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) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
August 1, 2011

Permit 331529

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

1. Operator Name and Address	2. OGRID Number
SPC RESOURCES, LLC P.O. Box 1020 Artesia, NM 88211	372262
	3. API Number 30-015-53285

4. Property Code	5. Property Name	6. Well No.
330286	Caveman	402H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
H	7	22S	27E		2420	N	188	E	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
E	12	22S	26E	E	1650	N	100	W	Eddy

9. Pool Information

PURPLE SAGE;WOLFCAMP (GAS)	98220

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
New Well	GAS		Private	3102
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	19220	Wolfcamp		3/1/2023
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ **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
Surf	17.5	13.375	54.5	425	430	0
Int1	12.25	9.625	40	2800	815	0
Prod	8.5	5.5	20	19220	2650	0

Casing/Cement Program: Additional Comments

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	3500	Hydril
Double Ram	10000	5000	Hydril

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.** Signature:		**OIL CONSERVATION DIVISION**	
Printed Name:	Electronically filed by Lelan J Anders	Approved By:	Katherine Pickford
Title:	Vice President of Operations	Title:	Geoscientist
Email Address:	landers@santopetroleum.com	Approved Date:	1/17/2023 Expiration Date: 1/17/2025
Date:	1/4/2023 Phone: 713-600-7502	Conditions of Approval Attached	

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

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

Form C-102
Revised August 4, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-~~47629~~ 53285	98220	PURPLE SAGE WOLFCAMP GAS POOL

Property Code	Property Name	Well Number
~~329783~~ 330286	CAVEMAN	402H

OGRID No.	Operator Name	Elevation
372262	SPC RESOURCES, LLC	3102'

Surface Location

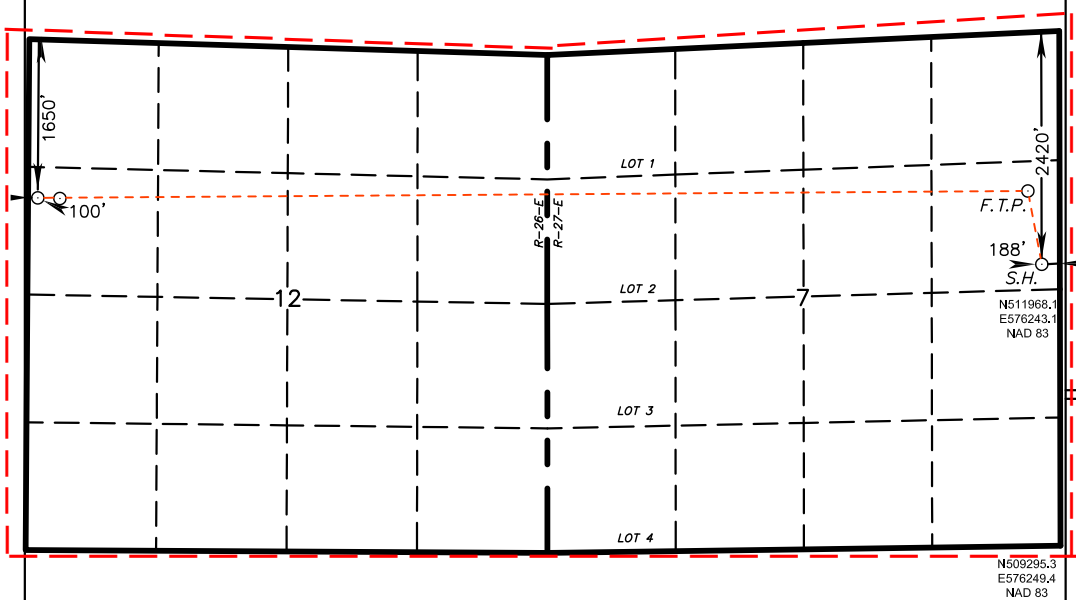
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
H	7	22 S	27 E		2420	NORTH	188	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
E	12	22 S	26 E		1650	NORTH	100	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
1267.10			

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



BOTTOM HOLE LOCATION
Lat – N 32.410061
Long – W 104.254726
NMSPCE– N 512920.2
E 565595.8
(NAD-83)

LAST TAKE POINT
1650 FNL & 330 FWL
Lat – N 32.410039
Long – W 104.253981
NMSPCE– N 512912.4
E 565826.0
(NAD-83)

FIRST TAKE POINT
1650 FNL & 330 FEL
Lat – N 32.410231
Long – W 104.221300
NMSPCE– N 512991.2
E 575910.6
(NAD-83)

SURFACE LOCATION
Lat – N 32.408132
Long – W 104.220836
NMSPCE– N 512227.9
E 576054.9
(NAD-83)

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.

1/2/2023
Signature Date

Lelan J Anders
Printed Name

LAnders@SantoPetroleum.com
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.

FEBRUARY 30, 2021
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

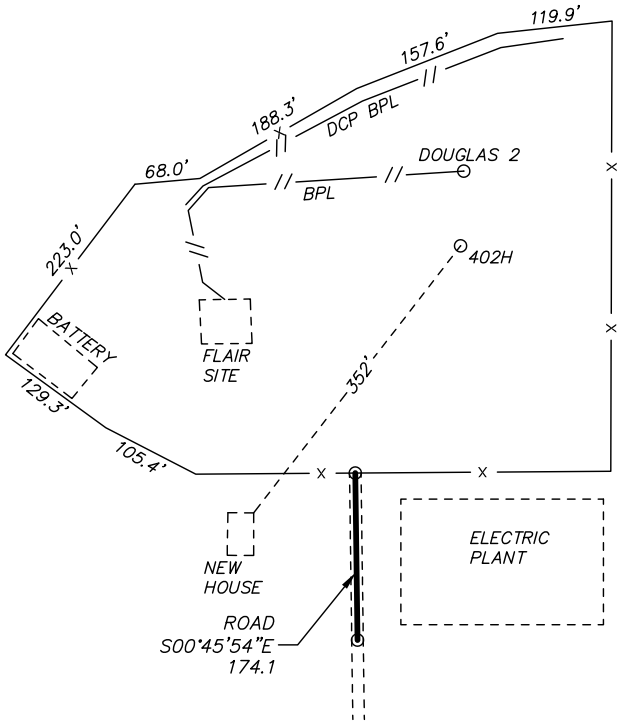
Certificate No. Gary L. Jones 7977
BASIN SURVEYS

0' 1000' 2000' 3000' 4000' N
SCALE: 1" = 2000'
WO Num.: 34729

SECTION 7, TOWNSHIP 22 SOUTH, RANGE 27 EAST. N.M.P.M.,

LEA COUNTY, NEW MEXICO.

SPC RESOURCES, LLC
CAVEMAN 402H
ELEV. – 3102'
Lat – N 32.408132
Long – W 104.220836
NMSPCE– N 512227.9
E 576054.9
(NAD–83)



CARLSBAD, NM IS ±1 MILES TO THE NORTHWEST OF LOCATION.

200 0 200 400 FEET

SCALE: 1" = 200'

SPC RESOURCES, LLC

REF: CAVEMAN 402H / WELL PAD TOPO

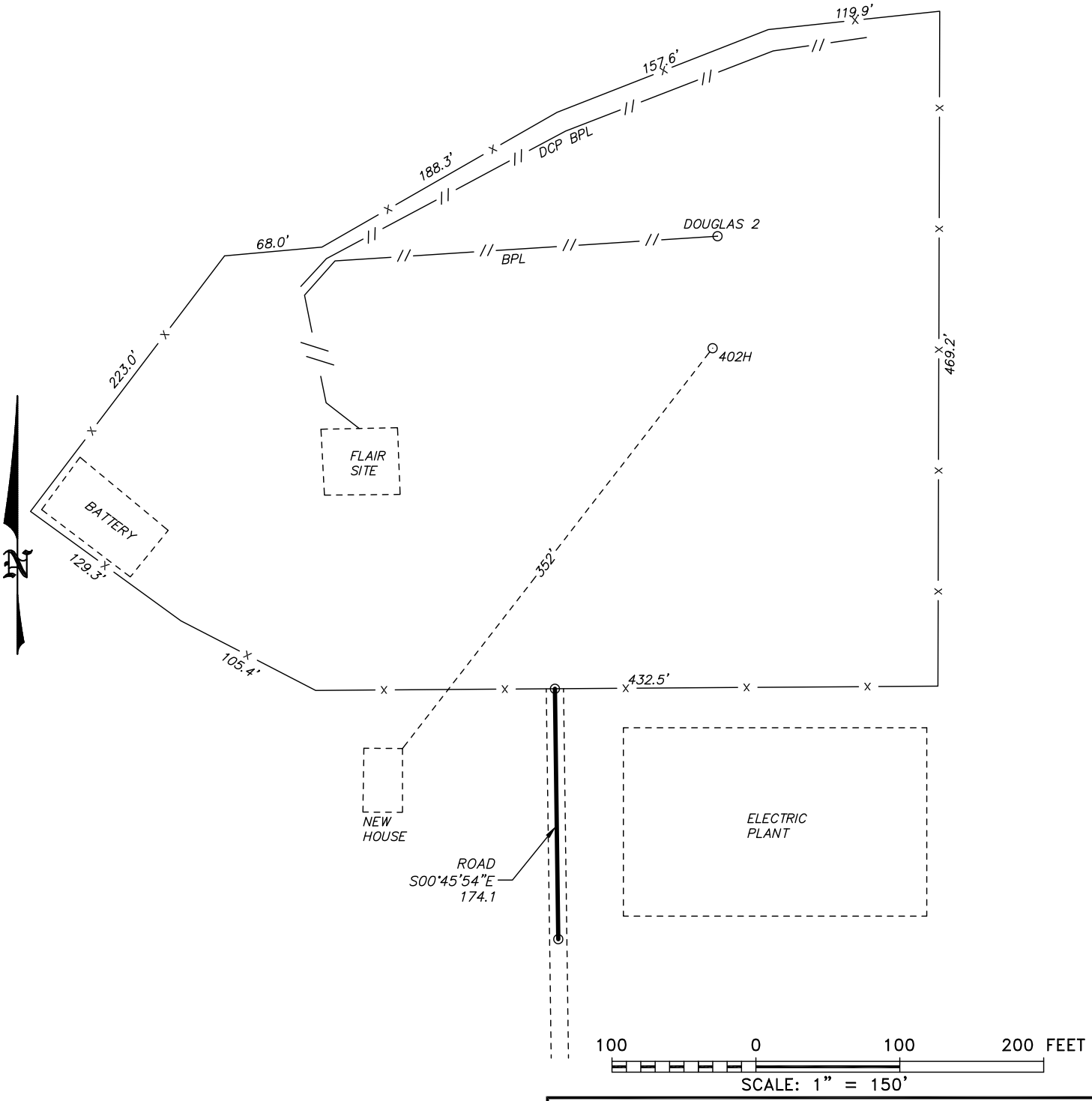
THE CAVEMAN 402H LOCATED 2420' FROM THE NORTH LINE AND 188' FROM THE EAST LINE OF SECTION 7, TOWNSHIP 22 SOUTH, RANGE 27 EAST. N.M.P.M., EDDY COUNTY, NEW MEXICO.

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: 35040	Drawn By: J GOAD	Date: 2–21–2020	Survey Date: 2–13–2020	Sheet 1 of 1 Sheets

SECTION 7, TOWNSHIP 22 SOUTH, RANGE 27 EAST. N.M.P.M.,

LEA COUNTY, NEW MEXICO.



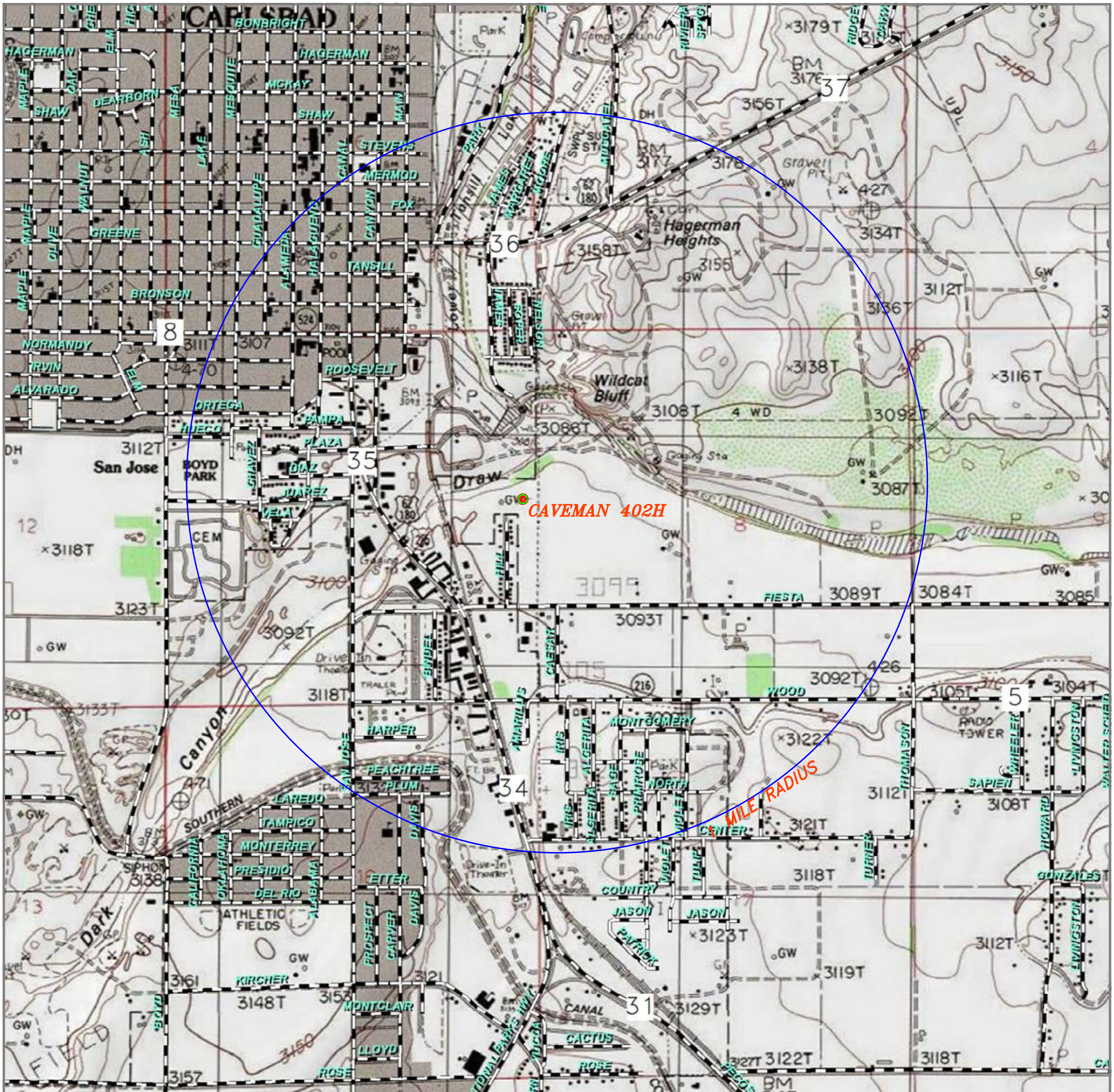
SPC RESOURCES, LLC

REF: CAVEMAN 402H / WELL PAD TOPO

THE CAVEMAN 402H LOCATED 2420' FROM THE NORTH LINE AND 188' FROM THE EAST LINE OF SECTION 7, TOWNSHIP 22 SOUTH, RANGE 27 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: 35040	Drawn By: J GOAD	Date: 2-21-2020	Survey Date: 2-13-2020	Sheet 1 of 1 Sheets



CAVEMAN 402H

Located 2420' FNL and 188' FEL
Section 7, Township 22 South, Range 27 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

0' 1000' 2000' 3000' 150'0'
SCALE: 1" = 2000'

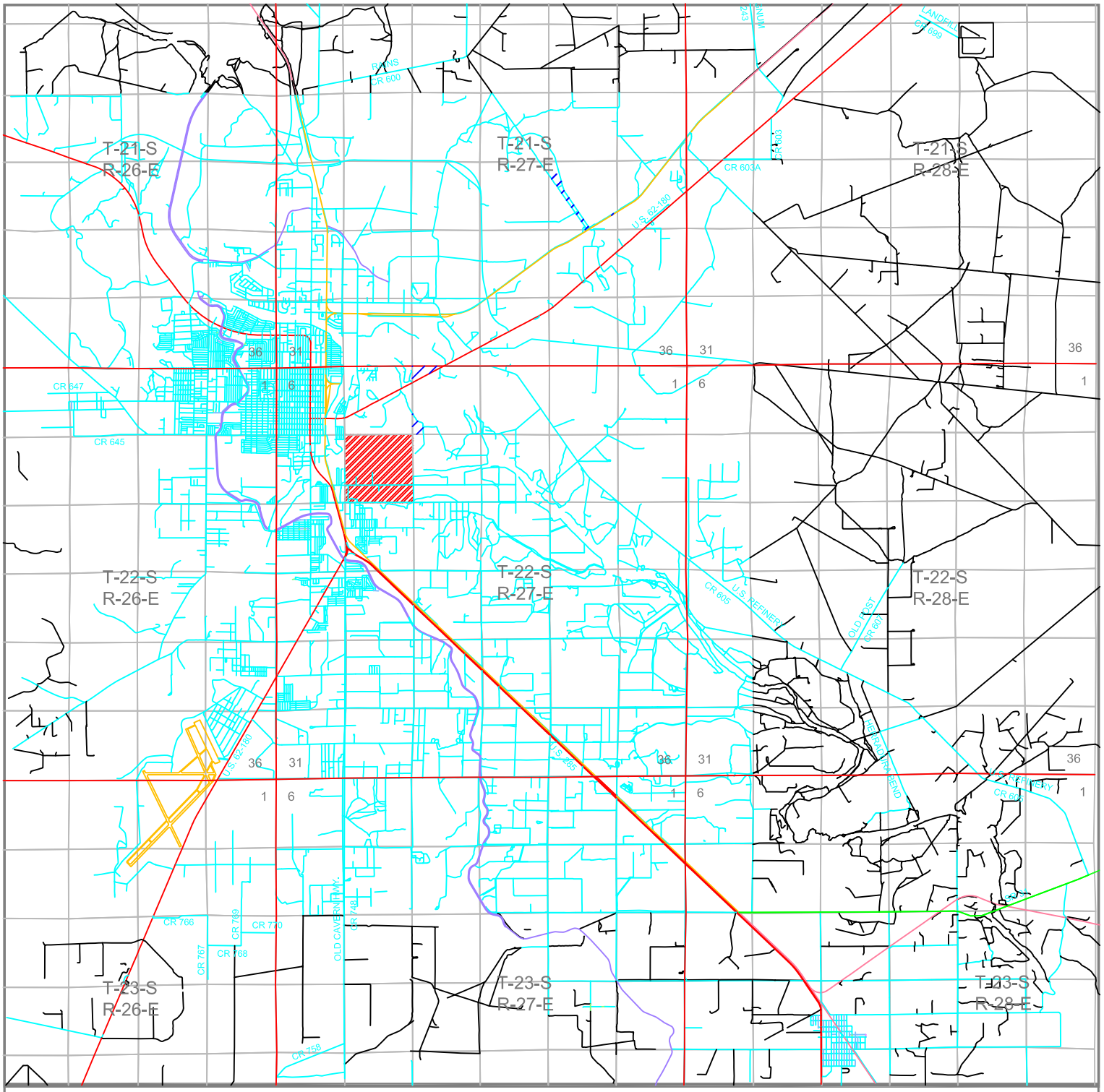
W.O. Number: JG 34729

Survey Date: 7-31-2019

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

N

SPC RESOURCES, LLC



CAVEMAN 402H

Located 2420' FNL and 188' FEL
Section 7, Township 22 South, Range 27 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

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

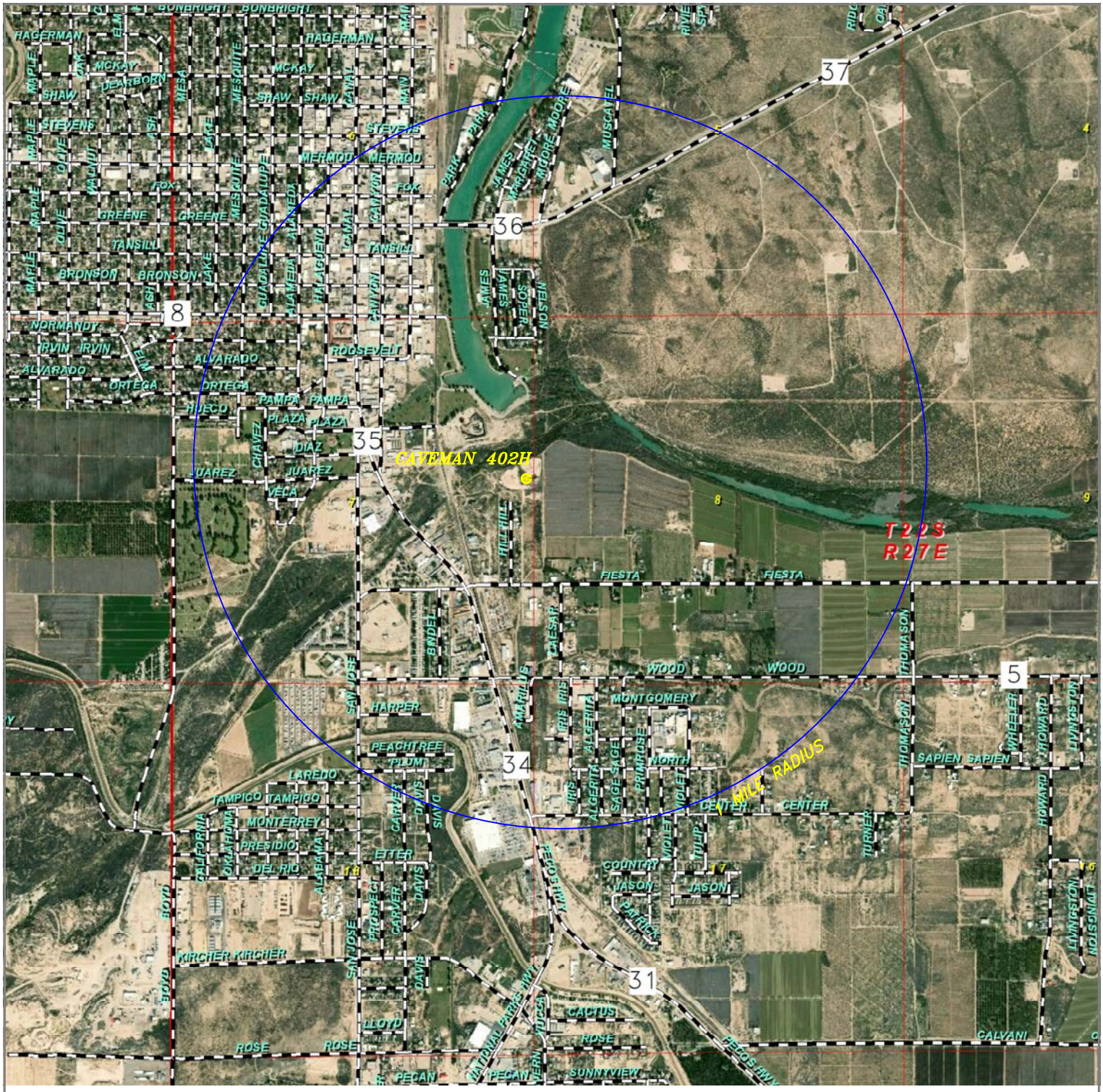
W.O. Number: JG 34729

Survey Date: 7-31-2019

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

N

SPC RESOURCES, LLC



CAVEMAN 402H

Located 2420' FNL and 188' FEL
Section 7, Township 22 South, Range 27 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

0' 1000' 2000' 3000' 150'0'
SCALE: 1" = 2000'

W.O. Number: JG 34729

Survey Date: 7-31-2019

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

N

SPC RESOURCES, LLC

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) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 331529

PERMIT COMMENTS

Operator Name and Address:	API Number:
SPC RESOURCES, LLC [372262] P.O. Box 1020 Artesia, NM 88211	30-015-53285
	Well: Caveman #402H

Created By	Comment	Comment Date
landers	Re-filing of permit 288270 because previous permit expired. Everything is the same other than changed intermediate casing size to 9-5/8" 40# from 10-3/4" 40.5#.	1/4/2023

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) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Conditions

Permit 331529

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:	API Number:
SPC RESOURCES, LLC [372262] P.O. Box 1020 Artesia, NM 88211	30-015-53285
	Well: Caveman #402H

OCD Reviewer	Condition
kpickford	Will require administrative order for non-standard spacing unit
kpickford	Notify OCD 24 hours prior to casing & cement
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: SPC Resources, LLC **OGRID:** 372262 **Date:** 01 / 04 / 2023

II. Type: ☑ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Caveman 402H	30-015-47629	H-7-22S-27E	2420 FNL 188 FEL	1200 bopd	2.5 MMcfpd	2500 bwpd

IV. Central Delivery Point Name: Caveman CTB [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Caveman 402H		TBD	TBD	TBD	TBD	TBD

VI. Separation Equipment: ☑ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☑ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☑ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☑ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☑ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☑ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☑ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☑ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☑ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:
Printed Name: Lelan J Anders
Title: Vice President of Operations
E-mail Address: LAnders@SantoPetroleum.com
Date: 1/4/2023
Phone: 575-736-3250

OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

Natural Gas Management Plan – Attachment

VI. Separation equipment will be sized by construction engineering staff based on stated manufacturer daily throughput capacities and anticipated daily production rates to ensure adequate capacity. Closed vent system piping, compression needs, and VRUs will be sized utilizing AspenTech HYSYS modeling software to ensure adequate capacity for anticipated production volumes and conditions.

VII. SPC Resources, LLC (SPC) will take the following actions to comply with the regulations listed in 19.15.27.8:

A. SPC will maximize the recovery of natural gas by minimizing the waste, as defined by 19.15.2 NMAC, of natural gas through venting and flaring. SPC will ensure that well(s) will be connected to a natural gas gathering system with sufficient capacity to transport natural gas. If there is no adequate takeaway for the gas, compression will be added to deliver volumes that are produced, well production may also be curtailed to manage the flow of gas and not overrun compression.

B. All drilling operations will be equipped with a rig flare located at least 100' from the nearest surface hole. Rig flare will be utilized to combust any natural gas that is brought to surface during normal drilling operations.

C. During completion operations any natural gas brought to surface will be flared. Immediately following the finish of completion operations, all well flowback will be directed to permanent separation equipment. Produced natural gas from separation equipment will be sent to sales. It is not anticipated that gas will not meet pipeline standards. However, if natural gas does not meet gathering pipeline quality specifications, SPC will flare the natural gas for up to 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. SPC will ensure that the flare is sized properly and is equipped with automatic igniter or continuous pilot. The gas sample will be analyzed twice per week and the gas will be routed into a gathering system as soon as pipeline specifications are met.

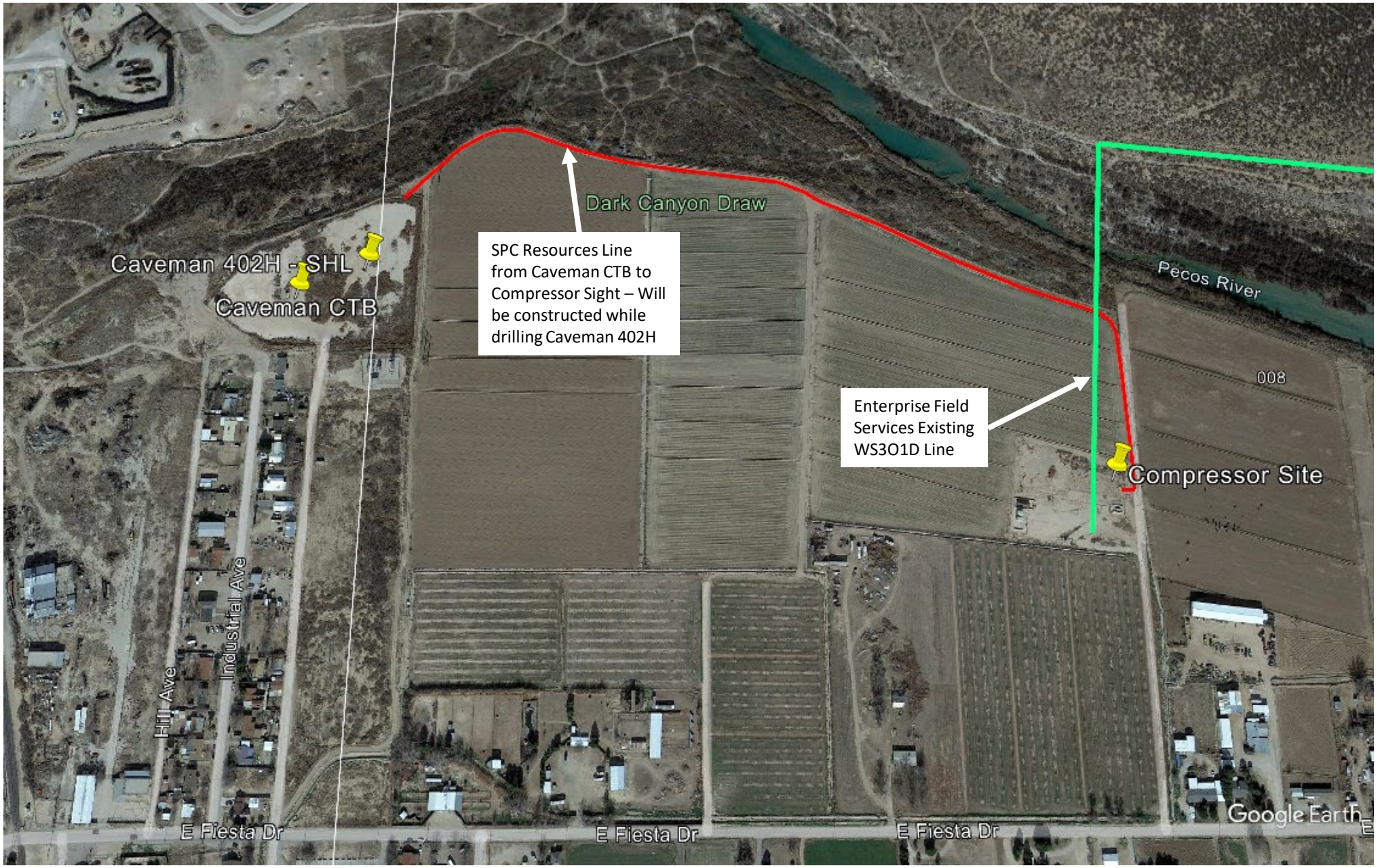
D. Natural gas will not be flared with the exceptions and provisions listed in the 19.15.27.8 D.(I) through (4). If there is no adequate takeaway for the separator gas, well(s) will be curtailed until the natural gas gathering system is available with exception of emergency or malfunction situations. Venting and/or flaring volumes will be measured using a TOTAL FLOW meter and reported appropriately.

E. SPC will comply with the performance standards requirements and provisions listed in 19.15.27.8 E.(l)through (8). All equipment will be designed and sized to handle maximum anticipated pressures and throughputs to minimize the waste. Production storage tanks constructed after May 25, 2021, will be equipped with automatic gauging system. Flares constructed after May 25, 2021, will be equipped with automatic igniter or continuous pilot. Flares will be located at least 100' from the well and storage tanks unless otherwise approved by the division. SPC will conduct AVO inspections as described in 19.15.27.8 E (5) (a) with frequencies specified in 19.15.27.8 E (5) (b) and (c). All emergencies will be resolved as quickly and safely as feasible to minimize waste.

F. The volume of natural gas that is vented or flared as the result of malfunction or emergency during drilling and completions operations will be estimated. The volume of natural gas that is vented, flared, or beneficially used during production operations, will be measured, or estimated. SPC will install equipment to measure the volume of natural gas flared from existing process piping, or a flowline piped from equipment such as high-pressure separators, heater treaters, or vapor recovery units associated with a well or facility associated with a well authorized by an SPC issued after May 25, 2021, that has an average daily production greater than 60 Mcf/day. If metering is not practicable due to circumstances such as low flow rate or low pressure venting and flaring, SPC will estimate the volume of vented or flared natural gas. Measuring equipment will conform to industry standards and will not be designed or equipped with a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment.

VIII. For maintenance activities involving production equipment and compression, venting will be limited to the depressurization of the subject equipment to ensure safe working conditions. For maintenance of production and compression equipment the associated producing wells will be shut in to eliminate venting. For maintenance of VRUs all gas normally routed to the VRU will be routed to flare to eliminate venting.

Caveman Gas Plan Map



Santo Petroleum

Eddy County, NM (NAD 83 - NME)
Caveman 7-12
#402H

ST01

Plan: ST01: Plan #4

Standard Planning Report

08 March, 2021

SANTO PETROLEUM

Planning Report

WELLBENDERS DIRECTIONAL SERVICES

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #402H
Company:	Santo Petroleum	**TVD Reference:**	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	**MD Reference:**	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	**North Reference:**	Grid
Well:	#402H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Project Eddy County, NM (NAD 83 - NME)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Caveman 7-12

Site Position:		**Northing:**	512,385.60 usft	**Latitude:**	32.408564
From:	Map	**Easting:**	576,482.00 usft	**Longitude:**	-104.219452
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.061 °

Well #402H

Well Position	**+N/-S**	-157.62 usft	**Northing:**	512,227.98 usft	**Latitude:**	32.408132
	+E/-W	-427.02 usft	**Easting:**	576,054.99 usft	**Longitude:**	-104.220836
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,102.00 usft

Wellbore ST01

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/10/2021	6.890	59.979	47,564.95128308

Design ST01: Plan #4

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	8,272.68

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.61

Plan Survey Tool Program **Date** 3/8/2021

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	8,272.68	19,220.06	ST01: Plan #4 (ST01)	MWD+IGRF OWSG MWD + IGRF or WM	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
8,272.68	0.00	0.00	8,224.04	765.32	160.09	0.00	0.00	0.00	0.000	
9,173.85	90.12	269.61	8,797.00	761.37	-414.02	10.00	10.00	-10.03	269.606	
16,035.02	90.12	269.61	8,783.00	714.14	-7,275.02	0.00	0.00	0.00	0.000	Caveman #402H D
16,093.59	91.29	269.61	8,782.28	713.74	-7,333.58	2.00	2.00	0.00	-0.002	
19,220.06	91.29	269.61	8,712.00	692.22	-10,459.18	0.00	0.00	0.00	0.000	PLAT PBHL: 1650'

SANTO PETROLEUM

Planning Report

WELLBENDERS DIRECTIONAL SERVICES

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #402H
Company:	Santo Petroleum	**TVD Reference:**	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	**MD Reference:**	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	**North Reference:**	Grid
Well:	#402H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLAT #402H SHL: 2420' FNL & 188' FEL									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	11.81	1,599.98	1.71	0.36	-0.37	2.00	2.00	0.00
1,700.00	4.00	11.81	1,699.84	6.83	1.43	-1.48	2.00	2.00	0.00
1,800.00	6.00	11.81	1,799.45	15.36	3.21	-3.32	2.00	2.00	0.00
1,863.06	7.26	11.81	1,862.09	22.49	4.70	-4.86	2.00	2.00	0.00
1,900.00	7.26	11.81	1,898.73	27.06	5.66	-5.84	0.00	0.00	0.00
2,000.00	7.26	11.81	1,997.93	39.43	8.25	-8.52	0.00	0.00	0.00
2,100.00	7.26	11.81	2,097.13	51.80	10.84	-11.19	0.00	0.00	0.00
2,200.00	7.26	11.81	2,196.33	64.17	13.42	-13.86	0.00	0.00	0.00
2,300.00	7.26	11.81	2,295.52	76.55	16.01	-16.53	0.00	0.00	0.00
2,400.00	7.26	11.81	2,394.72	88.92	18.60	-19.20	0.00	0.00	0.00
2,500.00	7.26	11.81	2,493.92	101.29	21.19	-21.88	0.00	0.00	0.00
2,600.00	7.26	11.81	2,593.12	113.66	23.78	-24.55	0.00	0.00	0.00
2,700.00	7.26	11.81	2,692.32	126.03	26.36	-27.22	0.00	0.00	0.00
2,800.00	7.26	11.81	2,791.51	138.40	28.95	-29.89	0.00	0.00	0.00
2,900.00	7.26	11.81	2,890.71	150.78	31.54	-32.56	0.00	0.00	0.00
3,000.00	7.26	11.81	2,989.91	163.15	34.13	-35.24	0.00	0.00	0.00
3,100.00	7.26	11.81	3,089.11	175.52	36.72	-37.91	0.00	0.00	0.00
3,200.00	7.26	11.81	3,188.31	187.89	39.30	-40.58	0.00	0.00	0.00
3,300.00	7.26	11.81	3,287.50	200.26	41.89	-43.25	0.00	0.00	0.00
3,400.00	7.26	11.81	3,386.70	212.63	44.48	-45.93	0.00	0.00	0.00
3,500.00	7.26	11.81	3,485.90	225.01	47.07	-48.60	0.00	0.00	0.00
3,600.00	7.26	11.81	3,585.10	237.38	49.65	-51.27	0.00	0.00	0.00
3,700.00	7.26	11.81	3,684.30	249.75	52.24	-53.94	0.00	0.00	0.00
3,800.00	7.26	11.81	3,783.49	262.12	54.83	-56.61	0.00	0.00	0.00
3,900.00	7.26	11.81	3,882.69	274.49	57.42	-59.29	0.00	0.00	0.00
4,000.00	7.26	11.81	3,981.89	286.86	60.01	-61.96	0.00	0.00	0.00
4,100.00	7.26	11.81	4,081.09	299.24	62.59	-64.63	0.00	0.00	0.00
4,200.00	7.26	11.81	4,180.29	311.61	65.18	-67.30	0.00	0.00	0.00
4,300.00	7.26	11.81	4,279.48	323.98	67.77	-69.97	0.00	0.00	0.00
4,400.00	7.26	11.81	4,378.68	336.35	70.36	-72.65	0.00	0.00	0.00
4,500.00	7.26	11.81	4,477.88	348.72	72.95	-75.32	0.00	0.00	0.00
4,600.00	7.26	11.81	4,577.08	361.09	75.53	-77.99	0.00	0.00	0.00
4,700.00	7.26	11.81	4,676.28	373.47	78.12	-80.66	0.00	0.00	0.00
4,800.00	7.26	11.81	4,775.47	385.84	80.71	-83.33	0.00	0.00	0.00
4,900.00	7.26	11.81	4,874.67	398.21	83.30	-86.01	0.00	0.00	0.00
5,000.00	7.26	11.81	4,973.87	410.58	85.89	-88.68	0.00	0.00	0.00
5,100.00	7.26	11.81	5,073.07	422.95	88.47	-91.35	0.00	0.00	0.00

SANTO PETROLEUM

Planning Report

WELLBENDERS DIRECTIONAL SERVICES

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #402H
Company:	Santo Petroleum	**TVD Reference:**	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	**MD Reference:**	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	**North Reference:**	Grid
Well:	#402H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,200.00	7.26	11.81	5,172.27	435.32	91.06	-94.02	0.00	0.00	0.00
5,300.00	7.26	11.81	5,271.46	447.70	93.65	-96.69	0.00	0.00	0.00
5,400.00	7.26	11.81	5,370.66	460.07	96.24	-99.37	0.00	0.00	0.00
5,500.00	7.26	11.81	5,469.86	472.44	98.83	-102.04	0.00	0.00	0.00
5,600.00	7.26	11.81	5,569.06	484.81	101.41	-104.71	0.00	0.00	0.00
5,700.00	7.26	11.81	5,668.26	497.18	104.00	-107.38	0.00	0.00	0.00
5,800.00	7.26	11.81	5,767.45	509.55	106.59	-110.05	0.00	0.00	0.00
5,900.00	7.26	11.81	5,866.65	521.93	109.18	-112.73	0.00	0.00	0.00
6,000.00	7.26	11.81	5,965.85	534.30	111.76	-115.40	0.00	0.00	0.00
6,100.00	7.26	11.81	6,065.05	546.67	114.35	-118.07	0.00	0.00	0.00
6,200.00	7.26	11.81	6,164.25	559.04	116.94	-120.74	0.00	0.00	0.00
6,300.00	7.26	11.81	6,263.45	571.41	119.53	-123.42	0.00	0.00	0.00
6,400.00	7.26	11.81	6,362.64	583.78	122.12	-126.09	0.00	0.00	0.00
6,500.00	7.26	11.81	6,461.84	596.16	124.70	-128.76	0.00	0.00	0.00
6,600.00	7.26	11.81	6,561.04	608.53	127.29	-131.43	0.00	0.00	0.00
6,700.00	7.26	11.81	6,660.24	620.90	129.88	-134.10	0.00	0.00	0.00
6,800.00	7.26	11.81	6,759.44	633.27	132.47	-136.78	0.00	0.00	0.00
6,900.00	7.26	11.81	6,858.63	645.64	135.06	-139.45	0.00	0.00	0.00
7,000.00	7.26	11.81	6,957.83	658.01	137.64	-142.12	0.00	0.00	0.00
7,100.00	7.26	11.81	7,057.03	670.39	140.23	-144.79	0.00	0.00	0.00
7,200.00	7.26	11.81	7,156.23	682.76	142.82	-147.46	0.00	0.00	0.00
7,300.00	7.26	11.81	7,255.43	695.13	145.41	-150.14	0.00	0.00	0.00
7,400.00	7.26	11.81	7,354.62	707.50	148.00	-152.81	0.00	0.00	0.00
7,500.00	7.26	11.81	7,453.82	719.87	150.58	-155.48	0.00	0.00	0.00
7,600.00	7.26	11.81	7,553.02	732.24	153.17	-158.15	0.00	0.00	0.00
7,685.57	7.26	11.81	7,637.91	742.83	155.39	-160.44	0.00	0.00	0.00
7,700.00	6.97	11.81	7,652.22	744.58	155.75	-160.82	2.00	-2.00	0.00
7,800.00	4.97	11.81	7,751.67	754.77	157.88	-163.02	2.00	-2.00	0.00
7,900.00	2.97	11.81	7,851.43	761.55	159.30	-164.48	2.00	-2.00	0.00
8,000.00	0.97	11.81	7,951.36	764.92	160.01	-165.21	2.00	-2.00	0.00
8,048.64	0.00	0.00	8,000.00	765.32	160.09	-165.30	2.00	-2.00	0.00
8,100.00	0.00	0.00	8,051.36	765.32	160.09	-165.30	0.00	0.00	0.00
8,200.00	0.00	0.00	8,151.36	765.32	160.09	-165.30	0.00	0.00	0.00
8,272.68	0.00	0.00	8,224.04	765.32	160.09	-165.30	0.00	0.00	0.00
8,300.00	2.73	269.61	8,251.35	765.32	159.44	-164.64	10.00	10.00	0.00
8,350.00	7.73	269.61	8,301.13	765.28	154.88	-160.09	10.00	10.00	0.00
8,391.49	11.88	269.61	8,342.00	765.24	147.82	-153.02	10.00	10.00	0.00
Top 3rd Bone Spring Sand (John)									
8,400.00	12.73	269.61	8,350.32	765.22	146.00	-151.21	10.00	10.00	0.00
8,450.00	17.73	269.61	8,398.54	765.13	132.87	-138.08	10.00	10.00	0.00
8,500.00	22.73	269.61	8,445.44	765.01	115.58	-120.79	10.00	10.00	0.00
8,550.00	27.73	269.61	8,490.66	764.87	94.28	-99.48	10.00	10.00	0.00
8,600.00	32.73	269.61	8,533.85	764.69	69.11	-74.31	10.00	10.00	0.00
8,650.00	37.73	269.61	8,574.67	764.50	40.28	-45.48	10.00	10.00	0.00
8,700.00	42.73	269.61	8,612.83	764.27	7.99	-13.20	10.00	10.00	0.00
8,750.00	47.73	269.61	8,648.03	764.03	-27.49	22.29	10.00	10.00	0.00
8,800.00	52.73	269.61	8,680.01	763.76	-65.91	60.71	10.00	10.00	0.00
8,829.04	55.64	269.61	8,697.00	763.60	-89.46	84.26	10.00	10.00	0.00
WOLFCAMP A (John)									
8,850.00	57.73	269.61	8,708.51	763.48	-106.97	101.77	10.00	10.00	0.00
8,900.00	62.73	269.61	8,733.33	763.18	-150.36	145.16	10.00	10.00	0.00
8,919.52	64.68	269.61	8,741.97	763.06	-167.85	162.66	10.00	10.00	0.00
PLAT FTP:1650' FNL & 330' FEL									

SANTO PETROLEUM

Planning Report

WELLBENDERS DIRECTIONAL SERVICES

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #402H
Company:	Santo Petroleum	**TVD Reference:**	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	**MD Reference:**	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	**North Reference:**	Grid
Well:	#402H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,950.00	67.73	269.61	8,754.27	762.87	-195.74	190.55	10.00	10.00	0.00
9,000.00	72.73	269.61	8,771.17	762.55	-242.78	237.59	10.00	10.00	0.00
Caveman #402H: Pilot PBHL									
9,041.29	76.86	269.61	8,782.00	762.27	-282.62	277.42	10.00	10.00	0.00
Y Sand Top (John)									
9,050.00	77.73	269.61	8,783.91	762.21	-291.11	285.92	10.00	10.00	0.00
9,055.22	78.25	269.61	8,785.00	762.18	-296.22	291.02	10.00	10.00	0.00
TOP WINDOW									
9,100.00	82.73	269.61	8,792.40	761.88	-340.37	335.18	10.00	10.00	0.00
9,150.00	87.73	269.61	8,796.55	761.53	-390.18	384.99	10.00	10.00	0.00
9,172.36	90.12	269.61	8,797.00	761.38	-412.53	407.34	10.67	10.67	0.00
TARGET LANDING									
9,173.85	90.12	269.61	8,797.00	761.37	-414.02	408.83	0.00	0.00	0.00
PLAN: LP									
9,200.00	90.12	269.61	8,796.94	761.19	-440.17	434.98	0.00	0.00	0.00
9,300.00	90.12	269.61	8,796.74	760.50	-540.17	534.98	0.00	0.00	0.00
9,400.00	90.12	269.61	8,796.54	759.81	-640.17	634.98	0.00	0.00	0.00
9,500.00	90.12	269.61	8,796.33	759.12	-740.17	734.98	0.00	0.00	0.00
9,600.00	90.12	269.61	8,796.13	758.43	-840.16	834.98	0.00	0.00	0.00
9,700.00	90.12	269.61	8,795.92	757.75	-940.16	934.98	0.00	0.00	0.00
9,800.00	90.12	269.61	8,795.72	757.06	-1,040.16	1,034.98	0.00	0.00	0.00
9,900.00	90.12	269.61	8,795.52	756.37	-1,140.16	1,134.98	0.00	0.00	0.00
10,000.00	90.12	269.61	8,795.31	755.68	-1,240.15	1,234.98	0.00	0.00	0.00
10,100.00	90.12	269.61	8,795.11	754.99	-1,340.15	1,334.98	0.00	0.00	0.00
10,200.00	90.12	269.61	8,794.90	754.30	-1,440.15	1,434.98	0.00	0.00	0.00
10,300.00	90.12	269.61	8,794.70	753.62	-1,540.15	1,534.98	0.00	0.00	0.00
10,400.00	90.12	269.61	8,794.50	752.93	-1,640.14	1,634.98	0.00	0.00	0.00
10,500.00	90.12	269.61	8,794.29	752.24	-1,740.14	1,734.98	0.00	0.00	0.00
10,600.00	90.12	269.61	8,794.09	751.55	-1,840.14	1,834.98	0.00	0.00	0.00
10,700.00	90.12	269.61	8,793.88	750.86	-1,940.14	1,934.98	0.00	0.00	0.00
10,800.00	90.12	269.61	8,793.68	750.17	-2,040.13	2,034.98	0.00	0.00	0.00
10,900.00	90.12	269.61	8,793.48	749.49	-2,140.13	2,134.98	0.00	0.00	0.00
11,000.00	90.12	269.61	8,793.27	748.80	-2,240.13	2,234.98	0.00	0.00	0.00
11,100.00	90.12	269.61	8,793.07	748.11	-2,340.13	2,334.98	0.00	0.00	0.00
11,200.00	90.12	269.61	8,792.86	747.42	-2,440.12	2,434.98	0.00	0.00	0.00
11,300.00	90.12	269.61	8,792.66	746.73	-2,540.12	2,534.98	0.00	0.00	0.00
11,400.00	90.12	269.61	8,792.46	746.04	-2,640.12	2,634.98	0.00	0.00	0.00
11,500.00	90.12	269.61	8,792.25	745.36	-2,740.11	2,734.98	0.00	0.00	0.00
11,600.00	90.12	269.61	8,792.05	744.67	-2,840.11	2,834.98	0.00	0.00	0.00
11,700.00	90.12	269.61	8,791.84	743.98	-2,940.11	2,934.98	0.00	0.00	0.00
11,800.00	90.12	269.61	8,791.64	743.29	-3,040.11	3,034.98	0.00	0.00	0.00
11,900.00	90.12	269.61	8,791.44	742.60	-3,140.10	3,134.98	0.00	0.00	0.00
12,000.00	90.12	269.61	8,791.23	741.91	-3,240.10	3,234.98	0.00	0.00	0.00
12,100.00	90.12	269.61	8,791.03	741.23	-3,340.10	3,334.98	0.00	0.00	0.00
12,200.00	90.12	269.61	8,790.82	740.54	-3,440.10	3,434.98	0.00	0.00	0.00
12,300.00	90.12	269.61	8,790.62	739.85	-3,540.09	3,534.98	0.00	0.00	0.00
12,400.00	90.12	269.61	8,790.42	739.16	-3,640.09	3,634.98	0.00	0.00	0.00
12,500.00	90.12	269.61	8,790.21	738.47	-3,740.09	3,734.98	0.00	0.00	0.00
12,600.00	90.12	269.61	8,790.01	737.78	-3,840.09	3,834.98	0.00	0.00	0.00
12,700.00	90.12	269.61	8,789.80	737.10	-3,940.08	3,934.98	0.00	0.00	0.00
12,800.00	90.12	269.61	8,789.60	736.41	-4,040.08	4,034.98	0.00	0.00	0.00
12,900.00	90.12	269.61	8,789.40	735.72	-4,140.08	4,134.98	0.00	0.00	0.00
13,000.00	90.12	269.61	8,789.19	735.03	-4,240.08	4,234.97	0.00	0.00	0.00

SANTO PETROLEUM

Planning Report

WELLBENDERS DIRECTIONAL SERVICES

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #402H
Company:	Santo Petroleum	**TVD Reference:**	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	**MD Reference:**	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	**North Reference:**	Grid
Well:	#402H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,100.00	90.12	269.61	8,788.99	734.34	-4,340.07	4,334.97	0.00	0.00	0.00
13,200.00	90.12	269.61	8,788.78	733.65	-4,440.07	4,434.97	0.00	0.00	0.00
13,300.00	90.12	269.61	8,788.58	732.97	-4,540.07	4,534.97	0.00	0.00	0.00
13,400.00	90.12	269.61	8,788.38	732.28	-4,640.07	4,634.97	0.00	0.00	0.00
13,500.00	90.12	269.61	8,788.17	731.59	-4,740.06	4,734.97	0.00	0.00	0.00
13,600.00	90.12	269.61	8,787.97	730.90	-4,840.06	4,834.97	0.00	0.00	0.00
13,700.00	90.12	269.61	8,787.76	730.21	-4,940.06	4,934.97	0.00	0.00	0.00
13,800.00	90.12	269.61	8,787.56	729.52	-5,040.06	5,034.97	0.00	0.00	0.00
13,900.00	90.12	269.61	8,787.36	728.84	-5,140.05	5,134.97	0.00	0.00	0.00
14,000.00	90.12	269.61	8,787.15	728.15	-5,240.05	5,234.97	0.00	0.00	0.00
14,100.00	90.12	269.61	8,786.95	727.46	-5,340.05	5,334.97	0.00	0.00	0.00
14,200.00	90.12	269.61	8,786.74	726.77	-5,440.05	5,434.97	0.00	0.00	0.00
14,300.00	90.12	269.61	8,786.54	726.08	-5,540.04	5,534.97	0.00	0.00	0.00
14,400.00	90.12	269.61	8,786.34	725.39	-5,640.04	5,634.97	0.00	0.00	0.00
14,500.00	90.12	269.61	8,786.13	724.71	-5,740.04	5,734.97	0.00	0.00	0.00
14,600.00	90.12	269.61	8,785.93	724.02	-5,840.04	5,834.97	0.00	0.00	0.00
14,700.00	90.12	269.61	8,785.72	723.33	-5,940.03	5,934.97	0.00	0.00	0.00
14,800.00	90.12	269.61	8,785.52	722.64	-6,040.03	6,034.97	0.00	0.00	0.00
14,900.00	90.12	269.61	8,785.32	721.95	-6,140.03	6,134.97	0.00	0.00	0.00
15,000.00	90.12	269.61	8,785.11	721.26	-6,240.02	6,234.97	0.00	0.00	0.00
15,100.00	90.12	269.61	8,784.91	720.58	-6,340.02	6,334.97	0.00	0.00	0.00
15,200.00	90.12	269.61	8,784.70	719.89	-6,440.02	6,434.97	0.00	0.00	0.00
15,300.00	90.12	269.61	8,784.50	719.20	-6,540.02	6,534.97	0.00	0.00	0.00
15,400.00	90.12	269.61	8,784.30	718.51	-6,640.01	6,634.97	0.00	0.00	0.00
15,500.00	90.12	269.61	8,784.09	717.82	-6,740.01	6,734.97	0.00	0.00	0.00
15,600.00	90.12	269.61	8,783.89	717.13	-6,840.01	6,834.97	0.00	0.00	0.00
15,700.00	90.12	269.61	8,783.68	716.45	-6,940.01	6,934.97	0.00	0.00	0.00
15,800.00	90.12	269.61	8,783.48	715.76	-7,040.00	7,034.97	0.00	0.00	0.00
15,900.00	90.12	269.61	8,783.28	715.07	-7,140.00	7,134.97	0.00	0.00	0.00
16,000.00	90.12	269.61	8,783.07	714.38	-7,240.00	7,234.97	0.00	0.00	0.00
16,035.02	90.12	269.61	8,783.00	714.14	-7,275.02	7,269.99	0.00	0.00	0.00
Caveman #402H Deflection Point									
16,093.59	91.29	269.61	8,782.28	713.74	-7,333.58	7,328.55	2.00	2.00	0.00
16,100.00	91.29	269.61	8,782.14	713.69	-7,339.99	7,334.96	0.00	0.00	0.00
16,200.00	91.29	269.61	8,779.89	713.00	-7,439.96	7,434.94	0.00	0.00	0.00
16,300.00	91.29	269.61	8,777.64	712.32	-7,539.93	7,534.91	0.00	0.00	0.00
16,400.00	91.29	269.61	8,775.39	711.63	-7,639.91	7,634.89	0.00	0.00	0.00
16,500.00	91.29	269.61	8,773.15	710.94	-7,739.88	7,734.86	0.00	0.00	0.00
16,600.00	91.29	269.61	8,770.90	710.25	-7,839.85	7,834.84	0.00	0.00	0.00
16,700.00	91.29	269.61	8,768.65	709.56	-7,939.82	7,934.81	0.00	0.00	0.00
16,800.00	91.29	269.61	8,766.40	708.88	-8,039.80	8,034.78	0.00	0.00	0.00
16,900.00	91.29	269.61	8,764.15	708.19	-8,139.77	8,134.76	0.00	0.00	0.00
17,000.00	91.29	269.61	8,761.91	707.50	-8,239.74	8,234.73	0.00	0.00	0.00
17,100.00	91.29	269.61	8,759.66	706.81	-8,339.71	8,334.71	0.00	0.00	0.00
17,200.00	91.29	269.61	8,757.41	706.12	-8,439.69	8,434.68	0.00	0.00	0.00
17,300.00	91.29	269.61	8,755.16	705.43	-8,539.66	8,534.66	0.00	0.00	0.00
17,400.00	91.29	269.61	8,752.91	704.75	-8,639.63	8,634.63	0.00	0.00	0.00
17,500.00	91.29	269.61	8,750.67	704.06	-8,739.60	8,734.61	0.00	0.00	0.00
17,600.00	91.29	269.61	8,748.42	703.37	-8,839.58	8,834.58	0.00	0.00	0.00
17,700.00	91.29	269.61	8,746.17	702.68	-8,939.55	8,934.56	0.00	0.00	0.00
17,800.00	91.29	269.61	8,743.92	701.99	-9,039.52	9,034.53	0.00	0.00	0.00
17,900.00	91.29	269.61	8,741.67	701.31	-9,139.49	9,134.51	0.00	0.00	0.00
18,000.00	91.29	269.61	8,739.43	700.62	-9,239.46	9,234.48	0.00	0.00	0.00
18,100.00	91.29	269.61	8,737.18	699.93	-9,339.44	9,334.46	0.00	0.00	0.00

SANTO PETROLEUM

Planning Report

WELLBENDERS DIRECTIONAL SERVICES

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #402H
Company:	Santo Petroleum	**TVD Reference:**	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	**MD Reference:**	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	**North Reference:**	Grid
Well:	#402H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
18,200.00	91.29	269.61	8,734.93	699.24	-9,439.41	9,434.43	0.00	0.00	0.00
18,300.00	91.29	269.61	8,732.68	698.55	-9,539.38	9,534.41	0.00	0.00	0.00
18,400.00	91.29	269.61	8,730.43	697.86	-9,639.35	9,634.38	0.00	0.00	0.00
18,500.00	91.29	269.61	8,728.19	697.18	-9,739.33	9,734.36	0.00	0.00	0.00
18,600.00	91.29	269.61	8,725.94	696.49	-9,839.30	9,834.33	0.00	0.00	0.00
18,700.00	91.29	269.61	8,723.69	695.80	-9,939.27	9,934.30	0.00	0.00	0.00
18,800.00	91.29	269.61	8,721.44	695.11	-10,039.24	10,034.28	0.00	0.00	0.00
18,900.00	91.29	269.61	8,719.19	694.42	-10,139.22	10,134.25	0.00	0.00	0.00
18,989.86	91.29	269.61	8,717.17	693.80	-10,229.05	10,224.09	0.00	0.00	0.00
PLAT LTP:1650' FNL & 330' FWL									
19,000.00	91.29	269.61	8,716.95	693.73	-10,239.19	10,234.23	0.00	0.00	0.00
19,100.00	91.29	269.61	8,714.70	693.05	-10,339.16	10,334.20	0.00	0.00	0.00
19,200.00	91.29	269.61	8,712.45	692.36	-10,439.13	10,434.18	0.00	0.00	0.00
19,220.06	91.29	269.61	8,712.00	692.22	-10,459.18	10,454.23	0.00	0.00	0.00
PLAT PBHL: 1650' FNL & 100' FWL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PLAT #402H SHL: 24 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	512,227.98	576,054.99	32.408132	-104.220836
PLAT PBHL: 1650' FN - plan hits target center - Point	0.00	0.00	8,712.00	692.22	-10,459.18	512,920.20	565,595.80	32.410061	-104.254726
PLAT LTP:1650' FNL - plan misses target center by 9.38usft at 18989.86usft MD (8717.17 TVD, 693.80 N, -10229.05 E) - Point	0.00	0.00	8,717.18	684.42	-10,228.98	512,912.40	565,826.00	32.410039	-104.253980
Caveman #402H Defl - plan hits target center - Point	0.00	0.00	8,783.00	714.14	-7,275.02	512,942.12	568,779.96	32.410114	-104.244408
PLAT FTP:1650' FNL - plan misses target center by 56.03usft at 8919.52usft MD (8741.97 TVD, 763.06 N, -167.85 E) - Point	0.00	0.00	8,792.85	763.22	-144.38	512,991.20	575,910.60	32.410230	-104.221302
PLAN: LP - plan misses target center by 0.01usft at 9173.85usft MD (8797.00 TVD, 761.37 N, -414.02 E) - Point	0.00	0.00	8,797.00	761.37	-414.02	512,989.35	575,640.97	32.410226	-104.222175
Caveman #402H: Pilo - plan misses target center by 1198.57usft at 9000.00usft MD (8771.17 TVD, 762.55 N, -242.78 E) - Point	0.00	0.00	9,900.00	765.32	160.09	512,993.30	576,215.08	32.410235	-104.220315

SANTO PETROLEUM

Planning Report

WELLBENDERS DIRECTIONAL SERVICES

Database:	WBDS_SQL_2	**Local Co-ordinate Reference:**	Well #402H
Company:	Santo Petroleum	**TVD Reference:**	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	**MD Reference:**	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	**North Reference:**	Grid
Well:	#402H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
459.00	459.00	Top Salt (John)			
1,153.00	1,153.00	Base Salt (John)			
1,654.07	1,654.00	Delaware			
1,703.17	1,703.00	Lamar Limestone			
1,967.81	1,966.00	Base Lamar Limestone			
5,176.55	5,149.00	BONE SPRING			
6,337.86	6,301.00	Top 1st BSPG Sand (John)			
6,606.01	6,567.00	Top 2nd Bone Spring Carbonate (Jo			
6,982.03	6,940.00	Top 2nd Bone Spring Sand (John)			
7,254.21	7,210.00	Top 3rd Bone Spring Carbonate (Jol			
8,391.49	8,342.00	Top 3rd Bone Spring Sand (John)			
8,829.04	8,697.00	WOLFCAMP A (John)			
9,041.29	8,782.00	Y Sand Top (John)			
9,055.22	8,785.00	TOP WINDOW			
9,172.36	8,797.00	TARGET LANDING			

SANTO PETROLEUM

Hydrogen Sulfide Drilling Operations Plan

SPC Resources, LLC
101 S. 4th Street, Suite B
Artesia, NM 88210
(575) 736-3250

1. H_2S Safety Instructions to the following:
   - Characteristics of H_2S.
   - Physical effects and hazards.
   - Principal and operation of H_2S detectors, warning system and briefing areas.
   - Evacuation procedures, routes and First Aid.
   - Proper use of safety equipment and life support systems.
   - Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30 min pressure demand air packs.

2. H_2S Detection & Alarm Systems:
   - H_2S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud returns pits by the shale shaker. Additional H_2S monitors may be placed as deemed necessary.
   - An audio alarm system will be installed on the derrick, the floor, and in the doghouse.

3. Windsocks and Wind Streamers:
   - Windsocks at mud pit area should be high enough to be visible.
   - Windsock on the rig floor/top of doghouse should be high enough to be visible.

4. Condition Flags & Signs:
   - Warning sign on access road to location
   - Flags to be displayed on sign at entrance to location
     i. Green Flag – Normal Safe Operation Condition
     ii. Yellow Flag – Potential Pressure and Danger
     iii. Red Flag – Danger (H_2S present in dangerous concentrations) Only H_2S trained personnel admitted on location

5. Well Control Equipment:
   - See attached APD

6. Communications:
    - While working under masks, chalkboards will be used for communications
    - Hand signals will be used where chalk board is inappropriate
    - Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at drilling foreman's trailer or living quarters.

7. Drilling Stem Testing:
    - No Drill Stem Tests or hole coring is planned at this time.

8. Drilling contractor supervisor will be required to be familiar with the effects H_2S has on tubular goods and other mechanical equipment.

9. If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavenger chemicals if necessary.

10. Emergency Contacts:

Emergency Contact Information - Santo Personnel				
Santo Petroleum, LLC	**Artesia Office**	575-736-3250	**Houston**	713-600-7500
Key Parties at Santo Petroleum	**Title**	**Office**	**Mobile**	**Email**
Gary Waldrop	Field Land Manager	575-736-3256	469-261-3446	gwaldrop@santopetroleum.com
Lelan J Anders	VP, Operations	713-600-7502	281-908-1752	landers@santopetroleum.com
Hanson Yates	President	713-600-7503	713-412-2097	hyates@santopetroleum.com

Carlsbad, New Mexico:	
Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
New Mexico Oil Conservation Division	575-887-6544

SANTO PETROLEUM

Santa Fe, New Mexico:	
New Mexico Emergency Response Commission	505-476-9600
New Mexico Emergency Response Commission (24 hr)	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

Federal Contacts:	
Carlsbad BLM Office	575-234-5972
National Emergency Response Center (Washington, DC)	800-424-8802

Medical:	
Flight for Life - Lubbock, TX	806-743-9911
AeroCare - Lubbock, TX	806-747-8923
Med Flight Air Ambulance - Albuquerque, NM	505-842-4433
SB Air Med Service - Albuquerque, NM	505-842-4949

Well Control/Other:	
Wild Well Control	281-784-4700
Boots & Coots IWC	800-256-9688
B.J. Services	575-746-3569
Halliburton	575-746-2757