

THE APPLICATION OF K-3 RESOURCES, L.P. TO MAINTAIN AND USE A PIT FOR THE DISPOSAL OF WATER-BASE DRILLING FLUIDS AT ITS JIM WELLS FACILITY, JIM WELLS COUNTY, TEXAS

HEARD BY: Donna K. Chandler, Technical Examiner
Mark J. Helmueller, Hearings Examiner

PROCEDURAL HISTORY OF CASE:

Application filed:	March 6, 2006
Protest received:	March 9, 2006
Request for hearing:	April 21, 2006
Notice of Hearing:	August 30, 2006
Hearing Held:	September 20, 2006
Transcript received:	October 11, 2006
PFD Issued:	November 3, 2006

APPEARANCES:

For Applicant:

Lloyd Muennink, Attorney
Karlis Ercums
Charles Pehl
Roland Baker
Richard Gerlock

Protestants:

Armando Cavada, Attorney	Rene Joslin
Elva Cavada	Noemi Joslin
Johnny Vela	Richard Gonzales
Emilia Vela	Connie Vasquez
Gary Brown	Norma Jean Garza
Danin Valenzuela	

Observer:

Nelson Salinas
State Rep. Gonzalez Toureilles

EXAMINER'S REPORT AND PROPOSAL FOR DECISION

STATEMENT OF THE CASE

K-3 Resources, L.P. ("K-3") requests authority to operate a water-base drilling fluid disposal pit at its Jim Wells Facility in Jim Wells County. The application was protested by several members of the community of Tecolote who live in close proximity to the facility. Many others filed letters of objection to the application.

DISCUSSION OF THE EVIDENCE

Matters Officially Noticed

The examiners have officially noticed the Proposal For Decision and Final Orders in: Oil & Gas Docket No. 04-0232348: *Application of Waste Facilities, Inc. for a Permit for a Treated Oil and Gas Waste Pit, WFI Cherry Pit No. 1, Jim Wells County, Texas*; Oil & Gas Docket No. 04-0229954: *Application of BES Environmental Services, Inc. to Consider a Commercial Drilling Fluids Disposal Pit, to be known as the BES Pit No. 1, Duval County, Texas*; and, Oil & Gas Docket No. 04-0228991: *Application of Waste Facilities, Inc. to Maintain and Use a Pit for the Disposal of Water-Based Drilling Fluids on the Rancho Neuvo Disposal Pit Lease, Duval County, Texas*; and Oil and Gas Docket No. 04-0213784: *The Application of Waste Facilities, Inc., to operate a Disposal Pit at the Rancho Nuevo Disposal Facility, Duval County Texas*. All of these dockets involved protested cases where the Commission granted permits for disposal operations in caliche pits similar to those requested by K-3 in this docket.

In addition, the examiners have officially noticed Commission records of similar current disposal pit permits. A table summarizing this information prepared by the Commission's Environmental Services Section of the Oil and Gas Division is attached as Attachment A to this proposal for decision.

Applicant's Evidence

K-3 owns a 50 acre site known as the Jim Wells Facility. In the past year, K-3 has moved its offices from Alice, Texas, to this 50 acre site, approximately eight miles north of Alice. At this facility, K-3 currently operates a water-base drilling mud manufacturing business. There is an existing caliche pit on the property which was excavated many years ago. (See attachment B). The approximate dimensions of the pit are 940 feet by 180 feet. The pit has a maximum depth of about 20 feet, but is shallower on the edges. The total capacity of the pit is approximately 1.5 million barrels. K-3 plans to divide the pit into four sections, using only one section at a time for disposal.

Base on a soil survey map of Jim Wells County, the first six feet of surface soil in the area of this facility is Parrita sandy clay loam. Beneath this soil, there is approximately 60 feet of caliche, 20 feet of which has been excavated in the pit. The soil make-up is confirmed by the recently drilled water well on K-3's property, which was drilled to a depth of 560 feet. The drilling report for this well indicates caliche to 60 feet, red clay from 60-180 feet, sandy shale from 180-200 feet, red clay from 200-240 feet, sandy shale from 240-340 feet, red clay from 340-440 feet, sandy shale from 440-520 feet and red sand from 520-560 feet. This water well is completed from 520-560 feet.

A review of records from the Texas Commission on Environmental Quality and the Texas Water Development Board indicates 13 other water wells within a one mile radius of the pit. The records indicate total depths of the wells range from 240 feet to 630 feet. The shallowest completion interval in any of the 13 water wells is 200 feet. These records also indicate that the only soil below the 60 feet of caliche is clay and/or shale down to a minimum depth of 100 feet. The information from these water well records confirm that there are at least 40 feet of clay and/or shale between the base of the caliche and any sand interval in any water well. There is substantially more clay and/or shale (at least 100 feet) above the completion depth of any water well in the area.

Groundwater flow in this area is generally to the southeast, away from property owned by protestants. The elevation drops about 10 feet from the northwest to southeast corners of the pit. The site is not within the 100 year flood plain. The average annual precipitation in the area is 23.9 inches and the annual evaporation rate is 50.5 inches. K-3 believes that this excessive evaporation rate will cause liquids in the disposal fluids to evaporate rapidly, leaving only a layer of bentonite and barite in the pit, which will form a natural barrier to percolation. The aquifers present at 200-250 feet are recharged from Waller County, several hundred miles away. The aquifer is not recharged from the surface at the site of this facility.

Only water-base drilling fluids transported by K-3 and BMI, K-3's trucking company, will be deposited into the pit. Each load brought to the facility will have a manifest. K-3 will keep records indicating the name of the generator, source of the waste, name of the carrier, date the waste was received, volume of waste received and chloride content of each load. No fluid will be accepted if the chloride concentration is 3,000 mg/l or more. No other oil field fluids or oil and gas wastes will be stored or disposed of in the pit.

When the pit is full to within 2 feet of the surface, the pit will be closed by leveling the berms, covering the pit with topsoil and contouring it to the natural grade. The Environmental Services section of the Commission estimates that the closure cost of the pit is \$255,453. This compares to K-3's estimate of \$201,864. K-3 is agreeable to providing financial security in the amount of \$255,453 before the pit is put into operation.

Protestants' Position

The residents of the community of Tecolote are opposed to the application. Several of the residents have property directly adjacent to the K-3 facility; other residents live nearby. They are concerned that the fluids placed into the pit may contain hazardous chemicals which would adversely affect the health of the residents, and possibly contaminate their water wells. They also expressed concerns that the pit could overflow. Additionally, the residents are concerned that there will not be adequate security to keep children out, and that there will be offensive odors from the facility.

Across the highway from K-3's facility is a disposal pit which has been operated by MoVac. Some of the residents observed what they perceived to be illegal dumping into MoVac's pit around 1995. They believe that the operations at the MoVac pit have caused

water wells to be contaminated, resulting in the death of animals that drank water from contaminated wells.

EXAMINERS' OPINION AND DISCUSSION

The examiners recommend that the application be approved. While the protestants have raised several concerns regarding the proposed operations, the proposed permit has stringent requirements, consistent with similar permits issued by the Commission, which address the concerns of protestants. Accordingly, the examiners believe that operation of the proposed disposal pit consistent with the permit requirements will not pose a threat of contamination of groundwater resources.

The protestants concerns include the nature of the disposed fluids, potential migration of fluids and chemicals from the pit which would contaminate their water wells, and possible access to the area by children. Protestants point to problems with the nearby MoVac facility as the primary basis for their concerns regarding K-3's proposed operations.

Limitations on Permitted Waste at the Facility

The protestants are concerned that unsuitable, hazardous wastes will be brought into the facility. This concern is addressed by the permit limitations on the type of waste which can be placed in the pit. Under the terms of the permit, only water based drilling fluids and associated cuttings with a chloride concentration of 3,000 mg/l or less can be disposed of in the pit. The fluids placed in the pit cannot be contaminated with hydrocarbons. The permit further requires K-3 keep to records regarding contents of each load of waste. The load records must be filed quarterly with Environmental Services in Austin and with the Corpus Christi District Office.

Additionally, K-3 intends to limit its use of the permit to dispose of spent drilling muds it provides for drilling operations in the area. Access to the facility will be limited to K-3's trucks and personnel. These further limitations will help ensure that no unsuitable or hazardous wastes will be brought in the facility. Accordingly, the examiners believe the permit conditions adequately address the concerns raised by protestants regarding the potential disposal of unsuitable or hazardous waste at the facility.

Groundwater Contamination

Protestants also expressed concerns about contamination of ground water, including potential overflow from the pit. Once again, the permit restrictions, supported by the geological evidence, show that groundwater and surface water will not be contaminated by the proposed operation of the pit.

Review of the water well records for the area, including the most recent water well drilled by K-3 to support its manufacturing of fresh water based drilling fluids, establishes that groundwater in the area will not be contaminated by the proposed operations. The well records show 40 feet of slowly permeable caliche and at least 100 feet of impermeable clay between the bottom of the pit and the shallowest producing sand in any water well in the area.

Additionally, groundwater in the area flows from northwest to southeast. The water wells of residents and property owners are to the west of the property. Because the groundwater flow is in the opposite direction from the location of the residential area in relation to the proposed facility, there is no threat that any disposed fluids would contaminate the water wells relied on by the residents in the community.

Additionally, the nature of water-base drilling fluids is such that the bentonite and/or barite clays in the drilling fluid will form a natural seal against the walls of the caliche pit as the water evaporates. In this area, the evaporation rate is more than twice the annual rainfall rate. Water will quickly evaporate effectively creating an impermeable clay liner for the pit which will only thicken as more material is deposited.

With respect to the concerns of run-off fluids from the facility leading to surface or groundwater contamination, the examiners note the permit requires construction of dikes around the pit and installation of alarms to indicate when the fluids in the pit have reached the maximum level of two feet below ground level. Additionally, because the residential area is situated approximately 10 feet higher than the surface level at the facility, there is no danger that any run-off fluids would flow uphill to contaminate the surface water and wells in the residential area.

As a final additional safeguard to prevent groundwater contamination, K-3 will be required to drill a test borehole in the southeast corner of the pit (the most downdip portion) to a depth of 100 feet. If water is recovered in the borehole within 24 hours, then K-3 must drill monitor wells around the facility to the shallowest groundwater zone to monitor the quality of the groundwater. The location of the monitor wells must be approved by Environmental Services prior to drilling the wells. The wells must then be monitored quarterly for various parameters to insure that the operations of the pit are not adversely affecting groundwater.

Facility Access Issues

Finally, Protestants are concerned that children might get injured at the facility. The permit requires K-3 fence the entire facility and maintain a lockable gate to prevent unauthorized access. Additionally, the facility will be manned 24 hours a day.

Additional Considerations

In addition to the permit restrictions and the geologic evidence provided, the examiners further observe K-3 must provide financial assurance in the amount of \$255,453 before operations of the pit can commence. This amount is the Commission's estimate of the cost to close the pit.

The permit will be valid for five years. If the pit has not reached disposal capacity, an application to renew the permit must be filed.

Based on the foregoing, it is the examiner's recommendation to grant the requested permit as the permit restrictions, geologic evidence and K-3's proposed operation of the

facility indicate that disposal of fresh water drilling muds in the pit will not result in the contamination of groundwater resources in the area.

FINDINGS OF FACT

1. Notice of the application was provided to all owners of property adjacent to the proposed disposal pit on April 26, 2006. Notice of the application was published on April 26 and May 3, 2006 in the *Alice Echo News-Journal*, a newspaper of general circulation in Jim Wells County.
2. Notice of this hearing was given to all person entitled to notice at least ten days prior to the date of hearing.
3. The proposed water- base drilling fluid disposal pit is an existing caliche pit which has been excavated to a maximum depth of 20 feet. The pit is on a 50 acre site owned by K-3 Resources, L.P.
4. K-3 currently operates a water-base drilling mud manufacturing business on the 50 acre site.
5. Use of subject pit as a fresh water-base drilling fluid disposal pit will not harm fresh water resources.
 - a. The drilling fluid components will form a natural seal against the walls of the caliche pit as water evaporates.
 - b. A clay layer with a minimum thickness of 40 feet underlies the remaining 40 feet of caliche in the area of the pit.
 - c. The minimum depth at which a water well in the area is completed is 200 feet.
 - d. Ground water monitoring wells around the facility will be required if water is found in a borehole to be drilled to 100 feet in the southeast corner of the pit. Analysis of water from the monitoring wells, if required, will insure that useable quality water is not being adversely affected by disposal operations at the K-3 facility.
6. The capacity of the pit is approximately 1.5 million barrels.
7. Prior to commencing disposal operations, the entire facility must be enclosed by a fence with lockable gate.
8. Prior to commencing disposal operations, K-3 Resources, L.P. must provide financial assurance in the amount of \$255,453.
9. The disposal site is not within the 100 year flood plain.

10. The average annual precipitation in the area is 23.9 inches and the annual evaporation rate is 50.5 inches.
11. K-3 Resources, L.P. will be required to keep records for each load of fluid delivered to the facility, indicating the name of the generator, source of the waste, name of the carrier, date the waste was received, volume of waste received and chloride content of each load. No fluid may be accepted if the chloride concentration is 3,000 mg/l or more. No other oil field fluids or oil and gas wastes may be stored or disposed of in the pit.

CONCLUSIONS OF LAW

1. Proper notice was issued as required by all applicable codes and regulatory statutes.
2. All things have occurred and been accomplished to give the Commission jurisdiction in this matter.
3. K-3 Resources, L.P.'s application to maintain and use a pit for disposal of water-base drilling fluids complies with Statewide Rule 8 and will not cause pollution of useable quality water.

EXAMINER'S RECOMMENDATION

The examiners recommend that K-3's application to operate the disposal pit be approved as set out in the attached Final Order.

Respectfully submitted,

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Technical Examiner

Mark J. Helmueller
Hearings Examiner