District I
1625 N. French Dr., Hobbs, NM 88240

Dis
130
Dis
100
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

REGISTERED

State of New Mexico
Natural Resources
nent
on Division
Francis Dr.
Santa Fe, NM 87505

Form C-144
July 21, 2008

For temporary pits, closed-loop sytems, 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.

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

Type of action:
- [X] 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: **Burlington Resources Oil & Gas Company, LP** OGRID#: **14538**
Address: **PO Box 4289, Farmington, NM 87499**
Facility or well name: **LARGO FEDERAL 1A**
API Number: **3004523562** OCD Permit Number:
U/L or Qtr/Qtr: **C** Section: **34** Township: **29N** Range: **9W** County: **San Juan**
Center of Proposed Design: Latitude: **36.68622°N** Longitude: **-107.77188°W** NAD: [X] 1927 [ ] 1983
Surface Owner: [X] Federal [ ] State [ ] Private [ ] Tribal Trust or Indian Allotment

2
[ ] **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: [ ] Drilling [ ] Workover
[ ] Permanent [ ] Emergency [ ] Cavitation [ ] P&A
[ ] Lined [ ] Unlined Liner type: Thickness _____ mil [ ] LLDPE [ ] HDPE [ ] PVC [ ] Other _____
[ ] String-Reinforced
Liner Seams: [ ] Welded [ ] Factory [ ] Other _____ Volume: _____ bbl Dimensions L ____ x W ____ x D ____

3
[ ] **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation: [ ] P&A [ ] Drilling a new well [ ] Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
[ ] Drying Pad [ ] Above Ground Steel Tanks [ ] Haul-off Bins [ ] Other _____
[ ] Lined [ ] Unlined Liner type: Thickness _____ mil [ ] LLDPE [ ] HDPE [ ] PVD [ ] Other _____
Liner Seams: [ ] Welded [ ] Factory [ ] Other _____

4
[X] **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: **120** bbl Type of fluid: **Produced Water**
Tank Construction material: **Metal**
[ ] Secondary containment with leak detection [X] 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 [X] Other **Unspecified**

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 pit, 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 fencing topped with two strands barbed wire.**

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 of the Santa Fe Environmental Bureau office for consideration of approval. **(Fencing/BGT Liner)**

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

10

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

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

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

11

Temporary Pits, Emergency Pits and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- [X] 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
- [X] Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- [X] Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- [X] Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- [X] 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 _____ or Permit _____

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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 _____

[ ] Previously Approved Operating and Maintenance Plan API _____

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 H2S, Prevention Plan
- [ ] Emergency Response Plan
- [ ] Oil Field Waste Stream Characterization
- [ ] Monitoring and Inspection Plan
- [ ] Erosion Control Plan
- [ ] Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14

Proposed Closure: 19.15.17.13 NMAC

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

Type: [ ] Drilling [ ] Workover [ ] Emergency [ ] Cavitation [ ] P&A [ ] Permanent Pit [X] Below-grade Tank [ ] Closed-loop System [ ] Alternative

Proposed Closure Method:
- [X] Waste Excavation and Removal **(Below-Grade Tank)**
- [ ] Waste Removal (Closed-loop systems only)
- [ ] On-site Closure Method (only for temporary pits and closed-loop systems)
  - [ ] In-place Burial [ ] On-site Trench
- [ ] 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.***

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

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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 identify 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 #: _____

Disposal Facility Name: _____ Disposal Facility Permit #: _____

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) ☐ No

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

☐ Soil Backfill and Cover Design Specification - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17

Siting Criteria (Regarding on-site closure methods only: 19.15.17.10 NMAC

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

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

18

On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must bee 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): Crystal Tafoya Title: Regulatory Technician

Signature: Crystal Tafoya Date: 12/22/2008

e-mail address: [redacted] Telephone: 505-326-9837

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

OCD Representative Signature: _____ **Approval Date:** _____

Title: _____ **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 identify 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 opeartions?

☐ Yes (If yes, please demonstrate complilane 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 (if applicable)

☐ 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 ture, 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: _____

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 29N Range: 08W Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ○ Non-Domestic ○ Domestic ◉ All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

WATER COLUMN REPORT 08/20/2008

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

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water Column (in feet)
SJ 00028	29N	08W	01	2	1	4				606	300	306
SJ 00196	29N	08W	09	3						1624	500	1124
SJ 00003	29N	08W	18	1						525		
SJ 00004	29N	08W	18	1						591	70	521
SJ 03050	29N	08W	18	2	3	2				600		
SJ 00019	29N	08W	21	2						502		
SJ 00005	29N	08W	21	3						606	406	200
SJ 00025	29N	08W	21	3						606	406	200
SJ 00006	29N	08W	26	2						560		

Record Count: 9

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 29N Range: 09W Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

WATER COLUMN REPORT 08/20/2008

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

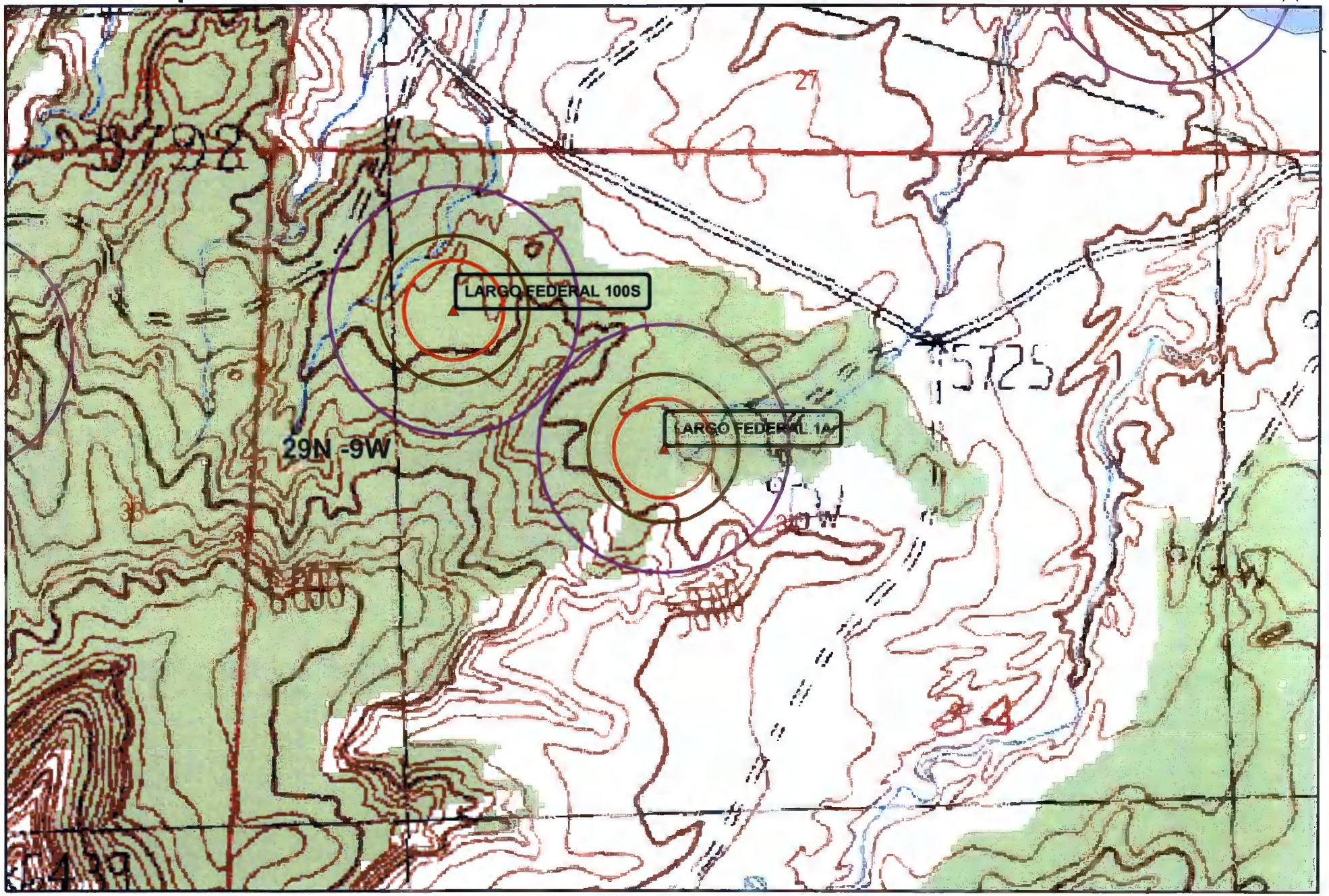
POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water Column (in feet)
SJ 01874	29N	09W	02							28	8	20
SJ 02347	29N	09W	02	1						25	4	21
SJ 01983	29N	09W	02	1						25	3	22
SJ 02346	29N	09W	02	1						25	4	21
SJ 03138	29N	09W	02	1	1	1				11	5	6
SJ 03044	29N	09W	02	1	1	2				10		
SJ 03396	29N	09W	02	1	1	2				10	4	6
SJ 02677	29N	09W	02	1	1	3				21	7	14
SJ 02492	29N	09W	02	1	1	3				13	5	8
SJ 02478	29N	09W	02	1	1	3				16	8	8
SJ 02096	29N	09W	02	1	1	4				27	11	16
SJ 01067	29N	09W	02	1	1	4				25	10	15
SJ 01066	29N	09W	02	1	1	4				25	10	15
SJ 01183	29N	09W	02	1	1	4				24	11	13
SJ 03632	29N	09W	02	1	2	2				27	7	20
SJ 01232	29N	09W	02	1	3					25	9	16
SJ 03080	29N	09W	02	1	3					35		
SJ 01210	29N	09W	02	1	3	1				26	10	16
SJ 01460	29N	09W	02	1	3	1				19	8	11
SJ 01430	29N	09W	02	1	3	1				24	11	13
SJ 01203	29N	09W	02	1	3	1				25	12	13
SJ 01392	29N	09W	02	1	3	2				25	11	14
SJ 03003	29N	09W	02	1	3	2				19	6	13
SJ 01867	29N	09W	02	1	3	2				25	71	-46
SJ 01579	29N	09W	02	1	3	2				25	12	13
SJ 03253	29N	09W	02	1	3	2				16	9	7
SJ 02600	29N	09W	02	1	4	3				18	8	10
SJ 03687	29N	09W	02	1	4	3				18	10	8
SJ 03687 POD1	29N	09W	02	1	4	3				18	10	8
SJ 03127	29N	09W	02	2	1	2				17	10	7
SJ 02376	29N	09W	03	1	2	4				13	10	3
SJ 02369	29N	09W	03	1	2	4				23		

SJ 02369 CLW	29N	09W	03	1	2	4	13	10	3
SJ 02103	29N	09W	03	1	3		21	4	17
SJ 01494	29N	09W	03	2	2		12	5	7
SJ 03300	29N	09W	03	2	2	2	21	4	17
SJ 03362 POD2	29N	09W	03	2	2	4	21	6	15
SJ 03362	29N	09W	03	2	2	4	38	12	26
SJ 02567	29N	09W	03	2	4	1	14	2	12
SJ 03200	29N	09W	03	3	1	1	28	13	15
SJ 02946	29N	09W	03	4	2	1	95	40	55
SJ 03491	29N	09W	04	1	1	3	70		
SJ 03490	29N	09W	04	1	1	3	42	20	22
SJ 03566	29N	09W	04	1	3	4	30		
SJ 03531	29N	09W	04	1	4	1	30		
SJ 03530	29N	09W	04	1	4	1	30		
SJ 03466	29N	09W	04	2	1	3	40		
SJ 02554	29N	09W	04	2	1	4	13	5	8
SJ 03118	29N	09W	05	2	2	3	250		
SJ 03599	29N	09W	05	4	1	1	42	20	22
SJ 03092	29N	09W	05	4	1	1	40	16	24
SJ 03182	29N	09W	05	4	1	1	42	18	24
SJ 00584	29N	09W	06	3	4		143	40	103
SJ 00785	29N	09W	07	3	4	2	60		
SJ 03389	29N	09W	07	4	4	2	20		
SJ 03536	29N	09W	07	4	4	2	19	6	13
SJ 01176	29N	09W	08	1	1		150	70	80
SJ 02822	29N	09W	08	1	1	3	100		
SJ 00436	29N	09W	08	1	3		150	100	50
SJ 03534	29N	09W	08	3	1	3	41	24	17
SJ 02279	29N	09W	09	1	1	4	30	6	24
SJ 00102	29N	09W	09	1	2	1	20	5	15
SJ 02883	29N	09W	16	2	3	3	123	87	36
SJ 03185	29N	09W	16	3	4	4	220	100	120
SJ 03430	29N	09W	18	2	2	1	21	1	20
SJ 03428	29N	09W	18	2	2	4	21	5	16
SJ 00099	29N	09W	18	2	4		16	4	12
SJ 00097	29N	09W	18	2	4		16	4	12
SJ 00101	29N	09W	18	2	4		16	4	12
SJ 00098	29N	09W	18	2	4		16	4	12
SJ 00100	29N	09W	18	4	1		16	4	12
SJ 00096	29N	09W	18	4	2		16	4	12
SJ 00095	29N	09W	18	4	2		16	4	12
SJ 02910	29N	09W	18	4	2	1	20		
SJ 00094	29N	09W	18	4	4	2	15		
SJ 00093	29N	09W	18	4	4	4	155		

Record Count: 76

ConocoPhillips

USGS TOPO MAP LARGO FEDERAL 1A



Wetlands data aquired from U.S. Fish and Wildlife
http://wetlandswms.er.usgs.gov

Ground Water
- iWaters
- COP

Buffers
- 200ft
- 300ft
- 500ft
- Wetlands

0 500 1,000 Feet

1:6,000

NAD_1983_StatePlane_NMWest_FIPS_3003

8/08

ConocoPhillips

AERIAL MAP LARGO FEDERAL 1A

Data Source
Aerial flown locally Sedgewick in 2005.

1000FT

300FT

0 500 1,000 Feet

1:6,000

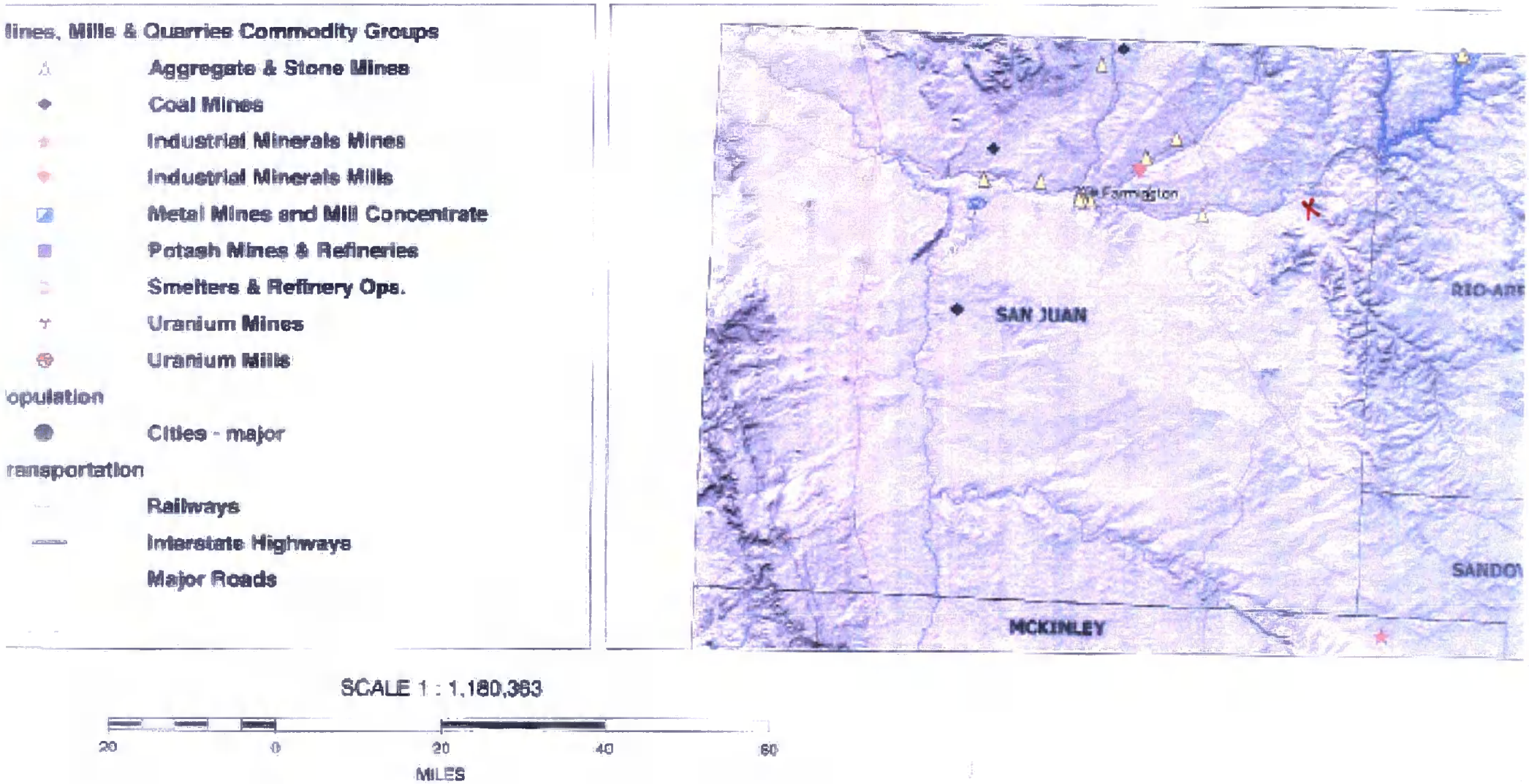
NAD_1983_SP_
NM West_FIPS_3003

8/08

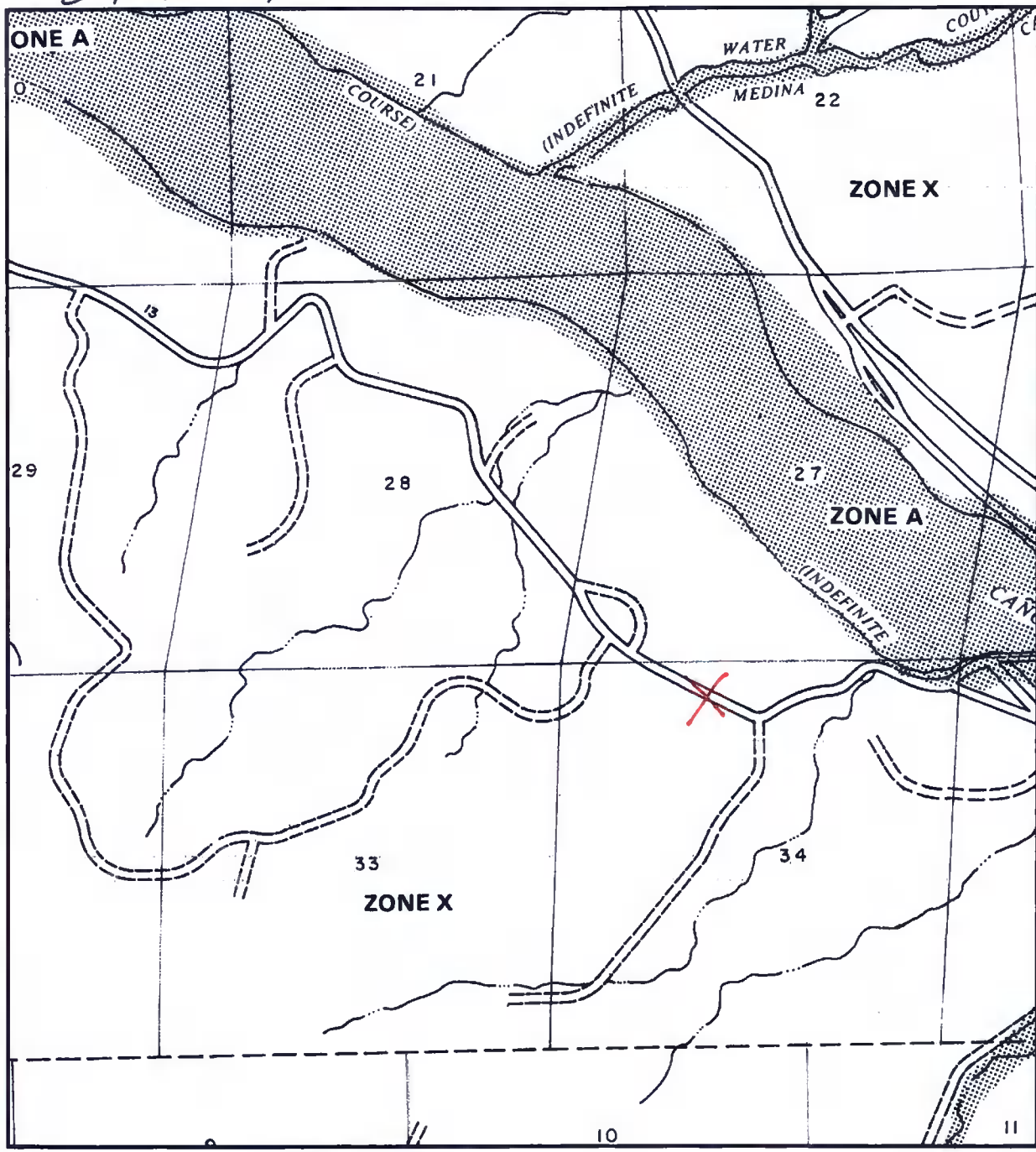
Mines, Mills and Quarries Web Map

LARGO FEDERAL 1A

Unit Letter: C, Section: 34, Town: 029N, Range: 009W



LARGO Federal #1A



APPROXIMATE SCALE

2000 0

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

SAN JUAN COUNTY,
NEW MEXICO
UNINCORPORATED AREAS

PANEL 575 OF 1450
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
350064 0575

EFFECTIVE DATE:
AUGUST 4, 1988

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

LARGO FEDERAL 1A

Site Specific Hydrogeology

A visual site inspection confirming the information contained herein was performed on the well 'LARGO FEDERAL 1A', which is located at 36.68622 degrees North latitude and 107.77188 degrees West longitude. This location is located on the Blanco 7.5' USGS topographic quadrangle. This location is in section 34 of Township 29 North Range 9 West of the Public Land Survey System (New Mexico Principal Meridian). This location is located in San Juan County, New Mexico. The nearest town is Blanco, located 4.1 miles to the northwest. The nearest large town (population greater than 10,000) is Farmington, located 24.3 miles to the west (National Atlas). The nearest highway is US Highway 64, located 3.2 miles to the northwest. The location is on BLM land and is 6,942 feet from the edge of the parcel as notated in the BLM land status layer updated January 2008. This location is in the Blanco Canyon. New Mexico, Sub-basin. This location is located 1757 meters or 5762 feet above sea level and receives 11 inches of rain each year. The vegetation at this location is classified as Colorado Plateau Pinon-Juniper Woodland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is 66 feet. This estimation is based on the data published on the New Mexico Engineer's iWaters Database website and water depth data from ConocoPhillips' cathodic wells. Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. The nearest stream is 32 feet to the northwest and is classified by the USGS as an intermittent stream. The nearest perennial stream is 2,806 feet to the northwest. The nearest water body is 1,722 feet to the south. It is classified by the USGS as an intermittent lake and is 0.1 acres in size. The nearest spring is 9,265 feet to the southeast. All stream, river, water body and spring information was determined as per the USGS Hydrographic Dataset (High Resolution), downloaded 3/2008. The nearest water well is 3,622 feet to the southwest. The nearest wetland is a 610.7 acre Ravine located 2,690 feet to the northeast. The slope at this location is 2 degrees to the northeast as calculated from USGS 30M National Elevation Dataset. This information is also discerned from the aerial and topographic map included. The surface geology at this location is NACIMIENTO FORMATION--Shale and sandstone with a Shale dominated formations of all ages substrate. The soil at this location is 'Fruitland-Persayo-Sheppard complex, hilly' and is well drained and not hydric with severe erosion potential as taken from the NRCS SSURGO map unit, downloaded January 2008. The nearest underground mine is 20.3 miles to the north as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

Regional Geological context:

The Nacimiento Formation is of Paleocene age (Baltz, 1967, p. 35). It crops out in a broad band inside the southern and western margins of the central basin and in a narrow band along the west face of the Nacimiento Uplift. The Nacimiento is a nonresistant unit and typically erodes to low, rounded hills or forms badland topography.

The Nacimiento Formation occurs in approximately only the southern two-thirds of the San Juan Basin where it conformably overlies and intertongues with the Ojo Alamo Sandstone (Fassett, 1974, p. 229). The Nacimiento Formation grades laterally into the main part of the Animas Formation (Fassett and Hinds, 1971, p. 34); thus, in this area, the two formations occupy the same stratigraphic interval.

Strata of the Nacimiento Formation were deposited in lakebeds in the central basin area with lesser deposition in stream channels (Brimhall, 1973, p. 201). In general, the Nacimiento consists of drab, interbedded black and gray shale with discontinuous, white, medium- to very coarse grained arkosic sandstone (Stone e al., 1983, p.30). Stone et al. indicated that the formation may contain more sandstone than commonly reported because some investigators assume the slope-forming strata in the unit area shales, whereas in many places the strata actually are poorly consolidated sandstones.

Total thickness of the Nacimiento Formation ranges from about 500 to 1,300 feet. The unit generally thickens from the basin margins toward the basin center (Steven et al., 1974). The sandstone deposits within the Nacimiento Formation are much thinner than the total thickness of the formation because their environment of deposition was localized stream channels (Brimhall, 1973, p. 201). The thickness of the combined San Jose, Animas, and Nacimiento Formations ranges from 500 to more than 3.500 feet.

Hydraulic Properties:

Reported well yields for 53 wells completed in either the Animas or Nacimiento Formations range from 2 to 90 gallons per minute and the median yield is 7.5 gallons per minute. The primary use of water from Nacimiento and Animas Formations is domestic and livestock supplies. There are no known aquifer tests for the Animas or Nacimiento Formations, but specific capacities reported for six wells range from 0.24 to 2.30 gallons per minute per foot of drawdown (Levings et al., 1990).
The Animas and Nacimiento Formations are in many ways hydrologically similar to the San Jose Formation because sands in both units produce approximately the same quantities of water. However, the greater percentage of fine materials in the Animas and Nacimiento Formations may restrict downward vertical leakage to the Ojo Alamo Sandstone or Kirtland Shale. The poorly cemented fine material is highly erodible, forms a badland terrain, and supports only spotty vegetation. These conditions are more conductive to runoff than retention of precipitation.

References:
Baltz, E.H., 1967, Stratigraphy and regional tectonic implications of part of Upper Cretaceous rocks, east-central San Juan Basin, New Mexico: USGS Professional Paper 552, 101 p.
Brimhall, R.M., 1973, Ground-water hydrology of Tertiary rocks of the San Juan Basin, New Mexico, in Fassett, J.E., ed., Cretaceous and Tertiary rocks of the Southern Colorado Plateau: Four Corners Geological Society Memoir, p. 197-207.
Fassett, J.E., 1974, Cretaceous and Tertiary rocks of the eastern San Juan Basin, New Mexico and Colorado, in Guidebook of Ghost Ranch, central-northern New Mexico: New Mexico Geological Society, 25th Field Conference, p. 225-230.
Fassett, J.E., and Hinds, J.S., 1971, Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: USGS Professional Paper 676, 76 p.
Levings, G.W., Craigg, S.d., Dam, W.L., Kernodle, J.M., and Thorn, C.R., 1990, Hydrogeology of the San Jose, Nacimiento, and Animas Formations in the San Juan structural basin, New Mexico, Colorado, Arizona, and Utah: USGS Hydrologic Investigations Atlas HA-720-A, 2 sheets.
Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6.