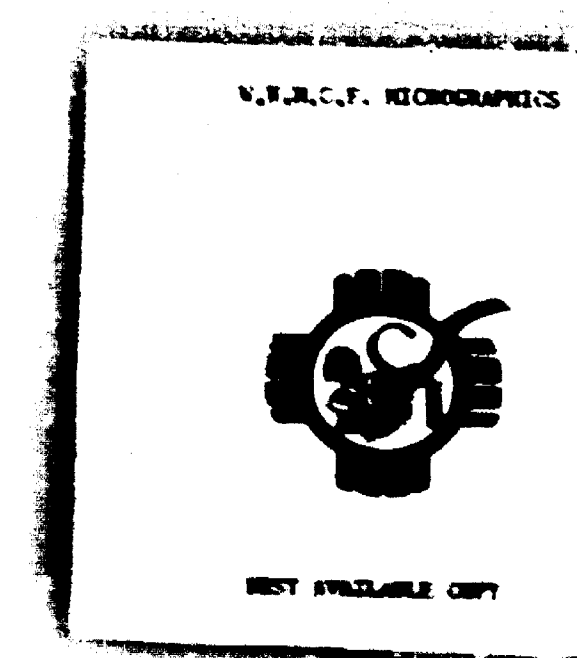
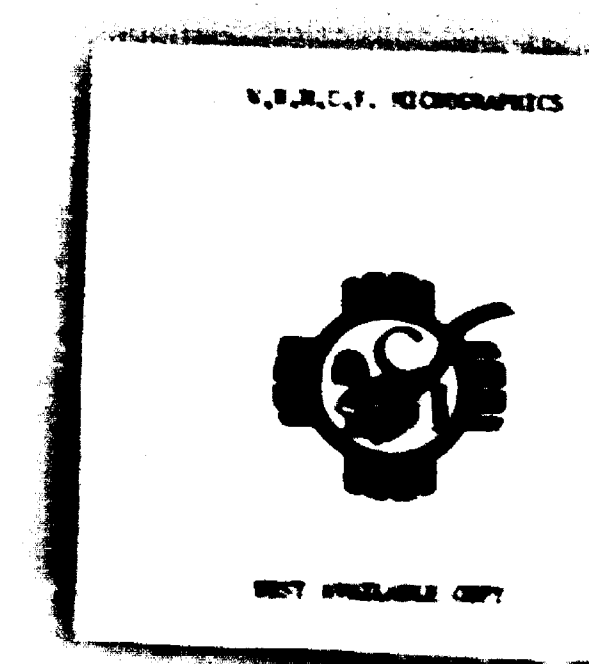
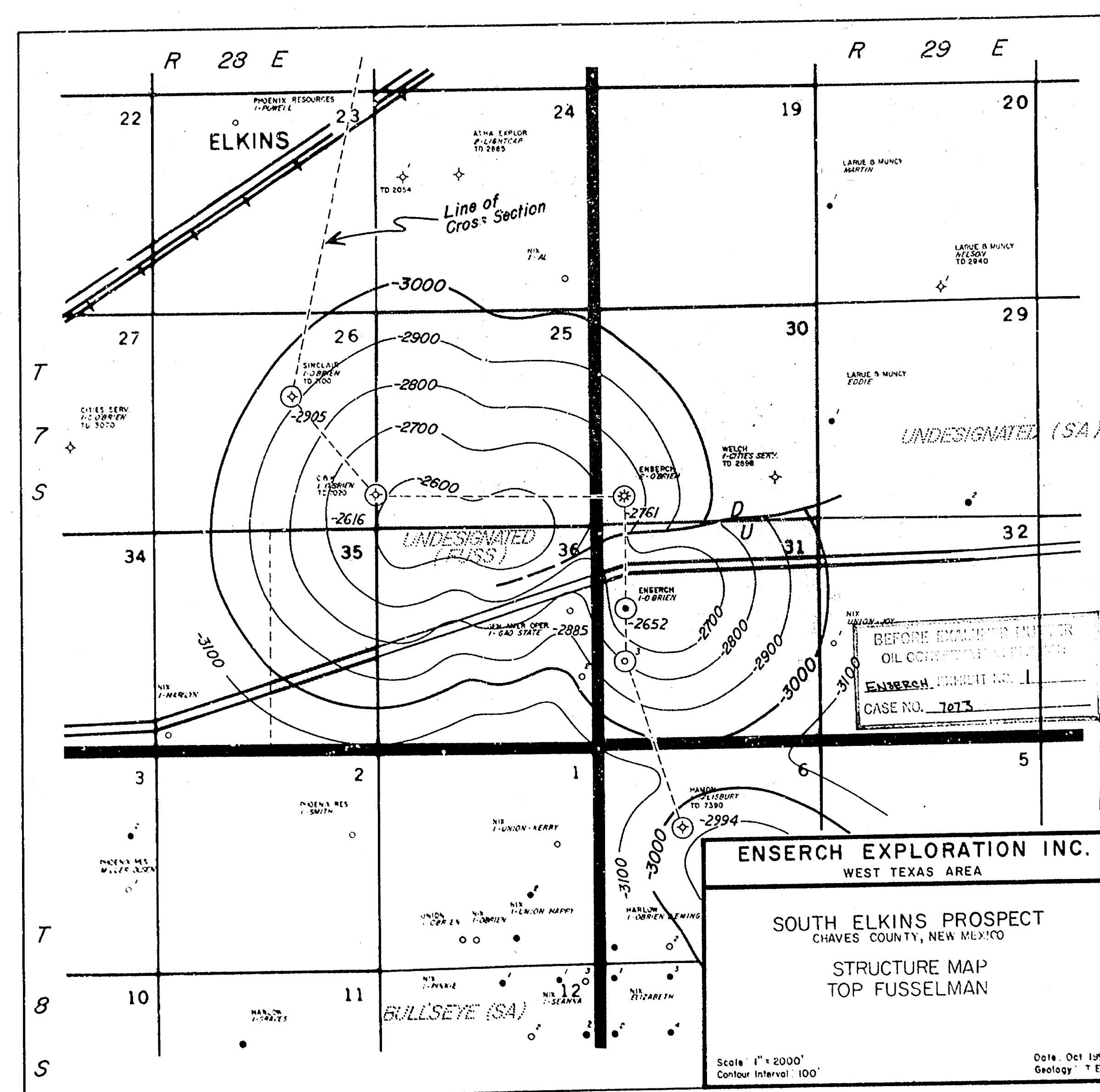
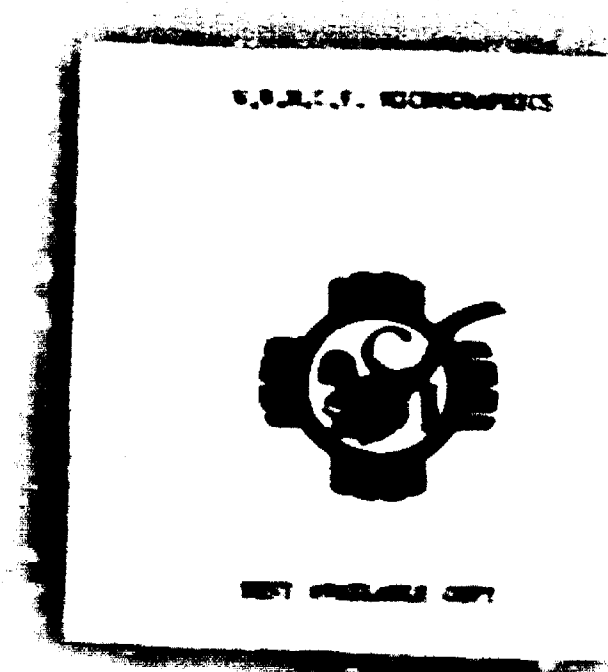
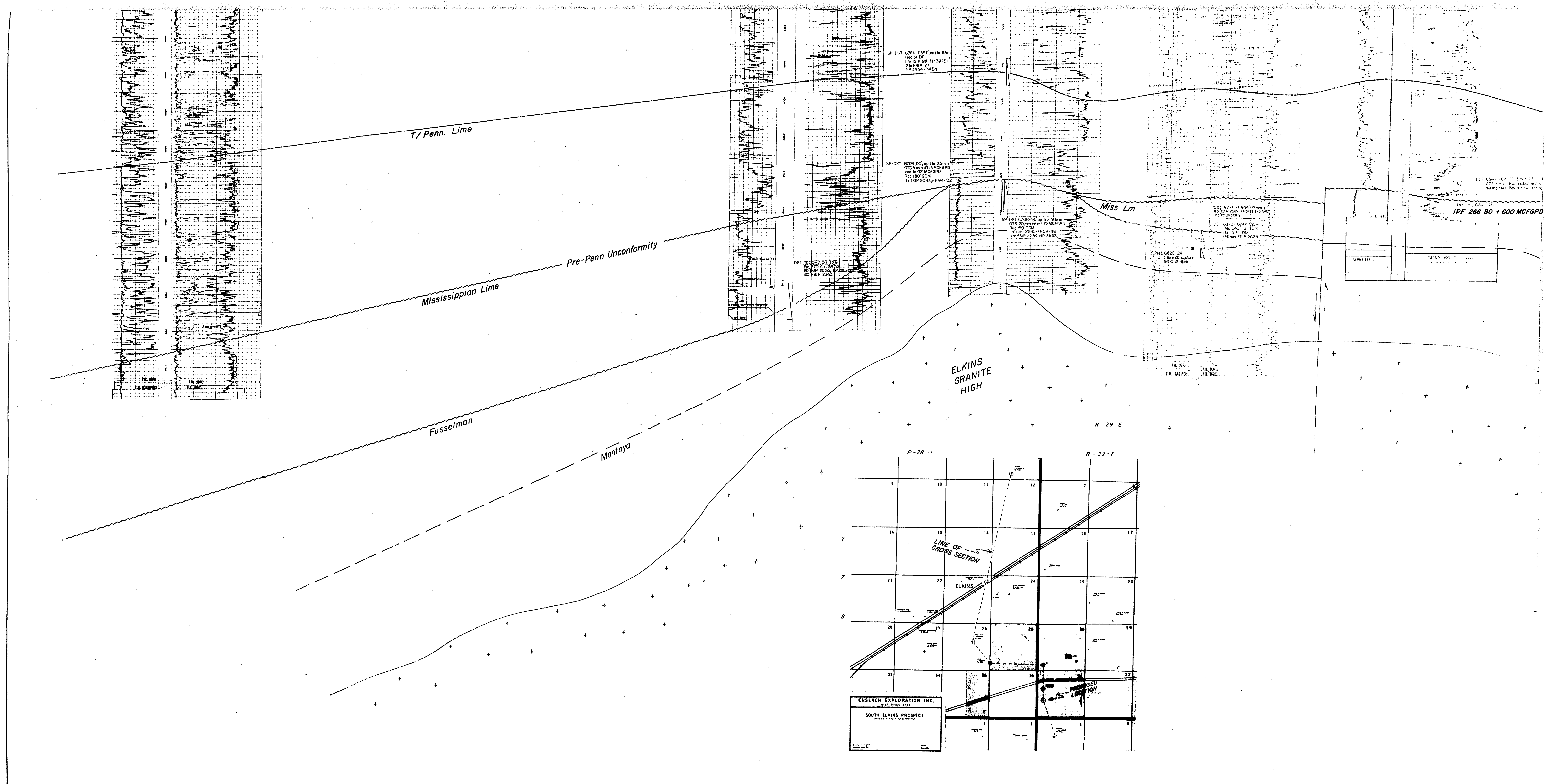


Case No
7073

Large Exhibits







 SOLLINBERGER		SINIC LOG	
COMPANY		Other Settings	
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FIELD		DATE	
LOCATION		Checked by	
COUNTRY		DATE	
STATE		DATE	

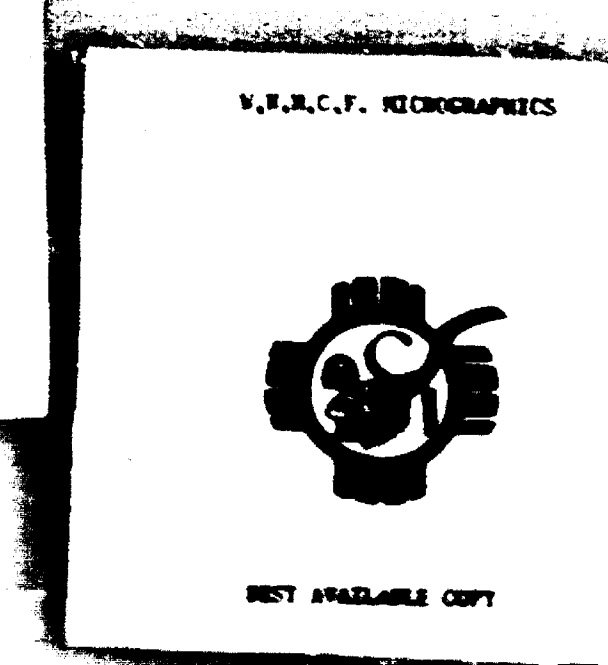
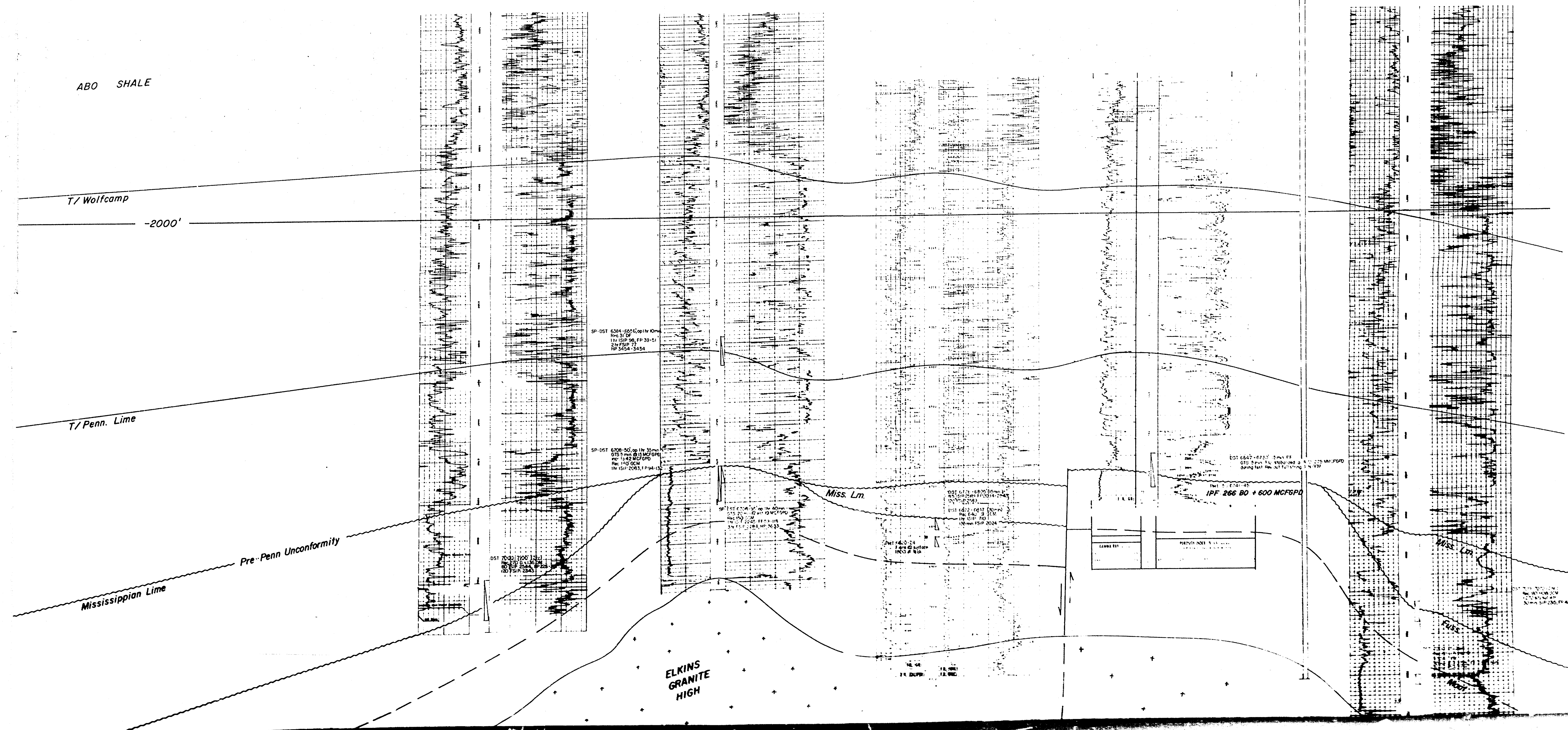
Dresser Air Dresser Industries, Inc. P.O. Box 1000 Houston, Texas 77240 (713) 462-1000	BHC <i>Acoustilog</i>	
	COMPANY: L. H. BROWN, JR., INC. TITLE: VICE PRES. & GEN. MGR. PHONE: 404-521-1111 COUNTY: S.WASCO STATE: TEX 75142 ZIP: 75142-0001	
Professional Engineering Filing Number:	LICENSE: 48816 EXPIR. DATE: 02/28/94 EXPIRATION DATE: 02/28/94 EXPIRATION DATE: 02/28/94	
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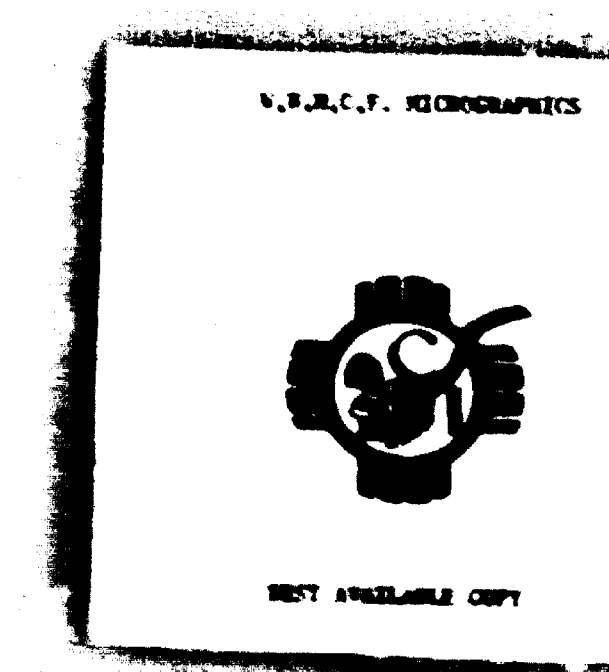
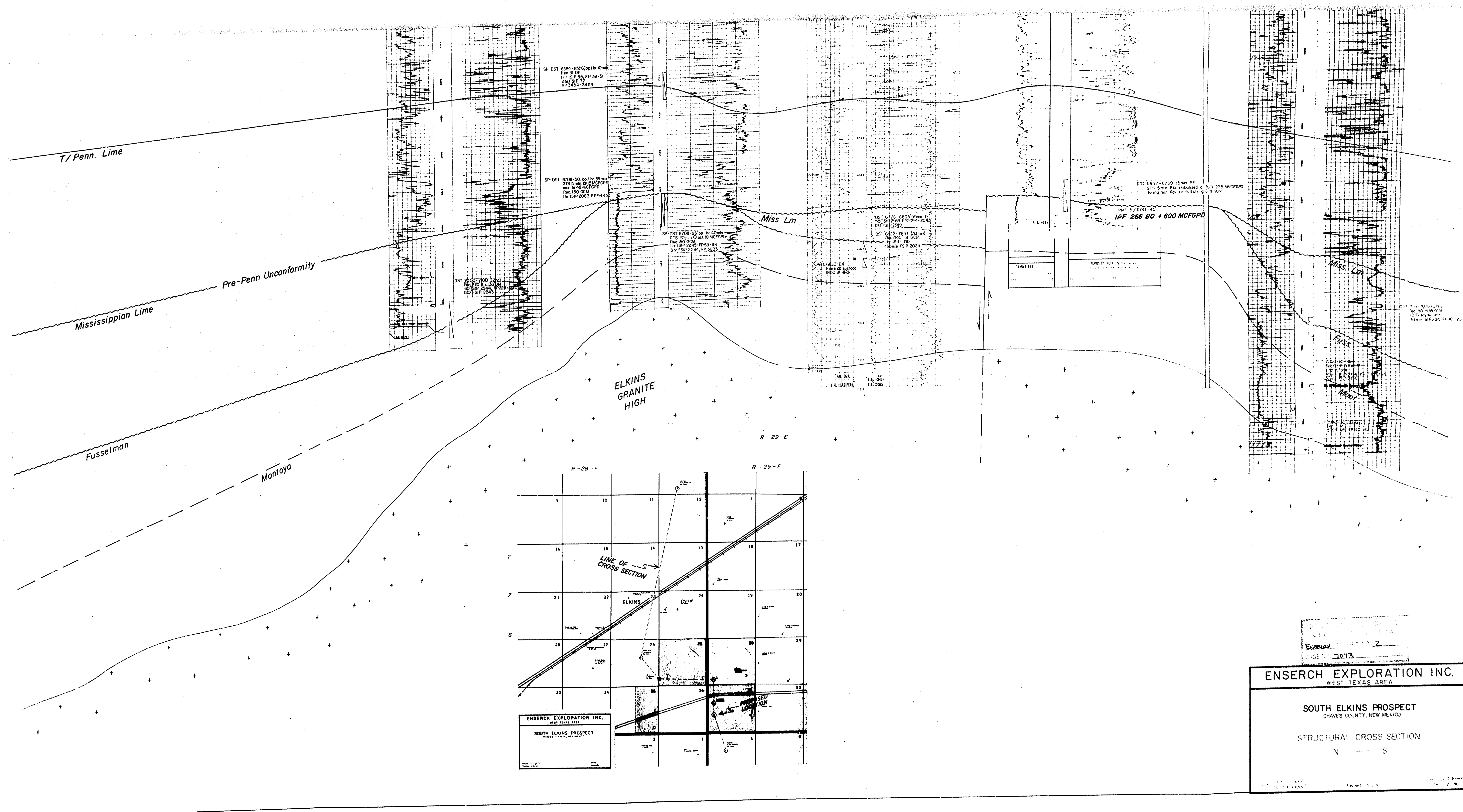
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1. SURFACE 2. ALT. 3. ELEV. 4. COUNTY 5. STATE		6. DATE 7. TIME 8. NAME 9. ADDRESS 10. CITY 11. STATE 12. ZIP	
13. COMMENTS 14. REMARKS 15. NOTES 16. OBSERVATIONS 17. MEASUREMENTS 18. CALCULATIONS 19. CONCLUSIONS 20. RECOMMENDATIONS 21. REFERENCES 22. APPENDICES 23. INDEX 24. GLOSSARY 25. ACRONYMS 26. UNITS 27. SCALE 28. MAP 29. PHOTO 30. SKETCH 31. DIAGRAM 32. FORMULA 33. TABLE 34. LIST 35. SUMMARY 36. CONCLUSION 37. RECOMMENDATION 38. REFERENCES 39. APPENDICES 40. INDEX 41. GLOSSARY 42. ACRONYMS 43. UNITS 44. SCALE 45. MAP 46. PHOTO 47. SKETCH 48. DIAGRAM 49. FORMULA 50. TABLE 51. LIST 52. SUMMARY 53. CONCLUSION 54. RECOMMENDATION 55. REFERENCES 56. APPENDICES 57. INDEX 58. GLOSSARY 59. ACRONYMS 60. UNITS 61. SCALE 62. MAP 63. PHOTO 64. SKETCH 65. DIAGRAM 66. FORMULA 67. TABLE 68. LIST 69. SUMMARY 70. CONCLUSION 71. RECOMMENDATION 72. REFERENCES 73. APPENDICES 74. INDEX 75. GLOSSARY 76. ACRONYMS 77. UNITS 78. SCALE 79. MAP 80. PHOTO 81. SKETCH 82. DIAGRAM 83. FORMULA 84. TABLE 85. LIST 86. SUMMARY 87. CONCLUSION 88. RECOMMENDATION 89. REFERENCES 90. APPENDICES 91. INDEX 92. GLOSSARY 93. ACRONYMS 94. UNITS 95. SCALE 96. MAP 97. PHOTO 98. SKETCH 99. DIAGRAM 100. FORMULA 101. TABLE 102. LIST 103. SUMMARY 104. CONCLUSION 105. RECOMMENDATION 106. REFERENCES 107. APPENDICES 108. INDEX 109. GLOSSARY 110. ACRONYMS 111. UNITS 112. SCALE 113. MAP 114. PHOTO 115. SKETCH 116. DIAGRAM 117. FORMULA 118. TABLE 119. LIST 120. SUMMARY 121. CONCLUSION 122. RECOMMENDATION 123. REFERENCES 124. APPENDICES 125. INDEX 126. GLOSSARY 127. ACRONYMS 128. UNITS 129. SCALE 130. MAP 131. PHOTO 132. SKETCH 133. DIAGRAM 134. FORMULA 135. TABLE 136. LIST 137. SUMMARY 138. CONCLUSION 139. RECOMMENDATION 140. REFERENCES 141. APPENDICES 142. INDEX 143. GLOSSARY 144. ACRONYMS 145. UNITS 146. SCALE 147. MAP 148. PHOTO 149. SKETCH 150. DIAGRAM 151. FORMULA 152. TABLE 153. LIST 154. SUMMARY 155. CONCLUSION 156. RECOMMENDATION 157. REFERENCES 158. APPENDICES 159. INDEX 160. GLOSSARY 161. ACRONYMS 162. UNITS 163. SCALE 164. MAP 165. PHOTO 166. SKETCH 167. DIAGRAM 168. FORMULA 169. TABLE 170. LIST 171. SUMMARY 172. CONCLUSION 173. RECOMMENDATION 174. REFERENCES 175. APPENDICES 176. INDEX 177. GLOSSARY 178. ACRONYMS 179. UNITS 180. SCALE 181. MAP 182. PHOTO 183. SKETCH 184. DIAGRAM 185. FORMULA 186. TABLE 187. LIST 188. SUMMARY 189. CONCLUSION 190. RECOMMENDATION 191. REFERENCES 192. APPENDICES 193. INDEX 194. GLOSSARY 195. ACRONYMS 196. UNITS 197. SCALE 198. MAP 199. PHOTO 200. SKETCH 201. DIAGRAM 202. FORMULA 203. TABLE 204. LIST 205. SUMMARY 206. CONCLUSION 207. RECOMMENDATION 208. REFERENCES 209. APPENDICES 210. INDEX 211. GLOSSARY 212. ACRONYMS 213. UNITS 214. SCALE 215. MAP 216. PHOTO 217. SKETCH 218. DIAGRAM 219. FORMULA 220. TABLE 221. LIST 222. SUMMARY 223. CONCLUSION 224. RECOMMENDATION 225. REFERENCES 226. APPENDICES 227. INDEX 228. GLOSSARY 229. ACRONYMS 230. UNITS 231. SCALE 232. MAP 233. PHOTO 234. SKETCH 235. DIAGRAM 236. FORMULA 237. TABLE 238. LIST 239. SUMMARY 240. CONCLUSION 241. RECOMMENDATION 242. REFERENCES 243. APPENDICES 244. INDEX 245. GLOSSARY 246. ACRONYMS 247. UNITS 248. SCALE 249. MAP 250. PHOTO 251. SKETCH 252. DIAGRAM 253. FORMULA 254. TABLE 255. LIST 256. SUMMARY 257. CONCLUSION 258. RECOMMENDATION 259. REFERENCES 260. APPENDICES 261. INDEX 262. GLOSSARY 263. ACRONYMS 264. UNITS 265. SCALE 266. MAP 267. PHOTO 268. SKETCH 269. DIAGRAM 270. FORMULA 271. TABLE 272. LIST 273. SUMMARY 274. CONCLUSION 275. RECOMMENDATION 276. REFERENCES 277. APPENDICES 278. INDEX 279. GLOSSARY 280. ACRONYMS 281. UNITS 282. SCALE 283. MAP 284. PHOTO 285. SKETCH 286. DIAGRAM 287. FORMULA 288. TABLE 289. LIST 290. SUMMARY 291. CONCLUSION 292. RECOMMENDATION 293. REFERENCES 294. APPENDICES 295. INDEX 296. GLOSSARY 297. ACRONYMS 298. UNITS 299. SCALE 300. MAP 301. PHOTO 302. SKETCH 303. DIAGRAM 304. FORMULA 305. TABLE 306. LIST 307. SUMMARY 308. CONCLUSION 309. RECOMMENDATION 310. REFERENCES 311. APPENDICES 312. INDEX 313. GLOSSARY 314. ACRONYMS 315. UNITS 316. SCALE 317. MAP 318. PHOTO 319. SKETCH 320. DIAGRAM 321. FORMULA 322. TABLE 323. LIST 324. SUMMARY 325. CONCLUSION 326. RECOMMENDATION 327. REFERENCES 328. APPENDICES 329. INDEX 330. GLOSSARY 331. ACRONYMS 332. UNITS 333. SCALE 334. MAP 335. PHOTO 336. SKETCH 337. DIAGRAM 338. FORMULA 339. TABLE 340. LIST 341. SUMMARY 342. CONCLUSION 343. RECOMMENDATION 344. REFERENCES 345. APPENDICES 346. INDEX 347. GLOSSARY 348. ACRONYMS 349. UNITS 350. SCALE 351. MAP 352. PHOTO 353. SKETCH 354. DIAGRAM 355. FORMULA 356. TABLE 357. LIST 358. SUMMARY 359. CONCLUSION 360. RECOMMENDATION 361. REFERENCES 362. APPENDICES 363. INDEX 364. GLOSSARY 365. ACRONYMS 366. UNITS 367. SCALE 368. MAP 369. PHOTO 370. SKETCH 371. DIAGRAM 372. FORMULA 373. TABLE 374. LIST 375. SUMMARY 376. CONCLUSION 377. RECOMMENDATION 378. REFERENCES 379. APPENDICES 			

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16. Name of the person 17. Date of birth 18. Place of birth 19. Nationality 20. Sex 21. Marital status 22. Religion 23. Education 24. Occupation 25. Address 26. Telephone 27. E-mail 28. Other information 29. Signature 30. Stamp	
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[illegible]

PROPOSED LOCATION
ENSERCH
NO. 3 ORRIEN





NORTH

COMPENSATED NEUTRON LOG	
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LOG NO.	LOG DATE
LOGGERS	
CHECKED BY	
CORRECTIONS	
REMARKS	

SONIC LOG	
DATE	TIME
WELL	WELL NO.
LOG NO.	LOG DATE
LOGGERS	
CHECKED BY	
CORRECTIONS	
REMARKS	

DRAINAGE	
DATE	TIME
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CORRECTIONS	
REMARKS	

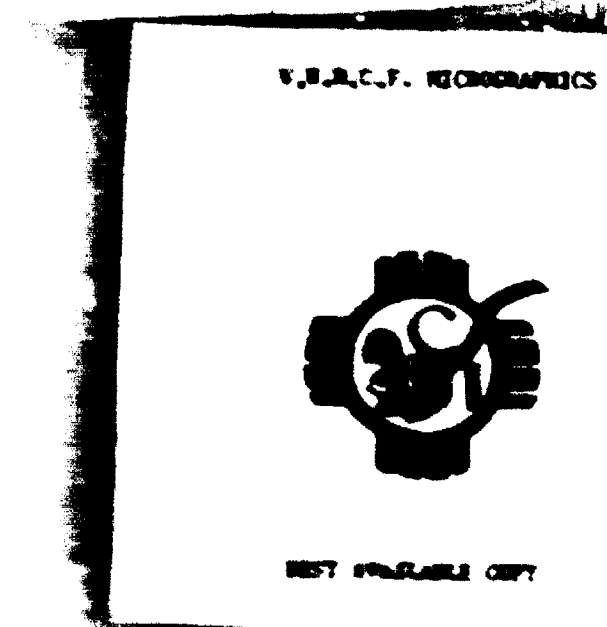
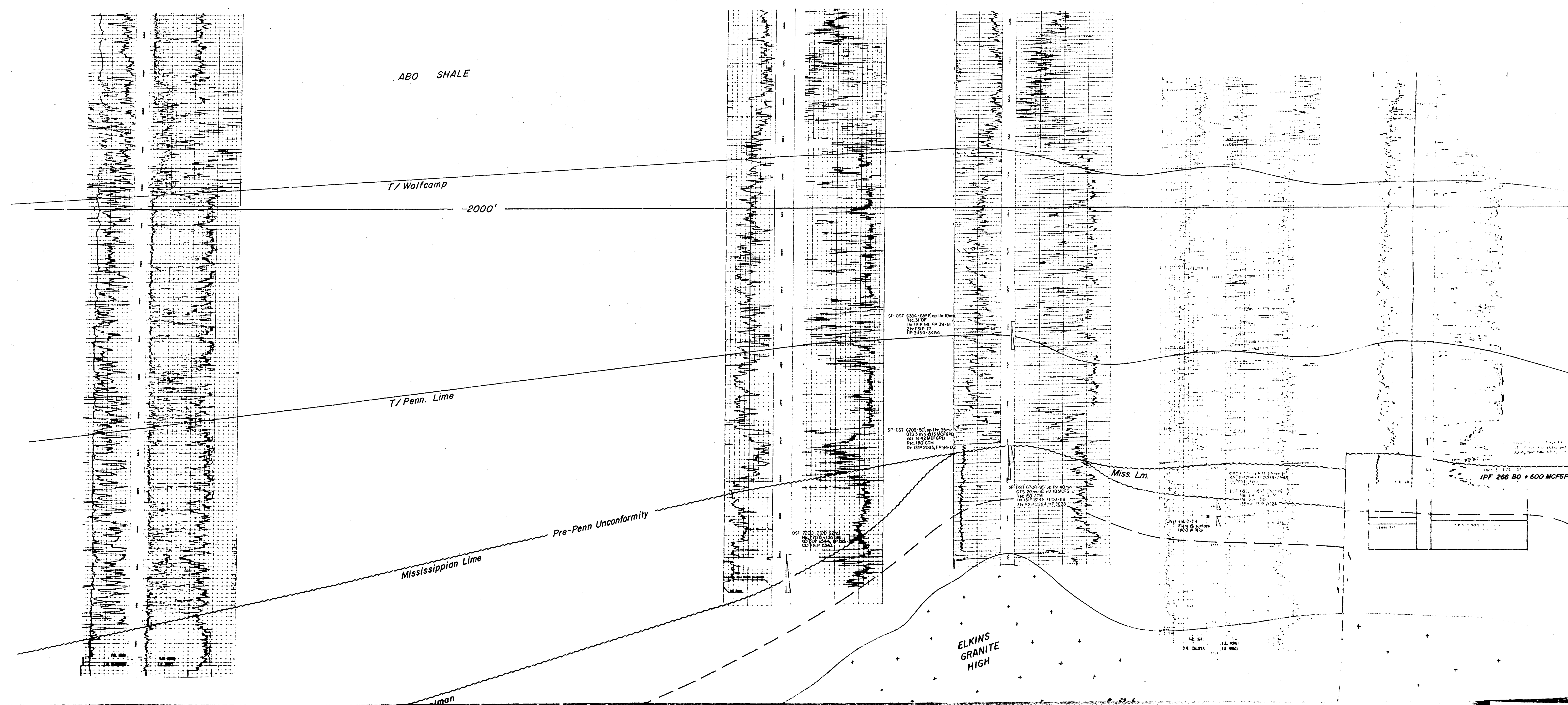
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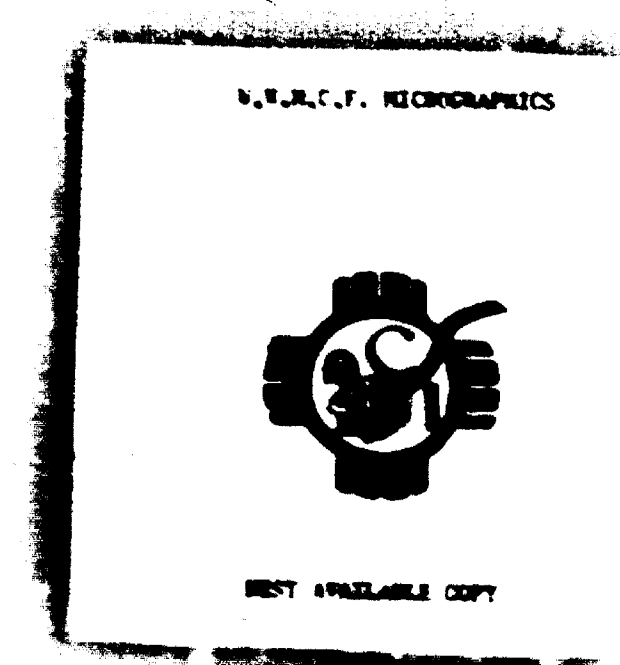
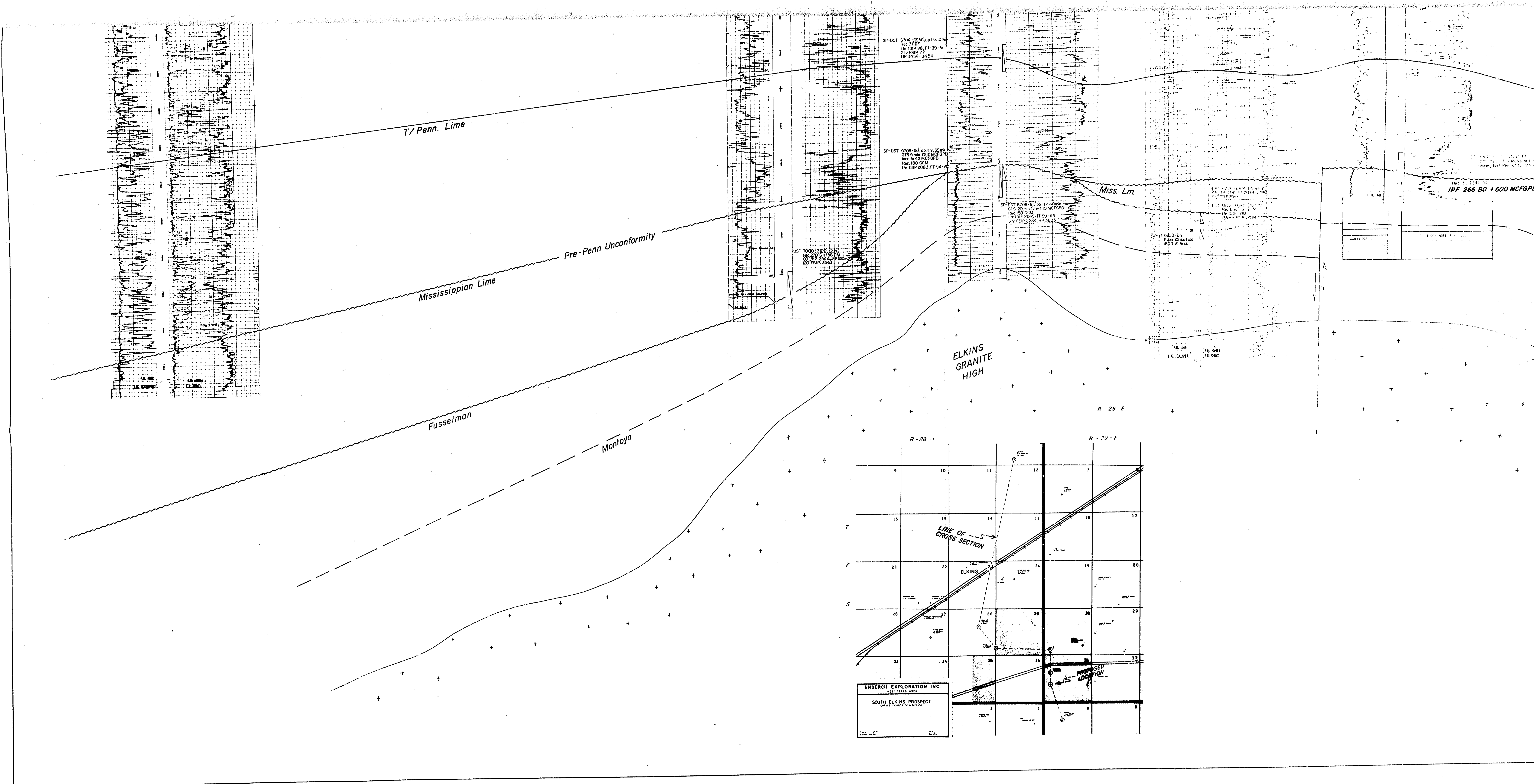
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REMARKS	

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+33 bbls cond. 14/64"ok

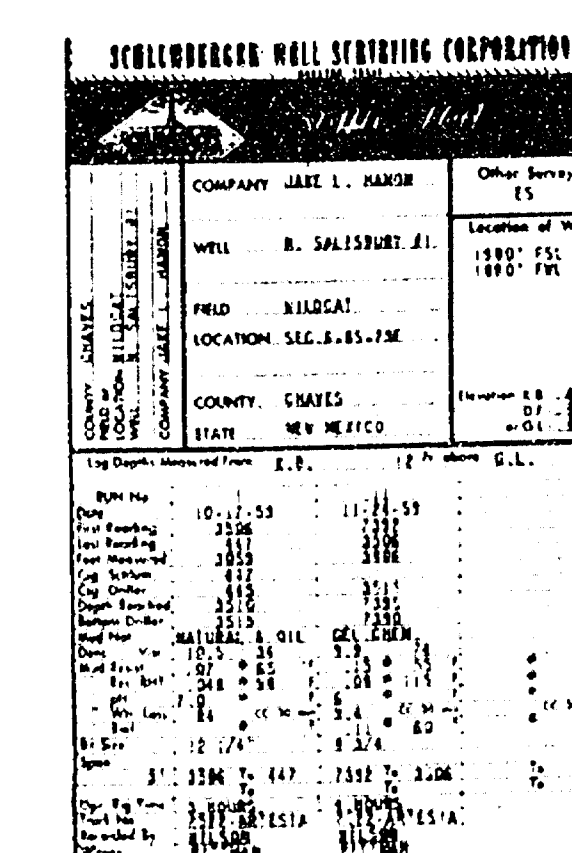
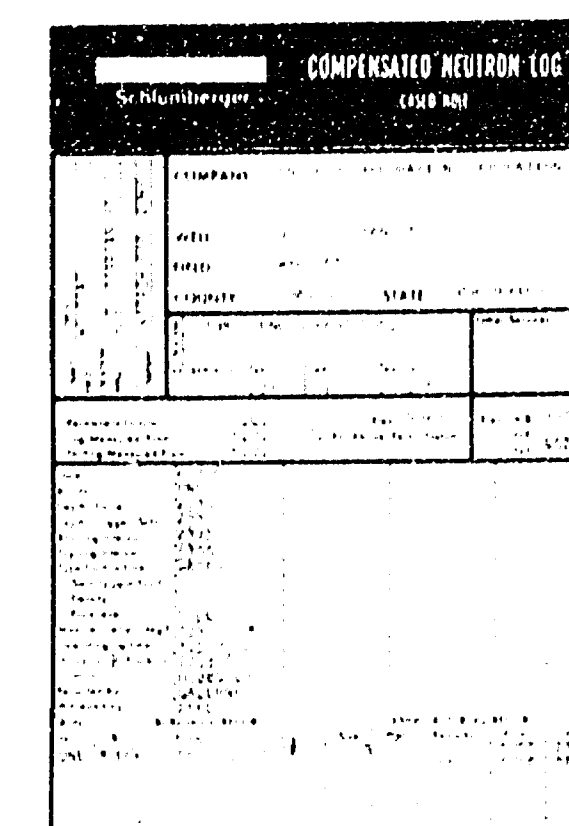
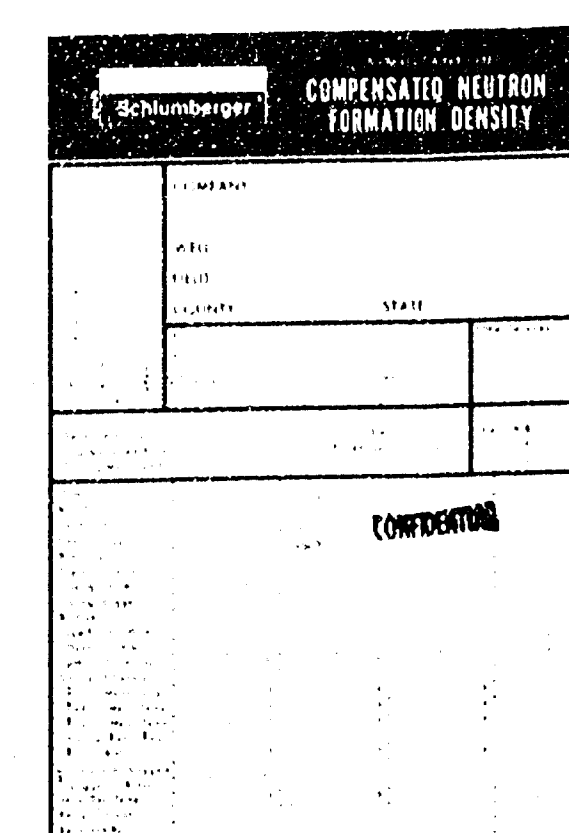
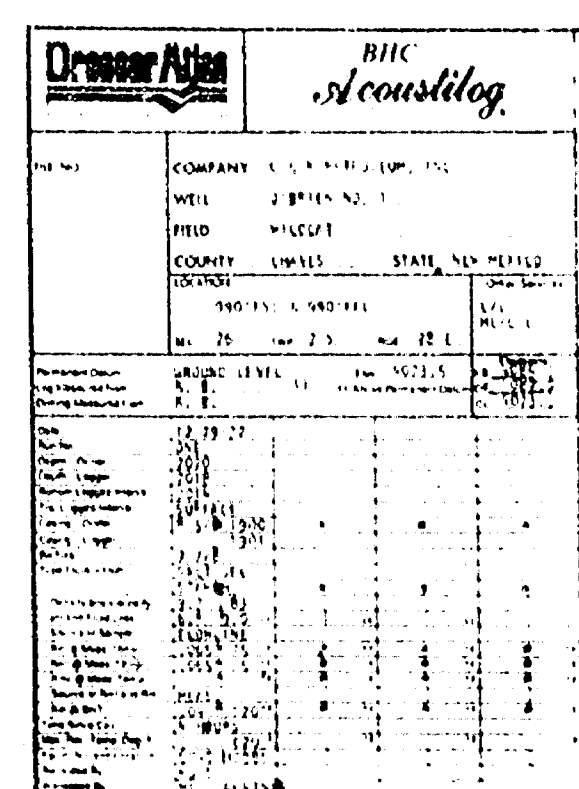
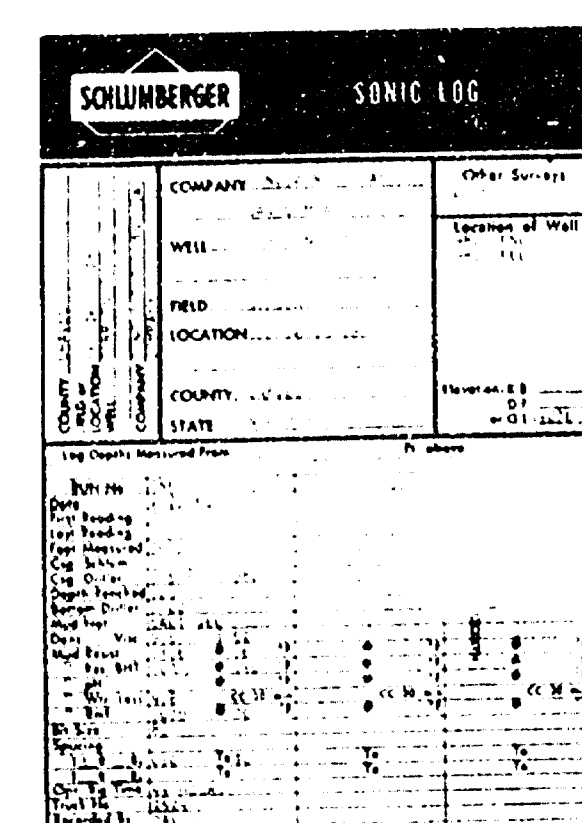
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PROPOSED L
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NO. 1





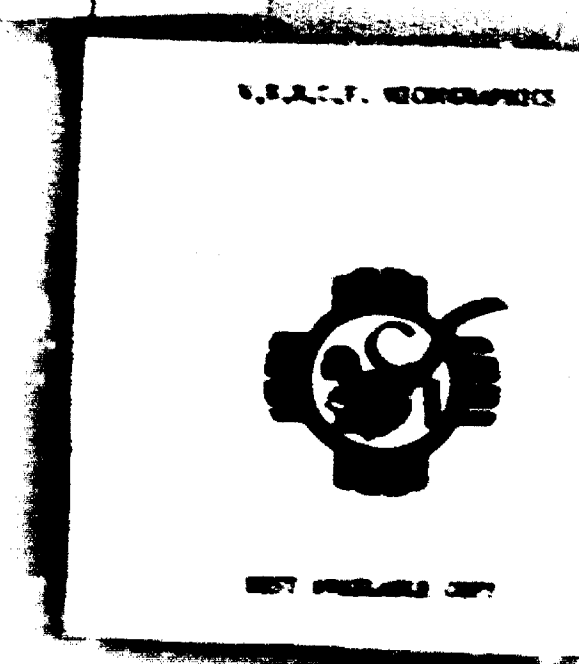
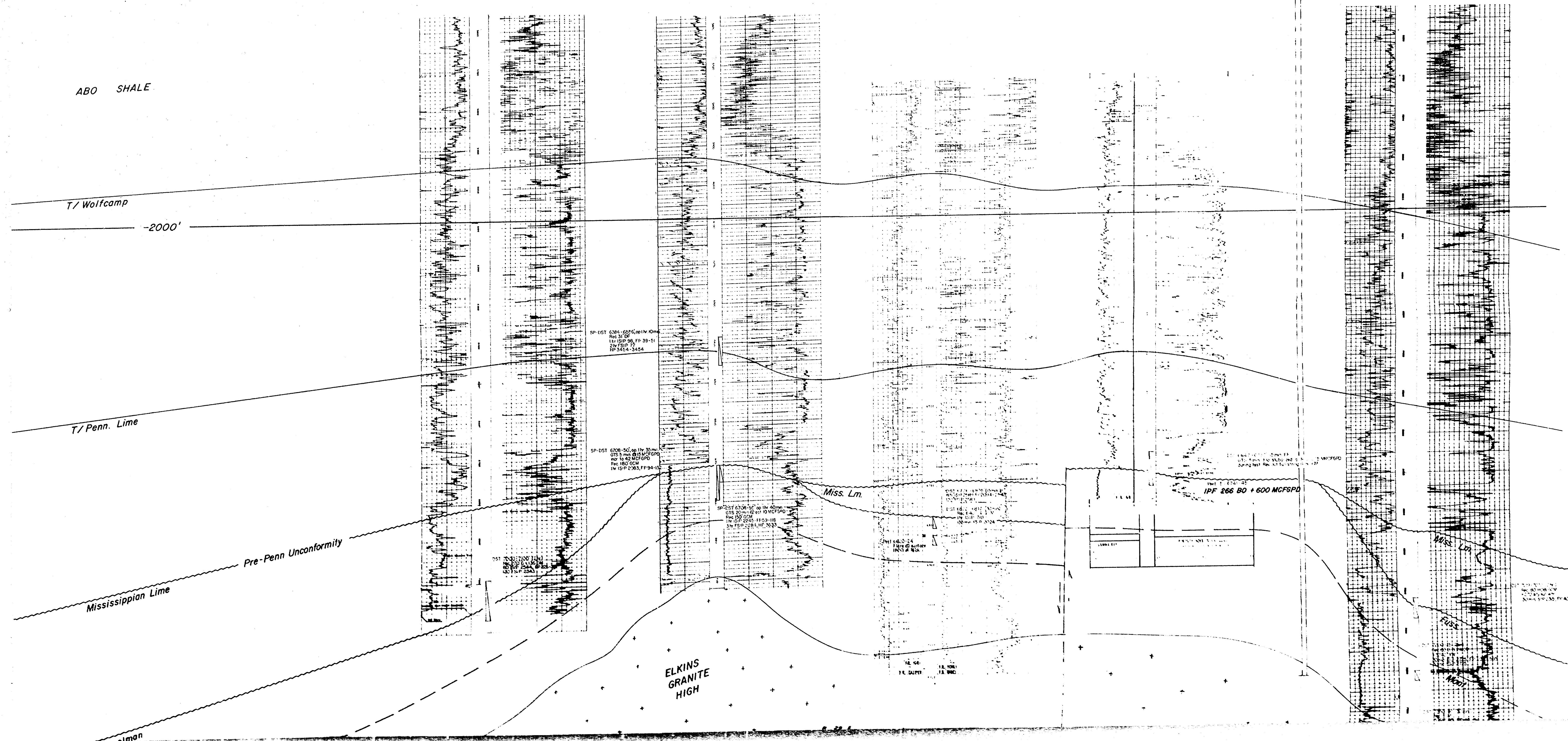
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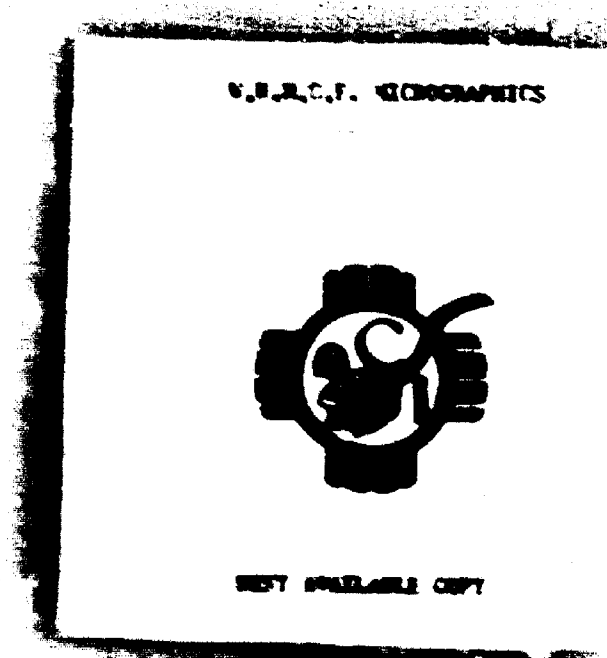
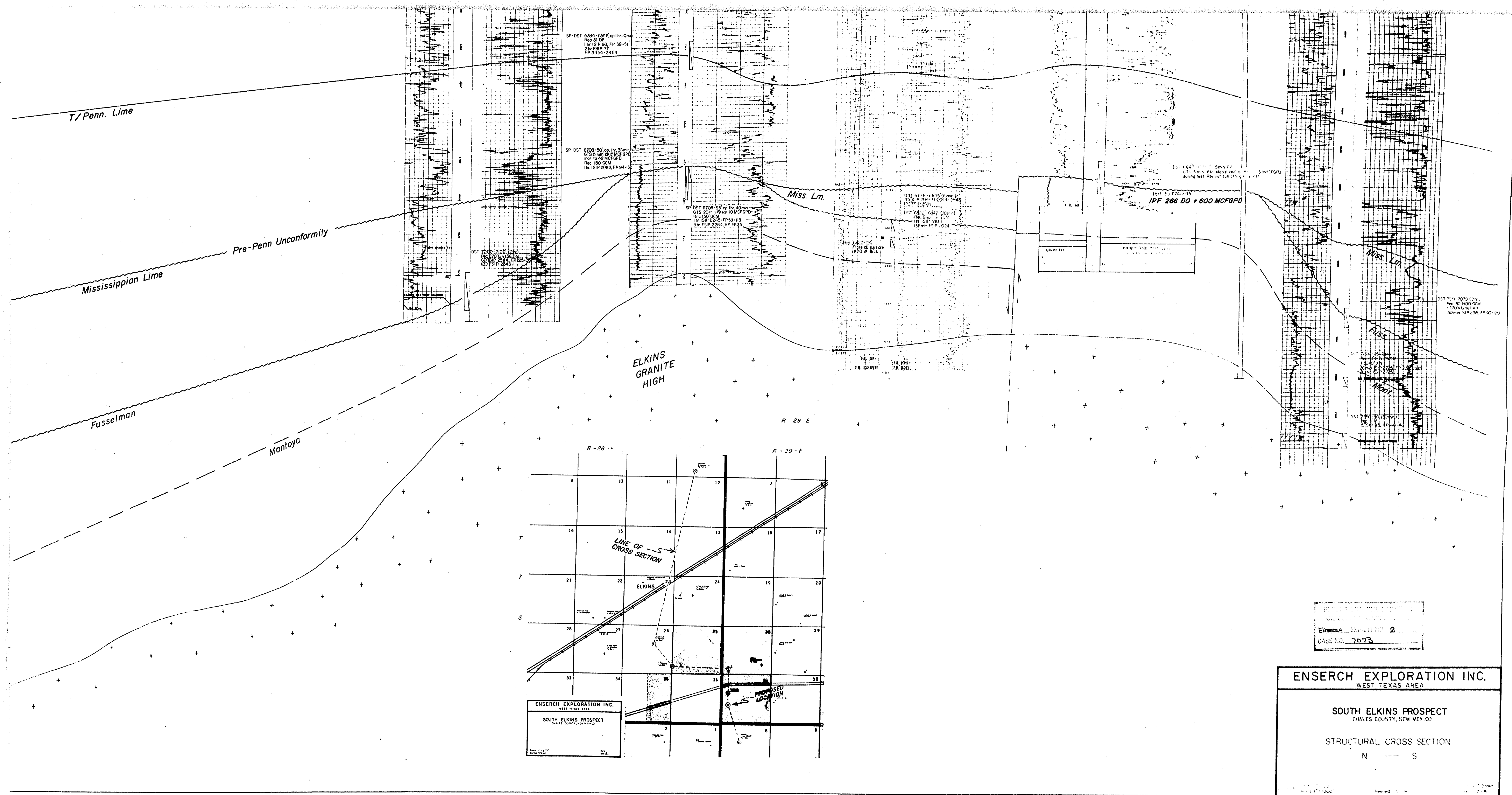


IPF 1541 MMCFSPD
+33 bbls cond. 14/64"ck

IPF 266 BO + 600 MMCFSPD

PROPOSED LOCATION
ENSE-31
NO. 3, CARIEN





OIL WELL PRESSURE ANALYSIS
West Texas District

Test Date: June 11/16, 1989 Loner: J.G. O'Brien
Formation: Fort Worth Well No.: 1
Casing Size: 5-1/2" x 15.54 Field: Wildcat
Cum. Prod. (bbt): 386 State: New Mexico
Prod. Rate (bbl/day): 266
Prod. Life = 2400/q: 34.83 hrs.

1. Calculation of kh (md-ft) and k (md):
 $kh = \frac{162.6 \cdot q \cdot B_o}{h} : k = \frac{kh}{h}$
 $h = \frac{31}{266} \text{ ft} \quad h' = 0.361 \text{ cp}$
 $q = \frac{266}{266} \text{ bbl/d} \quad m = 1.829 \text{ psi/cycle}$
 $kh = \frac{162.6 \times (266)}{(0.361)} \times (1.829) = 3138$
 $k = \frac{3138}{31} = 101 \text{ md}$

II. Calculation of Skin Effect, s, and Pressure Loss Due to Skin, Δp_{skin} (psi):
 $s = 1.151 \left[P_i - h' \cdot \frac{q}{k} \cdot \log \left(\frac{r_w}{r_{eff}} \right) + 3.23 \right]$
 $s = 1.151 \left[\left(\frac{2592}{0.361} \right) - \log \left(\frac{101}{0.118} \right) + 3.23 \right] = 3.72$
 $\Delta p_{skin} = (m) \times 0.87 (s) \quad \Delta p_{skin} = (9) \times 0.87 (-3.78) = -29.6$
 $k = 101 \text{ md} \quad r_w = 0.229 \text{ ft}$
 $\phi = 0.118 \text{ cp} \quad P_i = 2592 \text{ psi}$
 $\mu = 0.361 \text{ cp} \quad P_{wf} = 2492 \text{ psi}$
 $c = 18.1 \times 10^{-6} \text{ psi}^{-1} \quad m = 0 \text{ psi/cycle}$

III. Calculation of Productivity Index (B/D-psi) and Flow Efficiency:
 $J_{(actual)} = \frac{P_i - P_{wf}}{B_o} \quad J_{(ideal)} = \frac{(P_i - P_{wf})}{B_o} \cdot \frac{1}{1 - \Delta p_{skin}}$
 $J_{(actual)} = \frac{(2592 - 2492)}{(2592 - 2492)} \quad J_{(ideal)} = \frac{(2592 - 2492)}{(2592 - 2492)} \cdot \frac{1}{1 - (-29.6)}$
 $J_{(actual)} = 5.115 \quad J_{(ideal)} = 3.78$
 $\Delta p_{skin} = -29.6 \text{ psi} \quad P_i = 2592 \text{ psi}$
 $q = 266 \text{ bbl/d} \quad P_{wf} = 2492 \text{ psi}$
 $\text{Flow Efficiency} = \frac{J_{(actual)}}{J_{(ideal)}} = \frac{5.115}{3.78} = 1.57$

PARAMETERS:
 $C_F = S_o \cdot C_o + S_o \cdot C_o + C_F = (0.24) (0.9 \times 10^{-6}) (0.76) (0.9 \times 10^{-6}) (0.6 \times 10^{-6}) = 18.1 \times 10^{-6}$
 $P_c = 546 \text{ psia} \quad S_o = 24$
 $T_c = 272 \text{ }^\circ R \quad S_g = 76$
 $BWT = 133 \text{ bbl} \quad v_m = 0.741 \text{ sec/cm}^3$
 $BWP = 7549 \text{ psia}$
 $\text{Radius of Investigation: } r_i = 0.029 \sqrt{\frac{kt}{\phi \mu c}} \quad r_i = 0.029 \sqrt{\frac{(101)(34.83)}{(0.118)(0.361)(18.1 \times 10^{-6})}}$
 $r_i = 3761 \text{ ft}$
 $\text{Distance to boundary: } r_e = 0.029 \sqrt{\frac{(101)(2400)}{(0.118)(0.361)(18.1 \times 10^{-6})}} \quad r_e = 1771 \text{ ft}$
 Since $r_e < r_i$, the r_i value should be discounted.

116 70 psi
240 70 psi
31, 116 psi

