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.

5811

# 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: SG Interests I, Ltd. OGRID #: 20572
Address: PO Box 2677, Durango, Colorado 81301
Facility or well name: Federal 21-6-19 #4
API Number: 30-043-21070 OCD Permit Number:
U/L or Qtr/Qtr O SWSE Section 19 Township 21N Range 06W County: Sandoval, NM
Center of Proposed Design: Latitude 36.03153° N Longitude -107.50853° W NAD: ☐ 1927 ☐ 1983
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

RECEIVED
MAR 2010
OIL CONS. DIV. DIST. 3

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 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other
☐ String-Reinforced
Liner Seams: ☐ Welded ☒ Factory ☐ Other Volume: 1675 Bbls Dimensions: L 65' x W 40' x D 8'

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: 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 ☐ HDPE ☐ PVC ☐ Other

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.

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 The pit will be fenced with 4' Hog wire fence with 2 strands barbed wire on top

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.

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

☐ 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.<br>- 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)<br>- 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)*<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☒ No<br>☐ 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)*<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☒ No<br>☐ NA |
| 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.<br>- 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.<br>- Written confirmation or verification from the municipality; Written approval obtained from the municipality | ☐ Yes ☒ No |
| Within 500 feet of a wetland.<br>- 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.<br>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division | ☐ Yes ☒ No |
| Within an unstable area.<br>- 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.<br>- 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 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 $H_2S$, 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.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☒ No<br>☐ NA |
| Ground water is between 50 and 100 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☒ No<br>☐ NA |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☒ Yes ☐ No<br>☐ 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).<br>- 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.<br>- 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.<br>- 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.<br>- Written confirmation or verification from the municipality; Written approval obtained from the municipality | ☐ Yes ☒ No |
| Within 500 feet of a wetland.<br>- 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.<br>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division | ☐ Yes ☒ No |
| Within an unstable area.<br>- 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.<br>- 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): William Schwab III Title: Agent for SG Interests

Signature: [signature] Date: March 10, 2010

e-mail address: tripp@nikaenergy.com Telephone: 970-759-2701

20.
**OCD Approval:** ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

**OCD Representative Signature:** Brandon Powell **Approval Date:** 6/8/10

**Title:** Environ/spec **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:**

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 Longitude 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): Title:

Signature: Date:

e-mail address: Telephone:

# Nika Energy Operating

Mark Kelly
Bureau Of Land Management, DOI
Farmington Field Office
1235 La Plata Highway, Suite A
Farmington, NM 87401

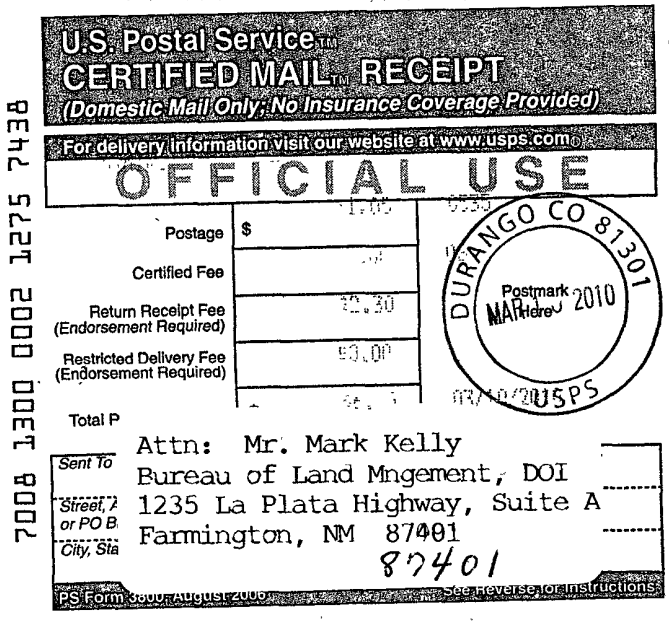
RE: Federal 21-6-19 #4, API # 30-043-21070

Mark,
This is a follow up certified letter as per the requirements of the new OCD pit rule 17 requiring notification to the surface owner that we are planning to open a temporary drilling pit on the subject location. After drilling operations cease, SGI plans to close the temporary pit per the approved APD and the new NMOCD rules.

Please let me know if you have any questions or if this notification needs to be directed to someone else.

Thank you for your time.

Tripp Schwab
President
Nika Energy Operating, LLC
Agent for SG Interests.




P.O. Box 2677 • Durango, Colorado 81302 • 970.259.2701 • Fax: 970.385-1598

FED 21-7-26 #2

21-7-25 #2

21-7-27 #1

21-6-19 #4

21-7-18 #3

**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:

Attn: Mr. Mark Kelly
Bureau of Land Mngemnt, DOI
1235 La Plata Highway, Suite A
Farmington, NM 87401

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature
X
☐ Agent
☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

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 la*

7008 1300 0002 1275 7438

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

## Tripp Schwab

**From:** Tripp Schwab [tripp@nikaenergy.com]
**Sent:** Tuesday, March 09, 2010 5:21 PM
**To:** Mark Kelly (mark_kelly@nm.blm.gov)
**Subject:** FW: Pit Notification
Re: Federal 21-6-19 #4, API 30-043-21070

Mark,

The requirements of the new OCD pit rule 17 requires notification to the surface owner that we are planning to open a temporary drilling pit on the subject location. After drilling operations cease, the pit will then be closed. SGI plans to close the temporary pit per approved Federal APD and NMOCD rules.

Please let me know if you have any questions or if this e-mail notification needs to be directed to someone else.

Thank you for your time.

Tripp Schwab
Nika Energy - Agent for SG Interests
970-259-2701 office
970-385-1598 fax

## HYDROGEOLOGIC DATA for the Federal 21-6-19 #4

The proposed well, Federal 21-6-19 #4, is located in the SWNE quarter of section 19 T21N- R6W. Ground level elevation at this site is at 6769'. The approximate elevation of the water bearing formation is 7084'. No water wells in this Township were identified using the iWaters Database from the Office of the State Engineers.

There are water wells located in some surrounding townships and are included with the following results:

| Location (T, R, Section) | POD Number | Well Depth | Depth to Water | Water Column |
|---|---|---|---|---|
| 21N 07W Sec 07 | SJ 01824 | 100' | n/a | n/a |
| 21N 07W Sec 07 | SJ 03562 | 680' | 240' | 440' |
| 20N 07W Sec 17 | RG 38729 | 252' | 110' | 142' |
| 20N 07W Sec 16 | SJ 01415 | 512' | 40' | 472' |
| 20N 07W Sec 22 | SJ01416 | 15' | 5' | 10' |
| 20N 07W Sec 22 | SJ 01417 | 620' | 10' | 610' |
| 20N 07W Sec 22 | SJ 01418 | 20' | 5' | 15' |
| 20N 07W Sec 34 | SJ 01419 | 350' | 30' | 320' |
| 20N 07W Sec 08 | SJ 01705 | 125' | 88' | 37' |
| 20N 07W Sec 34 | SJ 02615 | 360' | 200' | 160' |
| 20N 06W Sec 32 | SJ 00119 | 5007' | 180' | 4827' |
| 20N 06W Sec 32 | SJ 00119 Explore-1 | 5656' | 255' | 5401' |
| 20N 06W Sec 11 | SJ 01704 | 506' | 229' | 277' |
| 20N 05W Sec 22 | RG 91231 POD-1 | 143' | 78' | 65' |
| 21N 05W Sec 32 | RG 29678 | 2238' | 769' | 1469' |

The closest well from the surrounding townships was approximately 6.5 miles to the southwest in section 11 of 20N 06W.

The aquifer in this area of the San Juan Basin primarily consists of the Ojo Alamo Sandstone. The top of the Ojo Alamo at this drill site is estimated to be approximately 315 feet below the surface. The Ojo Alamo is a permeable conglomerate and medium to very coarse sandstone interlayered with relatively impermeable shale. This aquifer contains fresh to moderately saline water. Dissolved-solids concentrations generally increase along the groundwater flow path from less than 1,000 milligrams per liter near recharge areas to about 4,000 as the formation is deeper into the basin.

Reference:

GROUND WATER ATLAS of the UNITED STATES Arizona, Colorado, New Mexico, Utah, HA 730-C, USGS, S.G. Robson and E.R. Banta, 1995

iWaters (Waters Database), New Mexico Office of the State Engineer, 2007

# *New Mexico Office of the State Engineer*
# Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

| POD Number | Sub basin | Use | County | Q 64 | Q 16 | Q 4 | Sec | Tws | Rng | X | Y | Depth Well | Depth Water | Water Column |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RG 91231 POD1 | | PDM | MK | 2 | 2 | 2 | 22 | 20N | 05W | 288372 | 3981632 | 143 | 78 | 65 |

Average Depth to Water: **78 feet**

Minimum Depth: **78 feet**

Maximum Depth: **78 feet**

**Record Count:** 1

**PLSS Search:**

**Township:** 20N **Range:** 05W

# *New Mexico Office of the State Engineer*
# Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

| POD Number | Sub basin | Use | County | Q 64 | Q 16 | Q 4 | Sec | Tws | Rng | X | Y | Depth Well | Depth Water | Water Column |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SJ 00119 | | MIN | MK | 3 | 2 | | 32 | 20N | 06W | 275000 | 3978298* | 5007 | 180 | 4827 |
| SJ 00119 EXPLORE-1 | | MIN | MK | 3 | 2 | | 32 | 20N | 06W | 275000 | 3978298* | 5656 | 255 | 5401 |
| SJ 01704 | | STK | MK | 2 | 4 | | 11 | 20N | 06W | 280377 | 3984204* | 506 | 229 | 277 |

Average Depth to Water: **221 feet**

Minimum Depth: **180 feet**

Maximum Depth: **255 feet**

**Record Count:** 3

**PLSS Search:**

Township: 20N Range: 06W

***UTM location was derived from PLSS - see Help**

# New Mexico Office of the State Engineer
# Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

| POD Number | Sub basin | Use | County | Q 64 | Q 16 | Q 4 | Sec | Tws | Rng | X | Y | Depth Well | Depth Water | Water Column |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RG 38729 | | DOM | CI | 4 | 2 | 17 | 20N | 07W | | 265860 | 3983385* | 252 | 110 | 142 |
| SJ 01415 | | STK | MK | 4 | 4 | 16 | 20N | 07W | | 267450 | 3982529* | 512 | 40 | 472 |
| SJ 01416 | | DOM | MK | 1 | 1 | 22 | 20N | 07W | | 267842 | 3982113* | 15 | 5 | 10 |
| SJ 01417 | | STK | MK | 3 | 4 | 22 | 20N | 07W | | 268615 | 3980884* | 620 | 10 | 610 |
| SJ 01418 | | STK | MK | 2 | 1 | 22 | 20N | 07W | | 268244 | 3982101* | 20 | 5 | 15 |
| SJ 01419 | | MUL | MK | 3 | 3 | 34 | 20N | 07W | | 267734 | 3977660* | 350 | 30 | 320 |
| SJ 01419 S | | MUL | MK | 3 | 3 | 34 | 20N | 07W | | 267734 | 3977660* | 350 | 30 | 320 |
| SJ 01419 S 2 | | MUL | MK | 3 | 3 | 34 | 20N | 07W | | 267734 | 3977660* | 350 | 30 | 320 |
| SJ 01419 S 3 | | MUL | MK | 3 | 3 | 34 | 20N | 07W | | 267734 | 3977660* | 350 | 30 | 320 |
| SJ 01419 S-2 | | MUL | MK | 3 | 3 | 34 | 20N | 07W | | 267734 | 3977660* | 350 | 30 | 320 |
| SJ 01419 S-3 | | MUL | MK | 3 | 3 | 34 | 20N | 07W | | 267734 | 3977660* | 350 | 30 | 320 |
| SJ 01705 | | STK | MK | 2 | 3 | 08 | 20N | 07W | | 265079 | 3984620* | 125 | 88 | 37 |
| SJ 02615 | | SAN | MK | 1 | 1 | 4 | 34 | 20N | 07W | 268446 | 3978150* | 360 | 200 | 160 |

Average Depth to Water: **49 feet**

Minimum Depth: **5 feet**

Maximum Depth: **200 feet**

**Record Count:** 13

**PLSS Search:**

**Township:** 20N **Range:** 07W

***UTM location was derived from PLSS - see Help**

# *New Mexico Office of the State Engineer*
# Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

| POD Number | Sub basin | Use | County | Q 64 | Q 16 | Q 4 | Sec | Tws | Rng | X | Y | Depth Well | Depth Water | Water Column |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RG 29678 | | MIN | SA | 2 | 4 | 32 | 21N | 05W | | 285514 | 3987070* | 2238 | 769 | 1469 |

Average Depth to Water: **769 feet**

Minimum Depth: **769 feet**

Maximum Depth: **769 feet**

**Record Count:** 1

**PLSS Search:**

**Township:** 21N **Range:** 05W

***UTM location was derived from PLSS - see Help**

# *New Mexico Office of the State Engineer*
# Water Column/Average Depth to Water

No records found.

**PLSS Search:**

**Township:** 21N **Range:** 06W

# New Mexico Office of the State Engineer
# Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

| POD Number | Sub basin | Use | County | Q 64 | Q 16 | Q 4 | Sec | Tws | Rng | X | Y | Depth Well | Depth Water | Water Column |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SJ 01824 | | MUL | SA | 3 | 3 | 1 | 07 | 21N | 07W | 263575 | 3994603* | 100 | | |
| SJ 03562 | | SAN | SA | 3 | 3 | 1 | 07 | 21N | 07W | 263575 | 3994603* | 680 | 240 | 440 |

Average Depth to Water: **240 feet**

Minimum Depth: **240 feet**

Maximum Depth: **240 feet**

**Record Count:** 2

**PLSS Search:**

Township: 21N Range: 07W

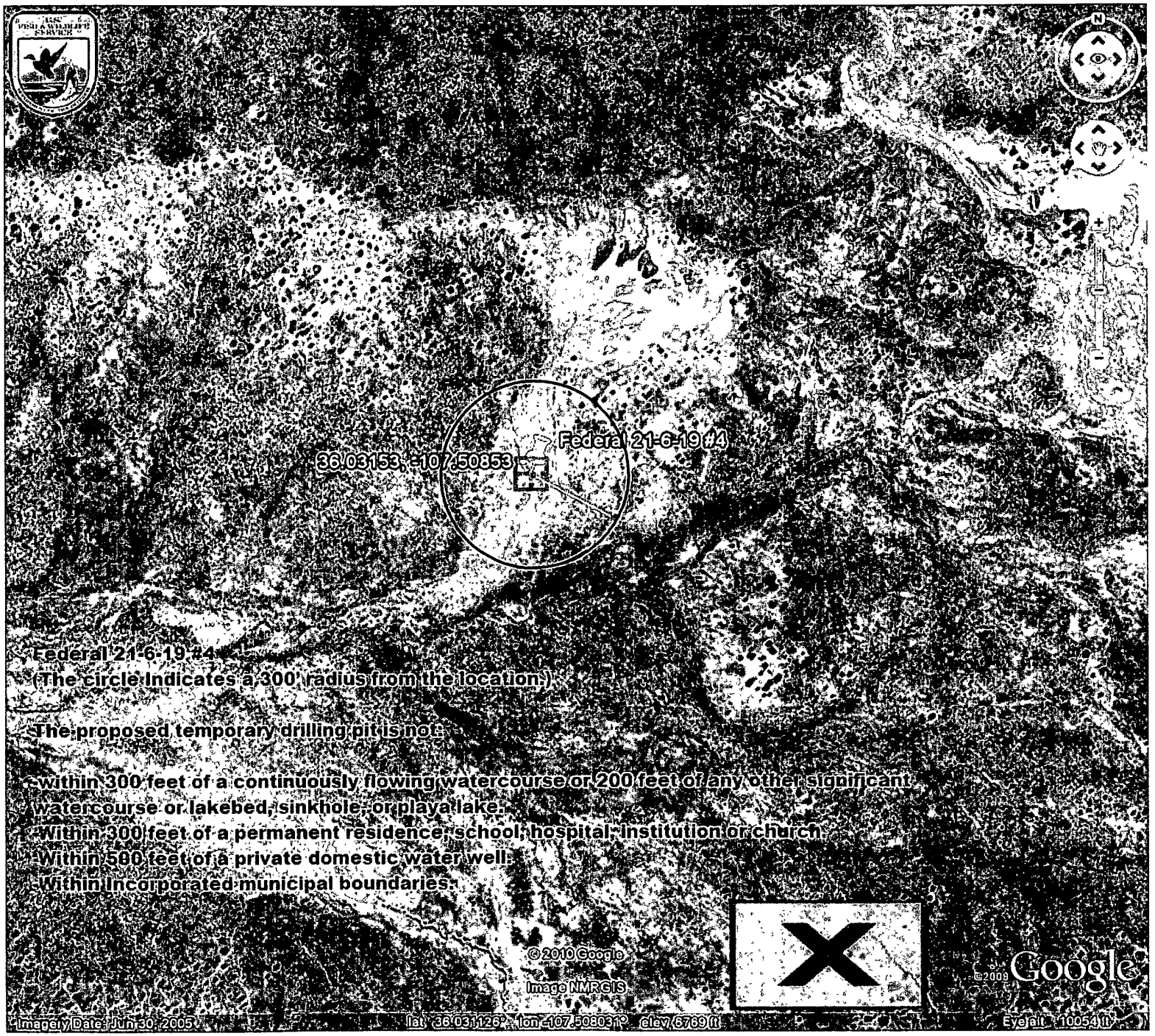
***UTM location was derived from PLSS - see Help**

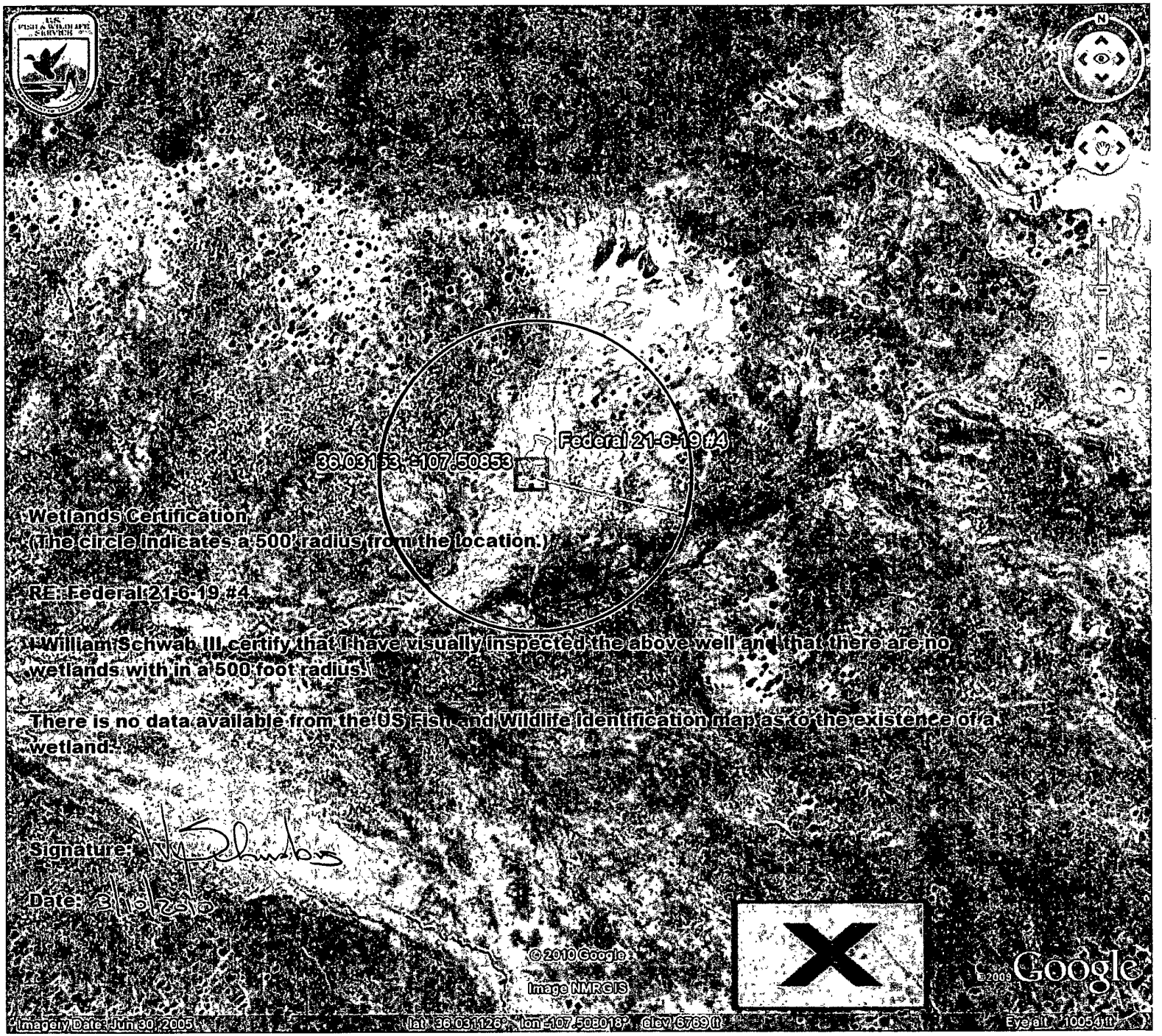
# *New Mexico Office of the State Engineer*
# Water Column/Average Depth to Water

No records found.

**PLSS Search:**

**Township:** 22N **Range:** 06W

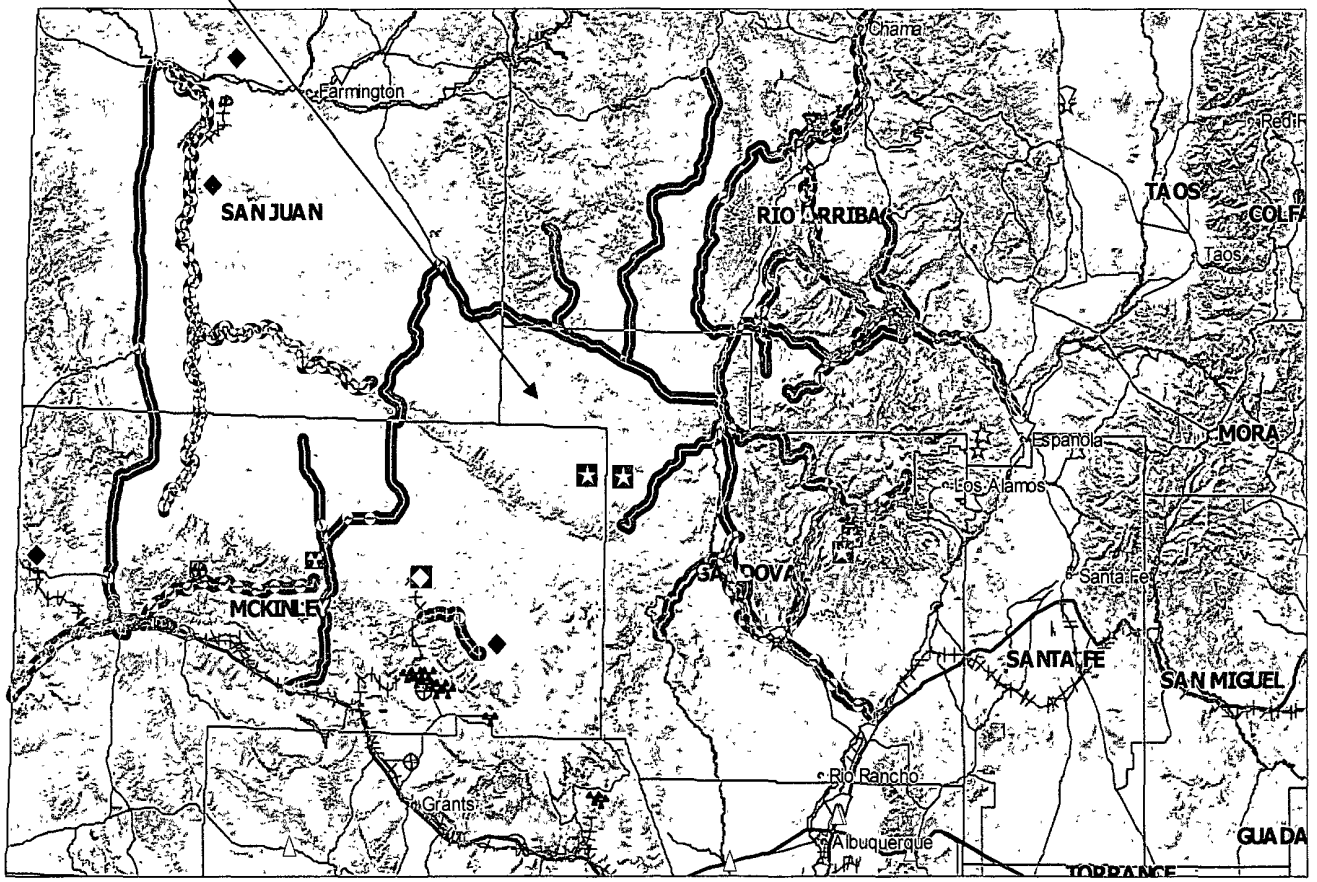

Federal 21-6-19 #4
36.03153, -107.50853
Federal 21-6-19 #4
(The circle indicates a 300' radius from the location.)
The proposed temporary drilling pit is not:
-within 300 feet of a continuously flowing watercourse or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake.
-Within 300 feet of a permanent residence, school, hospital, institution or church.
-Within 500 feet of a private domestic water well.
-Within Incorporated municipal boundaries.
© 2010 Google
Image NMRGIS
©2009 Google
Imagery Date: Jun 30, 2005
lat 36.031126° lon -107.508031° elev 6769 ft
Eye alt 10054 ft


Federal 21-6-19 #4
36.03153, -107.50853
Wetlands Certification
(The circle indicates a 500' radius from the location.)
RE: Federal 21-6-19 #4
I William Schwab III certify that I have visually inspected the above well and that there are no wetlands with in a 500 foot radius.
There is no data available from the US Fish and Wildlife identification map as to the existence of a wetland.
Signature:
Date: 3/10/2010
© 2010 Google
Image NMRGIS
Google
Imagery Date: Jun 30, 2005
lat 36.031126° lon -107.508018° elev 6789 ft
Eye alt 10054 ft

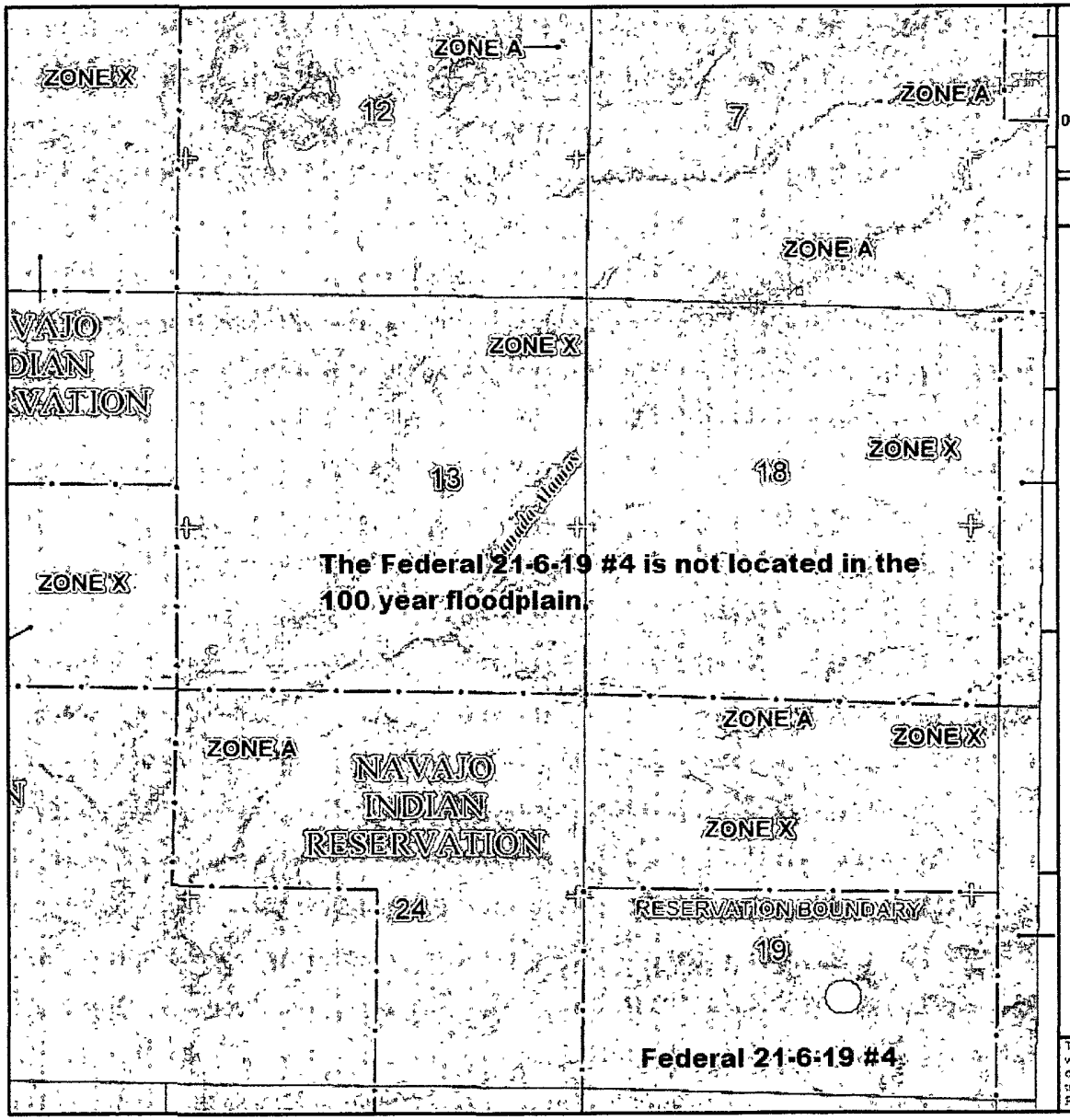
# Map of Mining Sites in Area of Interest

Map from NM-EMNRD Website

Location of Federal 21-6-19 #4




The Federal 21-6-19 #4 well pad is not located near any surface mines or over any subsurface mines. The Soil consists of a clay sand mixture. The location has a 5' cut and a 3' fill. The temporary drilling pit will be located in the cut of the cut side of the location.




MAP SCALE 1" = 2000'

000 0 2000 4000

FEET

METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0225D

# FIRM

## FLOOD INSURANCE RATE MAP

SANDOVAL COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 225 OF 2225

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| SANDOVAL COUNTY, UNINCORPORATED AREAS | 350055 | 0225 | D |

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
35043C0225D

MAP REVISED
MARCH 18, 2008

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

# SG Interests I, Ltd.

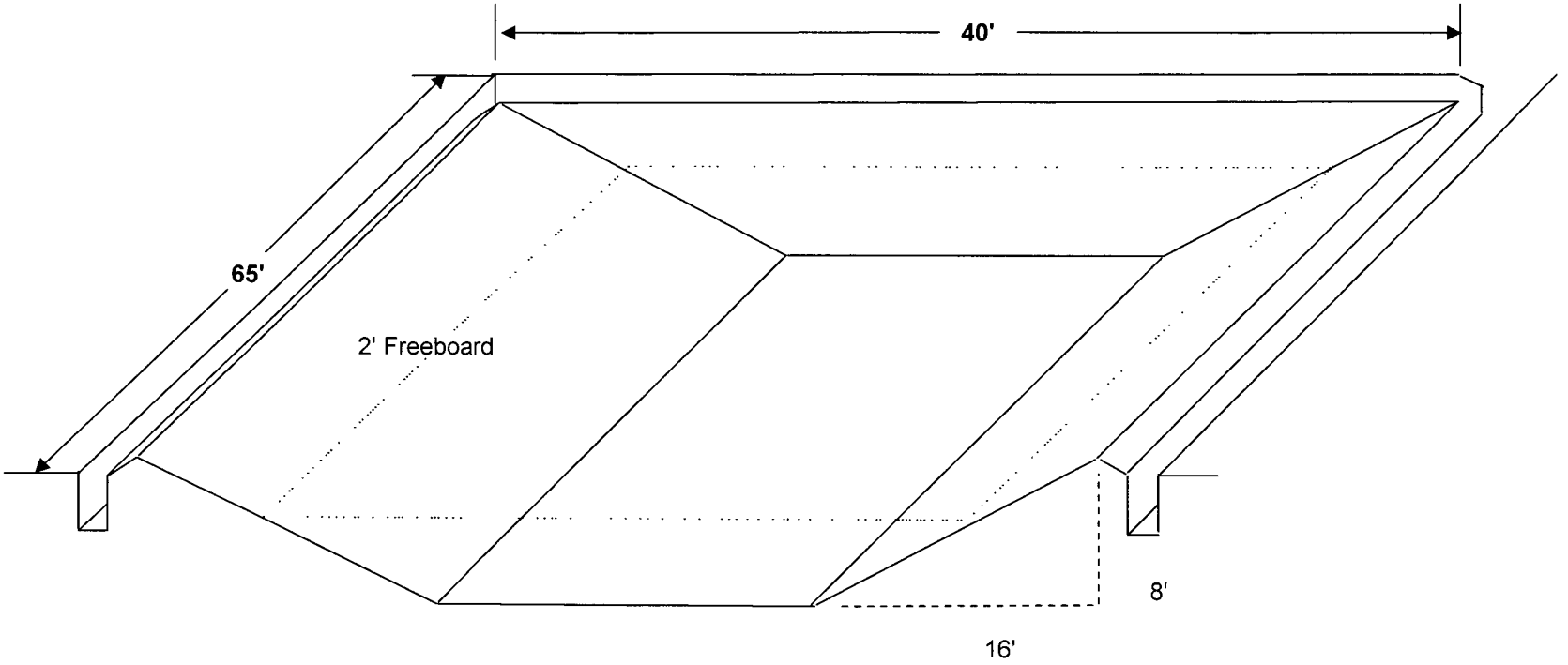
## Temporary Pit Design & Construction Plan

**Re: Federal 21-6-19 #4**

1 - SG Interests will design and construct a temporary pit to contain liquids, solids, prevent contamination of fresh water, and protect public health and environment.
2 - Prior to constructing the pit, topsoil will be stockpiled per APD for later use in reclamation.
3 - SGI will have sign on location in compliance with 19.15.3.103 NMAC.
4 - SGI shall construct all new fences utilizing 48" hog wire on bottom with a single strand of barbed wire on top. T-posts will be installed a minimum of every 12 feet and corners will be braced. Temporary pits will be fenced at all times except during drilling or workover operations when the rig side of the fence will be temporarily removed for operational purposes.
5 - SGI shall construct the temporary pit so the foundation and interior slopes are compact, free of rocks, debris, sharp edges and irregularities to prevent liner failure.
6 - SGI shall construct the pit so the slopes are no steeper than two horizontal feet to one vertical foot. Any other design will be submitted for administrative approval.
7 - All temporary pits will be lined with a 20 mil string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements.
8 - Geo-textile will be installed beneath the liner if integrity will be compromised from sharp edges or irregularities.
9 - Liner will be anchored in the bottom of a compacted earth filled trench at least eighteen inches deep.
10 - Liner seams will be minimized and oriented up and down, not cross slope. Factory seams will be used wherever possible. Field seams will be overlapped four to six inches and welded by qualified personnel. Seams will be minimized in corners and irregularly shaped areas.
11 - The liner shall be protected from any fluid force through the use of mud pit slides or a manifold system.
12 - Diversion ditches and berms will be used to prevent natural runoff from entering pit.
13 - Pit volume will not exceed 10 acre feet, including freeboard.
14 - Temporary blow pits will be constructed to allow fluid discharged to unlined pit, as allowed by Rule 19.15.17.11.F.11, to gravity flow into lined pit.
15 – Freestanding liquids will not be allowed in unlined portion of a temporary blow pit.

# Temporary Pit Design

**Federal 21-6-19 #4**




Pit to be lined with 20 mil LLDPE Material

Liner will be anchored in anchor ditch

# SG Interests I, Ltd.

## Temporary Pit - Maintenance & Operating Plan

**Re: Federal 21-6-19 #4**

1 - SG Interests will design and construct a temporary pit to contain liquids, solids, prevent contamination of fresh water, and protect public health and environment.
2 - SGI will dispose of drilling fluids at Basin Disposal Inc., Permit # NM-01-005.
3 - SGI will not dispose of or store any hazardous waste in any temporary pit.
4 - If the pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid surface, the NMOCD Aztec Division office will be notified by phone or e-mail within forty eight hours.
5 - If a leak develops below the liquid level SGI shall remove all liquids above the damaged liner within forty eight hours and repair the damage to the liner. For leaks less than 25 Bbls SGI shall notify the NMOCD Aztec office within forty eight hours of the discovery. For leaks greater than 25 Bbls SGI shall notify the NMOCD Aztec office within twenty four hours of the discovery. In addition verbal notification shall be given to the divisions Environmental Bureau Chief.
6 - The liner shall be protected from any fluid force through the use of mud pit slides or a manifold system.
7 - Diversion ditches and berms will be used to prevent natural runoff from entering pit.
8 - SGI shall immediately remove any visible layer of oil from the surface of the temporary pit. An oil absorbent boom will be used to contain and remove oil from the pits surface. An oil absorbent boom will be kept on-site until closure of pit.
9 - Only fluids generated during the drilling or completion process will be discharged into a temporary pit.
10 - The pit will be kept free of miscellaneous solid waste and or debris.
11 - During drilling or completion operations, SGI will inspect the temporary pit at least once daily to insure compliance with this plan. Inspections will be logged in the IADC reports and SGI daily drilling reports. These reports will be filed with the NMOCD Aztec Division office upon closure of the pit.
12 - After drilling or completion operations, SGI will inspect the temporary pit at least once weekly so long as liquids are present in the pit. Inspections will be logged as a continuation of the SGI daily drilling report and will be filed with the NMOCD Aztec Division office upon closure of the pit.
13 - The temporary pit shall always maintain a minimum of two feet of freeboard.
14 - Freestanding liquids will be removed from a temporary pit within 30 days from the date the drilling rig is released and removed as needed thereafter until the pit is closed.
15 - SGI will remove all freestanding liquids from a cavitation pit within 48 hours after completing a cavitation. SGI may request additional time to remove liquids from the NMOCD Aztec Division office if SGI is not able to remove liquids in 48 hours.

# SG Interests I, Ltd.

## Temporary Pit - Closure Plan

**Re: Federal 21-6-19 #4**

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

Details on capping and covering (where applicable)
Plot Plan (Pit Diagram)
Inspection Reports
Sampling Results
C-105

1 – All freestanding 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, re-use or reclaim the liquids in a manner that the appropriate division district office approves. SGI plans to dispose of drilling fluids at Basin Disposal Inc., Permit # NM-01-005, unless otherwise noted.

2 - The method of closure for all temporary pits will be on-site burial as long as all the criteria listed in sub-section B of 19.15.17.13 NMAC are met.

3 - The surface owner shall be notified of SGI closure plan using a means that provides proof of notice i.e., certified mail, return receipt requested or electronic mail with read receipt.

4 - Temporary pits will be closed, re-contoured, and re-seeded 6 months after drilling rig is released.

5 - "Notice of Closure" will be given to the NMOCD Aztec Division office within 72 hours of closure via electronic mail or verbally. The "Notification of Closure" will include:

   i. Operators Name
   ii. Location by Unit Letter, Section, Township, and Range
   iii. Well Name and API number.

6 - A five point composite sample will be taken of the pit using sampling tools and tested per 19.15.17.13.B.1.b. NMAC. Maximum limits for on-site burial are listed below:

| Components | Test 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 |

In the event the criteria are not met all contents and remediation will be handled per 19.15.17.13.B.1 NMAC. If ground water is 50'-100' below the bottom of the buried waste all limits are the same except the chloride limit is reduced to 500 mg/kg. The sampling can be taken prior to mixing but if the contents exceed the parameters then contents must be sampled after mixing and meet the criteria before closure.

7 - Pit contents shall be mixed with non waste containing earth material in order to achieve the solidification process. The solidification process will be accomplished using a combination of natural drying and mechanical mixing. Pit contents will be mixed with non waste, earth material to a consistency that is deemed safe and stable. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents.
8 - Liner of temporary pit will be removed above "mud level" after stabilization. Liner will be cut and all excessive liner will be removed and taken to a licensed disposal facility.
9 - Upon completion of solidification and satisfactory test results the pit area will be backfilled and compacted with non-waste earth material. A minimum of four feet of cover with the top foot (or background thickness of topsoil whichever is greater) suitable to establish vegetation at the site.
10 - The pit cover will be re-contoured and re-vegetated complying with subsections G, H, & I of 19.15.17.13 NMAC.
11 - Notification will be sent to NMOCD Aztec Division office when reseeding is completed.
12 - SGI will seed the disturbed areas the first growing season after the operator closes the pit. Seeding will be accomplished by drilling on the contour whenever practical or by other division approved methods. APD stipulated seed mixes will be used on Federal lands. Vegetative cover will equal 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. Seed cover will be maintained thru two consecutive growing seasons. Repeat seeding or planting will be continued until successive vegetative growth occurs.
13 - The closed temporary pit will have a steel marker no less than four inches in diameter, extending four feet above mean ground level, extending and cemented in a hole three feet deep, in the center of the onsite burial upon completion of the closing. The marker will be permanently welded, stamped or engraved to include the operator name, lease name, well name and number, unit number, section, township, range, and indicator that the marker is an onsite burial location. SGI reserves the right to install a temporary flat plate marker, one foot by two feet, with the same information if it is deemed necessary for safe operation on the wellsite during the productive life of the well. A full size marker will then be installed upon final abandonment.