

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

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

- 12022
45-35553
45-35554
- Type of action: Below grade tank registration
 Permit of a pit or proposed alternative method
 Closure of a pit, below-grade tank, or proposed alternative method
 Modification to an existing permit/or registration
 Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, 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: Logos Operating, LLC. OGRID #: 289408 **OIL CONS. DIV DIST. 3**
Address: 4001 North Butler Ave. Building 7101, Farmington, NM 87401
Facility or well name: Katie 1H & Katie 2H **JUL 18 2014**
API Number: 30-045-35553 & 30-045-35554 OCD Permit Number: _____
U/L or Qtr/Qtr H Section 06 Township 23N Range 08W County: San Juan
Center of Proposed Design: Latitude 36.259317°N Longitude 107.715396°W NAD: 1927 1983
Surface Owner: Federal State Private Tribal Trust or Indian Allotment

2.
 Pit: Subsection F, G or J of 19.15.17.11 NMAC
Temporary: Drilling Workover
 Permanent Emergency Cavitation P&A Multi-Well Fluid Management Low Chloride Drilling Fluid yes no
 Lined Unlined Liner type: Thickness 20 mil LLDPE HDPE PVC Other _____
 String-Reinforced
Liner Seams: Welded Factory Other _____ Volume: 8,000 bbl Dimensions: L 130' x W 75' x D 12'

3.
 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 HDPE PVC Other _____

4.
 Alternative Method:
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
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: 4' hog wire with one strand of barbed wire on top

5.

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)

7.

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 19.15.16.8 NMAC

8.

Variations and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

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

9.

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. Siting criteria does not apply to drying pads or above-grade tanks.

General siting

Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank.

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

Yes No
 NA

Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

Yes No
 NA

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. (Does not apply to below grade tanks)

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

Yes No

Within the area overlying a subsurface mine. (Does not apply to below grade tanks)

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

Yes No

Within an unstable area. (Does not apply to below grade tanks)

- 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. (Does not apply to below grade tanks)

- FEMA map

Yes No

Below Grade Tanks

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

Yes No

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Yes No

Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.)

- Topographic map; Visual inspection (certification) of the proposed site

Yes No

Within 300 feet from a occupied 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 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application.

NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Yes No

Within 100 feet of a wetland.
 - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes No

Temporary Pit Non-low chloride drilling fluid

Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any 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 spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application;
 - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site Yes No

Within 300 feet of a wetland.
 - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes No

Permanent Pit or Multi-Well Fluid Management Pit

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 1000 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 spring or a fresh water well used for domestic or stock watering purposes, 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 500 feet of a wetland.
 - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes No

10. **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: _____

11. **Multi-Well Fluid Management Pit 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.

- 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
 - A List of wells with approved application for permit to drill associated with the pit.
 - 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
 - Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
 - Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

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 the appropriate requirements of 19.15.17.11 NMAC
- Quality Control/Quality Assurance Construction and Installation Plan
- 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

13.

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 Multi-well Fluid Management Pit
 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

14.

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 C 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 H of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

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 require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

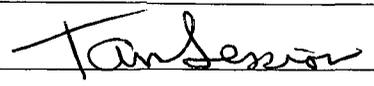
adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

16. **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 E of 19.15.17.13 NMAC
- Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K 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 19.15.17.13 NMAC
- Waste Material Sampling Plan - based upon the appropriate requirements 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 H of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

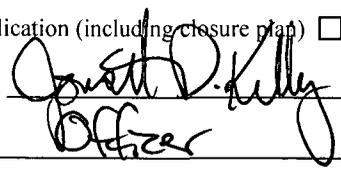
17. **Operator Application Certification:**
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Tamra Sessions Title: Operations Technician

Signature:  Date: 7-17-14

e-mail address: tsessions@logosresourcesllc.com Telephone: 505-330-9333

18. **OCD Approval:** Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)

OCD Representative Signature:  Approval Date: 7/30/2014

Title: Compliance Officer OCD Permit Number: _____

19. **Closure Report (required within 60 days of closure completion):** 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: _____

20. **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.

21. **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 for private land only)
- 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 _____ Longitude _____ NAD: 1927 1983

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): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

**Logos Operating, LLC
San Juan Basin
Variance Explanation for Temporary Pits**

All requested variances provide equal or better protection of fresh water, public health and the environment.

C-144 Item #5 Fencing

Logos is requesting a variance to rule 19.15.17.11 D (3) and shall construct all new fences utilizing 48' steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post.

Public Entity Closure Notification -Temporary Pit Closure Plan Attachment Item #3.

Rule 19.15.17.13 E. If the surface owner is a public entity (BLM/State/Tribal) then an email notification will be sent, of plans to close the temporary pit at least 72 hours, but no more than 1 week, prior to any closure operation. The notice will include the well name, API number, and location.

Temporary Pit Closure Plan Attachment Item #4

Logos has requested a variance on the pit closure timing as Logos will be utilizing this temporary pit for two new drills on the same location. The dual pad drilling will be a continuous operation with approximately 4 days from rig down on the 1st well to rig up on the 2nd well. If Drilling has not commenced within 30 days from first rig release date, the rig release date from the first rig will be used for pit closure timing.

Visible Marker - Temporary Pit Closure Plan Attachment Item #13 a.

Logos has requested a variance for the visible marker that should 'extend at least four feet above mean ground level'. Logos plans to use a steel plate at least 12" x 12", flush with ground level and contain the same information as the four foot riser would have as per the rule. Upon the abandonment of all the wells on the pad, the plate will be removed and replaced with a four foot tall riser containing the same information as per the rule.

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

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 746-1283 Fax: (575) 746-0720

DISTRICT III
1000 Rio Brazos Ed., Artec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1820 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3463

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 August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code		³ Pool Name NAGEEZI GALLUP	
⁴ Property Code		⁵ Property Name KATIE			⁶ Well Number 001H
⁷ OGRID No. 289408		⁸ Operator Name LOGOS OPERATING, LLC			⁹ Elevation 6929'

¹⁰ Surface Location

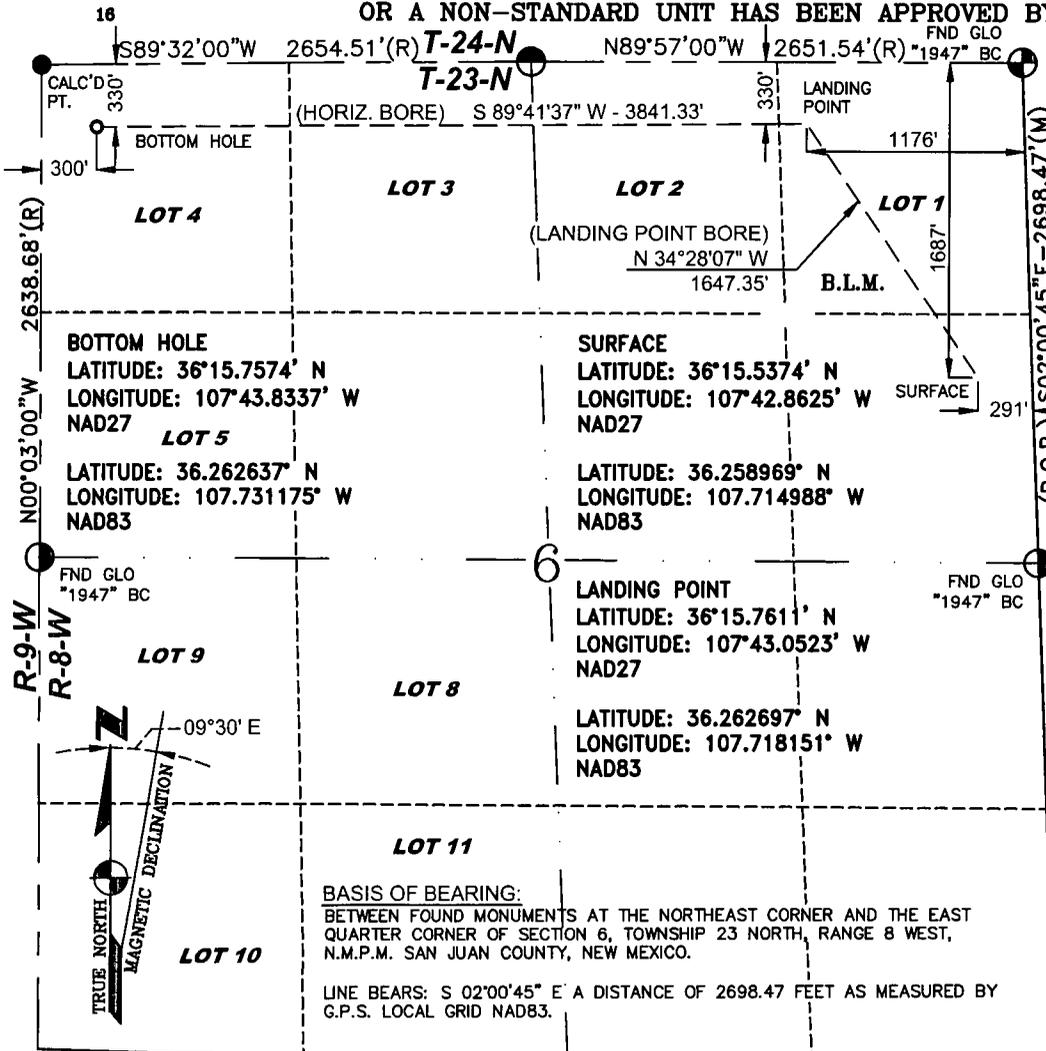
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	6	23-N	8-W		1687	NORTH	291	EAST	SAN JUAN

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
D	6	23N	8-W		330	NORTH	300	WEST	SAN JUAN

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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



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 of such a mineral or a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature _____ Date _____
Printed Name _____
E-mail Address _____

18 SURVEYOR CERTIFICATION

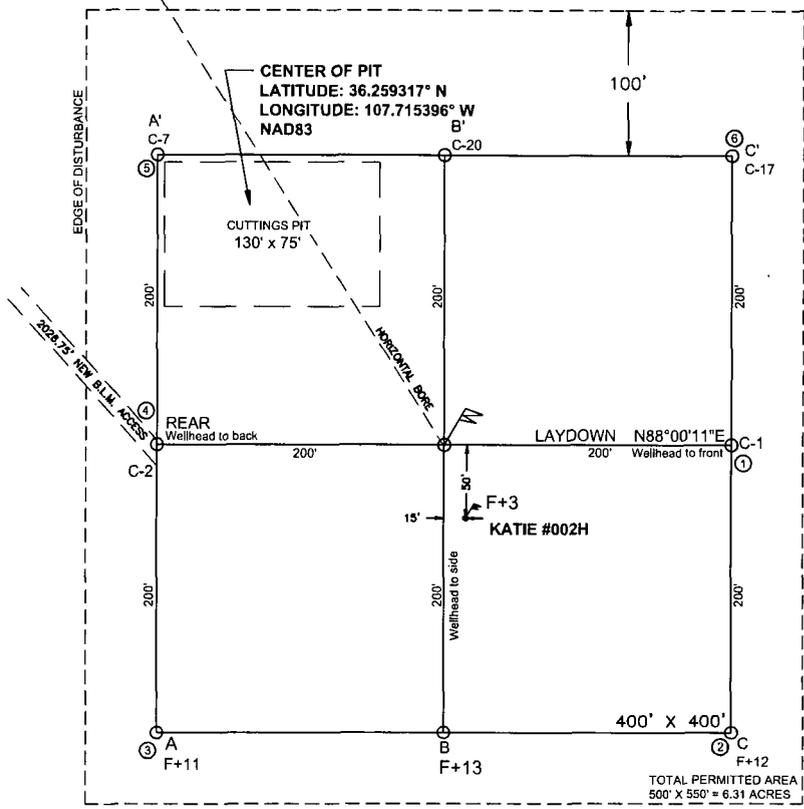
I hereby certify that the well location shown on this was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

MARCH 12, 2014
Date of Survey
Signature and Seal of Registered Surveyor _____



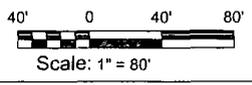
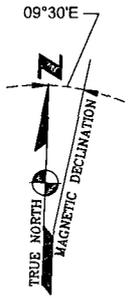
GLEN W. RUSSELL
Certificate Number 15703

LOGOS OPERATING, LLC
 KATIE #001H, 1687' FNL & 291' FEL
 SECTION 6, T-23-N, R-8-W, NMPM, SAN JUAN COUNTY, NM
 GROUND ELEVATION: 6929', DATE: JANUARY 22, 2014/RVSD: APRIL 2, 2014



LATITUDE: 36°15.5374' N
 LONGITUDE: 107°42.8625' W
 NAD27

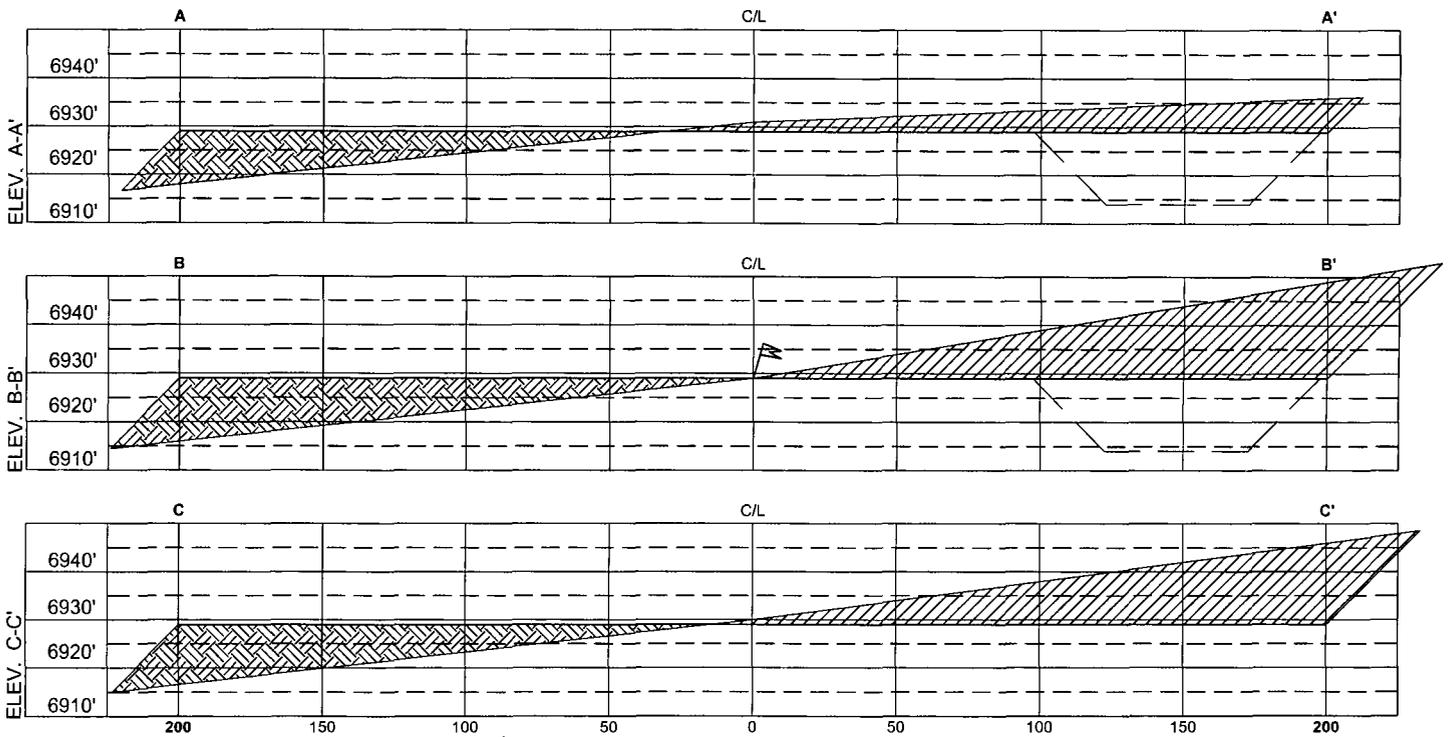
LATITUDE: 36.258969° N
 LONGITUDE: 107.714988° W
 NAD83



NOTES:

1. VECTOR SURVEYS IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. 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.
2. RESERVE PIT DIKE: TO BE 8" ABOVE DEEP SIDE (OVERFLOW - 3' WIDE AND 1' ABOVE SHALLOW SIDE).

LOGOS OPERATING, LLC
 KATIE #001H, 1687' FNL & 291' FEL
 SECTION 6, T-23-N, R-8-W, NMPM, SAN JUAN COUNTY, NM
 GROUND ELEVATION: 6929', DATE: JANUARY 22, 2014



HORIZ. SCALE: 1" = 50'
 VERT. SCALE: 1" = 30'

NOTE:
 VECTOR SURVEYS IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. 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.



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 6	Q 4	Q 1	Q 2	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<u>SJ 02686</u>			SJ	3	4	2	32	24N	08W		257502	4017472*	2128	690	690	0
<u>SJ 00001</u>			SJ		4	1	12	23N	09W		253534	4014427*	2896	695	630	65
<u>SJ 01712</u>			SJ		2	4	27	24N	09W		251195	4018933*	5605	528	515	13
<u>SJ 03978 POD1</u>			SJ	1	2	1	22	23N	08W		259816	4011541	5885	500	260	240
<u>SJ 00960</u>			SJ	3	3	3	36	24N	08W		262730	4016518*	6781			
<u>SJ 00960 S</u>			SJ	3	1	3	36	24N	08W		262744	4016920*	6837			
<u>SJ 01709</u>			SJ		1	1	27	23N	08W		259451	4009831*	7080	317	225	92
<u>SJ 00960 S-2</u>			SJ	3	2	3	36	24N	08W		263147	4016909*	7235			
<u>SJ 00870</u>			SJ		2	3	36	24N	08W		263248	4017010*	7349	250		
<u>SJ 00960 S-3</u>			SJ	2	4	3	36	24N	08W		263336	4016707*	7401			
<u>SJ 01710</u>			SJ		1	3	25	23N	09W		252985	4009203*	7419	550	173	377
<u>SJ 01304</u>			SJ			2	01	23N	08W		263823	4015987*	7854	100		
<u>SJ 01334</u>			SJ			2	01	23N	08W		263823	4015987*	7854	90	40	50
<u>SJ 01335</u>			RA		1	31	24N	07W			264672	4017581*	8846	185		

Average Depth to Water: **361 feet**
 Minimum Depth: **40 feet**
 Maximum Depth: **690 feet**

Record Count: 14

UTMNAD83 Radius Search (in meters):

Easting (X): 255969

Northing (Y): 4015996

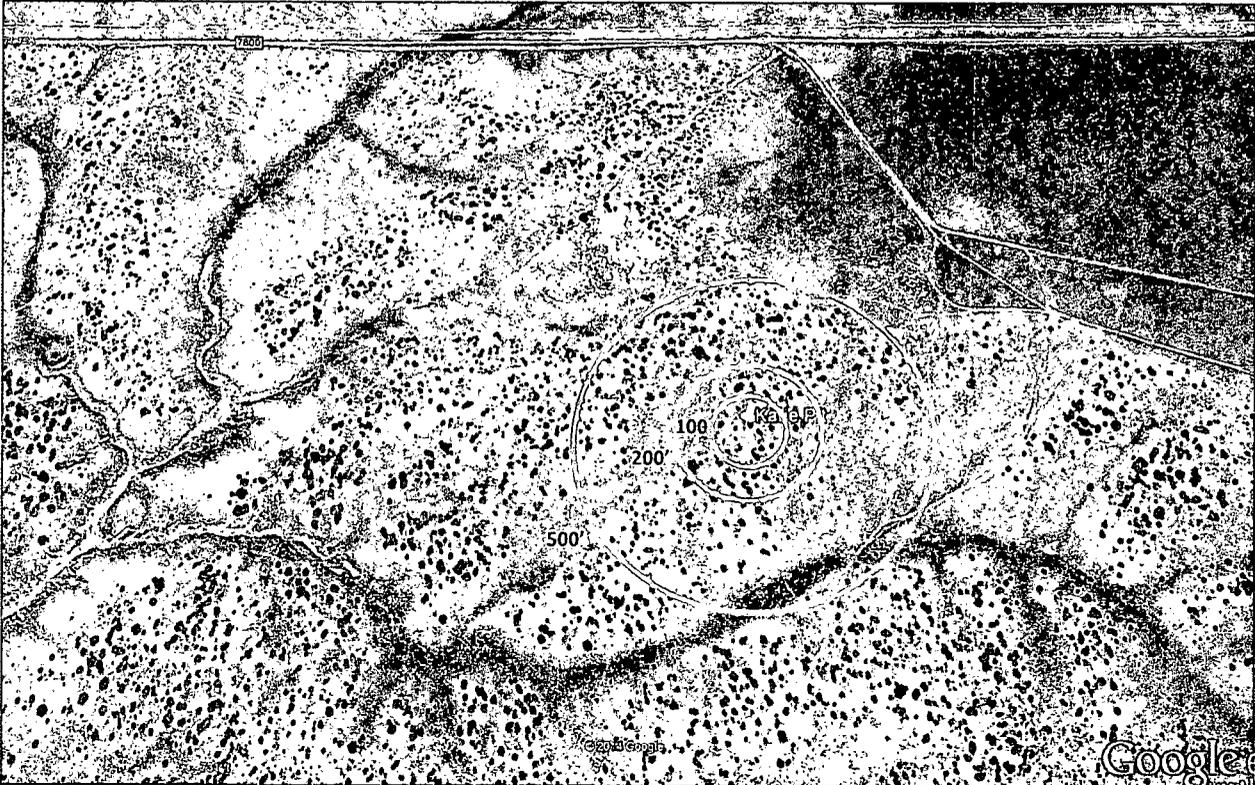
Radius: 10000

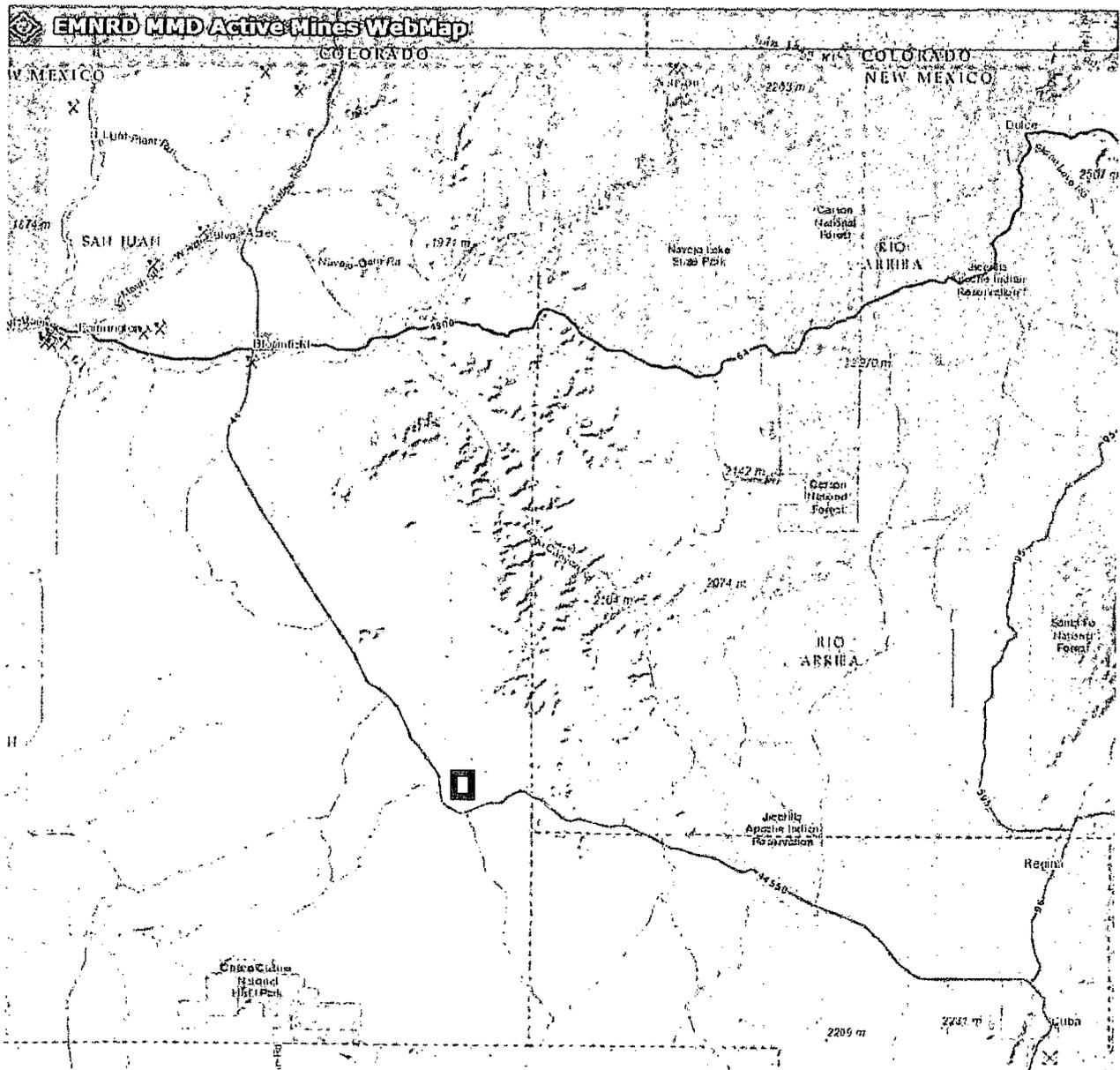
*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

Katie 1H & 2H AERIAL H-06-23N-08W

Rings: 100', 200', 500'

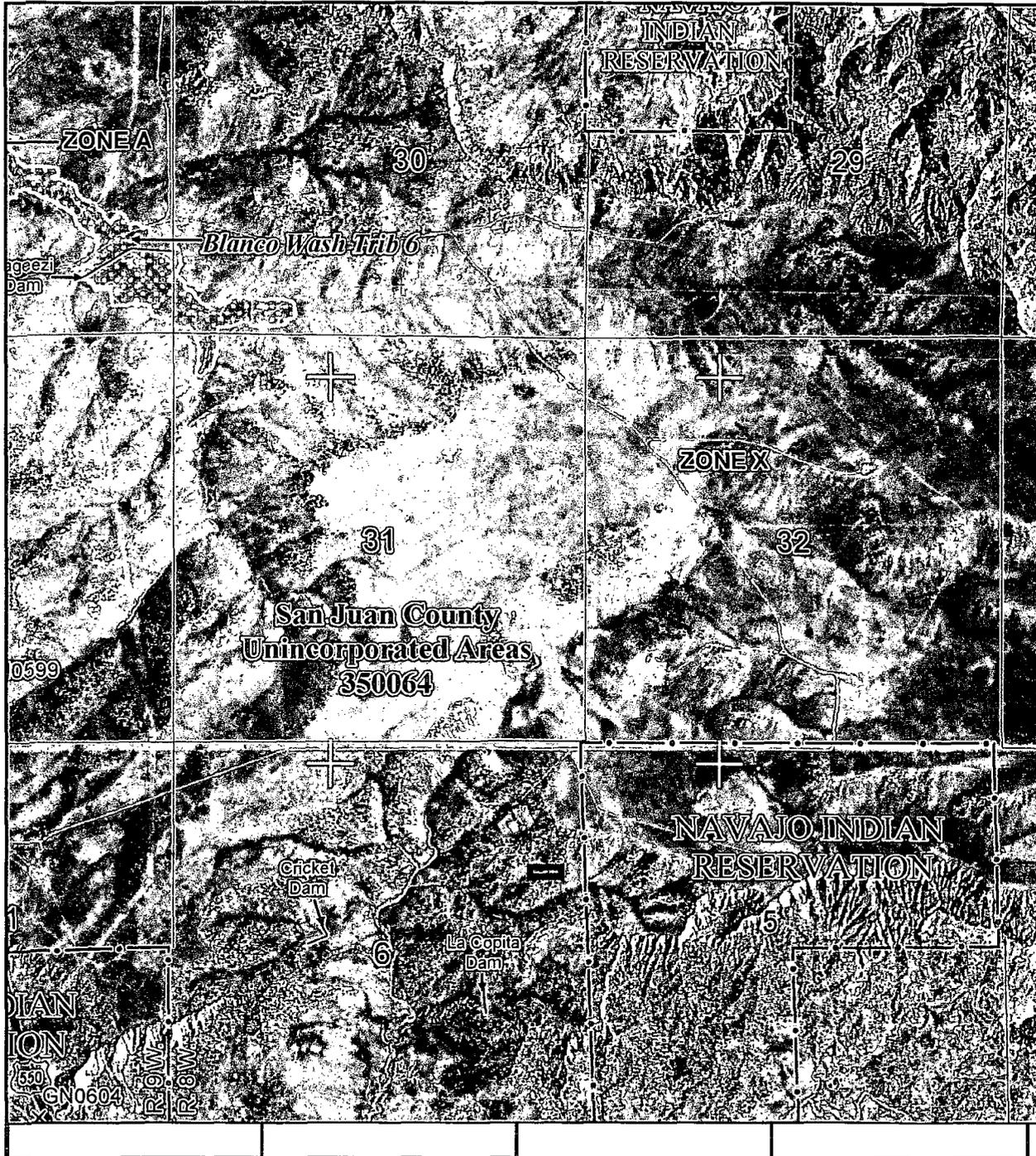




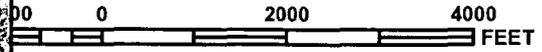
Katie 1H & 2H - Latitude 36.259317° N / Longitude 107.715396° W (NAD83)

There are no mines, mills or quarries within any close distance.

Data Source: New Mexico Active Mines, Feb 2012 spreadsheet
<http://www.emnrd.state.nm.us/MMD/gismapminedata.html>



MAP SCALE 1" = 2000'



PANEL 2100F

FIRM

FLOOD INSURANCE RATE MAP
 SAN JUAN COUNTY,
 NEW MEXICO
 AND INCORPORATED AREAS

PANEL 2100 OF 2750

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SAN JUAN COUNTY	350064	2100	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
 35045C2100F

EFFECTIVE DATE
 AUGUST 5, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

MO-TE DRILLING, INC.

DAY Thur

DRILLER <u>Zach M</u>		LEFT TOWN	ARRIVED FIELD
HELPER <u>Bob H.</u>		LEFT FIELD	ARRIVED TOWN
HELPER <u>Tom H.</u>		TOTAL FOOTAGE TODAY	

RIG NO. 207 DATE 1-17-13 CLIENT Logos Operating

BEGIN WORK ON HOLE NO. Logos # 5 AT FEET

BEGIN WORK ON HOLE NO. Test hole G/4 AT FEET

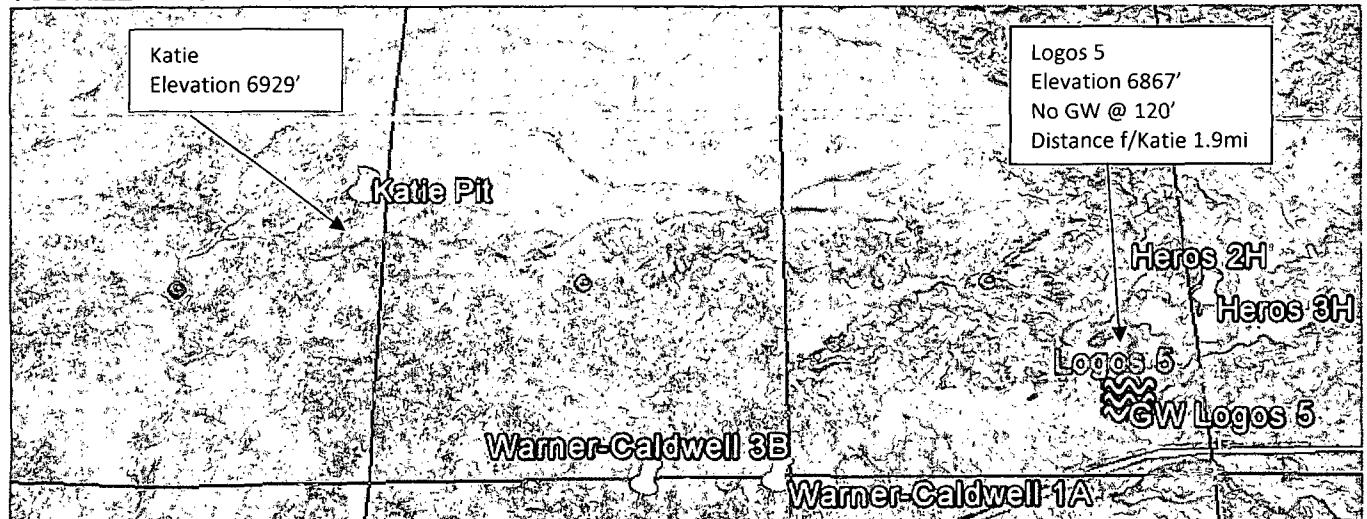
TIME		ACTIVITY
FROM	TO	
8 ⁴⁵	9 ³⁰	Drive to location
9 ³⁰	10 ⁰⁰	Rig Up
10 ⁰⁰	10 ¹⁵	Drill G/4 from 0' to 65'
10 ¹⁵	11 ¹⁵	Trip out wait 1 hour test for water
11 ¹⁵	11 ³⁰	Drill G/4 from 65' to <u>120</u>
11 ³⁰	1 ⁰⁰	Trip out ^{RDMO} wait 1 hour test for water
		back fill hole.
1 ⁰⁰	2 ¹⁵	Drive back to yard
NO WATER		
		0-10' SAND 80-90' shale
		10'-20' SAND 60'-70' shale/clay
		20'-30' SAND/clay 70'-80' shell
		30'-40' clay 80'-90' Clay
		40'-50' sandstone/clay 90'-100' clay
BIT RECORD		
SIZE & MAKE	SERIAL NO.	FOOTAGE
		100'-110' Sandstone/Clay
		110'-120' Sand/Clay Mix
		1 Day Rig 3500 ⁰⁰
CIRCULATION MATERIAL		
QUAN.	UNIT	MATERIAL
		1 Day Supervisor 775 ⁰⁰
		Water Level Meter 100 ⁰⁰
		Tax 311 ⁷²
		Total 4686⁷²

NO. OF LOADS OF WATER SOURCE

**Logos Operating, LLC
Katie 1H & Katie 2H
Temporary Reserve Pit Application
Siting Criteria**

1. According to the iWaters Database from the State Engineers Office, the closest known water well is 2128 meters (1.3miles) away in Section 32 of T24N R8W. The depth of the well is 690, and water depth is also 690'. A test water well drilled to 120' on the Logos #5, elevation 6867', no water was found. The well head location of the Katie wells has elevation at 6929', so ground water depth is greater than 182'.
2. As shown on the attached topographic map and aerial photos, there are no continuously flowing watercourses within 100' of the temporary pit, or lakebeds, sinkholes or playa lakes within 200' of the temporary pit.
3. There are no permanent residences, schools, hospitals, institutions, or churches within 300' of the temporary pit.
4. There are no domestic water wells or springs within 200' of the temporary pit. See iWaters Database printout.
5. The temporary pit is not located within any municipal boundaries.
6. The temporary pit is not within 100' of any wetlands. See attached topographic map and aerial photos.
7. There are no subsurface mines in Section 6, T23N, R8W. See attached map from the NM EMNRD Mining and Mineral Division.
8. The temporary pit is not located in an "unstable" area. The location is not over a mine and is not on the side of a hill. The location of the excavated pit material will not be located within 100' of a continuously flowing watercourse or 200' from any other watercourse. The stockpile will be on location and will meet the criteria.
9. The attached FEMA Map indicates that the proposed location is well outside 100 year floodplain.
10. In the event that the composite pit sample that is mixed 3:1 with native soils does not meet the requirements for onsite burial, the pit contents will be removed and disposed of at the Envirotech Land Farm #2 (NMOCD Permit #11).

PLEASE NOTE: THE KATIE 1H AND KATIE 2H WILL BE SHARING THE SAME WELL PAD. PLANS ARE TO DRILL THESE TWO WELLS BACK TO BACK AND UTILIZE THE SAME TEMPORARY PIT.



Hydro geological report for Katie 1H & Katie 2H

Referenced Well Location:

The Katie 1H and Katie 2H are located on public lands managed by the BLM in San Juan County, New Mexico. The general region surrounding the proposed project area is characterized by badlands, mesas, and relatively flat lowland valleys. The proposed project area is situated within gently rolling sagebrush shrubland terrain containing a complex of unnamed, intermittent/ephemeral watercourses that are tributary to Kimbeto Wash. Ground elevation at the proposed well heads is approximately 6929 feet.

General Regional Groundwater Description:

As a portion of the San Juan Basin, the FFO region is underlain by sandstone aquifers of the Colorado Plateau. The primary aquifer of potential concern at this location is the Uinta-Animas Aquifer, composed primarily of Lower Tertiary rocks in the San Juan Basin. The aquifer consists of the San Jose Formation; the underlying Animas formation and its lateral equivalent, the Nacimiento formation; and the Ojo Alamo Sandstone. The thickness of the Uinta-Animas aquifer generally increases toward the central part of the basin. In this region, the maximum thickness of the aquifer is approximately 3500 feet (USGS, 2001). This aquifer contains fresh to moderately saline water. Groundwater generally flows toward the San Juan River and its tributaries, where it becomes alluvial groundwater or is discharged to stream flow.

Site Specific Information:

Surface Hydrology: The temporary pit area is situated on Crow Mesa and generally drains southwest into a complex of unnamed, intermittent/ephemeral watercourses that are tributary to Kimbeto Wash drainage.
1st Water Bearing Formation: San Jose, Tertiary; Formation Thickness: Approximately 200 - 700 ft.
Underlying Formation: Nacimiento, Tertiary

Depth to Groundwater:

Depth to groundwater is estimated at greater than 100' below bottom of the temporary pit.

Tamra Sessions

From: Tamra Sessions
Sent: Thursday, July 17, 2014 2:54 PM
To: Mark Kelly (mkelly@blm.gov)
Subject: Katie 1H & Katie 2H_Surface Owner Notification for Temporary Pit 07-17-14

Katie 1H & Katie 2H
H, Section 6, T23N, R08W
San Juan County

According to NMOCD rules, Logos Operating, LLC is notifying you, as the surface owner, that there will be a temporary pit on the subject well and that they intend to bury the drill cuttings in the reserve pit, assuming that they qualify as per Subsection D of 19.15.17.13 NMAC. No action is required on your part. If you have any questions, please do not hesitate to call me. Please let me know if I need to add anyone else to this notification.

Thank you,

Tamra Sessions
Logos Resources, LLC
Operations Technician
tsessions@logosresourcesllc.com
(o) 505-436-3790 ext 103
(c)505-330-9333

Logos Operating, LLC
San Juan Basin
Temporary Pit Design and Construction Plan

In accordance with Rule 19 15 17 the following information describes the design and construction for temporary pits on Logos Operating, LLC (Logos) locations; this is Logos standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit that does not conform to this plan.

General Plan

- 1 Logos will design and construct a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public health and environment
- 2 Prior to constructing the pit, topsoil will be stockpiled in the construction zone for later use in restoration
- 3 Logos will post a well sign, in compliance with 19.15.17.11C on the well site prior to construction of the temporary pit. The sign will list the operator on record as the operator, the location of the well by unit letter, section, township range, and emergency telephone numbers
- 4 Logos shall construct all new fences utilizing 48' steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. If the temporary pit is within 1000' of an occupied residence, it will be enclosed with a chain link fence, at least six feet in height with at least two strands of barbed wire at the top. Temporary pits will be fenced at all times excluding drilling or overwork operations, when the front side of the fence will be temporarily removed for operational purposes
- 5 Logos shall construct the temporary pit so that the foundation and interior slopes are firm and free of rocks, debris, sharp edges or irregularities to prevent liner failure
- 6 Logos shall construct the pit so that the slopes are no steeper than two horizontal feet to 1 vertical foot
- 7 Pit walls will be walked down by a crawler type tractor following construction
- 8 All temporary pits will be lined with a 20-mil, string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements
- 9 Geotextile will be installed beneath the liner when rocks, debris, sharp edges or irregularities cannot be avoided
- 10 All liners will be anchored in the bottom of a compacted earth-filled trench at least 18 inches deep
- 11 Logos will minimize liner seams and orient them up and down, not across a slope. Factory seams will be used whenever possible. Logos will ensure all field seams are welded by qualified personnel. Field seams will be overlapped four to six inches and will be oriented parallel to the line of maximum slope. Logos will minimize the number of field seams in corners and irregularly shaped areas
- 12 The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or a manifold system
- 13 The pit shall be protected from run-on by constructing and maintaining diversion ditched around the location or around the perimeter of the pit in some cases
- 14 The volume of the pit shall not exceed 10 acre-feet, including freeboard
- 15 Temporary blow pits will be constructed to allow gravity flow to discharge into lined drill pit
- 16 The lower half of the blow pit (nearest lined pit) will be lined with the same 20 mil liner. The upper half of the blow pit will remain unlined as allowed in Rule 19 15 17 11 F 11
- 17 Logos will not allow freestanding liquids to remain on the unlined portion of temporary blow pit

Logos Operating, LLC
San Juan Basin
Temporary Pit Maintenance and Operating Plan

In accordance with Rule 19 15 17 the following information described the operation and maintenance of temporary pits on Logos Operating, LLC (Logos) locations. This is Logos standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit that does not conform to this plan.

General Plan

- 1 Logos will operate and maintain a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public health and environment
- 2 Logos will conserve drilling fluids by transferring liquids to pits ahead of the rigs whenever possible. All other drilling fluids will be disposed at Basin Disposal, Inc. Permit # NM-01-005
- 3 Logos will not discharge or store any hazardous waste in any temporary pit
- 4 If any pit liner's integrity is compromised or if any penetration of the liner occurs above the liquid's surface, then Logos shall notify the Aztec Division office by phone or email within 48 hours of the discovery and repair the damage or replace the liner
- 5 If a leak develops below the liquid's level, Logos shall remove all liquids above the damaged liner within 48 hours and repair the damage or replace the liner. Logos shall notify the Aztec Division office by phone or email within 48 hours of the discovery pursuant to 19.15.29 NMAC.
- 6 The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or manifold system
- 7 The pit shall be protected from run-on by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some cases
- 8 Logos shall immediately remove any visible layer or oil from the surface of temporary pit after cessation of a drilling or workover operation. Oil absorbent booms will be utilized to contain and remove oil from the pit's surface. An oil absorbent boom will be stored on-site until closure of pit
- 9 Only fluids generated during the drilling or workover process may be discharged into a temporary pit
- 10 Logos will maintain the temporary pit free of miscellaneous solid waste or debris
- 11 During drilling or workover operations, Logos will inspect the temporary pit at least once daily to ensure compliance with this plan. Inspections will be logged in the IADC reports. Logos will file this log with the Aztec Division office upon closure of the pit
- 12 After drilling or workover operations, Logos will inspect the temporary pit weekly so long as liquids remain in the temporary pit. A log of the inspections will be stored at Logos office electronically and will be filed with the Aztec Division office upon closure of the pit
- 13 Logos shall maintain at least two feet of freeboard for a temporary pit
- 14 Logos shall remove all free liquids from a temporary pit within 60 days from the date the operator releases the drilling or workover rig
- 15 Logos shall remove all free liquids from cavitations put within 48 hours after completing cavitations. Logos g may request additional time to remove liquids from Aztec Division office if it is not feasible to remove liquids within 48 hours

**Logos Operating, LLC
San Juan Basin
Temporary Pit Closure Plan**

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of temporary pits on Logos Operating, LLC (Logos) locations. This is Logos is standard procedure for all temporary pits. A Separate plan will be submitted for any temporary pit that does not conform to this plan.

All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of the pit closure. Closure report will be filed on C-144 and incorporated the following:

- Detail on Capping and Covering, where applicable
- Plot Plan (Pit diagram)
- Inspection reports
- Sampling Results
- C-105
- Copy of Deed Notice will be filed with County Clerk

General Plan

- 1 All free standing liquids will be removed at the start of the pit closure process from the pit and disposed of in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves
- 2 The preferred method of closure for all temporary pits will be on-site burial, assuming that all criteria listed in sub-section (D) of 19.15.17.13 are met
- 3 Logos will notify the surface owner by certified mail, return receipt requested, unless surface owner is a public entity (BLM/State/Tribal) then an email notification will be sent, of plans to close the temporary pit at least 72 hours, but no more than 1 week, prior to any closure operation. The notice will include the well name, API number, and location
- 4 Within 6 months of the Rig Off status occurring on the continuous drilling of dual pad wells, Logos will ensure that temporary pits are closed, re-contoured, and reseeded
- 5 Notice of Closure will be given to the Aztec Division office between 72 hours and one week of closure via email, or verbally, The notification of closure will include the following:
 - i. Operator's name
 - ii. Well name and API Number
 - iii. Location by Unit Letter, Section, Township, and Range.
- 6 Pit contents shall be mixed with non-waste containing, earthen material in order to achieve the solidification process. The solidification process will be accomplished using a combination of natural drying and mechanically mixing. Pit contents will be mixed with non-waste, earthen material to a consistency that is deemed as safe and stable. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents
- 7 A five point composite sample will be taken of the pit using sampling tools and all samples tested per 19.15.17.13 (D)(5). In the event that the criteria are not met, all contents will be handled per 19.15.17.13 (D)(7) i.e., Dig and haul

Components	Tests Method	Limit (mg/Kg) >100' bottom of pit to GW
Benzene	EPA SW-846 8021B or 8015M	10
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	1000
Chlorides	EPA 300.0	80,000

- 8 Upon completion of solidification and testing; and contents are below concentrations listed in TABLE II, Logos will fold the outer edges of the trench liner to overlap the waste material in the pit area, then install a geomembrane cover over the waste material in the pit to prevent collections of infiltration water after the soil cover is in place; geomembrane a 20-mil, string reinforced, LLDPE liner, or equivalent complying with EPA SW-846 method 9090A requirements and impervious resistance to ultra violet light, hydrocarbons, salts, alkaline.
- 9 Pit area will be backfilled with compacted, non-waste containing, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater
- 10 Re-contouring of location will match fit, shape, line, form and texture of the surrounding area. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be placed in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape
- 11 Notification will be sent to OCD when the reclaimed area is seeded
- 12 Logos shall seed the disturbed areas the first favorable growing season after the operator closes the pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM or Forest Service stipulated seed mixed will be used on federal lands. Vegetative cover will be established that will reflect a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and will equal seventy (70%) of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover thorough two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs
 - a. On Federal/Tribal/Forest lands we will comply with their stipulations as they are more stringent
- 13 The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center of the onsite burial upon the abandonment of all the wells on the pad. The marker will be a four foot tall riser with the operator's information at the time of all wells on the pad are abandoned. The operator's information will include the following: Operator Name, Lease Name, Well Name and Number, unit Number, Section, Township, Range and an indicator that the marker is an onsite burial location
 - a. If the well goes into production, then an alternate interim marking system will be used to allow for safer and more efficient operations. A minimum 4" O.D. steel pipe will be set at least 36" deep at the center of the pit. A threaded collar will be on the top of the pipe. A minimum 12" x 12" steel plate will be welded atop the threaded collar. Top of the plate will be flush with ground level. The steel plate will contain the Operator Name, Lease Name, Well Number, and location information including unit letter, section, township and range, and that the marker designates an onsite burial location. This information will be welded, stamped or otherwise permanently engraved into the metal of the plate. Upon the abandonment of all the wells on the pad, the plate will be removed and replaced with a four foot tall riser containing the same information as described for the steel plate pursuant to 19.15.17.13.H.5D.