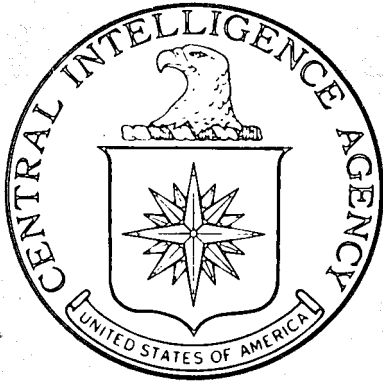


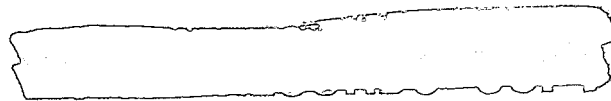
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IMAGERY  
ANALYSIS  
DIVISION

PIR

PHOTOGRAPHIC INTELLIGENCE REPORT



SEARCH FOR SEISMIC ACTIVITY  
IN OIL/GAS FIELD NEAR SALAVAT, USSR

Declass Review by NGA



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CIA/PIR 63038

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DATE FEB 1966

COPY 90

PAGES 12

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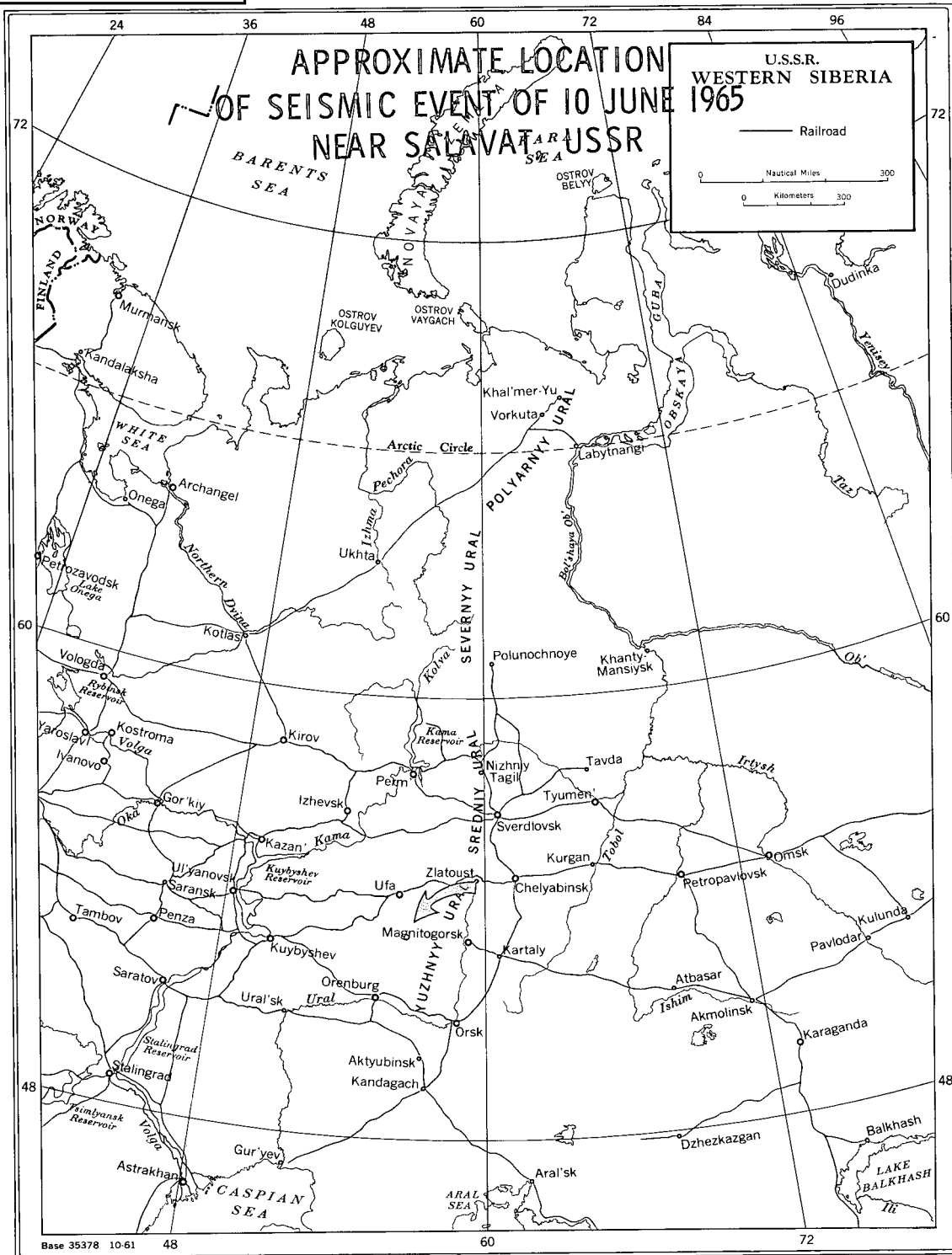


FIGURE 1

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SEARCH FOR SEISMIC ACTIVITY  
IN OIL/GAS FIELD NEAR SALAVAT, USSR

INTRODUCTION

This report is in response to a request for a detailed analysis of an oil/gas field (53-04N 55-50E) approximately 17 nautical miles (nm) SSW of the city of Salavat, USSR. The analysis of the field involved a well-by-well study for evidence of activity which might be related to a seismic event which occurred on 10 June 1965. An attempt was made to find indications of the detonation of a nuclear device to recover oil/gas in a Plowshare-type experiment or the detonation of very large amounts of chemical explosives for the same purpose.

DISCUSSION

The seismic event of 10 June 1965 was reported to have occurred within the area enclosed by an imaginary ellipse centered on the geographic coordinates 53-09N 55-34E. The ellipse had a semimajor axis of 29 kilometers (km) and a semiminor axis of 16 km. There are 4 and possibly 5 oil/gas fields located within the ellipse. For photographic search purposes the area of the ellipse is shown in rectangular form in Figure 2. The oil/gas fields in the area of search have been given the letter designators A through E. Field A is the northernmost field and Field E the southernmost. Of the five fields in the search area only Field D exhibited any significant drilling activity and therefore detailed investigation was limited to this field.

In response to an earlier requirement the entire area of the ellipse was searched for evidence of a seismic event; the results of the earlier search were negative. Ufa was used as the reference point in this requirement.

Size and Well Spacing of Field D

Field D is a small oil/gas field. It covers 210-250 acres. Well spacing is very close. The exact spacing cannot be determined since identification of probable "christmas trees" (well heads) was based mainly on ground activity and road patterns. The "christmas tree" piping and valves were not visible. It was possible to make a positive identification of service rigs. The average well spacing is 1 well per 6 acres, plus or minus 2 acres.

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### Age of Field D

The majority of the oil fields in the Ishimbay area are relatively old. In the immediate vicinity of the city at least one field was in existence in the mid-1930's. There are some indications that Oil/Gas Field D is an old field. They are:

1. The field was very well defined on the photography of [redacted]
2. There are permanent service rigs located over many of the wells. In modern fields permanent service rigs are not left over the wells.
3. The wells are very closely spaced contrary to modern conservation practice.

### Recent Seismic Work in Field D

Photography of [redacted] revealed extensive seismic work in Field D. Two separate shot patterns were visible on this photography. The older of the two patterns consisted of a series of straight scars visible through snow cover. Because of the snow cover the placement and distance between shot holes in this pattern could not be determined. The second and more recent seismic pattern is laid out in a plus configuration. This pattern has been laid out over, and oblique to, the scars of the first seismic pattern. In the plus configuration the distance between the shot holes, which are laid out in an approximate NNE-SSW line, is about 610 feet. The distance between the majority of holes which are laid out in an approximate WNW-ESE line also is about 610 feet; however, the spacing between the final two holes at either end of this line is 1220 feet or twice the distance between the interior holes. The center of the plus-shaped pattern is located near the site of the largest drill rig in the field. The seismic plus-shaped pattern used in this field is similar to the pattern used by the Soviets in their marine seismic work at Cayo Frances, Cuba. (Figure 3)

### Indications of Drilling and Drill Rigs

No large drill rigs were visible on photography prior to [redacted]. Large drilling rigs and seismic activity appeared simultaneously for the first time on [redacted]. On all interpretable photography since [redacted] drilling rigs have been visible. No more than 4 drill rigs have been visible at any one time within the field. Of the 4 rigs being used in the field, 3 are

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X1 approximately [ ] high (excluding the base platform). These rigs probably have a maximum drilling depth of 4000-7000 feet. The fourth rig (Rig C) measures approximately [ ] high excluding the base platform. It probably has a maximum drilling depth of 7000-10,000 feet. Of course, all four of the drill rigs could be used to drill holes to depths less than their maximum. Two of the rigs have not been moved since [ ] The other rigs appear to have been moved about the field (Figure 8 and Table 1). No new drilling activity was noted in Fields A, B, C, E (Figure 2). The drilling activity in Field D appears to have resulted in dry holes (if in fact the purpose of the drilling was to locate and produce oil). Using stereo-microscopic techniques the mud pits and support structures for the drilling operations are identifiable on photography. However, no unusual buildings or equipment were noted on photography and therefore this information was not included in Figure 8.

Depth of Field D

The original producing horizon in Field D was probably less than 4000 feet from the surface. This depth estimate was arrived at primarily on the bases of well spacing. The cost of drilling deep wells on the basis of 1 well per 4-8 acres would appear to be prohibitive. An exception to this cost-versus-depth concept might be made in the case of a national emergency such as existed in the Soviet Union during World War II.

CONCLUSIONS

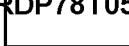
The most obvious purpose of the seismic and drilling activity at Field D would appear to be a search for an oil/gas bearing horizon at a greater depth than the original producing horizon. If this is the case, the search does not appear to have been successful as of [ ]

X1 [ ]

The possibility of this field being used for a Plowshare experiment, that is, the detonation of a nuclear device for the recovery of gas/oil cannot be confirmed or negated. The surface indications are that the field is probably old and therefore possibly depleted or nearly depleted, making it a good prospect for such an experiment

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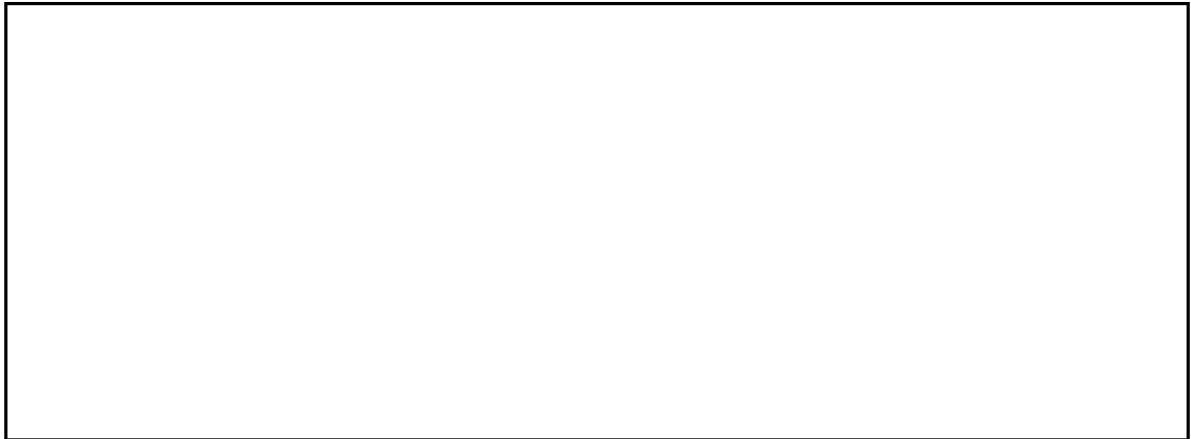
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from the viewpoint of additional oil/gas recovery. The extensive seismic work and drilling activity might be necessary to obtain details of the subsurface structure for such an experiment. The largest of the four drill rigs in the field would probably have sufficient structural strength to drill or enlarge a well to the proper diameter for a nuclear device and to emplace the device. The location of the field is within the search area as defined by the ellipse discussed in paragraph 2 and is located 11 nm SW of the epicenter of the seismic event of 10 June 1965.


All height measurements have been made by the NPIC Technical Intelligence Division, and are considered to be accurate within + 15 feet.

REFERENCES




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Maps and Charts

AMS. Series DESPA-1, NN40-7, Sterlitamak, USSR, scale 1:250,000, 1st ed., July 1963. (TOP SECRET )

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Documents

1. CIA. PIR-63021, Search for Seismic Event of 10 June 1965 in the USSR, November 1965. (TOP SECRET )

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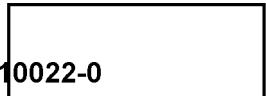
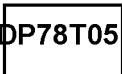
Requirement No.

C-SI5-83,223

CIA/IAD Project No.

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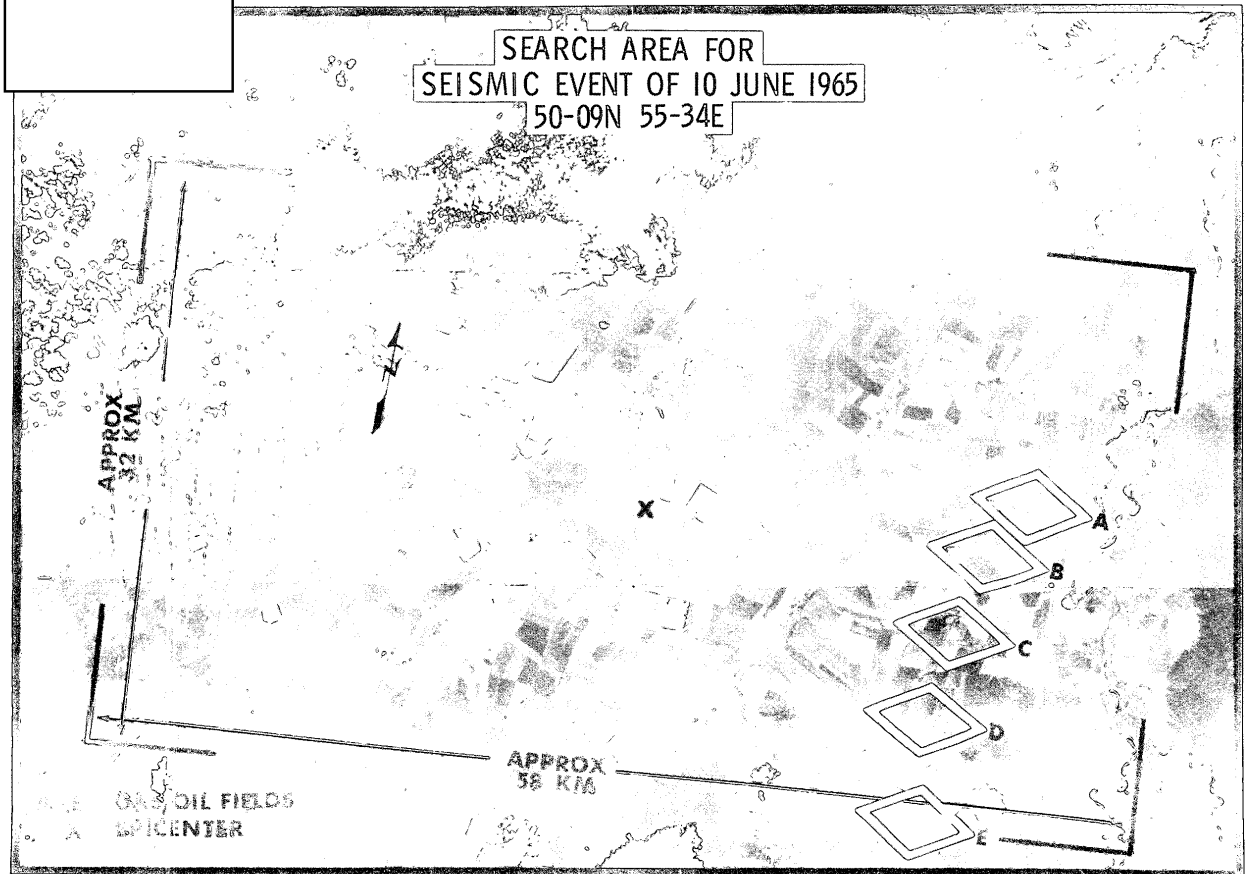
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FIGURE 2

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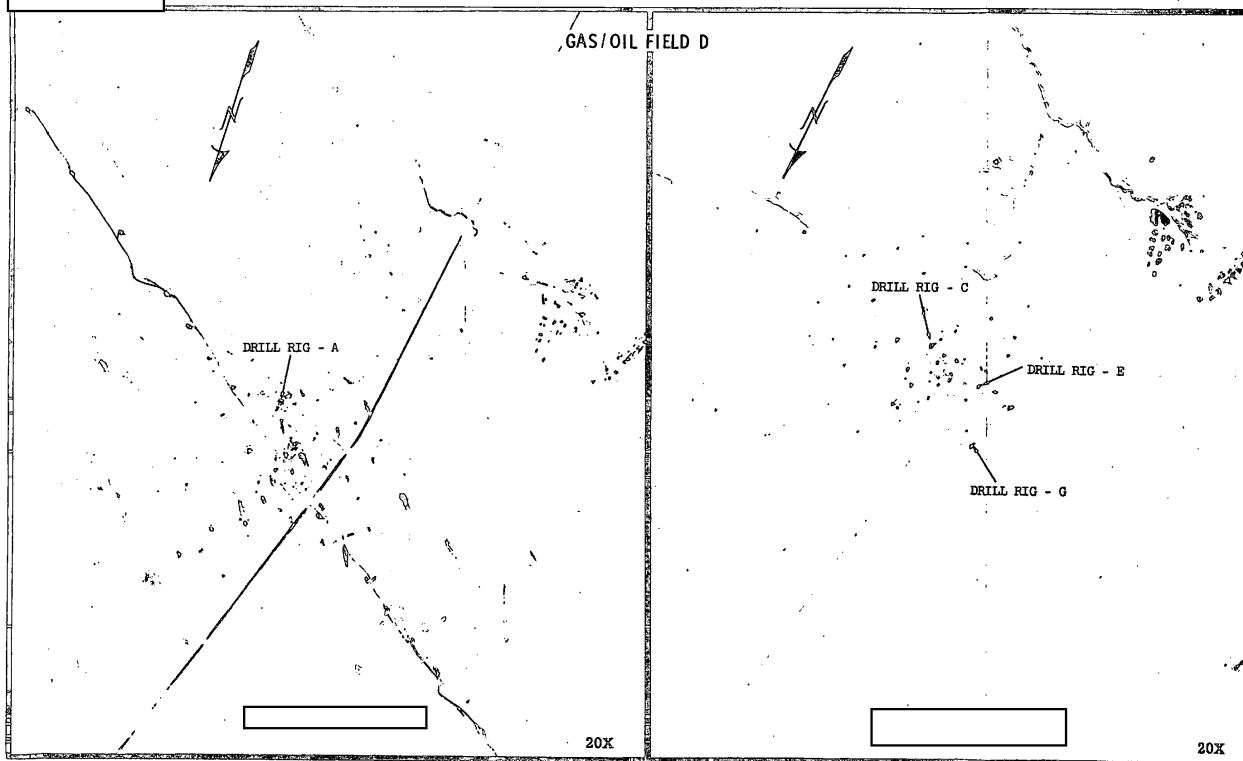


FIGURE 3

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[REDACTED]  
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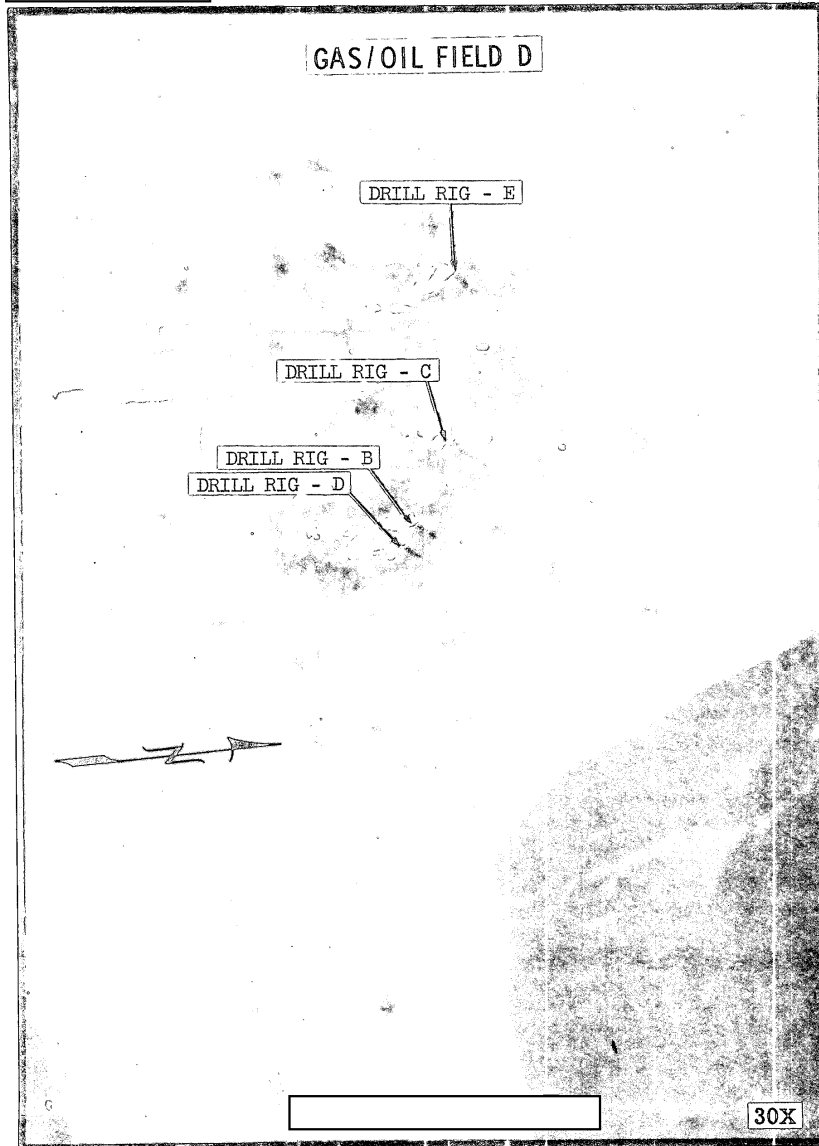


FIGURE 4

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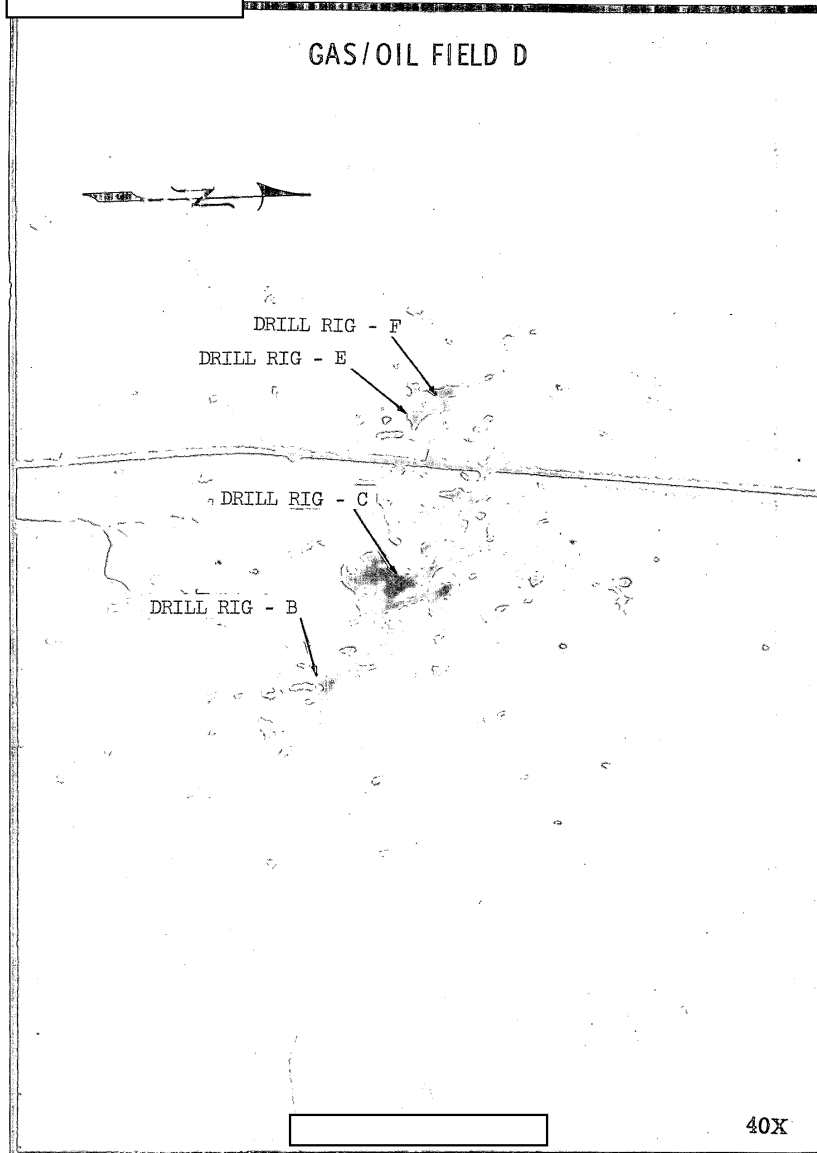


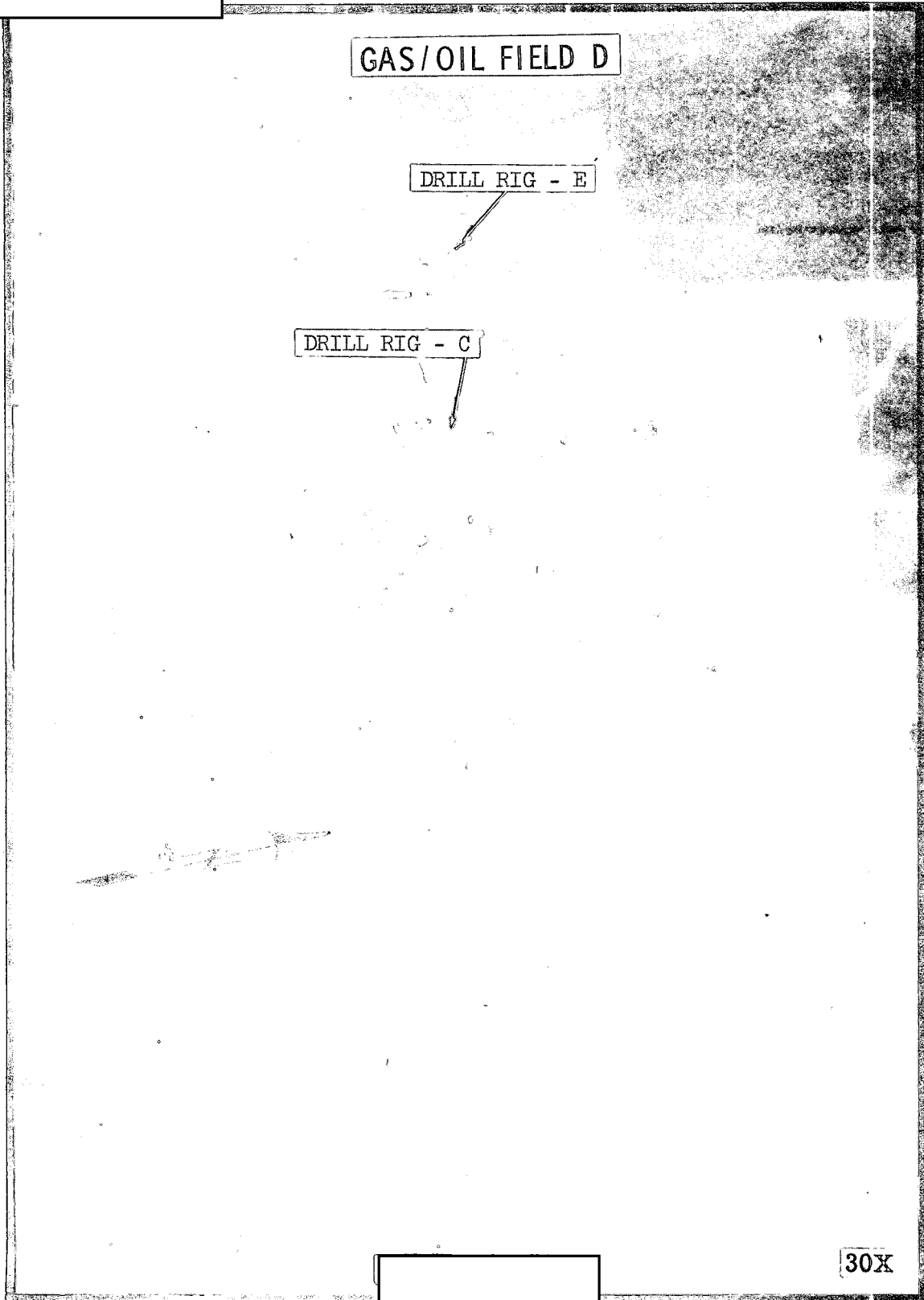
FIGURE 5

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FIGURE 6

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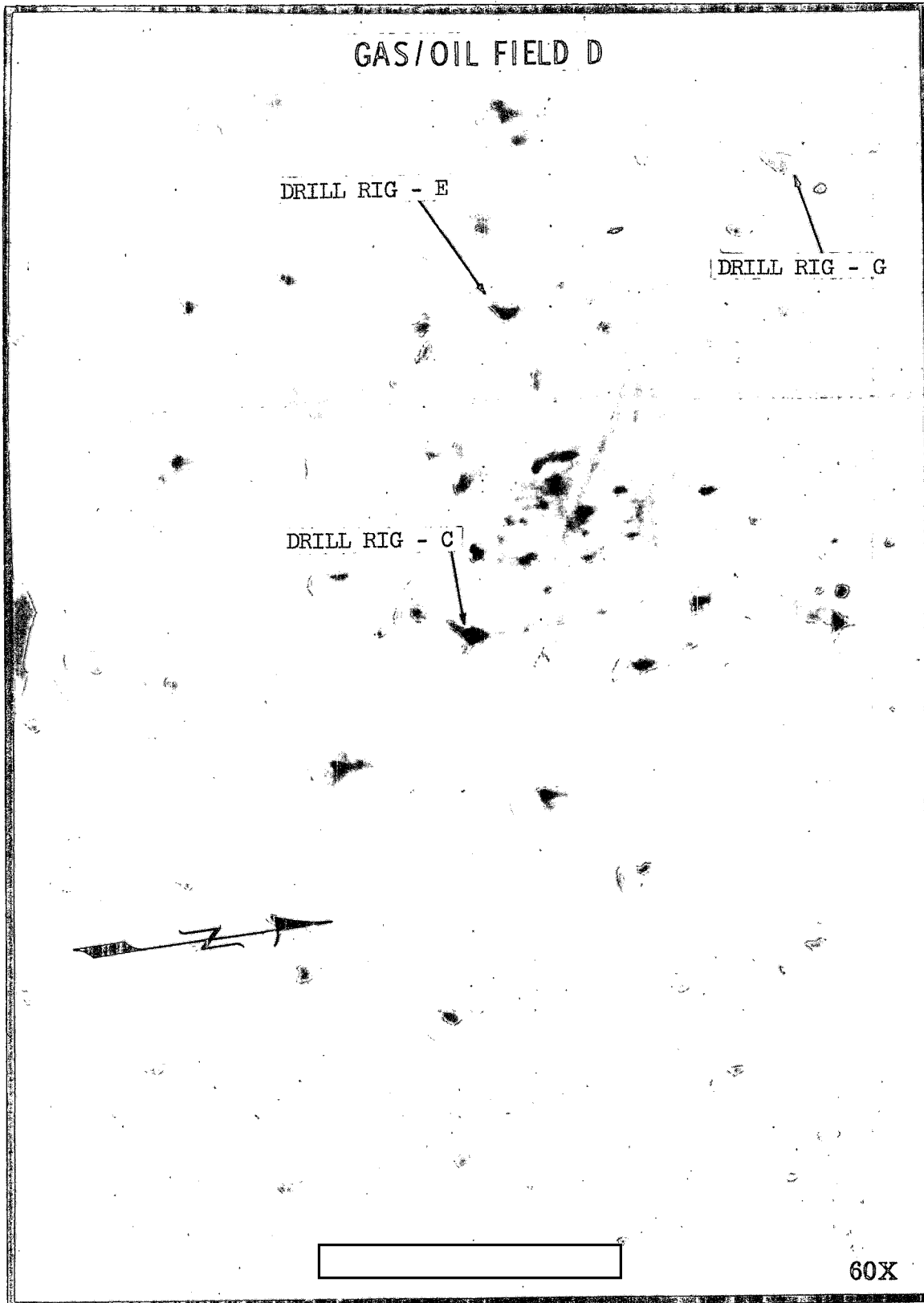
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FIGURE 7

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TABLE I

MISSION	DATE	DRILL RIGS PRESENT							FIG. NOS.	QUALITY
		A	B	C	D	E	F	G		
		X	X	X	X	X	X	X	--	FAIR
		X	X	X	X	X	X	X	--	FAIR
		O	X	*	X	X	X	X	3	FAIR
		O	X	O	O	O	X	X	--	POOR
		X	O	O	O	O	X	X	4	GOOD
		X	O	O	X	O	O	X	5	GOOD
		SEISMIC EVENT 10 JUNE 1965								
		X	X	O	X	O	X	X	6	FAIR
		X	X	O	X	O	X	O	3 & 7	GOOD
TOTAL TIMES DRILL RIG VISIBLE (In Months)		5	6	17	2	17	-	-		

X - Drill rigs not present.

O - Drill rigs present.

\* - Although Drill Rig C was not present on [redacted] there was activity at the site where the rig was subsequently erected.

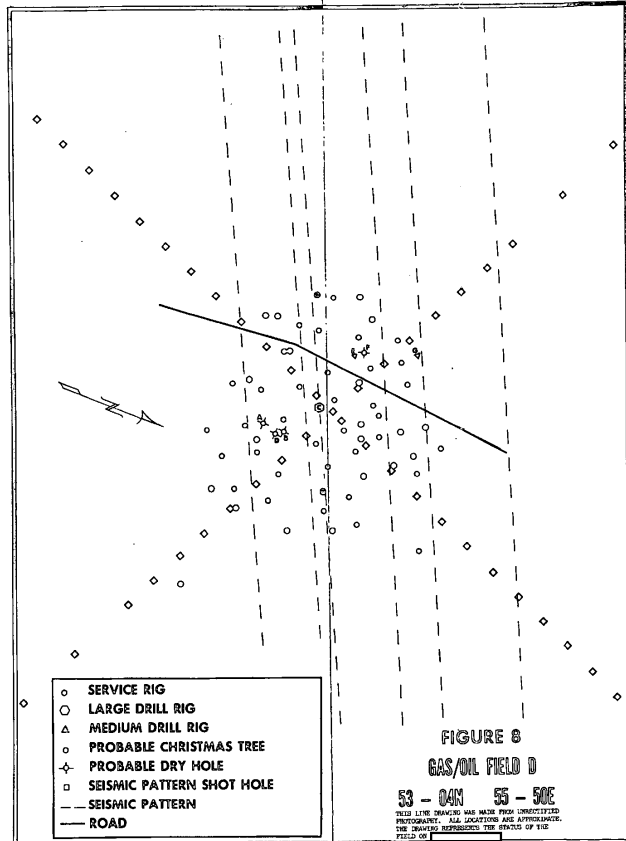


FIGURE 8  
GAS/OIL FIELD D  
53 - 04M 55 - 50E  
THIS LINE DRAWING WAS MADE FROM UNRECTIFIED PHOTOGRAPHS. ALL LOCATIONS ARE APPROXIMATE. THE DRAWING REPRESENTS THE STATUS OF THE FIELD ON [redacted]

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