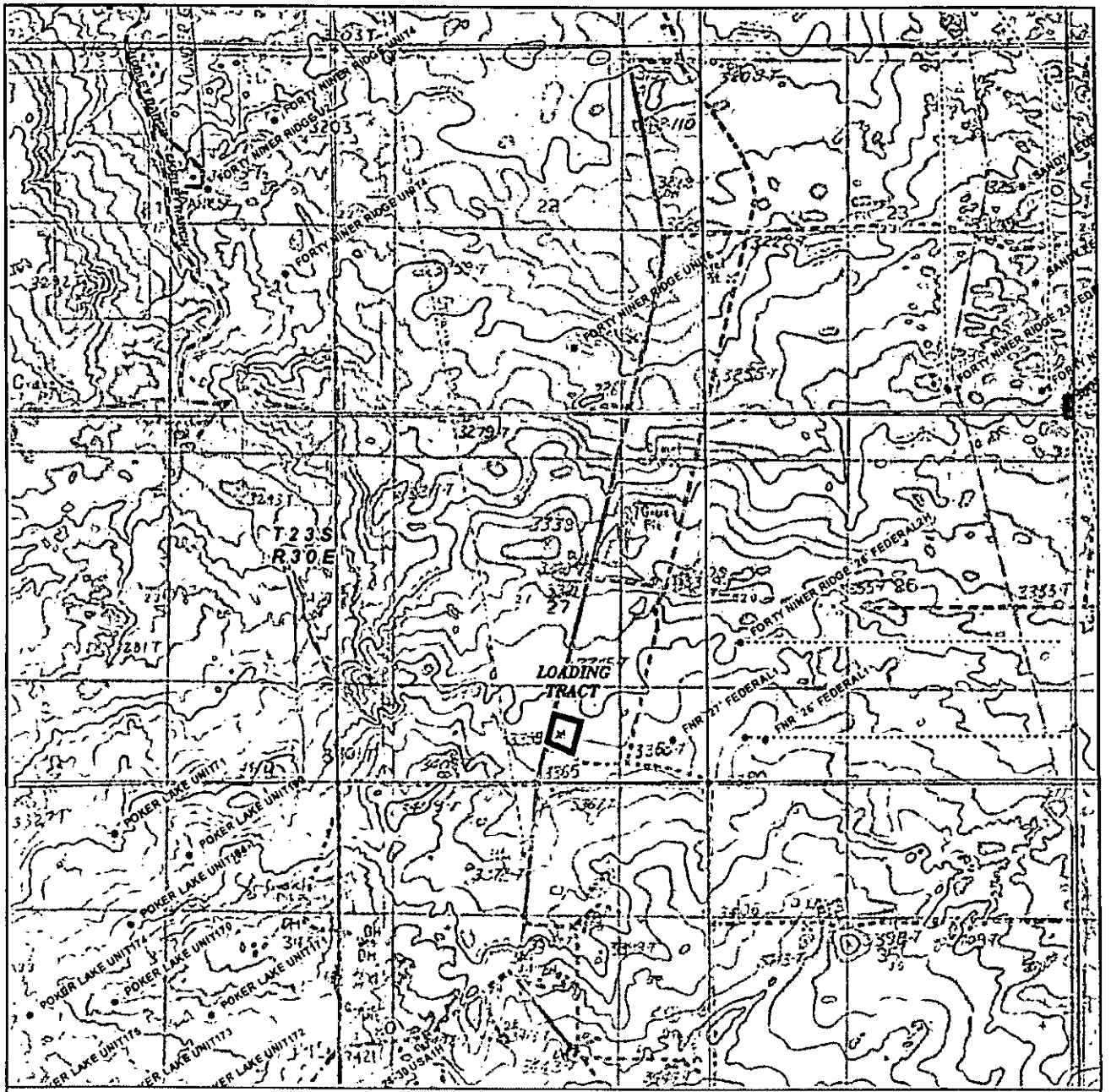
R360 ENVIRONMENTAL SOLUTIONS

REF: PROPOSED LOADING TRACT

A TRACT OF LAND LOCATED ON USA LAND IN SECTION 27, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

W.O. Number: 31652	Drawn By: K. NORRIS	Date: 06-10-2015	Survey Date: 06-08-2015	Sheet 1 of 1 Sheets



PROPOSED LOADING TRACT

Section 27, Township 23 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

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basinsurveys.com

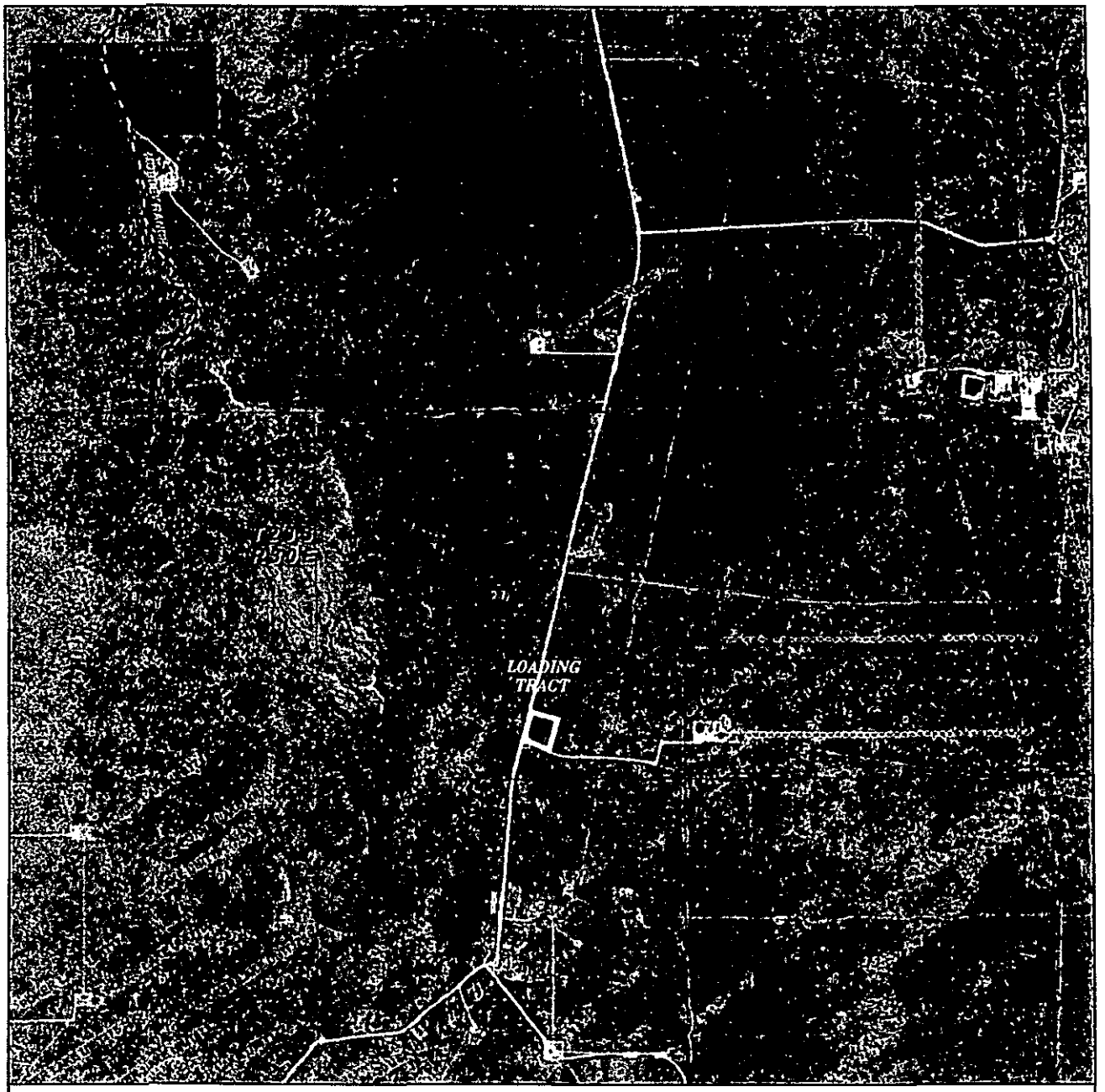
0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

W.O. Number: KAN 31652

Survey Date: 06-08-2015

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

R360 ENVIRONMENTAL SOLUTIONS



PROPOSED LOADING TRACT
Section 27, Township 23 South, Range 30 East,
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0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

W.O. Number: KAN 31652

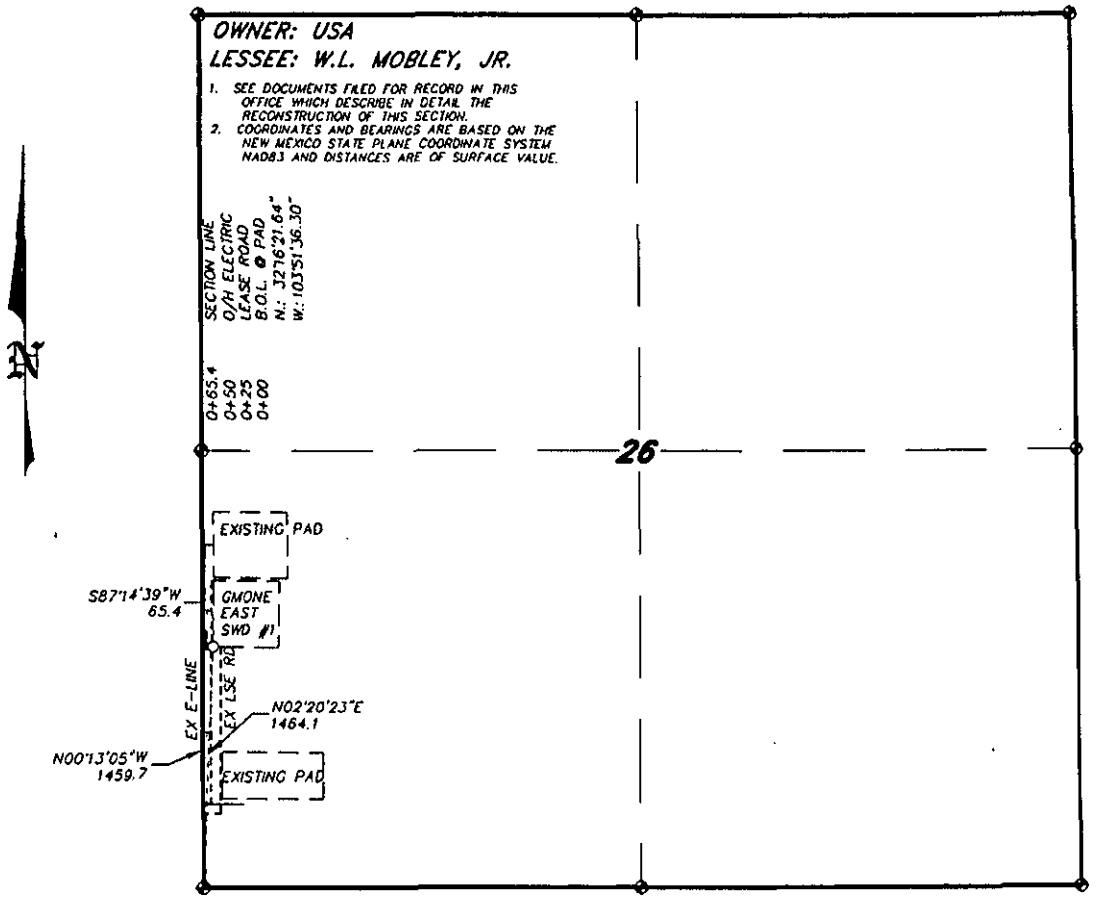
Survey Date: 06-08-2015

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

N

R360 ENVIRONMENTAL SOLUTIONS

SECTION 26, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



LEGAL DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 26, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

SECTION 26 = 65.4 FEET = 3.96 RODS = 0.01 MILES = 0.04 ACRES

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES — No. 7977
TEXAS — No. 5074

1000 0 1000 2000 FEET

R360 ENVIRONMENTAL SOLUTIONS

REF: PROPOSED 6" SWD BURIED PIPELINE TO LOADING TRACT

A PIPELINE CROSSING USA LAND IN
SECTION 26, TOWNSHIP 23 SOUTH, RANGE 30 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

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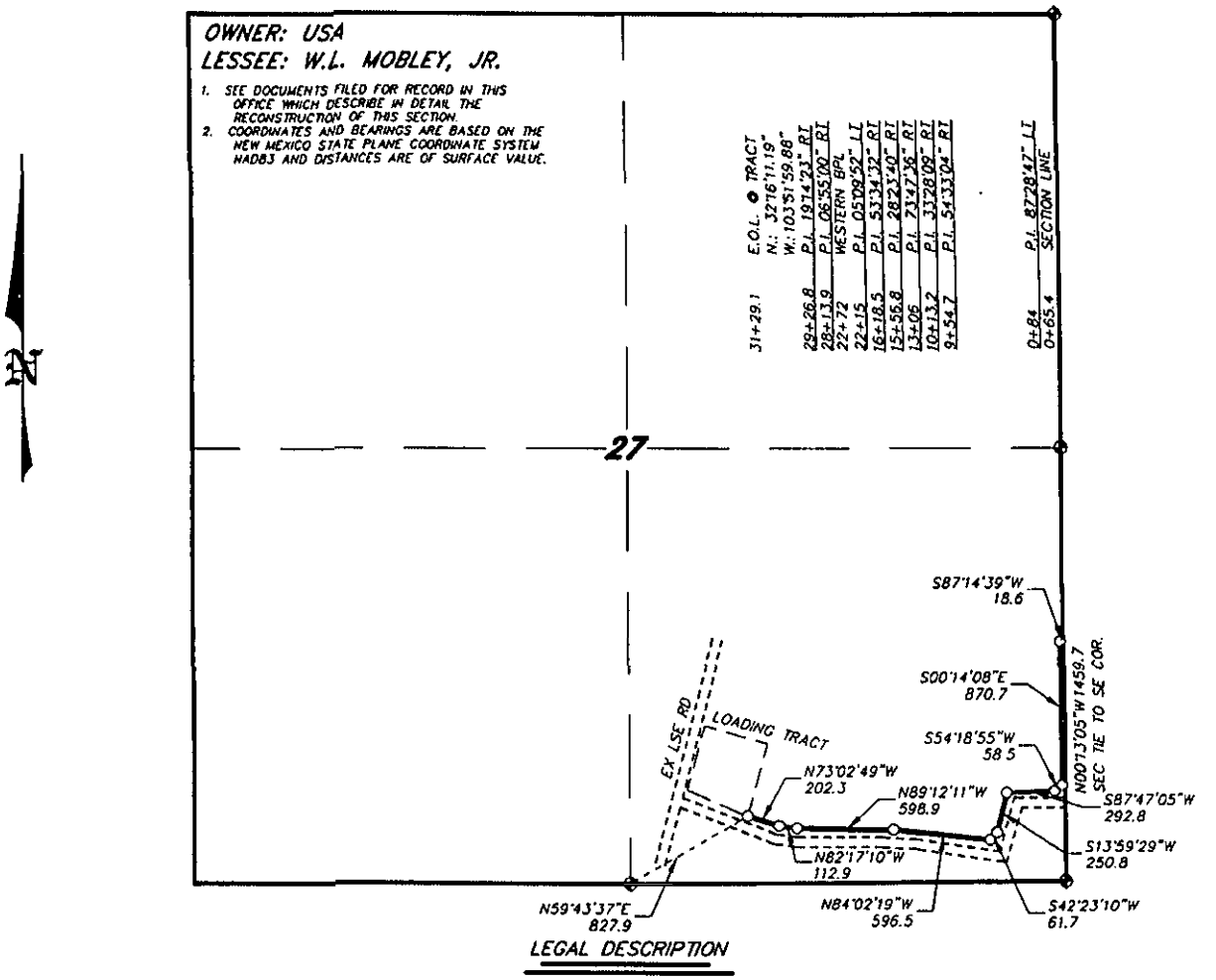
W.O. Number: 31652	Drawn By: K. NORRIS	Date: 06-10-2015	Survey Date: 06-08-2015	Sheet 1 of 2 Sheets

SECTION 27, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



LEGAL DESCRIPTION

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SECTION 27 = 3063.7 FEET = 185.68 RODS = 0.58 MILES = 2.11 ACRES

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THE STATE OF NEW MEXICO.

GARY L. JONES — No. 7977

TEXAS — No. 5074

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1000 0 1000 2000 FEET

R360 ENVIRONMENTAL SOLUTIONS

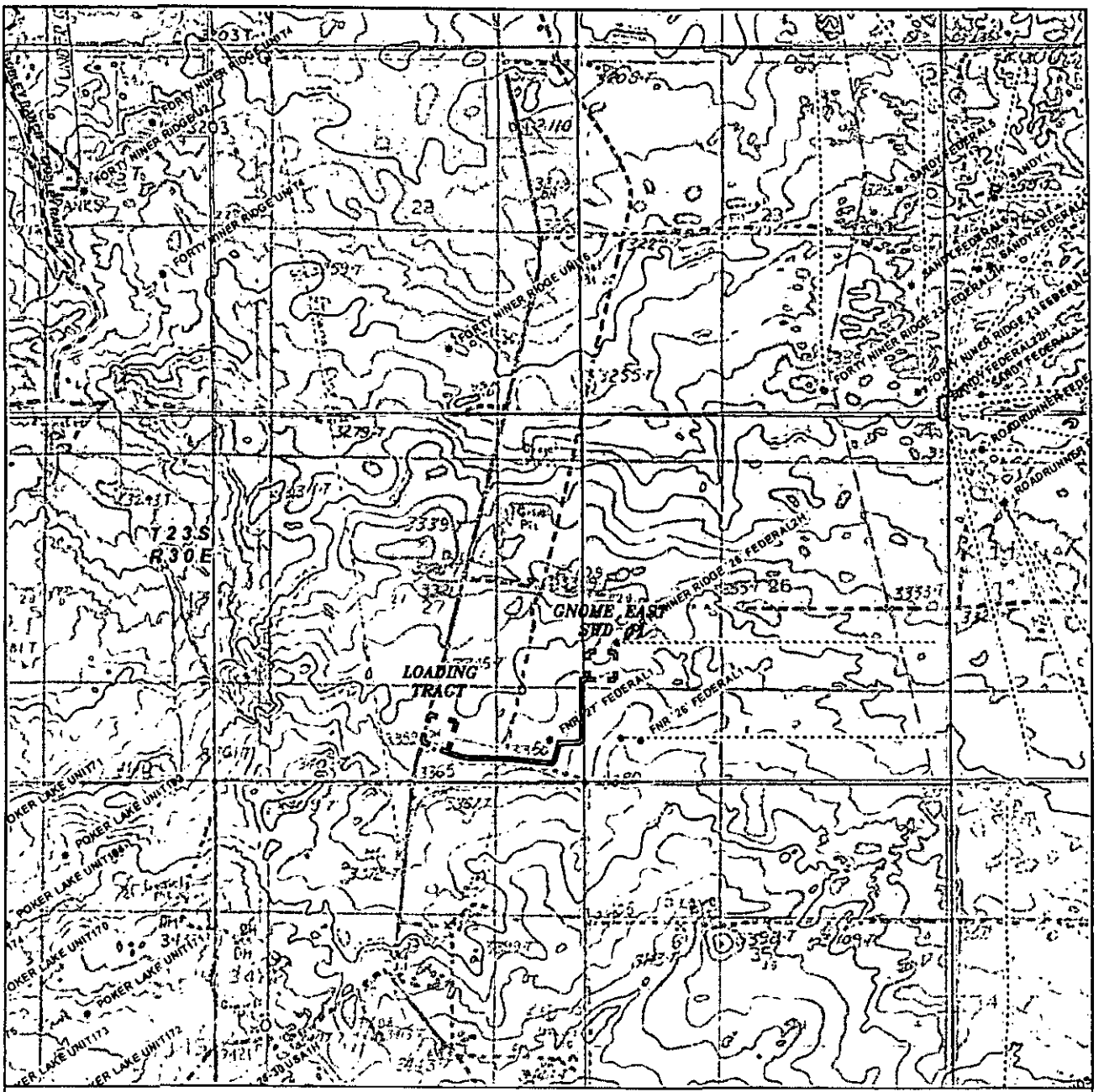
REF: PROPOSED 6" SWD BURIED PIPELINE TO LOADING TRACT

A PIPELINE CROSSING USA LAND IN

SECTION 27, TOWNSHIP 23 SOUTH, RANGE 30 EAST,

N.M.P.M., EDDY COUNTY, NEW MEXICO.

W.O. Number: 31652	Drawn By: K. NORRIS	Date: 06-10-2015	Survey Date: 06-08-2015	Sheet 2 of 2 Sheets



PROPOSED 6" SWD BURIED PIPELINE TO LOADING TRACT

Sections 26&27, Township 23 South, Range 30 East, N.M.P.M., Eddy County, New Mexico.

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0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

W.O. Number: KAN 31652

Survey Date: 06-08-2015

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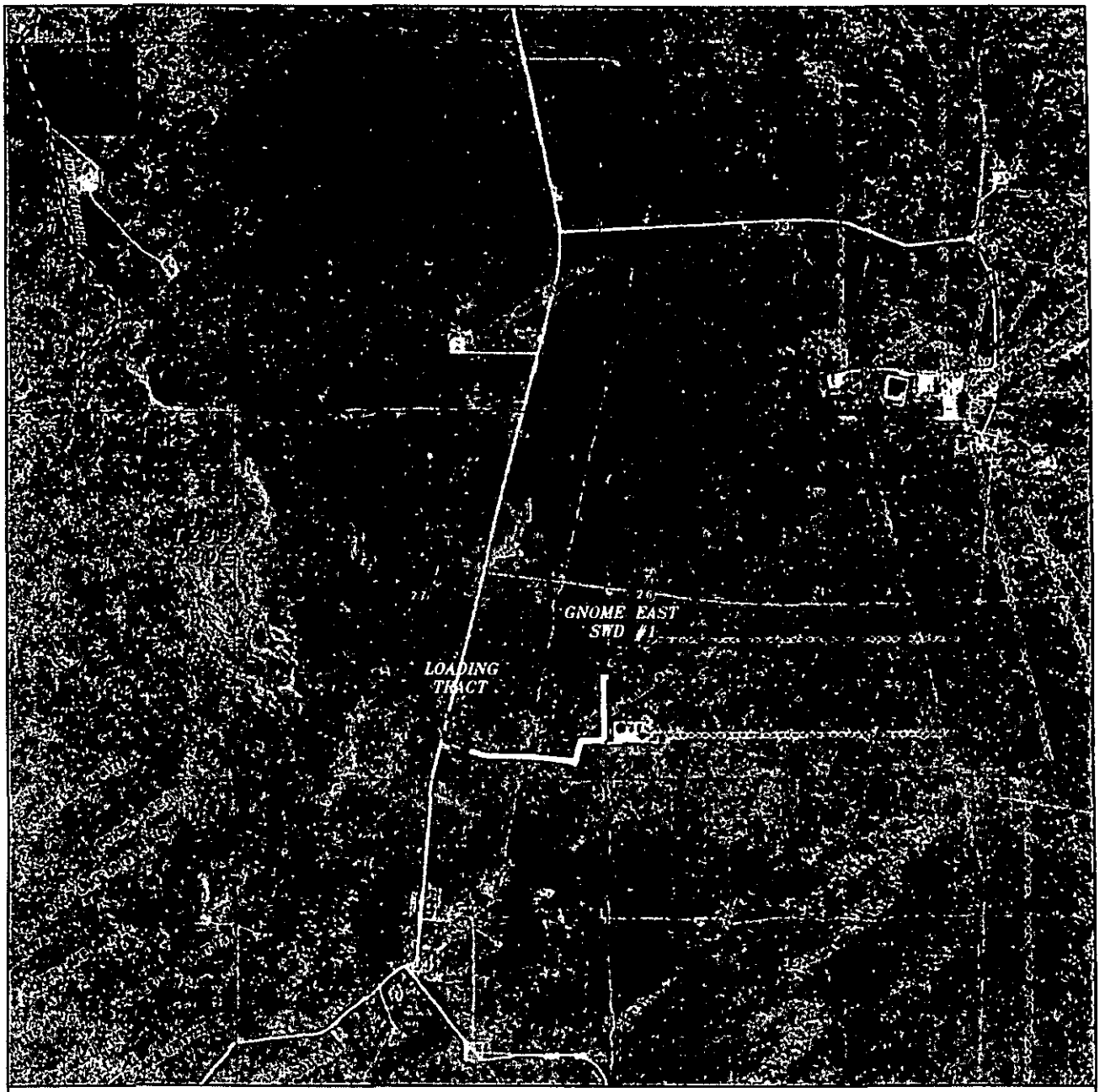
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

R360 ENVIRONMENTAL SOLUTIONS



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BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

R360
ENVIRONMENTAL
SOLUTIONS

Gnome East SWD #1 Drilling Plan

1. **Location:**

Legal:	1659' FSL 268 FWL Unit L, T 23S R 30 E Section 26: SW ¼
	Eddy County, New Mexico
GPS:	32.2732194°, -103.8594250°
O&G Lease #:	NMNM-0531277A

2. **Elevation Above Sea Level:** 3,337'

3. **Geologic Name of Surface Formation:** Alluvium

4. **Proposed Drilling Depth:** 16,550'

5. **Estimated Tops of All Geologic Formations:**

Formation	Estimated Top (feet)	Bearing
Triassic		<10' of perched water @ 40' BGS
Dewey Lake	430	
Salado	520	N/A
Tansil	N/A	N/A
Yates	N/A	N/A
Capitan	N/A	N/A
Delaware Mountain	3,830	Hydrocarbons
Bone Spring	7,660	Hydrocarbons
Wolfcamp	10,960	Hydrocarbons
Strawn	12,570	Hydrocarbons
Atoka	12,840	Hydrocarbons
Morrow	13,320	Hydrocarbons
Barnett	14,330	Hydrocarbons
Mississippian Lime	14,940	Hydrocarbons
Woodford Shale	15,340	Hydrocarbons
Devonian (Target)	15,550	N/A
Montoya		N/A
Simpson		N/A
Ellenberger		N/A

6. **Proposed Casing Program:**

Name	Hole (inches)	Size (inches)	Setting Depth (Feet)	Grade	Weight (lbs/ft)	Thread	Condition	Burst SF	Coll. SF	Ten. SF
Surface	26	20	1060	J55	106.4	LTC	New	1.2	1.125	1.6
1st Intermediate	17 ½	13 3/8	3,500	J55	68	LTC	New	1.2	1.125	1.6
2nd Intermediate	12 ¼	9 5/8	10,960	L80	53.5	LTC	New	1.2	1.125	1.6
Production	8 ½	7	0-120	HCL80	35	LTC	New	1.2	1.125	1.6
Production	8 ½	7	120-12,230	P-110	29	LTC	New	1.2	1.125	1.6
Production	8 ½	7	12,230-15,550	HCL80	35	LTC	New	1.2	1.125	1.6
Tubing	$5\frac{7}{8}$	4 ½	0-5,000	P-110	11.6	LTC	New	1.2	1.125	1.6
Tubing	$5\frac{7}{8}$	4 ½	5,000-15,550	L-80	11.6	LTC	New	1.2	1.125	1.6
Open Hole	5.875		15,550-16,550	NA	NA	NA	NA			

7. Drilling Procedure: Spud well and drill down each interval to total depth of that interval, staying in compliance with OCD/BLM rules and regulations and following this APD drilling plan. Each casing string will be cemented and cement will be circulated to surface. There are DV Tools in the casing strings to insure getting cement all the way to surface. Mud weights are spelled out below in paragraph 10 – Types and Characteristics of mud system. After reaching total casing depth of 15,550', OH Logs (Paragraph 12) will be run 15,550'-10,960' GR-CNL to surf, we will cement the 7" as spelled out in this APD. We will pick up a 5 7/8" bit to drill the injection interval for the open-hole completion; OH logs (see Paragraph 12) will be run TD-15,550'. The depths from 15,550' to 16,550' will not have a casing string, thus an "open-hole" completion. The Devonian target zone for injecting is a depleted zone considered to be under pressured and will be drilled with cut brine 8.4-8.9 PPG. The Injection tubing will be set to depth of 15,550' inside the 7". All intervals will be logged prior to running casing per BLM/OCD requirements.

8. Pressure Controls: A 10M 13-5/8" BOP system (Double Ram and Annular preventer) and 2 power chokes installed on manifold and 1 manual choke per BLM Onshore Order 2, will be installed and tested prior to drilling out the surface casing shoe. The BOP system used to drill the intermediate hole will be test per BLM Onshore Oil and Gas Order 2. A 10M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the intermediate casing shoe. The BOP system used to drill the production hole will be test per BLM Onshore Oil and Gas Order 2. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories, include a Kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP.

9. Cement Program:

Surface: Float/Landing Collar set @ 1015'. We will circulate cement to surface.

Interval	Amount (sacks)	Ft of Fill	Excess (%)	PPG	Ft^3/sx	Volume (ft^3)	Cement Type
Lead	820	700	100	13.5	1.69	1386	Class C + 2% Gel + 0.2% Antifoam + 0.125 lb/sk Polyflake
Tail	580	360	100	14.8	1.33	771	Class C + 0.125 lb/sk Polyflake

1st Intermediate: Stage 1 Float/Landing Collar set @ 1800, Stage 2 Collar set @ 1,800'. We will circulate cement to surface.

13 3/8 Contingency Cement design as follows: If hole conditions warrant and we will adjust DVT depth per circulation requirements. The current estimated setting is 1800' and cement volumes will be adjusted proportionally to maintain equivalent excess in all slurries.

Interval	Amount (sacks)	Ft of Fill	Excess (%)	PPG	Ft^3/sx	Volume (ft^3)	Cement Type
Stage 1 Lead	284	500'	100	11.9	2.45	695	Class C + 2% Sodium Metasilicate + 0.1% Dispersant + 0.2% Antifoam + 0.2% Retarder
Stage 1 Tail	652	600'	100	14.8	1.33	868	Class C + 0.125 lbs/sk Polyflake
Stage 2 Lead	804	1550'	100	11.9	2.45	1969	Class C + 2% Sodium Metasilicate + 0.1% Dispersant + 0.2% Antifoam
Stage 2 Tail	259	250'	100	14.8	1.34	348	Class C + 1% Calcium Chloride + 0.125 lbs/sk Polyflake

2nd Intermediate: Stage 1 Float/Landing Collar set @ 10,915', Stage 2 Collar set @ 3830'

9 5/8 Contingency Cement design as follows: If hole conditions warrant and we will adjust ECP/DVT depth per circulation requirements. The current estimated setting is 3830' and cement volumes will be adjusted proportionally to maintain equivalent excess in all slurries.

Interval	Amount (sacks)	Ft of Fill	Excess (%)	PPG	Ft^3/sx	Volume (ft^3)	Cement Type
Stage 1 Lead	513	2700	50	11	2.47	695	TXI + 2% Sodium Metasilicate + 0.2 % Dispersant + 0.2% Antifoam + 0.4% Retarder
Stage 1 Tail	237	600	50	14.8	1.33	868	Class C + 0.3% Retarder + 0.2% Antifoam
Stage 2 Lead	1252	7360	50	11.9	2.45	1969	Class C + 2% Sodium Metasilicate + 0.2 % Dispersant + 0.2% Antifoam + 0.4% Retarder
Stage 2 Tail	106	300	50	14.8	1.34	141	Class C + 1% Calcium Chloride + 0.125 lbs/sk Polyflake

Production: Stage 1 Float/Landing Collar set @ 15,505', Stage 2 Collar set @ 10,600', Stage 3 Collar set @ 7660'. We will circulate cement to surface.

7" Contingency Cement design as follows: If hole conditions warrant and we will adjust ECP/DVT depth per circulation requirements. The current estimated setting is 7660' and 10,600' cement volumes will be adjusted proportionally to maintain equivalent excess in all slurries.

Interval	Amount (sacks)	Ft of Fill	Excess (%)	PPG	Ft^3/sx	Volume (ft^3)	Cement Type
Stage 1	653	4450	50	13.5	1.29	842	TXI + 1.5 gal/sk GASBLOK +0.08 gal/sk D80 Dispersant + 0.04 gal/sk D801 Retarder + 0.05 gal/sk D175A Antifoam + 2% D176 Expanding Agent
Lead							
Stage 1 Tail	141	600	50	16.4	1.09	130	Class H + 0.4% D167 Fluid loss + 0.3% D800 Retarder + 2% D176 Expanding agent
Stage 2 Lead	305	4834	25	11.5	2.39	728	TXI + 10% D154 Extender + 0.6% D112 Fluid loass + 0.1% D208 Viscosifier + 3% D174 Expanding Agent + 4 lbs/sk Mica + 0.2% D65 Dispersant
Stage 2 Tail	100	500	25	16.4	1.09	109	Class H + 0.4% D167 Fluid loss + 0.3% D800 Retarder + 2% D176 Expanding agent
Stage 3 Lead	312	4590	25	11.5	2.16	674	TXI + 1.5% D79 Sodium Metasilicate + 5% D154 Extender + 1% D112 Fluid Loss + 0.2% D65 Dispersant + 0.2% D46 Antifoam
Stage 3 Tail	65	586	25	14.8	1.34	84	Class C + 0.3% D167 Fluid loss + 0.2% D13 Retarder + 0.2% D65 Dispersant

The contingency ECP/DVT tool setting depth may change and cement will be adjusted accordingly.

10. Type and Characteristics of Mud System:

Depth MD/TVD (ft)	Mud Type	Mud Density (ppg)	Viscosity (sec/1000cc)	Plastic Viscosity (cP)	Yield Point ($lb/100ft^2$)	API Fluid Loss (cc)	pH	LGS %
120 – 450	New Gel/Soda Spud Mud	8.8 – 9.2	60 – 70	12 – 28	12 – 34	20	+/-9.0	<6
450 – 2,900	Brine Water	10.0 – 10.1	29 – 30	0 – 1	0 – 1	NC	9.5 – 10.0	<6
2,900 – 7660	Existing Brine to New Zan D/White Starch/ Barite	10.0 -10.1	29 – 30	0 – 1	0 – 1	NC	9.5 – 10.0	<6
7660 – 15,550		10.1 – 11.5	36 – 44	6 – 14	12 – 18	10 – 12	9.5 – 10.0	<6
15,550' 16,550	Cut brine	8.4 - 8.9	28 - 30	0 - 1	0 - 1	NC	9. – 9.5	<6

Our goal for all DVT and ECP is to run with full intentions of running the 2 stage job. This will help insure good tail cement and help insure cement to surface.

11. **Air Drilling Description:** Not applicable.

12. **Testing, Coring, and Logging Procedures:**
    A. Mud logging program: 2 man unit from 2,900' (setting depth of salt string) to TD.
    B. Electric logging program: open hole logs CNL / LDT / CAL / GR, DLL / SGR (CNL/GR from base of intermediate casing to surface) from 15,550 to Intermediate casing and TD-15,550
    Cased Hole Logs
    CBL w/ CCL from base of Intermediate casing to surface (if cement is not circulated to surface)
    CBL w/ CCL from production casing DV tool at 8,000' to 3,000' (estimated top of cement at 4,000')
    C. No DST's or cores are planned
    D. Sonic log: not required but available if needed

13. **Expected Bottom Hole Pressure and Temperature:** 6,440 psi , 170° F.

14. **Abnormal Conditions:** None expected.

15. **H_2S Plan:** Breathing equipment will be available on location. If H_2S is encountered the operator will comply with the Onshore Oil and Gas Order No. 6. The H_2S measured amounts and formation will be reported to the BLM. Please see the attached H_2S Plan and the H_2S awareness map.

16. **Directional or Horizontal Survey:** The well is neither directional nor horizontal.

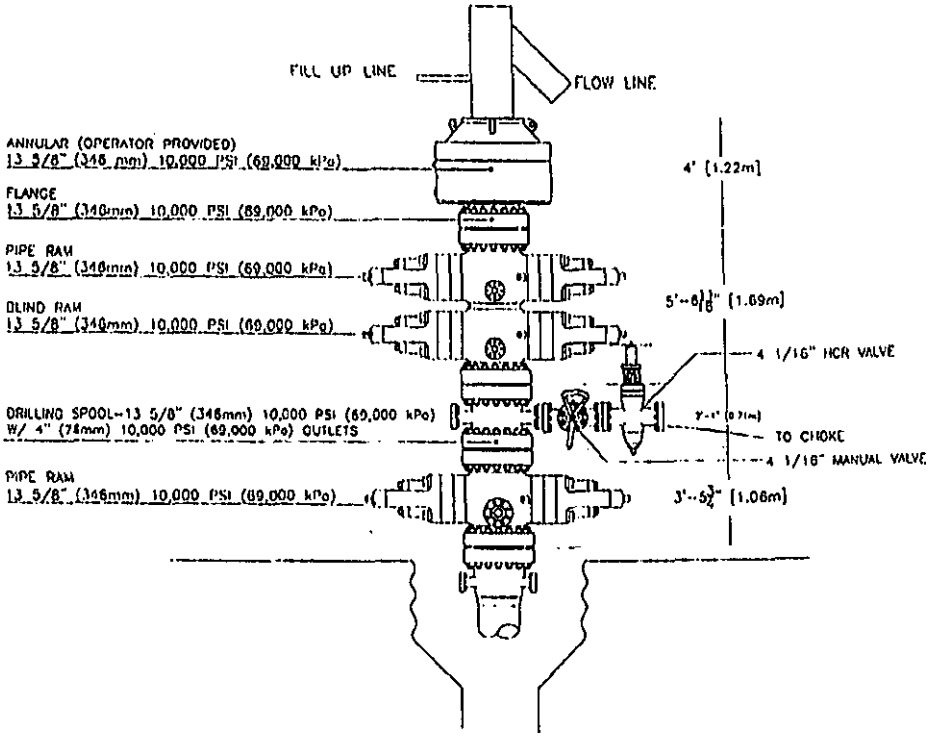
17. **Unit Well Current Unit POD:** The well is not in a unit or current unit POD.

18. **Work Schedule:** To be determined.

19. **Completion plans:** MIRU well service unit. PU 2 7/8" PH-6 work string. TIH, release retrievable bridge plug and pull out of hole. Pick up treating packer. TIH to 15,500' and set. Test back side to 1000 psi. Acidize down tubing with five stages – 8000 gallons 15% HCL each stage followed by 1500 lbs of rock salt each stage. Release packer and pull out of hole. Trip in hole with tubing with notched collar. Circulate clean to TD. Pull out of the hole and pick up 7" Arrow Set 1X packer. Trip in the hole to 15,500'. Set blanking plug and on/off tool. Release packer and pull out of hole, laying down 2 7/8" work string. Pick up 4 ½" lined injection tubing. Trip in hole and get on on/off tool. Release packer. Space out. Reset packer. Release on/off tool again. Circulate packer fluid. Get back on on/off tool. Nipple down BOP and nipple up well head. Schedule and perform MIT on tubing casing annulus per OCD and BLM guidelines. Turn well over to R360 for plumbing up surface facilities.

BOP LAYOUT

RIG 000



NOTE: CASING BOWL SET AT MATTING LEVEL AND ½" ALLOWANCE FOR RING GASKET GAP.

STACK COMPONENTS REPRESENTED ARE SUBJECT TO AVAILABILITY, PLEASE CONFIRM WITH WELL CONTROL DEPARTMENT MANAGER.

EQUIPMENT REPRESENTATION ONLY
NOT DRAWN TO SCALE

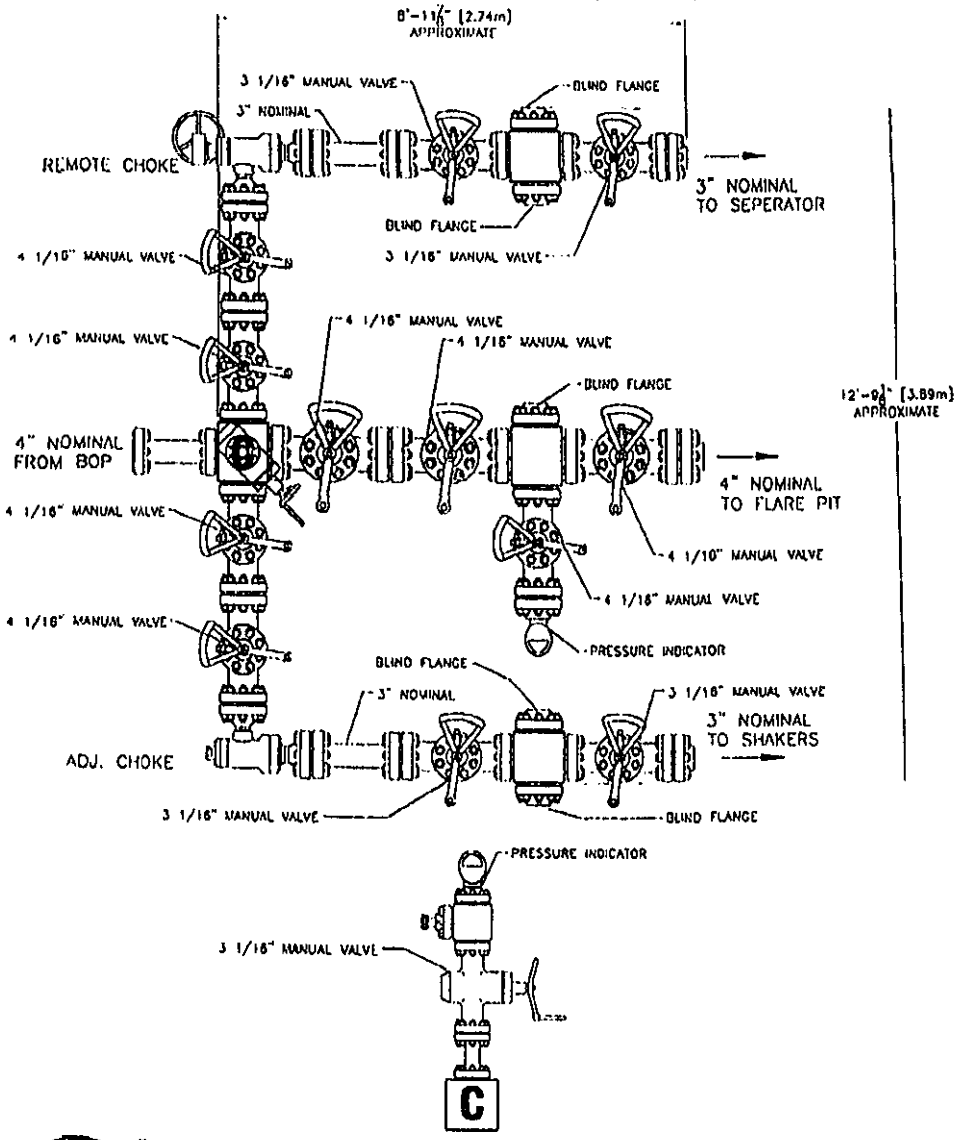
PRECISION DRILLING

DATE: 2014/02/26
DWG No.: BOP-000-008
DWG BY : BV

MANIFOLD LAYOUT

CO# 422

4 1/16" (103mm) x 3 1/16" (78mm) x 3 1/16" (78mm)10,000 PSI (69,000 kPa) SINGLE LINE



EQUIPMENT REPRESENTATION ONLY
NOT DRAWN TO SCALE

PRECISION DRILLING

DATE: 2011/09/08
DWG No.: 802-422-57
DRG BY : BM

R360 Environmental Solutions Inc.

Gnome East SWD #1

H_2S Plan

1. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

A. The hazards and characteristics of hydrogen sulfide (H_2S).
B. The proper use and maintenance of personal protective equipment and life support systems.
C. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds,
D. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

A. The effects of H_2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
B. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
C. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

2. H_2S Safety Equipment and Systems

All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

A. Well Control Equipment:
- Flare line.
- Choke manifold with remotely operated choke.
- Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
- Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

B. Protective equipment for essential personnel:
- Mark II Surviveair 30-minute units located in the dog house and at briefing areas.

C. H_2S detection and monitoring equipment:

- (2) Portable H_2S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels of 20 ppm are reached.

D. Visual warning systems:

- Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See attached example.

E. Mud Program:

- The mud program has been designed to minimize the volume of H_2S circulated to the surface.

F. Metallurgy:

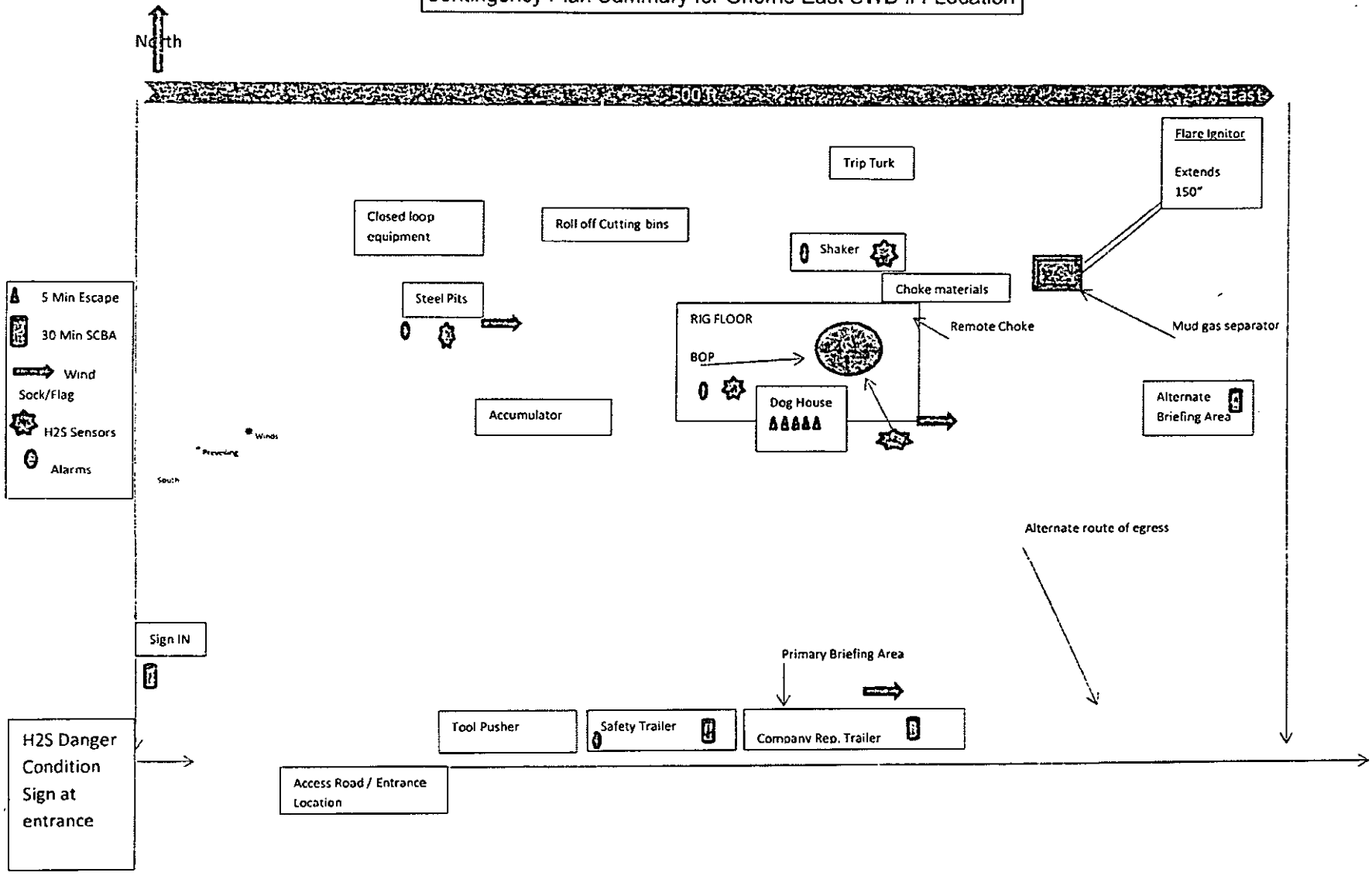
- All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.

G. Communication:

- Company vehicles equipped with cellular telephone.

R360 Permian Basin LLC has conducted a review to determine if an H_2S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H_2S concentrations of wells in this area from surface to TD are low enough; therefore, we do not believe that an H_2S contingency plan is necessary.

Contingency Plan Summary for Gnome East SWD #1 Location



WARNING

YOU ARE ENTERING AN H_2S AREA
AUTHORIZED PERSONNEL ONLY

1. BEARDS OR CONTACT LENSES NOT ALLOWED
2. HARD HATS REQUIRED
3. SMOKING IN DESIGNATED AREAS ONLY
4. BE WIND CONSCIOUS AT ALL TIMES
5. CHECK IN WITH R360 FOREMAN AT MAIN OFFICE

R360 PERMIAN BASIN

1-832-442-2200

R360 Environmental Solutions Inc.

Gnome East SWD #1

Surface Use Plan

1. Existing & Proposed Access Roads

   A. The well site survey and elevation plat for the proposed well is attached with this application. It was staked by Basin Surveys, Hobbs, New Mexico.

   B. All roads to the location are shown in the Vicinity Map. The existing lease roads are illustrated and are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling the well will be done where necessary.

   C. Directions to location: From Highway NM 31 and NM 128E continue on NM 128E for 7.6 miles, Turn right on Mobley Ranch road 0.6 miles, continue straight for 1.6 miles, slight left for 2 miles location is on the left.

   D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease. Roads will be maintained according to specifications in Section 2A of this Surface Use Plan.

2. Proposed Access Road:

No access roads are planned to be constructed. If any road is required it will be constructed as follows:

   A. The maximum width of the running surface will be 30'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

   B. The average grade will be less than 2%.

   C. Turnouts will be intervisible with interval spacing distance less than 1000 feet..

   D. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary.

   E. Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be hauled from the nearest BLM approved caliche pit.

3. Location of Existing Well:

The One-Mile Radius Map shows existing wells within a one-mile radius of surface hole location and the bottom hole location.

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

A. An SWD facility will be constructed on private land owned by R360 Permian Basin LLC as shown in the figure attachments.

B. The facility will be installed according to API specifications.

C. Any additional caliche will be obtained from the actual well site. If caliche does not exist or is not plentiful from the well site, the caliche will be hauled from a BLM approved caliche pit. Any additional construction materials will be purchased from contractors.

D. It will be necessary to run electric power if this well is productive. Power will be provided by local energy company and they will submit a separate plan and ROW for service to the well location.

E. Rehabilitation plans will include the following:

- The original topsoil from the well site will be returned to the location, and the site will be re-contoured as close as possible to the original site.

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

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling plan. The water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access road. If a commercial fresh water source is nearby, fast line may be laid along existing road ROW's and fresh water pumped to the well. No water well will be drilled on the location.

6. **Source of Construction Materials :**

Obtaining caliche: Caliche will be obtained from the existing caliche pit at R360 Halfway Facility or from a BLM approved Caliche plt.

7. **Methods of Handling Water Disposal:**

A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site.

B. Drilling fluids will be contained in steel mud pits.

C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility.

D. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill. No toxic waste or hazardous chemicals will be produced by this operation.

E. Human waste and grey water will be properly contained and disposed of. Proper disposal and elimination of waste and grey water may include but are not limited to portable septic systems and/or portable waste gathering systems (i.e. portable toilets). Human waste and grey water will be disposed at an approved facility.

F. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days.

8. **Ancillary Facilities:**

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

9. **Well Site Layout:**

A. The drill pad layout, with elevations staked by Basin Surveys, is shown in the Elevation Plat.

B. The Closed-Loop exhibit shows the proposed orientation of closed loop system and access road. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

10. **Plans for Restoration of the Surface:**

A. Interim reclamation will take place after the well has been completed. The pad will be downsized by reclaiming the areas not needed for production operations. The portions of the pad that are not needed for production operations will be re-contoured to its original state as much as possible. The caliche that is removed will be reused to either build another pad site or for road repairs within the lease. The stockpiled topsoil will then be spread out reclaimed area and reseeded with a BLM approved seed mixture. In the event that the well must be worked over or maintained, it may be necessary to drive, park, and/or operate machinery on reclaimed land. This area will be repaired or reclaimed after work is complete.

B. Final Reclamation: Upon plugging and abandoning the well all caliche for well pad and lease road will be removed and surface will be recountoured to reflect its surroundings as much as possible. Caliche will be recycled for road repair or reused for another well pad within the lease. If any topsoil remains, it will be spread out and the area will be reseeded with a BLM approved mixture and re-vegetated as per BLM orders.

11. **Surface Ownership:**

A. The surface is owned by the U.S. Government and is administered by the Bureau of Land Management. The surface is multiple uses with the primary uses of the region for grazing of livestock and the production of oil and gas.

B. The proposed road routes and surface location will be restored as directed by the BLM.

12. **Other Information:**

A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.

B. There is no permanent or live water in the immediate area.

C. There are no dwellings within 2 miles of this location.

13. **Bond Coverage:**

Bond Coverage is Statewide Bonds # NMB929591818