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

6770

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: EnerVest Operating, LLC OGRID # 143199
Address. 1001 Fannin St Ste 800 Houston, Texas 77002
Facility or well name. JICARILLA C No 003
API Number: 30-039-08098 OCD Permit Number
U/L or Qtr/Qtr I Section 23 Township 26N Range 05W County: Rio Arriba
Center of Proposed Design: Latitude 36 469657 Longitude -107.322559 NAD ☐ 1927 ☒ 1983
Surface Owner: ☐ Federal ☐ State ☐ Private ☒ Tribal Trust or Indian Allotment

2
☐ **Pit:** Subsection F or G of 19 15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
☐ Lined ☐ Unlined Liner type Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams. ☐ Welded ☐ Factory ☐ Other _____ Volume: _____bbl Dimensions: L_____ x W_____ x D_____

3.
☐ **Closed-loop System:** Subsection H of 19 15.17.11 NMAC
Type of Operation. ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other _____
☐ Lined ☐ Unlined Liner type. Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____

4.
☒ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume 95 bbl Type of fluid: Primarily produced water w/ compressor skid precipitation & incidental lubricating oil
Tank Construction material: Steel w/ expanded metal cover
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☒ Other electronic monitoring
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

65

Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society, Topographic map	☐ Yes ☒ No
Within a 100-year floodplain - FEMA map	☐ Yes ☒ No

11.
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19 15 17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☒ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19 15 17 9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19 15 17 9 NMAC
- ☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19 15.17 10 NMAC
- ☒ Design Plan - based upon the appropriate requirements of 19.15 17.11 NMAC
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19 15 17.12 NMAC
- ☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 15.17.9 NMAC and 19 15 17.13 NMAC

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

12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19 15.17 9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19 15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19 15 17 11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17 12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC and 19 15 17 13 NMAC

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

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

13
Permanent Pits Permit Application Checklist: Subsection B of 19 15.17 9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17 9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15 17 10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19 15 17 11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19 15 17 11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17 11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon 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

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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 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) Janet M Bienski Title Regulatory Assistant

Signature Janet M Bienski Date 10/13/10

e-mail address jbienski@enervest net Telephone: 713-495-1571

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

OCD Representative Signature: [signature] **Approval Date:** 1/26/11

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): Title:

Signature: Date:

e-mail address: Telephone:

Attachment to Form C-144
Below-grade Tank Permit Application

Introduction:

EnerVest Operating, LLC (EV) is submitting this application to permit an existing below-grade tank or a new below-grade tank at a recently completed well, all under the authority of 19.15.17 NMAC. The below-grade tank at this location is used to collect produced water from the primary and secondary separators. This tank is not currently permitted; therefore this document serves as supporting documentation referenced in the attached Form C-144.

This application is being submitted for the following well site:

Well Name: JICARILLA C No. 003
API No: 30-039-08098
Location: UL I, Sec 23, 26N, 05W

The supporting documentation contained in this C-144 attachment is organized as follows:

Section I – Sitting Criteria Compliance Demonstration
Section II – Design Plan
Section III – Operating and Maintenance Plan
Section IV – Closure Plan
Section V – Hydrogeology Report

Appendices:
01 – USGS 7.5 Minute Topo Map
02 – Groundwater (water well search)
03 – Aerial Photo
04 – Municipal Boundary Map
05 – U.S. Fish & Wildlife Wetland Identification Map
06 – FEMA 100-year Floodplain map
07 – Mine Map
08 – C-102 Location Plat & Site Physical Inspection Sheet
09 – Karst Map for unstable areas

References

Section I

Sitting Criteria Compliance Demonstration

Jicarilla C No. 003

API No. 30-039-08098

Sitting Criteria Compliance Demonstration

Criteria as per 19.15.17.10.(A) (1)	In Compliance	Comments
Ground water less than 50' below bottom of tank	Yes	Refer to "Site Hydrology Report" in Section V
Within 300' of continuously flowing watercourse or 200 feet of other significant watercourse, lakebed, sinkhole, or playa lake (measured from ordinary high-water mark)	Yes	Refer to Observed Setting Requirements completed by field personnel in Appendix 08
Within 300 feet of a permanent residence, school, hospital, institution, or church	Yes	Refer to Observed Setting Requirements completed by field personnel in Appendix 08
Within 500 ft of a private, domestic freshwater well or spring or within 1000 ft of freshwater well or spring in existenance at time of application	Yes	Refer to Observed Setting Requirements completed by field personnel in Appendix 08
Within incorporated municipal boundary of defined municipal fresh water field	Yes	Refer to Observed Setting Requirements completed by field personnel in Appendix 08
Within 500 feet of a wetland	Yes	Refer to Observed Setting Requirements completed by field personnel in Appendix 08 and USF&W Map in Appendix 5
Within the area overlying a subsurface mine	Yes	Refer to Observed Setting Requirements completed by field personnel in Appendix 08
Within an unstable area	Yes	Refer to Observed Setting Requirements completed by field personnel in Appendix 08 and Karst Map in Appendix 09
Within a 100-year floodplain	Yes	Refer to Observed Setting Requirements completed by field personnel in Appendix 08 and FEMA Map in Appendix 06

Section II

Design & Construction Plan

EnerVest Operating, LLC (EV)

BELOW-GRADE TANK
DESIGN AND CONSTRUCTION SPECIFICATIONS

Rule 19.15.17.11

C. Enervest Operating is the official operator of record for all wells which have below-grade tanks to be addressed in this specification. All below-grade tanks are located on these leases and will be in full compliance with 19.15.16.8 regarding signage.

D. EV will ensure a fence shall be constructed and maintained in good repair with gates that are closed and locked when responsible personnel are not on site. EV shall insure that all gates are closed and locked when responsible personnel are not on-site.

If the below-grade tank is located within 1,000 feet of a permanent residence, school, hospital, institution or church, the fence shall be a chain link security fence at least 6 feet in height with at least two strands of barbed wire on top.

If the below-grade tank is not within 1,000 feet of the above mentioned structures, the fence shall constructed to exclude livestock with at least four strands of barbed wire evenly spaced between one foot from the ground and four foot above the ground.

EV is requesting administrative approval to use a 42" Hog wire fence with 2 strands barbed-wire on top in lieu of the required four strand barbed wire fence. This will be supported with iron posting at the corners and 10 – 12 feet apart. EV believes this will offer better protection for wildlife in these tank areas. Please refer to Exhibit 2.1 of this Section.

E. EV shall ensure an open top tank is screened with expanded 3/16" metal screen or a fully closed top, both of which are welded on the top of the tank. Such screening will be painted to blend with the below-grade tank. EV believes this is sufficient strength to protect migratory birds or other wildlife.

I. EV will ensure all below-grade tanks will be constructed of 3/16" steel, resistant to the tank's contents and to damage from sunlight. Based on water production and road condition for access during the winter months there are a choice of three different sizes which could be used:

CAPACITY	DIAMETER	HEIGHT
125 bbl	15'	4'
120 bbl	12'	6'
100 bbl	12'	5'

This tank will contain liquids and should prevent contamination of fresh water to protect the public health and environment.

The below-grade system will include a excavated area for the tanks which will be dependent upon the size of the tank used:

18' x 18' x 4' High Square excavated area
18' Diameter x 4' High Circular excavated area
18' Diameter x 5' High Circular excavated area

The particular area and well conditions will determine which design best for that particular well. EV will ensure that there will be room to walk around the tank inside the containment area which will better enable our field personnel to inspect for damage to liners or incidental leaks. Please refer to tank diagram under Exhibit 2.2 of this section for details.

All excavated areas will be reinforced with metal walls to prevent collapse. There will be sufficient open area on all sides of the tank to witness any incidental release that may occur. Please refer to tank diagram under Appendix 8.

EV will ensure the base of any excavated area containing a below-grade tank will be level and free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom.

EV will ensure that any geomembrane liner used shall consist of 30-mil flexible PVC or 60-mil HDPE liner or equivalent liner material. The liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salt and acidic and alkaline solutions and shall be resistant to ultraviolet light. The liner shall have a hydraulic conductivity no greater than 1 x 10^{-9} cm/sec The liner shall be compatible with EPA SW-846 method 9090A. EV will install the liner in such a manner as to divert any possible leak for visual inspection. EV will demonstrate to the OCD that the liner complies with the specifications within Subparagraph (a) of Paragraph (4) of Section I of 19.156.17.11 NMAC and obtain approval from the division prior to the installation of the new design.

EV is requesting administrative approval to use an equivalent liner. The "Dura-Skirm J45 BB" is a 45-mil reinforced liner which we feels offers the same or better protection as the required 60-mil liner as indicated above. Please refer to Exhibit 2.3 of this Section for the specification sheets for this liner.

EV will ensure the fluid levels of tanks will be monitored by automatic high level alarms at 24" from the top and shut-off devise at 10 1/2 inches from the top of the tank. The tanks will be also equipped with a manual shut-off valve in the event it is needed. Please see design specification sheet of this system in this section.

The majority of our below-grade tanks are within the berm around our tank battery and as so are protected from run-on water. Those outside this berm will be protected with an earthen berm which will extend at least 6" above surface ground level to divert run-on around the tank. The side walls of the excavated area will extend at least 6" above the ground level to divert run-on water around the tank. Any possible leak will be diverted, on the liner, in such a way can be visually inspected. Please refer to Exhibit 2.4 of this Section for details of this automatic shut-off system.

EV tank design will be a single walled tank constructed to ensure that the side walls are open for visual inspection for leaks; the bottom will be elevated six inches above the ground surface and will contain a geomembrane liner, as described above, directly on the ground level of the containment area.

Once a below-grade tank which was installed prior to June 16, 2008 does not demonstrate integrity, EV shall promptly repair or remove that below-grade tank and close the tank or install a below-grade tank that is in full compliance with Paragraph 1 thru 4 of Section I of 19.15.17.11 NMAC. EV shall comply with the operational requirements of 19.15.17.12 NMAC. Please refer to tank diagram under Appendix 8 for details

Any single walled below-grade tank installed before June 16, 2008 where any portion of the tank sidewall is below the ground surface and not totally visible shall be closed, retrofited or replaced before June 15, 2013. EV will fully comply with Paragraph 1 thru 4 of Section I of 19.15.17.11 NMAC for all retrofitting or replacement of below-grade tanks.

ENERVEST OPERATING, LLC

Proposed Alternative Fencing

Below-Grade Tank Construction

42" Hogwire Fence with 2 strands barbed-wire on top

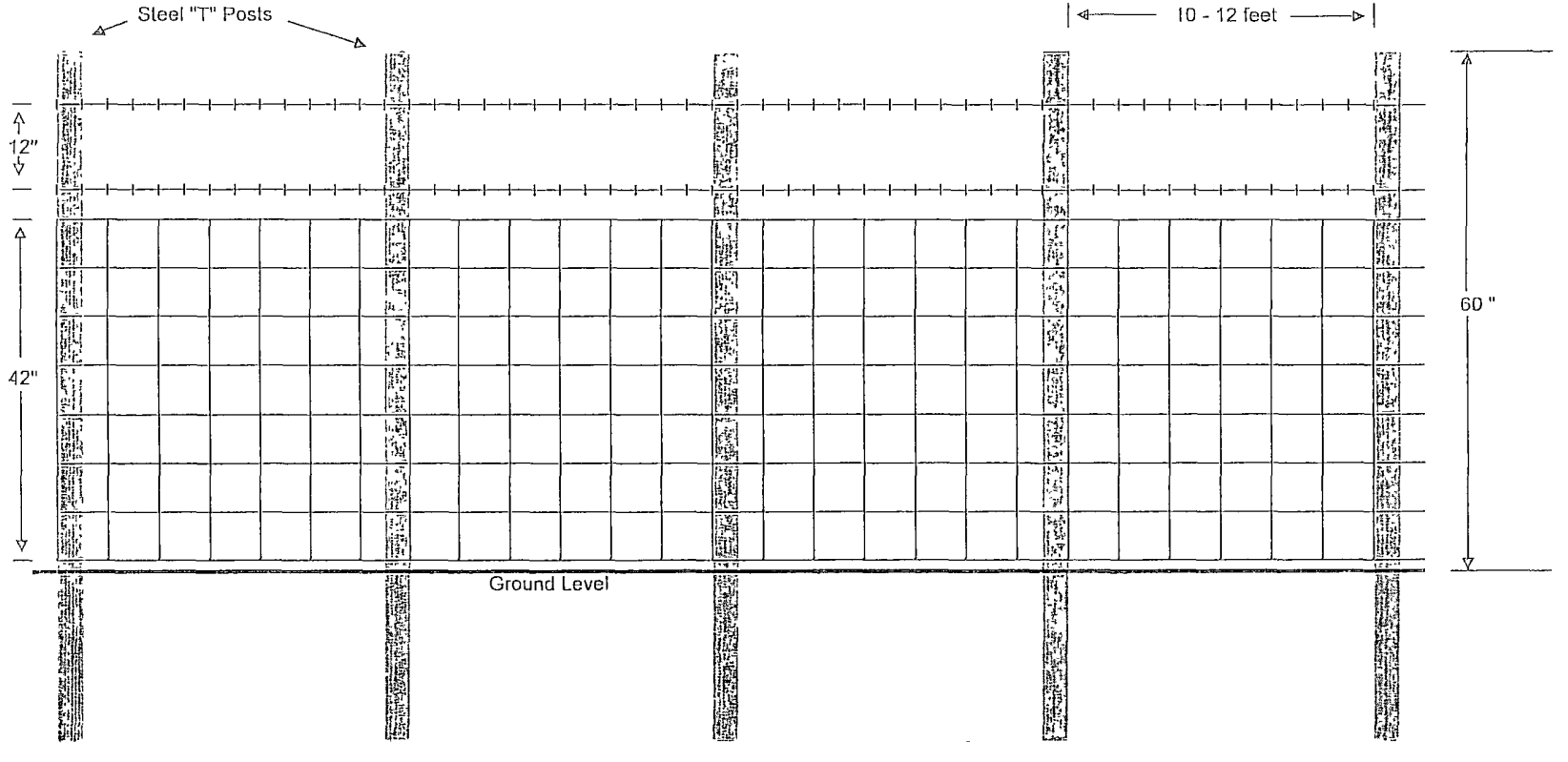
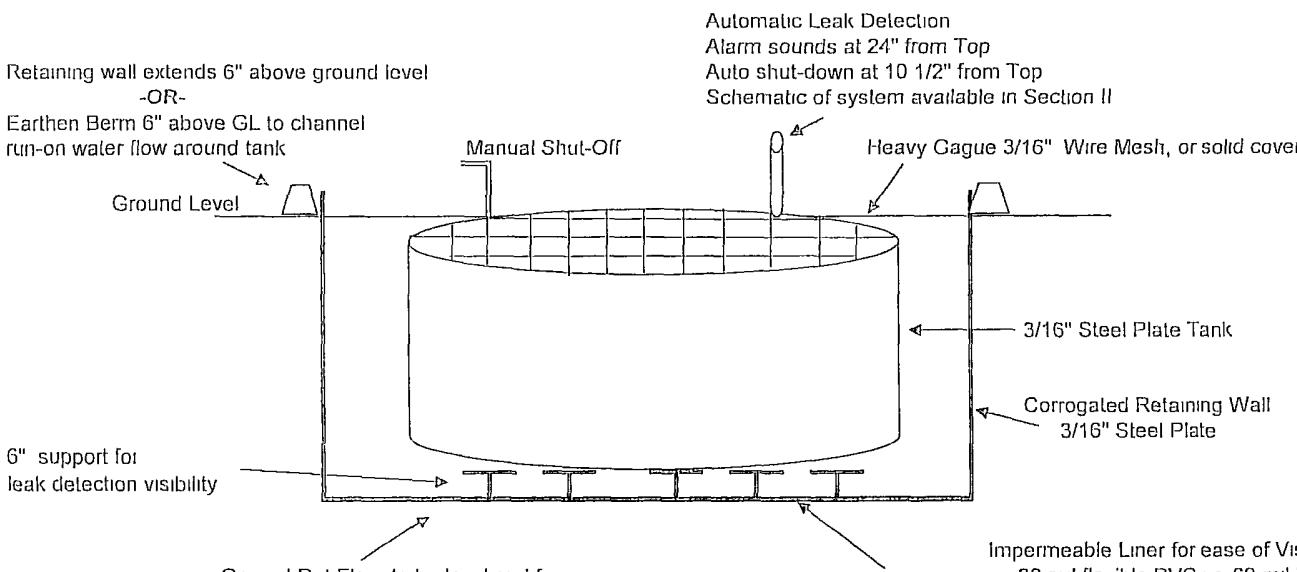


Exhibit 2.1

EnerVest Operating, LLC
Western Division

Below-Grade Tank System

Gravity Fed - Produced Water



Impermeable Liner for ease of Visible leak detection
30-mil flexible PVC or 60-mil HDPE or equilivant Liner
Liner shall have a hydraulic conductivity no greater than

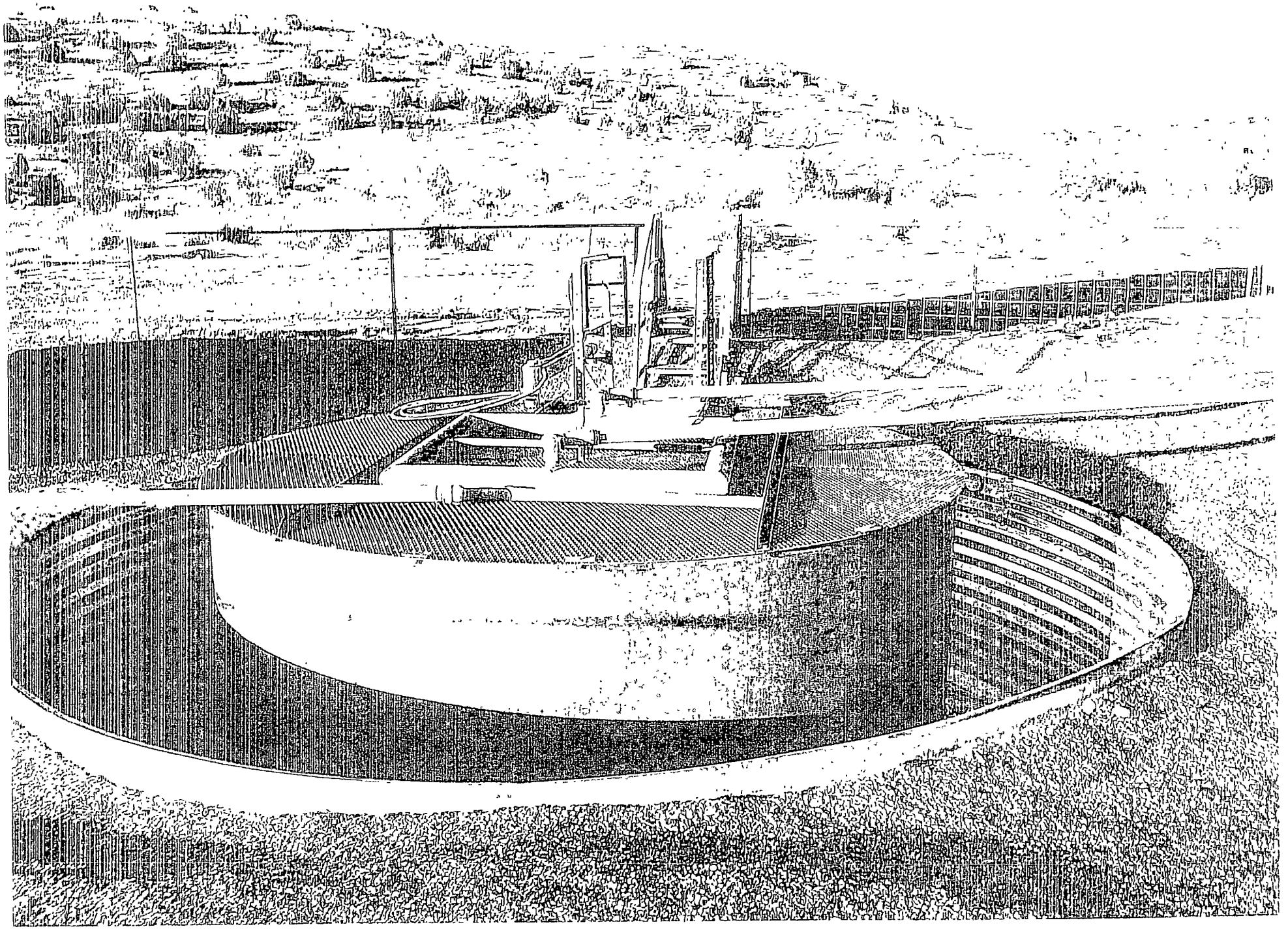
1×10^{-9} cm/sec

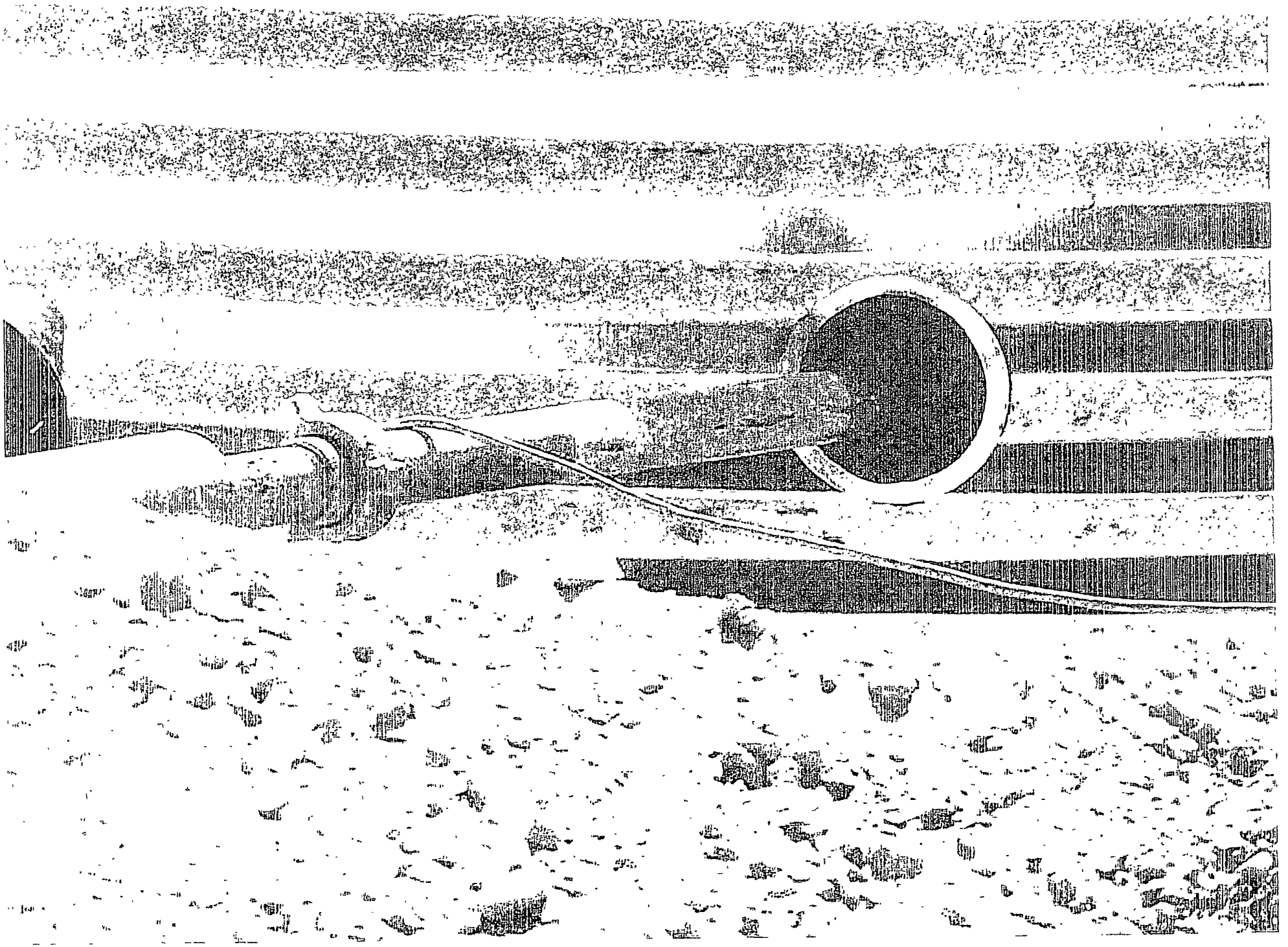
Liner compatibility shall comply with EPA SW-846 method 9090A
Liner to be impervious to hydrocarbons, salt &
acidic and alkiline solutions
Any liner installation will be done in such a way as to easily
detect any possible leak.

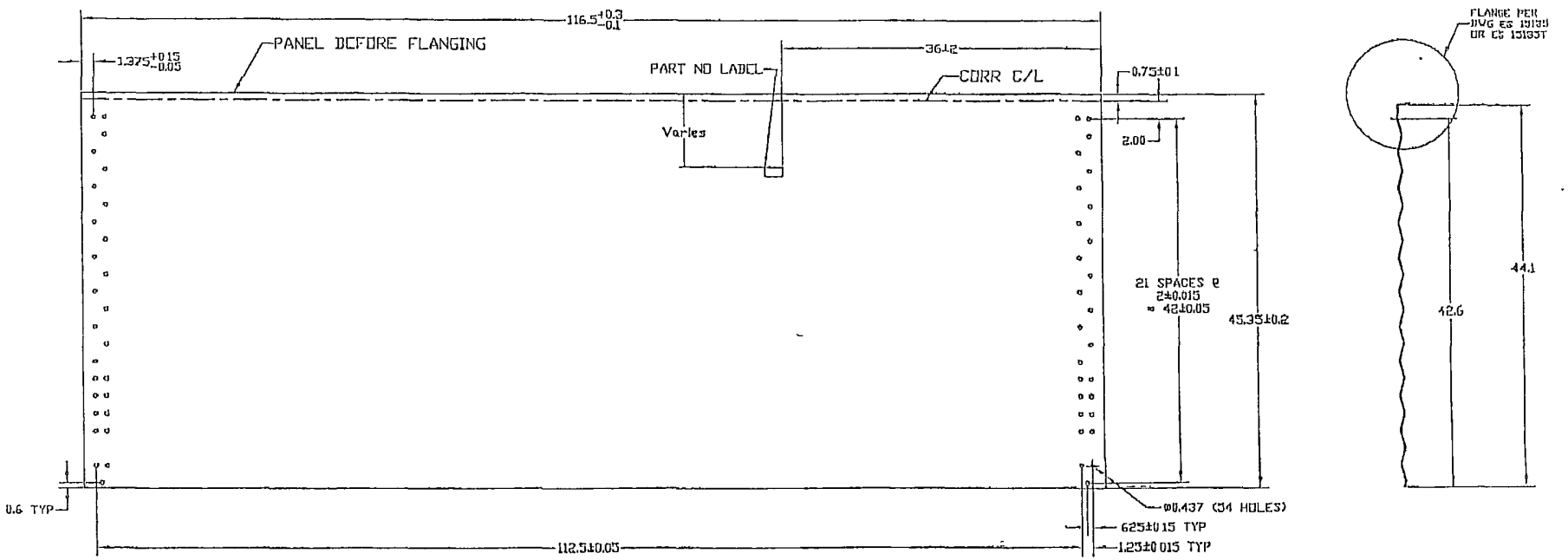
Below-Grade System Components

Tank Size		Excavation Areas
Capacity	Dia x Height	
125 Bbl	15' x 4'	18' x 18' x 4' Square
120 Bbl	12' x 6'	18' x 4' Circular
100 Bbl	12' x 5'	18' x 5' Circular

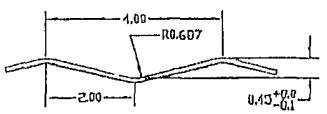
Tank size dependent upon water production & road conditions
Excavation Area size dependent upon tank size







44" WALL PANEL BEFORE FLANGING



CORRUGATING DETAIL

MANUFACTURING NOTES:
1. CORRUGATION..... SEE DETAIL
2. HOLE OFF CENTER OF CORR..... ± .05
3. HOLE BURR MAX..... .01
4. CUT OFF BURR MAX..... .01
5. CORNER HOLE TO HOLE DIAGONAL ± .15

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lbs)
NOMINAL	MINIMUM			
0.066	0.061	46.3	CW4415F	98.3
0.096	0.088	46.3	CW4413F	143.4

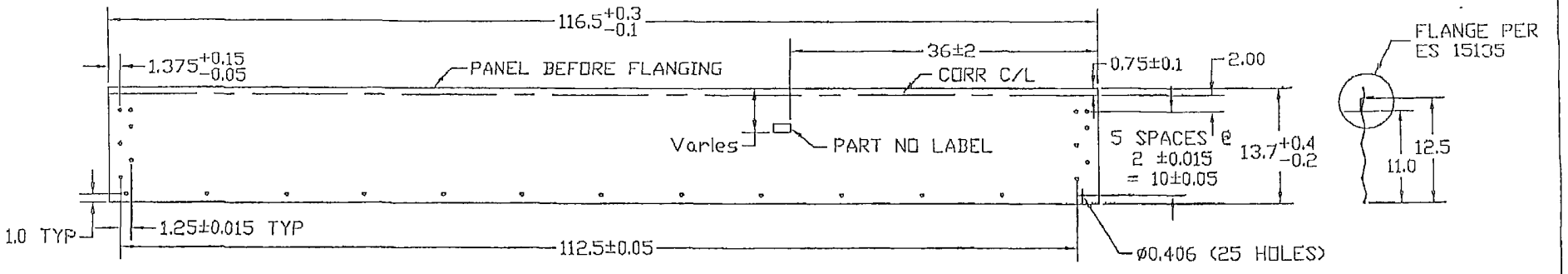
NO	DATE	REVISION	E.C.R.	BY	CH.
1	01.20.04	LOWERED CLAMP LOCATION 4"	A6786	RF	BA

DIMENSIONS SHOWN ARE IMPERIAL
UNITS SHOWN IN BRACKETS

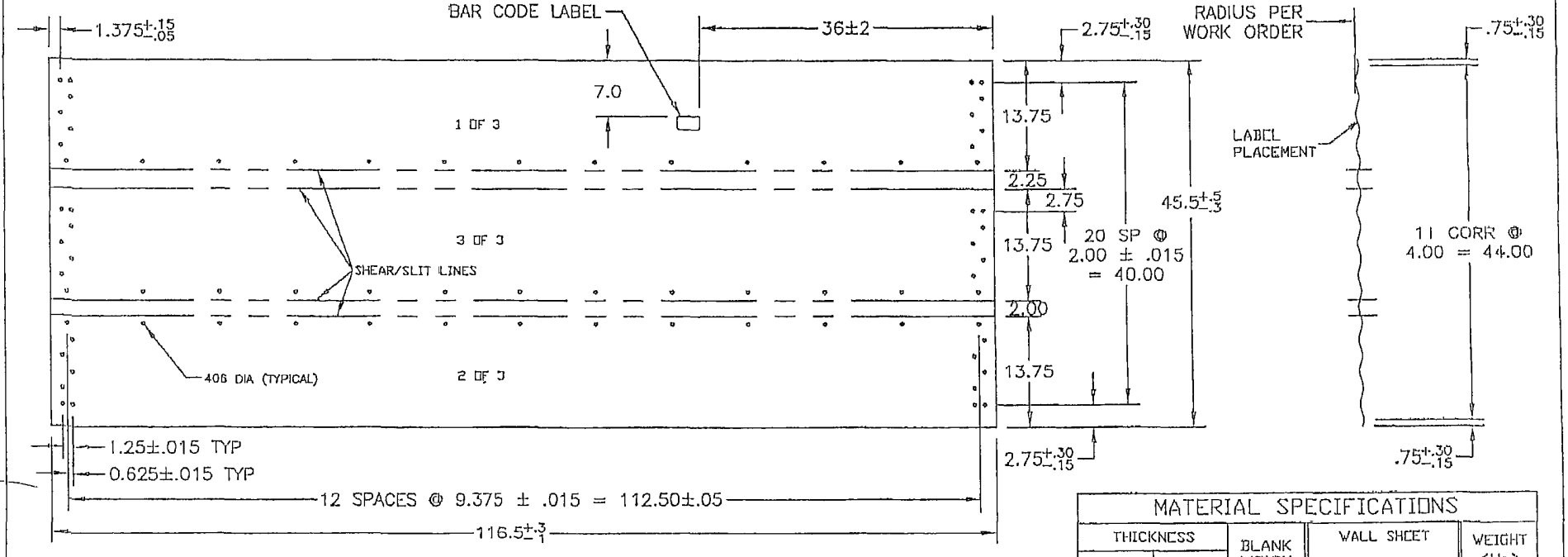
TOLERANCES UNLESS OTHERWISE NOTED
DIMENSIONS:
IMPERIAL (in.): .x ± .1, .xx ±.03, .xxx ±.010
METRIC (mm): x ± 2, .x ± 1.0, .xx ± .50
ANGULAR ± 1°

DESND. RM
DWN. RF
CHKD. BA
APPD. BA

MATERIAL: SEE CHART - ASTM A653 SS GR 50 G115 OIL
BLANK SIZE: 46.5 x 116.5
SURFACE AREA:
WEIGHT (LBS.): see chart
SCALE: n-t-s
DWN. (Y.M.D.): 02.02.19
LOCATION: WINNIPEG
E.C.R.: A6647
E.P. NO: 02-255
TYPE: ACAD14
DRAWING TITLE: CONTAINMENT RING 44" WALL PANEL
SIZE: B
DRAWING NO.: ES 15510
REV. NO.: 1
CUSTOMER:
PRINTING DATE:



13 1/2" WALL PANEL LAYOUT BEFORE FLANGING



MANUFACTURING VIEW ONLY - TRIPLE PANEL AFTER CORR & PUNCH, BEFORE SLITTING & FLANGING

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	14.75	CW1357F	31.5

NO	DATE	REVISION	E.C.R.	BY	CH.

DIMENSIONS SHOWN ARE IMP
MM UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)

DIMENSIONS:

IMPERIAL (in.)	METRIC (mm)
.x ? .1	x ? 2
.xx ? .03	.x ? 1.0
.xxx ? .010	.xx ? .50

ANGULAR: ± 1°

DESND.	BA
DWN.	RF
CHKD.	BA
APP'D.	BA

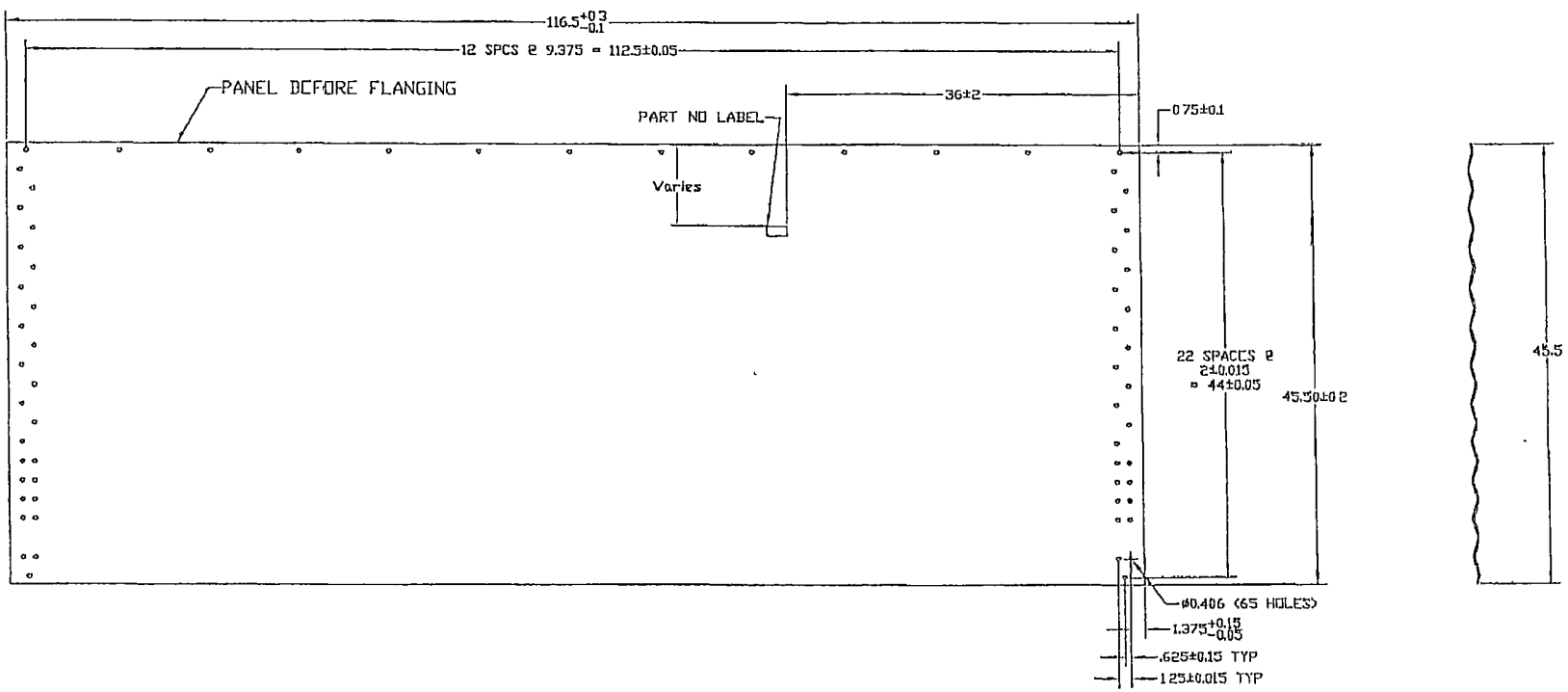
MATERIAL: SEE CHART - ASTM A653 SS GR50 G115 OIL
BLANK SIZE: 46.5x116.5 (3 pcs)
WEIGHT (LBS.): 31.5

SCALE	N.T.S.
DWN. (Y.M.D.)	2004.11.30
LOCATION	WPG
E.C.R.	A6834
C.P. NO	02-255
DWG TYPE	A-2000

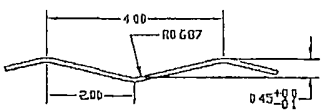
DRAWING TITLE: 13.5" FULL PANEL - 57" ONLY CONTAINMENT RING

SIZE	DRAWING NO.	REV. NO.
A	ES 15516	O

CUSTOMER: -
PRINTING DATE (Y.M.D.): -



44" WALL PANEL AFTER CORRUGATING AND PUNCHING



CORRUGATING DETAIL

MANUFACTURING NOTES:
1. CORRUGATION..... SEE DETAIL
2. HOLE OFF CENTER OF CORR..... ± .05
3. HOLE BURR MAX..... .01
4. CUT OFF BURR MAX..... .01
5. CORNER HOLE TO HOLE DIAGONAL ± .13

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (Lbs)
NOMINAL	MINIMUM			
0.066	0.061	46.5	CW445715F	97.7
0.139	0.130	46.2	CW445710F	208.5

NO	DATE	REVISION	E.C.R.	BY	CH.

DIMENSIONS SHOWN ARE IMPERIAL
UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)

DIMENSIONS

IMPERIAL (in)	METRIC (mm)
.X ± .1	X ± 2
.XX ± .03	.X ± 1.0
.XXX ± .010	.XX ± .50

ANGULAR: ± 1°

MATERIAL: SEE CHART - ASTM A653 SS GR 50 G115 OIL
BLANK SIZE: 46.5 x 116.5
SURFACE AREA:
WEIGHT (LBS): see chart

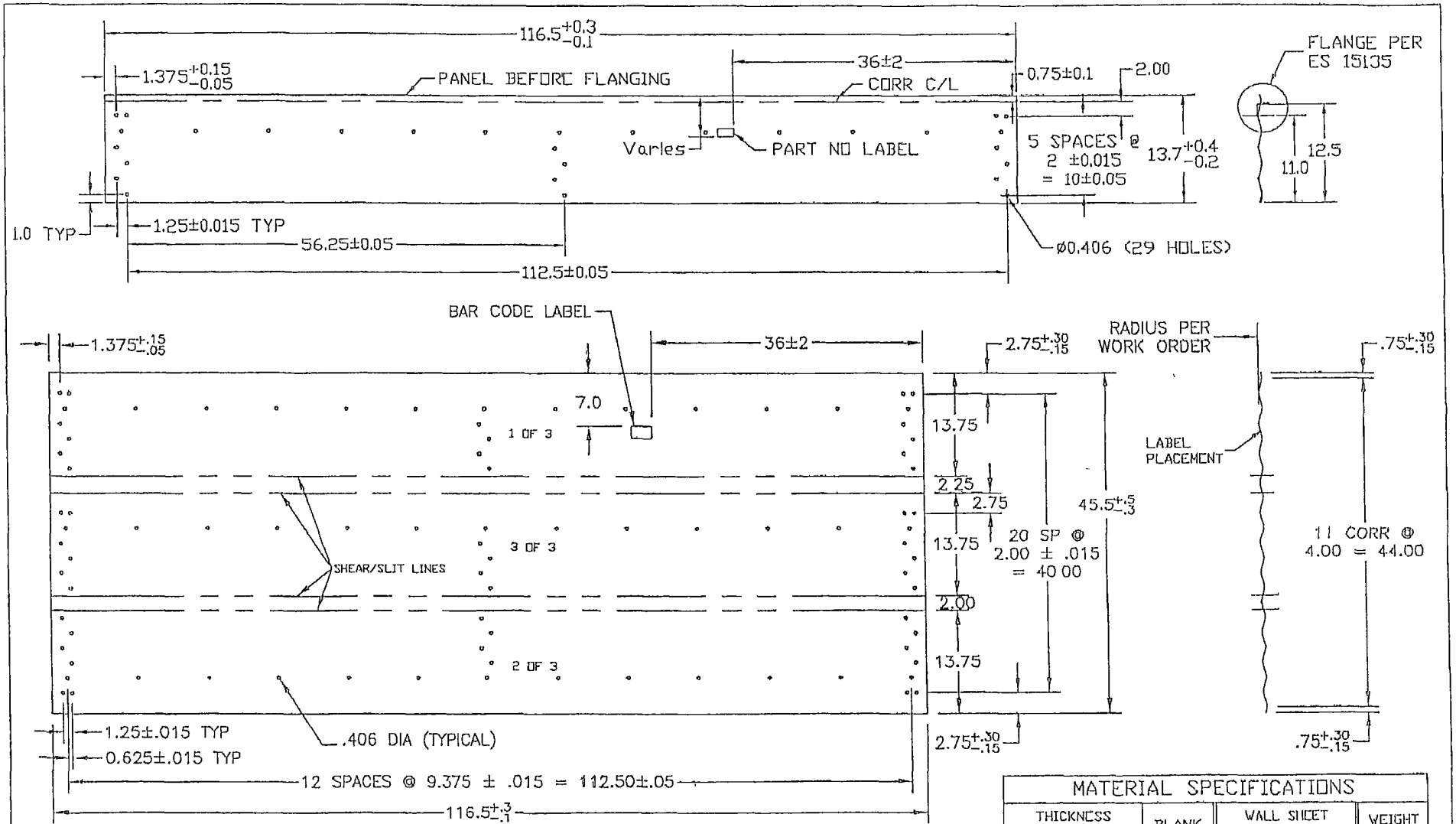
DESND. BA
DWN. RF
CHKD BA
APPD. BA

WESTEEL

SCALE: nts
DWN. (Y.M.D.): 04.12.01
LOCATION: WINNIPEG
E.C.R.: A6834
E.P. NO.:
TYPE: A-2000

DRAWING TITLE: 44" FULL PANEL - 57" ONLY CONTAINMENT RING
SIZE: B
DRAWING NO: ES 15518
REV. NO.: 0

CUSTOMER:
PRINTING DATE:



MANUFACTURING VIEW ONLY - TRIPLE PANEL AFTER CORR & PUNCH, BEFORE SLITTING & FLANGING

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	14.75	019401	31.5

NO	DATE	REVISION	E.C.R.	BY	CH.

DIMENSIONS SHOWN ARE IMP
MM UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)

DIMENSIONS:

IMPERIAL (in)	METRIC (mm)
.x ? .1	x ? 2
.xx ? .03	.x ? 1.0
.xxx ? 010	.xx ? .50

ANGULAR: ± 1°

MATERIAL	SEE CHART - ASTM A653 SS GR50 G115 OIL
BLANK SIZE	46.5x116.5 (3 pcs)
WEIGHT (LBS.)	31.5
DESND.	BA
DWN.	RF
CHKD.	BA
APPD.	BA

WESTEEL

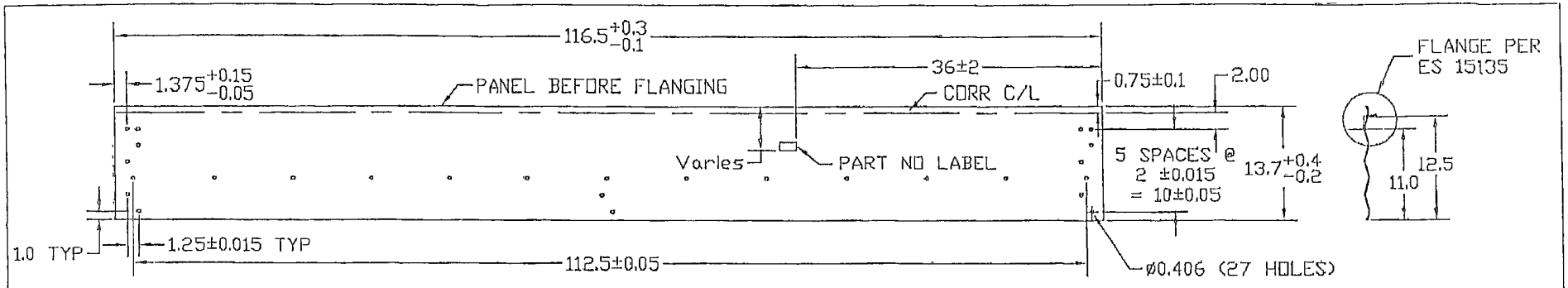
DRAWING TITLE 13.5" FULL PANEL - 4" RISER CONTAINMENT RING

CUSTOMER -

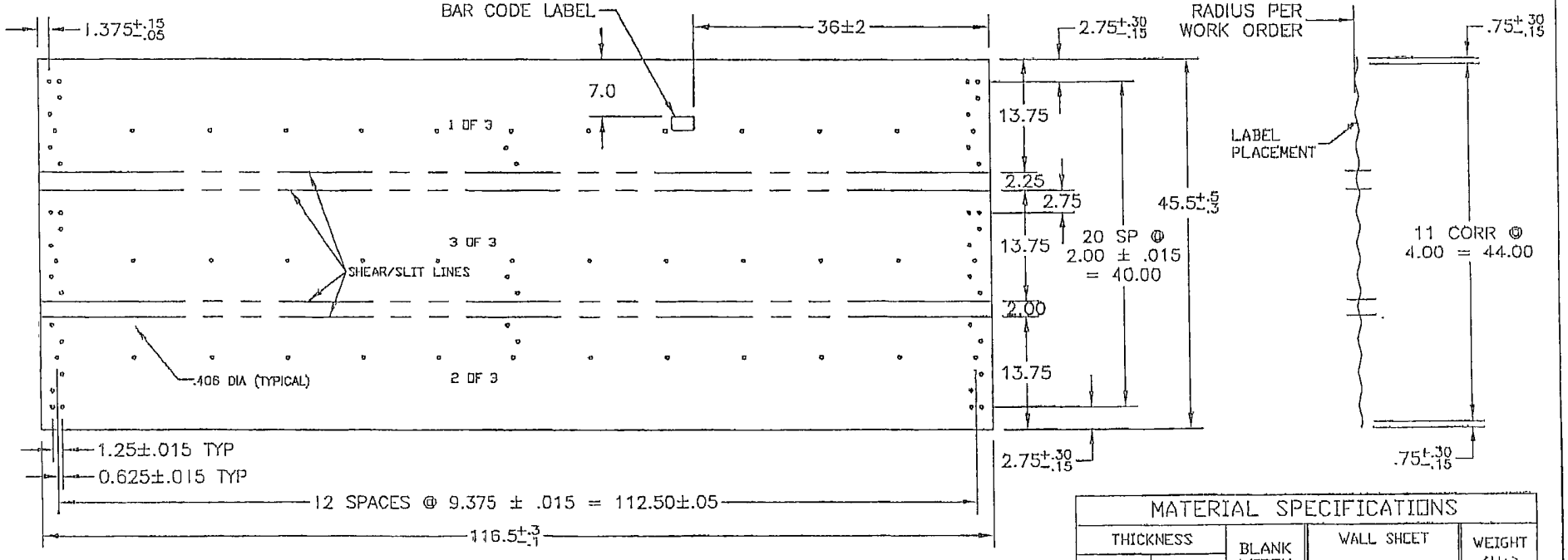
PRINTING DATE (Y.M.D.) -

SCALE	DWN. (Y.M.D.)	LOCATION
N.T.S.	2004.11.30	WPG
E.C.R.	E.P. NO.	DWG TYPE
A6834	02-255	A-2000

SIZE	DRAWING NO	REV. NO.
A	019401	O



13 1/2" WALL PANEL LAYOUT BEFORE FLANGING



MANUFACTURING VIEW ONLY - TRIPLE PANEL AFTER CORR & PUNCH, BEFORE SLITTING & FLANGING

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	14.75	019419	31.5

NO	DATE	REVISION	E.C.R.	BY	CH.

DIMENSIONS SHOWN ARE IMP
MM UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)

DIMENSIONS:

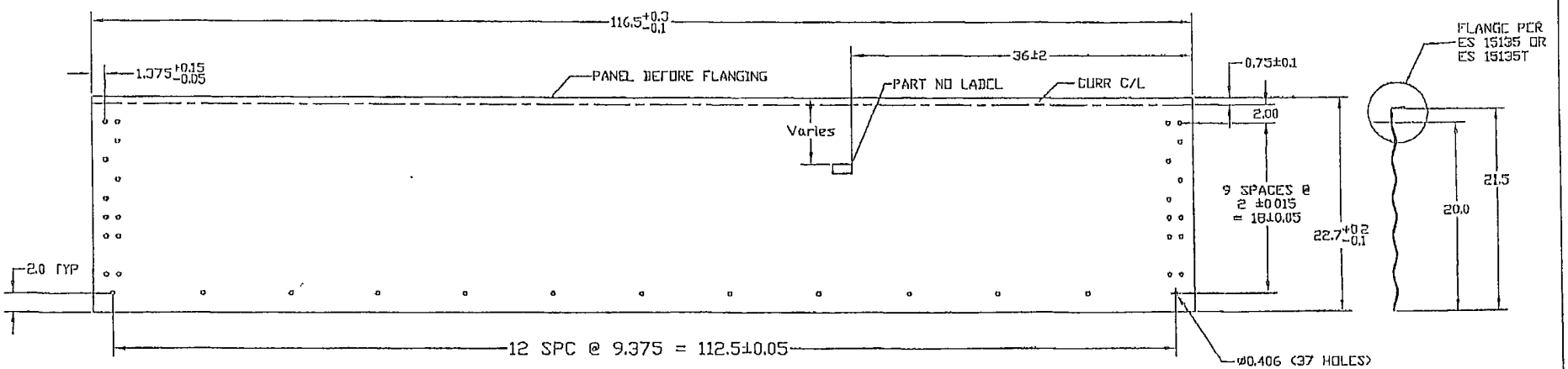
IMPERIAL (in.)	METRIC (mm)
.x ? .1	x ? 2
.xx ? .03	.x ? 1.0
.xxx ? .010	.xx ? .50

ANGULAR ± 1°

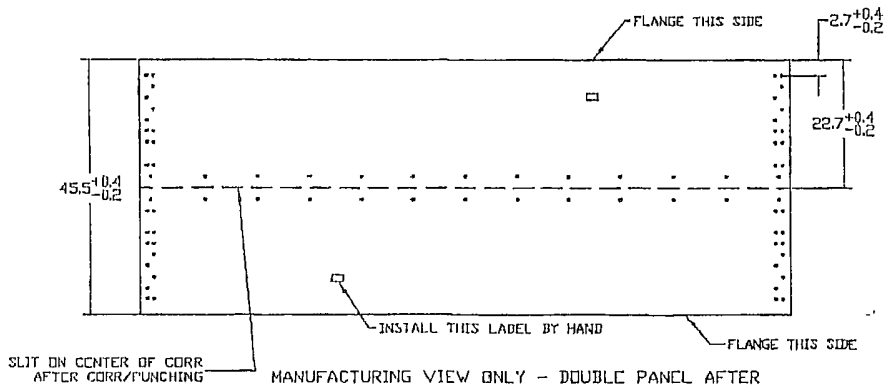
MATERIAL	SEE CHART - ASTM A653 SS GR50 G115 OIL
BLANK SIZE	46.5x116.5 (3 pcs)
WEIGHT (LBS.)	31.5
DESND.	BA
DWN.	RF
CHKD.	BA
APPD.	BA
SCALE	N.T.S.
DWN. (Y.M.D.)	2006.08.08
LOCATION	WPG
E.C.R.	A6834
EP. NO.	02-255
DWG TYPE	A-2000
SIZE	A
DRAWING NO.	019419
REV. NO.	O
CUSTOMER	-
PRINTING DATE (Y.M.D.)	-

DRAWING TITLE 9.5" FULL PANEL - 52.5" ONLY CONTAINMENT RING

Exhibit 2.2 pg 9



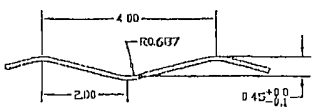
21 1/2" WALL PANEL LAYOUT BEFORE FLANGING



MANUFACTURING VIEW ONLY - DOUBLE PANEL AFTER CORR & PUNCH, BEFORE SLITTING & FLANGING

MANUFACTURING NOTES:
1. CORRUGATION..... SEE DETAIL
2. HOLE OFF CENTER OF CORR..... ⊥ .05
3. HOLE BURR MAX..... .01
4. CUT OFF BURR MAX..... .01
5. CORNER HOLE TO HOLE DIAGONAL ⊥ .15

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	23.3	C10514	49.4

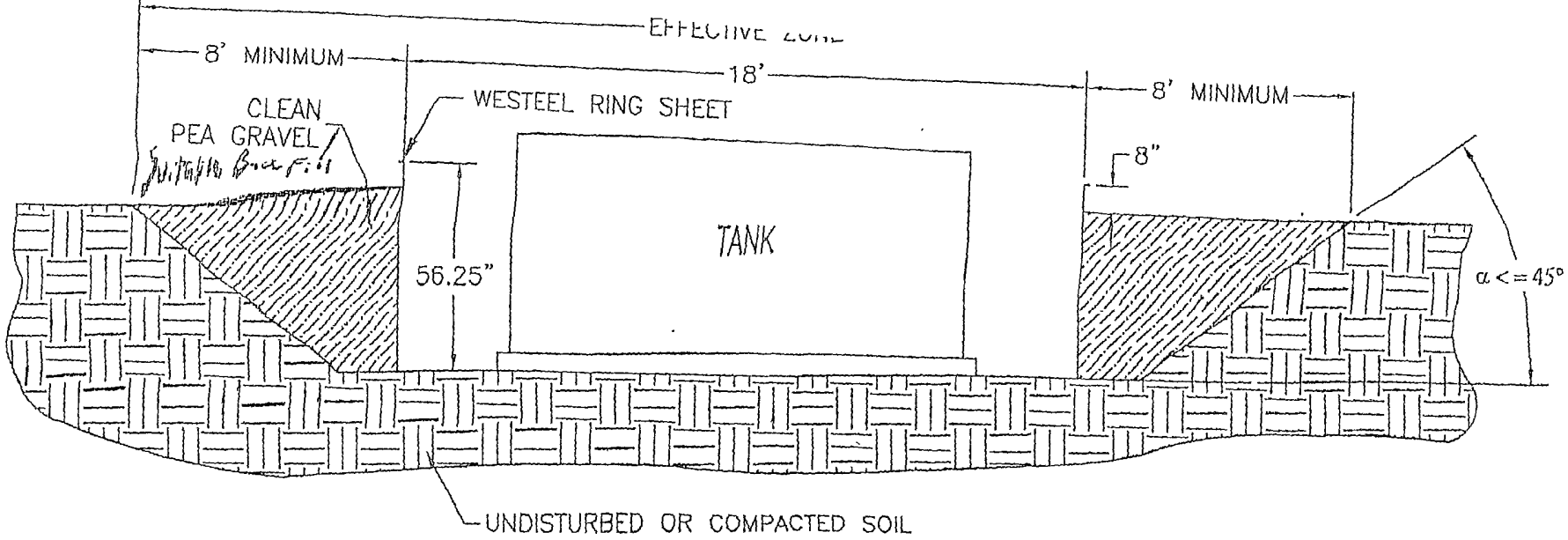


CORRUGATING DETAIL

NO	DATE	REVISION	E.C.R.	BY	CH.
1	06/12/06	CORRECTED HOLE PATTERN ON BOTTOM BLANK	A6898	RF	RF

DIMENSIONS SHOWN ARE IMPERIAL
UNITS SHOWN IN BRACKETS
TOLERANCES UNLESS OTHERWISE NOTED
DECIMALS: IMPERIAL (in) .X ± .1 .XX ±.03 .XXX ±.010; METRIC (mm) X ± 2 XX ± 1.0 XXX ± .50
ANGULAR: ± 1°

MATERIAL	SEE CHART - ASTM A653 SQ GR50 G115 OIL
BLANK SIZE	46.6x116.5 (2 pcs)
SURFACE AREA	
WEIGHT (LBS)	49.4
DESIGN	RM
DWN.	RM
CHECK	YS
APPR.	RM
CUSTOMER	
PRINTING DATE	
SCALE	n-ts
DWN. (YY.M.D)	98.08.13
LOCATION	WINNIPEG
E.C.R.	A 6428
E.P. NO.	98-197
TYPE	ACAD14
DRAWING TITLE	CONTAINMENT RING 22" WALL PANEL
SIZE	B
DRAWING NO	C10514
REV. NO.	1



INSTALLATION INSTRUCTIONS & SITE REQUIREMENTS

1. EXCAVATE AS PER ABOVE
2. FOR BEST RESULTS, BACKFILL WITH CLEAN PEA GRAVEL (OR EQUIVALENT FREE FLOWING MATERIAL) EVENLY AROUND THE STRUCTURE, TAKING CARE NOT TO FILL IN ANY ONE AREA VERY HIGH RELATIVE TO OTHER AREAS, SO AS TO MAINTAIN THE STRUCTURE AS ROUND. WORKING AROUND THE STRUCTURE IN APPROXIMATELY 6" LIFTS IS RECOMMENDED. (NOTE: ALTERNATIVE MATERIALS CAN BE USED BUT CARE MUST BE TAKEN TO INSURE THAT THE EXTERNAL PRESSURES ACTING ON THE STRUCTURE REMAIN UNIFORM. IF NATIVE SOIL IS USED AS A BACKFILL MATERIAL, IT SHOULD BE UNIFORM IN CONSISTENCY, AND BE FREE OF LARGE ROCKS OR UNBROKEN CLUMPS, WHICH COULD RESULT IN UNEVEN LOADING).
3. THE COMPLETED STRUCTURE SHOULD EXTEND APPROXIMATELY 8" ABOVE GRADE
4. TO INSURE STRUCTURAL INTEGRITY, UNEVEN EXTERNAL WALL PRESSURE IS TO BE AVOIDED. NO VEHICLES OR OTHER SOURCES OF POINT LOADING SHOULD BE PERMITTED WITHIN THE EFFECTIVE ZONE (AS ILLUSTRATED).
5. WESTEEL IS NOT LIABLE FOR ANY DAMAGES OR INJURIES RESULTING FROM ANY FAILURE DUE TO IMPROPER INSTALLATION, IMPROPER SITE CONDITIONS, OR INADEQUATE MAINTENANCE OF THE SITE.

NOTE: THIS SYSTEM IS NOT DESIGNED FOR THE SECONDARY CONTAINMENT OF LIQUIDS, RATHER, TO ALLOW FOR INSPECTION OF THE TANK.

DURA•SKRIM® J30, J36 & J45 BB

PRODUCT DESCRIPTION

DURA•SKRIM J30, J36 and **J45** are Linear Low Density Polyethylene geomembranes reinforced with a heavy encapsulated 1500 Denier polyester reinforcement. In addition to excellent dimensional stability the tri-directional reinforcement provides exceptional tear and tensile strength.

DURA•SKRIM J-Series membranes are formulated with thermal and UV stabilizers to assure a long service life. Custom colors are available based on minimum volume requirements.

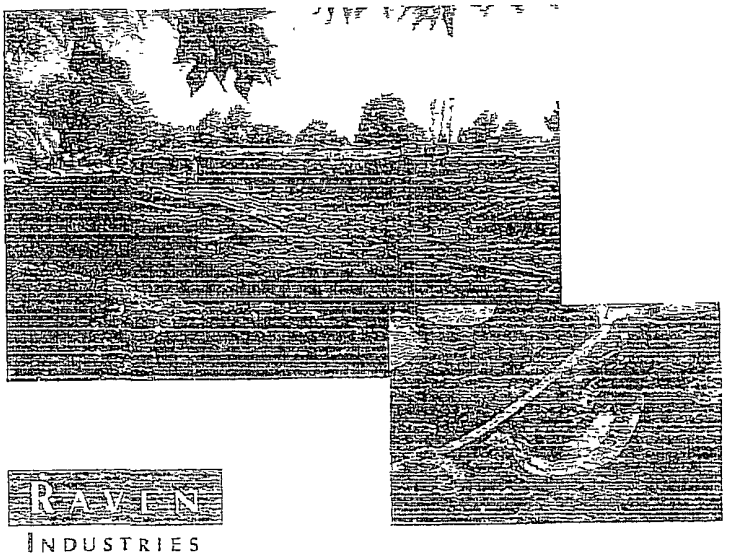
PRODUCT USE

DURA•SKRIM J30, J36 and **J45** are used in applications that require exceptional outdoor life and demand high tear strength and resistance to thermal expansion.

DURA•SKRIM J30, J35 and **J45** are manufactured from a very chemical-resistant, Linear Low Density Polyethylene with excellent cold crack performance.

SIZE & PACKAGING

DURA•SKRIM J30, J36 and **J45** are available in a variety of widths and lengths to meet the project requirements. Large diameter mill rolls are available to assure an efficient seaming process. Factory welded panels are accordion folded and tightly rolled on a heavy-duty core for ease of handling and time saving installation.



RAVEN INDUSTRIES
Engineered Films Division

PRODUCT	PART NUMBER
DURA•SKRIM J30	J30BB
DURA•SKRIM J36	J36BB
DURA•SKRIM J45	J45BB

COMMON APPLICATIONS

- Waste Lagoon Liners
- Floating Covers
- Daily Landfill Covers
- Modular Tank Liners
- Tunnel Liners
- Remediation Liners
- Earthen Liners
- Interim Landfill Covers
- Remediation Covers
- Landfill Caps
- Erosion Control Covers
- Radon Retarder
- Canal Liners
- Disposal Pit Liner
- Water Containment Ponds
- Heap Leach Liner

DURA•SKRIM®

DURA-SKRIM® J30BB, J36BB & J45BB

PROPERTIES	TEST METHOD	DURA-SKRIM J30BB		DURA-SKRIM J36BB		DURA-SKRIM J45BB	
		Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages
APPEARANCE		Black/Black		Black/Black		Black/Black	
THICKNESS, NOMINAL	ASTM D5199	27 mil	30 mil	32 mil	36 mil	40 mil	45 mil
WEIGHT (lbs/MSF (oz/yd²))	ASTM D5261	126 lbs (18.14)	140 lbs (20.16)	151 lbs (21.74)	168 lbs (24.19)	189 lbs (27.21)	210 lbs (30.24)
CONSTRUCTION		**Extrusion laminated with encapsulated tri-directional scrim reinforcement					
PLY ADHESION	ASTM D413	16 lbs	20 lbs	19 lbs	27 lbs	25 lbs	33 lbs
1" TENSILE STRENGTH	ASTM D7003	88 lbf MD 63 lbf DD	110 lbf MD 79 lbf DD	90 lbf MD 70 lbf DD	113 lbf MD 87 lbf DD	110 lbf MD 84 lbf DD	138 lbf MD 105 lbf DD
1" TENSILE ELONGATION @ BREAK % (FILM BREAK)	ASTM D7003	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD
1" TENSILE ELONGATION @ PEAK % (SCRIM BREAK)	ASTM D7003	20 MD 20 DD	33 MD 33 DD	20 MD 20 DD	30 MD 31 DD	20 MD 20 DD	36 MD 36 DD
TONGUE TEAR STRENGTH	ASTM D5884	75 lbf MD 75 lbf DD	97 lbf MD 90 lbf DD	75 lbf MD 75 lbf DD	114 lbf MD 107 lbf DD	100 lbf MD 100 lbf DD	125 lbf MD 127 lbf DD
GRAB TENSILE	ASTM D7004	180 lbf MD 180 lbf DD	218 lbf MD 210 lbf DD	180 lbf MD 180 lbf DD	295 lbf MD 294 lbf DD	220 lbf MD 220 lbf DD	341 lbf MD 337 lbf DD
TRAPEZOID TEAR	ASTM D4533	120 lbf MD 120 lbf DD	146 lbf MD 141 lbf DD	130 lbf MD 130 lbf DD	189 lbf MD 172 lbf DD	160 lbf MD 160 lbf DD	193 lbf MD 191 lbf DD
*DIMENSIONAL STABILITY	ASTM D1204	<1	<0.5	<1	<0.5	<1	<0.5
PUNCTURE RESISTANCE	ASTM D4833	50 lbf	64 lbf	65 lbf	83 lbf	80 lbf	99 lbf
MAXIMUM USE TEMPERATURE		180°F	180°F	180°F	180°F	180°F	180°F
MINIMUM USE TEMPERATURE		-70°F	-70°F	-70°F	-70°F	-70°F	-70°F

MD = Machine Direction
DD = Diagonal Directions

Note: Minimum Roll Averages are set to take into account product variability in addition to testing variability between laboratories.

*Dimensional Stability Maximum Value

**DURA-SKRIM J30BB J36BB and J45BB are a four layer reinforced laminate. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications

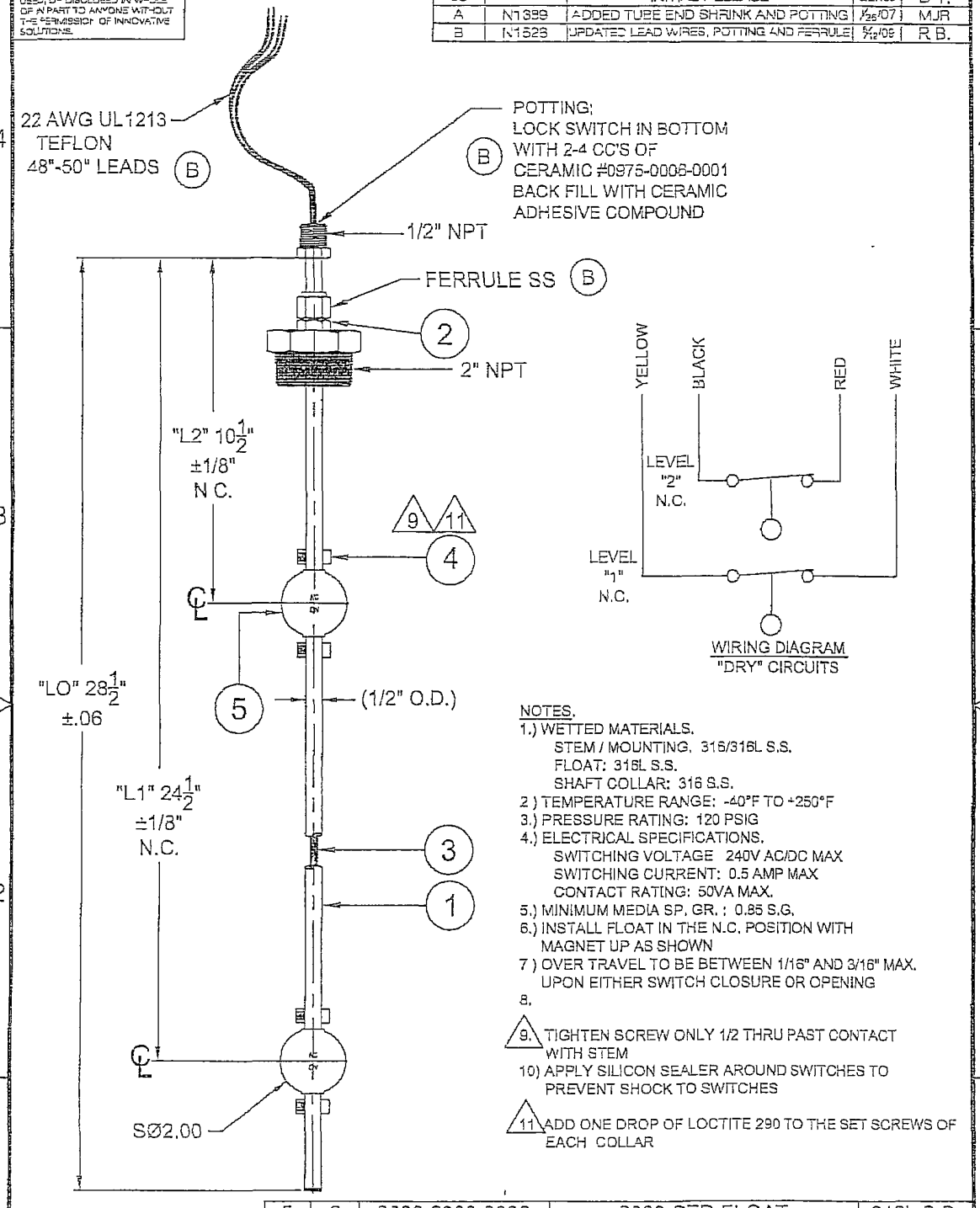
DURA-SKRIM J30BB, J36BB and J45BB are reinforced with a 1300 denier tri-directional scrim reinforcement.

RAVEN INDUSTRIES
RAVEN INDUSTRIES, INC. / Engineered Films Division
P.O. Box 5107 • Sioux Falls, SD 57117-5107
Ph: (605) 335-0174 • Fx: (605) 331-0333
Toll Free: 800-635-3456

ISO 9001:2000 CERTIFIED MANAGEMENT SYSTEM
www.ravengeo.com

6/09 EFD 1125

REVISION BLOCK				
REV	E C N NO	DESCRIPTION	DATE	APPRVD
00		INITIAL RELEASE	6/27/06	D T.
A	N1389	ADDED TUBE END SHRINK AND POTTING	7/25/07	MJR
B	N1528	UPDATED LEAD WIRES, POTTING AND FERRULE	5/12/08	R B.



WIRING DIAGRAM
"DRY" CIRCUITS

NOTES.
1.) WETTED MATERIALS.
STEM / MOUNTING. 316/316L S.S.
FLOAT: 316L S.S.
SHAFT COLLAR: 316 S.S.
2.) TEMPERATURE RANGE: -40°F TO +250°F
3.) PRESSURE RATING: 120 PSIG
4.) ELECTRICAL SPECIFICATIONS.
SWITCHING VOLTAGE 240V AC/DC MAX
SWITCHING CURRENT: 0.5 AMP MAX
CONTACT RATING: 50VA MAX.
5.) MINIMUM MEDIA SP. GR. ; 0.85 S.G.
6.) INSTALL FLOAT IN THE N.C. POSITION WITH MAGNET UP AS SHOWN
7.) OVER TRAVEL TO BE BETWEEN 1/16" AND 3/16" MAX. UPON EITHER SWITCH CLOSURE OR OPENING
8.
9. TIGHTEN SCREW ONLY 1/2 THRU PAST CONTACT WITH STEM
10) APPLY SILICON SEALER AROUND SWITCHES TO PREVENT SHOCK TO SWITCHES
11. ADD ONE DROP OF LOCTITE 290 TO THE SET SCREWS OF EACH COLLAR

ITEM	QTY	PART NUMBER	DESCRIPTION, CATALOG NO OR FINISHED SIZE	MATL
5	2	2000-2000-0006	2000-STD FLOAT	316L S.S.
4	4	0610-0500-0008	1/2" SHAFT COLLAR	316 S.S.
3	1	3000C3890-0001	SWITCH ASSEMBLY	
2	1	0199-0908-0500	AJUSTABLE MOUNTING	316/316L
1	1	5000C3890-0001	STEM/MTG. SUB-ASSEMBLY	316/316L

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES, [ ] ARE IN MM (MILLIMETERS)
TOLERANCES.
X= ± .XX= ± .01 .XXX= .005
FRACTIONS ± 1/64 ANGLES= 30'
MACHINED SURFACES 63 RMS
REMOVE ALL BURRS AND SHARP EDGES
NEXT ASSY
MATL: AS NOTED
DRAWN BY: MJR DATE: 6/26/06
CHKD BY: D T DATE: 6/27/06
APVD BY: D.T DATE: 6/27/06
FSCM NO
SIZE: B
INNOVATIVE SOLUTIONS, LLC
TITLE: 2 LEVEL S.S. / S.S. FLOAT L500 LEVEL SENSOR
DWG NO: L500C3890-0001 REV: B
SCALE: 25 SHEET 1

Exhibit 2.4

Section III

Operation & Maintenance Plan

EnerVest Operating, LLC (EV)

BELOW-GRADE TANK
OPERATIONAL REQUIREMENTS

Rule 19.15.17.12

A. EV will operate and maintain Below-Grade Tanks to insure the integrity of the below-grade tank, liner, liner system or berms to prevent contamination of fresh water and protect public health and the environment.

EV will not discharge or store any hazardous waste material of any kind in any Below-Grade Tank.

Any penetration of the below-grade below the liquid's surface that may occur, EV shall remove all liquid above the damage or leak line within 48 hours of the discovery. EV shall notify the appropriate district office within 48 hours of the discovery and repair the damage or replace the liner or below-grade tank.

EV will insure the metal retaining walls of the below-grade system around each tank will extend at least 6" above ground level or be equipped with a 6" earthen berm in an effort to divert run-on water around the below-grade system.

D. EV will insure that a below-grade tank constructed and installed prior to June 16, 2008 that does not meet the requirements of 19.15.17.11 NMAC and does not demonstrate integrity or that the below-grade tank develops any conditions as identified in 19.15.17.12 NMAC shall close the existing below-grade tank pursuant to the closure requirements of 19.15.17.13 NMAC and install a below-grade tank that is in full compliance with our approved design. Please see below-grade system diagram in Appendix 8 for details.

EV will insure all Below-grade tanks will be equipped with automatic high-level alarm which sounds at 24" and than shut off devise to insure that flow will shut off at the freeboard height of 10 1/2 inches.

The majority of our below-grade tanks are within the berm around our tank battery and as so are protected from run-on water. Those outside this berm will be protected with an earthen berm which will extend at least 6" above surface ground level to divert run-on around the tank.

EV will remove any visible or measurable layer of oil from the fluid surface of a below-grade tank.

With any below-grade tank, installed before June 16, 2008, that is retrofitted or replaced with another tank, EV will insure that the soil beneath the removed soil is inspected for wet, discolored, or any other evidence of release, with photographic evidence. EV will report the results of all testing to the division on form C-141 and demonstrate to the division whether the evidence of contamination indicates at an imminent threat to fresh water, public health, safety of the environmental exists. If the division determines that the contamination does not pose an imminent threat to fresh water, public health, safety or the environment, EV shall complete the retrofit or the replacement of the below-grade tank as per our approved design program as indicated in Appendix 8. If EV or the division determines that the contamination poses an imminent threat to fresh water, public health, safety or the environment, then EV shall close the existing below-grade tank pursuant to the closure requirements of 19.17.15.13 NMAC prior to initiating the retrofit or replacement.

Table 1 - GSE HD Smooth Geomembrane

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM AVERAGE VALUE				
			30 mil	40 mil	60 mil	80 mil	100 mil
Thickness, (minimum average) mil (mm) Lowest individual reading (-10%)	ASTM D 5199	every roll	30 (0.75) 27 (0.69)	40 (1.00) 36 (0 91)	60 (1.50) 54 (1 40)	80 (2 00) 72 (1 80)	100 (2 50) 90 (2.30)
Density, g/cm^3	ASTM D 1505	200,000 lb	0.94	0.94	0 94	0 94	0.94
Tensile Properties (each direction) Strength at Break, lb/in-width (N/mm) Strength at Yield, lb/in-width (N/mm) Elongation at Break, % Elongation at Yield, %	ASTM D 6693, Type IV Dumbell, 2 ipm G.L. 2 0 in (51 mm) G.L. 1.3 in (33 mm)	20,000 lb	 120 (21) 66 (11) 700 13	 152 (26) 84 (14) 700 13	 243 (42) 132 (23) 700 13	 327 (57) 177 (30) 700 13	 410 (71) 212 (37) 700 13
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	21 (93)	28 (124)	42 (186)	58 (257)	73 (324)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	65 (289)	85 (378)	125 (556)	160 (711)	195 (867)
Carbon Black Content, % (Range)	ASTM D 1 603*/421 8	20,000 lb	2.0 - 3.0	2 0 - 3 0	2 0 - 3 0	2 0 - 3 0	2 0 - 3.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	Note[1]	Note[1]	Note[1]	Note[1]	Note[1]
Notched Constant Tensile Load, hr	ASTM D 5397, Appendix	200,000 lb	1000	1000	1000	1000	1000
Oxidative Induction Time, min	ASTM D 3895, 200°C; O_2, 1 atm	200,000 lb	>140	>140	>140	>140	>140
TYPICAL ROLL DIMENSIONS							
Roll Length[2], ft (m)			1,120 (341)	870 (265)	560 (171)	430 (131)	340 (104)
Roll Width[2], ft (m)			22.5 (6.9)	22.5 (6.9)	22 5 (6 9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft^2 (m^2)			25,200 (2,341)	19,575 (1,819)	12,600 (1,171)	9,675 (899)	7,650 (711)

NOTES

- [1]Dispersion only applies to near spherical agglomerates 9 of 10 views shall be Category 1 or 2 No more than 1 view from Category 3
- [2]Roll lengths and widths have a tolerance of ± 1%
- GSE HD is available in rolls weighing approximately 3,900 lb (1,769 kg)
- All GSE geomembranes have dimensional stability of ±2% when tested according to ASTM D 1204 and LTB or <-77° C when tested according to ASTM D 746
- *Modified

O.R.E. SYSTEMS
P.O. Box 3677
Farmington, NM 87499
(505) 327-2161

Section IV

Closure Plan

EnerVest Operating, LLC (EV)

BELOW-GRADE TANK CLOSURE REQUIREMENTS

Rule 19.15.17.13

Before June 15, 2013, EV shall close, retrofit, or replace an existing below-grade tank that has not demonstrated integrity.

EV shall close a below-grade tank within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.

A. EV shall close an existing below-grade tank that does not meet the requirements of Subsection I, paragraphs (1) through (4), of 19.15.17.11 NMAC if not retrofitted to comply with said requirements prior to any sale or change of operator to 19.15.9.9 NMAC.

Any below-grade tank installed prior to June 16, 2008 that is single walled and where any portion of the tank sidewall is below the ground surface and not visible shall equip or retrofit the below-grade tank to comply with paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, or close it, within 5 years after June 16, 2008.

Within 60 days of cessation of the permitted below-grade tanks operation or as required by Subsection B of 19.15.17.17 NMAC, EV shall close the below-grade tank in accordance with a closure plan that the appropriate division district office approves.

J. Prior to implementing any closure operations EV shall research county tax records to determine the name and address of the surface owner of the properties involved. EV shall notify this surface owner via Certified U.S. Mail, return receipt requested, of their intent to close said below-grade tank.

Upon determination, EV will notify the appropriate district office prior to any closure operations beginning. Such notification shall be at least 72 hours, via U.S. Mail, prior to beginning work but not more than one week prior to beginning work. Such notice shall contain at a minimum the following:

Operators Name
Unit letter, Section, Township, & Range of well
Well name and well number
API Number of well

E. .All free standing liquids and sludge will be removed at the start of the below-grade tank closure process from the below-grade tank and disposed of in one of the below division-approved facility as indicated below:

TNT Land Farm	Permit # NM-01-0008	Liquids & Sludge
Environtech Land Farm	Permit # NM-01-0011	Solids
AguaMoss	Permit # 247130	Liquids

EV will obtain prior approval from the division to dispose, recycle, reuse, or reclaim the below-grade tanks and provide documentation of the final disposition of the below-grade tank in the closure report.

Existing liners that are removed as a result of closure will be wiped cleaned and disposed of at a solid waste facility listed below in compliance with Subparagraph (M) of Paragraph (I) of Subsection C 19.15.35.8 NMAC..

San Juan Regional Landfill	Permit # SWM 052426 or
"	Special Waster Permit # SWM052433 "sp"

If there is any on-site equipment associated with a below0grade tank, EV shall remove the equipment, unless the equipment is required for some other purpose .

Upon removal of the below-grade tank, EV will take, at a minimum, a five point composite sample from where the tank was sitting. EV shall collect individual grab samples will be taken from any area that is wet, discolored or showing other evidence of a release. All samples will be analyzed for the following:

Components	Test Method	Limits (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
Chlorides	EPA 300.1	250 or background, whichever is greater

EV will insure that the results of all sampling shall be reported to the division on approved form C-141. EV understands that the division may require additional delineation upon review of the results.

If sampling demonstrates that concentrations specified above have NOT been exceeded, or that a release has NOT occurred, EV will backfill the excavation with compacted, non-waste containing, earthen material, construct a division prescribed soil cover, and recontour and re-vegetate the site. The division prescribed soil cover, recontouring, and re-vegetation shall comply with 19.15.17.13.

If EV or the division determines that a release has occurred, EV shall fully comply with 19.15.29 NMAC and 19.15.30 NMAC as appropriate.

G. Once EV has closed a below-grade tank, we shall reclaim the site to a safe and stable condition that blends with the surrounding undisturbed area. When possible, EV will restore the impacted surface area to the condition that existed prior to oil and gas operations by the placement of soil cover.

If the closed area is within the confines of the pad location EV will blend the site to match the pad location as much as possible. Such activities shall prevent erosion, protect fresh water, human health and the environment. EV will obtain written agreement from the surface owner for any alternate re-vegetation proposals and submit to the division for final approval.

H. The soil cover design will be consistent with the requirements of 19.15.17.13(H)(1)and (3). The soil cover will consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater. The soil cover will be constructed to the site's existing grade and prevent ponding of water and erosion of the cover material.

I. EV will seed the disturbed areas the first growing season after closing the below grade tank. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM or Forest Service stipulated seed mixes will 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, and maintain that cover through two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs. During the two growing seasons that prove viability, there shall be no artificial irrigation of the vegetation.

EV shall notify the division when it has seeded or planted and when it successfully achieves re-vegetation by U.S. Mail.

K. Within 60 days of completion of closure operations, EV will file Form C-144, with attachments, outlining the detailed operations of the closing operations. Such attachments shall include, but not limited to, proof of surface owner and division notifications, confirmation of sampling analysis, disposal facility names and permit numbers, soil backfilling and cover installation, re-vegetation application rates and seeding techniques, and photo documentations.

Section V

Hydrogeology Report

Regional Hydrogeology Report

The San Jose Formation of Eocene age occurs in New Mexico and Colorado, and its outcrop forms the land surface over much of the eastern half of the central San Juan Basin. It overlies the Nacimiento Formation in the area generally sourth of the Colorado-New Mexico state line and overlies the Animas Formation in the area generally north of the State line.

The San Jose Formation was deposited in various fluvial-type environments. In general, the unit consists of an interbedded sequence of sandstone, siltstone, and variegated shale. Thickness of the San Jose Formation generally increases from west to east, ranging from 200 feet in the west and south to almost 2,700 feet in the center of the structural basin.

Ground water is associated with alluvial and fluvial sandstone aquifers. Therefore the occurrence of ground water is mainly controlled by the distribution of sandstone in the formation. The distribution of such sandstone is the results of original depositional extend plus any post-depositional modifications, namely erosion and structural deformation.

Transmissivity data for the San Jose Formation are minimal. Values of 40 and 120 feet squared per day were determined from two aquifer tests (Stone et al, 1983. table 5). The reported or measured discharge from 46 water wells completed in San Jose Formation ranges from 0.15 to 61 gallons per minute and the median is 5 gallons per minute. Most of the wells provide water for livestock and domestic use.

The San Jose Formation is a very suitable unit for recharge from precipitation because soils that form on the unit are sandy and highly permeable and therefore readily absorb precipitation. However, low annual precipitation, relatively high transpiration and evaporation rates, and deep dissection of the San Jose Formation by the San Juan River and its tributaries all tend to reduce the effective recharge to the unit.

Stone et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico; Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p.

Site Specific Hydro Geologic Analysis

Jicarilla C #3
API 30-039-08098

The above referenced well is located at UL I, Sec 23, 26N, 05W at an elevation of 6574'. Surface casing was set to a depth of 330' or at a depth of 6244'.

According to the Office of State Engineer, one water well drilled was RG81026 about 3 miles northwest of our location. Drilled to 468 feet at an unknown elevation, it shows water encountered at 186 feet.

According to the Office of State Engineer, another water well drilled was CR 03087 about 3 miles SE of our location. Drilled to 141 feet at an unknown elevation, it shows water encountered at 72 feet.

According to the Office of State Engineer, another water well drilled was CR 01909 about 4 miles SE of our location. Drilled to 100 feet at an unknown elevation, it shows water encountered at 60 feet.

In 1958, the Jicarilla #2G (30-039-06359) was drilled about 1000 feet SW of our location. It was at an elevation of 6566 with no indication of water being encountered. Surface casing was set at 103 feet which would be at 6463. This would be 103 feet above our well. We believe that the sand and limestone will prevent any migration of fluids.

The groundwater at our well site would be greater than 100 feet at a minimum. This should allow ample protection for any groundwater in the area.

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

RECEIVED
NOV 1 - 1966
U. S. GEOLOGICAL SURVEY
FARMINGTON, N. M.

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Tenneco Oil Company

3. ADDRESS OF OPERATOR: P. O. Box 1714, Durango, Colorado 81301

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 1650' FSL 990' FEL Unit Letter "I"
At top prod. interval reported below
At total depth

5. LEASE DESIGNATION AND SERIAL NO.: Jicarilla Cont. 108

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Jicarilla, Dulce, New Mex

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME: Jicarilla C

9. WELL NO.: #3

10. FIELD AND POOL, OR WILDCAT: Dual Undes. Cal & Basin Dakota

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 23, T-26-N, R-5-W

12. COUNTY OR PARISH: Rio Arriba

13. STATE: New Mexico

14. PERMIT NO. | DATE ISSUED

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
6/11/66	6/26/66	10/4/66	6574 GR	6574

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
7600	7572	Dual	→	0-7600	0

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
7504-7288 Dakota Gas
6772-6750 Gallup Gas

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: IES, Density

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8	20 & 24#	330	12-1/4	150 sx	None
5-1/2	14 & 15.5#	7580	7-7/8	1st stage 335 sx 2nd stage 90 sx 3rd stage 330 sx	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-1/16	7230	7230
2-1/16	6703	Dual

31. PERFORATION RECORD (Interval, size and number)
7504-7442
7415-7288
6772-6750

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
7504-7442	85,000 gals wtr & 85,000# sd.
7415-7288	55,000# sd & 75,000 gals wtr.
6772-6750	60,000# sd & 60,000 gals wtr.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
SI	Flowing	SI

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
10/4/66	3	3/4					

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
Dual SI	Cal. 69 IP Packer			Dak. 1215 Cal.		

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): SI

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

RECEIVED
NOV 15 1966
OIL CON. COM.
DIST. 3

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED Harold C. Nichols TITLE Senior Production Clerk DATE November 10, 1966

*(See Instructions and Spaces for Additional Data on Reverse Side)

ic

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Pictured Cliffs	3100	3150	Sd, Gas
Mesaverde	4763	5405	Sd, Gas
Gallup	6750	6780	Sd, Gas
Dakota	7280	7510	Sd, Gas

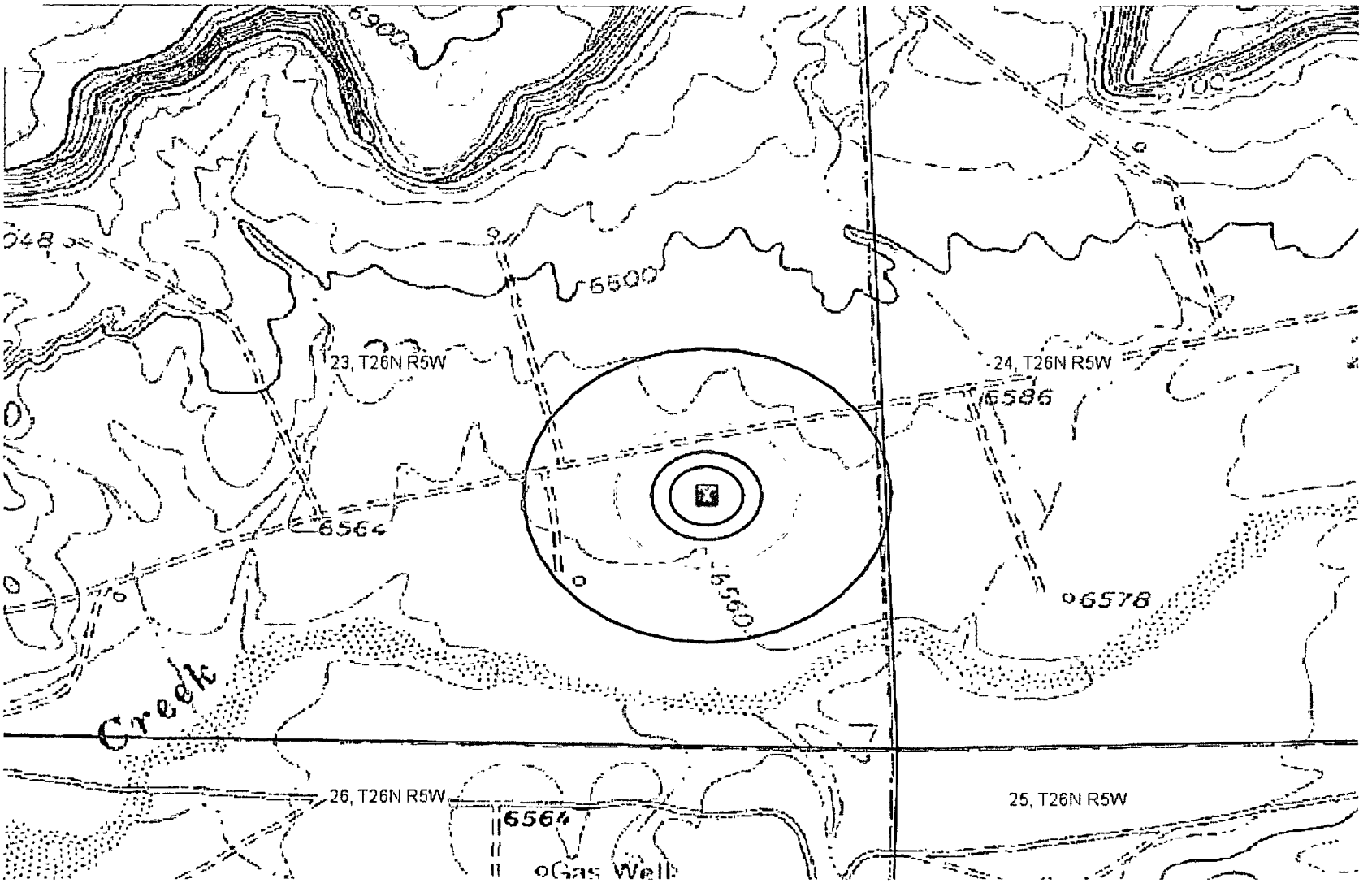
38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH

U.S. GOVERNMENT PRINTING OFFICE 1961—O-683636

Appendix 01

U.S. 7.5 Minute TOPO Map



Petroleum Recovery Research Center	JICARILLA C No. 003 - TOPO	Figure: 01
	UL I, Sec. 23, 26N, 05W	Oct 07, 2010

API 30-039-08098

Appendix 02

Ground Water Depth

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: RG 81026
Primary Purpose: STK 72-12-1 LIVESTOCK WATERING
Primary Status: PMT PERMIT
Total Acres:
Total Diversion: 3
Owner: BUREAU OF LAND MANAGEMENT
Contact: DALE WIRTH

Documents on File

	Doc	File/Act	Status 1	2	3	Transaction Desc.	From/To	Acres	Diversion	Consumptive
get images	72121	2003-09-02	PMT	LOG	PRC	RG 81026	T		3	

Point of Diversion

(NAD83 UTM in meters)

Pod Number	Source	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Other Location Desc
RG 81026	Shallow	3	4	4	27	27N	05W	290530	4046294*	LIVESTOCK WELL

*An (*) after northing value indicates UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer
Point of Diversion Summary

POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
RG 81026	3	4	4	27	27N	05W	290530	4046294*

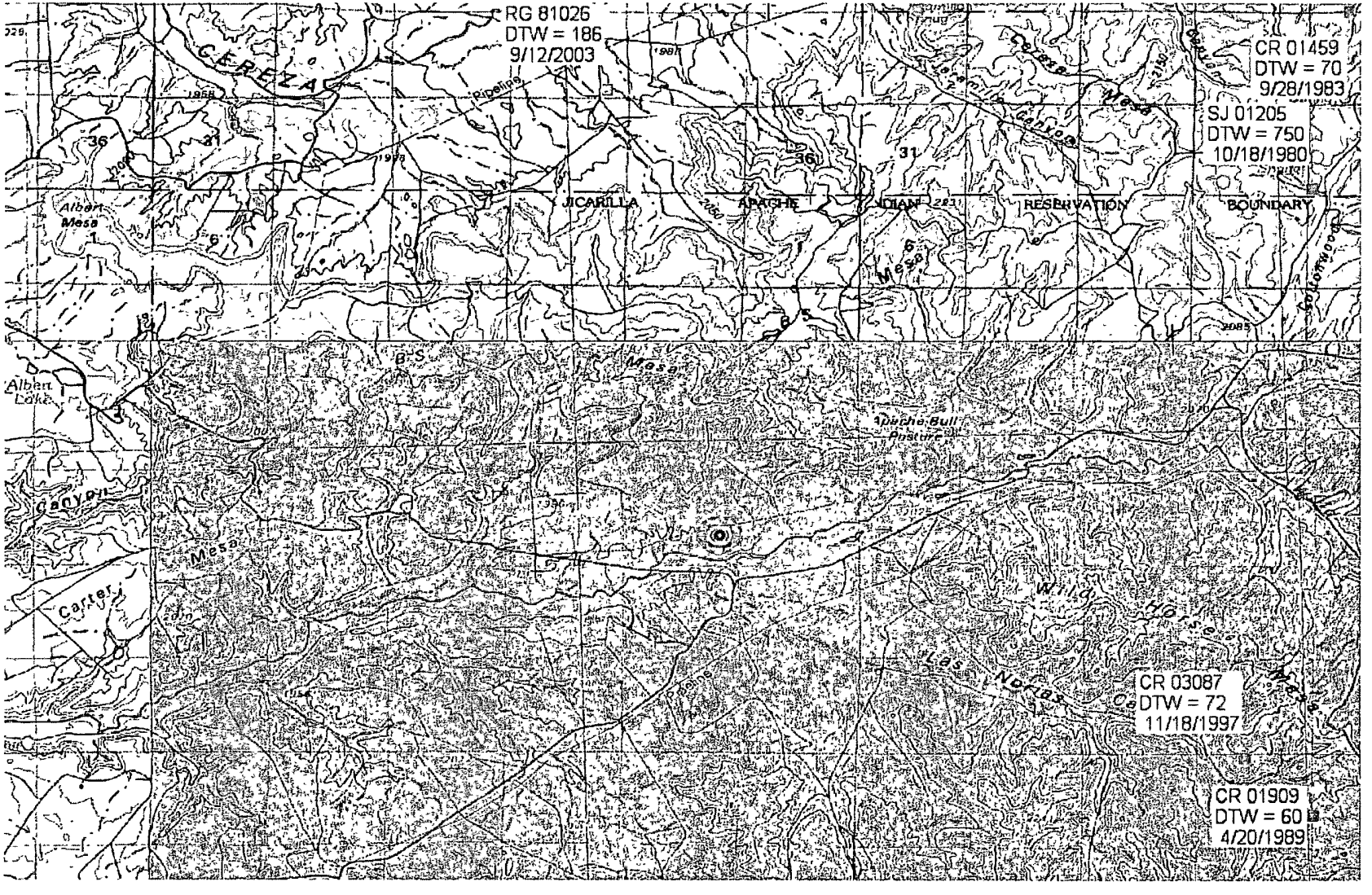
(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)
(NAD83 UTM in meters)

Driller License: SUNBELT DRILLING, LLC
Driller Name:
Source: Shallow
Drill Start Date: 09/12/2003 **Drill Finish Date:** 09/16/2003
Log File Date: 10/01/2003 **PCW Received Date:**
Pump Type: **Pipe Discharge Size:**
Casing Size: 5.00 **Estimated Yield:** 3
Depth Well: 460 feet **Depth Water:** 186 feet

Water Bearing Stratifications:	Top	Bottom	Description
	180	195	Sandstone/Gravel/Conglomerate
	430	460	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	412	452

UTM location was derived from PLSS - see Help



Petroleum Recovery Research Center	Jicarilla C No. 003 - OSE Water Wells	Figure: 02
	UL I, Sec. 23, 26N, 05W	Oct 25, 2010

New Mexico Office of the State Engineer
Point of Diversion Summary

POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64 Q16 Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
CR 01909		02	25N	15E	300037	4033531

Driller License: COOK, ROBERT R.
Driller Name:

Drill Start Date:	04/20/1989	**Drill Finish Date:**	04/20/1989	**Plug Date:**	
Log File Date:	05/05/1989	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:		**Depth Well:**	100 feet	**Depth Water:**	60 feet

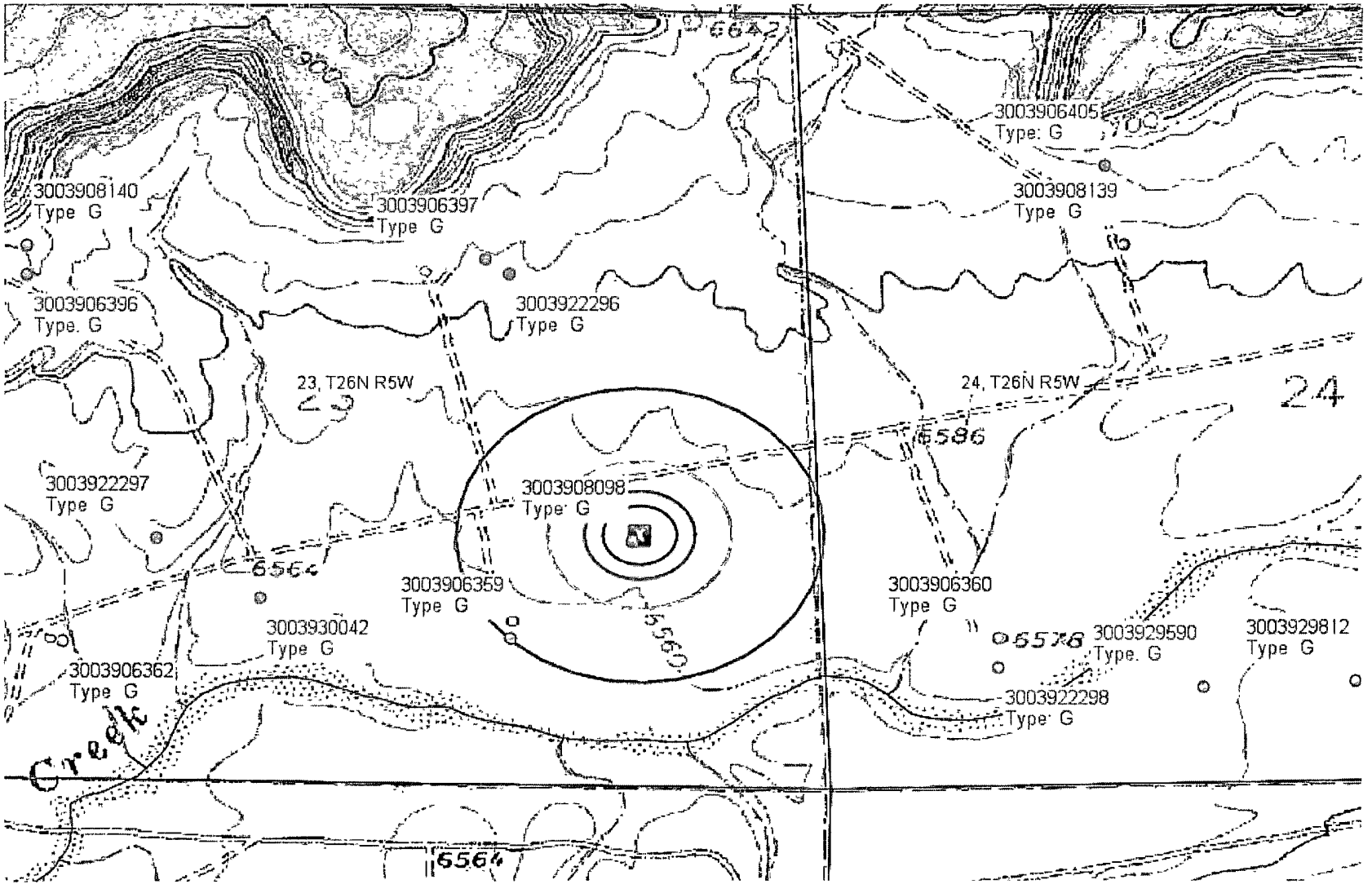
New Mexico Office of the State Engineer
Point of Diversion Summary

POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64 Q16 Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
CR 03087					299120	4034533

Driller License:	MAHONEY, J H. CONSTRUCTION				
Driller Name:	MAHONEY, JOHN H.				
Drill Start Date:	11/18/1997	**Drill Finish Date:**	11/18/1997	**Plug Date:**	
Log File Date:	11/26/1997	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	20
Casing Size:	5.00	**Depth Well:**	141 feet	**Depth Water:**	72 feet

Water Bearing Stratifications:	Top	Bottom	Description
	120	124	Sandstone/Gravel/Conglomerate
	130	135	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	80	120



Petroleum Recovery Research Center	JICARILLA C No. 003 - Offset Wells	Figure: 02A
	UL I Sec. 23, 26N, 05W	Oct 07, 2010

API 30-039-08098

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

(Form C-104)
Revised 7/1/57

REQUEST FOR ~~(OIL)~~ - (GAS) ALLOWABLE

New Well
~~Recompletion~~

This form shall be submitted by the operator before an initial allowable will be assigned to any completed Oil or Gas well. Form C-104 is to be submitted in QUADRUPLICATE to the same District Office to which Form C-101 was sent. The allowable will be assigned effective 7:00 A.M. on date of completion or recompletion, provided this form is filed during calendar month of completion or recompletion. The completion date shall be that date in the case of an oil well when new oil is delivered into the stock tanks. Gas must be reported on 15.025 psia at 60° Fahrenheit.

Farmington, New Mexico (Place) 8-5-58 (Date)

WE ARE HEREBY REQUESTING AN ALLOWABLE FOR A WELL KNOWN AS:

EL PASO NATURAL GAS COMPANY (Company or Operator) JICARILLA (Lease), Well No. 2-G, in SW ¼ SE ¼,

O (Unit Letter), Sec. 23, T. 26N, R. 5W, NMPM., S. Blanco PC Ext. Pool

Rio Arriba County. Date Spudded 5-18-58 Date Drilling Completed 6-11-58

Please indicate location:

D	C	B	A
E	F	G	H
L	K	J	I
M	N	O X	P

Elevation 6566 Total Depth 3156 PBTD 3120

Top Oil/Gas Pay 3048 Name of Prod. Form. Pictured Cliffs

PRODUCING INTERVAL -

Perforations 3056-84', 3093-3103'

Open Hole ____ Depth Casing Shoe 3155 Depth Tubing 3103

OIL WELL TEST -

Natural Prod. Test: ____ bbls.oil, ____ bbls water in ____ hrs, ____ min. Size ____ Choke

Test After Acid or Fracture Treatment (after recovery of volume of oil equal to volume of load oil used): ____ bbls.oil, ____ bbls water in ____ hrs, ____ min. Size ____ Choke

GAS WELL TEST -

Natural Prod. Test: None MCF/Day; Hours flowed ____ Choke Size ____

Method of Testing (pitot, back pressure, etc.): ____

Test After Acid or Fracture Treatment: 4,498 MCF/Day; Hours flowed 3

Choke Size 3/4 Method of Testing: Back pressure

Acid or Fracture Treatment (Give amounts of materials used, such as acid, water, oil, and sand): 22,890 gallons water, 30,000# sand

Casing Press. ____ Tubing Press. ____ Date first new oil run to tanks ____

Oil Transporter ____

Gas Transporter El Paso Natural Gas Company

Tubing, Casing and Cementing Record

Size	Feet	Sax
8-5/8"	103	70
5-1/2"	3146	100
1-1/4"	3094	-

Remarks: ____

RECEIVED
AUG 6 1958
OIL CON. COM.
DIST. 3

I hereby certify that the information given above is true and complete to the best of my knowledge.

Approved AUG 6 1958, 19____

OIL CONSERVATION COMMISSION

By: Original Signed Emery C. Arnold

Title Supervisor Dist. # 3

EL PASO NATURAL GAS COMPANY (Company or Operator)

By: D C Johnston (Signature)

Title Petroleum Engineer

Send Communications regarding well to:

Name R. S. Oberly

Address Box 997, Farmington, New Mexico

OIL CONSERVATION COMMISSION

AZTEC DISTRICT OFFICE

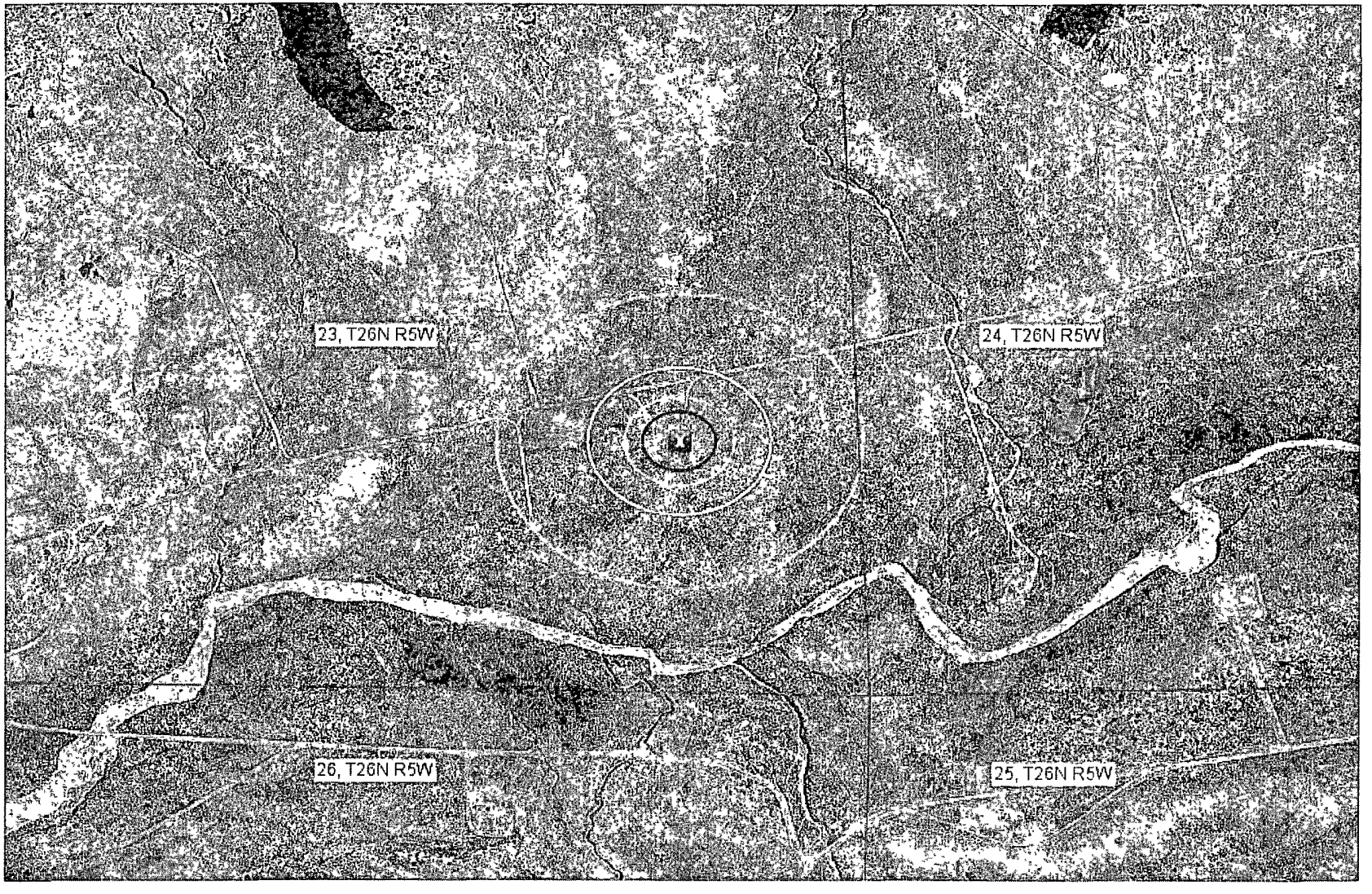
No. Copies Received 4

DISTRIBUTION

	NO. FURNISHED	
Operator	1	
Santa Fe	1	
Proration Office	1	
State Land Office		
U S G S		
Transporter		
File	1	✓

Appendix 03

Aerial Photo



0 500 1000ft

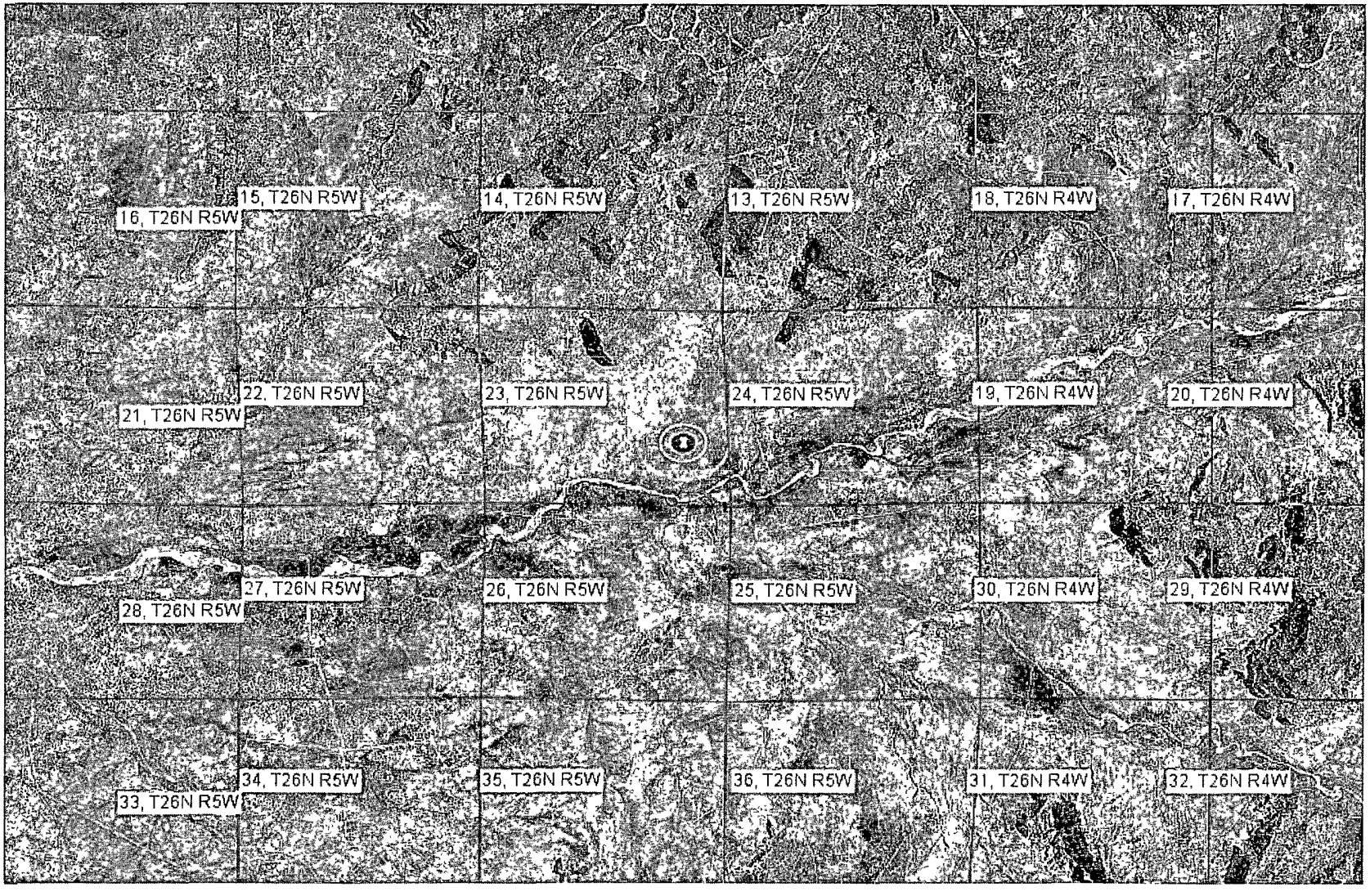
N W E S

Petroleum Recovery Research Center	JICARILLA C No. 003 - Aerial View	Figure: 03
	UL I, Sec. 23, 26N, 05W	Oct 07, 2010

API 30-039-08098

Appendix 04

Municipality Boundary Map



Petroleum Recovery Research Center	JICARILLA C No. 003 - Municipalities	Figure: 04
	UL I, Sec. 23, 26N, 05W	Oct 07, 2010

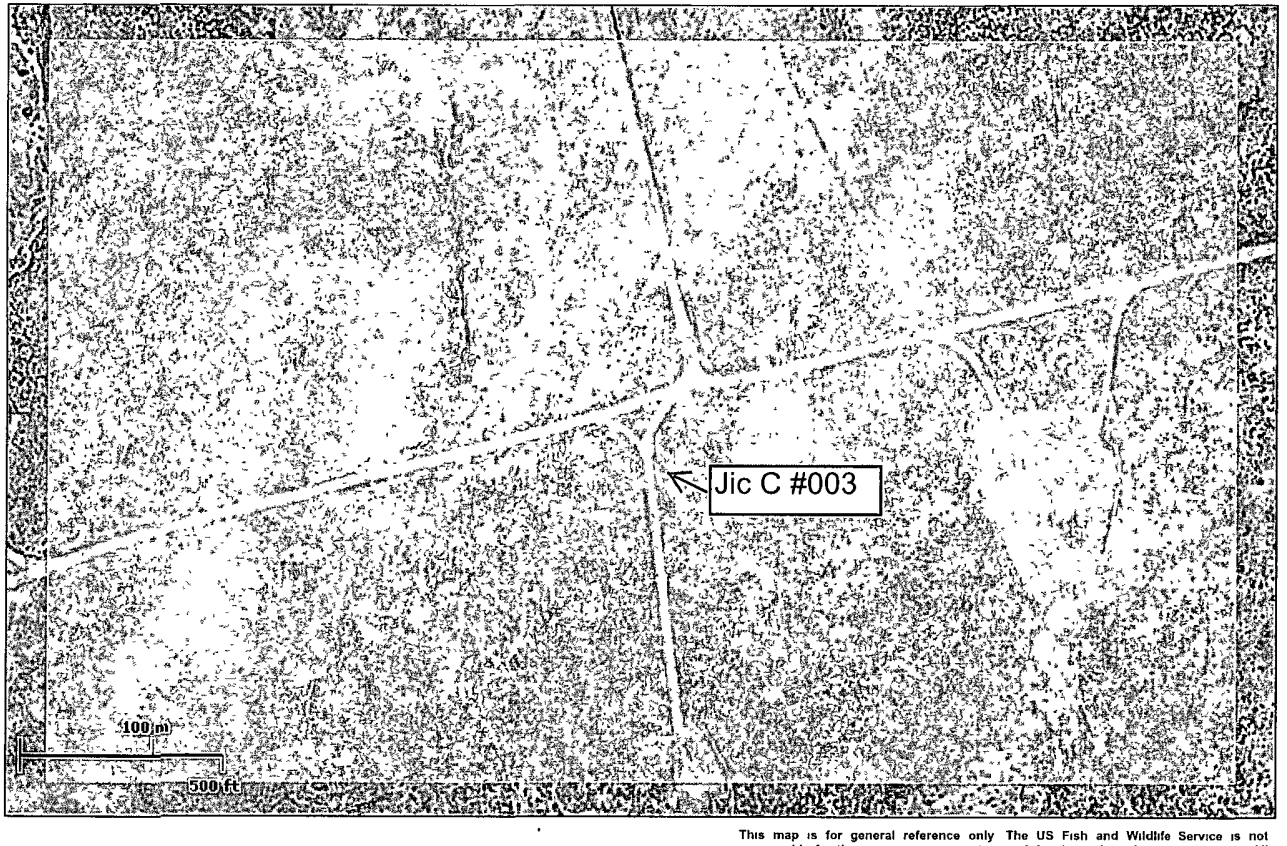
API 30-039-08098

Appendix 05

U.S. Fish & Wildlife Wetland Identification Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Oct 25, 2010



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deetwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

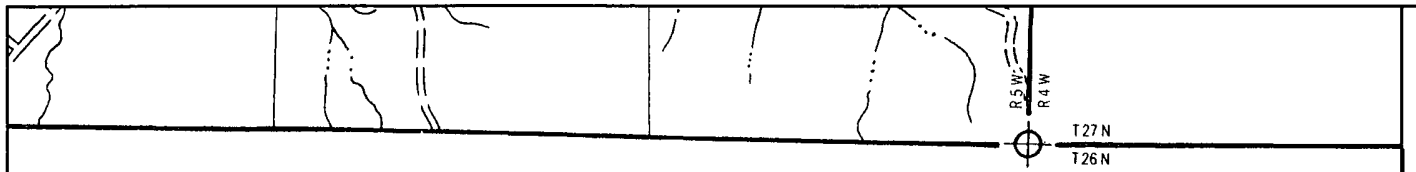
Status

- Digital
- Scan
- Non-Digital
- No Data

User Remarks:

Appendix 06

FEMA 100-year Floodplain Map



Jicarilla C Lease
Floodplain maps not available

Jicarilla Apache Indian Reservation

UNSTUDIED AREA

N

APPROXIMATE SCALE

2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

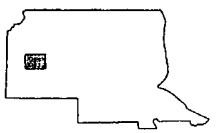
FLOOD INSURANCE RATE MAP

RIO ARRIBA COUNTY, NEW MEXICO

UNINCORPORATED AREAS

PANEL 550 OF 1325

(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

COMMUNITY-PANEL NUMBER

350049 0550 B

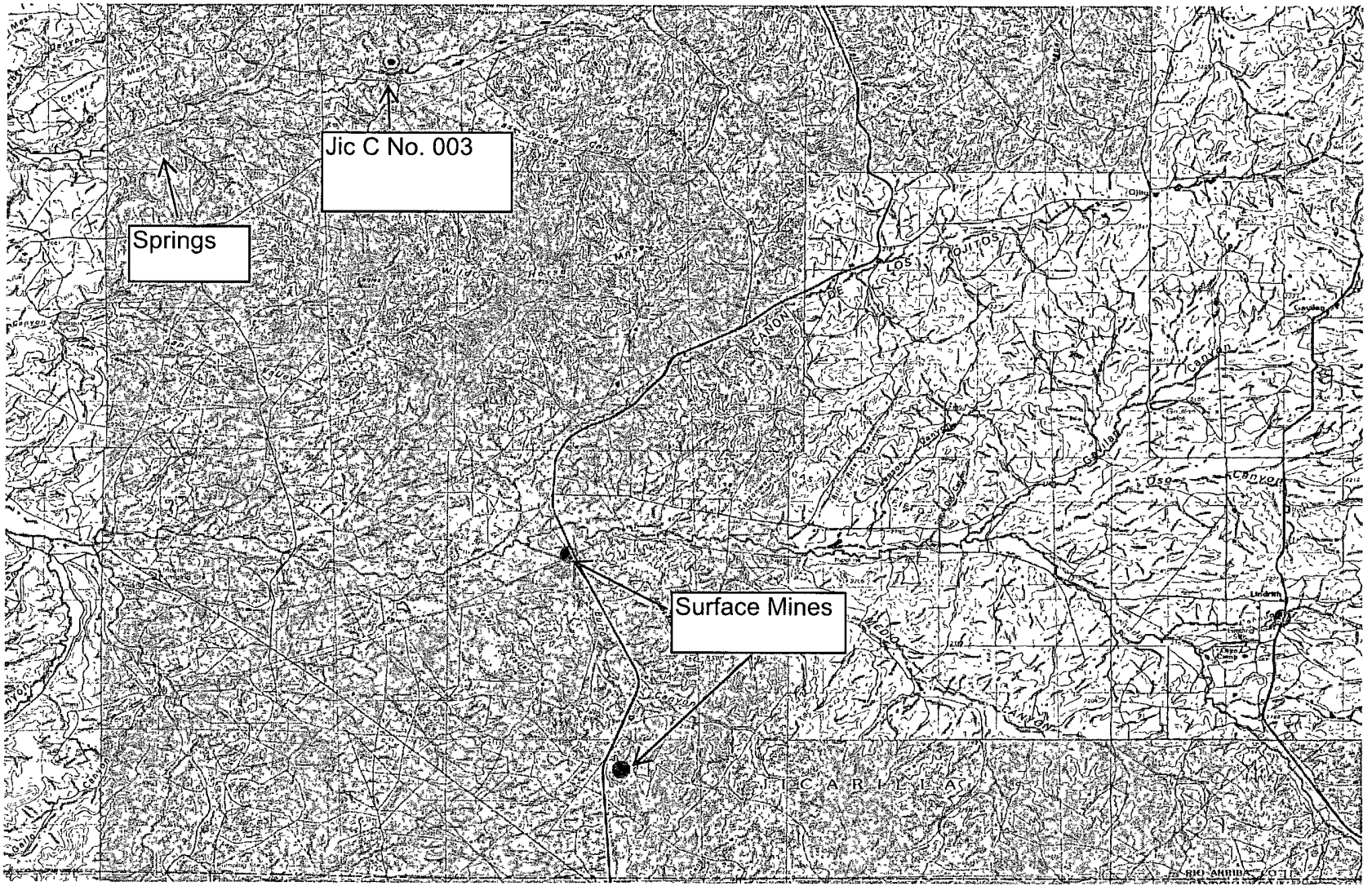
EFFECTIVE DATE:

JANUARY 5, 1989

Federal Emergency Management Agency

Appendix 07

Mines, Mills, & Quarires Map



0 2 4mi

N W E S

Petroleum Recovery Research Center	JICARILLA C No. 003 - Mines, Mills, Quarries	Figure: 07
	UL I, Sec. 23, 26N, 05W	Oct 07, 2010

API 30-039-08098

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Tenneco Oil Company

3. ADDRESS OF OPERATOR: P. O. Box 1714, Durango, Colorado 81301

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1650' FSL, 990' FEL

Unit I

5. LEASE DESIGNATION AND SERIAL NO: Jicarilla Cont. 108

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Jicarilla Dulce, N. M.

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Jicarilla "C"

9. WELL NO.: No. 3

10. FIELD AND POOL, OR WILDCAT: Undesig. Gallup & Basin Dakota

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 23, T26N, R5W

12. COUNTY OR PARISH: Rio Arriba

13. STATE: New Mexico

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 6574 GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☒	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)	☐						

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Spud 6/11/66 drill to 330'. Ran 8 jts. 20# and 24# J-55 ST&C casing set at 330' with 150 sx cement. Cement circulated. WOC. Drilled cement and drilled to T.D. 7600' on 6/26/66. Logged, ran 233 jts. 5-1/2" 14# and 15.5# casing set at 7580'. Cemented first stage with 335 sx, second stage with 90 sx, and third stage with 330 sacks. Stage collars set at 5465' and 3176'. Cement circulated. WOC. Released rig 6/27/66. Waiting on completion rig.

RECEIVED
JUL 12 1966
OIL CON. COM.
DIST. 3

RECEIVED
JUL 11 1966
U. S. GEOLOGICAL SURVEY
FARMINGTON, N. M.

18. I hereby certify that the foregoing is true and correct

SIGNED Original Signed By HAROLD C. NICHOLS TITLE Senior Production Clerk DATE 7/7/66

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Distribution:
5 - USGS, Farmington
1 - Continental, Durango
1 - Atlantic, Farmington
1 - TOC File

*See Instructions on Reverse Side

Appendix 08

C-203 Location Plat
Site Physical Inspection Sheet

ENERVEST OPERATING LLC

Below Grade Tank
Observed Sitting Requirements

Lease Name & Well Number C-3 NEW LOC

API No. 30-039-08098

Observed by LEE GARDNER

Date Observed 4/24/10

Latitude 36.469657 EL 6571

Longitude 107.322554

MEASURED FROM THE BELOW-GRADE TANK:	Yes	No	If not within limits, explain:
Continiously flowing water course > 300 ft	X		
Significant Watercourse, lakebed, sinkhole or playa lake > 200 feet	X		
Permanent Residence > 200 feet	X		
School > 200 feet	X		
Hospital > 200'	X		
Institution or Church > 200'	X		
Private, domestic fresh water well or spring > 500 feet	X		
Any other fresh water well or spring > 1000 feet	X		
Within incorporated municipal boundary of defined municipal fresh water field		X	
Wetland area > 500 feet	X		
Overlying a subsurface mine		X	

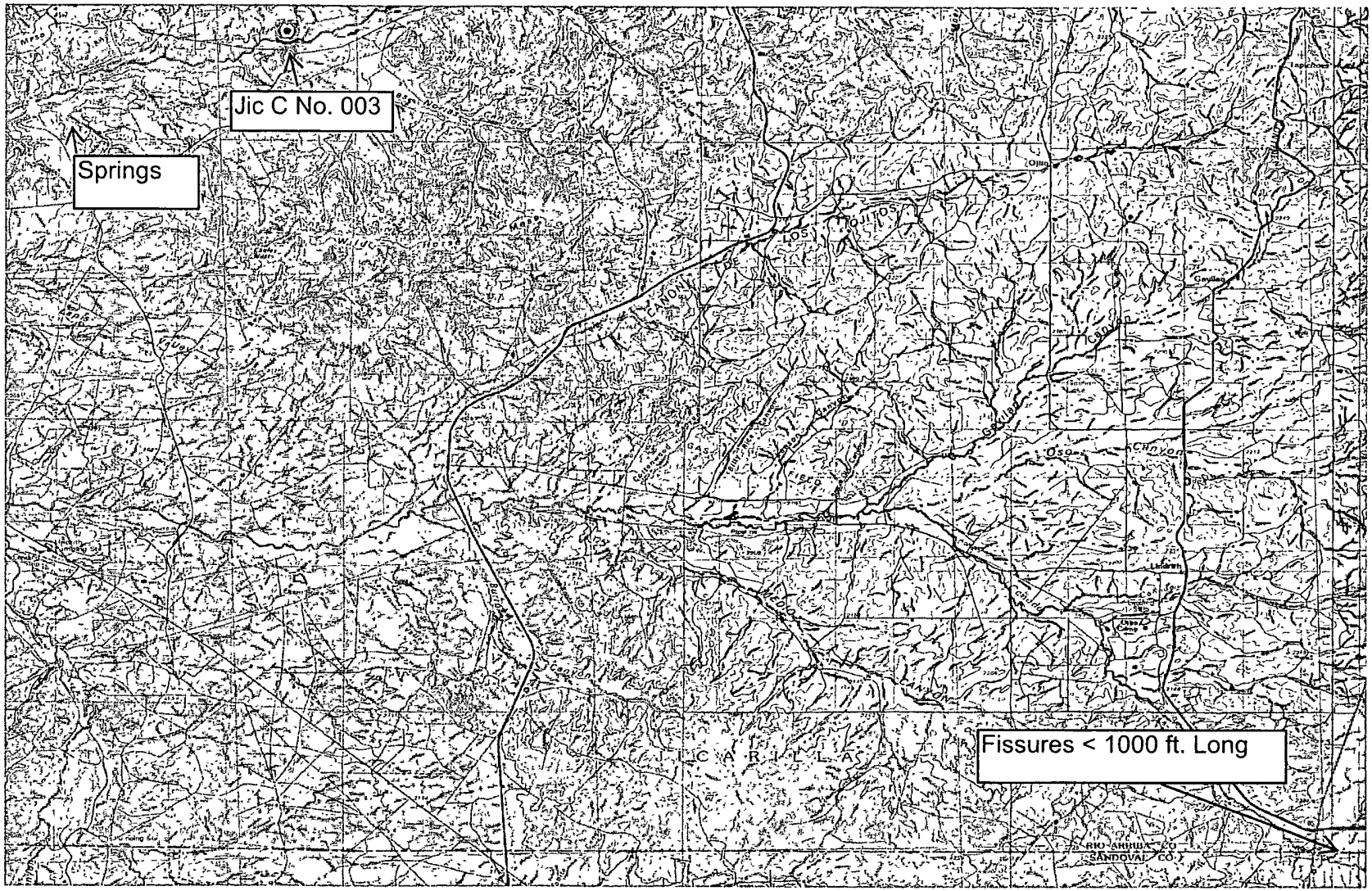
Distance to watercourse or dry wash should be to nearest edge

Please include distance & direction to all waterwells and/or wetland areas

Each Below-Grade Tank needing to be permitted, needs a visual inspection of the above Criteria as per Rule 19.15.17.10

Appendix 09

Karst Map



Petroleum Recovery Research Center	JICARILLA C No. 003 - Karst Area	Figure: 09
	UL I, Sec. 23, 26N, 05W	Oct 07, 2010

API 30-039-08098

REFERENCES

Wetland Map:
U. S. Fish and Wildlife Service
National Wetlands Inventory
Wetlands Mapper
www.fws/gov/wetlands/data/mapper

Floodplains map:
Federal Emergency Management Agency
National Flood Insurance Program
FIRM (Flood Insurance Rate Map)
Map Service Center
http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1

Depth to Ground Water: Individual water well documentation.
State of New Mexico
Office of the State Engineer
New Mexico Water Rights Reporting System
http://www.ose.state.nm.us/waters_db_index.html

Subsurface Mines:
EMNRD
Mining & Minerals Division
Mines, Mills & Quarries Commodity Group
http://www.emnrd.state.nm.us/MMD/index.htm

Regional Hydrogeology:
Stone et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico; Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p.

Base Maps:
Petroleum Recovery Research Center
PRRC PitRule Web Mapping Portal
USGS Topo
TerraServer – US
www.pitrule.source3.com