Proposed Rule 17 Closing

New Mexico Industry Committee

A Consortium of Operating Companies

December 10, 2007

Overview

- Is there a Need for Proposed Rule 17?
- Does the Proposed Rule Address the Need?
- At What Cost?
- Does the Industry Committee Proposal Address the Need as well or Better?
- Recommendation to the Commission

Is there a Need for Proposed Rule 17?

- The Division argues that revising recently adopted Rule 50 is critical because:
  - Pits/below-grade tanks (BGTs) are not operated correctly
  - Pits/BGTs are not closed correctly
  - Pits/BGTs will threaten groundwater
  - Pits/BGTs will threaten human health and the environment

Are these allegations true?

- Pits, continued
  - Almost all (490 of 500) pits known or suspected of groundwater contamination are permanent or production pits.
  - Industry Committee supports proposed Rule 17 as to permanent pits

Are these allegations true?

- Pits
  - Division testified that there have been 80-100,000 pits in New Mexico.
  - Division identified 400-500 "pits" that have caused groundwater impact
    - Mr. Roe testified that some of these may not be pits
  - Assuming all 500 incidents by Division are correct, 0.5% of pits have caused known or suspected problems.

Are these allegations true?

- Temporary Pits
  - Industry Committee suggests that Division has not made case for temporary drilling pits:
    - At most 10 out of 400-500 known or suspected incidents (2-2.5%)
    - At most 10 out of 80-100,000 pits (0.0125%)
  - None of the 10 "known" or "suspected" cases involve contamination post-closure

Are these allegations true?

- Temporary Pits, continued
  - What is basis for Division proposal?
    - Some operational issues
    - No observed closure issues
    - Operator cleanup at closure under Rule 50
    - Historic revegetation issues
    - Fear of unknown (our model says there will be a problem, so it must be true…)

Are these allegations true?

- Temporary Pits, continued
  - Do these bases warrant changing the regulation?
    - Operational and closure issues largely addressed by existing Rule 50
    - Operational issues may evince lack of enforcement
    - No evidence that Rule 50 closure not working—indeed field inspectors said working well
    - Model—uncertain basis. Given age of oil and gas operation in New Mexico, effects should have been seen from at least some pits—but none shown

Proposed Rule Address the Need?

- Permanent Pits
  - No substantive disagreement from Industry Committee with proposed Rule 17
- Temporary Pits—Operating Issues
  - Industry Committee supports majority of Task Force consensus recommendations

Proposed Rule Address?

- Temporary Pits—Operating Issues
  - Industry does not support following aspects of proposed rule's operating provisions:
    - Multiple permits for a single APD
    - Storm water coverage
    - Siting limit of 200' from "watercourse"
    - 20-mil liner
    - Level measuring device
    - Proposed short time for emptying pit after rig release

What Does Industry Prefer

- Temporary Pits—Operating Issues
  - Siting: Limit should be 100' from a "significant" water course: For purposes of 19.15.17.10 only, a significant watercourse is any watercourse with defined bed and bank either named on a USGS 7.5 minute quadrangle map or a first order tributary to such a watercourse, if that watercourse drains an area of at least five square miles;
    - Together, this and flood plain limits address environmental issues of overflood, meander and enhanced leaching
  - 12-mil string-reinforced liner versus 20-mil due to cost and installation issues. NW inspector testified to no problems; SE inspector said releases, when occurring, are cleaned up.

What Does Industry Prefer?

- Level measuring device
  - Do not believe this is practical and risks suction into system
- Empty pit within *x* days of rig release
  - Industry agrees this is important, but prefers 45-days due to difficulty in arranging removal and greatly increased costs when time line is tightly constrained
  - No distinction necessary or appropriate between drilling and workover pits

Proposed Rule Address?

- Temporary Pits—Closure
  - Industry strongly disagrees—no need shown
  - No record evidence of non-chloride groundwater contamination from drilling pits; therefore, no warrant for BTEX, TPH and 3103 constituents
    - Modeling demonstration alone not compelling—as Hansen and Stephens both agreed, "typical" conservative case. Contamination should already have been seen.
    - Thomas testimony that constituents are not type and level to raise human health or environmental concern
    - Stabilized material not addressed by NMED SSLs for migration to groundwater—Thomas and von Gonten both agreed on this point

Proposed Rule Address?

- Temporary Pits—Closure Issues
  - Division proposal merely transfers chloride issues to landfills
  - Elevates concentrations and reserves issue for future at levels of greater concern
  - Both Division and Industry Committee proposals address revegetation
    - Industry STRONGLY DISAGREES with Division position that landowners have ABSOLUTE RIGHT to control surface. Division's interpretation constitutes a *taking* of Industry Committee members' property (Bill Carr addresses)

What Does Industry Prefer?

- Industry prefers three part solution to closure:
  - Dig and haul if < 50' to groundwater
  - Closure in place if > 50' to groundwater AND
    - Benzene < 0.2 mg/kg on stabilized material;
    - BTEX < 100 mg/kg total on stabilized material;
    - Chloride < 5000 mg/kg on stabilized material;
    - Maintain liner and 4' cover, including topsoil/revegetation.
  - Deep trench burial if > 50' to groundwater AND
    - Benzene < 10 mg/kg on stabilized material;
    - BTEX < 100 mg/kg total on stabilized material;
    - Chloride < 3500 mg/l using SPLP on stabilized material;
    - New liner, cover, and 4' cover, including topsoil/revegetation.

Industry Pit Proposal Is Superior

- Groundwater
  - Closure in place:
    - Groundwater protected by closure standards
      - 5000 mg/kg chloride protective of GW and human health (<5000 mg/l per OCD) even if compromised liner
      - Benzene, BTEX, GRO/DRO protective of GW and human health even if compromised liner
      - Other constituents not present at levels of health or GW concern
    - Surface protected by 4' cover (1' topsoil)
      - Dr. Buchanan: always protective based on research and experience
      - "Tight" clays not found in NM areas where pits allowed and easily worked around
      - Native species easily established and tolerant of small movement (Buchanan, 0-12") up into soil column. Native and palatable.

Industry Pit Proposal Is Superior

- Groundwater
  - Deep Trench Burial:
    - Groundwater protected by closure standards
      - 3500 mg/l chloride protective of GW and human health (<5000 mg/l per OCD) even if compromised liner over time
      - Benzene, BTEX, GRO/DRO protective of GW and human health even if compromised liner over time
      - Other constituents not present at levels of health or GW concern
    - Surface protected by 4' cover (1' topsoil)
      - Dr. Buchanan: always protective based on research and experience
      - "Tight" clays not found in NM areas where pits allowed and easily worked around
      - Native species easily established and tolerant of small movement (Buchanan, 0-12") up into soil column. Native and palatable.

Industry Proposal Is Superior

- Groundwater modeling is superior
  - Tied to actual New Mexico conditions
  - Uses a representative range of "reasonable worse case" soil types—without resorting to impossible combinations
  - Addresses limited size and mass of pits
  - Considers cumulative impacts

Industry Proposal Is Superior

- Revegetation
  - Industry Committee brings not only theoretical understanding but 35+ years practical experience in reclamation in New Mexico
    - Explained likely causes of past failures
    - Explained how Industry Committee proposal addresses them
  - Industry Committee provides New Mexico plant and vegetation specific analysis—NMCCA&W uses "crop" standards of little relevance to NM landscape
  - NMCCA&W model assumes away dynamism of natural system—Industry Committee addresses

Industry Pit Proposal Is Superior

- Industry Proposal Minimizes Adverse Consequences More Successfully:
  - Less truck traffic, emissions and injuries on a per unit of production basis
  - Avoids landfill "hyper-concentration" that creates high concentration, extreme duration plumes that will require treatment after post-closure care ends
  - If liner fails, small, dispersed levels will cleanup selves after a shorter period even without regulatory intervention.
  - Small pits "fail safe" in that liner holes earlier will further disperse concentrations, limiting both peaks and cumulative impact

Below-Grade Tanks (BGTs): Are these allegations true?

- Below-Grade Tanks
  - Division has offered not one piece of evidence that existing rules for BGTs are inadequate; that any releases have occurred; that any threat to human health, environment or groundwater has or will occur.
  - In absence of any evidence, how does Division justify sweeping changes that will undo $125 million plus industry investment in protective technology?

BGTs: Does Proposal Address?

- Division proposal addresses no apparent problem (not in Bureau presentation; not in field presentations).
- Division proposal undoes extensive work by a number of operators in consultation with Division staff. ConocoPhillips alone has spent $125 million on Rule 50 for BGTs.
- Division BGT proposal is poorly drafted and should be remanded or replaced entirely

BGTs: Industry Committee Proposal

- Keep definition the same as existing
- Rewrite provisions to provide for clear, concise requirements
  - Industry Committee has provided draft that eliminates repetitive reference to "secondary containment" and "leak detection" which makes it unclear what actual requirements are

Sub-Grade Tanks: Industry proposal

- Industry Committee recommends creation of new category of "sub-grade tanks" to reflect Task Force consensus and best practice
  - Sub-grade tank shall mean a vessel intended for the storage of produced water and incidental hydrocarbons, excluding sumps and pressurized pipeline drip traps, where a portion of the tank's sidewalls are below the ground surface, but are visible. For tanks installed after [rule effective date], the bottom of the tank must also be either visible for inspection or an impermeable deflection liner must be placed under the tank bottom to allow visual inspection of the liner edge for leaks from the tank bottom.
  - Registration ONLY so locations are known
  - Estimated 10,000+ SGTs—burden staff/industry for no reason. Tracking, leak detection, spill reporting/response provide protection.

Summary: Industry Committee

- Permits
  - Single permit for APD; registration only for SGTs
- Application
  - Hydrologic report for temporary pits and BGTs only as needed to satisfy siting requirements
- Siting Requirements
  - Limit "watercourse" for siting purposes as follows:
    - **For purposes of 19.15.17.10 only, a significant watercourse is any watercourse with defined bed and bank either named on a USGS 7.5 minute quadrangle map or a first order tributary to such a watercourse, if that watercourse drains an area of at least five square miles**;
  - Broader definition forecloses too many locations after landowner concerns addressed.

Summary: Industry Committee

- Design/Operating Standards
  - BGT standard should be revised as proposed in Industry Committee redline for clarity
  - SGT should NOT be regulated as BGTs because represent "best practice" and significant commitment
  - Pits: 20-mil liner not warranted by testimony; 12-mil reinforced adequate and easier to use and is protective, even in SE
  - Industry Committee generally supports other Task Force consensus items

Summary: Industry Committee

- Closure
  - Drastic remedy of ban on in-place closure not warranted by evidence presented to Commission
    - No contamination post-closure known or suspected
    - Modeling shows not necessary for protection
    - Salt surfacing concerns not borne out by evidence if pits closed per modern practice
  - Closure in place fully protective at 5000 mg/kg and limits proposed by Industry Committee for closure-in-place for both direct exposure and groundwater
  - Deep Trench Burial fully protective at 3500 mg/l and limits proposed by Industry Committee for both direct exposure and groundwater
  - Capping with 4' allows successful revegetation and prevents salt surfacing

Conclusion

- Principal benefit of Division proposal—consolidation in landfill and reduction in number of units—comes at a high price: high concentration, long duration plume in future that will require addressing long after post-closure care
- Industry Committee proposal achieves same "goods" as Division proposal, but without following costs:
  - $$ for unnecessary hauling and truck traffic and replacement of perfectly good SGTs with revised BGTs
  - Emissions increases from incremental truck traffic per unit of production
  - Injuries and fatalities increases from incremental truck traffic per unit of production
- Industry Committee dispersed pits avoids most cumulative impact and, compared to landfill, more quickly self-corrects

Conclusion

- The Division's preference for a "class-based" prescriptive system of waste regulation similar to RCRA Subpart C **does not justify** the costs in:
  - Jobs
  - Lives
  - Injuries
  - Property
  - Emissions/health
  - Resources to industry
  - Revenues to the State of New Mexico
- When it delivers **no health benefit, little benefit to the surface** and **multiple long-lasting high concentration plumes** instead of a greater number of short-duration, low concentration plumes basically meeting WQCC standards.