District I
1625 N French Dr , Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
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

Form C-144
July 21, 2008

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office

3442

Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action:
- ☐ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
- ☒ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
- ☐ Modification to an existing permit
- ☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances

1
Operator Energen Resources Corporation OGRID #. 162928
Address 2010 Afton Pl. Farmington, New Mexico 87401
Facility or well name Carracas Unit #16
API Number 30-039-30468 OCD Permit Number
U/L or Qtr/Qtr K Section 10 Township 32N Range 05W County Rio Arriba
Center of Proposed Design Latitude 36.99311 Longitude 107.35384 NAD ☐1927 ☒1983
Surface Owner ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2
☒ **Pit** Subsection F or G of 19 15 17 11 NMAC
Temporary ☒ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
☒ Lined ☐ Unlined Liner type Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams ☐ Welded ☐ Factory ☐ Other _____ Volume _____ bbl Dimensions L_____ x W_____ x D_____

3
☐ **Closed-loop System:** Subsection H of 19 15 17 11 NMAC
Type of Operation ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other _____
☐ Lined ☐ Unlined Liner type Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
Liner Seams. ☐ Welded ☐ Factory ☐ Other _____

4
☐ **Below-grade tank** Subsection I of 19 15 17 11 NMAC
Volume: _____ bbl Type of fluid _____
Tank Construction material _____
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
Liner type Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____

RECEIVED
APR 2009
OIL CONS DIV DIST. 3

5
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval

21

6

Fencing: Subsection D of 19 15 17 11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)

☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☐ Alternate. Please specify _____

7

Netting Subsection E of 19 15 17 11 NMAC (Applies to permanent pits and permanent open top tanks)

☐ Screen ☐ Netting ☐ Other

☐ Monthly inspections (If netting or screening is not physically feasible)

8

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19 15 3.103 NMAC

9

Administrative Approvals and Exceptions:
Justifications and/or demonstrations of equivalency are required. Please refer to 19 15 17 NMAC for guidance.

☐ Administrative approval(s) Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.

☐ Exception(s) Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10

Siting Criteria (regarding permitting) 19.15.17 10 NMAC
***Instructions:** The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.*

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map, Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site, Aerial photo, Satellite image	☐ Yes ☐ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo, Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application - NM Office of the State Engineer - iWATERS database search, Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality, Written approval obtained from the municipality	☐ Yes ☐ No
Within 500 feet of a wetland - US Fish and Wildlife Wetland Identification map, Topographic map, Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design, NM Bureau of Geology & Mineral Resources, USGS; NM Geological Society, Topographic map	☐ Yes ☐ No
Within a 100-year floodplain - FEMA map	☐ Yes ☐ No

11

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19 15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19 15.17 9 NMAC
☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19 15 17 9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19 15.17 10 NMAC
☐ Design Plan - based upon the appropriate requirements of 19.15 17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19 15.17.12 NMAC
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 15.17.9 NMAC and 19.15 17 13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number _____

12

Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15 17 9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19 15 17 9
☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19 15.17 10 NMAC
☐ Design Plan - based upon the appropriate requirements of 19 15.17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19 15 17.12 NMAC
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC and 19 15 17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____

☐ Previously Approved Operating and Maintenance Plan API Number _____ *(Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

13

Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15 17 9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17 10 NMAC
☐ Climatological Factors Assessment
☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15 17.11 NMAC
☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19 15 17 11 NMAC
☐ Leak Detection Design - based upon the appropriate requirements of 19 15.17 11 NMAC
☐ Liner Specifications and Compatibility Assessment - based upon
☐ Quality Control/Quality Assurance Construction and Installation Plan the appropriate requirements of 19 15 17 11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19 15 17 12 NMAC
☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15 17.11 NMAC
☐ Nuisance or Hazardous Odors, including H2S, Prevention Plan
☐ Emergency Response Plan
☐ Oil Field Waste Stream Characterization
☐ Monitoring and Inspection Plan
☐ Erosion Control Plan
☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19 15.17.9 NMAC and 19.15.17 13 NMAC

14

Proposed Closure. 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System Alternative

Proposed Closure Method
☐ Waste Excavation and Removal
☐ Waste Removal (Closed-loop systems only)
☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
  ☐ In-place Burial ☐ On-site Trench Burial
☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15

Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15 17 13 NMAC
☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15 17 13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19 15 17 13 NMAC

16

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only (19.15 17.13 D NMAC)

Instructions Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings Use attachment if more than two facilities are required

Disposal Facility Name _____ Disposal Facility Permit Number _____

Disposal Facility Name _____ Disposal Facility Permit Number. _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service and operations?

☐ Yes (If yes, please provide the information below) ☐ No

Required for impacted areas which will not be used for future service and operations

☐ Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15 17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19 15 17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17 13 NMAC

17

Siting Criteria (regarding on-site closure methods only 19 15 17 10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search, USGS, Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search, USGS, Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark) - Topographic map, Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site, Aerial photo, Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality, Written approval obtained from the municipality	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area - Engineering measures incorporated into the design, NM Bureau of Geology & Mineral Resources; USGS, NM Geological Society, Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

18

On-Site Closure Plan Checklist: (19 15 17 13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached

☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19 15.17 13 NMAC
☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17 13 NMAC
☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19 15.17 13 NMAC
☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19 15 17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15 17 13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19

Operator Application Certification

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief

Name (Print) _____ Title _____

Signature _____ Date _____

e-mail address. _____ Telephone _____

20

OCD Approval: ☐ Permit Application (including closure plan) ☒ Closure ~~Plan (only)~~ ☐ OCD Conditions (see attachment)

OCD Representative Signature: Jonathan D. Kelly **Approval Date:** 2/29/2012

Title: Compliance Officer **OCD Permit Number:** _____

21

Closure Report (required within 60 days of closure completion) Subsection K of 19 15 17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☒ **Closure Completion Date:** 11/10/08

22

Closure Method

☐ Waste Excavation and Removal ☒ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain

23

Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name _____ Disposal Facility Permit Number _____

Disposal Facility Name _____ Disposal Facility Permit Number _____

Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations

☐ Site Reclamation (Photo Documentation)

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

24

Closure Report Attachment Checklist *Instructions Each of the following items must be attached to the closure report Please indicate, by a check mark in the box, that the documents are attached*

☒ Proof of Closure Notice (surface owner and division)

☐ Proof of Deed Notice (required for on-site closure)

☒ Plot Plan (for on-site closures and temporary pits)

☒ Confirmation Sampling Analytical Results (if applicable)

☒ Waste Material Sampling Analytical Results (required for on-site closure)

☐ Disposal Facility Name and Permit Number

☒ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

☐ Site Reclamation (Photo Documentation)

On-site Closure Location Latitude 36.99311 Longitude 107.35384 NAD ☐ 1927 ☒ 1983

25

Operator Closure Certification

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan

Name (Print) Vicki Donaghey Title: Regulatory Analyst

Signature Vicki Donaghey Date: vdonaghe@energe

e-mail address 505-324-4136 Telephone 04/14/09

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

CARRACAS UNIT #160

Client:	Energen	Project #:	03022-0001
Sample ID:	10170802	Date Reported:	10-21-08
Laboratory Number:	47767	Date Sampled:	10-17-08
Chain of Custody No:	5566	Date Received:	10-17-08
Sample Matrix:	Soil	Date Extracted.	10-20-08
Preservative:	Cool	Date Analyzed	10-20-08
Condition:	Intact	Analysis Requested	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**21.7**	**0.2**
Diesel Range (C10 - C28)	**19.2**	**0.1**
Total Petroleum Hydrocarbons	**40.9**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Pits 10/17/08.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505-632-0615 • Fax 505-632-1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Energen	Project #:	03022-0001
Sample ID:	10170802	Date Reported:	10-21-08
Laboratory Number:	47767	Date Sampled.	10-17-08
Chain of Custody	5566	Date Received:	10-17-08
Sample Matrix:	Soil	Date Analyzed:	10-20-08
Preservative.	Cool	Date Extracted:	10-20-08
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**88.0**	**0.9**
Toluene	**325**	**1.0**
Ethylbenzene	**20.3**	**1.0**
p,m-Xylene	**321**	**1.2**
o-Xylene	**83.6**	**0.9**
Total BTEX	**838**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	**97.0 %**
	1,4-difluorobenzene	**97.0 %**
	Bromochlorobenzene	**97.0 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Pits 10/17/08.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505-632-0615 • Fax 505-632-1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Client	Energen	Project #:	03022-0001
Sample ID:	10170802	Date Reported:	10-21-08
Laboratory Number:	47767	Date Sampled:	10-17-08
Chain of Custody No:	5566	Date Received:	10-17-08
Sample Matrix:	Soil	Date Extracted:	10-20-08
Preservative:	Cool	Date Analyzed:	10-20-08
Condition:	Intact	Analysis Needed:	TPH-418.1

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**1,910**	**5.0**

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Pits 10/17/08.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505-632-0615 • Fax 505-632-1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

Chloride

Client:	Energen	Project #:	03022-0001
Sample ID:	10170802	Date Reported:	10-21-08
Lab ID#:	47767	Date Sampled:	10-17-08
Sample Matrix.	Soil Extract	Date Received:	10-17-08
Preservative:	Cool	Date Analyzed:	10-20-08
Condition:	Intact	Chain of Custody:	5566

Parameter	Concentration (mg/L)
Total Chloride	**690**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983. Standard Methods For The Examination of Water And Waste Water", 18th ed , 1992

Comments: **Pits 10/17/08.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505-632-0615 • Fax 505-632-1865

ENERGEN
RESOURCES

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

7007 1490 0000 5397 4202

Postage	$ 4.20
Certified Fee	2.70
Return Receipt Fee (Endorsement Required)	2.20
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 5.32

mailed 3.17.09
Postmark Here

Sent To Carson Nat'l Forest Service
Street, Apt. No.; or PO Box No. Jic Ranger District 664 E Broadway
City, State, ZIP+4 Bloomfield NM 87413

PS Form 3800, August 2006 See Reverse for Instructions

March 17, 2009

Certified Mail: 0000 5397 4202

Carson National Forest Service
Jicarilla Ranger District
664 East Broadway
Bloomfield, NM 87413

Subject: Reserve Pit In-Place Closure
Carracas Unit #16

Dear Sir or Madam:

Energen Resources plans to close a reserve pit located on the subject well location. You are on record as the surface owner where this well is located and the New Mexico Oil Conservation Division (NMOCD) rules require notification to the surface owner of our plans to close the reserve pit. NMOCD rules and guidelines will be followed. The well is located in Unit Letter K, Section 10, Township 32N, Range 05W in Rio Arriba County, New Mexico.

If there are any questions or concerns, please contact me at 505.324.4136.

Sincerely,

Vicki Donaghey

Vicki Donaghey

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Carson Nat'l Forest Serv.
Jicarilla Ranger District
664 East Broadway
Bloomfield NM 87413

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [illegible] ☐ Agent [✓ Addressee]

B. Received by (Printed Name) Lorri Kettleman C. Date of Delivery 3/18/09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: [✓ No]

3. Service Type
[✓ Certified Mail] ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7007 1490 0000 5397 4202

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Brandon,

This is our 72 hr. notice to cover two reserve pits. Both well sites are with Energen Resources.
Carracas Canyon 10A #16
Township 32n, Range 5W, Section 10, Quarter Section SW

Carracas Unit 33 2B
Township 32N, Range 4W, Section 33, Quarter Section SW

Thank you,

Stephanne Coats
Rosenbaum Construction
505-325-6367

Unit 16

Well Name: Carracas ~~#074#76~~.

Reserve Pit - Final Closure Report:

The pit was closed with in-place burial. The surface owner was notified by certified mail. The OCD was notified at least 72 hours and not more than one week prior to the pit closing. The following process was used to close the pit:

1) All free standing fluids were removed and the liner was cut off at the mudline.
2) The contents were solidified to a bearing capacity sufficient to support the final cover. This was accomplished by mixing the contents with soil at a mixing ratio no greater then 3:1 soil to contents.
3) Sampling was done by collecting a five-point composite sample of the contents after stabilization. The sample was analyzed for the following components;

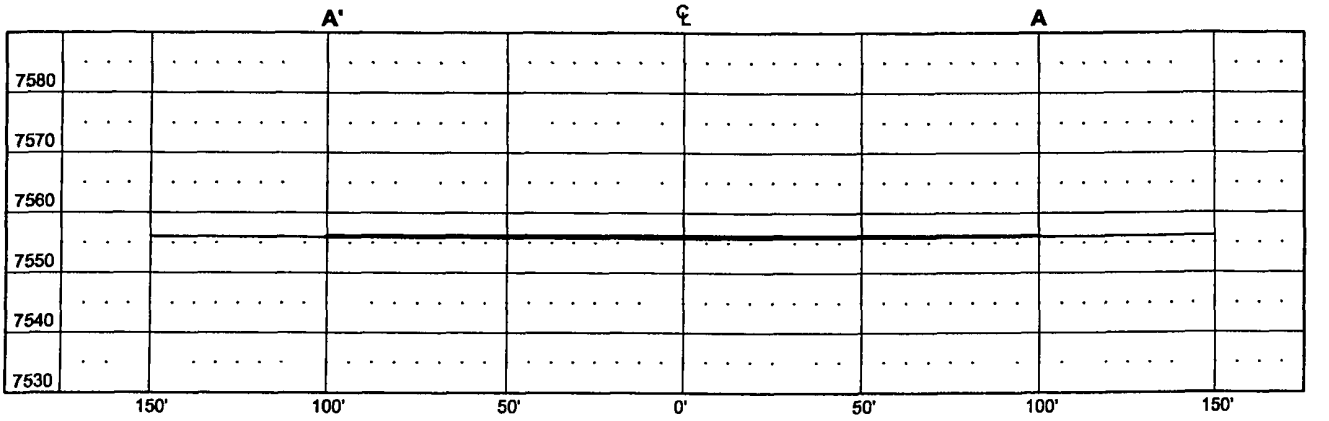
Components	Tests Method	Limit (mg/Kg)
Benzene	EPA SW-846 8021B or 8260B	0.2
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	500
Chlorides	EPA 300.1	1000

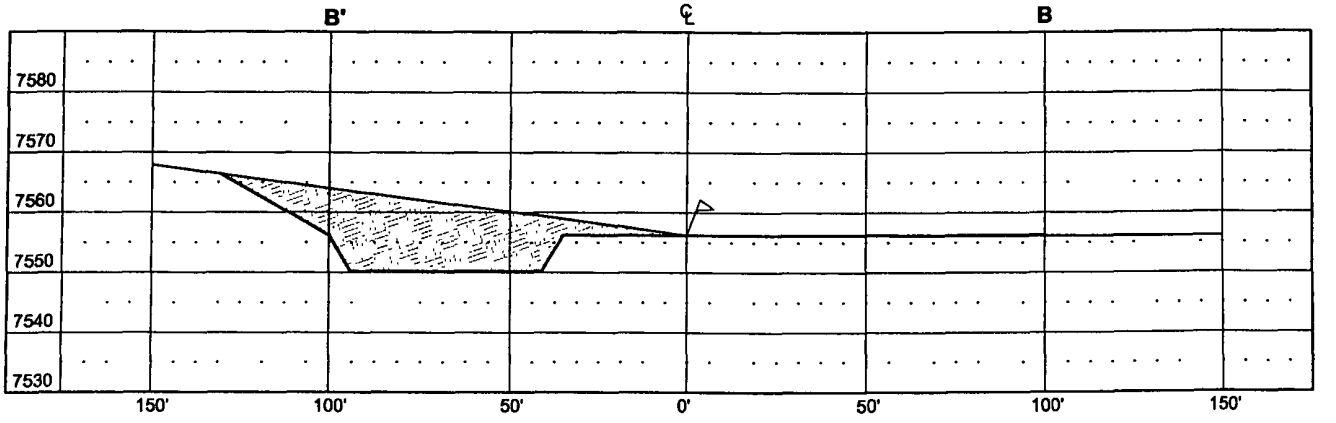
4) The analyses demonstrated that the stabilized contents were under the limits listed above. The contents were covered with compacted non-waste containing earthen material to three feet.
5) After the stabilized contents were covered, the stockpiled topsoil was replaced to a depth of one foot. Topsoil cover was graded to prevent ponding of water and erosion of the cover material. This was accomplished within six months of rig release.
6) The disturbed area not needed for operations will be seeded or planted the first growing season after closing the pit. Seed will be drilled on the contour whenever practical or by other division-approved methods. The goal is to obtain vegetative cover that equals 70% of the native cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) consisting of at least three native plant species, including at least one grass but not including noxious weeds. Cover will be maintained through two successive growing seasons. During the two growing seasons that prove viability there shall be no artificial irrigation of the vegetation. Seeding or planting will continue until the required cover is reached. If conditions are not favorable to establishment of vegetation due to periods of drought or similar problems then the Aztec office of the OCD will be notified. The Aztec office of the OCD will also be notified when the disturbed ground successfully achieves re-vegetation.
7) A steel marker no less then four inches in diameter was cemented in a hole three feet deep in the center of the onsite burial. The top of this marker was flush with the ground with a threaded collar for future abandonment use to allow access of the pad and for safety concerns. On top of this marker, a steel

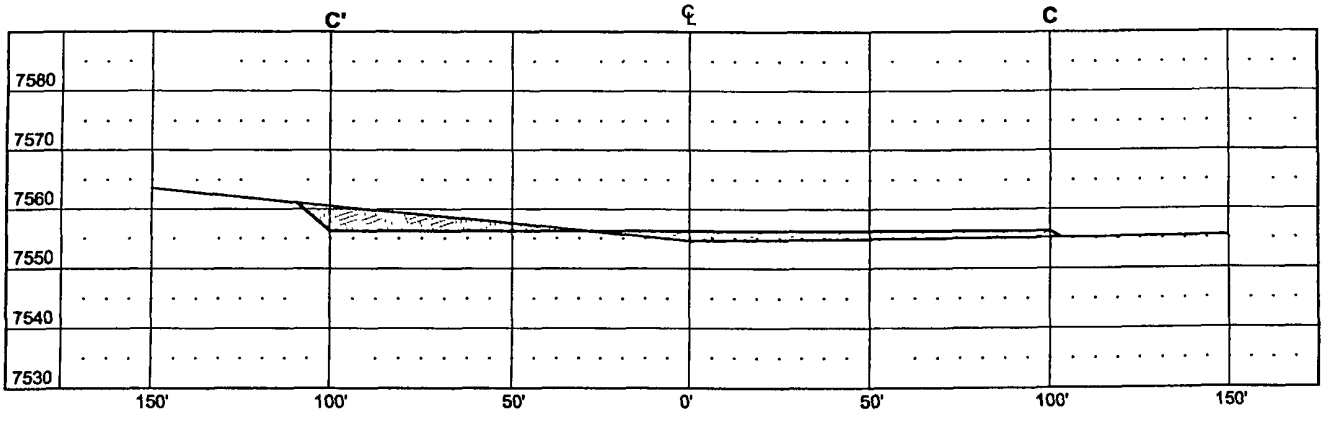
12 inch square plate indicating onsite burial was intermittent welded to the top of the collar to allow easy removal at time of the well being abandoned. Once all wells on the pad are abandoned a four foot tall riser will be threaded into the top of the marker and circumferential welded around the base with; operator name, lease name, well name and number, unit number, section, township and rage, and a designation that it is an onsite burial location

ENERGEN RESOURCES CORPORATION

CARRACAS CANYON UNIT 10A #16
2015' FSL & 1400' FWL
LOCATED IN THE NE/4 SW/4 OF SECTION 10, T32N,
R5W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO
GROUND ELEVATION: 7556', NAVD 88
FINISHED PAD ELEVATION: 7556.2', NAVD 88







VERT. SCALE: 1" = 30'
HORZ. SCALE: 1" = 50'
JOB No.: ERG074
DATE: 05/30/07

CUT
FILL

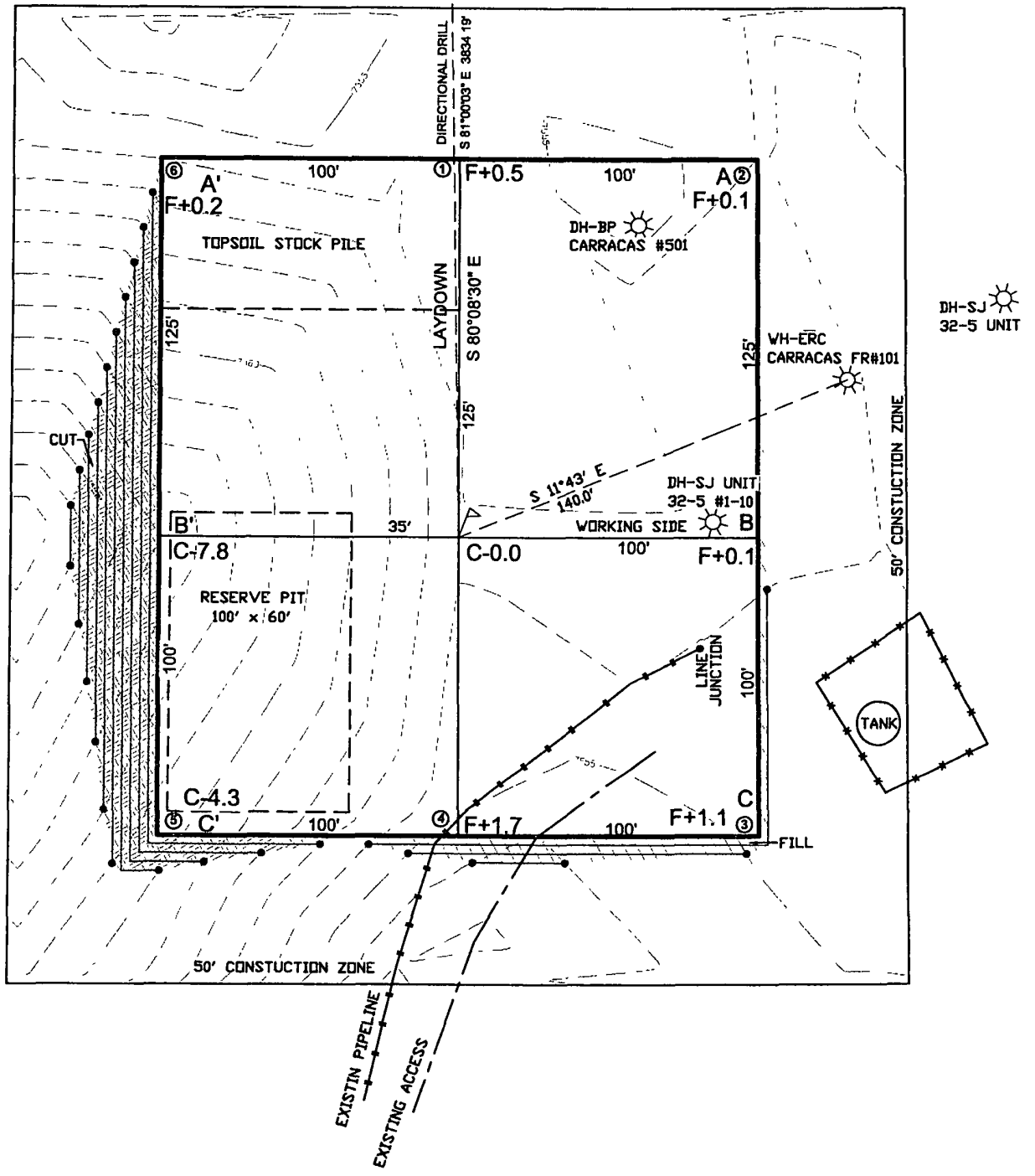
Russell Surveying
1409 W. Aztec Blvd. #2
Aztec, New Mexico 87410
(505) 334-8637

LATITUDE: 36.99306°N
LONGITUDE: 107.35389°W
DATUM: NAD 83

ENERGEN RESOURCES CORPORATION

CARRACAS CANYON UNIT 10A #16
2015' FSL & 1400' FWL
LOCATED IN THE NE/4 SW/4 OF SECTION 10,
T32N, R5W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO
GROUND ELEVATION: 7556', NAVD 88
FINISHED PAD ELEVATION: 7556.2', NAVD 88

25' 0 25' 50'
SCALE = 50'



1 FOOT CONTOUR INTERVAL SHOWN
SCALE: 1" = 50'
JOB No.: ERG074
DATE: 05/02/06

Russell Surveying
1409 W. Aztec Blvd. #2
Aztec, New Mexico 87410
(505) 334-8637

Carracas 10A #16

Name (Print): Jason Eddie	Signature: Jason Eddie	Date: 8-24-08	OK
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 8-25-08	✓ good
Name (Print): Jason Eddie	Signature: Jason Eddie	Date: 8-26-08	
Name (Print): Eddie Chacon	Signature: Ed Ch	Date: 8-27-08	
Name (Print): Eddie Ch	Signature: Ed Ch	Date: 8-28-08	
Name (Print): Eddie Ch	Signature: Ed Ch	Date: 8-29	
Name (Print): Eddie Ch	Signature: Ed Ch	Date: 8-30	
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 8-31	OK
Name (Print): Jason Eddie	Signature: Jason Eddie	Date: 9-1	OK
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 9-2	"OK" 4 foot to top
Name (Print): Eddie Chacon	Signature: Ed Ch	Date: 9-3	
Name (Print): Eddie Chacon	Signature: Ed Ch	Date: 9-4	
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 9-5-08	
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 9-6	
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 9-7	
Name (Print): Eddie Chacon	Signature: Ed Ch	Date: 9-8	
Name (Print): Eddie Chacon	Signature: Ed Ch	Date: 9-9	Called Riley Ind.
Name (Print): Eddie Chacon	Signature: Ed Ch	Date: 9-10	Riley NO show
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 9-11	Removed 2 LOADS.
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 9-12	Removed 2 LOADS
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 9-13	Removed 6 Loads
Name (Print): Eddie Chacon	Signature: Ed Ch	Date: 9-14	Removed 8 Loads
Name (Print): Eddie Chacon	Signature: Eddie Chacon	Date: 9-15	Removed 2 Loads
Name (Print): Eddie Chacon	Signature: Eddie Chacon	Date: 9-16	Removed 7 Loads
Name (Print): Jason Eddie	Signature: Jason Eddie	Date: 9-17	" 4 LOADS
Name (Print): JASON Eddie	Signature: Jason Eddie	Date: 9-18	6 Loads Removed
Name (Print): JASON Eddie	Signature: Jason Eddie	Date: 9-19	Report 3'X2' TEAR
Name (Print):	Signature:	Date: 9-20	
Name (Print):	Signature:	Date: 9-21	
Name (Print):	Signature:	Date: 9-22	
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 9-23	
Name (Print): JASON EDDIE	Signature: Jason Eddie	Date: 9-24	IT's All good.
Name (Print): Jason Eddie	Signature: Jason Eddie	Date: 9-25	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	
Name (Print):	Signature:	Date:	

CARRAC'S 10-A-16

Name (Print)	Signature	Date
JACK O'NEAL	Jack O'Neal	10-9-08
JACK O'NEAL	Jack O'Neal	10-10-08
JACK O'NEAL	Jack O'Neal	10-11-08
JACK O'NEAL	Jack O'Neal	10-12-08
JACK O'NEAL	Jack O'Neal	10-13-08
JACK O'NEAL	Jack O'Neal	10-14-08
JACK O'NEAL	Jack O'Neal	10-15-08
JACK O'NEAL	Jack O'Neal	10-16-08
JACK O'NEAL	Jack O'Neal	10-17-08
JACK O'NEAL	Jack O'Neal	10-18-08
JACK O'NEAL	Jack O'Neal	10-19-08
JACK O'NEAL	Jack O'Neal	10-20-08
JACK O'NEAL	Jack O'Neal	10-21-08
JACK O'NEAL	Jack O'Neal	10-22-08
JACK O'NEAL	Jack O'Neal	10-23-08
Bill Vocke	Bill Vocke	10-30-08
Bill Vocke	B.V.	11-6-08
Bill Vocke	B.V.	Pit closed on 11-10-08

Submit to Appropriate District Office
Five Copies
District I
1625 N French Dr , Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd , Aztec, NM 87410
District IV
1220 S St Francis Dr , Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

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

Form C-105
July 17, 2008

1. WELL API NO. 30-039-30468
2. Type Of Lease ☐ STATE ☐ FEE ☐ FED/INDIAN
3. State Oil & Gas Lease No.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

4 Reason for filing

☐ **COMPLETION REPORT** (Fill in boxes #1 through #31 for State and Fee wells only)

☒ **C-144 CLOSURE ATTACHMENT** (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33, attach this and the plat to the C-144 closure report in accordance with 19 15 17 13 K NMAC)

5 Lease Name or Unit Agreement Name: Carracas Unit

6 Well Number: #16

9 Type of Completion
☐ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☒ OTHER Pit Closure

8 Name of Operator: Energen Resources Corporation

9 OGRID Number: 162928

10 Address of Operator: 2010 Afton Place, Farmington, NM 87401

11 Pool name or Wildcat: Basin Fruitland Coal

12 Location	Unit Letter	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface										
BH										

13 Date Spudded	14 Date T D Reached	15 Date Rig Released	16 Date Completed (Ready to Produce)	17 Elevations (DF & RKB, RT, GR, etc)
		09/27/08		

18 Total Measured Depth of Well	19 Plug Back Measured Depth	20 Was Directional Survey Made	21 Type Electric and Other Logs Run

22 Producing Interval(s), of this completion - Top, Bottom, Name

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB /FT	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET

26. Perforation record (interval, size, and number)

27 ACID, SHOT, FRACTURE, CEMENT, SQEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

28. **PRODUCTION**

Date First Production	Production Method *(Flowing, gas lift, pumping - Size and type pump)*	Well Status *(Prod or Shut-in)*

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl	Gas - MCF	Water - Bbl	Gas - Oil Ratio

Flow Tubing Press	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl	Gas - MCF	Water - Bbl	Oil Gravity - API -*(Corr)*

29 Disposition of Gas *(Sold, used for fuel, vented, etc)*

30 Test Witnessed By

31 List Attachments

32 If a temporary pit was used at the well, attach a plat with the location of the temporary pit

33 If an on-site burial was used at the well, report the exact location of the on-site burial
Latitude 36.99311 Longitude 107.35384 NAD 1927 X 1983

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature [signature] Printed Name Vicki Donaghey Title Regulatory Analyst Date 12/08/08

E-mail address vdonaghe@energen.com

COVER PAGE

ENERGEN RESOURCES
2010 AFTON PLACE
FARMINGTON NM 87401

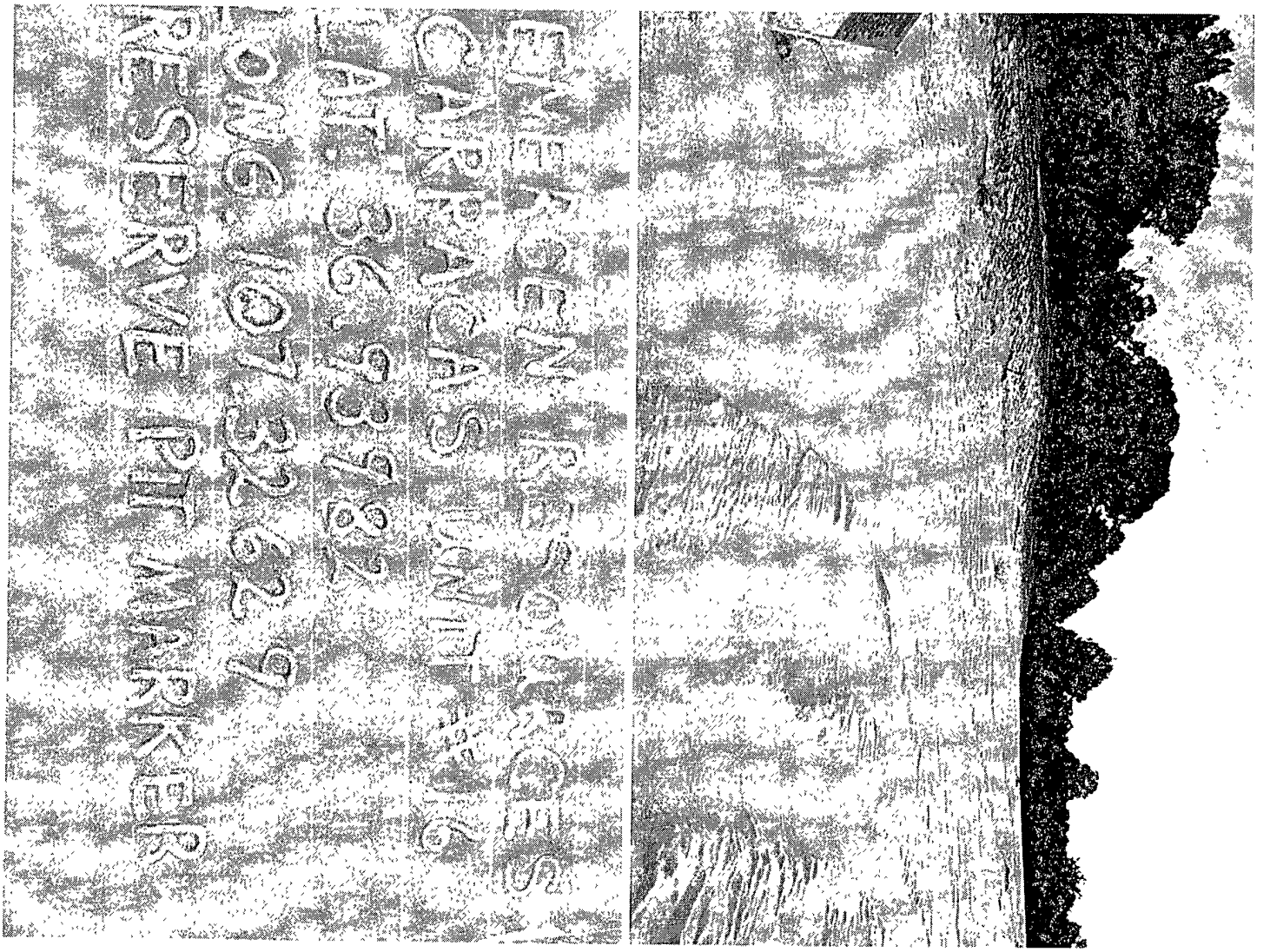
OGRID # 162928

WELL NAME CARRACAS UNIT 16

API 30-039-30468

PERMIT 3442

MISSING C102/PHOTOS



ENERGEN
RESOURCES
CORPORATION

CARRACAS UNIT #16
2015' FSL 1400' FWL
UNIT K SEC 10 T32N R05W
LATITUDE 36.99306°
LONGITUDE -107.35389°
API # 30-039-30468 ELEV. 7663'
LEASE # NMNM-29341
RIO ARRIBA COUNTY, NEW MEXICO
BASIN FRUITLAND COAL

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

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

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

DISTRICT IV
1220 S 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

RECEIVED
JAN 22 2008
Bureau of Land Management
Farmington Field Office

Form C-102
Revised October 12, 2005

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30039-30468	71629	BASIN FRUITLAND COAL

4 Property Code	5 Property Name	6 Well Number
37285	CARRACAS CANYON UNIT 10A	~~108~~ 16

7 OGRID No	8 Operator Name	9 Elevation
162928	ENERGEN RESOURCES CORPORATION	7556'

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
K	10	32N	5W		2015'	SOUTH	1400'	WEST	RIO ARRIBA

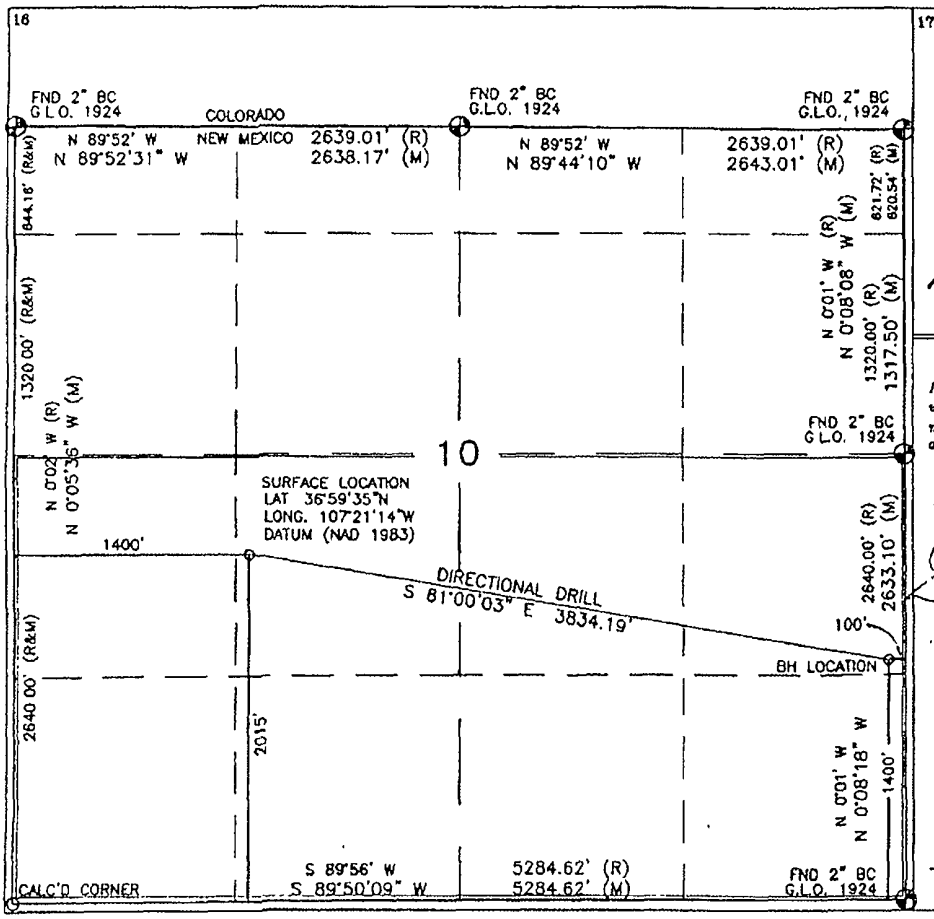
11 Bottom Hole Location If Different From Surface

UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	10	32N	5W		1400'	SOUTH	100'	EAST	RIO ARRIBA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320.00 Acres – (S/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

16



17 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 or a compulsory pooling order heretofore entered by the division.

Signature — Date: 1-17-08

Jason Kincaid
Printed Name

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

OCTOBER 21, 2005
Date of Survey

Signature and Seal of Professional Surveyor:

DAVID R. RUSSELL NEW MEXICO 10201 REGISTERED PROFESSIONAL LAND SURVEYOR

DAVID RUSSELL
Certificate Number 10201