

Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM0489599	
6. If Indian, Allottee or Tribe Name	
7. If Unit or CA Agreement, Name and No.	
8. Lease Name and Well No. SOUTH AVALON AUA COM 1H	
9. API Well No.	
1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	10. Field and Pool, or Exploratory CARLSBAD/WOLFCAMP EAST (GAS)
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other	11. Sec., T. R. M. or Blk. and Survey or Area SEC 23/T21S/R26E/NMP
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone	12. County or Parish EDDY
2. Name of Operator SPC RESOURCES LLC	13. State NM
3a. Address , ,	14. Distance in miles and direction from nearest town or post office* 4 miles
3b. Phone No. (include area code)	15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 660 feet
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWNW / 660 FNL / 660 FWL / LAT 32.471133 / LONG -104.269686 At proposed prod. zone SENE / 1650 FNL / 200 FEL / LAT 32.467824 / LONG -104.238103	16. No of acres in lease
	17. Spacing Unit dedicated to this well 642.03
	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 0 feet
	19. Proposed Depth 8782 feet / 18105 feet
	20. BLM/BIA Bond No. in file FED: NMB001643
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3152 feet	22. Approximate date work will start* 01/04/2021
	23. Estimated duration 60 days
24. Attachments	

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|---|---|
| <ul style="list-style-type: none"> 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). | <ul style="list-style-type: none"> 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 requested by the BLM. |
|---|---|

25. Signature (Electronic Submission)	Name (Printed/Typed) BRIAN WOOD / Ph: (575) 736-3262	Date 11/30/2020
Title President		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575) 234-5959	Date 09/30/2021
Title Assistant Field Manager Lands & Minerals		
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.

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)

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-8161 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) 334-8178 Fax: (505) 334-8170

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

Form C-102
Revised August 4, 2011

Submit one copy to appropriate
District Office

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number 30-015-31001	Pool Code 74160	Pool Name CARLSBAD; WOLFCAMP, EAST (GAS)
Property Code	Property Name SOUTH AVALON AUA COM	Well Number 1H
OGRID No. 372262	Operator Name SPC RESOURCES, LLC	Elevation 3152'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
D	23	21 S	26 E		660	NORTH	660	WEST	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
H	24	21 S	26 E		1650	NORTH	200	EAST	EDDY

Dedicated Acres 642.03	Joint or Infill	Consolidation Code C	Order No.
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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

SURFACE LOCATION

Lat - N 32.471133°
Long - W 104.269686°
NMSPC-E 535134.8
E 560965.8
(NAD-83)

Lat - N 32.471016°
Long - W 104.269179°
NMSPC-E 535074.6
E 519785.2
(NAD-27)

FIRST TAKE POINT
1650' FNL & 1250' FWL

Lat - N 32.468425°
Long - W 104.467780°
NMSPC-E 534150.1
E 561554.3
(NAD-83)

Lat - N 32.468308°
Long - W 104.267273°
NMSPC-E 534090.0
E 520373.6
(NAD-27)

LAST TAKE POINT
1650' FNL & 330' FEL

Lat - N 32.467841°
Long - W 104.538524°
NMSPC-E 533944.5
E 570577.0
(NAD-83)

Lat - N 32.467724°
Long - W 104.238018°
NMSPC-E 533884.2
E 529396.2
(NAD-27)

BOTTOM HOLE LOCATION

Lat - N 32.467824°
Long - W 104.238103°
NMSPC-E 533938.3
E 570706.8
(NAD-83)

Lat - N 32.467706°
Long - W 104.237598°
NMSPC-E 533878.0
E 529526.0
(NAD-27)

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.

Brian Wood **11-15-20**

Signature Date

BRIAN WOOD

Printed Name **brian@permitswest.com**

Email Address **505 466-8120**

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 supervision and that the same is true and correct to the best of my belief.

SEPTEMBER 16 2020

Date Surveyed

Signature & Seal of Professional Surveyor **7977**

Certificate No. **7977** Jones **7977**

BASIN SURVEYS

0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

WO Num.: 35192

District I
1625 N. French Dr., Hobbs, NM 88240
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1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 11/15/2020

X Original Operator & OGRID No.: SPC Resources, LLC (372262)

Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: A C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule 19.15.18.12.A

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well	API	SHL (ULSTR)	SHL Footages	Expected MCF/D	Flared or Vented	Comments
South Avalon AUA Com 1H	30-015- 31001	D-23-21S-26E	660 FNL & 660 FWL	1,000	30 days	Time depends on well clean up

Gathering System and Pipeline Notification

Well will be connected to an existing production facility after flowback operations are complete. Gas from the pad will be piped north ≈125’ to an existing Lucid Artesia Company (147831) line in NWNW 23-21s-26e. SPC Resources, LLC will provide (periodically) to its Gas Transporter a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, SPC Resources, LLC and its Gas Transporter have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at an as yet undetermined Gas Transporter Processing Plant located in Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on its Gas Transporter system at that time. Based on current information, it is SPC Resources, LLC’s belief an existing or new system can take this gas upon completion of the well(s). Safety requirements during cleanout operations from using underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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:** 11 / 08 / 2021

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
South Avalon AUA Com 1	ST	D-23-21S-26E	660 N, 660 W	1300 bopd	3000 Mcfpd	2540 bwpd

IV. Central Delivery Point Name: South Avalon AUA 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
South Avalon AUA Com 1	ST	2-1-2022	2-15-2022	3-1-2022	3-15-2022	4-1-2022

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: 11/2/2021
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.(1) 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.(1)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.



Blue – Well Location
Red – Existing Gas Sales Line
to DCP Meter 724912-00
Magenta – New Line for South
Avalon AUA CTB



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report

09/30/2021

APD ID: 10400065778

Submission Date: 11/30/2020

Highlighted data
reflects the most
recent changes

Operator Name: SPC RESOURCES LLC

Well Name: SOUTH AVALON AUA COM

Well Number: 1H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1174881	QUATERNARY	3152	0	0	OTHER : Caliche	USEABLE WATER	N
6837255	TANSILL	3027	125	125	DOLOMITE	USEABLE WATER	N
6837256	YATES	2852	300	300	SANDSTONE	USEABLE WATER	N
1174882	CAPITAN REEF	2396	756	756	LIMESTONE	USEABLE WATER	N
1174883	DELAWARE SAND	1030	2122	2122	SANDSTONE	NATURAL GAS, OIL	N
1174884	BONE SPRING LIME	-1258	4410	4410	LIMESTONE	NATURAL GAS, OIL	N
1174885	BONE SPRING 1ST	-2579	5731	5750	SANDSTONE	NATURAL GAS, OIL	N
1174886	BONE SPRING 2ND	-3370	6522	6559	SANDSTONE	NATURAL GAS, OIL	N
1174887	BONE SPRING 3RD	-4840	7992	8062	SANDSTONE	NATURAL GAS, OIL	N
1174888	WOLFCAMP	-5204	8356	8503	OTHER : Carbonate	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 10000

Equipment: A 5000-psi 10,000' rated BOP stack and choke manifold will be installed and tested before drilling the new hole. Test plug will be installed before starting tests. Casing valve will be left open for the entire BOP test. Rams (blind, double) will initially be tested to 250 and 3000 psi. Annular will initially be tested to 2000-psi. Test pressures must not be exceeded.

Requesting Variance? NO

Variance request:

Testing Procedure: Third party tester will conduct all tests. All tests will be held for at least 5-minutes. One-thousand psi pressure drop of no more than 10% over a 30-minute test. All BOP test charts will be kept for the record in the Drilling Supervisors office. Tests will be done at least once every 21 days. Relevant well control equipment will be tested following replacement of any pressure containing component; or following removal, then reinstallation of the BOP stack; or following installation of each casing string; or at the discretion of the Drill Site Manager or Drilling Superintendent. New ring gaskets will be used every time the BOP is installed. TIW valve with appropriate wrenches will be on the rig floor at all times. Drill pipe float is required in all BHAs. No speed head is planned. All casing strings will be tested in accordance with Onshore Order 2

Operator Name: SPC RESOURCES LLC

Well Name: SOUTH AVALON AUA COM

Well Number: 1H

III.B.1.h.

Choke Diagram Attachment:

South_Avalon_1H_Choke_20201125151559.pdf

BOP Diagram Attachment:

South_Avalon_1H_BOP_20201125151610.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	595	0	595	3152	2557	595	H-40	48	ST&C	1.125	1.125	DRY	1.6	DRY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2150	0	2150	3152	1002	2150	J-55	36	LT&C	1.125	1.125	DRY	1.6	DRY	1.6
3	INTERMEDIATE	8.75	7.0	NEW	API	N	0	4600	0	4600	3152	-1448	4600	OTHER	29	LT&C	1.125	1.125	DRY	1.6	DRY	1.6
4	PRODUCTION	6.75	5.5	NEW	NON API	N	0	8600	0	8408	3152	-5256	8600	OTHER	20	OTHER - Ultra FJ	1.125	1.125	DRY	1.8	DRY	1.8
5	PRODUCTION	6.125	5.0	NEW	NON API	Y	8600	18105	8408	8782	-5256	-5630	9505	OTHER	18	OTHER - Ultra FJ	1.125	1.125	DRY	1.8	DRY	1.8

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

South_Avalon_1H_Casing_Design_Assumptions_20201125151826.pdf

Operator Name: SPC RESOURCES LLC

Well Name: SOUTH AVALON AUA COM

Well Number: 1H

Casing Attachments

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

South_Avalon_1H_Casing_Design_Assumptions_20201125151931.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

South_Avalon_1H_Casing_Design_Assumptions_20201125152044.pdf

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

5.5in_P110_CYHP_20201125152833.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

South_Avalon_1H_Casing_Design_Assumptions_20201125152853.pdf

Operator Name: SPC RESOURCES LLC

Well Name: SOUTH AVALON AUA COM

Well Number: 1H

Casing Attachments

Casing ID: 5 String Type: PRODUCTION

Inspection Document:

Spec Document:

5in_P110_CYHP_20201125153032.pdf

Tapered String Spec:

5in_P110_CYHP_20201125153042.pdf

Casing Design Assumptions and Worksheet(s):

South_Avalon_1H_Casing_Design_Assumptions_20201125153108.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	595	600	2	12.5	1200	100	35/65 Poz C	5 #/sk salt + ½ #/sk cello flake + 10#/sk gilsonite
SURFACE	Tail		0	595	200	1.34	14.8	268	100	Class C	2% CaCl ₂
INTERMEDIATE	Lead		0	2150	950	1.98	12.5	1881	100	Class C Lite 35/65/6	5 #/sk gilsonite + 1/4 #/sk cello flake + 2% CaCl ₂
INTERMEDIATE	Tail		0	2150	200	1.34	14.8	268	100	Class C Neat	2% CaCl ₂
INTERMEDIATE	Lead		0	4600	1110	2.04	12.4	2244	70	35/65 Poz C	3 #/sk salt + 5 #/sk gilsonite + ¼ #/sk cello flake + 0.2% FL-52
INTERMEDIATE	Tail		0	4600	425	1.6	13.2	680	70	Super C Modified	0.7% FL-52
PRODUCTION	Lead		0	1810 5	380	2.24	11.8	851	50	50/50 Poz H	0.5 gal/100 sk foam preventer + 2% NaCl + 1% sodium metasilicate
PRODUCTION	Tail		0	1810 5	710	1.38	13.2	979	50	Class H	0.005 gal/sk foam preventer + 0.2% retarder

Operator Name: SPC RESOURCES LLC

Well Name: SOUTH AVALON AUA COM

Well Number: 1H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: All necessary mud products (barite, bentonite, LCM) to control weight and fluid loss will be on site at all times. Mud program may change due to hole conditions.

Describe the mud monitoring system utilized: Surface and intermediate holes were drilled with 8.4 ppg mud mixed at viscosity of 28 and pH of 10. An electronic PVT mud system will monitor flow rate, pump pressure, stroke rate, and volume.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
4600	1810 5	OIL-BASED MUD	8.5	10							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

AZ-LL/MCFL/GR, 3D-LD/CNL/GR, and BHC Sonic/GR logs were run by Yates and are on file with NMOCD.

A CBL will be run before setting the shallow CIBP and whipstock to verify good cement from 4600' to 4550'. A 2-person mud logging program will be used from casing exit to TD. GR log will be acquired by MWD tools from the casing exit to TD.

List of open and cased hole logs run in the well:

MUD LOG/GEOLOGICAL LITHOLOGY LOG, CEMENT BOND LOG, GAMMA RAY LOG,

Coring operation description for the well:

No core or drill stem test is planned.

Operator Name: SPC RESOURCES LLC

Well Name: SOUTH AVALON AUA COM

Well Number: 1H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4319

Anticipated Surface Pressure: 2386

Anticipated Bottom Hole Temperature(F): 190

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

South_Avalon_1H_H2S_Plan_20201125182311.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

South_Avalon_1H_Horizontal_Plan_20201125182500.pdf

Other proposed operations facets description:

Well was drilled and completed in 2000 as an 11,300' deep vertical Atoka Morrow gas well by Yates Petroleum Corporation. SPC will isolate the Atoka Morrow by setting a CIBP at 10,200' (35' above the Atoka's highest perf of 10,235') and top it with 50' of cement. SPC will next set a CIBP at 4600'. After that, a whipstock will be set. The window bottom will be at 4595' and window top at 4583'. SPC will then drill a horizontal Wolfcamp gas well.

Existing casing noted with * is API and was new when run. Proposed casing will be new.

Other proposed operations facets attachment:

South_Avalon_1H_Drill_Plan_Revised_20210806150709.pdf

Other Variance attachment:



Company: Santo Petroleum
 Project: Eddy County, NM (NAD 83 - NME)
 Site: South Avalon AUA Com
 Well: Well #1
 Wellbore: Wellbore #2
 Design: Plan #4

WELL DETAILS: Well #1

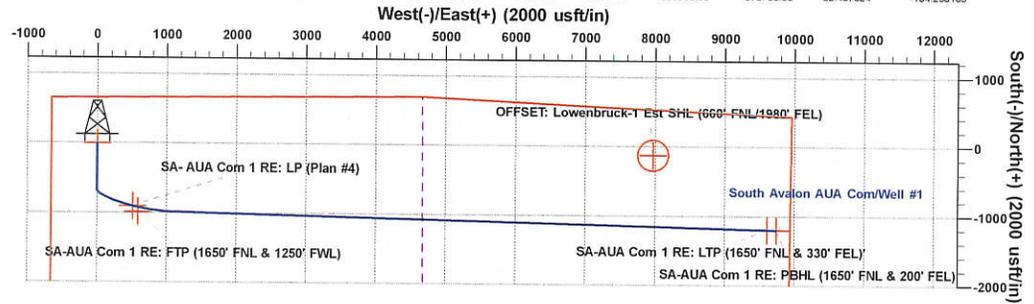
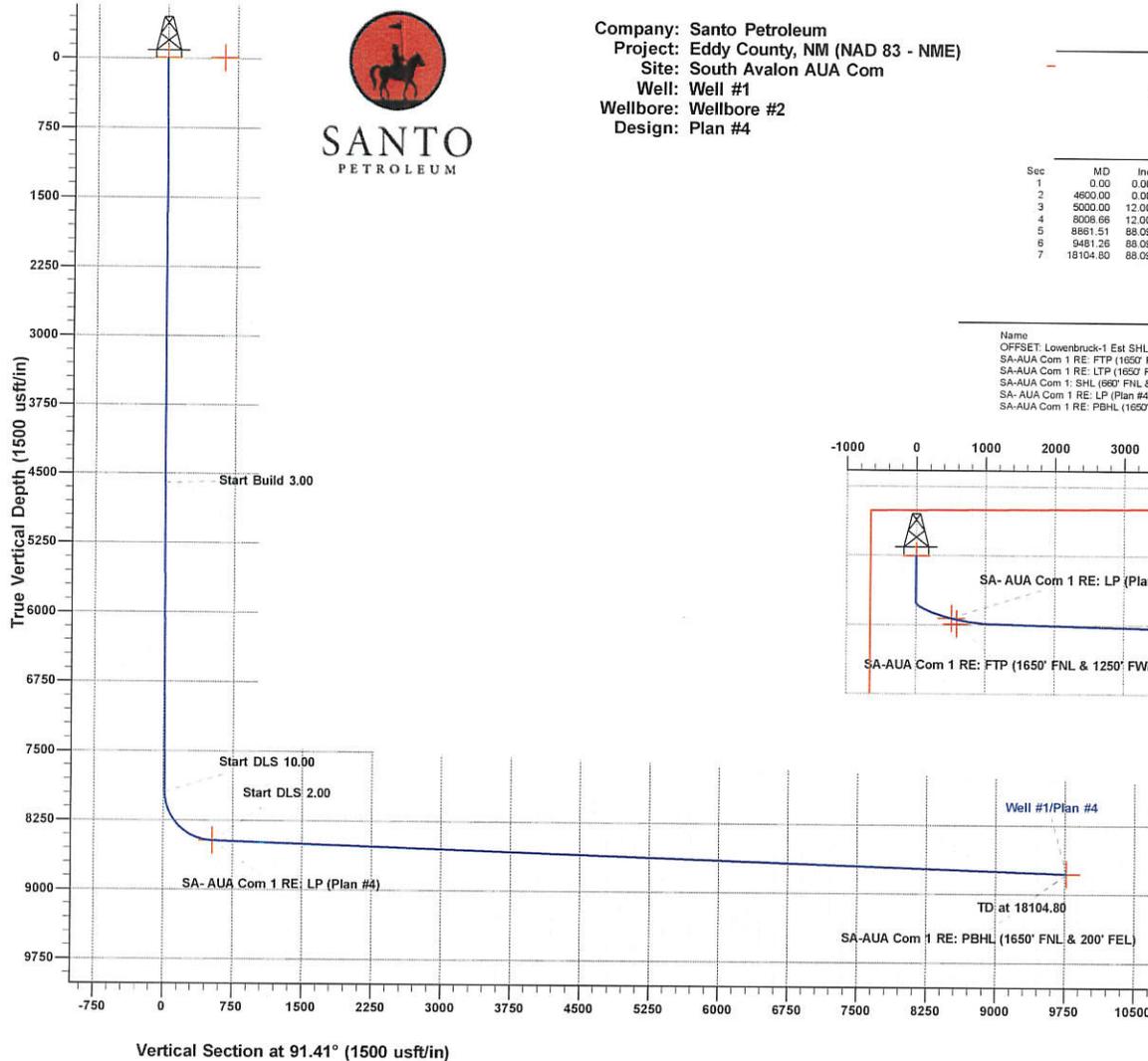
Rig Name:	Est RKB = 25' @ 3177.00usft		
	3152.00		
+N/-S	+E/-W	Northing	Longitude
0.00	0.00	535134.80	-104.269586
		Eastings	Latitude
		560965.80	32.471133

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	0.00	0.00	
3	5000.00	12.00	180.00	4997.98	-41.73	0.00	3.00	180.000	1.03	
4	8006.66	12.00	180.00	7940.00	-667.27	0.00	0.00	0.000	16.42	
5	8861.51	88.09	103.81	8473.70	-902.86	512.11	10.00	-76.868	534.17	
6	9481.26	88.09	91.41	8494.44	-984.71	1124.86	2.00	-90.212	1148.75	
7	18104.80	89.09	91.41	8782.00	-1196.50	9741.00	0.00	0.000	9767.49	SA-AUA Com 1 RE: PBHL (1650' FNL & 200' FEL)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Eastings	Latitude	Longitude
OFFSET: Lowenbruck-1 Est SHL (660' FNL/1980' FEL)	0.00	-122.09	7969.53	535012.71	566935.33	32.470761	-104.243844
SA-AUA Com 1 RE: FTP (1650' FNL & 1250' FWL)	0.00	-984.70	588.50	534150.10	561554.30	32.468425	-104.267780
SA-AUA Com 1 RE: LTP (1650' FNL & 330' FEL)	0.00	-1190.30	9611.20	533944.50	570577.00	32.467841	-104.238524
SA-AUA Com 1: SHL (660' FNL & 950' FEL)	0.00	0.00	0.00	535134.80	560965.80	32.471133	-104.269686
SA-AUA Com 1 RE: LP (Plan #4)	8473.70	-902.86	512.11	534231.94	561477.91	32.468950	-104.268027
SA-AUA Com 1 RE: PBHL (1650' FNL & 200' FEL)	8782.00	-1196.50	9741.00	533938.30	570706.60	32.467824	-104.238103



PROJECT DETAILS: Eddy County, NM (NAD 83 - NME)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level



Plan: Plan #4 (Well #1/Wellbore #2)
 Created By: Matthew May Date: 9:08, October 06 2020



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well Well#1
Company:	Santo Petroleum	TVD Reference:	Est RKB = 25' @ 3177.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	Est RKB = 25' @ 3177.00usft
Site:	South Avalon AUA Com	North Reference:	Grid
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	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	South Avalon AUA Com				
Site Position:		Northing:	535,138.92 usft	Latitude:	32.471144
From:	Lat/Long	Easting:	560,963.09 usft	Longitude:	-104.269695
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.034 °

Well	Well #1					
Well Position	+N/-S	-4.11 usft	Northing:	535,134.80 usft	Latitude:	32.471133
	+E/-W	2.72 usft	Easting:	560,965.80 usft	Longitude:	-104.269686
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,152.00 usft

Wellbore	Wellbore #2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	08/06/20	6.958	60.139	47,689.39142067

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	91.41

Plan Survey Tool Program	Date	10/06/20		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,104.80	Plan #4 (Wellbore #2)	MWD+IGRF OWSG MWD + IGRF or WM

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.000	
5,000.00	12.00	180.00	4,997.08	-41.73	0.00	3.00	0.00	0.00	180.000	
8,008.66	12.00	180.00	7,940.00	-667.27	0.00	0.00	0.00	0.00	0.000	
8,861.51	88.09	103.81	8,473.70	-902.86	512.11	10.00	8.92	-8.93	-76.868	
9,481.26	88.09	91.41	8,494.44	-984.71	1,124.86	2.00	0.00	-2.00	-90.212	
18,104.80	88.09	91.41	8,782.00	-1,196.50	9,741.00	0.00	0.00	0.00	0.000	SA-AUA Com 1 RE



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well Well #1
Company:	Santo Petroleum	TVD Reference:	Est RKB = 25' @ 3177.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	Est RKB = 25' @ 3177.00usft
Site:	South Avalon AUA Com	North Reference:	Grid
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	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
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	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	3.00	180.00	4,699.95	-2.62	0.00	0.06	3.00	3.00	0.00
4,800.00	6.00	180.00	4,799.63	-10.46	0.00	0.26	3.00	3.00	0.00
4,900.00	9.00	180.00	4,898.77	-23.51	0.00	0.58	3.00	3.00	0.00
5,000.00	12.00	180.00	4,997.08	-41.73	0.00	1.03	3.00	3.00	0.00
5,100.00	12.00	180.00	5,094.90	-62.53	0.00	1.54	0.00	0.00	0.00
5,200.00	12.00	180.00	5,192.71	-83.32	0.00	2.05	0.00	0.00	0.00
5,300.00	12.00	180.00	5,290.53	-104.11	0.00	2.56	0.00	0.00	0.00



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well Well #1
Company:	Santo Petroleum	TVD Reference:	Est RKB = 25' @ 3177.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	Est RKB = 25' @ 3177.00usft
Site:	South Avalon AUA Com	North Reference:	Grid
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	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)	
5,400.00	12.00	180.00	5,388.34	-124.90	0.00	3.07	0.00	0.00	0.00	
5,500.00	12.00	180.00	5,486.16	-145.69	0.00	3.58	0.00	0.00	0.00	
5,600.00	12.00	180.00	5,583.97	-166.48	0.00	4.10	0.00	0.00	0.00	
5,700.00	12.00	180.00	5,681.79	-187.27	0.00	4.61	0.00	0.00	0.00	
5,800.00	12.00	180.00	5,779.60	-208.06	0.00	5.12	0.00	0.00	0.00	
5,900.00	12.00	180.00	5,877.42	-228.86	0.00	5.63	0.00	0.00	0.00	
6,000.00	12.00	180.00	5,975.23	-249.65	0.00	6.14	0.00	0.00	0.00	
6,100.00	12.00	180.00	6,073.04	-270.44	0.00	6.65	0.00	0.00	0.00	
6,200.00	12.00	180.00	6,170.86	-291.23	0.00	7.17	0.00	0.00	0.00	
6,300.00	12.00	180.00	6,268.67	-312.02	0.00	7.68	0.00	0.00	0.00	
6,400.00	12.00	180.00	6,366.49	-332.81	0.00	8.19	0.00	0.00	0.00	
6,500.00	12.00	180.00	6,464.30	-353.60	0.00	8.70	0.00	0.00	0.00	
6,600.00	12.00	180.00	6,562.12	-374.39	0.00	9.21	0.00	0.00	0.00	
6,700.00	12.00	180.00	6,659.93	-395.18	0.00	9.72	0.00	0.00	0.00	
6,800.00	12.00	180.00	6,757.75	-415.98	0.00	10.24	0.00	0.00	0.00	
6,900.00	12.00	180.00	6,855.56	-436.77	0.00	10.75	0.00	0.00	0.00	
7,000.00	12.00	180.00	6,953.38	-457.56	0.00	11.26	0.00	0.00	0.00	
7,100.00	12.00	180.00	7,051.19	-478.35	0.00	11.77	0.00	0.00	0.00	
7,200.00	12.00	180.00	7,149.01	-499.14	0.00	12.28	0.00	0.00	0.00	
7,300.00	12.00	180.00	7,246.82	-519.93	0.00	12.79	0.00	0.00	0.00	
7,400.00	12.00	180.00	7,344.64	-540.72	0.00	13.31	0.00	0.00	0.00	
7,500.00	12.00	180.00	7,442.45	-561.51	0.00	13.82	0.00	0.00	0.00	
7,600.00	12.00	180.00	7,540.27	-582.31	0.00	14.33	0.00	0.00	0.00	
7,700.00	12.00	180.00	7,638.08	-603.10	0.00	14.84	0.00	0.00	0.00	
7,800.00	12.00	180.00	7,735.90	-623.89	0.00	15.35	0.00	0.00	0.00	
7,900.00	12.00	180.00	7,833.71	-644.68	0.00	15.86	0.00	0.00	0.00	
8,008.66	12.00	180.00	7,940.00	-667.27	0.00	16.42	0.00	0.00	0.00	
8,050.00	13.54	162.56	7,980.33	-676.19	1.45	18.09	10.00	3.73	-42.20	
8,100.00	16.62	147.27	8,028.62	-687.80	7.07	24.00	10.00	6.15	-30.56	
8,150.00	20.45	137.10	8,076.03	-700.21	16.89	34.12	10.00	7.66	-20.35	
8,200.00	24.68	130.15	8,122.20	-713.35	30.82	48.37	10.00	8.48	-13.90	
8,250.00	29.15	125.17	8,166.78	-727.11	48.77	66.65	10.00	8.94	-9.95	
8,300.00	33.76	121.44	8,209.42	-741.38	70.59	88.81	10.00	9.21	-7.48	
8,350.00	38.45	118.51	8,249.81	-756.05	96.12	114.70	10.00	9.39	-5.85	
8,400.00	43.20	116.13	8,287.64	-771.02	125.17	144.10	10.00	9.51	-4.75	
8,450.00	48.00	114.14	8,322.61	-786.16	157.51	176.80	10.00	9.59	-3.98	
8,500.00	52.82	112.44	8,354.47	-801.38	192.89	212.55	10.00	9.65	-3.42	
8,550.00	57.67	110.93	8,382.96	-816.54	231.06	251.08	10.00	9.69	-3.00	
8,600.00	62.53	109.59	8,407.88	-831.53	271.71	292.09	10.00	9.72	-2.70	
8,650.00	67.40	108.35	8,429.03	-846.24	314.54	335.27	10.00	9.75	-2.47	
8,700.00	72.29	107.20	8,446.26	-860.56	359.23	380.30	10.00	9.76	-2.30	
8,750.00	77.17	106.11	8,459.42	-874.38	405.43	426.82	10.00	9.78	-2.18	
8,800.00	82.07	105.07	8,468.43	-887.59	452.79	474.49	10.00	9.79	-2.09	
8,850.00	86.96	104.04	8,473.20	-900.09	500.94	522.94	10.00	9.79	-2.04	
8,861.51	88.09	103.81	8,473.70	-902.86	512.11	534.17	10.00	9.79	-2.03	
8,900.00	88.09	103.04	8,474.98	-911.79	549.52	571.79	2.00	-0.01	-2.00	
9,000.00	88.08	101.04	8,478.33	-932.63	647.26	670.02	2.00	-0.01	-2.00	
9,100.00	88.08	99.04	8,481.68	-950.05	745.67	768.82	2.00	0.00	-2.00	
9,200.00	88.08	97.04	8,485.03	-964.02	844.63	868.10	2.00	0.00	-2.00	
9,300.00	88.08	95.04	8,488.38	-974.53	944.01	967.71	2.00	0.00	-2.00	
9,400.00	88.08	93.03	8,491.73	-981.56	1,043.71	1,067.54	2.00	0.00	-2.00	
9,481.26	88.09	91.41	8,494.44	-984.71	1,124.86	1,148.75	2.00	0.01	-2.00	
9,500.00	88.09	91.41	8,495.07	-985.17	1,143.58	1,167.48	0.00	0.00	0.00	
9,600.00	88.09	91.41	8,498.40	-987.63	1,243.49	1,267.42	0.00	0.00	0.00	



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well Well#1
Company:	Santo Petroleum	TVD Reference:	Est RKB = 25' @ 3177.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	Est RKB = 25' @ 3177.00usft
Site:	South Avalon AUA Com	North Reference:	Grid
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	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)
9,700.00	88.09	91.41	8,501.74	-990.08	1,343.41	1,367.36	0.00	0.00	0.00
9,800.00	88.09	91.41	8,505.07	-992.54	1,443.32	1,467.31	0.00	0.00	0.00
9,900.00	88.09	91.41	8,508.40	-995.00	1,543.24	1,567.25	0.00	0.00	0.00
10,000.00	88.09	91.41	8,511.74	-997.45	1,643.15	1,667.20	0.00	0.00	0.00
10,100.00	88.09	91.41	8,515.07	-999.91	1,743.07	1,767.14	0.00	0.00	0.00
10,200.00	88.09	91.41	8,518.41	-1,002.36	1,842.98	1,867.09	0.00	0.00	0.00
10,300.00	88.09	91.41	8,521.74	-1,004.82	1,942.89	1,967.03	0.00	0.00	0.00
10,400.00	88.09	91.41	8,525.08	-1,007.28	2,042.81	2,066.98	0.00	0.00	0.00
10,500.00	88.09	91.41	8,528.41	-1,009.73	2,142.72	2,166.92	0.00	0.00	0.00
10,600.00	88.09	91.41	8,531.75	-1,012.19	2,242.64	2,266.86	0.00	0.00	0.00
10,700.00	88.09	91.41	8,535.08	-1,014.64	2,342.55	2,366.81	0.00	0.00	0.00
10,800.00	88.09	91.41	8,538.42	-1,017.10	2,442.47	2,466.75	0.00	0.00	0.00
10,900.00	88.09	91.41	8,541.75	-1,019.56	2,542.38	2,566.70	0.00	0.00	0.00
11,000.00	88.09	91.41	8,545.09	-1,022.01	2,642.29	2,666.64	0.00	0.00	0.00
11,100.00	88.09	91.41	8,548.42	-1,024.47	2,742.21	2,766.59	0.00	0.00	0.00
11,200.00	88.09	91.41	8,551.75	-1,026.92	2,842.12	2,866.53	0.00	0.00	0.00
11,300.00	88.09	91.41	8,555.09	-1,029.38	2,942.04	2,966.47	0.00	0.00	0.00
11,400.00	88.09	91.41	8,558.42	-1,031.83	3,041.95	3,066.42	0.00	0.00	0.00
11,500.00	88.09	91.41	8,561.76	-1,034.29	3,141.86	3,166.36	0.00	0.00	0.00
11,600.00	88.09	91.41	8,565.09	-1,036.75	3,241.78	3,266.31	0.00	0.00	0.00
11,700.00	88.09	91.41	8,568.43	-1,039.20	3,341.69	3,366.25	0.00	0.00	0.00
11,800.00	88.09	91.41	8,571.76	-1,041.66	3,441.61	3,466.20	0.00	0.00	0.00
11,900.00	88.09	91.41	8,575.10	-1,044.11	3,541.52	3,566.14	0.00	0.00	0.00
12,000.00	88.09	91.41	8,578.43	-1,046.57	3,641.44	3,666.09	0.00	0.00	0.00
12,100.00	88.09	91.41	8,581.77	-1,049.03	3,741.35	3,766.03	0.00	0.00	0.00
12,200.00	88.09	91.41	8,585.10	-1,051.48	3,841.26	3,865.97	0.00	0.00	0.00
12,300.00	88.09	91.41	8,588.43	-1,053.94	3,941.18	3,965.92	0.00	0.00	0.00
12,400.00	88.09	91.41	8,591.77	-1,056.39	4,041.09	4,065.86	0.00	0.00	0.00
12,500.00	88.09	91.41	8,595.10	-1,058.85	4,141.01	4,165.81	0.00	0.00	0.00
12,600.00	88.09	91.41	8,598.44	-1,061.31	4,240.92	4,265.75	0.00	0.00	0.00
12,700.00	88.09	91.41	8,601.77	-1,063.76	4,340.84	4,365.70	0.00	0.00	0.00
12,800.00	88.09	91.41	8,605.11	-1,066.22	4,440.75	4,465.64	0.00	0.00	0.00
12,900.00	88.09	91.41	8,608.44	-1,068.67	4,540.66	4,565.59	0.00	0.00	0.00
13,000.00	88.09	91.41	8,611.78	-1,071.13	4,640.58	4,665.53	0.00	0.00	0.00
13,100.00	88.09	91.41	8,615.11	-1,073.59	4,740.49	4,765.47	0.00	0.00	0.00
13,200.00	88.09	91.41	8,618.45	-1,076.04	4,840.41	4,865.42	0.00	0.00	0.00
13,300.00	88.09	91.41	8,621.78	-1,078.50	4,940.32	4,965.36	0.00	0.00	0.00
13,400.00	88.09	91.41	8,625.12	-1,080.95	5,040.23	5,065.31	0.00	0.00	0.00
13,500.00	88.09	91.41	8,628.45	-1,083.41	5,140.15	5,165.25	0.00	0.00	0.00
13,600.00	88.09	91.41	8,631.78	-1,085.87	5,240.06	5,265.20	0.00	0.00	0.00
13,700.00	88.09	91.41	8,635.12	-1,088.32	5,339.98	5,365.14	0.00	0.00	0.00
13,800.00	88.09	91.41	8,638.45	-1,090.78	5,439.89	5,465.08	0.00	0.00	0.00
13,900.00	88.09	91.41	8,641.79	-1,093.23	5,539.81	5,565.03	0.00	0.00	0.00
14,000.00	88.09	91.41	8,645.12	-1,095.69	5,639.72	5,664.97	0.00	0.00	0.00
14,100.00	88.09	91.41	8,648.46	-1,098.14	5,739.63	5,764.92	0.00	0.00	0.00
14,200.00	88.09	91.41	8,651.79	-1,100.60	5,839.55	5,864.86	0.00	0.00	0.00
14,300.00	88.09	91.41	8,655.13	-1,103.06	5,939.46	5,964.81	0.00	0.00	0.00
14,400.00	88.09	91.41	8,658.46	-1,105.51	6,039.38	6,064.75	0.00	0.00	0.00
14,500.00	88.09	91.41	8,661.80	-1,107.97	6,139.29	6,164.70	0.00	0.00	0.00
14,600.00	88.09	91.41	8,665.13	-1,110.42	6,239.21	6,264.64	0.00	0.00	0.00
14,700.00	88.09	91.41	8,668.46	-1,112.88	6,339.12	6,364.58	0.00	0.00	0.00
14,800.00	88.09	91.41	8,671.80	-1,115.34	6,439.03	6,464.53	0.00	0.00	0.00
14,900.00	88.09	91.41	8,675.13	-1,117.79	6,538.95	6,564.47	0.00	0.00	0.00
15,000.00	88.09	91.41	8,678.47	-1,120.25	6,638.86	6,664.42	0.00	0.00	0.00



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well Well #1
Company:	Santo Petroleum	TVD Reference:	Est RKB = 25' @ 3177.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	Est RKB = 25' @ 3177.00usft
Site:	South Avalon AUA Com	North Reference:	Grid
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	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)
15,100.00	88.09	91.41	8,681.80	-1,122.70	6,738.78	6,764.36	0.00	0.00	0.00
15,200.00	88.09	91.41	8,685.14	-1,125.16	6,838.69	6,864.31	0.00	0.00	0.00
15,300.00	88.09	91.41	8,688.47	-1,127.62	6,938.60	6,964.25	0.00	0.00	0.00
15,400.00	88.09	91.41	8,691.81	-1,130.07	7,038.52	7,064.19	0.00	0.00	0.00
15,500.00	88.09	91.41	8,695.14	-1,132.53	7,138.43	7,164.14	0.00	0.00	0.00
15,600.00	88.09	91.41	8,698.48	-1,134.98	7,238.35	7,264.08	0.00	0.00	0.00
15,700.00	88.09	91.41	8,701.81	-1,137.44	7,338.26	7,364.03	0.00	0.00	0.00
15,800.00	88.09	91.41	8,705.14	-1,139.90	7,438.18	7,463.97	0.00	0.00	0.00
15,900.00	88.09	91.41	8,708.48	-1,142.35	7,538.09	7,563.92	0.00	0.00	0.00
16,000.00	88.09	91.41	8,711.81	-1,144.81	7,638.00	7,663.86	0.00	0.00	0.00
16,100.00	88.09	91.41	8,715.15	-1,147.26	7,737.92	7,763.81	0.00	0.00	0.00
16,200.00	88.09	91.41	8,718.48	-1,149.72	7,837.83	7,863.75	0.00	0.00	0.00
16,300.00	88.09	91.41	8,721.82	-1,152.18	7,937.75	7,963.69	0.00	0.00	0.00
16,400.00	88.09	91.41	8,725.15	-1,154.63	8,037.66	8,063.64	0.00	0.00	0.00
16,500.00	88.09	91.41	8,728.49	-1,157.09	8,137.58	8,163.58	0.00	0.00	0.00
16,600.00	88.09	91.41	8,731.82	-1,159.54	8,237.49	8,263.53	0.00	0.00	0.00
16,700.00	88.09	91.41	8,735.16	-1,162.00	8,337.40	8,363.47	0.00	0.00	0.00
16,800.00	88.09	91.41	8,738.49	-1,164.45	8,437.32	8,463.42	0.00	0.00	0.00
16,900.00	88.09	91.41	8,741.83	-1,166.91	8,537.23	8,563.36	0.00	0.00	0.00
17,000.00	88.09	91.41	8,745.16	-1,169.37	8,637.15	8,663.31	0.00	0.00	0.00
17,100.00	88.09	91.41	8,748.49	-1,171.82	8,737.06	8,763.25	0.00	0.00	0.00
17,200.00	88.09	91.41	8,751.83	-1,174.28	8,836.97	8,863.19	0.00	0.00	0.00
17,300.00	88.09	91.41	8,755.16	-1,176.73	8,936.89	8,963.14	0.00	0.00	0.00
17,400.00	88.09	91.41	8,758.50	-1,179.19	9,036.80	9,063.08	0.00	0.00	0.00
17,500.00	88.09	91.41	8,761.83	-1,181.65	9,136.72	9,163.03	0.00	0.00	0.00
17,600.00	88.09	91.41	8,765.17	-1,184.10	9,236.63	9,262.97	0.00	0.00	0.00
17,700.00	88.09	91.41	8,768.50	-1,186.56	9,336.55	9,362.92	0.00	0.00	0.00
17,800.00	88.09	91.41	8,771.84	-1,189.01	9,436.46	9,462.86	0.00	0.00	0.00
17,900.00	88.09	91.41	8,775.17	-1,191.47	9,536.37	9,562.80	0.00	0.00	0.00
18,000.00	88.09	91.41	8,778.51	-1,193.93	9,636.29	9,662.75	0.00	0.00	0.00
18,104.80	88.09	91.41	8,782.00	-1,196.50	9,741.00	9,767.49	0.00	0.00	0.00



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well Well #1
Company:	Santo Petroleum	TVD Reference:	Est RKB = 25' @ 3177.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	Est RKB = 25' @ 3177.00usft
Site:	South Avalon AUA Com	North Reference:	Grid
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Plan #4		

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
SA-AUA Com 1 RE: F - plan misses target center by 1147.16usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	-984.70	588.50	534,150.10	561,554.30	32.468425	-104.267780
SA-AUA Com 1 RE: L - plan misses target center by 8772.78usft at 17682.12usft MD (8767.91 TVD, -1186.12 N, 9318.68 E) - Point	0.00	0.00	0.00	-1,190.30	9,611.20	533,944.50	570,577.00	32.467841	-104.238524
SA-AUA Com 1: SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	535,134.80	560,965.80	32.471133	-104.269686
OFFSET: Lowenbruck - plan misses target center by 7970.47usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 222.00)	0.00	0.00	0.00	-122.09	7,969.53	535,012.72	568,935.34	32.470781	-104.243845
SA-AUA Com 1 RE: I - plan hits target center - Point	0.00	0.00	8,473.70	-902.86	512.11	534,231.94	561,477.91	32.468650	-104.268028
SA-AUA Com 1 RE: F - plan hits target center - Point	0.00	0.00	8,782.00	-1,196.50	9,741.00	533,938.30	570,706.80	32.467824	-104.238104

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	SPC RESOURCES LLC
LEASE NO.:	NMNM0489599
WELL NAME & NO.:	SOUTH AVALON AUA COM 1H
SURFACE HOLE FOOTAGE:	660'/N & 660'/W
BOTTOM HOLE FOOTAGE:	1650'/N & 200'/E
LOCATION:	SECTION 23, T21S, R26E, NMP
COUNTY:	Eddy County, New Mexico

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input type="radio"/> Medium	<input checked="" type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input checked="" type="radio"/> None	<input type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input type="radio"/> Multibowl	<input checked="" type="radio"/> Both
Other	<input checked="" type="checkbox"/> 4 String Area	<input checked="" type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **595** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after

- completing the cement job.
- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The **9-5/8** inch first intermediate casing shall be set at approximately **900** feet. The minimum required fill of cement behind the **9-5/8** inch first intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
 - ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
 - ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
 - ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)
 - Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
3. The **7** inch second intermediate casing shall be set at approximately **2,080** feet. The minimum required fill of cement behind the **7** inch second intermediate casing is:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
4. The minimum required fill of cement behind the **5 1/2 X 5** inch production casing is:
- Cement should tie-back at least **50 feet** on top of Capitan Reef top. If cement does not circulate see B.1.a, c-d above.

C. PRESSURE CONTROL

1. No variance approved to use flex line from BOP to choke manifold. Manufacturer's specification is not necessary to be available.
- 2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the first intermediate casing shoe shall be **2000 (2M)** psi.
- c. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the second intermediate casing shoe shall be **3000 (3M)** psi.

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for

the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

OTA09282021



Hydrogen Sulfide Drilling Operations Plan

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

1. H₂S Safety Instructions to the following:
 - Characteristics of H₂S.
 - Physical effects and hazards.
 - Principal and operation of H₂S 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. H₂S Detection & Alarm Systems:
 - H₂S 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 H₂S monitors may be placed as deemed necessary.
 - An audio alarm system will be installed on the derrick, the floor, and in the doghouse.

3. Windssocks and Wind Streamers:
 - Windssocks at mud pit area should be high enough to be visible.
 - Windssock 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 (H₂S present in dangerous concentrations) Only H₂S 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 H₂S 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

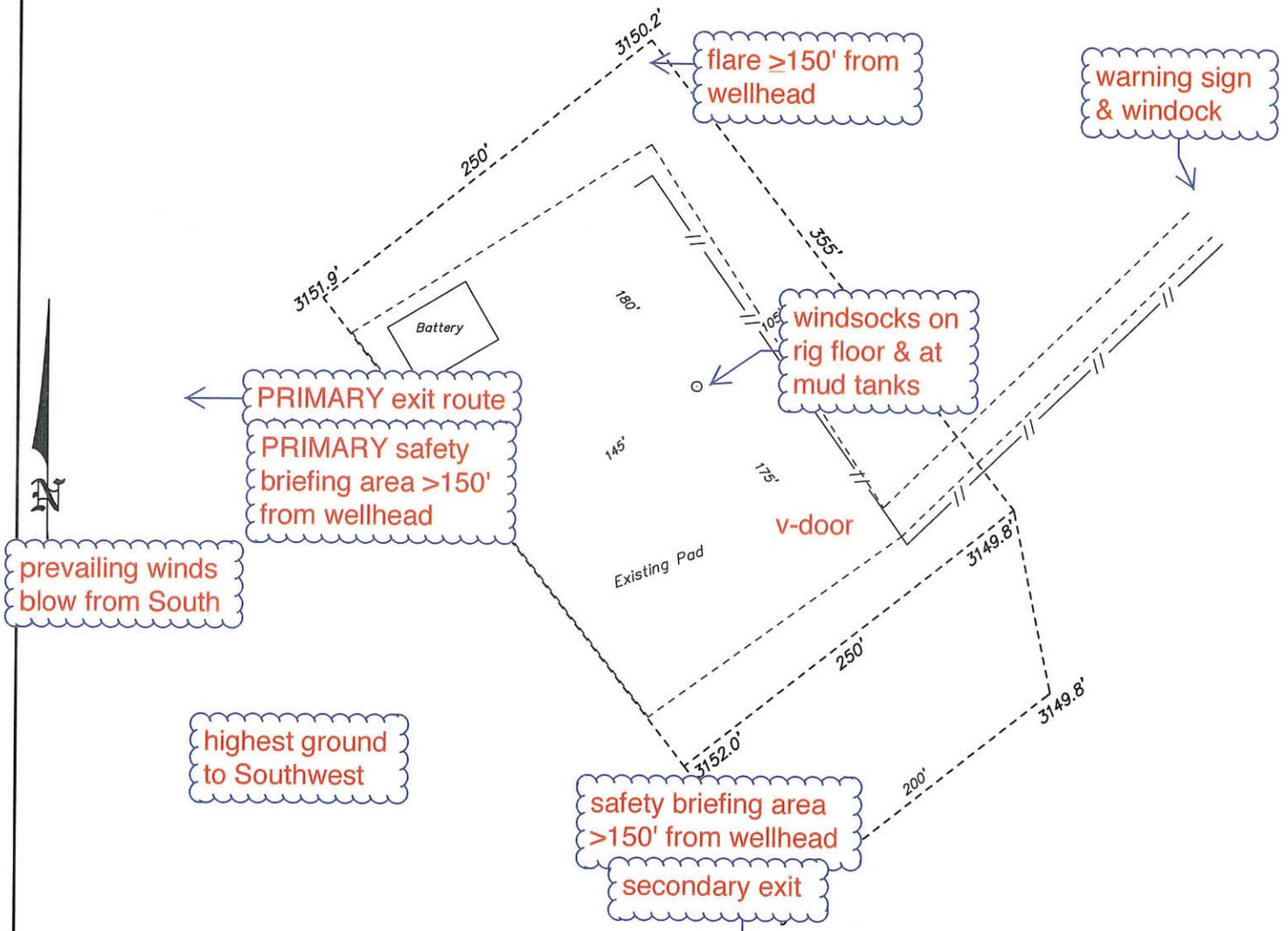
Carlsbad, New Mexico:	
Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
New Mexico Oil Conservation Division	575-887-6544



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

SECTION 23, TOWNSHIP 21 SOUTH, RANGE 26 EAST. N.M.P.M.,
EDDY COUNTY,
NEW MEXICO.



prevailing winds blow from South

highest ground to Southwest

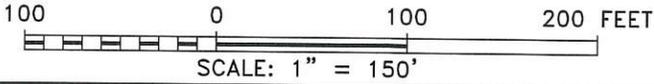
PRIMARY exit route
PRIMARY safety briefing area >150' from wellhead

flare ≥150' from wellhead

warning sign & windock

windssocks on rig floor & at mud tanks

safety briefing area >150' from wellhead
secondary exit



SPC RESOURCES, LLC

REF: SOUTH AVALON AUA COM 1H / WELL PAD TOPO

THE SOUTH AVALON AUA COM 1H LOCATED 660' FROM THE NORTH LINE AND 660' FROM THE WEST LINE OF SECTION 23, TOWNSHIP 21 SOUTH, RANGE 26 EAST. N.M.P.M., EDDY COUNTY, NEW MEXICO.



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

W.O. Number: 35192	Drawn By: K. GOAD	Date: 09-24-2020	Survey Date: 09-21-2020	Sheet 1 of 1 Sheets
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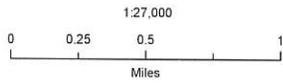
SPC Resources, LLC

South Avalon AUA 1H
H2S Contingency Plan:
Radius Map

Section 23, Township 21S, Range 26E
Eddy County, New Mexico



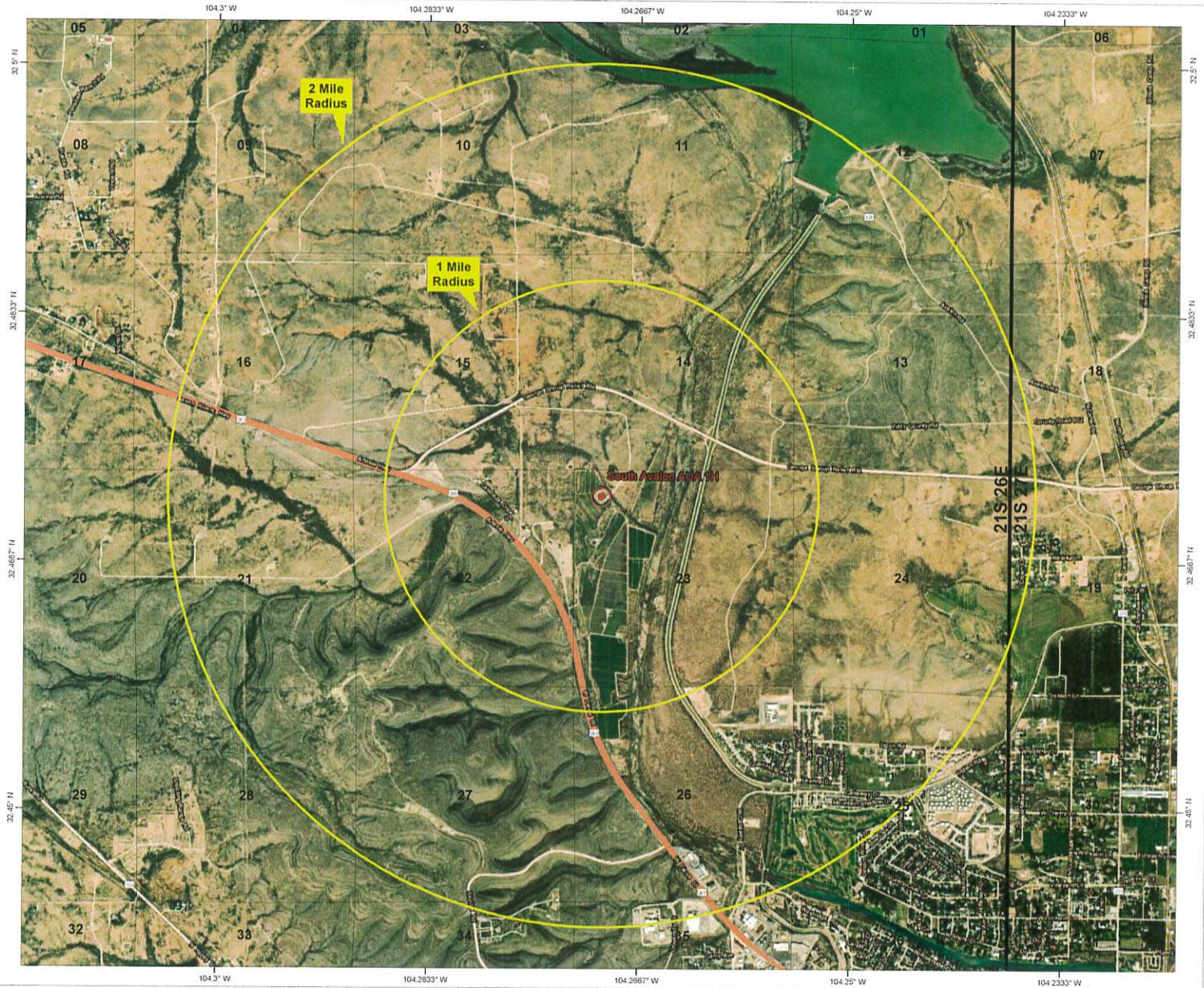
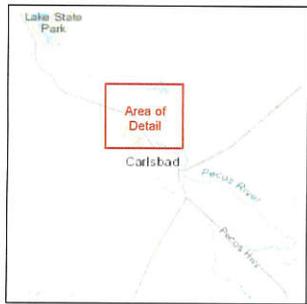
Pad Center

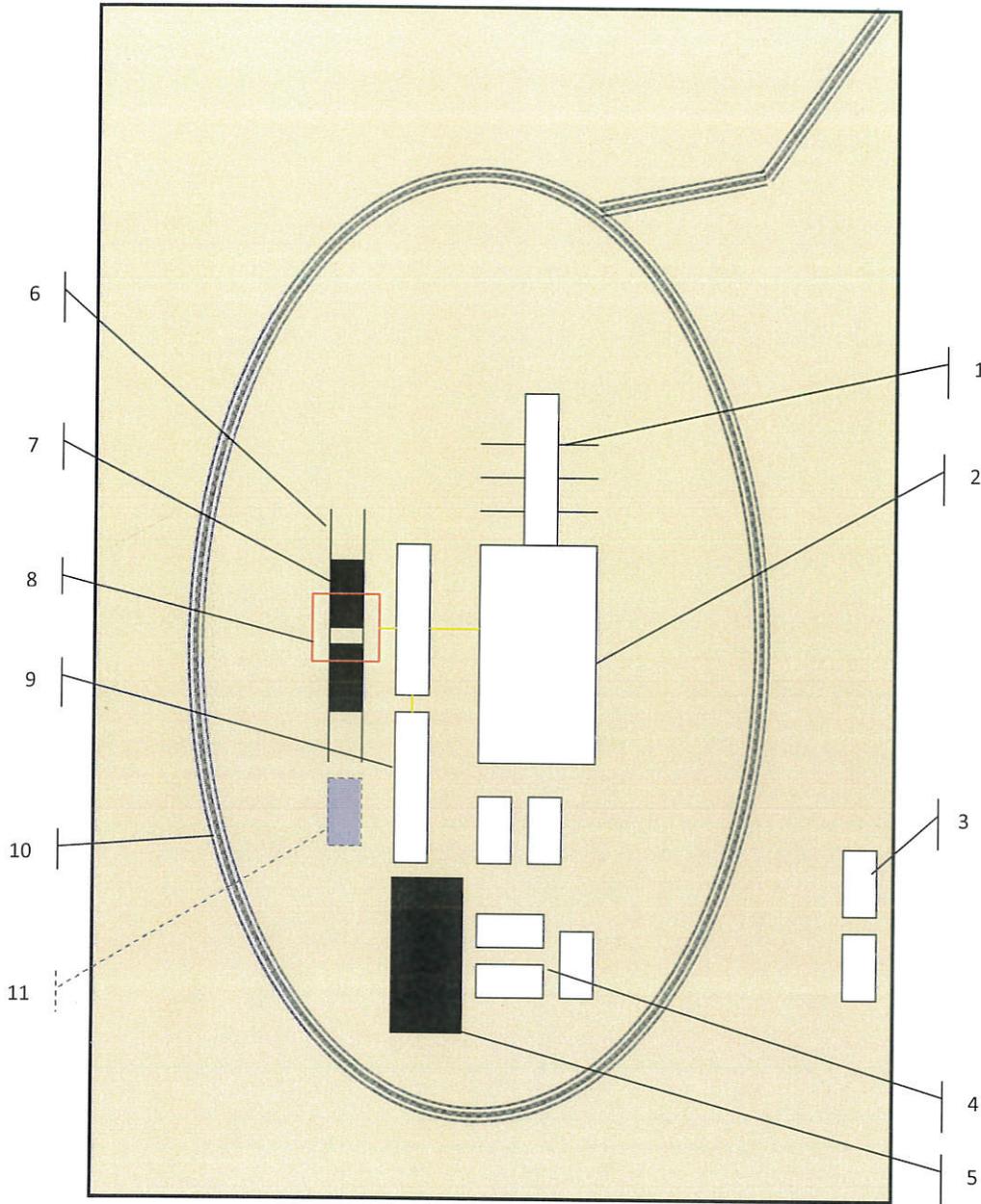


NAD 1983 New Mexico State Plane East
FIPS 3001 Feet



Prepared by Permits West, Inc., October 30, 2020
for Vision Energy Group, LLC





Schematic Closed Loop Drilling Rig*

- 1. Pipe Rack
- 2. Drill Rig
- 3. House Trailers/ Offices
- 4. Generator/Fuel/Storage
- 5. Overflow-Frac Tank
- 6. Skids
- 7. Roll Offs
- 8. Hopper or Centrifuge
- 9. Mud Tanks
- 10. Loop Drive
- 11. Generator (only for use with centrifuge)

*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available

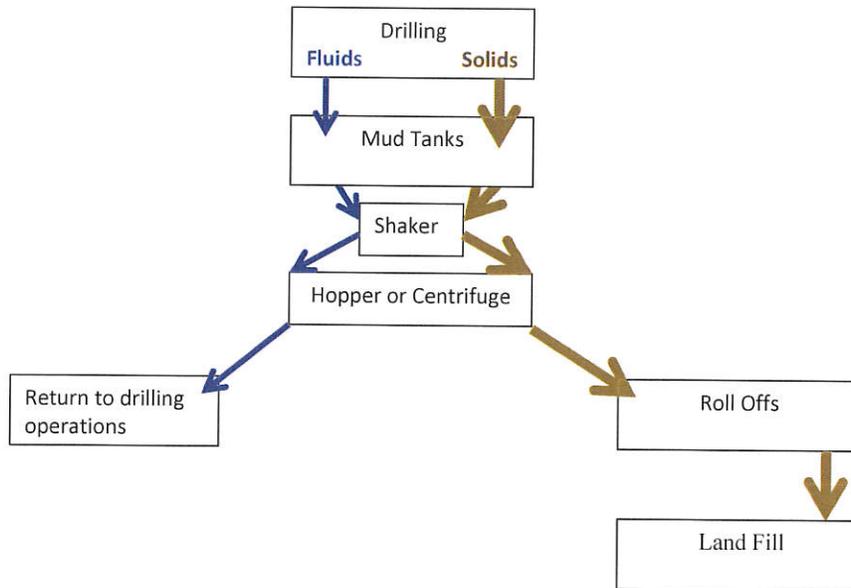


Above: Centrifugal Closed Loop System



Closed Loop Drilling System: Mud tanks to right (1)
Hopper in air to settle out solids (2)
Water return pipe (3)
Shaker between hopper and mud tanks (4)
Roll offs on skids (5)

Flow Chart for Drilling Fluids and Solids



Photos Courtesy of Gandy Corporation Oil Field Service

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

COMMENTS

Action 60783

COMMENTS

Operator: SPC RESOURCES, LLC P.O. Box 1020 Artesia, NM 88211	OGRID: 372262
	Action Number: 60783
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

COMMENTS

Created By	Comment	Comment Date
kpickford	KP GEO Review 11/8/2021	11/8/2021

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

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CONDITIONS
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Operator: SPC RESOURCES, LLC P.O. Box 1020 Artesia, NM 88211	OGRID: 372262
	Action Number: 60783
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Notify OCD 24 hours prior to casing & cement	11/8/2021
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	11/8/2021
kpickford	The CIBP will need to be tested and then the plug will need 25 sacks of H cement or 100' whichever is greater.	11/8/2021