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

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

1516

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
[X] 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: Dugan Production Corp. OGRID #: 006515
Address 709 East Murray Drive, Farmington, New Mexico 87401
Facility or well name Sixteen G's #1 Drip at Meter Run
API Number: 30-045-21995 OCD Permit Number:
U/L or Qtr/Qtr E Section 7 Township 24N Range 9W County. San Juan
Center of Proposed Design: Latitude 36.33099 North Longitude 107.83503 West 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 _____

RECEIVED
SEP 2008
OIL CONS. DIV.

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.
[X] **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: 60 bbl Type of fluid: Producer H2O and Fallout (drip)
Tank Construction material Fiberglass (See Closure Plan #2)
[ ] Secondary containment with leak detection [ ] Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
[ ] Visible sidewalls and liner [ ] Visible sidewalls only [X] Other No visible sidewalls + Leak detection
Liner type: Thickness _____mil [ ] 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.

23

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 4'=3' Hog wire + 1 Strand 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 or the Santa Fe Environmental Bureau office for consideration of approval.

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

10

Siting Criteria (regarding permitting): 19 15 17.10 NMAC

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

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site, Aerial photo, Satellite image	☐ Yes ☐ No ☒ 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. - 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 NMAC
- [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 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 [X] Below-grade Tank [ ] Closed-loop System [ ] Alternative

Proposed Closure Method:
- [X] 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.***

- [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

16

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19 15 17 13 D NMAC)

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

Disposal Facility Name. _____ Disposal Facility Permit Number: _____

Disposal Facility Name. _____ Disposal Facility Permit Number: _____

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

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

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

☐ Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19 15.17 13 NMAC

☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17

Siting Criteria (regarding on-site closure methods only): 19 15.17 10 NMAC

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

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

18.

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

☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15 17 10 NMAC

☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19 15.17.13 NMAC

☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC

☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19 15.17.11 NMAC

☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC

☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19 15.17.13 NMAC

☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)

☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19 15 17 13 NMAC

19
Operator Application Certification:

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

Name (Print): Kurt Fagrelius Title: Vice President, Exploration

Signature: Kurt Fagrelius Date: Sept. 11, 2008

e-mail address: kfagrelius@duganproduction.com Telephone: 505-325-1821(O), 505-320-8248(C)

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

OCD Representative Signature: Jonathan D. Kelly **Approval Date:** 3/28/2012

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

21.
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

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

☐ **Closure Completion Date:**

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): Kurt Fagrelius Title: Vice President, Exploration

Signature: Date:

e-mail address: kfagrelius@duganproduction.com Telephone: 505-325-1821

Sixteen G'S #1 Drip at Meter Run Hydrogeologic Report

The Sixteen G'S #1 Drip at Meter Run is located on Federal land on the Chaco Slope area of the San Juan Basin, in San Juan County, New Mexico. The area is characterized as an arid, open flat land of grass and sage. It is very poorly drained by numerous arroyos and poorly defined draws that carry water during seasonal periods (rainstorms and snowmelt) to the northeast.

A records search of the NM Office of the State Engineer –iWATERS database was conducted on a three square mile area centered on the Sixteen G'S #1 Drip at Meter Run location (Exhibit 2). One water well was located 1,250 feet to the north. This well was drilled to a total depth of 1,100 feet and the top of water was reported at 1,073 feet. The results of the search are shown on Exhibit 1.

The main source of stock water in the region is encountered in valley-fill deposits in existing arroyos at shallow depths of approximately 15 – 50 feet below the surface and stock tanks constructed on surface shale in the upper reaches and confluences of arroyos. The proposed below grade tank is not located in an arroyo Although the topographic map shows an arroyo very close to the proposed below grade tank, this is not representative of actual field conditions. There is no clearly distinguishable arroyo with cut banks and channel. There are however, numerous, very small, poorly defined draws (less than 12" deep) that drain the relatively flat area to the northeast.

The Nacimiento Formation extends from the surface down to a depth of approximately 970 feet. From surface down to a depth of 220 feet, the interval consists primarily of mudstone / shale with a trace of thin siltstone. From 220 feet down to a depth of 760 feet, there are seven shaly sands (20-30 feet thick) inter-bedded with mudstone / shale (15-125 feet thick) which could contain poor quality groundwater. The sands with most potential to contain groundwater are at 270-370 feet in depth. From 760 down to 970 the section is mudstone / shale.

The Nacimiento is a source of ground water for livestock purposes and more rarely domestic use in some areas near the outcrop. With depth and distance from the outcrop, water quality decreases quickly and may be useful for livestock only. Due to the high silt content in the sands, poor reservoir quality and unpredictable nature of sand occurrence, the Nacimiento is not expected to contain significant quantities of ground water in the area of the proposed below grade tank.

The underlying Ojo Alamo / Animas interval is very poorly developed and ranges from approximately 970 feet down to a depth of approximately 1100 feet and is comprised of a coarse grained alluvial sandstone (30-feet thick) at the top underlain by shale, siltstone and thin sand stringers.

Based on electric open hole logs, the iWATERS database, literature reviewed, poor quality groundwater might be found at depth between 220 and 760 feet from discontinuous shaly sands in the Nacimiento Formation. The Ojo Alamo /Animas interval from 970 to 1100 is probably not capable of producing a significant volume of groundwater.

The excessive drilling depth to reservoirs with unpredictable variations in reservoir quality and water quality has discouraged the drilling of water wells in the area.

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, 70 p.

Brown, D.R., and Stone, W.J., 1979, Hydrogeology of Aztec quadrangle, San Juan County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Hydrogeologic Sheet 1.

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: U.S. Geological Survey, Atlas HA-720-A, Sheet 1 and 2.

Thorn, C.R., Levings, G.W., Craigg, S.D., Dam, W.L., and Kernodle, J.M., 1990, Hydrogeology of the Ojo Alamo Sandstone in the San Juan Structural Basin, New Mexico, Colorado, Arizona and Utah: U.S.G.S, Atlas HA-720-B, Sheet 1 and 2.

EXHIBIT 1.

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 09W Sections. 5,6,7,8,17,18

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 09/08/2008

(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 01255	24N	09W	07	1	1					1100	1073	27

Record Count: 1

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 10W Sections: 1,12,13

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 09/08/2008

(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)

No Records found, try again

Siting Criteria for the Sixteen G's #1 Drip at Meter Run

1. Ground water is not less than 50-feet below the bottom of the below grade tank. Ground water is greater than 100-feet below the bottom of the below grade tank.

2. The below grade tank is not within 300-feet of a continuously flowing water course, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from ordinary high water mark). See the attached Topographic map (Exhibit 2) and Visual Inspection Certification of the location and area around the subject below grade tank.

3. The below grade tank is not within 300-feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. See the attached Satellite Image (Exhibit 3) and Visual Inspection certification of the location and area around the subject below grade tank.

4. The below grade tank is not within 500-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. See the attached NM Office of the State Engineer iWATERS database search (Exhibit 4) and Visual Inspection certification of the location and area around the subject below grade tank.

5. The below grade tank is not located within the 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. See the attached Topographic map of the location and area around the subject below grade tank.

6. The below grade tank is not located within 500-feet of a wetland. See the attached Topographic map and Visual Inspection Certification of the location and area around the subject below grade tank.

7. The below grade tank is not located within the area overlying a subsurface mine. See the attached Mine, Mills and Quarry Map of New Mexico (New Mexico, EMND 2008) (Exhibit 5) showing the location and area around the subject pit.

8. The below grade tank is not located within an unstable area. See the attached Topographic map of the location and area around the subject below grade tank.

9. The below grade tank is not located within a 100-year floodplain area. See the attached FEMA map (Exhibit 6) of the 100 year floodplain showing the location and area around the subject pit.

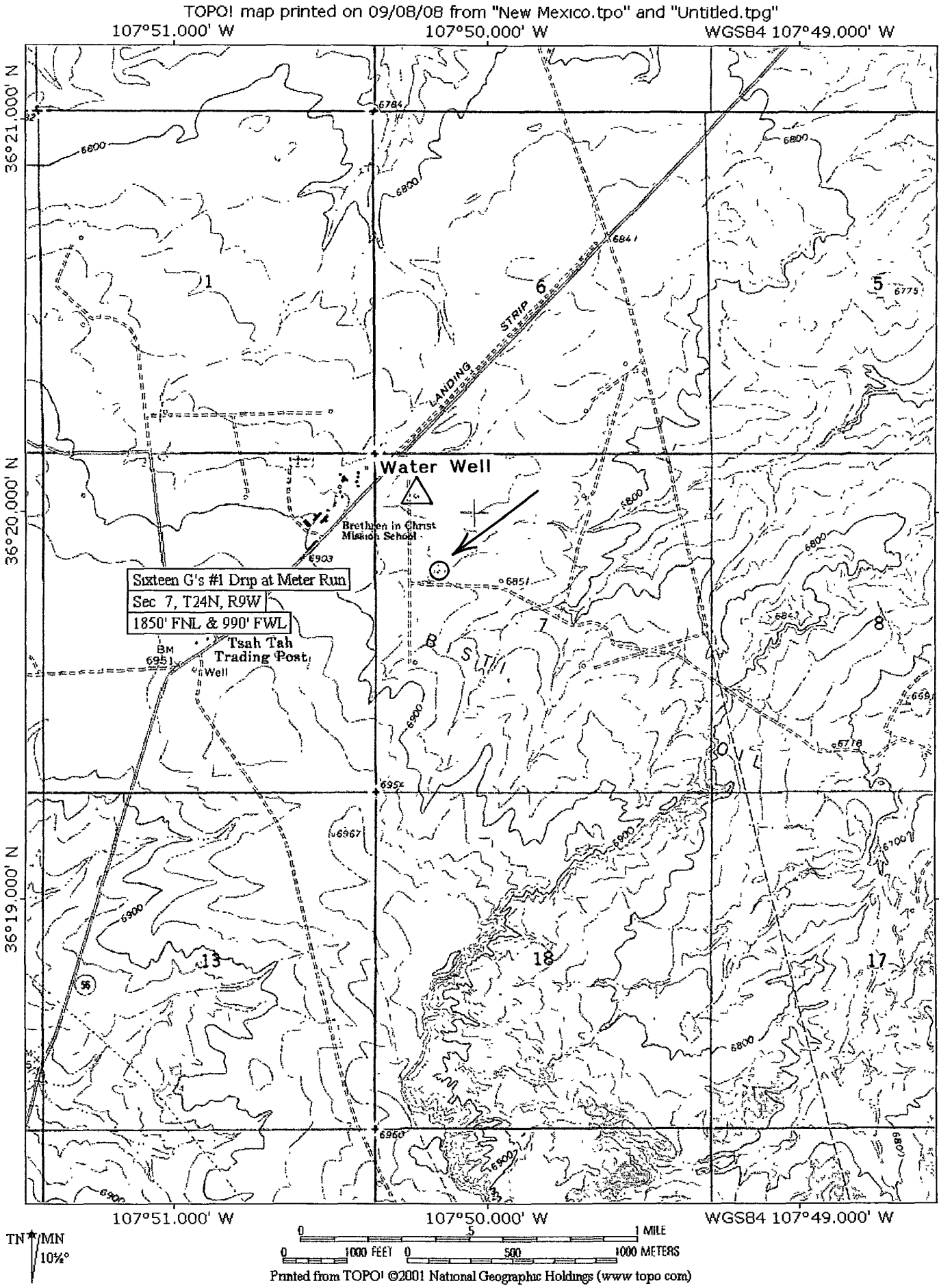
Sixteen G's #1 Drip at Meter Run Visual Inspection Certification

I, Kurt Fagrelius, Vice President of Exploration for Dugan Production Corp. 709 East Murray Drive, Farmington, New Mexico hereby certify that I or persons under my direct supervision, prepared the attached exhibits and conducted a Visual Inspection of the location and area around the Sixteen G's #1 Drip at Meter Run below grade tank (July 28, 2008). This application is in full compliance with all siting criteria and standards for below grade tanks established by the State of New Mexico, Energy Minerals and Natural Resources Department 19.15.17.10 NMAC.

Kurt Fagrelius
Kurt Fagrelius

Sept. 11, 2008
Date

EXHIBIT 2.


TOPO! map printed on 09/08/08 from "New Mexico.tpo" and "Untitled.tpg"
107°51.000' W
107°50.000' W
WGS84 107°49.000' W
36°21.000' N
36°20.000' N
36°19.000' N
Water Well
Brethren in Christ Mission School
Sixteen G's #1 Drip at Meter Run
Sec 7, T24N, R9W
1850' FNL & 990' FWL
Tsah Tah Trading Post
Well
BM 6951
LANDING STRIP
TN 10½°
0 1 MILE
0 1000 FEET 0 500 1000 METERS
Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

36.33099 N, 107.83503 W
Sixteen G's #1 Drip at Meter Run
Image NMRGIS
© 2008 Tele Atlas
Google
1055 ft
Pointer 36°20'05.06" N 107°49'55.53" W elev 6886 ft Streaming 100%
Eye alt 4317 ft

EXHIBIT 3.

EXHIBIT 4.

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 09W Sections: 7

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 09/08/2008

(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 01255	24N	09W	07	1	1					1100	1073	27

Record Count: 1

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 10W Sections: 12

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

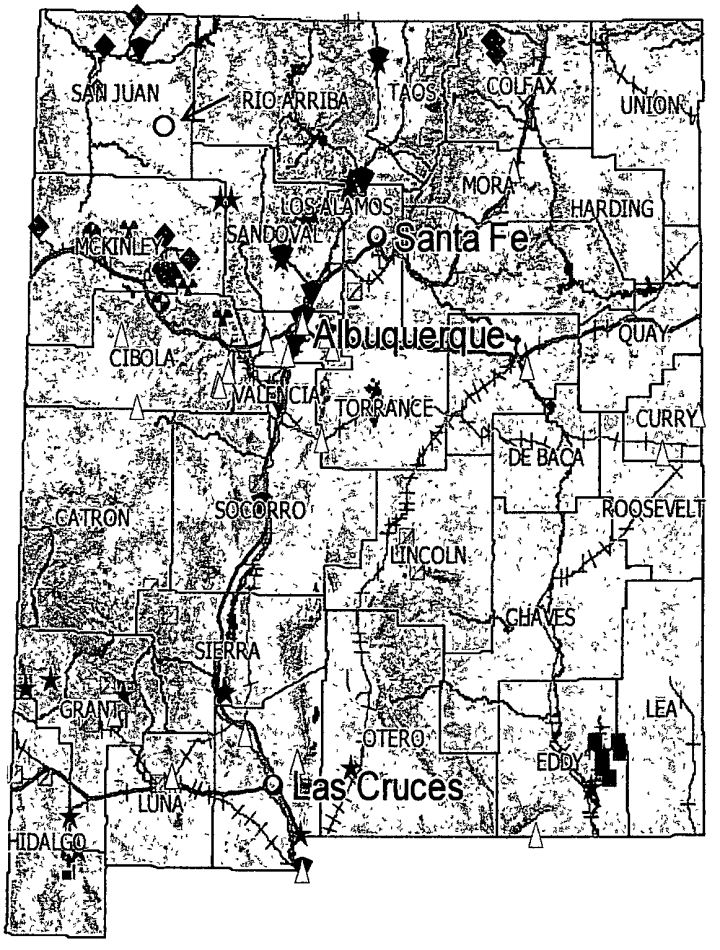
WATER COLUMN REPORT 09/08/2008

(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)

No Records found, try again

EXHIBIT 5.

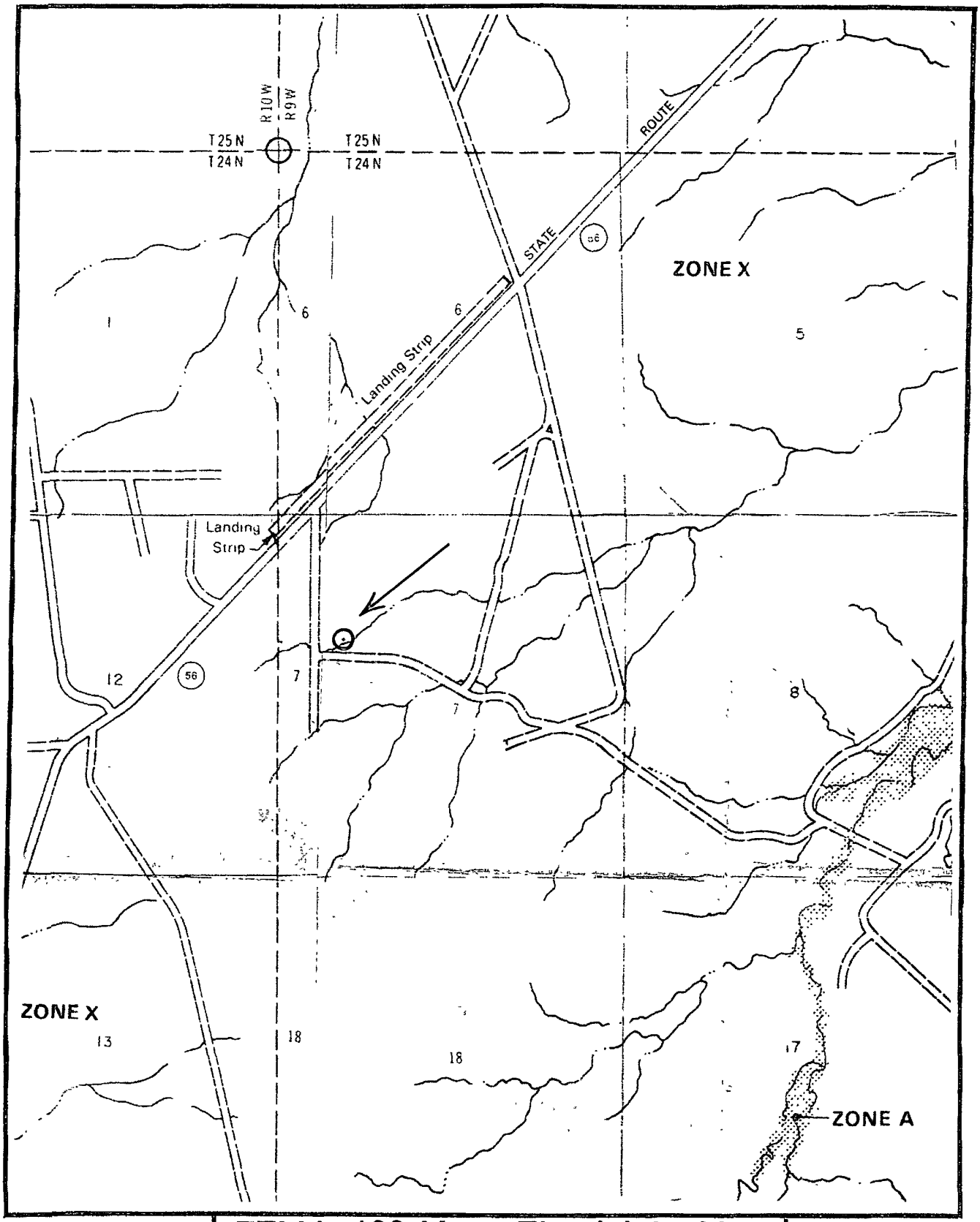


Mine, Mills and Quarry Map of New Mexico

Dugan Production Corp.
Sixteen G's #1 Drip
at Meter Run

Taken from the New Mexico Energy, Minerals and Natural Resources Department.
Mining and Minerals Division.

EXHIBIT 6.



FEMA 100-Year Floodplain Map
Sixteen G's #1 Drip
at Meter Run

Sixteen G's #1 Drip at Meter Run Design and Construction Plan

The Sixteen G's #1 Drip at Meter Run below grade tank will be designed and constructed in accordance with the following requirements:

1. Below grade tank will be designed and constructed to contain liquids and solids, prevent contamination of fresh water and protect the public health and environment (Exhibit 7).

2. Stockpile topsoil prior to digging pit, keep separate from subsoil and use as final cover and fill when closing pit.

3. Sign-12" by 24" with operator name, lease name, well #, location (unit letter, qtr/qtr, Sect., Twp., and Rge.) and emergency phone #'s will be posted on location. Sign will be posted in a location where it can be easily read.

4. Fencing around the Sixteen G's #1 Drip at Meter Run below grade tank will be constructed and operated in a manner that prevents unauthorized access and shall be maintained in good condition to protect the public and wildlife. Fencing will include a 4-foot hog wire fencing with two strands of barbed wire or top rail of re-bar or pipe on top. See the attached request for Administrative Approval. The Sixteen G's #1 Drip at Meter Run below grade tank is not located within 1000 feet of a house, school, hospital or church.

5. The Sixteen G's #1 Drip at Meter Run below grade tank will be covered with expanded metal, chicken wire or a metal lid on top of the tank.

6. Sixteen G's #1 Drip at Meter Run below grade tank will be designed and constructed to ensure the confinement of liquids and prevent unauthorized releases. Pit will be constructed with a firm foundation and interior slopes, smooth and free of rocks or sharp edges to prevent punctures, cracks or indentations of the liner or tank bottom.

7. Sixteen G's #1 Drip at Meter Run below grade tank will be constructed of materials resistant to the tank's particular contents and resistant to damage from sunlight.

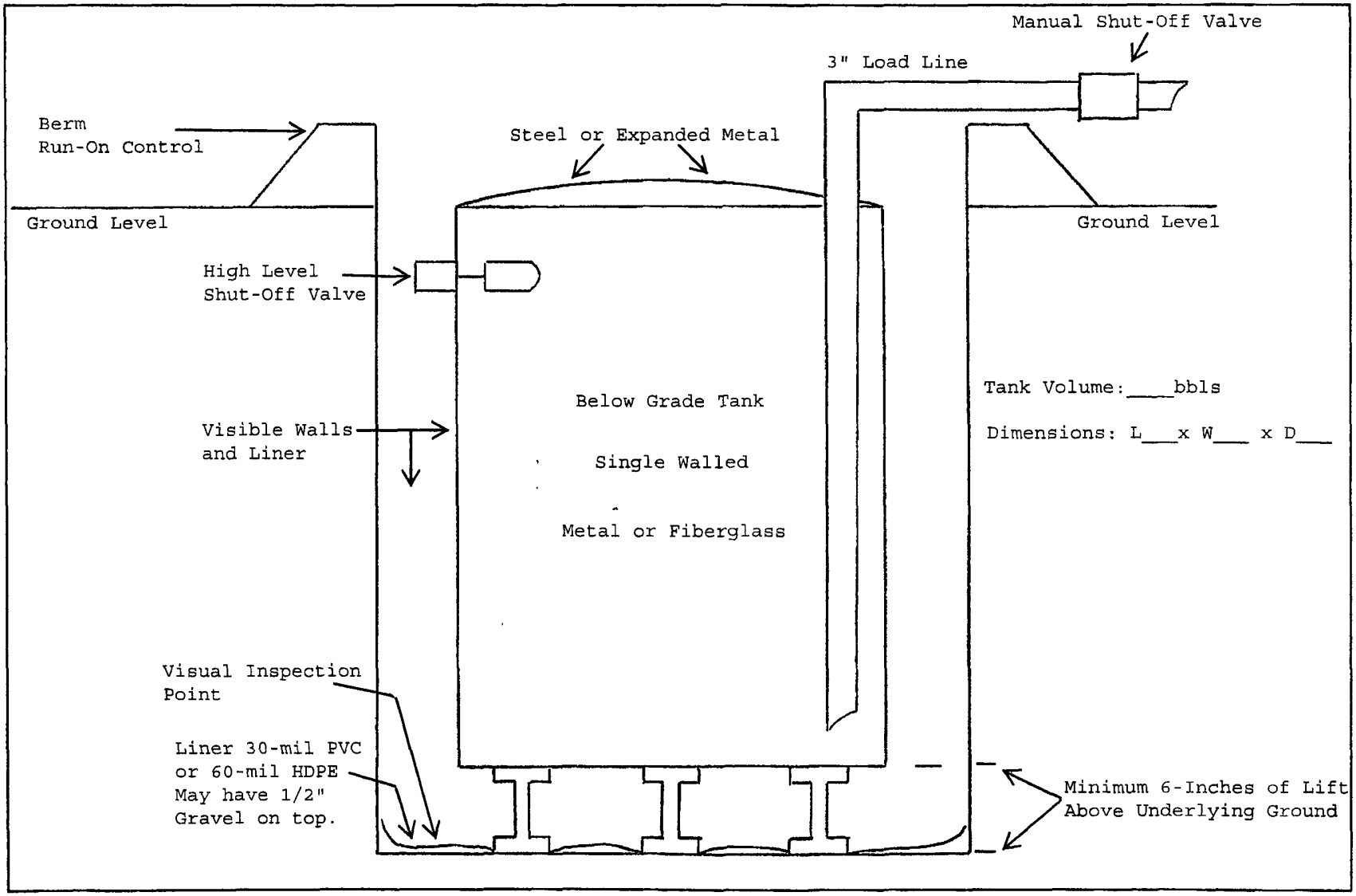
8. Liner will be 30-mil flexible PVC or 60-mil HDPE, string reinforced, impervious material, resistant to UV light, hydrocarbons, salt, acidic or basic liquids. The liner will have a hydraulic conductivity less than 1 x 10-9 cm/sec. Liner compatibility will comply with EPA SW-846.

9. The Sixteen G's #1 Drip at Meter Run below grade tank will be constructed with single walled sides and bottom, which will be open for visual inspection for leaks. The below grade tank will be elevated a minimum of 6-inches above the underlying ground surface. The below grade tank will be underlain with a geo-membrane liner designed to divert any leaked fluid to a visual inspection point. Liner may be covered with gravel.

10. The Sixteen G's #1 Drip at Meter Run below grade tank will be equipped with a properly operating automatic high-level shut-off control device and manual controls to prevent overflows.

11. Diversionary berms, ditches or sloping will be constructed as necessary to prevent overflow and the collection of surface water entrapment.

Design Plan For Below Grade Tank



Dugan Production Corp.
Sixteen G's #1 Drip
at Meter Run

EXHIBIT 7.

Sixteen G's #1 Drip at Meter Run Operational Requirements

The Sixteen G's #1 Drip at Meter Run below grade tank will be maintained and operated in accordance with the following requirements:

1. The Sixteen G's #1 Drip at Meter Run below grade tank will be operated and maintained to contain liquids and solids and maintain the integrity of the tank / liner system or secondary containment system to prevent contamination of fresh water and protect public health and environment.

2. All fluids will be recycled, reused, reclaimed or disposed of in a manner approved by NMOCD rules.

3. Do not dispose of solid waste, trash, debris or hazardous material into the pit.

4. If the Sixteen G's #1 Drip at Meter Run below grade tank develops a leak or if a penetration occurs below the liquids surface, all liquid will be removed above the damage or leak line within 48-hours. The NMOCD office will be notified within 48-hours of the discovery. The below grade tank / liner system or secondary containment system will then be either replaced or repaired.

5. Below grade tank will be constructed and operated in a manner that prevents the tank from over flow and prevents surface water from entering the pit. Diversion berms will be constructed around the sides of pit and an automatic high level shut-off will be installed.

6. Any measurable oil will be continuously removed from the Sixteen G's #1 Drip at Meter Run below grade tank to prevent a significant accumulation of oil overtime.

7. The Sixteen G's #1 Drip at Meter Run below grade tank will be inspected at least monthly and records of each inspection will be maintained for five years.

8. Adequate freeboard will be maintained to prevent overtopping of the Sixteen G's #1 Drip at Meter Run below grade tank.

Sixteen G's #1 Drip at Meter Run Closure Plan–Methods, Procedures and Protocols

1. Comply with deadlines for closure of a pit or below grade tank established by the State of New Mexico, Energy Minerals and Natural Resources Department 19.15.17.13 NMAC, or an earlier date if required by the NMOCD in the case of imminent danger to fresh water, public health or the environment.

Existing	Permit Applc Submittal or	File Closure Plan By	Stop Use By	Close By
On June 16, 2008	Modification Request			
Temporary Pit - Unlined	Not Permtd under 19 15 17	7/16/2008	Upon drlg rig release	9/16/2008
Permanent Pit - Unlined or Lined	Not permitted with NMOCD	7/16/2008	6-16-2008	12/16/2008
Permanent Pit - Unlined	Permitted with NMOCD	12-16-2008	6-16-2010	6-16-2011
BGT-Aprvd Design	Not Permtd under 19 15 17	12/16/2008	failed integrity replc	
	Applc by 9-16-2008		w/apprvd design	
BGT-Not Aprvd Design Nor Retrofit	Not Permtd under 19 15 17	12/16/2008	6/16/2013	6-16-2013
to Comply w/19 15 17	Mod Rqust by 9-16-2008			
BGT-Not Aprvd Design Nor Retrofit	NA	12/16/2008	6/16/2013	6/16/2013
to comply w/19 15 17				
Permanent Pit-Design and Constr	Mod Rqust by 12-16-2008	12/16/2008	failed integrity replc	60-days after cessation
Does not comply w/19 15 17	Comply w/in 18-mos of aprvl	submit w/mod request	w/apprvd design	
permitted and lined				
Permanent Pit-Design and Constr	Permit Applc by 12-16-2008	12/16/2008		60-days after cessation
Does not comply w/19 15 17	Comply w/in 18-mos of aprvl	submit w/permit Applc		
Registered and Lined				
Permanent Pit	Permitted under 19 15 17	60-Days prior to close		
Temporary Pit	Permitted under 19 15 17	Prior to closure	Upon drlg rig release	6-mos after rig release
BGT	Permitted under 19 15 17	12/16/2013	failed integrity replc	60-days after cessation
		or prior to closure	w/apprvd design	

2. Provide the NMOCD district office at least 72-hours notice but no greater than 1 week prior to any closure operations. Notice will include operator name, well name and number, API number, and location (unit letter, section, township and range).

3. The Sixteen G's #1 Drip at Meter Run below grade tank is not an approved design under rule 19.15.17. Upon approval of this application, the existing below grade tank will be closed and a new below grade tank that meets the design requirements of rule 19.15.17 will be constructed.

4. Below grade tank will be closed within 60-days after cessation of use.

5. Proof of closure notice will be provided by certified mail to surface owner after closure. Proof of notice will be attached to final closure report.

6. Remove all liquid from below grade tank prior to closure and dispose of at the Dugan Production operated Sanchez O'Brien #1 SWD (permit SWD-694) located 1650 feet from the South line and 990 feet from the West line (Unit L) of Section 6, Township 24 North, Range 9 West.

7. All solids from the below grade tank and all solids removed from the containment pit will be excavated, hauled to and disposed of at either the Envirotech facility (permit #NM-01-0011) facility located in Section 6, Township 26 North, Range 10 West or the IEI facility (permit NM-01-0010B) located in Section 2, Township 29 North, Range 12 West.

8. Remove below grade tank and dispose of in a NMOCD approved facility, or recycle, reuse, or reclaim it in a manner that the NMOCD approves.

9. On site equipment associated with the below grade tank will be removed unless it is needed for some other purpose.

10. Collect a five point, composite sample of the soils beneath the below grade tank (any area that is wet, discolored or shows evidence of a release) to demonstrate that Benzene, BTEX, TPH and chlorides do not exceed the standards as specified in 19.15.17.13.E or the background concentration, whichever is greater.

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	100
GRO/DRO	EPA SW-846 8015M	NS
Chlorides	EPA 300 1	250 or Background

11. The NMOCD will be notified of the testing results on form C-141.

12. If it is determined that a release has occurred, rule 19.15.3.116 NMAC and 19.15.1.19 NMAC will be complied with as required.

13. If the sampling results demonstrate that a release has not occurred, or that any release does not exceed the concentrations specified above or background concentrations, the pit will be backfilled with compacted, non-waste containing, earthen material.

14. Stockpiled sub-surface soil will be used to backfill pit and re-contour (to a final or intermediate cover that blends with the surrounding topography). A minimum of four feet of compacted, non-waste containing, earthen material will be used as backfill.

15. Stockpiled surface soil will be used as a cover over the backfilled pit and disturbed area no longer needed for production operations. The soil cover will include either the background thickness of top soil or one foot of suitable material to establish vegetation at the site whichever is greater.

16. The area will be re-seeded as per BLM guidelines. Re-seeding will be repeated until 70% of the native natural cover is achieved and maintained for two successive growing seasons. The first growing season after the pit is closed the disturbed area will be re-seeded. The seeding method will be to drill on contour whenever possible.

17. The NMOCD will be notified within 60-days of closure of the below grade tank. The closure report will be filed on form C-144 and will document all closure activities, sampling results, a plot plan, and details on backfilling and capping where applicable.

18. The NMOCD will be notified once successful re-vegetation has been achieved.

Sixteen G's #1 Drip at Meter Run Request for Administrative Approval

Administrative approval is hereby requested for an alternative to the fencing design for the Sixteen G's #1 Drip at Meter Run below grade tank.

The request for administrative approval cited above is needed to help minimize environmental impact and increase safety and protect wildlife and public health. The alternative proposed will protect fresh water, public health, safety and the environment more effectively than the design and construction specifications established by the State of New Mexico, Energy Minerals and Natural Resources Department do in rule 19.15.17.11 NMAC.

1. The proposed alternative fencing design will include T-posts spaced 10-feet apart. Hog wire / field fence 4-feet in height will be strung tightly and anchored to the top and bottom of each T-post. Small holes (3" high X 6" wide) in the hog-wire will be located at ground level with increasing larger holes (up to 7" high X 6" wide) located at the top of the fence. Anchor braces will be put at all four corners to strengthen and tighten the fence. Two strands of barbed wire or a pipe / re-bar top rail will be constructed above the hog wire. This fence design (developed over the last 30-years) has proven to be very effective controlling unauthorized access to below grade tanks.

   The existing rule (19.15.17.11.D.3) would require the operator to fence the below grade tank with a four foot fence that has at least four strands of barbed wire evenly spaced in the interval between on foot and four feet above the ground level. The proposed fencing alternative would provide better security against unauthorized access to below grade tanks. The smaller holes in hog-wire (3" X 6" up to 7" X 6") is more effective at controlling unauthorized access by the public and wildlife than 4-strands of barbed wire spaced 12" apart.

   The proposed fence around the below grade tank will be constructed and operated in a manner that prevents unauthorized access and shall maintain the fence in good condition to protect the public and wildlife.

   The request for administrative approval cited above is needed to help minimize environmental impact, increase safety and protect wildlife and public health. The alternatives proposed will protect fresh water, public health, safety and the environment more effectively than the design and construction specifications established by the State of New Mexico, Energy Minerals and Natural Resources Department do in rule 19.15.17.11 NMAC.