-ARCHAEOLOGICAL SURVEY CONSULTANTS

CULTURAL RESOURCES EXAMINATION

on lands administered by the Department of the Interior Bureau of Land Management Roswell District, New Mexico ASC PERMIT NO.: 18-2920-93-G ASC JCB NO.: 94-027; Enron Oil & Gas Company Half "7" Fed. Well No. 1 & Access Road R/W

1. ABSTRACT: intensive archaeological survey of the Enron Oil & Gas Company Half "7" Federal Well No. 1 (final well pad location: 400 ft. square, 3.67 acres; original well pad location: 400 ft. square, 3.67 acres), and access road R's/W (final: 150 ft. long x 150 ft. wide, 0.52 acres; cancelled access road R/W: 280 ft. long x 100 ft. wide, with a 150 ft. sq. dalta, 0.81 acres). A total land surface of 8.67 acres was inspected for cultural remains [New Mexico State land surface, 8.60 acres; federal land surface, 0.07 acres].

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Consequently, the well pad was moved to 990 FSL, 990 FWL to avoid the site.

Archaeological survey of the Enron Oil & Gas Company Half "7" Federal Well No. 1 final location (@ 990 FSL, 990 FWL) and Access Road R/W did not reveal any cultural resources. Therefore, archaeological CLEARANCE for the Enron Oil & Gas Company Half "7" Federal Well No. 1 (final location @ 990 FSL, 990 FWL), and access road R/W is RECOMMENDED.

2. LETAL LOCATION: T25S, R34E, Section 7, SWASWA: (990 FSL, 990 FWL). ACCESS ROAD R/W LOCATION: T25S, R34E, Section 7 (SWASWA: NWASWA: Lea County, New Mexico.

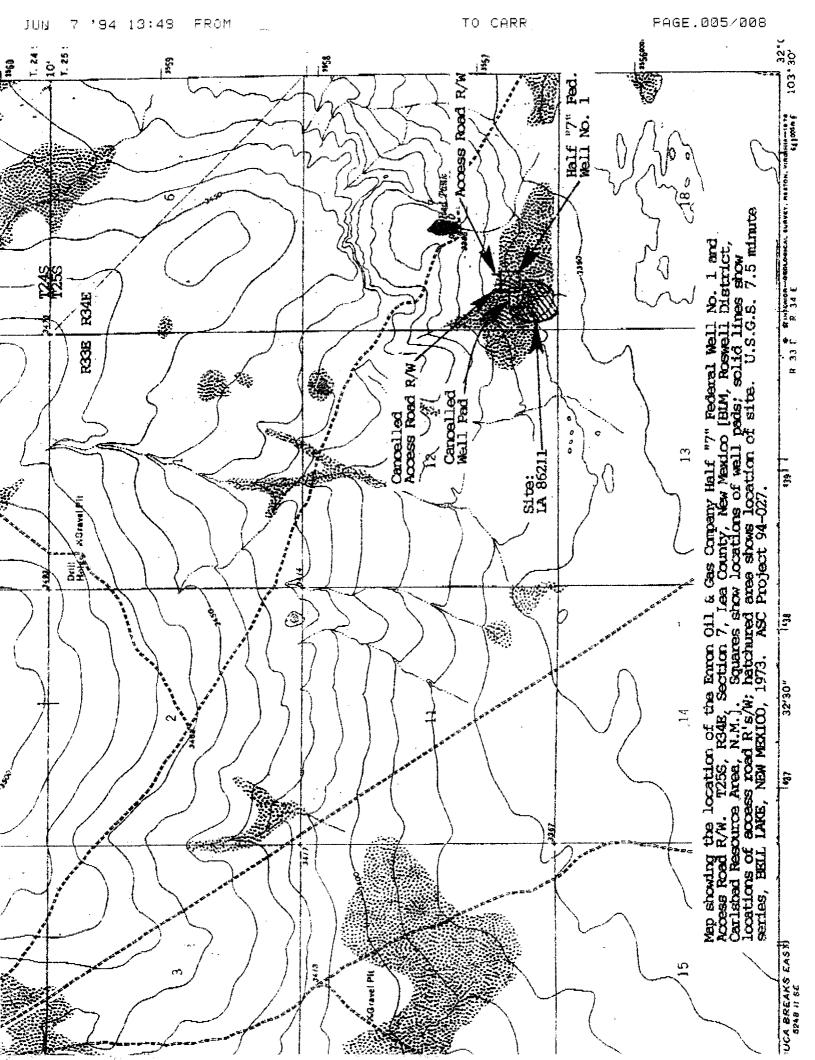
Map Reference: U.S.G.S. 7.5 minute series, BEIL LAKE, NEW MEXICO, 1973.
Land Status: New Mexico State Land Surface: T25S, R34E, Section 7 (S4S2; NE4SW4; SFANW4). BIM, Carlsbad Resource Area, New Mexico: T25S, R34E, Section 7 (N4N2; S4NE4; N4SE4; SWANW4; NW4SW4).

3. PROJECT DESCRIPTION: well pad (final well pad location: 400 ft. square, 3.67 acres; original well pad location: 400 ft. square, 3.67 acres), and access road R's/W (final: 150 ft. long x 150 ft. wide, 0.52 acres; camcelled access road R/W: 280 ft. long x 100 ft. wide, with a 150 ft. sq. delta, 0.81 acres). A total land surface of 8.67 acres was inspected for cultural remains [New Mexico State land surface, 8.60 acres; federal land surface, 0.07 acres].

TOPOGRAPHY: situated ca. 6.5 miles SW of Antelope Ridge and 6.4 miles NE of Paduca Breaks, within an area draining 4.0 miles SE towards Woodley Flat, and 1200 ft. SW of Red Tank; the project is in undulating to inclined terrain, which slopes in a S/SE direction. The project area is at the interface of 2 soil zones; the area to the W/SW is marked by headward eroding arroyos; the development of coppice dunes at the margins of dune rise terrain further to the S/SW. The area to the N/NE is characterized by psuedo-coppice dunes, some arroyo cutting, shallow soils with a high caliche float. Indurated caliche is at a shallow depth. Shallow aeolian deposits overlay sterile caliche at a shallow depth; caliche float is characteristic. Soils: interface of Pyote soils/Duneland terrain and Simona-Upton association, with most of the project in the latter soil assemblage. Permanent Water: Pecos River, ca. 27.0 miles WWW. Potential Water: Bell Lake, 7.42 miles NNW. Elevation: 3358 ft. to 3366 ft. Slope: 0.39° to 1.04°. Aspect: SE. Littic Resources: only small gravel float in the project area. Vegetation: Grassland Formation, scrub-grass scrub disclimax community.

4. EXAMINATION PROCEDURE: straight and zig-zag transacts, spaced no greater than 15 metres apart, with dogleash transacts in the area of cultural material. Work Hrs. on Ground: 6.25. Area Delineation: staked by client. Visibility: ground, ca. 65% to 100% in denuded areas; weather, sunny.

Exhibits 1 through >



Case No	1102/ Exhibit No1_
Submitted by:	Enron Oil & Gas Company
Hearing Date:_	July 21, 1994

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Form 3160-3 (July 1992)

UNITED STATES DEPARTMENT OF THE INTERIOR

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

FORM APPROVED OMB NO. 1004-0136 Expires: February 28, 1995

BUREAU OF LAND MANAGEMENT				NM 18640-A				
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PERMIT NO					APPROVAL DATE			GEHERAL REQUIREMENTS AL
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*See Instructions On Reverse Side --- because in and mittentin to make to any department or agency of the

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

Case No.	11027
Order No.	. R-

APPLICATION OF ENRON OIL & GAS COMPANY FOR AN UNORTHODOX OIL WELL LOCATION, LEA COUNTY, NEW MEXICO.

ENRON OIL & GAS COMPANY'S PROPOSED ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 21, 1994, at Santa Fe, New Mexico, before Examiner Jim H. Morrow.

NOW, on this _____ day of July, 1994, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) The applicant, Enron Oil & Gas Company ("Enron") seeks approval to drill its Half 7 Federal Well No. 1 at an unorthodox oil well location 990 feet from the South and West lines (Unit M) of Section 7, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico, to test the Bone Spring formation.
- (3) The proposed well location is situated within one mile of the outer boundaries of the Red Hills-Bone Spring Pool, which is governed by Special Rules and Regulations (Division Order No. R-10109), which require 80-acre spacing with wells to be located within 150 feet of the center of either quarter-quarter section.
- (4) The applicant proposes to dedicate 80-acres consisting of the W/2 SW/4 of said Section 7 to this well.
- (5) Enron originally proposed this well at a standard location in the SW/4 SW/4 of said Section 7, but was required to move the location to avoid an archeological site.

Case No. 11027 Order No. R-____ Page 2

- (6) The applicant further testified that according to geological and engineering data utilized in this area, a well at the proposed unorthodox location should penetrate the Bone Spring formation at a thicker net sand position than a well drilled at a standard location in the NW/4 SW/4 of said Section 7, thereby reducing the inherent risk of drilling a dry hole or non-commercial well in this area.
- (7) The applicant further testified that a well at the proposed unorthodox location should be less affected by drainage from offsetting wells than a well at a standard location in the NW/4 SW/4 of Section 7 and would increase the ultimate recovery of oil underlying the proration unit, thereby preventing waste.
- (8) The applicant presented evidence which indicates that the working and royalty interest ownership in the proposed proration unit and in all affected offset acreage is common and no interest owner has objected to this proposed location.
- (9) Approval of the subject application will afford the applicant the opportunity to produce its just and equitable share of the oil in the subject pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of well, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED THAT:

- (1) The applicant, Enron Oil & Gas Company, is hereby authorized to drill its Half 7 Federal Well No. 1 at an unorthodox oil well location 990 feet from the South and West lines (Unit M) of Section 7, Township 25 South, Range 34 East, NMPM, Undesignated Red Hills-Bone Spring Pool, Lea County, New Mexico.
- (2) The W/2 SW/4 of said Section 7 shall be dedicated to the above described well.
- (3) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LeMAY Director

Case No	11027 Exhibit No7
Submitted by:	Enron Oil & Gas Company
Hearing Date:	July 21, 1994

Enron Oil & Gas Company Half "7" Federal No. 1 Unorthodox Location Hearing

The preferred drill site is in the south half of the 80 acre dedication unit. The north half orthodox location is within the drainage radius of the Diamond "7" Federal No. 4. (north offset)

Volumetric Drainage Areas and Radii

Well Name	Net Pay (Ft)	Decline EUR (MBO)	Drainage Acres	Drainage Radius (Ft)
Diamond "7" Federal No. 4	64	178.5	111.9	1,246
Diamond "7" State No. 2	81	116.4	57.6	894
Hallwood "12" Federal No. 3	105	144.1	55.0	873

Reservoir and Fluid properties used in volumetric calculations.

POROSITY - 12.5% FORMATION VOLUME FACTOR - 1.867 OIL SATURATION - 60.0% RECOVERY FACTOR - 8.0%

BEFORE THE OIL CONSERVATION DIVISION Santa Fe, New Mexico

Case No	11027	Exhibit No	5
Submitted by:	Enron O	il & Gas Compa	ny
Hearing Date	:	July 21, 1994	

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-ARCHAEOLOGICAL SURVEY CONSULTANTS

CULTURAL RESOURCES EXPAINATION

on lands administered by the Department of the Interior Bureau of Land Management Roswell District, New Mexico

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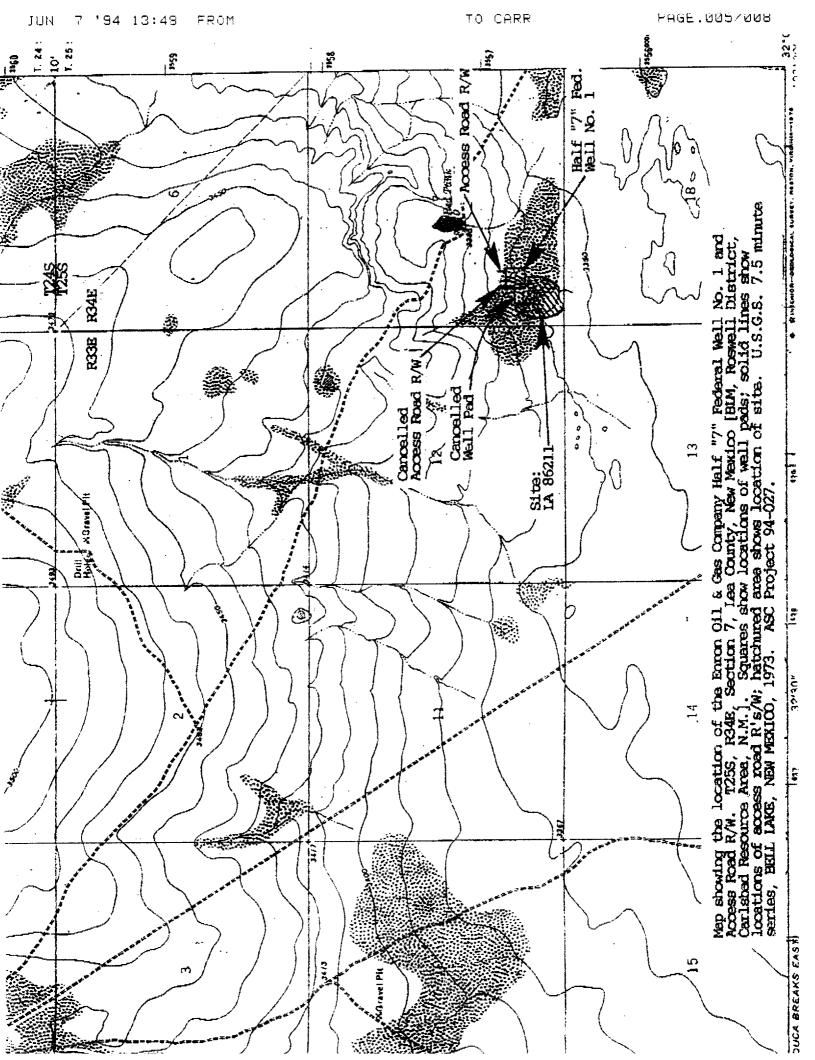
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Case No.	11027 Exhibit No1_
Submitted by:	Enron Oil & Gas Company
Hearing Date:	July 21, 1994

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Form 3160-3 (July 1992)

SUBMIT IN TRIPLICATE. UNITED STATES

(Other instructions on reverse side)

FORM APPROVED OMB NO. 1004-0136 Expires: February 28, 1995

DEPARTMENT OF THE I	NTER	IOR		5. LEASE DESIGNATION AND BERIAL NO.	
BUREAU OF LAND MANAG		NM 18640-A			
APPLICATION FOR PERMIT TO I		6. IF INDIAN, ALLOTTEE	OR TRIBE NAME		
a. TYPE OF WORK		<u> </u>			
DRILL X DEEPEN				7. UNIT AGREEMENT NA	X3
D. TYPE OF WELL OIL TY GAS T		ore X Murin	ינצ (ן	8. FARM OR LRASE HAME WELL	<u></u>
WELL X WELL OTHER	ZON	E CONE		Half 7 Federa	
Enron Oil & Gas Company				9. AT WELLING	
ADDRESS AND TELEPHONE NO.					
P. O. Box 2267, Midland, Texas 79702	•			10. FIELD AND POOL, OR	WILDCAT
LOCATION OF WELL (Report location clearly and in accordance wi	th any St	ate requirements.*)		Red Hills Bone	Spring
990' FSL & 660' FWI mit				11. SEC., T., R., M., OR BI AMD SURVEY OR ARE	IX.
4t proposed prod. son 990 990' FSL & 660' FML MOT				Sec 7, T25S,	R34E
DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POS	ST OFFICE			12. COUNTY OR PARISH	13. STATE
29 miles west from Jal				Lea	NM
DISTANCE FROM PROPUSED*	16. NO.	OF ACRES IN LEASE		OF ACRES ASSIGNED HIS WELL	
PROPERTY OR LEARE LINE, FT. 330 (Also to nearest drig. unit line, if any) 330		40		40	•
DISTANCE FROM PROPOSED LOCATION® TO NEAREST WELL, DRILLING, COMPLETED.	19. Рко	POSED DEPTH	20. BOTA	RY OR CABLE TOOLS	
OR APPLIED FOR, ON THIS LEASE, FT. None	12	,600	<u> </u>	Rotary	
ELEVATIONS (Show whether DF, RT, GR, etc.)				22. APPROX. DATE WOR	K WILL START*
3366' GR				6/1/94	
PROPOSED CASI	ING AND	CEMENTING PROGRA	м		
SIZE OF HOLE GRADE SIZE OF CASING WEIGHT PER F	7007	SETTING DEPTH		QUANTITY OF CEMENT	
14-3/4 11-3/4 H-40 STSC 42#	_	650		Sx C1 C CIRCULA	TED
11 8-5/8 J-55 LT&C 32#		5200		sx CIRCULATED.	
7-7/8 5-1/2 J-55 & N-80 ST&C	17#	12650	1400	sx <u>TOC est at</u>	4500'
BEFORE THE OIL CONSERVATION DIV Santa Fe, New Mexico Case No	No	any	and proposed	Carlahada	
	Reg	ulatory Analy	st	DATE 3/2/94	
(This space for Federal or State office use)				APPROVAL ST	
CONTRACTOR VO		APPROVAL DATE		GENERAL REC	
Application approval does not warrant or certify that the applicant holds legal or e	ecasitable title	to those rights in the minima	Icase which =	STECIAL STIP	ULATIONS
Application approval does not warrant or certify that the applicant notes legal or e CONDITIONS OF APPROVAL, IF ANY:	paramie ude	unani ligina in un anijou		A FACHED	
	for!				
APPROVED BY Fin links TITLE	·	AREA MANAG	co.	1	•
APPROVED BY Im tunin TITLE	2	THE PROPERTY		DATE 6-8-99	

*See Instructions On Reverse Side

the state of a same for any person knowingly and willfully to make to any department or agency of the

Enron Oil & Gas Company Half "7" Federal No. 1 Unorthodox Location Hearing

The preferred drill site is in the south half of the 80 acre dedication unit. The north half orthodox location is within the drainage radius of the Diamond "7" Federal No. 4. (north offset)

Volumetric Drainage Areas and Radii

Well Name	Net Pay (Ft)	Decline EUR (MBO)	Drainage Acres	Drainage Radius (Ft)
Diamond "7" Federal No. 4	64	178.5	111.9	1,246
Diamond "7" State No. 2	81	116.4	57.6	894
Hallwood "12" Federal No. 3	105	144.1	55.0	873

Reservoir and Fluid properties used in volumetric calculations.

POROSITY - 12.5% FORMATION VOLUME FACTOR - 1.867 OIL SATURATION - 60.0% RECOVERY FACTOR - 8.0%

BEFORE THE OIL CONSERVATION DIVISION Santa Fe, New Mexico

Case No.	11027	Exhibit No.	5
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Submitted by: Enron Oil & Gas Company

Hearing Date: July 21, 1994

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STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

Case No. 1	11027
Order No. R-	

APPLICATION OF ENRON OIL & GAS COMPANY FOR AN UNORTHODOX OIL WELL LOCATION, LEA COUNTY, NEW MEXICO.

ENRON OIL & GAS COMPANY'S PROPOSED ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 21, 1994, at Santa Fe, New Mexico, before Examiner Jim H. Morrow.

NOW, on this _____ day of July, 1994, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) The applicant, Enron Oil & Gas Company ("Enron") seeks approval to drill its Half 7 Federal Well No. 1 at an unorthodox oil well location 990 feet from the South and West lines (Unit M) of Section 7, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico, to test the Bone Spring formation.
- (3) The proposed well location is situated within one mile of the outer boundaries of the Red Hills-Bone Spring Pool, which is governed by Special Rules and Regulations (Division Order No. R-10109), which require 80-acre spacing with wells to be located within 150 feet of the center of either quarter-quarter section.
- (4) The applicant proposes to dedicate 80-acres consisting of the W/2 SW/4 of said Section 7 to this well.
- (5) Enron originally proposed this well at a standard location in the SW/4 SW/4 of said Section 7, but was required to move the location to avoid an archeological site.

Case No. 11027 Order No. R-____ Page 2

- (6) The applicant further testified that according to geological and engineering data utilized in this area, a well at the proposed unorthodox location should penetrate the Bone Spring formation at a thicker net sand position than a well drilled at a standard location in the NW/4 SW/4 of said Section 7, thereby reducing the inherent risk of drilling a dry hole or non-commercial well in this area.
- (7) The applicant further testified that a well at the proposed unorthodox location should be less affected by drainage from offsetting wells than a well at a standard location in the NW/4 SW/4 of Section 7 and would increase the ultimate recovery of oil underlying the proration unit, thereby preventing waste.
- (8) The applicant presented evidence which indicates that the working and royalty interest ownership in the proposed proration unit and in all affected offset acreage is common and no interest owner has objected to this proposed location.
- (9) Approval of the subject application will afford the applicant the opportunity to produce its just and equitable share of the oil in the subject pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of well, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED THAT:

- (1) The applicant, Enron Oil & Gas Company, is hereby authorized to drill its Half 7 Federal Well No. 1 at an unorthodox oil well location 990 feet from the South and West lines (Unit M) of Section 7, Township 25 South, Range 34 East, NMPM, Undesignated Red Hills-Bone Spring Pool, Lea County, New Mexico.
- (2) The W/2 SW/4 of said Section 7 shall be dedicated to the above described well.
- (3) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LeMAY Director

Case No	11027 Exhibit No7_
Submitted by:	Enron Oil & Gas Company
Hearing Date:	July 21, 1994