Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MAR 2005
RECEIVED
OIL CONS. DIV.
DIST. 3

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Designation and Serial No.

6. If Indian, Allottee or Tribe Name

1a. Type of Work ☒ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.
Crawford 29-12-24 # 102

2. Name of Operator
Synergy Operating, LLC
NM OGRID # 163458

9. API Well No.
30-045-32861

3a. Address
PO Box 5513
Farmington, NM 87499

3b. Phone Number
(505) 325-5449

10. Field and Pool, or Exploratory
Basin Fruitland Coal

11. Sec., T., R., M., or Blk. and Survey or Area

4. Location of Well (Footage, Sec, T. R., M, or Survey Description)
At surface: Unit Letter I, 1540' FSL, 1325' FEL, Sec 24, T29N-R12W
At proposed prod. Zone: Same

I Sec 24, T-29-N, R-12-W

14. Distance in miles and direction from nearest town or post office*
4 miles west of Bloomfield, NM, Just North of McGee Park

12. County or Parish
San Juan

13. State
New Mexico

15. Distance from proposed* location to nearest propety or lease line, ft. (Also to nearest drlg. Unit line, if any)
1540 Feet from South Line

16. No of Acres in lease
_____ Acres

17. Spacing Unit dedicated to this well
314.42 Acres - East Half

18. Distance from proposed* location to nearest propety or lease line, ft.
1325 Feet from East Line

19. Proposed Depth
1800'

20. BLM/BIA Bond No. on file
NM-2559

21. Elevation (Show whether DF, KDB, RT, GL, etc.)
5634' Ground Level

22. Approximate date work will start*
February 15, 2005

23. Estimated duration
30 days

24. Attachments

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

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

Size of Hole	Grade, Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
12-1/4"	8-5/8" K-55	24 #	350'	213 sxs, 302 ft3 - 100% Excess
7-7/8"	5-1/2" K-55	15.5#	1800'	299 sxs, 565 ft3 - 100% OH Excess

SEE ATTACHED APD INFORMATION

Latitude: 36 Deg, 42 Min, 31.4 Sec N
Longitude: 108 Deg, 02 Min, 46.4 Sec W

25. Signature	Name(Printed/Typed)	Date
Title: Engineering Manager	Thomas E. Mullins	1-25-05

Approved by (Signature)	Name(Printed/Typed)	Date
Title: AFM	Office: FFO	3-2-05

Application approval does not warrant or certify 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 knowlingly and willfully to make to any department or agency of the United States any false, ficticious, or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

NMOCD

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
1301 W. Grand Ave., Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
1220 South St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised June 10, 2003

Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

2005 JAN 25 PM 4 01

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045-32861		BASIN FRUITLAND COAL

[4] Property Code	[5] Property Name	[6] Well Number
34618	CRAWFORD 29-12-24	102

[7] OGRID No.	[8] Operator Name	[9] Elevation
163458	SYNERGY OPERATING LLC	5634

[10] Surface Location

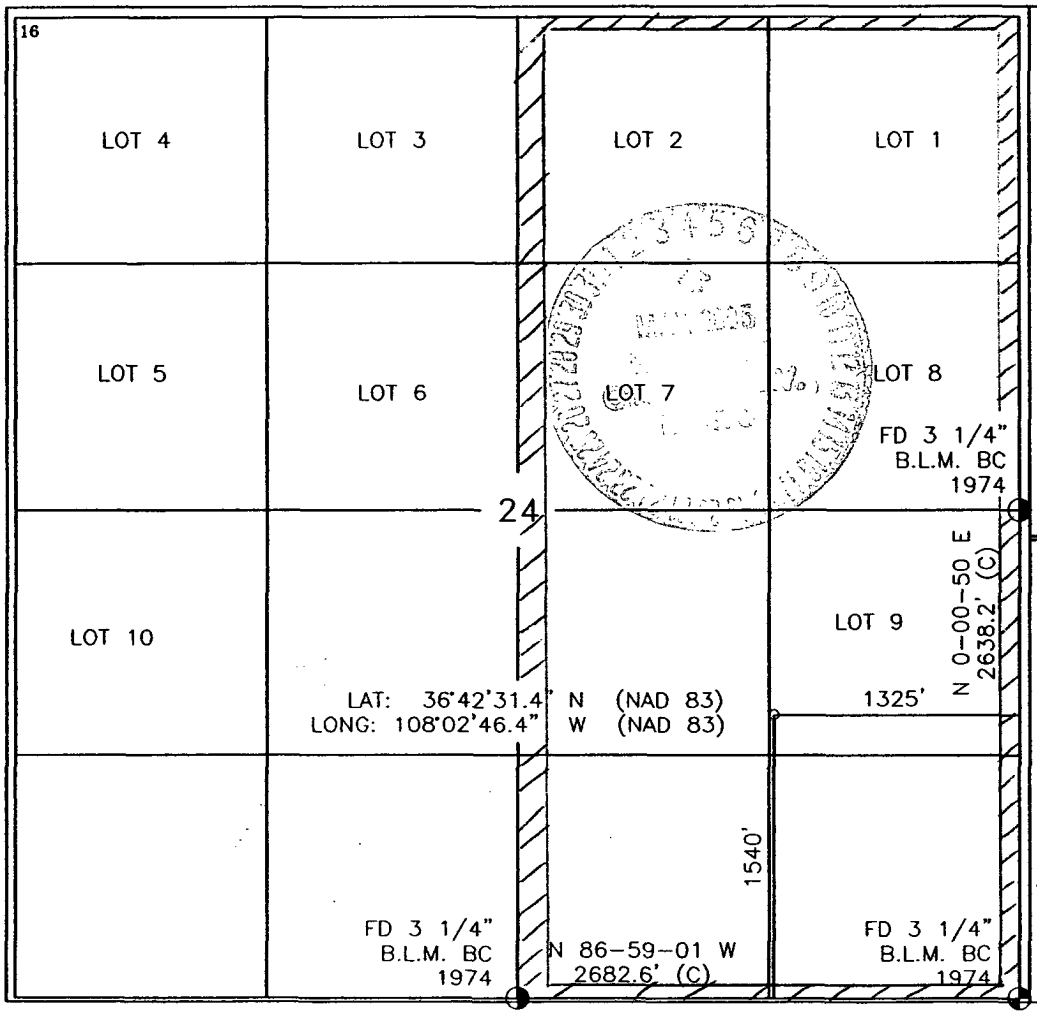
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	24	29-N	12-W	9	1540	SOUTH	1325	EAST	SAN JUAN

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
E/2			

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



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature

THOMAS E. MULLINS
Printed Name

ENGINEERING MANAGER
Title

12-26-2004
Date

[18] 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.

NOVEMBER 2004
Date of Survey

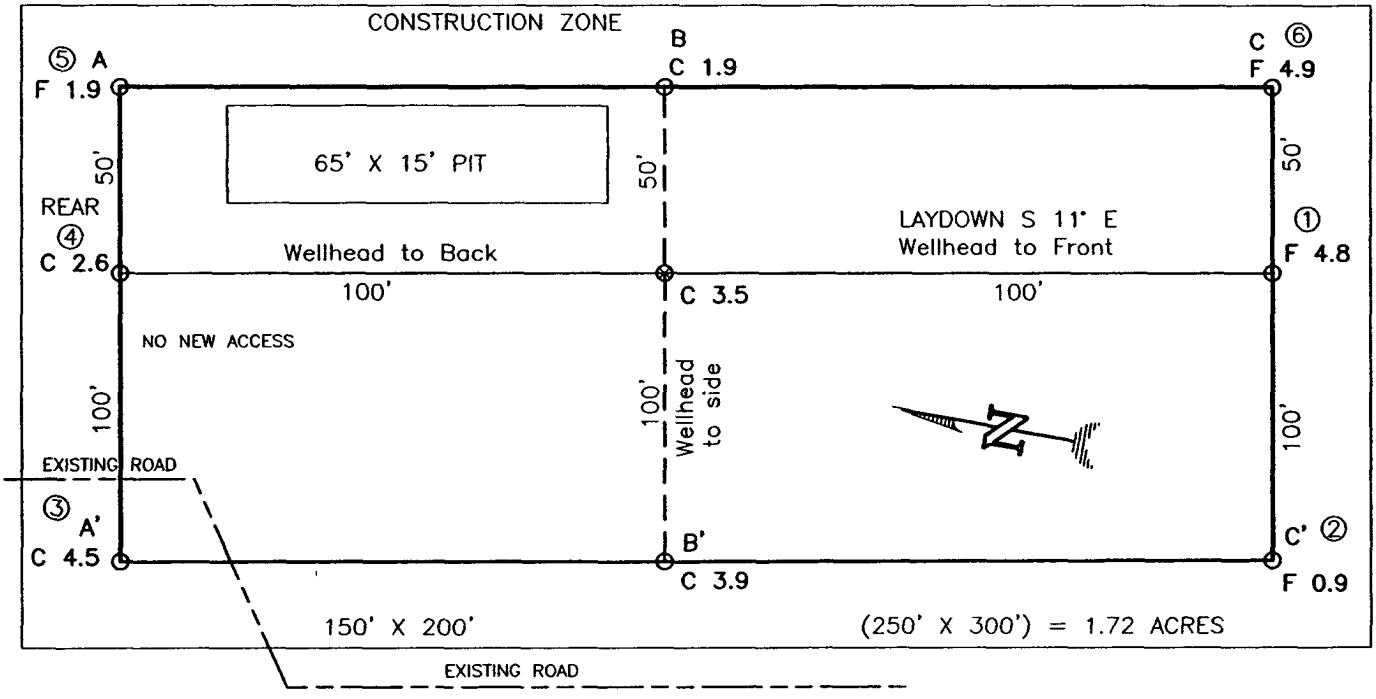
Signature and Seal of Professional Surveyor:

JOHN A. VUKONICH NEW MEXICO 14831 REGISTERED PROFESSIONAL SURVEYOR

12-17-04

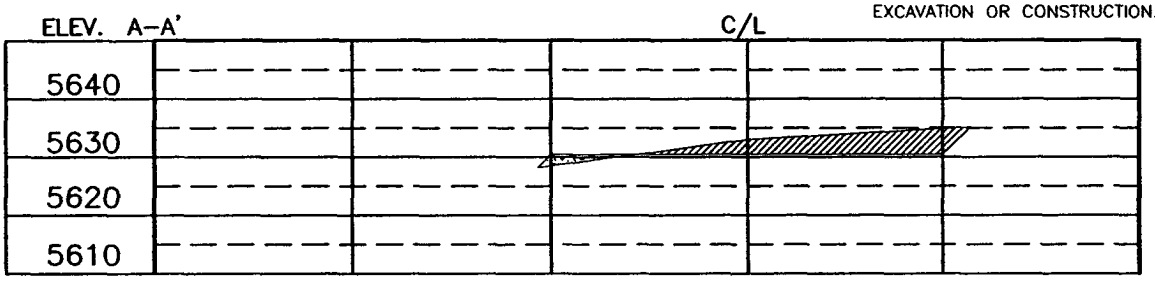
Certificate Number

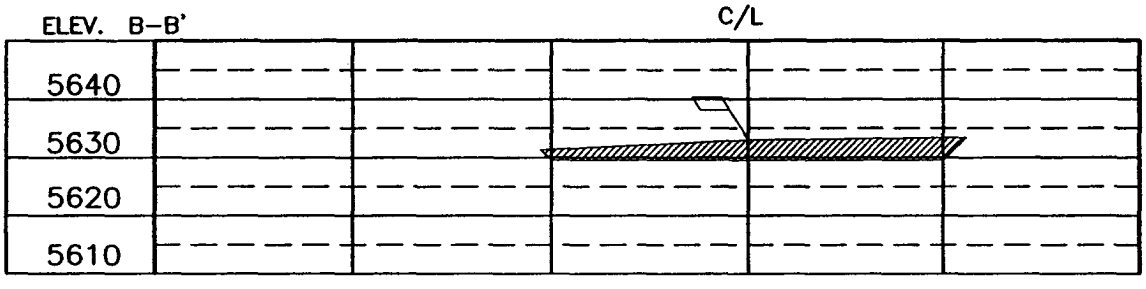
SYNERGY OPERATING LLC
CRAWFORD 29-12-24 NO. 102, 1540' FSL 1325' FEL
SECTION 24, T29N, R12W, N.M.P.M., SAN JUAN COUNTY, N. M.
GROUND ELEVATION: 5634', DATE: NOVEMBER 10, 2004

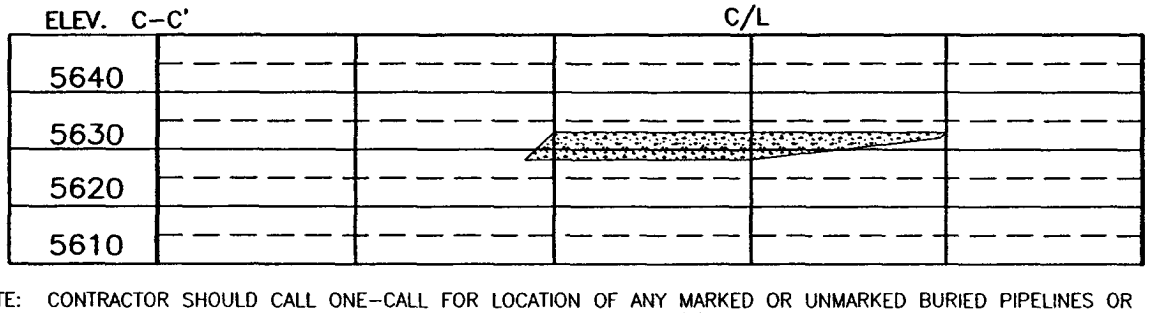


RESERVE PIT DIKE: TO BE 8' ABOVE DEEP SIDE (OVERFLOW – 3' WIDE AND 1' ABOVE SHALLOW SIDE).
BLOW PIT: OVERFLOW PIPE HALFWAY BETWEEN TOP AND BOTTOM AND TO EXTEND OVER PLASTIC LINER AND INTO BLOW PIT.

NOTE: DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.







NOTE: CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

Daggett Enterprises, Inc.
Surveying and Oil Field Services
P. O. Box 15068 · Farmington, NM 87401
Phone (505) 326-1772 · Fax (505) 326-6019
NEW MEXICO L.S. No. 14831

REVISION: | DATE: | REVISED BY:
DRAWN BY: G.V. | CADFILE: SYOP005CFB
ROW#: SYOP005 | DATE: 11/22/04

Synergy Operating LLC
Operations Plan

Well Name: Crawford 29-12-24 #102

Location: Unit I, 1540' FSL, 1325' FEL, Sec. 24, T-29-N, R-12-W, San Juan Co. NM
Latitude 36° 42' 31.4" N, Longitude 108° 02' 46.4" W

Field: Basin Fruitland Coal

Elevation: 5634' GL

GEOLOGIC PROGRAM (Offset Well Crawford Gas Com B # 1)

Formations:	**Tops/Depth**	**Fluids**
Nacimiento	Surface	None
Ojo Alamo	382'	Possible fresh water aquifer
Kirtland	721'	None
Fruitland	1326'	Natural gas & produced water
Pictured Cliffs	1651'	Natural gas & produced water
TOTAL Depth	1800'	

Logging Program:
A) Open Hole: Induction + Density/Neutron: TD to Surface Csg Shoe
B) Cased Hole: GR-CCL-CBL

Mudlogs, Cores, DST's:
No mudlogs, coring or drill-stem testing (DST's) are scheduled.

Anticipated Downhole Conditions:
It is not anticipated that any abnormal temperatures, abnormal pressures or hydrogen sulfide gas will be encountered. The maximum anticipated formation pressures are expected to be less than 1000-PSIG.

DRILLING PROGRAM

Contractor: A local rotary drilling company is yet to be determined.

Mud Program: Freshwater based mud system will be utilized. Water sourced from commercial suppliers.

Depth	Type	Viscosity	#'s/Gal
0-350'	Spud	40-50	8.4-8.9
350'-TD	Low Solids, Non-dispersed	30-60	8.4-9.5*

* Barite will be used as a weighting material if needed

Pressure Control / Blow Out Preventers (BOP's):

All BOP systems will be in accordance with MMS Onshore Oil & gas Order No2. Until the drilling contract has been let, the exact make, model and pressure rating of BOP's is unknown. A typical double gate BOP with a rotating head is shown in the attached Exhibit #1. A typical Choke & Kill manifold is also shown in the attached Exhibit #1.

An upper kelly cock valve with handle and drill string safety valves for each size of drill pipe will be available on the rig floor.

BOP Testing:
Surface – TD: An 11" 2000# or 3000# double gate BOP Stack & choke manifold will be utilized. Prior to drilling out the surface casing, the ~~rams~~ BOPE will be tested to 1000#.

Pipe rams will be hydraulically actuated at least once a day. The blind rams will be function tested on each pipe trip. All ram function testing and BOP pressure testing will be recorded on the daily IADC drilling logs.

Casing & Tubing Program:
All casing shall be new and constructed to API standards.

Hole Size	OD	Weight	Grade	GL Set Depth	Clearance Hole/Collar
12-1/4"	8.625"	24#/ft	J-55	0' – 350'	1.3125"
7-7/8"	5.500"	15.5#/ft	J-55	0' – TD(1800'+/-)	0.9125"
2-3/8"	2.375"	4.7#/ft	J-55	Unknown	

Float Equipment & Centralizers:

8-5/8" Surface Casing: Cement Guide Shoe, 1-Jt 8-5/8" casing as shoe joint, float collar and 8-5/8" casing to surface. A centralizer will be run 10' above the shoe, secured with a stop ring, and three more centralizers will be applied around the collars of the bottom most three casing joints. Surface casing will be run to a minimum depth of 330' to ensure protection of surface waters.

5-1/2" Production Casing: Cement guide shoe w/ auto-fill, 1-Jt 5-1/2" casing as shoe joint, float collar, and 5-1/2" casing to surface. A centralizer will be run 10' above the shoe, secured with a stop ring, and three more centralizers will be applied around the collars of the bottom most three casing joints. Additional centralizers will be deployed every fifth joint from the third most bottom joint to surface. Turbolizers will be used around the first casing collar below the base of the Ojo Alamo and a second on the first casing collar above the base of the Ojo Alamo. The Ojo Alamo will be covered with cement.

Wellhead Equipment:

A 8-5/8" x 5-1/2" 3000# wellhead will be screwed on to the top joint of the 8-5/8" surface casing.

Cementing Program:

8-5/8" Surface Casing: Pump 213-sxs (302-ft^3) Type III Cement w/ 3% $CaCl_2$ + ¼-#/sx Celloflake. Yield = 1.42 ft^3/sx, Slurry Weight = 14.5 PPG. Cement volume is 100% of annular excess to ensure circulation to surface. Wait on Cement (WOC) for 8-Hours. Pressure test surface casing to 1000# for 30-Minutes.

5-1/2" Production Casing:

Lead Slurry: Pump 197-sxs (423-ft^3) Premium Lite FM Cement w/ 3% $CaCl_2$ + ¼-#/sx Celloflake + 0.4% FL-52 + 8% Bentonite + 0.4% Sodium Metasilicate + 3-#/sx Pheno-Seal. Yield = 2.15 ft^3/sx, Slurry Weight = 12.1 PPG.
Tail Slurry: Pump 102-sxs (142-ft^3) Type III Cement w/ 1% $CaCl_2$ + ¼-#/sx Celloflake + 0.2% FL-52 + 2-#/sx Pheno-Seal. Yield = 1.39 ft^3/sx, Slurry Weight = 14.6 PPG. Total slurry volume is 565 ft3.

The projected annular hole volume from 1800' to surface is: 318.6 ft3. Cement volume is 100% excess of annular openhole volume to ensure circulation to surface. Cement will be brought to surface.

Estimated Drilling Time:

Spud date will occur after the APD has been approved, the location built and a drilling contractor selected. Once drilling operations commence, it is anticipated that the drilling phase should be completed within three (3) to five (5) days.

Estimated Completion Time:

Rig completion activities are estimated to take approximately five (5) days. Surface facilities anticipated will include a rod pumping unit, separator, and one four hundred (400) bbl water production tank. No oil production is anticipated from this well.

Reserve Pit Construction/Closure:

The planned reserve pit is located on the attached plat. The pit dimensions are projected to be 65 feet by 15 feet. The pit will be lined with an approved lining material, a minimum of a 12 mils in thickness. The pit will be constructed and closed per the November 1, 2004 NMOCD pit guideline information. A form C-144 will be prepared and submitted for the reserve pit in conjunction with this APD submittal.

Exhibit #1

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Typical BOP setup

ocation: San Juan Basin, New Mexcio