

OIL & GAS DOCKET NO. 04-0246645

**APPLICATION OF BETTY EYHORN TO CONSIDER APPROVAL OF A QUALIFIED
SUBDIVISION PURSUANT TO STATEWIDE RULE 76 FOR THE EYHORN
SUBDIVISION NO. 1, HIDALGO COUNTY, TEXAS**

OIL & GAS DOCKET NO. 04-0246646

**APPLICATION OF BETTY EYHORN TO CONSIDER APPROVAL OF A QUALIFIED
SUBDIVISION PURSUANT TO STATEWIDE RULE 76 FOR THE EYHORN
SUBDIVISION NO. 2, HIDALGO COUNTY, TEXAS**

AMENDED
PROPOSAL FOR DECISION

APPEARANCES:

FOR APPLICANT BETTY EYHORN:

Jamie Nielson
Greg Cloud
Rocky Stevens
Louis H. Jones, Jr.

FOR PROTESTANT SWEPI, L.P.:

Brian Sullivan
Sandra Buch
Terry Payne
Lance Johnson
James A. Miller
Brian Windham
Mark Stone

FOR INTERESTED PARTIES:

Hollis Rutledge

Peter Ellis

INTERESTED PARTIES:

Hidalgo County

Boston Texas Land and Trust

PROCEDURAL HISTORY

DATE APPLICATIONS FILED:	March 8, 2006
DATE OF NOTICES OF HEARING:	March 22, 2006
DATES INITIALLY HEARD:	October 11-12, 2006 January 21 and February 22, 2007
EXAMINERS ASSIGNED:	Marshall Enquist, Hearings Examiner James M. Doherty, Hearings Examiner Donna Chandler, Technical Examiner
BRIEFING SCHEDULE CLOSED:	April 23, 2007
DATE INITIAL PFD CIRCULATED:	November 1, 2007
DATE OF REOPENED HEARING:	January 11, 2008
DATE AMENDED PFD CIRCULATED:	January 22, 2008

STATEMENT OF THE CASE

These are the applications of Betty Eyhorn (“Eyhorn”) pursuant to Statewide Rule 76 for approval of two 640-acre qualified subdivisions in Hidalgo County, Texas, the Eyhorn Subdivision No. 1 and Eyhorn Subdivision No. 2. A plat of proposed Eyhorn Subdivision No. 1 is attached to this Proposal for Decision as Appendix 1, and a plat of proposed Eyhorn Subdivision No. 2 is attached as Appendix 2. Eyhorn is the current owner of the surface estate of the acreage included in the two proposed qualified subdivisions. The acreage in the two subdivisions is subject to an option to purchase contract between Eyhorn, as current owner, and Hidalgo County, as purchaser. If the proposed qualified subdivisions are approved, Hidalgo County proposes to use the acreage in the subdivisions as a landfill.

The proposed subdivisions are on the southern portion of the 10,829-acre Boston Texas Land and Trust Lease (“BTLT Lease”), of which SWEPI, L.P. (“SWEPI”) is the lessee, and SWEPI opposes the Eyhorn applications. An area map showing an outline of the BTLT Lease and the location of the proposed qualified subdivisions is attached to this Proposal for Decision as Appendix 3. Hidalgo County is an interested party supporting approval of the Eyhorn applications. Boston Texas Land and Trust is an interested party in that it is the lessor (to SWEPI as lessee) of the acreage covered by the proposed qualified subdivisions and opposes approval of the Eyhorn applications.

The Eyhorn applications were heard initially before Examiners Marshall Enquist and Donna Chandler on October 11-12, 2006, and January 21 and February 22, 2007. The record includes the four volume transcript containing 683 pages of testimony and 155 exhibits. Following the initial hearing, the parties filed written closing statements and reply briefs, and the briefing schedule closed on April 23, 2007. Also following the initial hearing, Examiner James M. Doherty was assigned to assist with review of the evidence and pleadings and preparation of a Proposal for Decision.

The initial Proposal for Decision in these dockets was served on November 1, 2007.

Thereafter, SWEPI filed exceptions, a motion to reopen, and a motion for oral argument and Eyhorn replied. In its motion to reopen, SWEPI asserted that after the close of the initial hearing, SWEPI drilled the BTLT Lease, Well No. 56 on the acreage covered by Eyhorn Subdivision No. 2 at a surface location outside the operations sites provided on the revised plat for Subdivision No. 2. SWEPI requested that the hearing be reopened to receive evidence as to this new well. Eyhorn replied to SWEPI's motion to reopen, attaching a revised plat for Eyhorn Subdivision No. 2 which provided an additional operations site around the location of the BTLT Lease, Well No. 56.

By letter ruling dated December 14, 2007, the examiners reopened the hearing for the limited purpose of receiving evidence, as to Oil & Gas Docket No. 04-0246646 only, directly pertaining to: (1) the Form W-1, Form W-1D, and associated plat filed to obtain a drilling permit, and the drilling permit, for SWEPI's BTLT Lease, Well No. 56; (2) the spud date and drilling date of BTLT Lease, Well No. 56; (3) the as-drilled location of the BTLT Lease, Well No. 56; and (4) the respects in which the revised plat of Eyhorn Subdivision No. 2 would need to be revised in order to provide an operations site, and any associated road and pipeline easements, for the BTLT Lease, Well No. 56.

A reopened hearing was convened on January 11, 2008 before examiners Enquist, Chandler, and Doherty. Counsel for Eyhorn and SWEPI appeared and presented a stipulation and affidavit relevant to the issues identified in the examiners' letter ruling dated December 14, 2007, reopening the hearing.

This Amended Proposal for Decision is issued to address the additional facts proved by the stipulation and affidavit received at the reopened hearing relative to the SWEPI BTLT Lease, Well No. 56 and the revised plat for Subdivision No. 2. The initial Proposal for Decision issued on November 1, 2007, is therefore withdrawn.

During the course of the initial hearing, the examiners reserved ruling on certain objections to the admissibility of evidence. All objections to the admissibility of evidence not specifically sustained at the hearings are hereby overruled and denied. With its reply to Eyhorn's closing statement, SWEPI requested adoption of certain proposed findings of fact and conclusions of law. To the extent the suggested findings and conclusions are not adopted in this Amended Proposal for Decision, this request is denied.

POSITIONS OF THE PARTIES

Eyhorn

Eyhorn contends that her applications conform to all requirements of Chapter 92 of the Texas Natural Resources Code and Statewide Rule 76. In particular, Eyhorn asserts that use of the oil and gas well operations sites and road and pipeline easements reserved on the plats of the proposed qualified subdivisions will enable SWEPI to fully and effectively exploit mineral resources of the subdivisions. Eyhorn believes that directional drilling from the reserved operations sites will enable SWEPI to reach all portions of the subdivisions and encounter all potential target formations,

including the Frio, Vicksburg and Eocene formations. While recognizing that directional drilling will involve some incremental cost, Eyhorn nonetheless asserts that SWEPI can realize an adequate return on investment in directionally drilled wells.

SWEPI

SWEPI contends that Eyhorn did not meet its burden to prove that the operations sites and other easements reserved on the plats of the proposed qualified subdivisions will allow mineral resources under the subdivisions to be fully and effectively exploited. SWEPI asserts that the reserved operations sites are not adequate, and the cost of directional drilling from the proposed operations sites would cause certain wells to be uneconomic. According to SWEPI, this would result in the waste of hydrocarbons. SWEPI believes that directional drilling to the Frio formation would be difficult due to the angle required to drill directionally to shallow depths and inability to drill stacked pay sections. SWEPI also contends that directional drilling would impose an additional risk of wellbore problems, and use of the subdivisions for a landfill would prevent SWEPI from obtaining new seismic data in the area covered by the subdivisions.

SWEPI further contends that the Eyhorn applications are legally deficient because; (1) the applications seek qualified subdivision approval for more than 640 acres; (2) the proposed qualified subdivisions have not been subdivided in a manner authorized by law; (3) Eyhorn and/or Hidalgo County cannot in good faith comply with the requirement that the surface owner begin construction of roads or utilities and sell a lot to a third party within three years of finality of a Commission order approving the subdivisions; and (4) a qualified subdivision for use as a landfill is not contemplated or authorized by Chapter 92 of the Texas Natural Resources Code.

Hidalgo County

On June 6, 2006, the Commissioner's Court of Hidalgo County adopted a resolution stating unconditional support of the Eyhorn applications. A statement of support made at the initial hearing on behalf of the County was to the effect that the County and surrounding area have grown significantly over the years, and the County has a need for the proposed landfill.

Boston Texas Land and Trust

Boston Texas Land and Trust made a statement at the initial hearing that it is the owner of the mineral fee of the acreage covered by the Eyhorn subdivisions (under lease to SWEPI), and any development of the surface of this acreage that would restrict or impede full development of mineral resources would be contrary to the interest of the Trust. The Trust requested denial of the Eyhorn applications.

DISCUSSION OF THE EVIDENCE

Eyhorn

Eyhorn is the owner of the surface estate of the 1,280 contiguous acres covered by the proposed qualified subdivisions. This is dry farm land in Hidalgo County acquired by Eyhorn in 2004. Hidalgo County has an option to purchase this acreage from Eyhorn, and if the proposed qualified subdivisions are approved, Hidalgo County's proposed use of the acreage is as a landfill.

Notice of hearing on the Eyhorn applications was provided to the applicant and all owners of possessory mineral interests in the acreage covered by the proposed qualified subdivisions. Notice of hearing was also published in the Edinburg Review, a newspaper of general circulation in Hidalgo County, on March 24, March 31, April 7, and April 14, 2006.

Hidalgo County is a county having a population in excess of 400,000. The 2005 population of Hidalgo County was 678,275. The County has experienced a population growth since 2000 of about 19%.

The plats which the Commission is requested to approve were revised to accommodate Eyhorn's conception of SWEPI's in-house South Texas drilling pad requirements. In the revised plats, operations sites are reserved in the form of a continuous 300' wide band around the perimeter and on three and one-half sides of the proposed subdivisions. The revised plat for proposed Eyhorn Subdivision No. 1 roughly doubles the width of the reserved operations sites in the northeast and southwest corners of the proposed subdivision, and expands the reserved operations sites in Lots 4, 5, and 6 to accommodate existing wells. The revised plat for Eyhorn Subdivision No. 2 expands the reserved operations sites in the northwest corner of the subdivision to an area of about 950' x 870' in order to accommodate the BTLT Well No. 52 and its gathering lines. As a result of the drilling by SWEPI of the BTLT Well No. 56 after the close of the initial hearings in these dockets, the revised plat for Subdivision No. 2 also provides an expanded operations site for Well No. 56 in Lot 7 consisting of about 9.6 acres on the east side of the subdivision.

The revised plats of the proposed qualified subdivisions also reserve road and pipeline easements. The revised plat for Eyhorn Subdivision No. 1 reserves a 30' wide road easement and 50' wide pipeline easement generally paralleling and adjacent to the reserved operations sites easement on the perimeter of the subdivision. The revised plat for Eyhorn Subdivision No. 1 also reserves a 50' wide pipeline easement extending from the northern boundary of the subdivision to the location of BTLT Well No. 9, an abandoned well in Lot 5. The revised plat for Eyhorn Subdivision No. 2 reserves a 50' wide pipeline and access easement generally paralleling and adjacent to the reserved operations sites easement on the perimeter of the subdivision.

The revised plats of the proposed qualified subdivisions have not yet been submitted to Hidalgo County for approval. The examiners have officially noticed that on January 9, 2007, Hidalgo County amended its subdivision rules to provide that no formal plat shall be required by Hidalgo County for a qualified subdivision as defined by §92.002(3) of the Texas Natural Resources Code until the qualified subdivision has been approved by a final order of the Railroad Commission.

Under these County rules as amended, a parcel of land is considered subdivided for residential, commercial, or industrial use upon the surface owners delineating tract boundaries, oil and gas operations sites, pipeline easements, road easements, or other boundaries on a plat that is filed with the Railroad Commission as a part of an application for approval of a qualified subdivision, provided that no sale of a tract within the area of a qualified subdivision approved by the Railroad Commission may occur until a formal plat of the subdivision is approved by the Commissioner's Court.

The 10,829-acre BTLT Lease surrounds the proposed qualified subdivisions, except that the southern boundary of Eyhorn Subdivision No. 1 conforms to the southern boundary of the BTLT Lease. At the time of the initial hearings in these dockets, a total of 60 wells had been drilled on the BTLT Lease, of which 15 were dry holes. Forty-two of these wells were completed as gas wells, one was converted to a saltwater disposal well, and two were in the process of being completed as of the date of the October 2006 hearing. Perforations in the completed wells were at depths ranging from 6,348' to 14,070', mostly in the depth interval between 10,000' to 13,000'. The shallowest production that has occurred on the BTLT Lease was by the Legacy BTLT (Shell) No. 1, Well No. 1. This well was completed in February 1997, in the Upper Vicksburg formation, with perforations in the interval between 6,348' and 6,350'. The well produced for six months from February 1997 to July 1997. Total production was 3,607 MCF of gas and 13 barrels of oil, before the well was plugged in October 1997.

In the opinion of Eyhorn's consulting petroleum engineer, directional drilling will enable SWEPI to make successful completions in the productive horizons under the proposed qualified subdivisions. The BTLT Well No. 28 was perforated in the Vicksburg "W" sand in the Javelina (Vicksburg Cons.) Field, with perforations in the intervals between 10,620'-11,695', and the well was fracture stimulated. As of the October 2006 hearing, the well had cumulative production of about 2.6 BCF and was continuing to produce at a rate of 700 MCFD. Based on cumulative production of about 2.6 BCF and an estimated gas price of about \$6.00 per MCF, the 8/8ths value of the production is about \$15.6 million.¹ Assuming a royalty burden of 15%, the value of production to

SWEPI, less royalty value, is about \$13.3 million, as compared to SWEPI's cost to drill the well of

¹ On cross-examination of Eyhorn's expert, SWEPI pointed-out that this estimate did not take into account the monthly price of gas during the life of BTLT Well No. 28 and when the well started producing in 2000, the gas price was in the range of \$3-\$4 per MCF.

\$3,054,000.²

Eyhorn performed the 2.5 mile area of review development analysis required by Statewide Rule 76(c)(5) as to both of the proposed qualified subdivisions. Production in this area has been from depths generally ranging from 4,500' to about 13,000'. Most of this production has occurred at a depth of 9,000' to 13,000' and has been production from deep Vicksburg gas wells.

Within the 2.5 mile area of review, oil and gas development began in 1957 and continues today. At the time of the initial hearings in these dockets, within 2.5 miles of Eyhorn Subdivision No. 1, there were 385 wellbores, and of these, 273 produce or have produced from depths deeper than 10,000', 55 produce or have produced from depths between 7,000' and 9,999', and 35 produce or have produced from depths between 4,000' and 6,999'. Thirty-eight of the 385 wellbores within 2.5 miles were dry holes. No wellbore within 2.5 miles produces or has produced from depths shallower than 4,000'. Six wells are disposing or have disposed of saltwater at depths from 0'-4,000', and four wells are disposing or have disposed of saltwater at depths from 4,900'-6,228'.

Of the 38 dry holes that were drilled within 2.5 miles of Eyhorn Subdivision No. 1, 20 had a total depth of 0'-7000', 6 had total depth of 7,001'-9,000', and 12 had total depth of more than 9,000'. Of 56 abandoned wells that formerly produced within 2.5 miles of Eyhorn Subdivision No. 1, none produced from depths shallower than 4,000'.

A total of five wells have been drilled on the acreage included in Eyhorn Subdivision No. 1. Of these, two were dry holes that were plugged, and three are producing wells. Two of the producing wells have perforations at depths ranging from 9,896' to 13,080'. Information regarding the depth interval of perforations in the third producing well was unavailable at the time of the October 2006 hearing, but this well is a producing gas well completed in the Vicksburg formation. Two of the producing wells are completed in the Javelina (Vicksburg Cons.) Field, and the other producing well is completed in the Jeffress NE (T, Lo.-FB, A) Field.

The Javelina (Vicksburg Cons.) Field has 467'/933' spacing and standard proration units of

² As a part of Eyhorn's rebuttal case, Eyhorn's consulting petroleum engineer performed a similar economic analysis for BTLT Well Nos. 30-40, 42-46, and 49-51 (19 wells), said to have been selected because they are modern vintage wells (first producing since November 2000 at the earliest) in close proximity to the proposed qualified subdivisions. Eyhorn calculated average EUR for these wells was about 2.9 BCF of gas and 89,573 BBLs of condensate. Assuming an oil price of \$50.00 per barrel and a gas price of \$5.00, said to be a conservative estimate, and monthly operating expenses of \$5,000 per month, the average well will return a undiscounted value of about \$14 million, or about \$11.6 million if discounted by 15%. Assuming the average directional well costs \$6 million to drill, the well will yield an undiscounted return on investment of about \$8 million, or if discounted by 15%, about \$5.6 million. SWEPI countered by disputing the estimate of \$6 million to drill the average directional well and showing that the calculated value of the average well does not take into account gas shrinkage, and the average well on the proposed subdivisions has an EUR of about 2.1 BCF, as compared to the average of 2.9 BCF calculated for the 19 wells studied by Eyhorn's expert.

320 acres, with optional 40 acre proration units. In 1995, a large number of Vicksburg fields were consolidated and set up as the Javelina (Vicksburg Cons.) Field. The Jeffress NE (T, Lo.-FB, A) Field has 467'/933' spacing and 40 acre proration units.

At the time of the initial hearings in these dockets, within 2.5 miles of Eyhorn Subdivision No. 2, 326 wellbores had been drilled, and of these, 192 produce or have produced from depths deeper than 10,000', 37 produce or have produced from depths between 7,000'-9,999', and 44 produce or have produced from depths between 4,000'-6,999'. Forty-four of the wellbores within 2.5 miles of Eyhorn Subdivision No. 2 were dry holes. No well within 2.5 miles produces or has produced from depths of less than 4,000'. Also, within 2.5 miles, four wells are disposing or have disposed of saltwater in intervals between 0'-4,000', and three wells are disposing or have disposed of saltwater in intervals between 5,087'-6,228'.

The shallowest production within 2.5 miles of Eyhorn Subdivision No. 2 has been from a depth of 4,417'. This production was from the Texaco Yturria Land Co. Well No. B9, in the Flores (Sullivan, Up) Field, a well that was plugged in 1960. This was a shallow oil well lying to the west of Eyhorn Subdivision No. 1.

Within 2.5 miles of Eyhorn Subdivision No. 2, 44 dry holes have been drilled, and of these, 23 had total depth between 0'-7,000', seven had total depth between 7,001'-9,000', and 14 had total depth in excess of 9,000'. Of 56 abandoned wells that once produced within 2.5 miles of Eyhorn Subdivision No. 2, none produced from depths of less than 4,000'.

At the time of the initial hearings in these dockets, the only wells that had been drilled on the acreage included in Eyhorn Subdivision No. 2 were the BTLT Well No. 52, which is a producing gas well completed in the Javelina (Vicksburg Cons.) Field, with perforations between 11,370'-11,430', and a dry hole that was plugged in 1977.³

The shallowest production in the area of the proposed Eyhorn subdivisions is from producing oil wells in the Flores Field, about 2.5 miles to the west of the subdivisions. This is Frio production which generally occurs from a depth of about 4,500'. A structure map obtained from the file in Oil & Gas Docket No. 4-53,476 heard in February 1964 contoured on the top of the Upper Sullivan sand shows the geology of the Flores Field in Starr and Hidalgo Counties, indicating that structure dips down to the east toward the proposed Eyhorn subdivisions. In the opinion of Eyhorn's consulting

petroleum engineer, the productive part of this reservoir lies to the west of the oil-water contact drawn on the structure map, and the Flores Field is down dip and wet in the area of the proposed

³ The evidence presented by stipulation and affidavit at the reopened hearing showed that after the close of the initial hearings, on October 13, 2007, SWEPI spud the BTLT Well No. 56 on Subdivision No. 2, and completed drilling this well by November 8, 2007. BTLT Well No. 56 was drilled as a directional well with a maximum angle of 21.66 degrees.

subdivisions.

Shallow intervals in the area of the subdivisions have been used for disposal of saltwater. Six saltwater disposal wells within 2.5 miles of Eyhorn Subdivision No. 1 have injected into shallow intervals ranging between 1,122'-3,800'. Four additional saltwater disposal wells within 2.5 miles of Eyhorn Subdivision No. 1 have injected into shallow intervals ranging between 5,087'-6,228'. The six saltwater disposal wells that have injected into the intervals ranging between 1,122'-3,800' were permitted on Forms W-14 (Application to Dispose of Oil and Gas Waste By Injection Into A Porous Formation Not Productive of Oil or Gas). The shallowest zones productive of oil or gas identified in these applications ranged from 4,400' to 12,900'. Of four saltwater disposal wells within 2.5 miles of Eyhorn Subdivision No. 1 completed at depths greater than 4,000', two were permitted on Forms W-14 and two on Forms H-1 (Application to Inject Fluid Into A Reservoir Productive of Oil or Gas). The shallowest zones productive of oil or gas identified in these applications ranged from 4,498' to 12,900'. From this and similar data pertaining to seven saltwater disposal wells within 2.5 miles of Eyhorn Subdivision No. 2 using intervals shallower than 6,300' for disposal, Eyhorn's consulting petroleum engineer concluded that the depth intervals in the area of the proposed Eyhorn subdivisions from surface down to 6,300' are non-productive and are being used for saltwater disposal.

The BTLT Lease Well No. 9 was a dry hole drilled on the acreage in Eyhorn Subdivision No. 1. A SWEPI authorization for expenditure for this well obtained by Eyhorn through discovery indicated that the target formations were the Frio at 4,640', the Vicksburg at 6,300', and the Vicksburg at 11,240'. A SWEPI information bulletin indicated that the shallowest possible hydrocarbons were in the Frio at 5,341'-5,348', said to be three net feet of pay with porosity of 26% and saturation of 50%. The bulletin indicated that SWEPI concluded that there were no zones in the BTLT Lease Well No. 9 that could be considered to be of commercial quality or sufficient thickness to warrant testing. This well was plugged and abandoned in June 1972 as a dry hole.

Eyhorn and SWEPI stipulated to certain facts disclosed by other SWEPI documents obtained in discovery: (1) SWEPI documents reflecting reserve amounts used to prepare 2004-2006 reserve reports for acreage in Eyhorn Subdivisions Nos. 1 and 2 are in three categories: (i) decline curve analyses of EURs for various wells on the BTLT Lease; (ii) drilling justification memoranda for newer wells on the BTLT Lease; and (iii) reserves and scope for recovery revision/transfer processing forms used to transfer reserves and scope for recovery volumes between categories; (2) the decline curve data is for BTLT Lease, Well Nos. 8, 15, 22, 25, 26, 27, 29, 30, 32, 33, 35, 36, 37, 38, 40, 42, 43, 44, 45, 46, and 49, all of which produce at depths deeper than 6,000' subsea and only from the Vicksburg formation or deeper horizons; (3) SWEPI has not attributed any reserves to the Frio formation (defined by SWEPI as occurring at depths from 2,000' to 5,000' subsea beneath Eyhorn Subdivision Nos. 1 and 2); (4) BTLT Lease, Well Nos. 40, 42, 46, 50, 51, and 52 were targeted for and completed in various intervals of the Vicksburg formation; there is no mention in drilling justification memoranda relating to these wells of any potential Frio production or reserves, and SWEPI has not attributed any reserves to the Frio formation for these or any other wells on the BTLT Lease or the area that underlies the proposed Eyhorn subdivisions; (5) Vicksburg formation

reservoirs are the only reservoirs listed on reserves and scope for discovery revision/transfer forms for the BTLT Lease acreage; and (6) the classifications of reserves on the aforementioned forms are proved developed producing, proved developed non-producing, proved undeveloped, unproved developed, and unproved undeveloped.

Eyhorn's consulting petroleum engineer reviewed SWEPI open hole logs and mud logs for wells in the area of the proposed Eyhorn subdivisions. There are exceptions, but generally the depth interval between the surface and 6,000' is not logged. In the opinion of Eyhorn's expert, this is because these intervals are non-productive. In many wells in close proximity to the proposed Eyhorn subdivisions, SWEPI does not place cement behind 3 ½" production casing any higher than about 6,000'-6,500'. Eyhorn's expert believes that if there were any possible productive zones above 6,000', SWEPI would place cement in these shallow intervals behind the production casing.⁴

In discovery, Eyhorn obtained SWEPI's drilling operations site plan, which is understood to show the footprint for drilling operations in South Texas. This site plan, according to Eyhorn's consulting petroleum engineer, is basically 380' wide by 425' tall and calculates to 3.7 acres. Core requirements of SWEPI are that engines on the site must be 100' from the wellbore, living quarters must be 150' from the rig location, and no open flames can be within 150' of the wellbore. This SWEPI site plan was taken into account by Eyhorn in reservation of operations sites and easements on the revised plats of the proposed Eyhorn subdivisions which the Commission is requested to approve.

The revised plat for Eyhorn Subdivision No. 1 reserves a 300' wide operations site easement that basically runs around the entire perimeter of the subdivision, except for portions of Lots 1 and 3 in the northwest portion of the subdivision. Two operations sites are provided in Lot 5, including a two-acre operations site around an abandoned gas well, the BTLT Lease Well No. 9, which was a dry hole. Pipeline easements are reserved on the plat of Subdivision No. 1 for all existing SWEPI pipelines and gathering lines, as well as for a SWEPI pipeline easement where no pipeline presently exists. The reserved operations sites around the perimeter of Subdivision No. 1 can be accessed from adjoining roadways by a 30' wide private road access easement that runs along the interior of the proposed operations sites. A 50' wide pipeline and access easement generally parallels the operations sites easements around the perimeter of the subdivision and can be used for pipeline or surface operations and truck access. According to Eyhorn's consulting petroleum engineer, a total of 31 3.7-acre operations sites will fit in the operations sites easement reserved on the revised plat of Eyhorn Subdivision No. 1. Total acreage in the operations sites reserved in the revised plat for Subdivision No. 1 is 140.65 acres, which is 22.61% of the total acreage in the subdivision. Each of

⁴ According to a SWEPI drilling superintendent, SWEPI cements the 3 ½' casing string as high as practical. Typical design criteria require heavier cement (17.3 lbs. per gallon) to ensure good displacement of cement behind the casing. Some depleted zones will not stand more than this. When the heavy cement is pumped into place, it is thicker than drilling fluid and provides more equivalent circulating density. If an attempt is made to raise the top of cement much higher than it is usually placed by SWEPI, it is possible that sands downhole will be broken down and the column of cement will be lost into the formation.

the eight subdivided lots of roughly 80 acres has an operations site of two or more acres, ranging from 2.07 acres in Lot 3 to 30.74 acres in Lot 7. In addition, SWEPI will be able to drill from surface locations outside the boundaries of proposed Eyhorn Subdivision No. 1.

The revised plat for Eyhorn Subdivision No. 2 reserves an operations sites easement and road and pipeline easements generally similar to those reserved for Eyhorn Subdivision No. 1. Operations sites are reserved in the form of a 300' wide band of acreage around the perimeter of the subdivision, except for a portion of the southern boundary in Lots 6 and 8 in the southeast corner of the subdivision, with extra reserved operations sites acreage in Lots 5 and 7. A 50' wide pipeline and access easement runs around the perimeter of the subdivision parallel to the reserved operations sites. Roadways surround the boundaries of the subdivision. The expanded operations site in Lot 5 is designed to cover the location of the BTLT Lease Well No. 52 and its gathering lines. The expanded 9.6 acre operations site in Lot 7 is designed to cover the location of the BTLT Lease, Well No. 56 and its associated facilities.⁵ The reserved operations sites in Eyhorn Subdivision No. 2 contain 138.79 acres (exclusive of at least some of the acreage in the new operations site provided for the BTLT Well No. 56), which is 22.23% of the total acreage in the subdivision. Each lot of roughly 80 acres in the proposed subdivision has at least two acres of operations sites, the range being from 2.34 acres to 32.72 acres per lot.

In the opinion of Eyhorn's consulting petroleum engineer, by directional drilling from the proposed operations sites, SWEPI will be able to fully and effectively develop the minerals underlying the proposed Eyhorn subdivisions. While a SWEPI drilling superintendent expressed concern in deposition testimony about directional drilling to access shallow formations, Eyhorn's consulting petroleum engineer has the opinion that Eyhorn's evidence shows there are no shallow productive formations beneath the proposed subdivisions.

SWEPI

A SWEPI geologist presented an area map showing SWEPI's leasehold as it relates to the Javelina (Vicksburg Cons.) Field, with well locations color coded to indicate zones of completion. All of the zones of completion have been consolidated into the Javelina (Vicksburg Cons.) Field. SWEPI's BTLT Lease is also depicted by this area map.

SWEPI's geologist also presented a conceptual northeast to southwest cross-section of productive horizons underlying the proposed Eyhorn subdivisions. In this area, the Vicksburg and Frio formations lie above a glide plane that is a down to the coast fault. Eocene-age sediments lie below the glide plane. The Upper Vicksburg formation lies above the sands in the Javelina (Vicksburg Cons.) Field interval, and the Frio formation lies above the Upper Vicksburg. The Frio consists of flat lying sediments above the Upper Vicksburg. SWEPI targets the Lower Vicksburg

⁵ Eyhorn and SWEPI stipulated at the reopened hearing that this operations site is sufficient to provide an operations site and road and pipeline easements for production of the BTLT Well No. 56.

when proposing wells.

The BTLT Lease Well No. 16 is at the southern edge of the southwest quadrant of Eyhorn Subdivision No. 1 and the BTLT Lease Well No. 33 is at the eastern edge of the BTLT Lease. A composite log of these wells was presented by SWEPI's geologist. The package of Eocene-age sediments occurs on this composite log at about 15,900', and the glide plane or fault is seen at about 14,210'. On top of the glide plane or fault, a clipped section of the Vicksburg Z sand is seen, and the Vicksburg Y sand occurs at about 12,426'. The Vicksburg X sand lies over the Vicksburg Y sand, and the Vicksburg W sand lies on top of the Vicksburg X sand at about 10,074'. The Vicksburg U sand is seen on the composite log at about 9,723', the Vicksburg T sand at about 9,224' and the Vicksburg S sand at about 7,495'. Above the Vicksburg S sand is the so-called Carmine Red marker, and above the Carmine Red are a series of sands and silts that make up the Frio sands.⁶

SWEPI's geologist also presented a structure map on top of the Eocene, i.e., the glide plane or surface on which overlying sediments slid down and created the rotation and growth seen in the Lower Vicksburg. Temperatures in the Eocene are in the 350-400 degree range. SWEPI's geologist believes that the Eocene is potentially productive beneath the proposed Eyhorn subdivisions.

Structure maps based on seismic for the Vicksburg Y, X, W, V, U, T, and S sands were presented by SWEPI's geologist to show that these sands underlie all or portions of the proposed Eyhorn subdivisions. These structure maps showed wells in the area said by SWEPI's geologist to be productive from one or more of these sands. One or more of these sands are thought to be potentially productive in wells on the BTLT Lease, and SWEPI's geologist has the opinion that all of these sands are potentially productive beneath the proposed Eyhorn subdivisions.

The BTLT Lease Well No. 15 is located on the southern edge of the BTLT Lease, just to the west of Eyhorn Subdivision No. 1. This well now produces from the Vicksburg W sand in the Javelina (Vicksburg Cons.) Field. SWEPI's geologist presented a sidewall core analysis and log sections for this well. According to this geologist, there is evidence of hydrocarbons in intervals other than the Vicksburg W sand.⁷

The BTLT Lease Well No. 19 is located in the southwest corner of the BTLT Lease, west of Eyhorn Subdivision No. 1. According to SWEPI's geologist, a log section for this well at about 3,360' to 3,370' shows a spike in resistivity with some cross over with conductivity and 20%

⁶ Neither of the BTLT Lease Well Nos. 16 and 33, on which the composite log is based, produced at a depth above 6,500' and neither was tested above that depth. Well No. 16 was plugged and abandoned, so that SWEPI apparently did not consider that production of any reserves behind pipe was viable. Well No. 33 penetrated the Eocene-age sediments, but did not produce from this zone and was not tested there.

⁷ SWEPI's geologist stated that he would probably recommend recompletions rather than new drills to attempt to recover hydrocarbons in the potentially productive intervals in the BTLT Lease Well No. 15. He could not offer an opinion as to why any of these potentially productive intervals have not been tested by SWEPI.

porosity, which are indicators of the presence of hydrocarbons.⁸ The BTLT Lease Well No. 18 is located about 1.25 miles north of Eyhorn Subdivision No. 2. According to SWEPI's geologist, a log section for this well at around 2,740' shows a spike in resistivity and cross over with conductivity and 22% porosity, also an indicator of hydrocarbons.⁹

The BTLT Lease Well No. 9 is located roughly in the center of Eyhorn Subdivision No. 1. A June 2, 1972, SWEPI information bulletin described a Frio marker in the interval between 5,341' and 5,348', referring to three net feet of possible hydrocarbons with 26% porosity and 50% water saturation. The same bulletin contains references to five net feet of possible hydrocarbons in the Vicksburg C sand at 6,873'-6,883' with 21% to 26% porosity and 55%-60% water saturation, six net feet of questionable hydrocarbons in the Vicksburg R sand at 8,800' with 16.5% porosity and 65% water saturation, and other possible hydrocarbons at 11,560' to 11,578'.¹⁰

A detailed production report for the Bentsen Lloyd Continental Oil Company No. 4, located centrally in the greater BTLT Lease, about 1.75 miles from Eyhorn Subdivision No. 2, indicates that the productive zone in this well was the Frio formation, although SWEPI's geologist had no information as to the depth of the well's perforations. The first production was in December 1974, and the well had cumulative production of 2,168 barrels of oil before the well was plugged.

The BTLT Lease Well No. 3 is located about 1.5 miles northeast of Eyhorn Subdivision No. 2. A core analysis report indicated oil saturation at 4,236', 6,878', 8,417', 9,174', 9,220', 9,951', 9,966' and 9,989'.¹¹

SWEPI's geologist believes that log and core analysis for wells in the area of the proposed Eyhorn subdivisions show signs of the presence of hydrocarbons with good porosity in the upper sands of the Vicksburg formation. To date, SWEPI has not attributed any reserves to the Frio formation in the area of the proposed subdivisions because it does not have any production from the Frio in this area.

There have been recent developments in the Eocene-age sediments in the area of the proposed Eyhorn subdivisions. About two miles to the west of the BTLT Lease, wells have been drilled, or are being drilled, to the Eocene, and some wells have produced from this interval. The

⁸ This well was plugged as a dry hole, and the zone between 3,360' and 3,370' was not tested.

⁹ SWEPI's geologist clarified that he was not making a judgment as to whether any hydrocarbons in this zone actually are producible. This well was not tested in the zone at 2,740'.

¹⁰ The BTLT Lease Well No. 9 was plugged as a dry hole.

¹¹ One hundred percent water saturation was noted at 4,236'. The BTLT Lease Well No. 3 was not tested for any zone above 6,000'.

closest Eocene well was drilled by SWEPI and last produced in 1999. An Eocene well drilled in 2005 northwest of the proposed subdivisions produced gas from the interval between 17,200' and 17,300', and because this well looked promising, another well is now drilling. There are five active Eocene wells in Starr County, plus two inactive wells and one dry hole.¹²

SWEPI's geologist believes that the acreage covered by the proposed Eyhorn subdivisions is productive in the Lower Vicksburg and Eocene, and sands in the Upper Vicksburg and Frio have the potential to be productive. No judgment is passed, however, on whether hydrocarbons that may be present in the shallow sands are producible because these zones have not been tested.

According to SWEPI's geologist, if the proposed subdivisions are approved and a landfill is in place, it will not be practical for SWEPI to obtain new seismic data over the area. Existing seismic is good for structure and faulting, but not very good for predicting reservoir quality. SWEPI might be interested in shooting more seismic if seismic technology improves.

A SWEPI drilling superintendent presented a hypothetical example of the manner in which SWEPI would drill a directional well on the BTLT Lease. Most wells are drilled to the top of the Eocene or base of the Lower Vicksburg sands to make sure that all sands in the Lower Vicksburg have been encountered.

SWEPI's drilling superintendent presented a theoretical plan for drilling a directional well to a true vertical depth of about 13,600' under the proposed Eyhorn subdivisions. Under this plan, the well would be drilled vertical down to about 5,000'. At 5,000', the well would start to build angle at a rate of 2-3 degrees per 100' to reach the tangent section at about 6,313' where intermediate casing would be set. Drilling of the tangent section would then continue, dropping angle before setting a 7 5/8" liner at about 10,500'. Then the well would be drilled vertically to total depth. In this theoretical example, the well would be drilled to a bottom hole location about 2,500' from the surface location.

Problems may be experienced with directional drilling when a well is drilled to deep horizons. In South Texas, temperature gradients are higher than in most parts of the world. At 13,500', the bottom hole temperature is in the range of 370-390 degrees Fahrenheit. Directional drilling tools that are available today have a limit of 310-350 degrees. This is the reason the hypothetical directional well described by SWEPI's drilling superintendent is brought back to vertical at 10,500'. At that point, directional tools would be pulled out of the hole, and a packed hole assembly would be run in the hole to drill vertically to TD.

SWEPI's drilling superintendent estimated the cost to drill the BTLT Lease Well No. 52 directionally as compared to the actual cost of drilling this well (\$3,673,089). He estimated that

¹² When SWEPI recently drilled the BTLT Lease Well No. 52 on the Eyhorn Subdivision No. 2, the well was drilled to a depth that touched the Eocene, but SWEPI did not continue drilling through the Eocene, and the Eocene was not tested in this well.

based on 2006 costs, the incremental cost of drilling the BTLT Lease Well No. 52 directionally would be \$875,942. Costs have risen since this estimate, and in the opinion of SWEPI's drilling superintendent, the incremental cost of drilling Well No. 52 directionally now would be about \$1 million, assuming that no problems are experienced. SWEPI's drilling superintendent also estimated the incremental cost of directionally drilling a well to a true vertical depth of 5,500' in the Frio formation. Based on 2006 costs, the estimated incremental cost to drill such a well directionally is \$371,000, or based on today's costs, about \$400,000.

To directionally drill a Frio well to a true vertical depth of 5,500', and achieve 2,500' of horizontal displacement, SWEPI would need to start its kickoff point at 500' and build angle by two degrees per 100'. Hole angle at 3,100' would need to be 60 degrees. Then angle would be decreased so that by the time the well reached 5,500', angle would be about 20 degrees though the Frio. A directional well could be drilled through the Frio, but it would be difficult and problematic. Twenty degrees of angle going through the Frio sands would not allow drilling of multiple pay sections stacked on top of each other. SWEPI expects that almost all wells drilled in South Texas will require stacking pay in order to make a commercial well. SWEPI's drilling superintendent agreed, however, that it is possible to drill directionally from the operations sites on the proposed Eyhorn subdivisions and to reach out 2,500' to the center of the subdivisions in the Frio, Vicksburg, and Eocene formations, although there is more cost associated with directional drilling and there is an increased risk of hole problems while drilling.

In the Vicksburg, a lot of sands are at least partially depleted from offset production. When drilling through such sands at high angle, the drill string and bottom hole assembly lay on the low side of the hole in contact with the formation wall. Drilling pipe or casing strings may get stuck in the hole. For example, the McAllen Ranch No. B-53 was drilled as a directional well to encounter multiple pay zones in different vertical sections. This well had a maximum angle of 29 degrees and the authorization for expenditure for the well was \$8.1 million. Actual cost was \$10.1 million because a whole section of the well was lost and had to be re-drilled when casing strings got stuck in the hole and the tubing string parted during a commingling clean-out job.

SWEPI's drilling superintendent also presented a typical pad diagram for SWEPI's South Texas drilling operations. This diagram allows for a rig location in the center, an area of 190' to the east for raising and lowering the rig, an area 170' to the south where living quarters are usually placed, an area 180' to the west for mud pumps, engines, generators and the like, and an area 110' to the north for drilling mud tanks, choke manifold, gas separator and the like. In the northwest corner of the diagram an area is planned for a 150' x 90' reserve pit. Also, SWEPI typically has a land farm on the drill pad area, usually on the north side of the reserve pit, where drill cuttings are placed for bioremediation and land farming. To the south of the pad, trailers are usually set-out on the edge of the pad, and a self-contained sewage treatment facility is placed on the south side of trailer houses used for living quarters. Also, a "spoil area" is provided where dirt from digging the reserve pit is placed. Typical land usage or disturbance is 5 to 5 ½ acres on most South Texas well sites.

It is SWEPI policy that living quarters must be located such that if the derrick should fall, it could not reach the living quarters. The derrick is 142' tall, and policy dictates that living quarters be 150' away from the derrick. The engine/generator package is an ignition source and must be located 100' from the wellbore. The end of the flare line must be 150' from the wellbore because of the open flame.

SWEPI's drilling superintendent believes that neither the typical pad or entire area typically used or disturbed in association therewith could be placed on the 300' wide operations sites reserved on the revised plats of the proposed Eyhorn subdivisions.¹³

It is the opinion of SWEPI's drilling superintendent that the operations sites reserved on the revised plats of the Eyhorn subdivisions do not allow SWEPI the amount of space required for setting up of rigs. In addition, the reserved operations sites would require the drilling of directional wells, and this may not be economically feasible. SWEPI's drilling superintendent expressed the opinion, therefore, that the reserved operations sites will not allow SWEPI to recover hydrocarbons underlying the proposed subdivisions.

A consulting petroleum engineer retained by SWEPI presented a development map for the area of the Javelina (Vicksburg Cons.) Field showing wells drilled over time from the pre-1970 era through 2006. This area has become progressively more developed over time, and SWEPI believes that development has been moving in the direction of the proposed Eyhorn subdivisions, particularly during 2000-2006. During that time, new wells have been drilled to the northeast and south of the proposed subdivisions, and BTLT Lease Well No. 52 has been drilled on Eyhorn Subdivision No. 2.

In the affected area, effective density for Vicksburg wells is trending more toward 20 acres than 40 acres. SWEPI asserts that to be able effectively and efficiently to drain the area of the proposed subdivisions, operators need to be thinking in terms of 20-acre density, and in the Frio and Eocene, 40-acre density. On any 80-acre lot within the proposed subdivisions, four Vicksburg wells, two Frio wells, and potentially two Eocene wells may be needed, assuming that wells are not completed in more than one formation.

SWEPI's consulting petroleum engineer performed a cash flow analysis for the BTLT Lease Well No. 52. Assuming an estimated ultimate recovery of 0.8 BCF, and based on a gas price of

¹³ SWEPI's drilling superintendent stated that at extra expense, the typical layout of the drill site area, i.e., the area of usage or disturbance, could be reconfigured by moving some equipment or facilities from their planned locations, that is elongating the area of usage east to west on the north and south sides of the subdivisions or north to south on the east and west sides, in order to fit the drill site into the operations sites reserved on the revised plats of the Eyhorn subdivisions. He acknowledged also that additional space was reserved in adjacent pipeline and access easements that could be used during the drilling phase, assuming that there are no restrictions against such usage associated with the easements. Once the drilling phase has been completed, a majority of the drilling pad facilities are removed, and the area of usage or disturbance is diminished.

\$6.13 per MCF and an oil price of \$69.03 per BBL as of April 1, 2006 (over the life of the well), and a net investment of \$6 million, SWEPI's petroleum engineer calculated that the well would be expected to return an undiscounted \$275,000 over well expenses. With a present worth discount of 5%, the well would break even, and with a present worth discount of 10%, the return would be a negative \$200,000. SWEPI's engineer believes that operators will not drill wells like this simply to break even. Based on prices that existed at the time the BTLT Lease Well No. 52 was drilled in late 2005 or early 2006 (\$8.16 per MCF of gas and \$65.85 per BBL of oil), the well would be expected to return an undiscounted \$1.5 million over the cost to drill and complete the well. With a present worth discount of 10%, the return would be about \$900,000. SWEPI's engineer believes that even at these higher prices, if SWEPI were required to directionally drill this well, it would be a break even venture.

SWEPI's consulting petroleum engineer presented a histogram of EURs for wells drilled on the BTLT Lease for the purpose of showing that the BTLT Lease Well No. 52 is not atypical. Of about 42 wells apparently represented on the histogram, 11 have EURs of 0.0 to 1.0 BCF, 6 have EURs of 1.0 to 2.0 BCF, 8 have EURs of 2.0 to 3.0 BCF, 6 have EURs of 4.0 to 5.0 BCF, 3 have EURs of 4.0 to 5.0 BCF, 4 have EURs of 6.0 to 7.0 BCF, 1 has an EUR of 8.0 to 10.0 BCF, and 3 have EURs of 10 to 20 BCF.

Reserve projections by SWEPI for wells drilled on the BTLT Lease since 2000 have generally trended downward with time, for example, from 10 to 12 BCF for BTLT Lease Well Nos. 33 and 35 as of 2002 down to about 2.5 BCF for BTLT Lease Well No. 52 in early 2006. To SWEPI's consulting petroleum engineer, this means that targets that are being drilled for by SWEPI on the BTLT Lease are getting smaller. Drilling activity in the Javelina (Vicksburg Cons.) Field has been very sensitive to gas prices, including on the BTLT Lease.

From a west to east cross section of mud logs for the BTLT Lease Well Nos. 50, 49, 45, 42 and 36, SWEPI's consulting petroleum engineer concluded that what has been produced in the area of the Eyhorn subdivisions is the Vicksburg section from about 9,000' to 13,000', but he believes that there are indicators on the logs of productive Vicksburg zones above the depths now being produced.¹⁴ A map depicting completions with perforations shallower than 9,000' shows that there have not been many of such completions on the BTLT Lease, where the focus has been the deeper Vicksburg. However, in the general area, 151 wells have produced from perforations above 9,000' or disposed of saltwater above 9,000', and the producing wells have produced about 121 BCF of gas and 3.2 million barrels of condensate or oil.

SWEPI's consulting petroleum engineer believes that the acreage covered by the proposed Eyhorn subdivisions is productive not only in the current producing zone for wells on this acreage,

¹⁴ SWEPI's engineer explained that the zones above 9,000' are shown by mud logs to be potentially productive in the sense that there are indicators of movable hydrocarbons at shallower intervals, although he could not quantify a volume of producible hydrocarbons in these shallower intervals.

but also at depths above 9,000' in the shallower Vicksburg. He does not believe that the operations sites reserved on the revised plats of the proposed Eyhorn subdivisions are adequate to allow recovery of hydrocarbons under the subdivisions. In his opinion, approval of the proposed subdivisions will render some wells uneconomic and cause the ultimate loss of hydrocarbons.

EXAMINERS' OPINION

Applicable Law

Chapter 92 of the Texas Natural Resources Code, in practical effect, creates a limited statutory restriction on the common law principle that the surface estate of a tract of land is servient to the mineral estate. Under the common law, subject only to contractual and deed restrictions, judicial restrictions such as reasonable use, negligence and accommodation doctrines, and restrictions imposed by statutes, regulations, and ordinances, an incident of ownership of a possessory interest in the mineral estate is an implied easement to use the surface and subsurface in any way reasonably necessary for exploring and drilling for, producing, transporting, and marketing mineral resources. Thus, in the absence of some applicable restriction, the owner of a possessory interest in the mineral estate has the right to choose a proper location on the surface for his activities, even though the location may interfere with the surface owner's use. *Davis v. Devon Energy Prod. Co., L.P.*, 136 S.W.3d 419, 424 (Tex. App.-Amarillo 2004, no pet.).

Section 92.001 of the Texas Natural Resources Code indicates that Chapter 92 was enacted with the purpose in mind that full and efficient utilization and development be made of all land resources and all minerals of the state. Thus, the Legislature provided in §92.003 of the Code that the surface owners of a parcel of land may create a "qualified subdivision" on the land if a plat of the subdivision has been approved by the Railroad Commission and filed with the clerk of the county in which the subdivision is to be located.

In §92.002 of the Code, "qualified subdivision" is defined as a tract of land of not more than 640 acres: (a) that is located in a county having a population in excess of 400,000, or in a county having a population in excess of 140,000 that borders a county having population in excess of 400,000 or located on a barrier island; (b) that has been subdivided in a manner authorized by law by the surface owners for residential, commercial, or industrial use; and (c) that contains an operations site for each separate 80 acres within the 640-acre tract and provisions for road and pipeline easements to allow the use of the operations site. "Operations site" is defined as "a surface area of two or more acres located in whole or in part within a qualified subdivision, designated on the subdivision plat, that an owner of a possessory mineral interest may use to explore for and produce minerals."

If, after notice and hearing as provided for in §92.004 of the Code, the Railroad Commission approves an application for a qualified subdivision, upon a finding that approval will ensure that the mineral resources of the subdivision are fully and effectively exploited, under §92.005, an owner of a possessory mineral interest within the qualified subdivision may use only the surface contained in the designated operations sites for exploration, development, and production of minerals and the

designated easements only as necessary to adequately use the operations sites. The owner of the possessory mineral interest may drill wells or extend well bores from an operations site or from a site outside the qualified subdivision if the operations do not unreasonably interfere with the use of the surface of the qualified subdivision outside the operations site.

Section 92.005 ceases to apply to a subdivision if, by the third anniversary of the date on which the order of the Railroad Commission becomes final; (a) the surface owner has not commenced actual construction of roads or utilities within the qualified subdivision; and (b) a lot within the qualified subdivision has not been sold to a third party.

Legal Sufficiency of the Eyhorn Applications

SWEPI contends that the Eyhorn applications are legally deficient because; (1) the applications seek qualified subdivision approval for more than 640 acres; (2) the proposed qualified subdivisions have not been subdivided in a manner authorized by law; (3) Eyhorn and/or Hidalgo County cannot in good faith comply with the requirement that the surface owner begin construction of roads or utilities and sell a lot to a third party within three years of finality of a Commission order approving the subdivisions; and (4) a qualified subdivision for use as a landfill is not contemplated or authorized by Chapter 92 of the Texas Natural Resources Code.

(1) The 640-Acre Limitation

Eyhorn seeks the Commission's approval of two partially contiguous 640-acre subdivisions of a parcel of land containing 1,280 acres. SWEPI argues that the Commission may not grant qualified subdivision approval for more than 640 acres total, because "qualified subdivision" is defined in §92.002(3) of the Texas Natural Resources Code as, *inter alia*, "a tract of land of not more than 640 acres."

The examiners disagree. Considering that the stated purpose of the enactment of Chapter 92 of the Code was to achieve full and efficient utilization and development of all the land resources of the state, as well as full development of the minerals of the state, it appears to the examiners implausible that it was intended that the surface owner of a 1,280-acre housing or mixed use development, for example, be prohibited from obtaining the protections of §92.005 for more than 50% of his development. The definition in §92.002(3) suggests that the Commission may not approve a distinct subdivision containing more than 640 acres, but it does not expressly forbid approval of two contiguous 640-acre subdivisions created out of a single parcel of contiguous acreage. A more plausible interpretation is that the 640 acre limitation in the definition of "qualified subdivision" was intended to require the surface owner to reserve operations sites and road and pipeline easements for each distinct 640 acres or less and to require independent analysis by the Railroad Commission of the adequacy of such operations sites and easements for the full and efficient exploitation of mineral resources for each distinct 640 acres or less.¹⁵

¹⁵ Eyhorn points out that in Oil & Gas Docket No.03-0245063; *Application of Affiliate Crown Development, Ltd. to Consider Approval of a Qualified Subdivision Pursuant to Statewide Rule 76 for a 407.40*

(2) Subdivision In A Manner Authorized By Law

SWEPI contends that the Eyhorn subdivisions cannot be approved because they have not been subdivided in a manner authorized by law, as required by the definition of “qualified subdivision” in §92.002(3) of the Texas Natural Resources Code. This contention is predicated on the fact that the revised plats of the Eyhorn subdivisions have not yet been approved by the Commissioner’s Court of Hidalgo County.

However, on January 9, 2007, the subdivision rules of Hidalgo County were amended to provide, in §1.5(B) relating to “Division of Land of an Application for Approval of a Qualified Subdivision Filed with the Railroad Commission,” that:

“A parcel of land may be subdivided for the purpose of filing an application with the Railroad Commission for approval of a qualified subdivision. ‘Qualified Subdivision’ has the same meaning as in Tex. Natural Resources Code §92.002(3). *No formal plat shall be required for a qualified subdivision until the qualified subdivision has been approved by a final order of the Railroad Commission.* (Emphasis Added) Notwithstanding any provision to the contrary in Title A, B and G of these rules, a parcel of land may be the (sic) depicted on and subdivided by multiple contemporaneous plats prepared for purposes of seeking Railroad Commission approval of a qualified subdivision.

“*The parcel of land shall be considered subdivided for residential, commercial or industrial use upon the surface owners of the parcel of and (sic) delineating tract boundaries, oil and gas operations sites, pipeline easements, road easements, or other boundaries on a plat that is filed with the Railroad Commission as part of an application for approval of a qualified subdivision.* (Emphasis Added) No sale of a tract within the area of a qualified subdivision approved by the Railroad Commission may occur until a formal plat of the subdivision is approved by the Commissioner’s Court unless the subdivision is except (sic) from platting requirement under other provisions of Title A, B, and G of these rules.

This section of the Hidalgo County subdivision rules is made applicable to parcels of land and subdivisions that are the subject of an application for approval of a qualified subdivision filed with the Railroad Commission on or after January 1, 2006.

Consequently, under Hidalgo County subdivision rules, approval of the Commissioner’s Court of Hidalgo County of Eyhorn’s revised subdivision plats is not required prior to Railroad

Acre Tract of Land in Montgomery County, Texas (Final Order dated January 24, 2006) and Oil & Gas Docket No. 03-0245064, *Application of Affiliate Crown Development, Ltd. to Consider Approval of a Qualified Subdivision Pursuant to Statewide Rule 76 for a 533 Acre Tract of Land in Montgomery County, Texas* (Final Order dated January 24, 2006), the Commission simultaneously approved two contiguous qualified subdivisions covering a total of 942.4 acres.

Commission approval, and the acreage covered by the subdivisions is considered to have been subdivided when the revised plats were filed with the Railroad Commission. County regulation of subdivisions is authorized by Chapter 232 of the Local Government Code. The examiners believe that the Eyhorn subdivisions have been subdivided in a manner authorized by law.¹⁶

(3) Compliance With §92.005(c)

Section 92.005(c) of the Texas Natural Resources Code provides that the restrictions on surface use of a qualified subdivision provided by §92.005(a) and (b) cease to apply to a subdivision if, by the third anniversary of the date on which an order of the Railroad Commission approving the qualified subdivision becomes final: (1) the surface owner has not commenced actual construction of roads or utilities within the qualified subdivision; and (2) a lot within the qualified subdivision has not been sold to a third party.

SWEPI contends that Eyhorn/Hidalgo County cannot in good faith comply with the requirements of §92.005(c) because it is predicted that required TCEQ approval of Hidalgo County's proposed landfill will require more than three years. SWEPI asserts that commencement of road/utilities construction prior to TCEQ landfill approval would not be in good faith, and, in deposition testimony, a landfill consultant for Hidalgo County said there was no plan then in place to sell a lot to a third party. Eyhorn has replied that it is fully anticipated that roads and utilities will be constructed within three years of an order approving the Eyhorn applications, and that sale of a lot on each subdivision to a third party cannot reasonably be planned until the locations of operations sites are fixed by the Commission. Eyhorn also interprets §92.005(c) to mean that the restrictions on surface use provided by §92.005(a) and (b) continue to apply if the surface owner, within three years, *either* commences actual construction of roads/utilities or sells a lot to a third party.¹⁷

¹⁶ Qualified subdivisions are created by a surface owner's compliance with all provisions of Chapter 92 of the Texas Natural Resources Code, not by order of the Railroad Commission. Railroad Commission approval of an application for a qualified subdivision is only one of the steps requisite to creation of a qualified subdivision entitled to the protections of §92.005 of the Code. There is no explicit requirement in Chapter 92 that local government approval of a subdivision plat precede an application to the Railroad Commission for a qualified subdivision. The Commission has approved applications for qualified subdivisions where the surface owner applicant had not yet obtained subdivision plat approval of local government, but stated an intent to do so. See Oil & Gas Docket No. 03-0239165; *Application of Terrabrook Cinco Ranch Southwest L.P. to Consider A Qualified Subdivision Pursuant to Statewide Rule 76, Fort Bend County, Texas* (Final Order dated September 21, 2004) ("Terrabrook"); Oil & Gas Docket No. 03-0245001; *Application of Newland Communities to Consider Approval of A Qualified Subdivision Pursuant to Statewide Rule 76 for A 143.26 Acre Tract of Land in Fort Bend County, Texas* (Final Order dated July 6, 2006) ("Newland"). In *Newland*, the Commission made a finding that the surface owner proposed to subdivide the tract in a manner authorized by law for residential, commercial, or industrial use, and a plat of the subdivision would be submitted for approval of appropriate local governmental authorities and would be filed with the County Clerk of Fort Bend County. The Commission also made a conclusion of law that its final order approved Newland's qualified subdivision plat pursuant to the standards of §92.004 of the Texas Natural Resources Code but did not create a qualified subdivision, and creation of a qualified subdivision would occur when all requirements of Chapter 92 of the Code had been met.

¹⁷ Eyhorn observes that the Senate Committee on Energy Bill Analysis for SB 946 interpreted §92.005(c) as follows:

In the opinion of the examiners, SWEPI's position on this issue is not well taken. The Railroad Commission cannot know whether, within three years of the date of a Commission order approving an application for a qualified subdivision, road and utility construction will be commenced and/or a lot will be sold to a third party, and Chapter 92 of the Texas Natural Resources Code does not require a Commission finding on this issue in deciding an application for a qualified subdivision.

(4) Single Use Qualified Subdivisions

SWEPI contends that Chapter 92 of the Code does not authorize qualified subdivision approval of a single use facility like a landfill in a sparsely populated, non-urban area. Relying on certain portions of bill analyses of legislation that enacted Chapter 92, and the §92.005(c) provision requiring construction of roads/utilities and sale of a lot within three years of Commission approval of a qualified subdivision, SWEPI asserts that the Legislature intended that Chapter 92 should apply only to those subdivisions for uses benefitting multiple owners and accommodating uses common in an urban setting, i.e., office and retail buildings, apartments, houses, warehouses and industrial complexes encountered in developing urban areas.

While the examiners agree with SWEPI that there are indications in portions of the bill analyses cited by SWEPI that the legislative focus was on developments of a different kind than a landfill development, the focus here should be on the law the Legislature enacted. Under the Code Construction Act, whether or not a statute is considered ambiguous, a court *may* consider, in construing the statute, its legislative history. See Texas Government Code, §311.023. Nonetheless, nothing has been found in the legislative history of Chapter 92 cited by the parties that is a clear indicator of legislative intent to forbid application of Chapter 92 to a landfill development. A landfill subdivision is a subdivision for industrial use within the meaning of §92.002(3)(B), and nothing has been found in the entire context of Chapter 92 that prevents use of its provisions in the case of a subdivision for landfill use.

Furthermore, the examiners disagree with SWEPI's suggestion that a qualified subdivision cannot exist in a rural setting. On this point, the §92.002(3) definition of "qualified subdivision" requires only that the subdivision be located in a county having a population of 400,000 or more, or a county having a population of 140,000 or more that borders a county having a population of 400,000 or more, or on a barrier island. It must be presumed that at the time of enactment of Chapter 92, the Legislature was aware that even in the densely populated counties of the state, some sparsely populated areas remained. Hidalgo County is a county having a population of more than

"c) If *neither* of the following events occurs within three year (sic) after the date on which the Commission order becomes final, the provisions of this Section no longer apply to the subdivision (Emphasis Added):

- 1) the surface owners commence actual construction of either roads or utilities within the subdivision;
- 2) lots within the subdivision are sold to third parties."

400,000, and nothing in Chapter 92 forbids approval of a qualified subdivision in a sparsely populated area of this County.

Between 1983 when Chapter 92 became effective, and December 2006, a total of 49 applications for qualified subdivisions were filed with the Commission, and the parties have pointed to two of these that involved subdivisions for landfill use, Oil & Gas Docket No. 3-84,416; *Application of E & D Waste Systems, Inc. for Approval of a Qualified Subdivision Pursuant to Statewide Rule 76 for a 99.9733 Acre Tract of Land in Abstracts Nos. 601 and 607, Galveston County, Texas* (Final Order dated August 19, 1995) (“*E & D Waste Systems*”) and Oil & Gas Docket No. 09-0209058, *Application of Sentry Environmental, L.P. for Approval of a Qualified Subdivision Pursuant to Statewide Rule 76 in Denton County, Texas* (Final Order dated December 3, 1996) (“*Sentry*”).¹⁸

In *E & D Waste Systems*, the Commission approved a proposed qualified subdivision for use as a landfill, concluding that approval of the application would assure proper and orderly development of both the mineral and land resources of the state and protect the rights and welfare of the citizens of the state. In *Sentry*, the Commission denied the qualified subdivision application, but not because the proposed subdivision was for a landfill use. In *Sentry*, the protestant made most of the same arguments as are made here by SWEPI, including the argument that Chapter 92 did not contemplate a qualified subdivision in a sparsely populated area for landfill use. It is evident from the proposal for decision issued June 24, 1996, that the examiners agreed with this argument. However, when the Commission acted by Amended Final Order dated December 3, 1996, although the application was denied because applicant “failed to prove that approval of its application will ensure the full and effective development of the mineral resources of the proposed subdivision,” the Commission declined to adopt the examiners’ proposed findings of fact and conclusions of law stating, in effect, that Chapter 92 did not authorize a qualified subdivision for a single use facility, such as a landfill, in a sparsely populated area.¹⁹

¹⁸ According to the parties, only three Rule 76 qualified subdivision cases have reached a Commission final order as contested cases: *E & D Waste Systems, Inc.*, *Sentry*, and Oil & Gas Docket No. 3-94,516, *Application of Oyster Creek Associates, A Joint Venture, for a Designation of a Qualified Subdivision Pursuant to Statewide Rule 76 for a 150.2 Acre Tract Out of the William Stafford Survey in Fort Bend County, Texas* (Final Order dated February 10, 1992) (“*Oyster Creek*”). Although *E & D Waste Systems* was contested, the applicant and protestant appear to have agreed on the terms of a final order by the time the case reached the Commissioners for a decision. The examiners have officially noticed the proposals for decision, final orders, and files in these three cases.

¹⁹ In *Sentry*, the Commission *declined* to adopt the examiners’ proposed Finding of Fact No. 6 that “Sentry’s proposed qualified subdivision is for a single use (solid waste landfill) facility that is not planned to be subdivided, except into the components of a landfill, during the life of the landfill;” proposed Finding of Fact No. 7 that “The Legislature when it enacted Chapter 92, intended to restrict mineral development to accommodate a future surface use only in urban areas and areas undergoing transition from rural to urban;” proposed Conclusion of Law No. 4 that “The proposed ‘qualified subdivision’ has not been properly subdivided in the manner contemplated by Chapter 92;” and proposed Conclusion of Law No. 5 that “The requirement that a lot within a qualified subdivision be sold within three years of the date on which the order of the Commission became final necessarily precludes a ‘single use’ facility from becoming a ‘qualified subdivision’.”

The examiners conclude that there is no legal bar to consideration of a qualified subdivision subdivided for landfill use.

Full and Effective Exploitation of Mineral Resources

The examiners conclude that the operations sites and road and pipeline easements reserved on the revised plats of the Eyhorn subdivisions are adequate as to number and location, and approval of the Eyhorn applications will ensure that the mineral resources of the subdivisions will be fully and effectively exploited.

The operations sites reserved on the revised plats of the Eyhorn subdivisions contain substantially more acreage than the minimum required by §92.002(1) of the Texas Natural Resources Code. Whereas the minimum amount of operations site acreage for a 640-acre qualified subdivision required by §92.002(1) is two acres for each separate 80 acres in the subdivision, or a total of 16 acres, the operations sites reserved for Eyhorn Subdivision No. 1 contain 140.65 acres, which is 22.61% of the total acreage in the subdivision. The operations sites reserved for Eyhorn Subdivision No. 2 contain at least 138.79 acres, which is 22.23% of the total acreage in the subdivision. Each lot of roughly 80 acres in the proposed subdivisions has at least two acres of operations sites, ranging from 2.07 acres to 30.74 acres in the case of Subdivision No. 1 and from 2.34 acres to 32.72 acres in the case of Subdivision No. 2. Operations sites are provided for all of SWEPI's producing wells, active or inactive, and one plugged and abandoned dry hole on Subdivision No. 1 and one plugged and abandoned dry hole on Subdivision No. 2, as well as adequate operations sites for future wells that may be drilled on the subdivisions.

The revised plats of the Eyhorn subdivisions also reserve adequate road and pipeline easements which will enable use of the reserved operations sites. On Subdivision No. 1, pipeline easements are reserved for all existing SWEPI pipelines and gathering lines, as well as for a SWEPI pipeline easement where no pipeline presently exists. On Subdivision No. 1, the reserved operations sites can be accessed from adjoining roadways by a 30' wide private road access easement that runs parallel and interior to the operations sites. A 50' wide pipeline and access easement is also reserved on Subdivision No. 1 running generally parallel and interior to the private road access easement and

operations sites. On Subdivision No. 2, a 50' wide pipeline and access easement runs around the perimeter of the subdivision parallel and interior to the operations sites, and roadways surround the boundaries of the subdivision.

By drilling of vertical wells on the perimeter of the proposed subdivisions or directional wells from surface locations on the reserved operations sites to completion locations on the interior of the subdivisions, SWEPI will be able to encounter the productive formations and fully and efficiently exploit the mineral resources of the subdivisions.

SWEPI's criticisms of the proposed operations site are these: (1) the 300' wide operations sites easements on the subdivisions will require SWEPI to adjust its typical South Texas drilling pad; and (2) because the operations sites are, for the most part, on the perimeter of the subdivisions,

SWEPI will be required to drill directional wells to reach completion locations on the interior of the subdivisions at greater cost and with an increased risk of wellbore problems.²⁰

The examiners believe that the continuous band of operations sites easements on three and one-half sides of the proposed subdivisions will allow SWEPI feasibly to drill such vertical and directional wells as may be required in the future to exploit mineral resources of the subdivisions. The operations sites on the north and south perimeter are at least 300' tall, and virtually unlimited space is reserved to elongate a drill site to the east and west. The same principle applies on the east and west perimeters of the subdivisions, where the operations sites are at least 300' wide, and virtually unlimited space is reserved to elongate a drill site to the north and south. Some or all of the adjacent road and pipeline easements may be subject to some temporary drill site uses while wells are being drilled.²¹ Some adjustment of SWEPI's typical South Texas drilling pad configuration may be necessary, such as relocation relative to the rig or reconfiguration of such facilities as the reserve pit and land farm areas on the typical site, but the evidence is sufficient to show that the reserved operations sites are adequate to permit SWEPI to drill such additional wells as may be required on the subdivisions.

The examiners recognize that there is incremental cost associated with the drilling of directional wells. However, this is not a controlling factor, if it is demonstrated that directional drilling will nonetheless permit the full and efficient exploitation of mineral resources of the subdivisions. The Legislature contemplated that limiting surface use for mineral development on qualified subdivisions as provided in Chapter 92 of the Texas Natural Resources Code might necessitate directional drilling.²² The Commission previously has approved applications for qualified subdivisions that involved operations sites on the perimeter of the qualified subdivision on the basis of findings that such operations sites were adequate for full and efficient exploitation

²⁰ In assessing the dimension of these concerns, it is appropriate to consider that SWEPI has said that it has been the lessee of the BTLT Lease for more than 50 years. In this time, a total of five wells have been drilled on the portion of the BTLT Lease covered by Eyhorn Subdivision No. 1, two of which were dry holes and plugged. At the time of the initial hearing, two wells had been drilled on the portion of the BTLT Lease covered by Eyhorn Subdivision No. 2, one of which was a dry hole and plugged. After the close of the initial hearing, one additional well, the BTLT Lease, Well No. 56, was drilled on Subdivision No. 2.

²¹ Under §92.005(b) of the Texas Natural Resources Code, SWEPI will, of course, be entitled to drill directional wells from sites that are located wholly or partially on acreage outside the proposed subdivisions, and SWEPI's 10,829-acre BTLT Lease surrounds the subdivisions and their operations sites on every side, except to the south of Subdivision No. 1.

²² Section 92.005(b) provides that "The owner of the possessory mineral interest may drill wells or extend well bores from an operation site or from a site outside the qualified subdivision under the surface of other parts of the qualified subdivision if the operations do not unreasonably interfere with the use of the surface of the qualified subdivision outside the operations site." The May 20, 1987, House Research Organization Bill Analysis for S.B. 10 observed that "The owner of a mineral interest could engage in directional drilling from the operations site under the surface of other parts of the 'qualified subdivision,' so long as it did not unreasonably interfere with the use of the surface of the qualified subdivision outside of the operations area."

of the mineral resources of the subdivisions.²³ In other qualified subdivision cases, the Commission has found specifically that directional drilling would enable the possessory mineral interest owner to fully and effectively exploit mineral resources of the subdivisions.²⁴

In *Oyster Creek, supra*, a contested qualified subdivision case, the Commission found that use of two operations sites proposed by the applicant on the western perimeter of the qualified subdivision were sufficient to ensure the full and effective development of minerals under the subdivision, even though Exxon Corporation, the protestant, had contended that use of the operations site in the northwest corner of the subdivision would necessitate drilling of an “S Curve” directional well and had estimated that the cost to drill the directional well would be \$1 million to \$2.25 million more than the cost to drill a vertical well at an alternative operations site proposed by Exxon.²⁵

The evidence shows that from an operational standpoint, directional wells can be drilled from surface locations on the proposed operations sites to completion locations in the geographic center of the Eyhorn subdivisions to encounter the Frio, Vicksburg, and Eocene formations. The examiners believe that concerns about wellbore angle and ability to drill stacked pay sections in the shallow Frio formation are not well founded, because the evidence as a whole tends to show that the Frio is either not productive, or does not contain hydrocarbons that are producible in commercial quantities, beneath the proposed subdivisions. No well within 2.5 miles of the proposed subdivisions produces, or has ever produced, from depths shallower than 4,000'. The shallowest production that has occurred on the BTLT Lease was by a well completed in February 1997 in the Upper Vicksburg,

²³ See, for example, *Terrabrook, supra*; *Newland, supra*; Oil & Gas Docket No. 05-0242841; *Application of Hillwood Lakeside 2, L.P. to Consider Approval of a Qualified Subdivision Pursuant to Statewide Rule 76 for a 61.51 Acre Tract of Land, Dallas and Denton Counties, Texas* (Final Order served July 12, 2005).

²⁴ See, for example, Oil & Gas Docket No. 03-0248597; *Application of ARO Partners for Approval of a Qualified Subdivision Pursuant to Statewide Rule 76 for a 512.8 Acre Tract of Land, Harris County, Texas* (Final Order served December 20, 2006) (“The proposed operations sites will accommodate future directional drilling, if necessary to access deeper horizons. Directional wells have been drilled in the 2.5 mile area of review, and future directional drilling on the proposed qualified subdivision from the proposed operations sites to access deeper horizons will be feasible, both mechanically and economically.”); Oil & Gas Docket No. 03-0231968; *Application of Mainland 215 L.P. for Approval of a Qualified Subdivision Pursuant to Statewide Rule 76 for a 215.2299 Acre Tract of Land, Galveston County, Texas* (Final Order served March 9, 2005) (“Use of directional drilling techniques has been common in the area of the proposed qualified subdivision, and it would be practical to employ such techniques to drill from surface locations on the ‘A-16’ and ‘B-2’ eastern operations sites to completion and bottomhole locations at Frio depth on the west side of the subdivision if such drilling were deemed advisable.”)

²⁵ In *Sentry, supra*, the Commission denied an application for a qualified subdivision for a landfill use on the basis of a conclusion that the applicant had failed to prove that approval of the application would ensure the full and effective development of the mineral resources of the proposed subdivision. Directional drilling from proposed operations sites was an issue, but there are no findings or conclusions in *Sentry* to indicate that the incremental cost of directional drilling was a basis for denial of the application. Instead, it reasonably can be inferred from the findings of fact in this case that the denial was based on failure of the applicant to show that drilling from the proposed operations sites would enable the possessory mineral interest owner to fully and effectively develop the shallow Strawn formation.

with perforations between 6,348' and 6,350', and this well produced only 3,607 MCF of gas and 13 barrels of oil before it was plugged in October 1997. The shallowest production in the area of the proposed subdivisions is from producing oil wells completed in the Flores Field, about 2.5 miles to the west. This is Frio production which generally occurs from a depth of about 4,500'. There is evidence concerning the geology of the Flores Field indicating that structure dips down to the east toward the Eyhorn subdivisions, so that this field is down dip and probably wet in the area of the subdivisions. Furthermore, SWEPI has not attributed any reserves to the Frio formation for any of the wells that have been drilled on the BTLT Lease.

Sensitivity of directional drilling tools to high temperatures in the deep sands of the Lower Vicksburg and the Eocene-age sediments should not be a concern because SWEPI has demonstrated its ability to drill directional wells from the proposed operations sites to these formations, under the central area of the Eyhorn subdivisions, by building angle in the depth interval between 5,000' and 10,500', then pulling directional tools out of the hole and drilling vertically to total depth of the well.

Directional drilling has become a common practice in the oil and gas industry²⁶, and the examiners believe that SWEPI can drill such wells from the proposed operations sites with no unacceptable risk of wellbore problems, such as sticking drill pipe or casing strings in the hole, at least in comparison to the risk of such problems associated with drilling of vertical wells that are seldom truly vertical.

Based on the evidence, the examiners conclude that the incremental cost of drilling directional wells will not prevent full and efficient exploitation of the mineral resources of the proposed subdivisions or cause the waste of a substantial volume of hydrocarbons. SWEPI's position is to the contrary, and it cited the BTLT Lease Well No. 52 as an example of a well that might not be drilled if SWEPI were required to drill the well directionally. However, at the time the decision was made to drill Well No. 52, SWEPI's reserve estimate for this well was about 2.5 BCF.²⁷ When drilled and completed, the well did not meet this expectation. Based on decline curve analysis by SWEPI's consulting petroleum engineer, the estimated ultimate recovery for Well No. 52 is only 0.8 BCF. Based on the assumptions made by this expert of a net investment of \$6,000,000 and gas prices prevailing as of the date of the hearing, the return on investment of this well with a present worth discount is such that if SWEPI had known in advance the well would recover only 0.8 BCF, there is serious doubt that the well would have been drilled even as a vertical well.²⁸

²⁶ The examiners have officially noticed that during 2006, the Commission issued 1,508 drilling permits for directional or directional sidetrack wells, and 3,847 permits for horizontal or horizontal sidetrack wells.

²⁷ See SWEPI Exhibit No. 43. SWEPI's engineer testified that this exhibit shows projected reserves at the time of drilling.

²⁸ SWEPI's engineer testified that with current gas prices over the life of the well, the well would be expected to return about \$275,000 above the undiscounted cost to drill and complete the well, and with a present worth discount of five percent, the well would break even. At a present worth discount of ten percent, the return would be a negative \$200,000. According to SWEPI's engineer, operators will not drill wells like this one simply to break even.

Eyhorn's evidence shows that directional wells can be drilled economically on the proposed qualified subdivisions. An economic analysis of 19 wells on the BTLT Lease, selected because of their modern vintage (wells first producing since November 2000 at the earliest) and proximity to the proposed subdivisions, showed that the average calculated estimated ultimate recovery for the wells is about 2.9 BCF of gas and 89,573 BBLs of condensate. Based on a conservative assumption of an oil price of \$50.00 per barrel and a gas price of \$5.00, an assumed directional drilling cost of \$6,000,000, and assumed monthly operating expenses of \$5,000, Eyhorn's consulting petroleum engineer estimated that the average well will return an undiscounted return on investment of about \$8 million, or with a present worth discount of 15%, about \$5.6 million.

Although SWEPI also expressed concern that landfill use would prevent SWEPI from obtaining new seismic data for the acreage in the proposed subdivisions, the examiners do not believe this is a concern sufficient to conclude that approval of the Eyhorn applications will prevent SWEPI from fully and effectively exploiting the mineral resources of the subdivisions. SWEPI now has seismic data covering the subdivision acreage that was shot in the early 1990's, and apparently has seen no need to shoot new seismic since that time. SWEPI believes that its existing seismic is good for determining structure and faulting. Present seismic technology is not as good for predicting reservoir quality, but use of new seismic for this purpose would depend on future improvements in technology.

Based on the record in these dockets, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. At least ten (10) days notice of this hearing was provided to all affected persons, including the applicant and all owners of possessory mineral interests in the acreage covered by the proposed qualified subdivisions. In addition, notice of the applications was published in the Edinburg Review, which is a newspaper of general circulation in Hidalgo County, Texas, on March 24, March 31, April 7, and April 14, 2006.
2. Pursuant to Chapter 92 of the Texas Natural Resources Code and Statewide Rule 76, Betty Eyhorn ("Eyhorn"), requests in these dockets that the Commission approve two 640-acre qualified subdivisions, the Eyhorn Subdivision No. 1 and Eyhorn Subdivision No. 2, in Hidalgo County, Texas. A plat of Subdivision No. 1 is attached as Appendix 1 and incorporated herein by reference. A plat of Subdivision No. 2 is attached as Appendix 2 and incorporated herein by reference.
3. The Eyhorn applications are opposed by SWEPI, L.P., which is the lessee of the mineral estate and operator of the 10,829-acre Boston Texas Land and Trust Lease ("BTLT Lease"). The proposed Eyhorn qualified subdivisions are located on the southern portion of the BTLT Lease.

4. Each of the subdivided tracts for which qualified subdivision approval is requested contains acreage not exceeding 640 acres.
5. Hidalgo County, Texas, is a county having a population of more than 400,000. The 2005 population of Hidalgo County was 678,275.
6. Each of the proposed qualified subdivisions has been subdivided in a manner authorized by law by the surface owner for industrial use.
 - a. Eyhorn is the owner of the surface estate of the acreage included in each of the proposed qualified subdivisions.
 - b. Eyhorn has filed plats of each of the proposed qualified subdivisions with the Railroad Commission showing subdivided lots and the proposed locations of operations sites for exploration, development, and production of minerals and road and pipeline easements necessary to use the operations sites.
 - c. Under Hidalgo County subdivision rules, approval of the Commissioner's Court of Hidalgo County of qualified subdivision plats is not required prior to Railroad Commission approval. Under these subdivision rules, a parcel of land is considered subdivided for residential, commercial, or industrial use when a plat delineating tract boundaries, oil and gas operations sites, pipeline easements, road easements or other boundaries is filed with the Railroad Commission as a part of an application for approval of a qualified subdivision.
 - d. The acreage covered by the two proposed qualified subdivisions is subject to an option to purchase contract between Eyhorn, as current surface owner, and Hidalgo County, as purchaser.
 - e. Hidalgo County proposes to use each of the proposed qualified subdivisions for a landfill and associated landfill facilities.
7. The plat of each of the proposed qualified subdivisions contains an operations site having a surface area of at least two acres for each 80 acres within the 640-acre subdivision for exploration, development, and production of minerals and provisions for road and pipeline easements to allow use of the operations sites.
8. At the time of the initial hearing in these dockets, within 2.5 miles of proposed Subdivision No. 1, 385 wells had been drilled, including 38 dry holes and 10 saltwater disposal wells. Fifty-six of the producing wells within 2.5 miles have been abandoned.
9. At the time of the initial hearing in these dockets, within 2.5 miles of proposed Subdivision No. 2, 326 wells had been drilled, including 44 dry holes and seven saltwater disposal wells. Fifty-six of the producing wells within 2.5 miles have been abandoned.

10. At the time of the initial hearing in these dockets, a total of 60 wells had been drilled on the BTLT Lease, of which 15 were dry holes and plugged and abandoned. The producing wells have been gas wells, one of which was converted to a saltwater disposal well.
11. Five wells have been drilled on the acreage included in proposed Subdivision No. 1, of which two were dry holes and plugged and abandoned and three are producing wells. Two of the producing wells are completed in the Javelina (Vicksburg Cons.) Field, and the other producing well is completed in the Jeffress NE (T, Lo.-FB, A) Field.
12. At the time of the initial hearing in these dockets, two wells had been drilled on the acreage included in proposed Subdivision No. 2, of which one was a dry hole plugged and abandoned in 1977, and the other is a producing well completed in the Javelina (Vicksburg Cons.) Field. Subsequent to the close of the initial hearing, on or about November 8, 2007, SWEPI completed directional drilling of the BTLT Lease, Well No. 56 on Subdivision No. 2. This well was permitted in the Javelina (Vicksburg Cons.) and Wildcat Fields.
13. The Javelina (Vicksburg Cons.) Field has 467'/933' spacing and standard proration units of 320 acres, with optional 40-acre proration units. The Jeffress NE (T, Lo.-FB, A) Field has 467'/933' spacing and 40-acre proration units.
14. Formations underlying each of the proposed qualified subdivisions are the Frio, Vicksburg, and Eocene formations. Most production within 2.5 miles of the proposed qualified subdivisions has been from deep Vicksburg wells, and all production of wells on the acreage covered by each of the subdivisions has been from the Vicksburg.
15. The operations sites reserved on the plats of each of the proposed qualified subdivisions for exploration, development, and production of minerals are adequate as to number and location and in all other respects, and use of these operations sites will enable the possessory mineral interest owner to fully and effectively exploit and develop the mineral resources of the subdivisions.
 - a. As to each of the subdivisions, operations sites are reserved on the subdivision plats in the form of a continuous 300' wide band of sites around the perimeter and on three and one-half sides of the subdivisions.
 - b. As to Subdivision No. 1, the 300' wide band of operations sites extends around the entire perimeter of the subdivision, except for portions of Lots 1 and 3 in the northwest portion of the subdivision. The width of the operations sites for Subdivision No. 1 is roughly doubled in the northeast and southwest corners of the subdivision and is expanded in Lots 4, 5, and 6 to accommodate existing wells.
 - c. As to Subdivision No. 2, the 300' wide band of operations sites extends around the entire perimeter of the subdivision, except for a portion of the southern boundary in Lots 6 and 8 in the southwest corner of the subdivision. This band of operations sites is expanded in the northwest corner of the subdivision to an area of about 950' x 870'

to accommodate the BTLT Lease Well No. 52 and its gathering lines. The band of operations sites is also expanded to an operations site of about 9.6 acres in Lot 7 on the east side of the subdivision to accommodate the BTLT Lease Well No. 56.

- d. The amount of acreage in the reserved operations sites for each of the proposed qualified subdivisions greatly exceeds the minimum operations site surface acreage required by Texas Natural Resources Code, §92.002(1). The operations sites reserved for Subdivision No. 1 contain 140.65 acres, which is 22.61% of the total acreage in the subdivision. The operations sites reserved for Subdivision No. 2 contain at least 138.79 acres, which is 22.23% of the total acreage in the subdivision.
- e. The reserved operations sites for each of the proposed qualified subdivisions accommodate the locations of existing wells on the subdivisions.
- f. The reserved operations sites for each of the proposed qualified subdivisions provide adequate space for drilling rigs and other facilities, equipment, personnel, and activities associated with drilling of wells.
- g. The reserved operations sites for each of the proposed qualified subdivisions can be used for the drilling of vertical or directional wells.
- h. Directional wells feasibly can be drilled from surface locations on the reserved operations sites on each of the proposed qualified subdivisions to completion locations in all productive formations underlying all areas of the subdivisions.
 - i. Directional wells can be drilled from the reserved operations sites to completion locations in the Frio, Vicksburg, and Eocene formations underlying the central portions of the proposed qualified subdivisions.
 - ii. Excessive angle required to directionally drill to shallow sections of the Frio at depths of less than 4,000', or inability to complete directional wells in stacked pay sections of the Frio, likely will not be a practical problem because these sections of the Frio are probably not productive, or do not contain hydrocarbons producible in commercial quantities, beneath the proposed qualified subdivisions.
 - A. No well drilled within 2.5 miles of either of the proposed qualified subdivisions has ever produced from a depth of less than 4,000'.
 - B. No well drilled on the BTLT Lease has ever produced from the Frio formation.

- C. SWEPI has not attributed any reserves to the Frio formation for any of the wells that have been drilled on the BTLT Lease.
 - iii. Sensitivity of directional drilling tools to high temperatures in the deep sands of the Lower Vicksburg and the Eocene-age sediments likely will not be a problem because SWEPI has the ability to drill directional wells from the reserved operations sites to these formations, under the central area of each of the subdivisions, by building angle in the depth interval between 5,000' and 10,500', then pulling directional tools out of the hole and drilling vertically to total depth of the well.
 - iv. Directional wells economically can be drilled from the reserved operations sites to productive formations beneath all areas of each of the proposed qualified subdivisions.
 - v. Directional wells can be drilled from the reserved operations sites to productive formations beneath all areas of each of the proposed qualified subdivisions without unacceptable risk of wellbore problems.
16. The road and pipeline easements reserved on the plats of each of the proposed qualified subdivisions are adequate as to number and location, and in all other respects, to allow use of the reserved operations sites and to enable the possessory mineral interest owners to fully and effectively exploit and develop the mineral resources of the subdivisions.
- a. The reserved operations sites around the perimeter of Subdivision No. 1 can be accessed from adjoining roadways by a 30' wide private road access easement reserved on the subdivision plat that runs parallel to and just to the interior of the operations sites.
 - b. The plat of Subdivision No. 1 reserves a 50' wide pipeline and access easement that generally parallels and is interior to the reserved private road access easement.
 - c. The plat of Subdivision No. 2 reserves a 50' wide pipeline and access easement that runs around the perimeter of the subdivision parallel and just interior to the reserved operations sites, and roadways surround the subdivision.
 - d. The pipeline easements reserved on the plats of the proposed qualified subdivisions accommodate the locations of all existing SWEPI pipelines and gathering lines and a SWEPI pipeline easement where no pipeline now exists.

CONCLUSIONS OF LAW

- 1. Proper notice of hearing was timely issued by the Railroad Commission to appropriate persons entitled to notice.

2. All things necessary to the Commission attaining jurisdiction over the subject matter and the parties in these dockets have been performed or have occurred.
3. Each of the applications for approval of qualified subdivisions in these dockets meets and complies with all requirements for approval of Chapter 92 of the Texas Natural Resources Code and Railroad Commission Statewide Rule 76 [Tex. R.R. Comm'n, 16 TEX. ADMIN. CODE §3.76].
4. Approval of each of the applications in these dockets will ensure that the mineral resources of each of the qualified subdivisions are fully and effectively exploited and developed.

RECOMMENDATION

The examiners recommend that the Commission adopt the attached final orders approving the applications of Betty Eyhorn in these dockets.

Respectfully submitted,

James M. Doherty
Hearings Examiner

Marshall Enquist
Hearings Examiner

Donna Chandler
Technical Examiner