116672

BCM

APPENDIX B

RECONNAISSANCE BOREHOLE CAMERA LOGS

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 of 7

Project: POTTSTOWN FACILITY TB-1 Logged By: DMW/EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																												8" steel casing
																												0-22' temp
																												0-100' permanent
10																												
20																												
															X				X									
															X				X									
			X		X										X				X									@28' some cascading
			X												X				X									water, wets sides
30		X			X	X									X				X									of bore hole
			X		X	X						X			X				X									
		X	X		X	X								X	X				X									
		X	X		X	X								X	X				X									
			X											X	X				X									
			X												X	X			X									@39-41 V fract
40		X																										
		X										X							X									@42-43 V. fract
			X		X							X							X									
			X		X																							
															X	X			X									@45' walls left rough
															X	X			X									and less fractured
															X	X			X									@47' core hole. visible
50			X		X										X				X									
			X												X				X									@50' calcite
		X			X														X									
		X				X						X							X									@52-54 vertical
		X	X			X				X		X							X									@55' open vertical
		X										X							X									
	▼																		X									@58' water level with
																			X									possibly floating product
60																			X									
		X			X	X													X									@61-66 vertical fract
		X			X	X			X		X				X						X							@68' rock color change to re
		X			X	X			X		X				X						X							white subst. fills fracture
																X			X									
70																X			X									
													X															@72-76 open fract dark ppt. or
		X			X	X						X				X			X									growth assoc. w/ fracture
		X										X							X									@75-77
		X			X														X									
																X			X									
80		X			X											X			X									@80' V. open fracture

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 7

Project: POTTSTOWN FACILITY TB-1 Logged By: DMW / EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV. 2 SIDE	BOREHOLE SURFACE: CREV. 1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
		X																											
			X		X	X									X	X			X										@80-83 H. fract open
			X												X	X			X										@84 V. fracture
		X			X											X			X		X								
		X										X	X		X				X										@87' natural.
90																X			X										
																X			X										@91 calcite veins
																X			X										
																X			X										@95 calcite veins
																X			X										
															X				X										
100																													
		X			X	X						X				X			X										@101' V. fracture
			X		X																								@103' Bottom of Hole
		X	X		X										X														@106' observed flowing
			X									X			X														water
		X													X														
110		X																											
			X													X													
			X												X	X													
			X												X	X													
			X			X									X	X													
			X													X													
																X													
120																X													
																X													
			X												X	X													
			X												X	X													
			X												X														
			X												X	X													
			X												X														
			X												X	X													
130																X													
		X	X									X			X	X													
															X														
																X													
																X													
																X													
140		X		X												X													
			X									X			X	X													
																X													
		X													X														
																X													
		X													X														
		X													X	X													
150																X													
			X									X			X	X													
			X												X														
																X													
																X													
																X													
																X													
160			X		X											X													

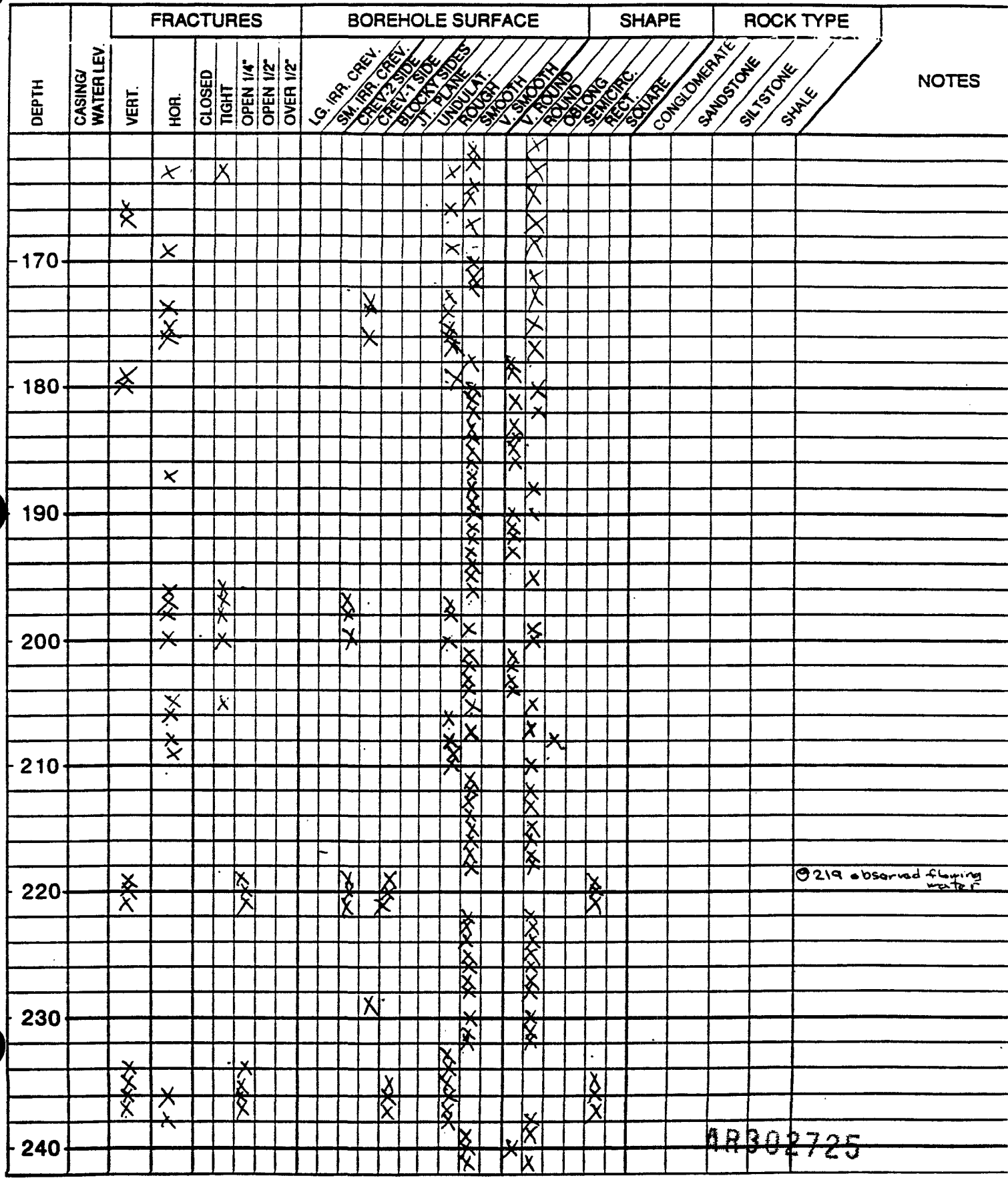
AR302724

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 3 Of 7

Project: POTTSTOWN FACILITY TB-1 Logged By: DMW/EBS



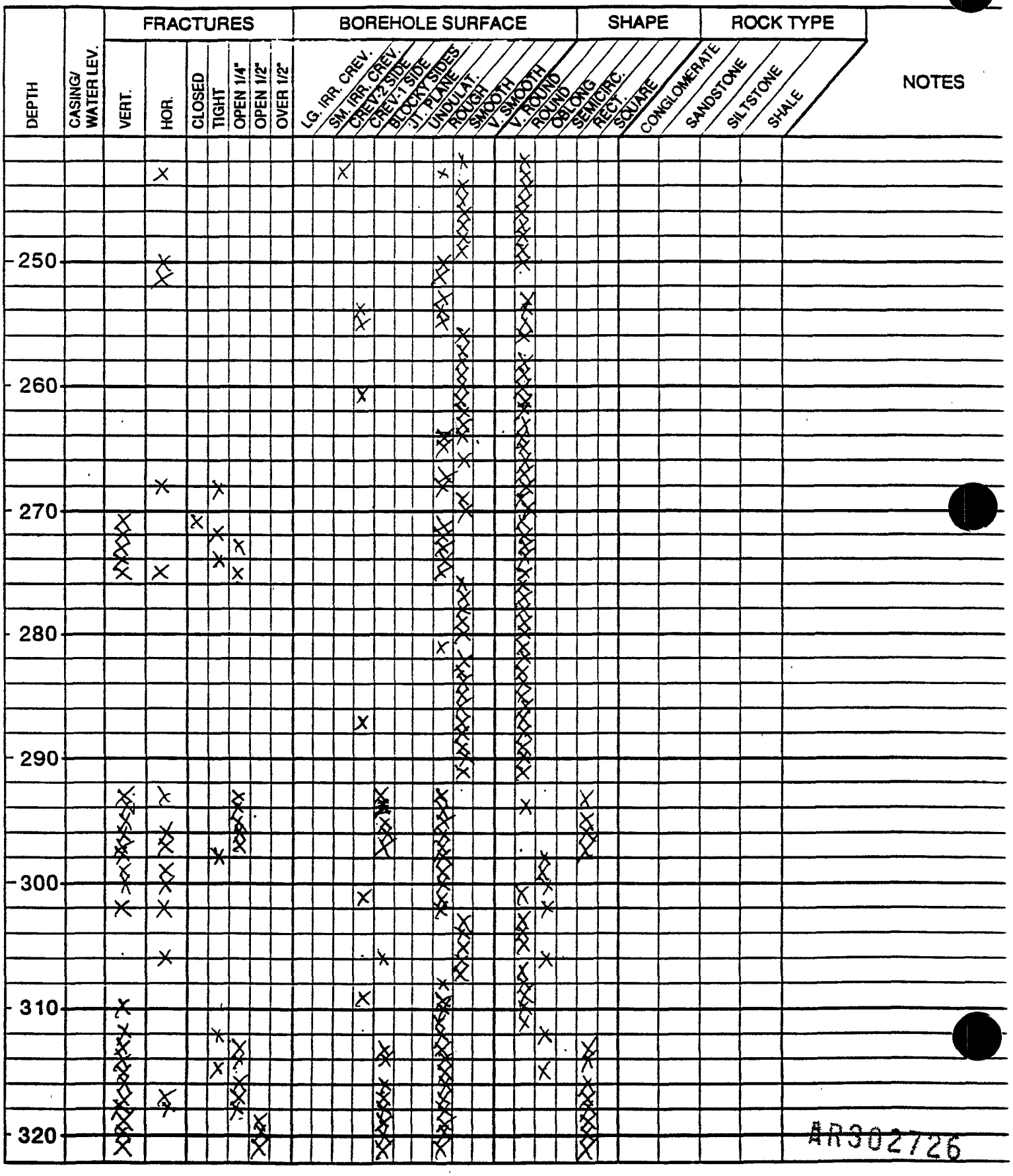
AR302725

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 of 7

Project: POTTSTOWN FACILITY TB-1 Logged By: DMW/EBS



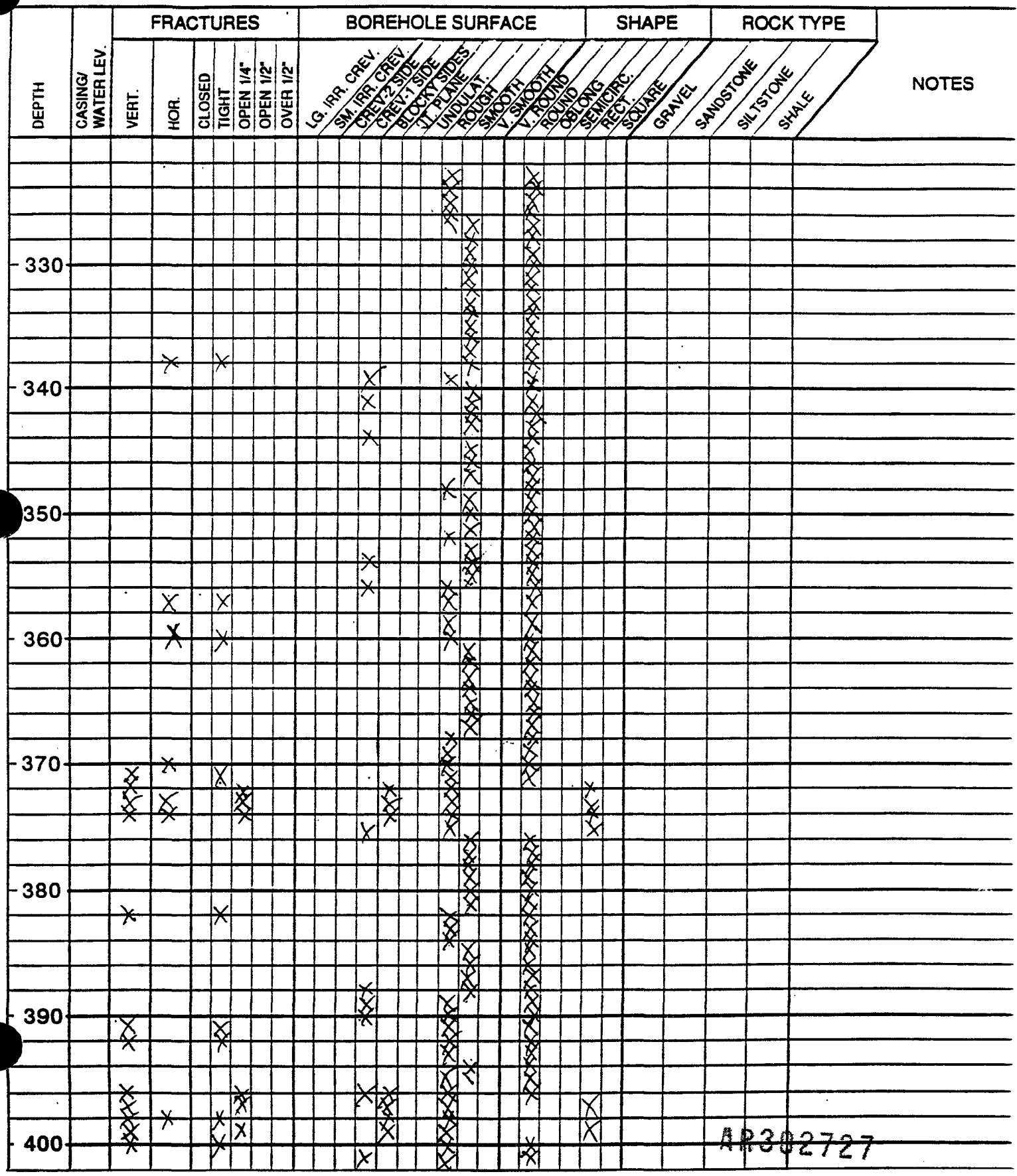
AR302726

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-41064-13 Sheet Number 5 Of 7

Project: POTTSTOWN FACILITY TB-1 Logged By: DMW/EBS



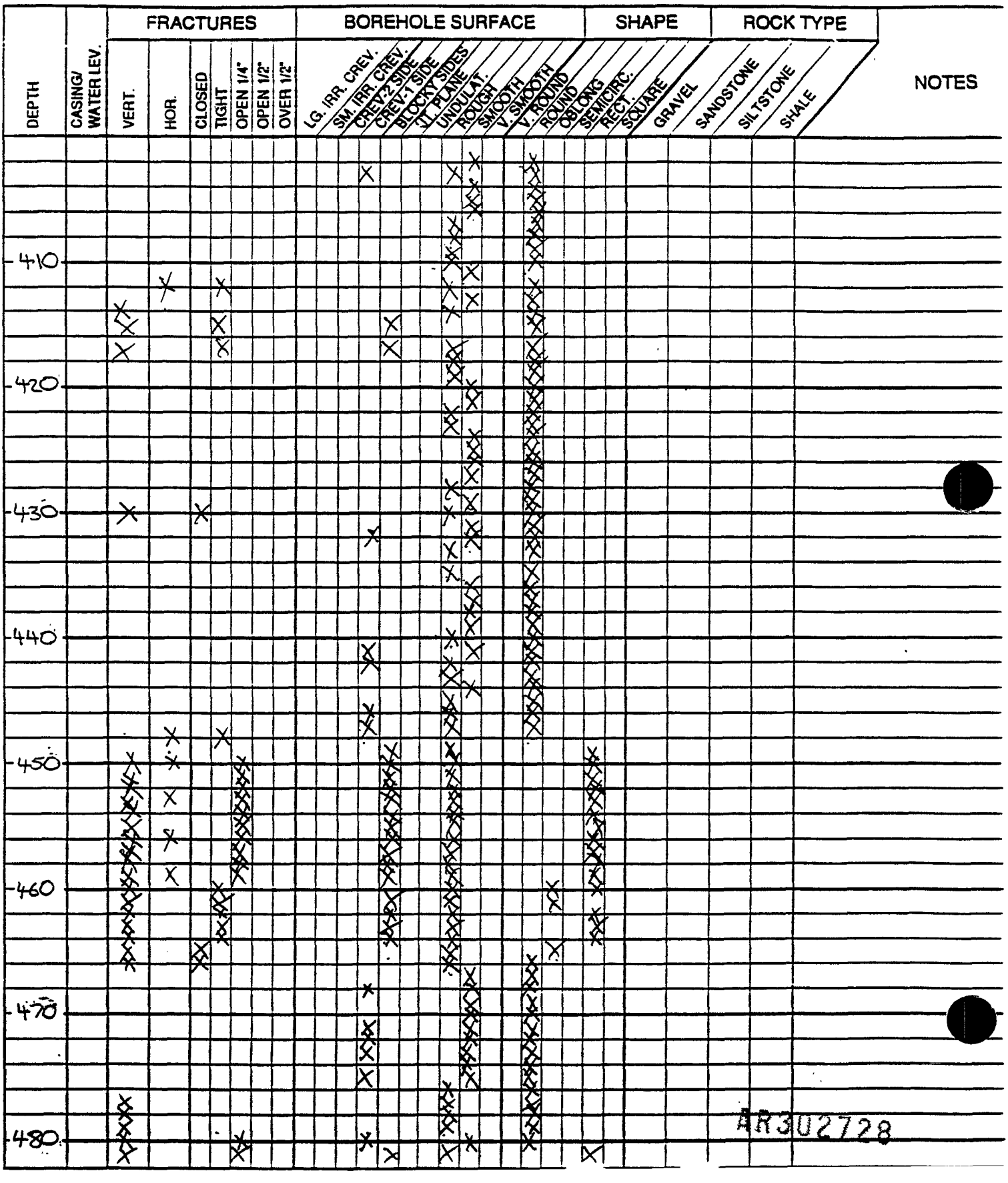
AR302727

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 6 of 7

Project: POTTSTOWN FACILITY TB-1 Logged By: DMW/EBS



AR302728

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 7 Of 7

Project: POTTSTOWN FACILITY TB-1 Logged By: DMW/EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	HOR.	CLOSED	TIGHT	OPEN 1/4"	OPEN 1/2"	OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	SM. IRR. CREV.	CREV-2 SIDE	CREV-1 SIDE	BLOCKY SIDES	JT. PLANE	UNDULAT.	ROUGH	SMOOTH	V. SMOOTH	SHAPE: V. ROUND	ROUND	OBLONG	SEMICIRC.	RECT.	SQUARE	ROCK TYPE: GRAVEL	SANDSTONE	SILTSTONE	SHALE	NOTES
		X											X						X										
		X											X			X			X										
		X										X				X			X										
		X	X			X							X			X			X			X							
		X	X	X	X											X			X										
490		X	X			X							X			X			X										
		X	X										X			X			X										
			X													X	X		X										
																	X		X										
																	X		X										
500																													

AR302729

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 Of 6

Project: POTTSTOWN FACILITY TB-2 Logged By: DMW / EBS

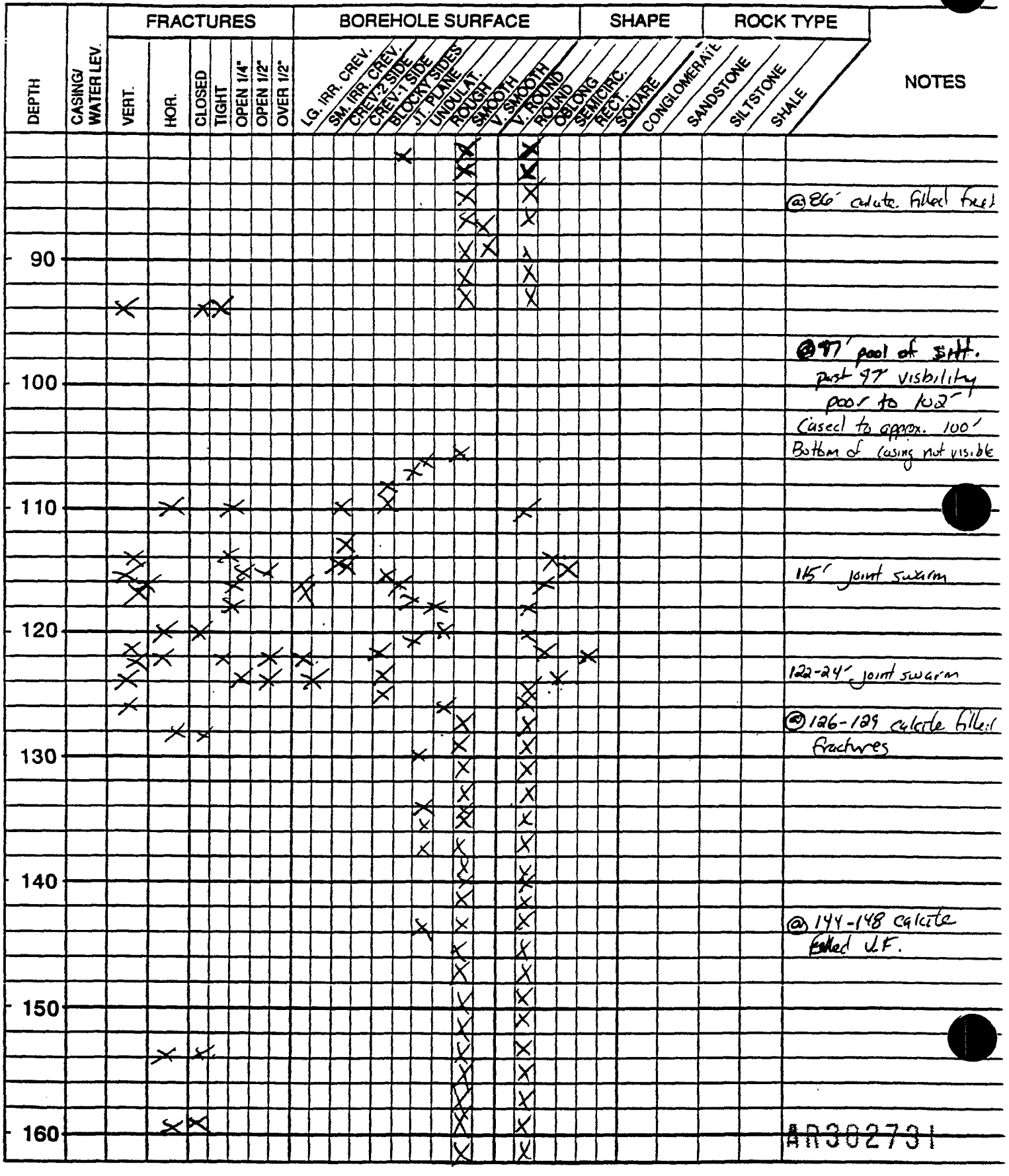
DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																												8" steel casing
																												0-9' temporary
10			X			X									X				X									0-100' permanent
			X												X				X									
			X		X	X									X				X									
			X		X	X									X				X									
			X												X				X									@17' sides of bore wet
															X				X									
20															X				X									
			X		X	X									X				X									
			X		X	X									X				X									
			X												X				X									
			X			X									X				X									
			X		X	X									X				X									
			X		X	X									X				X									
30			X												X				X									
			X		X																							
40			X		X																							
			X		X	X																						
						X																						@44-45 vert. open
		X	X																									
		X	X													X			X									
																X			X									static water @ 49' w/ 100' casi
50		X														X			X									@49-50 [illegible]
																												@ 51-60 view obscure
																												water cloudy red
																												lighter @ 60'
60																												water cloudy yellow-bro
																												from 60 - 70'
70			X			X																						@71' water clears and
																X			X									H. fracture
																X			X									
																X			X									
																X			X									
80			X				X			X		X				X			X									@71 open H. fracture

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 5

Project: POTTSTOWN FACILITY TB-2 Logged By: DMW



AR302731

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 3 Of 5

Project: POTTSTOWN FACILITY TB-2 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
										X						X			X										@160' calcite filled VF
		X			X											X			X										
																X			X										
			X	X										X	X					X									
170																X			X										
																X			X										
																X			X										
			X			X								X		X			X										@176' tight B.P.F.
			X													X			X										
																X			X										
180																X			X										
		X			X											X			X										
																			X										
																X			X										
190																X			X										
																X			X										
		X	X		X	X					X					X			X										
																X			X										
																X			X										
200		X				X			X	X		X				X			X		X								@200' Joint swarm open v. fractures
		X				X	X					X	X								X	X							
		X				X															X								
		X				X	X		X	X				X		X			X			X							@206' Joint swarm open v. fractures
		X				X										X			X										
																X			X										
210																X			X										
																X			X										
																X			X										
																X			X										
		X			X	X	X		X	X						X			X										@217-221' Vertical fractures open
220		X									X		X							X	X	X							
		X			X	X			X		X										X	X							
												X	X						X										
														X					X										
		X	X		X	X									X	X			X										
230																X			X										@230' lithology change
															X	X			X										
															X	X			X										
															X	X			X										
															X				X										
240															X				X										
															X				X										

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 5

Project: POTTSTOWN FACILITY TB-2 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X			X									
																X			X									@ 244-248 calcite filled v. fractures
																X			X									
																X			X									
																X			X									
250																												
			X		X											X			X									
																			X									
													X		X													
		X				X							X	X		X			X									
		X					X																					
		X								X		X							X									@258-9 v. fract open
260																												
		X				X	X		X		X		X	X					X									262 v. fract. open
															X				X		X							
		X		X												X			X									
		X		X	X											X			X									
																X			X									
270																												
																X			X									
																X			X									
													X	X		X			X									
		X	X		X						X		X			X			X									
			X		X											X			X									
																X			X									
280																												
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
290																												
																X			X									
																X			X									
		X		X												X			X									
																X			X									
																X			X									@297 calcite filled vert fractures
																X			X									
300																												
																X			X									
																X			X									
																X			X									
																X			X									
		X		X												X			X									
310																												
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
320																X			X									

AR302733

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 5 of 5

Project: POTTSTOWN FACILITY TB-2 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
330																													
																													@335-336 calcite filled fractures
340																													
																													@343-345 calcite filled fractures
350																													@350-366' joint swarm, vertical fracture open 1/2"-3/4"
360																													
370																													
380																													
390																													
																													calcite filled fractures
400																													

AR302734

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 6 of 6

Project: POTTSTOWN FACILITY TB-2 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
		X	X		X											X			X										
		X	X		X											X			X										
															X	X			X										
																X			X										
410																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
420			X		X											X			X										
			X		X					X				X		X			X										
																X			X										
																X			X										
																X			X										
																X			X										
430																X			X										
																X			X										
																X			X										
			X		X											X			X										
																X			X										
																X			X										
440			X		X											X			X										
																X			X										
																X			X										@ 444 water cloudy
																													@ 446 pool of silt
450																													

AR302735

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 50-40064-11 Sheet Number 1 Of 2

Project: TB-3 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																												12" casing 0-8'
									X			X																-start log at 5'
												X																
												X																
10												X																@8-11' cobbles and
												X																other 5" blocks
		X			X							X	X															@12-15 blocky Dore
												X																
														X	X													
20														X	X													
															X													
												X	X															
												X	X															
														X														
30														X														
														X														
		X			X							X	X			X												
																X												
												X			X													@37-41 cascading
												X			X													water < 1GPM
40		X																										
										X											X							
		X				X	X			X		X	X									X						@44-46 v. joint swarm
		X								X												X						open
		X																		X								@47-48 v. fract open
		X					X		X	X																		@50' hor. crence
50									X		X																	@51' hor. crenice
			X											X														
												X		X														
			X									X	X															horiz. crence 54-56'
													X															
60														X	X													
		X												X														
		X				X						X	X															@63-65 blocky jt. surfs
			X		X																							@66' crence one side
		X	X						X		X																	
												X	X															
70																												
																												@76 blocky
					X									X		X												
												X	X															
																X												
80																X												
																X												@90' poss lease

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-11 Sheet Number 2 of 2

Project: TB-3 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV. 2 SIDE	BOREHOLE SURFACE: CREV. 1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X		X										
																X		X	X									
END																X		X										@ 86 cannot advance past drill rod
90																												
100																												
110																												
120																												
130																												
140																												
150																												
160																												

AR302737

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 of 4

Project: TB-4 POTTSTOWN FACILITY Logged By: DEE/EBS

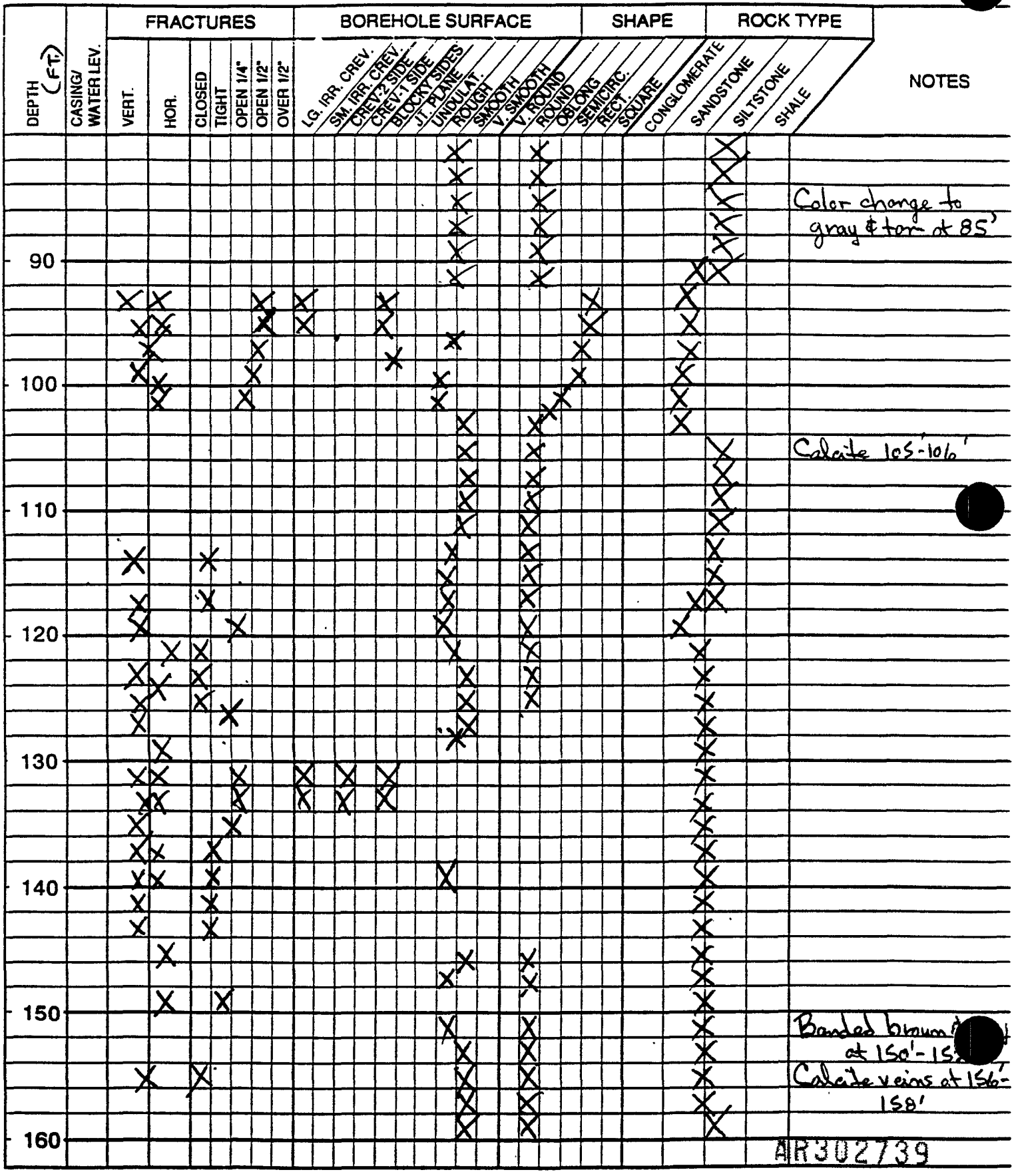
DEPTH (FT.)	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																												8-INCH CASING (NOTE: DEPTHS ARE REFERENCED TO TOP OF CASING) TO 40'
10																												
20																												
30																												
40															X			X							X			Reddish Brown & Gray
		X				X									X			X							X			Calcite filling at 45'
50									X						X			X							X			
		X				X									X			X							X			
60													X		X			X							X			
															X			X							X			bedding plane closed at 64 & 65
70		X							X				X		X			X							X			
															X			X							X			
80		X			X										X			X							X			

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 3/4

Project: TB-4 POTTSTOWN FACILITY Logged By: DEE/EBS



AR302739

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 3 Of 4

Project: TB-4 POTTSTOWN FACILITY Logged By: DEE/EBS

DEPTH (FT.)	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X		X							X			
		X		X												X		X							X			
																X		X							X			
		X		X												X		X							X			
170																X		X							X			
		X		X												X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
180																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			calcite vein at 186'
																X		X							X			
190																X		X							X			
																X		X							X			
																X		X							X			calcite veins (horiz at 192'-198'
																X		X							X			
																X		X							X			
200																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
															X			X							X			
210		X		X											X			X							X			brown band at 209'
																X		X							X			
																X		X							X			
																X		X							X			calcite vein at 218'
																X		X							X			
220																X		X							X			
			X	X												X		X							X			
																X		X							X			
			X	X												X		X							X			
230																X		X							X			
															X			X							X			
																X		X							X			
																X		X							X			
																X		X							X			
240																X		X							X			

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 4

Project: TG-4 POTTSTOWN FACILITY Logged By: DEE/EBS

DEPTH (FT.)	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X		X								X		
			X	X											X			X							X			
		X		X											X			X							X			
			X	X											X			X							X			
250															X			X							X			
															X	X		X							X			
																X		X							X			
																X		X							X			
			X	X												X		X							X			
260		X		X												X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
270																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			calcite veins at 278' (horizontal)
280																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
290																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
																X		X							X			
		X		X											X			X							X			
300															X			X							X			Bottom of TV Log at 300'
310																												
320																												

AR302741

BLM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 Of 6

Project: TB-5 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
10																												
20																												
30																												CASING TO 42'
40	▼	X	X			X	X				X			X			X											(AIR BUBBL OBSERVED AT BOTTOM OF CASING)
														X			X											@42' Static Water level
50										X				X			X			X								
		X				X			X					X			X											
60														X			X											
		X		X	X																							
70															X		X											
			X		X					X																		
			X		X					X																		
80								X				X								X								

Fresh water

AR302742

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 6

Project: TB-5 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																													SALCITE VEINS AT 88'
90																													
100																													
110																													GRAY LAYER AT
120																													
130																													
140																													
150																													
160																													

AR302743

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4664-13 Sheet Number 3 Of 6

Project: TB-5 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
			X				X																						
																X			X										
																X			X										
																X			X										
																X			X										
170																X			X										
			X			X										X			X										
180			X	X										X					X										
																X			X										
190											X		X							X									POSSIBLE INFLOW OBSERVED AT 189'
																X			X										
																X			X										
																X			X										
																X			X										
200			X	X												X			X										
																													CALCITE VEINS AT 206'
210			X			X																							
														X							X								
220						X				X		X									X								
						X				X		X									X								
230																													
																X			X										
		X	X			X						X																	
240																X			X										

AR302744

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 6

Project: TB-5 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
			X		X																							
		X						X		X			X									X						
		X						X		X			X									X						
		X					X	X		X			X									X						
		X					X	X		X			X									X						
250																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
260																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
							X	X	X																			POSSIBLE INFLOW AT 268'
270																X			X									
																X			X									
																X			X									
			X			X																						
		X			X																							
		X				X																						
280																X			X									
																X			X									
																X			X									
																X			X									
							X			X									X									
															X				X									POSSIBLE INFLOW AT 288'
290	X	X			X																							
																X			X									
300																												
		X		X																								
							X	X																				
310																												
																X			X									
320																												

AR302145

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 5 Of 6

Project: TB-5 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																												BLACK VEIN AT 27'
330															X			X										
																X		X										
340																X		X										
			X	X																								
350																												
		X		X								X																
															X			X										
360															X			X										
															X			X										
																X		X										
370																X		X										
																X		X										
																X		X										
																X		X										
380															X			X										
															X			X										
															X			X										
																X		X										
390																X		X										
																X		X										
																X		X										
																X		X										
400																X		X										

AR302746

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 6 Of 6

Project: TB-5 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JL. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
															X				X									
															X				X									
																X			X									
410		X	X	X																								CALCITE FILLED VERT. FRAC. AT 410'
																X			X									
																X			X									
															X				X									
420		X	X		X								X															
		X				X		X					X															POSSIBLY INFLOW AT 424'
																X			X									
430																X			X									
																X			X									CALCITE - FILLED VEINS AT 430'
440															X				X									
		X	X		X																							
												X				X			X									
450																												BOTTOM OF HOLE AT 450'
460																												
470																												
480																												

AR302747

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 Of 6

Project: POTTSTOWN FACILITY TB-6 Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
10																													
20																													(BOTTOM OF CASING POSSIBLY AT 43' WITH WATER TABLE... HIGH REFLECTION AND LOW RESOLUTION BY CAMERA UNTIL WATER TABLE IS INTERCEPTED)
30																													
40																													▼ CASCADING WATER ~~TABLE~~ AT 43'
		X	X				X				X											X							
50													X						X										
													X						X										
												X									X								TRICKLING INFLOW CASCADING AT 58'
60												X									X								
												X									X								
										X					X			X											INCREASED CASCADING AT 66'
										X		X																	WATER TABLE AT 69' REDDISH BROWN AND GRAY
70			X			X																							
			X			X																							
														X					X										
														X					X										
														X					X										
														X					X										
80														X					X										

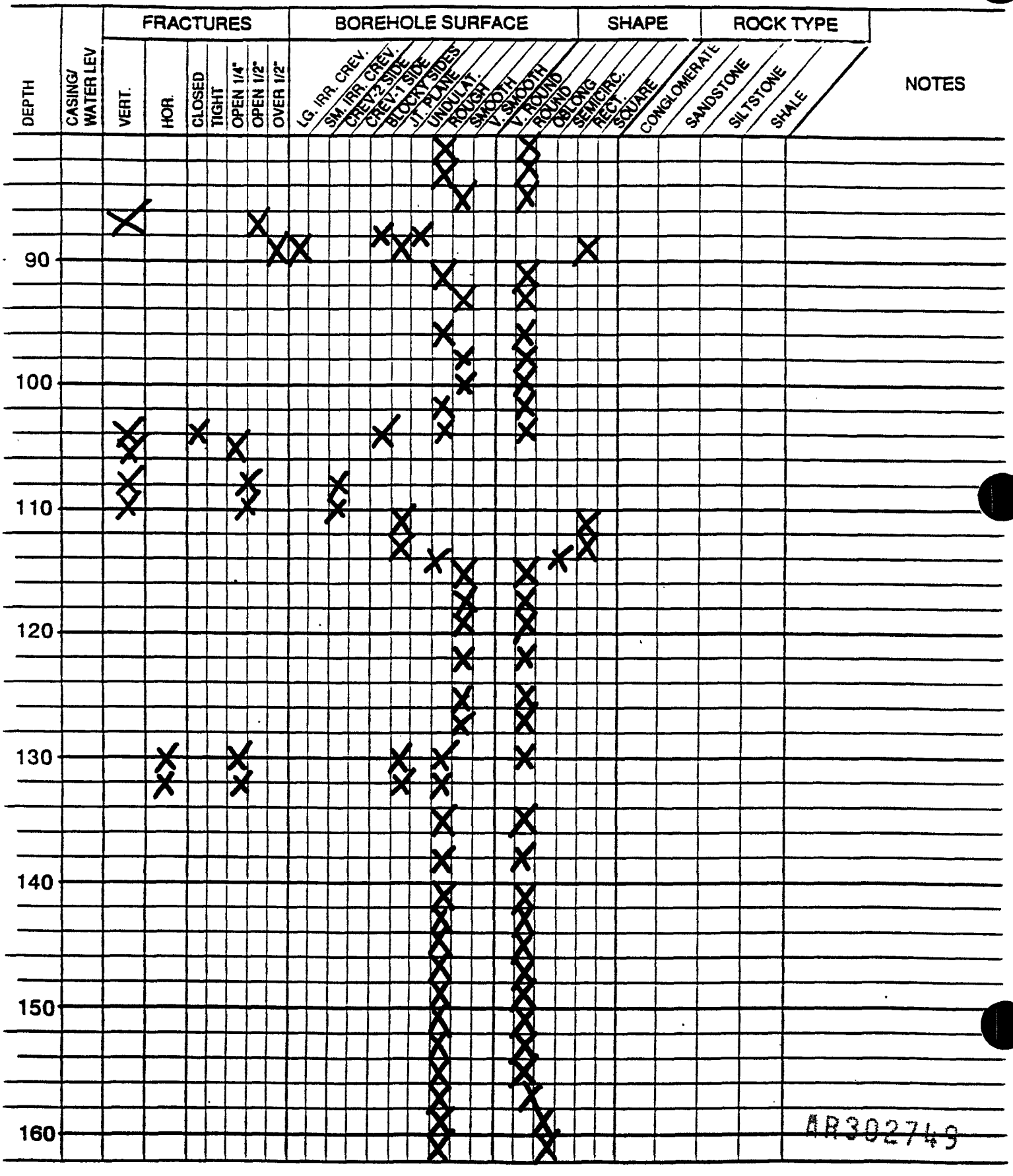
AR302748

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 6

Project: POTTSTOWN FACILITY TB-6 Logged By: DEE



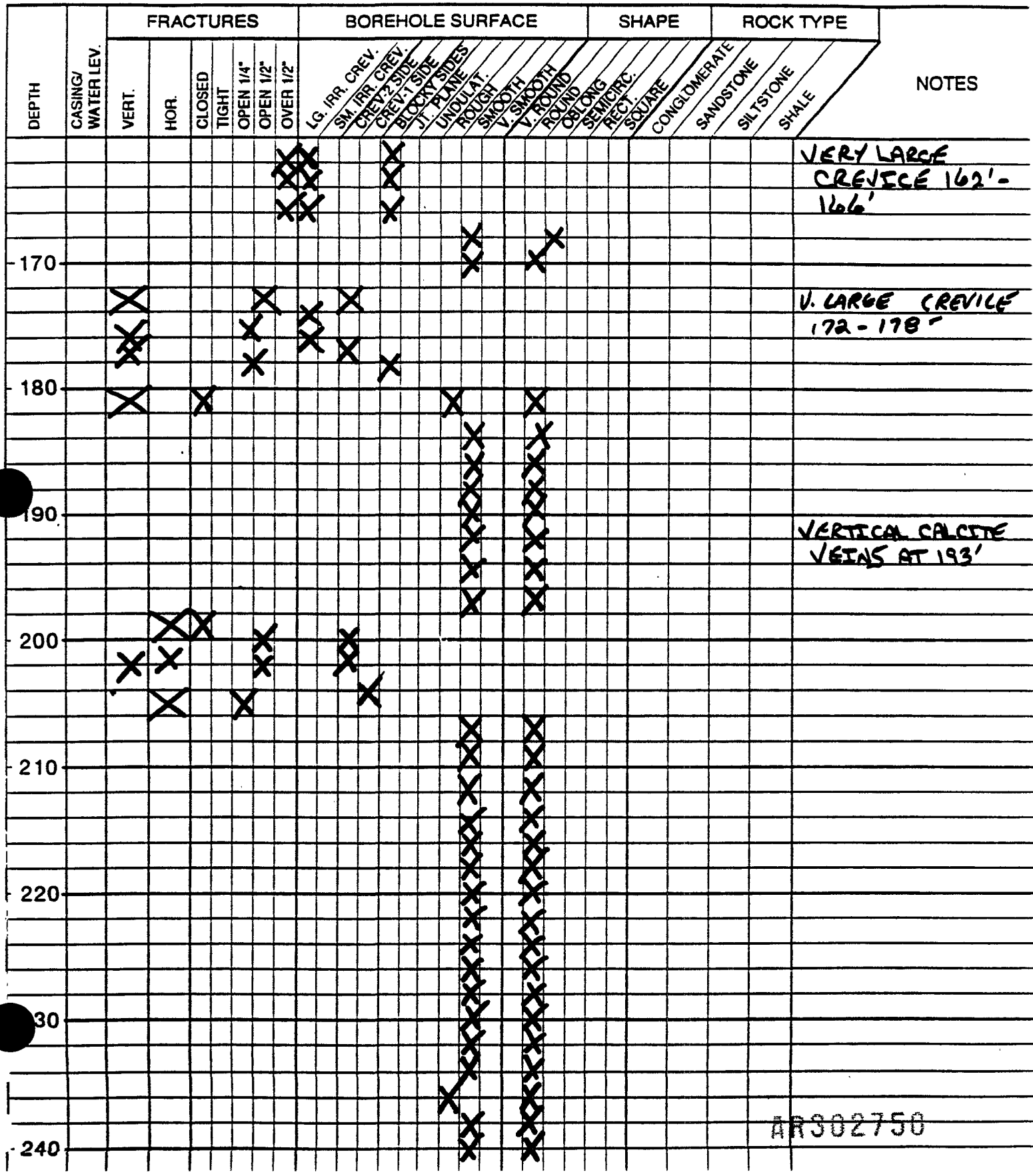
AR302749

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 3 Of 6

Project: POTTSTOWN FACILITY TB-6 Logged By: DEE



AR302750

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 6

Project: POTTSTOWN FACILITY TB-6 Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
250																													
260																													
270																													
280																													
290																													
300																													
310																													
320																													

AR302751

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 5 Of 6

Project: POTTSTOWN FACILITY TB-6 Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: 1L. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
330																X													
340		X		X																									
350		X		X																									
		X		X																									
360																													
370																													
380		X				X																							
			X			X																							
390																													
400																													

AR302752

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4641-13 Sheet Number 6 Of 6

Project: POTTSTOWN FACILITY TB-6 Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
410		X	X			X							X															
420																												
430																												
440		X		X												X												
		X				X										X												
450																X												BOTTOM OF HOLE AT 451'
460																												
470																												
480																												

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 Of 5

Project: TB-7 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																													8" steel casing to approximately 66'
10																													
20																													
30																													
40																													
	▼																												WATER TABLE AT 46'
50																													
60																													
																													COULD NOT DISTINGUISH BOTTOM OF CASING, MURKY TO 68' REDDISH BROWN
70																X		X							X				
		X		X		X										X		X							X				
		X				X										X		X							X				
		X	X													X		X							X				
80																X		X							X				

AR302754

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 5

Project: TB-7 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
90																													POSSIBLE WEATHERED FRACTURES 89' & 91'
100																													
110																													
																													BANDED GRAY & REDDISH BROWN 110'-
																													CALCITE VEINS AT 114'
120																													
130																													
140																													
																													BANDED HORIZONTAL FRACTURES AT 149'-
150																													FRACTURES APPEAR
																													SEDIMENT-INFILLED
																													CALCITE VEINS AT 159'
160																													

AR302755

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-464-13 Sheet Number 3 Of 5

Project: TB-7 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV. 2 SIDE	BOREHOLE SURFACE: CREV. 1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
			X			X									X				X								X		
															X				X									X	LARGE WEATHERED CALCITE
															X				X									X	VEIN AT 163'
		X													X				X									X	BANDED GRAY AND
170															X				X									X	TAN 165'-171'
															X				X								X		CALCITE-FILLED
																											X		VERT. FRAC. AT 166'-
		X											X														X		TO 169' & 176'-177'
															X												X		
180															X												X	X	
															X												X		
															X												X		
															X												X		
															X				X								X		
190															X				X								X		
															X				X								X		
															X				X								X	X	
															X				X								X		
															X				X						X				
						X			X						X				X						X				
200															X				X						X				
															X				X						X				
															X				X						X				
															X				X						X				
		X				X									X				X						X				
210															X				X						X				
															X				X							X	X		
															X				X							X	X		
		X													X				X							X	X		VERT. CALCITE VEINS
															X				X							X	X		216'-218'
220															X				X							X	X		
															X				X							X	X		
															X				X							X	X		
															X				X							X	X		
		X	X			X									X				X							X	X		CALCITE-FILLING
230															X				X							X	X		228'-230'
															X				X							X	X		
															X				X							X	X		
															X				X							X	X		
															X				X							X	X		
240															X				X							X	X		

AR302756

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 5

Project: TB-7 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
250				X					X																			CALCITE-FILLED CRENICE AT 251'-252'
																										X		BANDED GRAY & TAN 256'-
260		X				X																				X		DARKER GRAY IN BANDS 261'-266', OTHER DARK BANDING IN SHALE BELOW
270			X	X																						X		IN SHALE
		X				X																				X		
280																										X		
																										X		COLOR CHANGE TO GRAY AT 288'
290																										X		
300																										X		
																										X		CRYSTALLINE AT 309' (REFLECTION OFF CAMERA BULB ON FACIES)
310																										X		
320																										X		

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4664/3 Sheet Number 5 Of 5

Project: TB-7 POTTSTOWN FACILITY Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: IL. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
330																													CALCITE-FILLED VEINS AT 335'
340		X		X																									CALCITE-FILLED FRAC. AT 341'
350																													BOTTOM OF TV CAMERA LOG
360																													NOTE: WHEN DISTINGUISHING BETWEEN A "SILTSTONE" AND A "SHALE" ON THIS LOG, I CONSIDERED FISSILITY -- THAT IS, I RESERVED THE TERM SHALE FOR FINER-GRAINED ROCK WHICH WAS FISSILE. DEFER DIFFERENTIATION BETWEEN SILTSTONE AND SANDSTONE TO GAMMA AND OTHER GEOPHYSICAL LOG
370																													
380																													
390																													
400																													

AR302758

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL Sheet Number 1 of 5

Project: TB-8 POTTSTOWN FACILITY Logged By: DEE/EBS

DEPTH (FT.)	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	SM. IRR. CREV.	CREV.-2 SIDE	CREV.-1 SIDE	BLOCKY SIDES	JT. PLANE	UNDULAT.	ROUGH	SMOOTH	V. SMOOTH	V. ROUND	OBLONG	SHAPE: SEMICIRC.	RECT.	SQUARE	ROCK TYPE: CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	NOTES
10																											
20																											
	▼																										8-INCH CASING TO 32 FT
30																											@24' water level
40																											
50																											
60																											OBSERVED FLOW INTO BOREHOLE AT 62'
70																											CALCITE VEINS AT ~~70~~ TO ~~78~~ 80'
80																											

AR302759

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-400413 Sheet Number 2 of 5

Project: TB-8 Logged By: DEE / EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
90		X	X			X			X			X	X																
100																													
110																													
120		X		X																									LARGE CALCITE VEIN AT 120'
130		X							X																				
140		X							X																				COLOR CHANGE TO REDDISH BROWN AT 142'
150																													
160			X	X																									

AR302760

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 3 of 5

Project: TB-8 POTTSTOWN FACILITY Logged By: DEE/EBS

DEPTH (FT.)	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									LARGE CALCITE
170																X			X									VEIN AT 167'
																X			X									
																X			X									
																X			X									
		X		X					X							X			X									
														X					X									
180														X					X									
														X					X									
														X					X									
														X					X									
														X					X									
														X					X									
														X					X									
190														X					X									
														X					X									LARGE CALCITE
														X					X									VEIN AT 192'
														X					X									
														X					X									
														X					X									
200														X					X									
														X					X									
														X					X									
														X					X									
														X					X									
														X					X									
														X					X									
210			X		X									X					X									
														X					X									
														X					X									
														X					X									
														X					X									
														X					X									
220			X		X									X					X									
			X		X									X					X									
														X					X									
		X			X				X					X					X									
															X				X									
			X												X				X									
230			X		X										X				X									
															X				X									
															X				X									
															X				X									
															X				X									
240															X				X									AR302761

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 5

Project: TB-8 POTTSTOWN FACILITY Logged By: DEE / EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	SM. IRR. CREV.	CREV-2 SIDE	CREV-1 SIDE	BLOCKY SIDES	JT. PLANE	UNDULAT.	ROUGH	SMOOTH	V. SMOOTH	V. ROUND	ROUND	OBLONG	SEMICIRC.	RECT.	SQUARE	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	NOTES
																X			X										
		X														X			X										CALCITE VEIN AT 243'
																X			X										
																X			X										
250																X			X										
		X	X		X											X			X										
																X			X										
																X			X										
																X			X										
260																X			X										
																X			X										
																X			X										
																X			X										
																X			X										COLOR CHANGE TO
270																X			X										GRAY AT 268'
		X			X																								
																X			X										
																X			X										
																X			X										
280																X			X										
																X			X										
			X		X											X			X										
																X			X										
																X			X										
																X			X										
290																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
300																X			X										
		X			X																								
																X			X										
																X			X										
			X		X															X									
			X		X															X									
310																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
320																X			X										

AR302762

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL CO-4064-13 Sheet Number 5 of 5

Project: TB-8 POTTSTOWN FACILITY Logged By: DEE/EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: 1L PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X			X									
																X			X									
																X			X									
																X			X									
330			X		X											X			X									
																X			X									
																X			X									
																X			X									
																X			X									
340																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
350																X			X									BOTTOM OF HOLE AT 351'
360																												
370																												
380																												
390																												
400																												

AR302763

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 Of 4

Project: POTTSTOWN FACILITY TB-9 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																												8-inch steel casing from 0 to 42'
5																												
	▼																											@ 8.5' water level water cloudy w/ suspended matter
10																												
20																												
30																												
																												@37' water in casing clear still has suspended matt
40																												@42' Bottom of casing 43-46' Calcite filled v. fractures
			X								X					X		X										
																X		X										
				X						X			X			X		X										
50																X		X										Calcite infilled fractures
																X		X										
																X		X										
																X		X										
																X		X										
60																X		X										
			X	X									X	X		X		X										
													X	X		X		X										
																X		X										
		X	X			X	X					X	X					X										@ 60' possible flow from H. fracture, water clear
70				X								X				X		X										@ 70-84' calcite filled V. and H. fractures
																X		X										
			X	X									X					X										
													X				X											
80																X		X										
																X		X										

AR302764

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 4

Project: POTTSTOWN FACILITY TB-9 Logged By: DMW

DEPTH	CASING/ WATER LEV	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																												@84 H. fract tight.
																												@85-86 V. fract. calcite
																												cemented - opens to 1/4.
90																												@89-90 H. bedding plane op
																												91-95 calcite filled
																												V. fractures
																												Water cloudier
100																												
																												@100-104 bedding plan
																												fract. and undulat.
110																												@110' h. fracture
120																												@120-23 undulating, w/
																												bedding plane fractures
130																												
140																												Lithologic change
																												@148-155 calcite filled
																												V. & H. fract
150																												
																												V. fracture
160																												n to tight

AR302765

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DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 3 Of 4

Project: POTTSTOWN FACILITY TB-9 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	SM. IRR. CREV.	CREV-2 SIDE	CREV-1 SIDE	BLOCKY SIDES	JT. PLANE	UNDULAT.	ROUGH	SMOOTH	V. SMOOTH	V. ROUND	OBLONG	SEMICIRC.	RECT.	SQUARE	SHAPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	SILTSTONE	SHALE	NOTES
		X			X											X			X									@ 161-162 v. fracture - tight
		X														X			X									
																X			X									
																X			X									
		X				X				X						X			X									
170														X					X									@ 169 v. fracture open
																X			X									
														X		X			X									
														X		X			X									
														X		X			X									
															X				X									
180															X	X			X									
																X			X									
																X			X									Calcite filled vert and hor. fracture from 183-200
																X			X									
																X			X									
																X			X									
190																X			X									
																X			X									
																X			X									
																X			X									
																	X		X									
																	X		X									
200			X		X											X			X									
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
210			X		X									X					X									
														X					X									
														X					X									
																X			X									
																X			X									
																X			X									
220					X							X				X			X									
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
0																X			X									
																X			X									
																			X									@ 234-236 possible inflow. 234-37 v. fractures open
		X					X	X	X		X		X	X	X				X									
			X					X					X								X	X						@ 236 zone
																X			X									@ 238 v. fract
240		X				X							X	X		X												

AR302766

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 4

Project: POTTSTOWN FACILITY TB-9 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X			X										@ 240' water clear
																X			X										calcite filled v. fractures
																X			X										
		X				X													X										@241-48 v. fractures
250																X			X										
		X	X			X			X		X		X		X				X										
		X				X	X	X	X	X		X	X							X		X							@251-255 open v. fracture
		X					X	X	X				X									X							highly fract @ 255
															X	X			X	X									@255 pebble zone
			X		X											X			X										water somewhat silty
260																X			X										
																X			X										
																X			X										
														X		X			X										
																X			X										@268' water clear
270																X			X										
																X			X										Calcite filled v. and
														X		X			X										n. fracture 270-285
																X			X										
														X		X			X										
				X									X			X			X										
280																X			X										
																X			X										
																X			X										water v. cloudy
																X			X										
																X			X										
																X			X										
290																X			X										
																X			X										
																X			X										
																X			X										
																X			X										@298 pad of sediment
300																													totally obscures camera
310																													
320																													

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 Of 5

Project: POTTSTOWN FACILITY TB-10 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV. 2 SIDE	BOREHOLE SURFACE: CREV. 1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																												Steel casing from 0-28'
10																												
	▼																											@15' water level
20																												large suspended parts in water (flat algae-like visibility poor (clearing until 34'
																												@28'? bottom of casing
30																												
																												@ V. fracture @ 36' open
40																												
50																												
																												@55-7' V. fracture open
60																												
																												@66-68 V. fract open
70																												water clear considerably
																												@73' calcite vein
																												@76 V. fracture
80																												

AR302768

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 5

Project: POTTSTOWN FACILITY TB-10 Logged By: DMW

DEPTH	CASING/ WATER LEV	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	BOREHOLE SURFACE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X			X										
																X			X										
																X			X										
																X			X										
									X							X			X										
90																X			X										
																X			X										
																X			X										
		X				X							X		X				X										@95-96 V. fract open
		X		X	X										X				X										
		X			X	X													X										
100			X			X			X						X				X										
															X				X										
															X				X										
		X			X	X			X						X				X										@106 lithology chan
															X				X										
			X								X																		
110		X			X										X				X										
		X	X		X	X									X	X			X										@112 H. fract open
																X			X										
			X		X				X							X			X										
																X			X										
																X			X										
120																X			X										
			X			X									X				X										@122' H. fract
			X			X							X		X				X										w/ sure growth?
			X												X				X										
																X			X										
																X			X										
130																X			X										
																X			X										
									X							X			X										
		X	no												X				X										@135-36 V. fract. open
		X			X										X				X										& calcite vein
			X								X								X										
140																X			X										
																X			X										
		X			X										X														@142-144 calcite vein
																X			X										
																X			X										@148-150 V. fracture
		X	X	X	X	X							X			X			X										
150		X				X							X			X			X										
																X			X										
																X			X										
		X			X	X										X			X										oblique V. fract @153
																X			X										
																X			X										
160																X			X										

AR302769

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 3 Of 5

Project: POTTSTOWN FACILITY TB-10 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
170																													@ 168' H. fracture open
180																													@ 180-85 open v. fracture
																													@ 188-193 open v. frac
190																													
200																					no								
210																													
																													@ 213-14 v. fracture open
																													@ 215-17 v. fracture open
220																													
																													@ 221 Horizontal frac
																													@ 222-26 V. frac. obs
																													@ 227-236
																													no seen observed
230																													
																													@ 231 & 236 tight v. frac
																													@ 237 open H. frac
240																													

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 5

Project: POTTSTOWN FACILITY TB-10 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
250																												
																												@ 255 calcite ven
																												@ 256-257 h. & v.
																												fractures open
260																												
																												@ 261-64 vertical fracture
																												and l.l. fract open & tight
																												@ 268' V. fracture
270																												
																												@ 275-77 Calcite ven
																												@ 277-78 V. fracture
																												open
280																												@ 280' H. fracture open
																												@ 283' Camera stuck, cloudy
																												@ 288' V. & H. fractures
290																												
																												@ 294-96 calcite veins
																												@ 299-300 - V. fract
300																												open
																												@ 307-314 calcite
																												veining
310																												
																												@ 317-19 V. fracture
320																												

AR302771

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 5 Of 5

Project: POTTSTOWN FACILITY TB-10 Logged By: DMW

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																												@ 323 - H. frac
		X	X			X	X	X	X	X	X	X	X		X						X							@ 323-26 V. fractu open
		X									X	X																
			X		X										X			X										
330		X	X			X	X				X					X		X										@ 330 V. and H fractur
		X	X		X	X						X	X						X	X								
			X												X			X										
																												@ 334 - visibility obscured
340			X		X	X																						
			X		X	X																						
		X				X				X																		possible flow? out of bore
350																												@ 350 bottom of camera log - silt pa
360																												
370																												
380																												
390																												
400																												

AR302772

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 Of 7

Project: POTTSTOWN FACILITY PW-1R Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	BOREHOLE SURFACE: ROUND	BOREHOLE SURFACE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
10																													
20																													BOTTOM OF CASING AT 40'
30																													
40																													TAN & GRAY, WEATHERED
			X			X																							
			X			X				X									X										
50															X					X									
						X									X					X									
						X									X					X									
						X									X					X									
60																													INFLOW OBSERVED AT 62', CASCADING INCREASED CASCADING AT 66', ≈5 GPM AT 70' (WATER) DARK LAYER AT 71
70															X				X										
			X		X																								
			X			X									X				X										GRAY
			X			X																							
			X			X									X				X										
80															X						X								

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 7

Project: POTTSTOWN FACILITY PW-1R Logged By: DEE

DEPTH	CASING/ WATER LEV	FRACTURES: VERT.	HOR.	CLOSED	TIGHT	OPEN 1/4"	OPEN 1/2"	OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	SM. IRR. CREV.	CREV-2 SIDE	CREV-1 SIDE	BLOCKY SIDES	JT. PLANE	UNDULAT.	ROUGH	SMOOTH	V. SMOOTH	V. ROUND	ROUND	OBLONG	SHAPE: SEMICIRC.	RECT.	SQUARE	ROCK TYPE: CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	NOTES
90																													
100																													COLOR CHANGE TO REDDISH BROWN AND GRAY 101'
110																													
120																													
130																													
140																													
150																													
160																													

AR302774

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DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 3 Of

Project: POTTSTOWN FACILITY PW-1R Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
			X	X			X		X																			
														X				X										GRAY AT 165'
														X				X										
														X				X										REDDISH BROWN AT 169', POSSIBLE PEBBLE ZONE
170															X			X										
															X			X										
														X				X										
														X				X										
														X				X										
180														X				X										
			X	X										X				X										
														X				X										
		X		X										X				X										
190														X				X										
			X			X								X				X										
														X				X										
														X				X										
														X				X										
200														X				X										
														X				X										BANDED TAN & REDDISH BROWN AT 203'
														X				X										
					X						X																	
210		X				X								X					X									
														X				X										
		X				X																						
															X			X										
220															X			X										
															X			X										
															X			X										
															X			X										
															X			X										
230															X			X										
		X		X							X																	
		X		X							X																	
		X		X							X																	
				X																								
240															X			X										

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DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 7

Project: POTTSTOWN FACILITY PW-1R Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
250		X		X		X						X																
		X													X				X									
260																												
						X					X																	POSSIBLE INFLOW
																												OBSERVED AT 2
			X			X																						
270		X	X			X										X			X									
		X	X												X					X									
			X													X			X									
															X				X									
280																												
															X				X									
		X		X								X																
290															X				X									
															X				X									
															X				X									
														X				X										
300															X				X									
															X				X									
															X				X									
															X				X									
															X				X									
310															X				X									
															X				X									
															X				X									
		X				X																						
															X				X									
															X				X									
320														X					X									

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DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 5 Of 7

Project: POTTSTOWN FACILITY PW-1R Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: IT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
330						X							X															GRAY AT 329'
															X				X									
			X			X																						POSSIBLE PEBBLE AT 338'
																X			X									
340																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
350			X			X																						TAN AT 34[illegible]
			X			X																						
																												BLUISH GRAY AT 355'-356
																												GRAY & TAN 358'
360																X			X									
																X			X									
																X			X									
																X			X									
																X			X									
370																X			X									
																X			X									
		X				X																						
																X			X									
380																												
			X			X																						
																X			X									
																X			X									
390																X			X									
			X			X							X															
																X			X									
																X			X									
400																X			X									

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DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4044-13 Sheet Number 6 Of 7

Project: POTTSTOWN FACILITY PW-1R Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X		X										
																X		X										
			X			X																						
															X			X										
420			X		X																							CALCITE VEIN AT 411'
															X			X										
															X			X										
															X			X										
420															X			X										
															X			X										
															X			X										
			X			X																						
430															X			X										
															X			X										
																X		X										
																X		X										
440																X		X										
																X		X										
		X	X			X																						
		X	X			X																						
450															X			X										
															X			X										
460		X					X		X																			
		X					X																					
		X					X																					
																X		X										
																X		X										
470																X		X										
																X		X										
																X		X										
																X		X										
																X		X										
																X		X										
480							X			X						X		X										

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DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-406413 Sheet Number 7 Of 7

Project: POTTSTOWN FACILITY PW-1R Logged By: DEE

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	BOREHOLE SURFACE: V. ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X		X										
																X		X										
																X		X										
490																X		X										
																X		X										
																X		X										
																X		X										
		X				X										X		X										
500																X		X										
																X		X										
																X		X										
																X		X										
																X		X										
510																X		X										
																X		X										
																X		X										
																X		X										
																X		X										
520																X		X										
																X		X										
																X		X										
																X		X										
																X		X										
530																X		X										
																X		X										
																X		X										
																X		X										
																X		X										
540																X		X										
																X		X										
																X		X										
																X		X										
																X		X										
550																X		X										BOTTOM OF LOG AT BOTTOM OF HOLE AT 551'
560																												

AR302779

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DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 1 Of 5

Project: POTTSTOWN FACILITY PW-7 Logged By: DMW / EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	SM. IRR. CREV.	CREV-2 SIDE	CREV-1 SIDE	BLOCKY SIDES	JT. PLANE	UNDULAT.	ROUGH	SMOOTH	V. SMOOTH	V. ROUND	OBLONG	SEMICIRC.	RECT.	SQUARE	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	NOTES
																												0 to 35' 10" steel casing 10" BORE 0-204'
10																												
	▼																											@ 17' static water level
20																												
30																												@ 32' casing corroded
		X					X		X			X								X								@ 39-51 two principal joints intersect bore open
40		X					X		X			X								X								
		X					X		X			X								X								
		X					X		X			X								X								
		X					X		X			X								X								
		X					X		X			X								X								
		X					X		X			X								X								
50		X	X				X		X			X		X						X								@ 50' possible pebble
		X					X		X			X								X								@ 55-58 large cavity one principal joint plane
		X				X				X		X								X								
		X	X				X		X			X									X							
		X				X	X		X			X							X									
60		X			X							X		X	X				X									
		X			X											X			X									
					X											X			X									@ 62' encrustation, scaling to 69' scaling broken
					X											X			X									
		X					X	X					X	X					X									@ 66' irregular cavity created from vertical joints
70											X				X				X									
		X		X											X	X			X									@ 71-73 infilled w. fracture
																X			X									
		X			X	X										X			X									
																X			X									@ 79-[illegible] broken
80																												

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 2 Of 5

Project: POTTSTOWN FACILITY PW-7 Logged By: DMW / EBS

DEPTH	CASING/ WATER LEV	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																X			X										@ 81- encrustation c.. half bore 1/2-1" thick
															X	X			X										
																X			X										
															X	X			X										
		X			X											X			X										
90																X			X										
		X			X											X			X										
											X				X	X			X										
																X			X										
																X			X										
																X			X										
																X			X										
100																X			X										
			X			X				X						X			X										
															X	X			X										
																X			X										
																X			X										
																X			X										
110																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
120																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
																X			X										
130															X	X			X										
																X			X	X									
		X					X	X	X			X							X										@ 133'-38' v. fracture open to light
		X					X	X				X								X									
		X				X	X					X								X									
					X	X										X			X	X									
140																X			X										
																X			X										Encrustation thinner
																X			X										
																X			X										
																X			X										
																X			X										
150																X			X										
																X			X										
																X			X										
																X			X										@ 156-58' spider-web of calcite filled fracture
																X			X										
160																X			X										

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DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 3 Of 5

Project: POTTSTOWN FACILITY PW-7 Logged By: DMW/EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
170																													
																													@ 174-176 Encrustation thickens
180																													
190																													@ 192-95 - V. fracture open to tight
																													@ 196-2 vertical fracture expands
200																													
																													@ 201 encrustation much thinner
																													@ 209' 8" BORE
																													@ 207-210 V. fracture
210																													
220																													@ 219-221 V. fracture open
																													@ 227-228 V. fracture open
230																													
240																													

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DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 4 Of 5

Project: POTTSTOWN FACILITY PW-7 Logged By: DMW / EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV.-2 SIDE	BOREHOLE SURFACE: CREV.-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: CONGLOMERATE	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
																													@243-47 seems v. crd horizontal fractures
250																													
																													@254-55 tight v. fract.
260																													@260 oblique v. fracture
																													@263-65 Jt. plane intersects bore
																													@265-70 - irregular fracture
270																													
280																													
290																													
																													@297-98 v. fract. tight
300																													
310																													
																													@315' H. fract. 1/4-1/2"
320																													@319 pebble zone @320 H. fracture

BCM

DOWNHOLE CAMERA LOGS

Name of Client: OCCIDENTAL CHEMICAL 00-4064-13 Sheet Number 5 Of 5

Project: POTTSTOWN FACILITY PW-7 Logged By: DMW / EBS

DEPTH	CASING/ WATER LEV.	FRACTURES: VERT.	FRACTURES: HOR.	FRACTURES: CLOSED	FRACTURES: TIGHT	FRACTURES: OPEN 1/4"	FRACTURES: OPEN 1/2"	FRACTURES: OVER 1/2"	BOREHOLE SURFACE: LG. IRR. CREV.	BOREHOLE SURFACE: SM. IRR. CREV.	BOREHOLE SURFACE: CREV-2 SIDE	BOREHOLE SURFACE: CREV-1 SIDE	BOREHOLE SURFACE: BLOCKY SIDES	BOREHOLE SURFACE: JT. PLANE	BOREHOLE SURFACE: UNDULAT.	BOREHOLE SURFACE: ROUGH	BOREHOLE SURFACE: SMOOTH	BOREHOLE SURFACE: V. SMOOTH	SHAPE: V. ROUND	SHAPE: ROUND	SHAPE: OBLONG	SHAPE: SEMICIRC.	SHAPE: RECT.	SHAPE: SQUARE	ROCK TYPE: GRAVEL	ROCK TYPE: SANDSTONE	ROCK TYPE: SILTSTONE	ROCK TYPE: SHALE	NOTES
														X	X	X			X										
			X											X					X										
		X	X		X			X	X	X			X						X										@325-26 blocky possible
															X				X										cave in; possible flow
															X														possible pebble zone 326'
330																X			X										
															X				X										@335-34
		X						X	X	X			X	X							X								
														X	X														
														X	X				X										
340															X				X										
															X				X										@343' silt pool
350																													
360																													
370																													
380																													
390																													
400																													

BCM

APPENDIX C

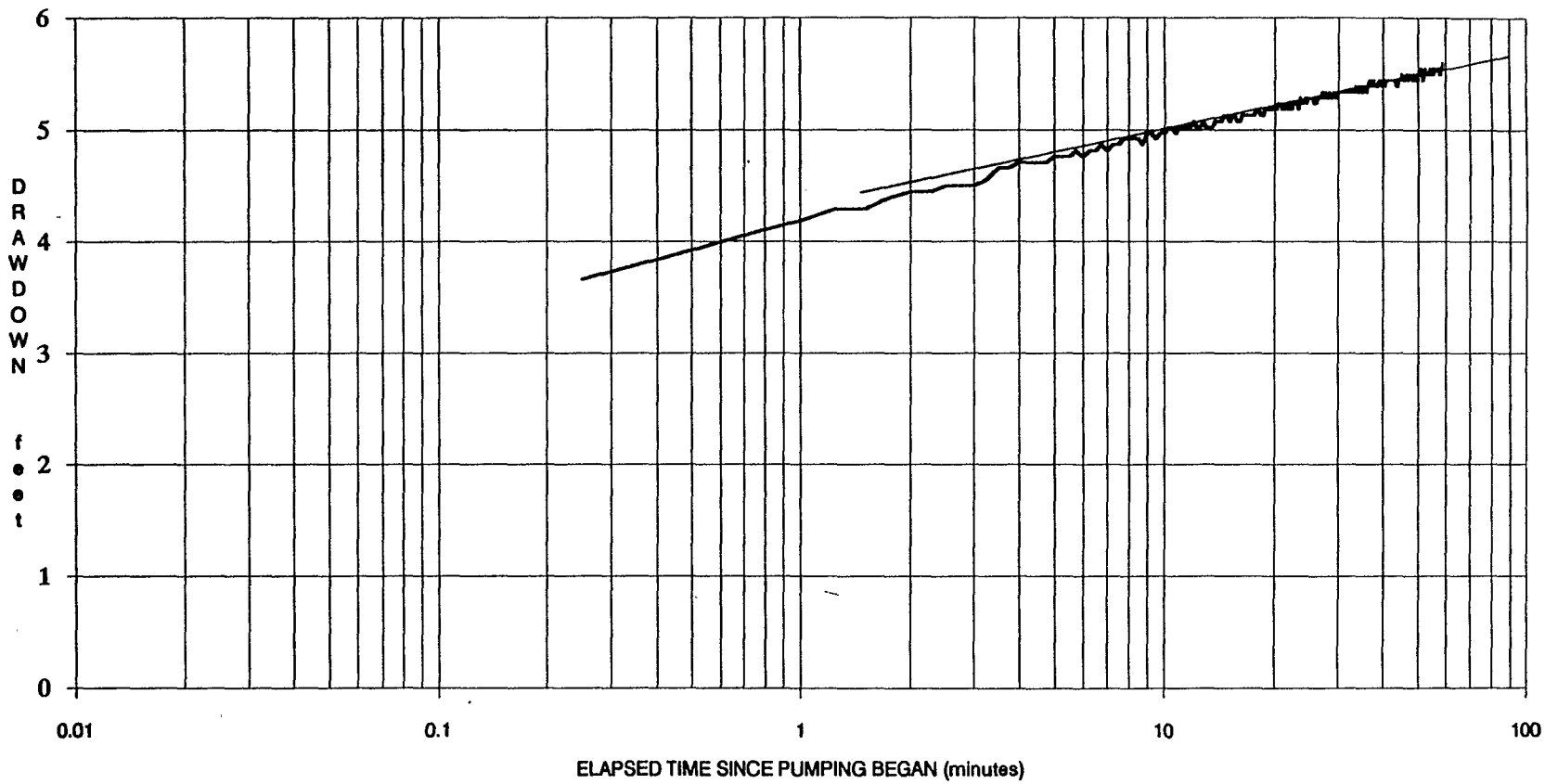
RECONNAISSANCE BOREHOLE GEOPHYSICAL LOGS

BCM

APPENDIX D

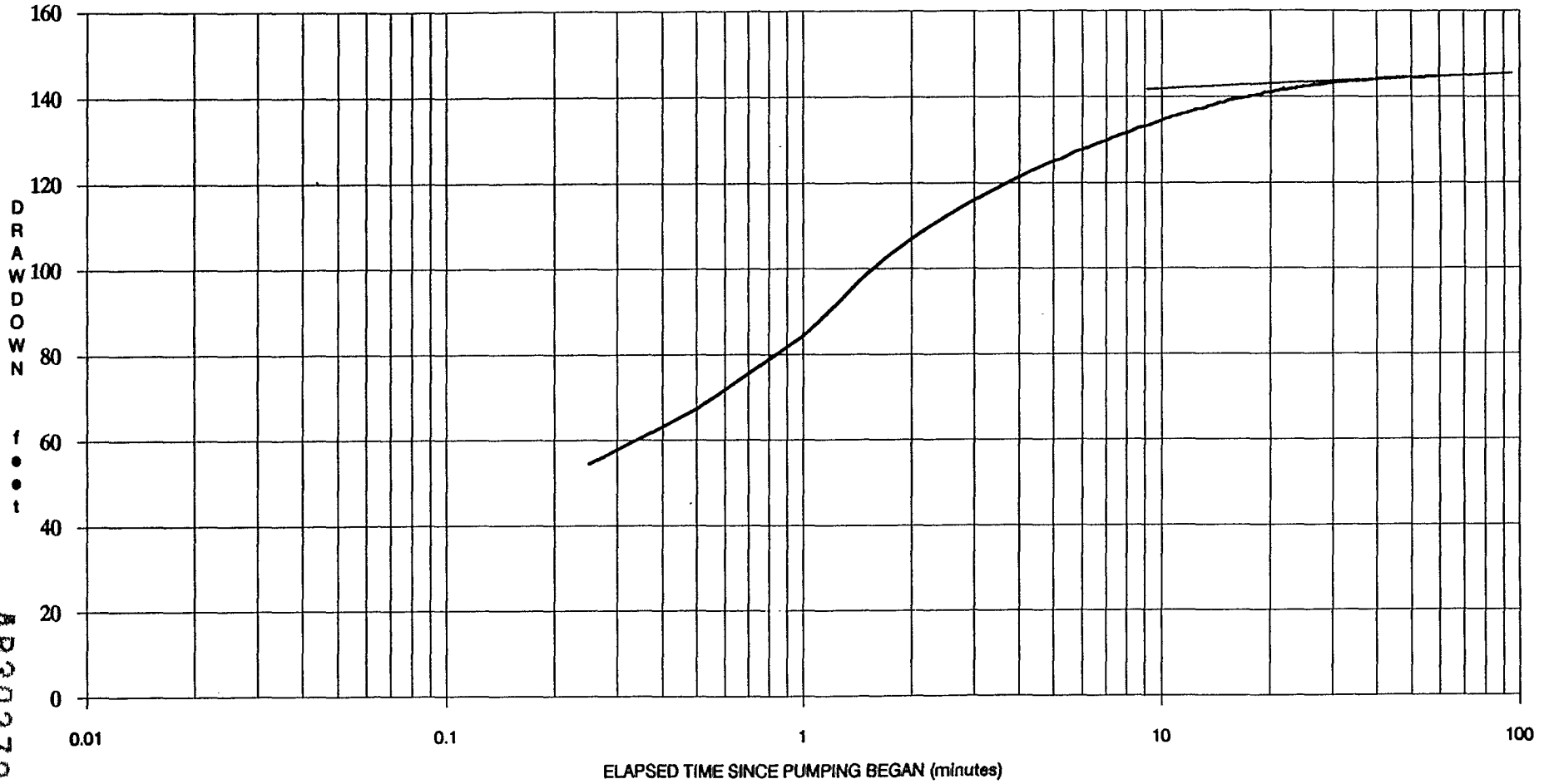
PACKER TESTING TIME - DRAWDOWN GRAPHS

PACKER TEST: TB-1 (ZONE 6)



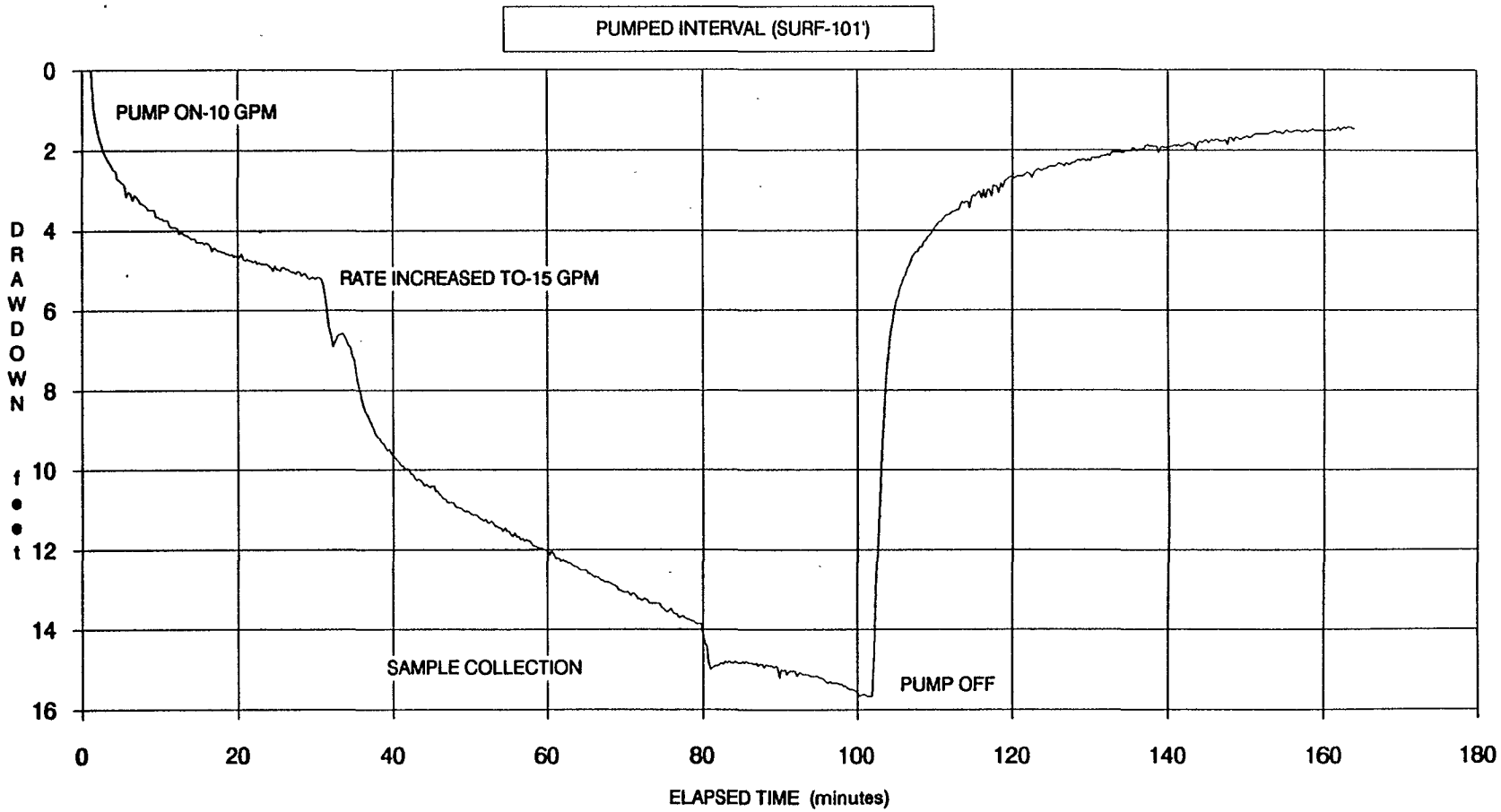
AR302787

PACKER TEST: TB-1 (ZONE 7)



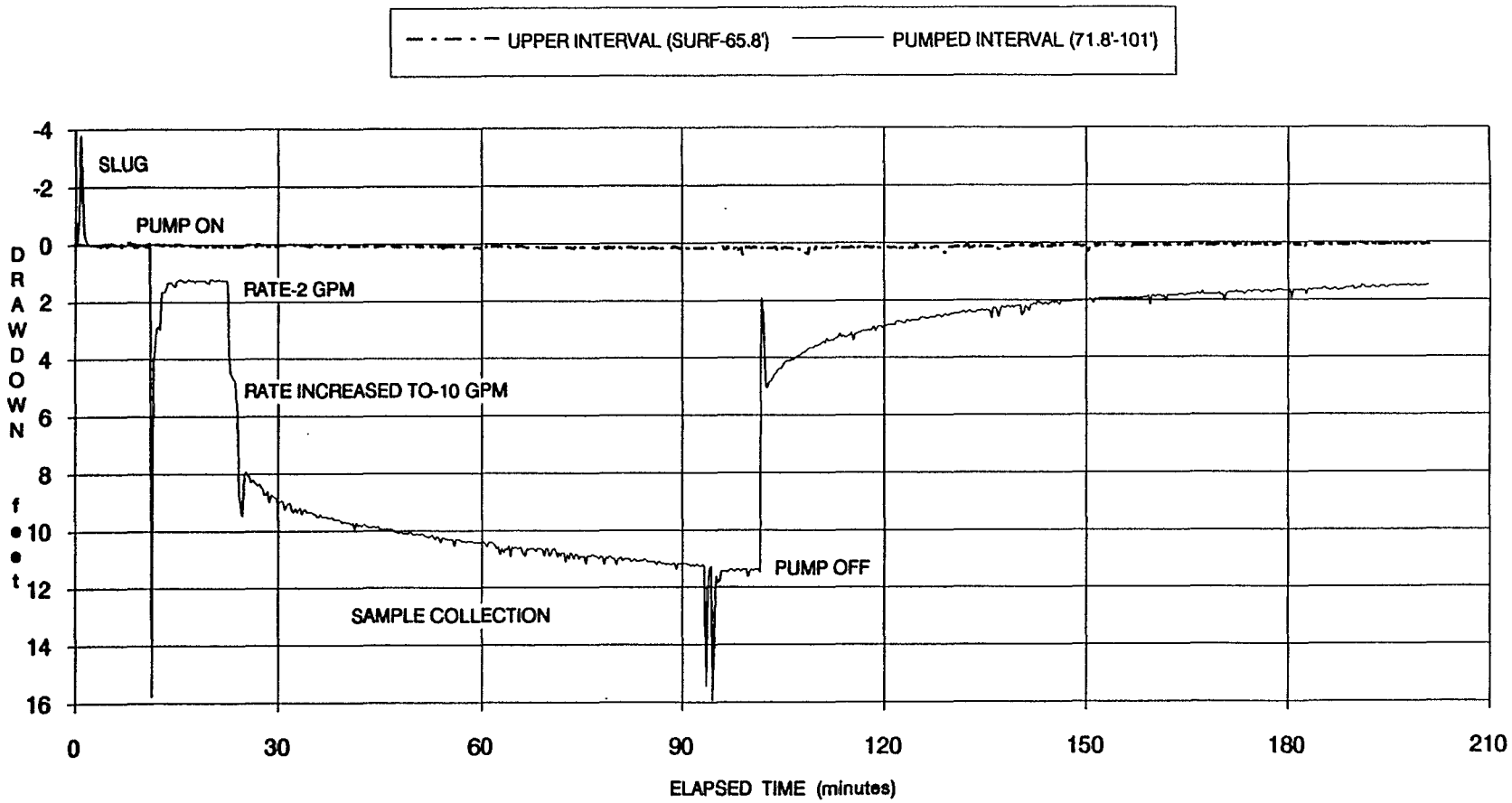
AR302788

PACKER TEST: TB-1 COMPOSITE OF ENTIRE WELL BORE



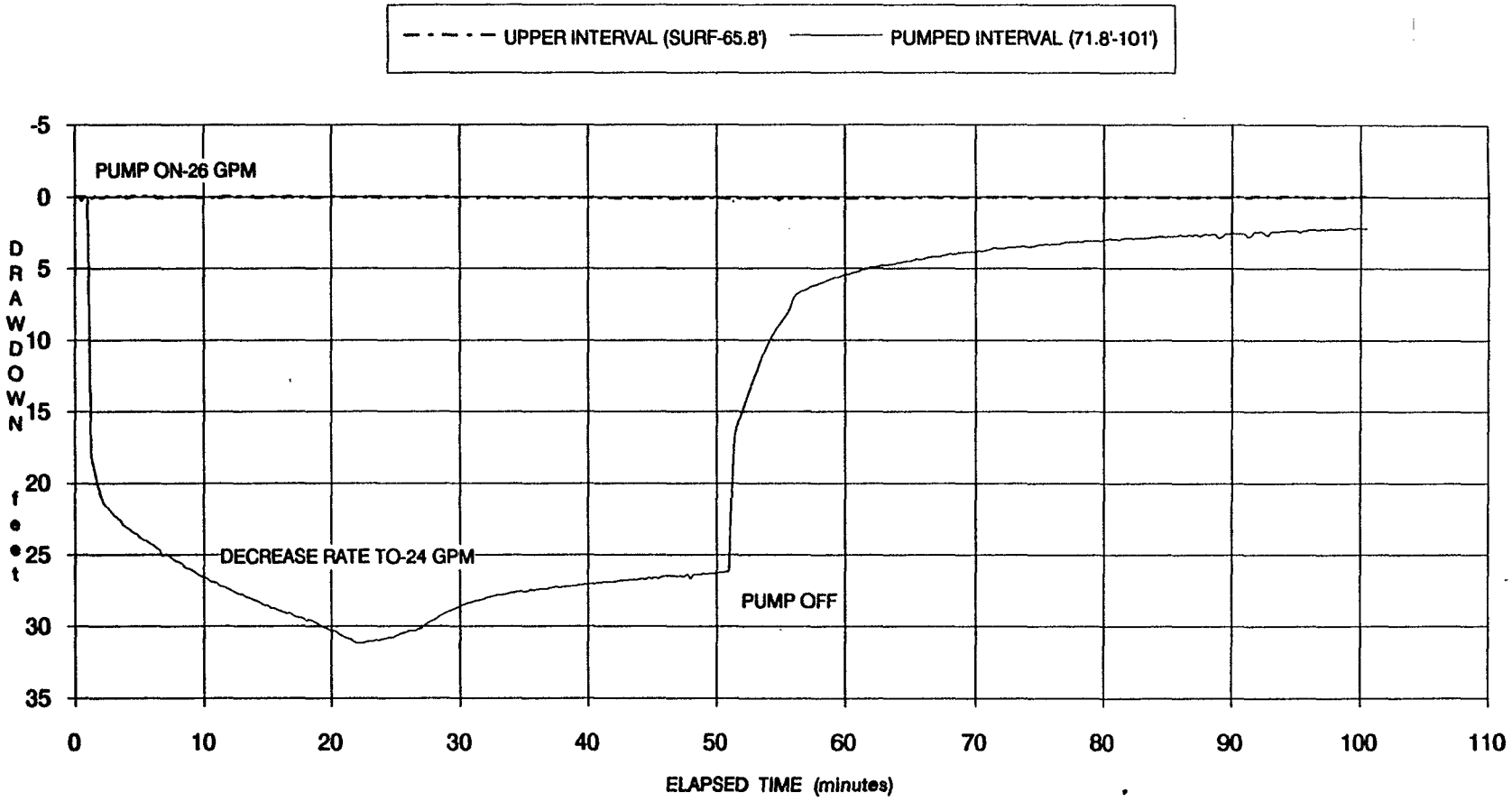
AR302789

PACKER TEST: TB-1 (ZONE 2a)



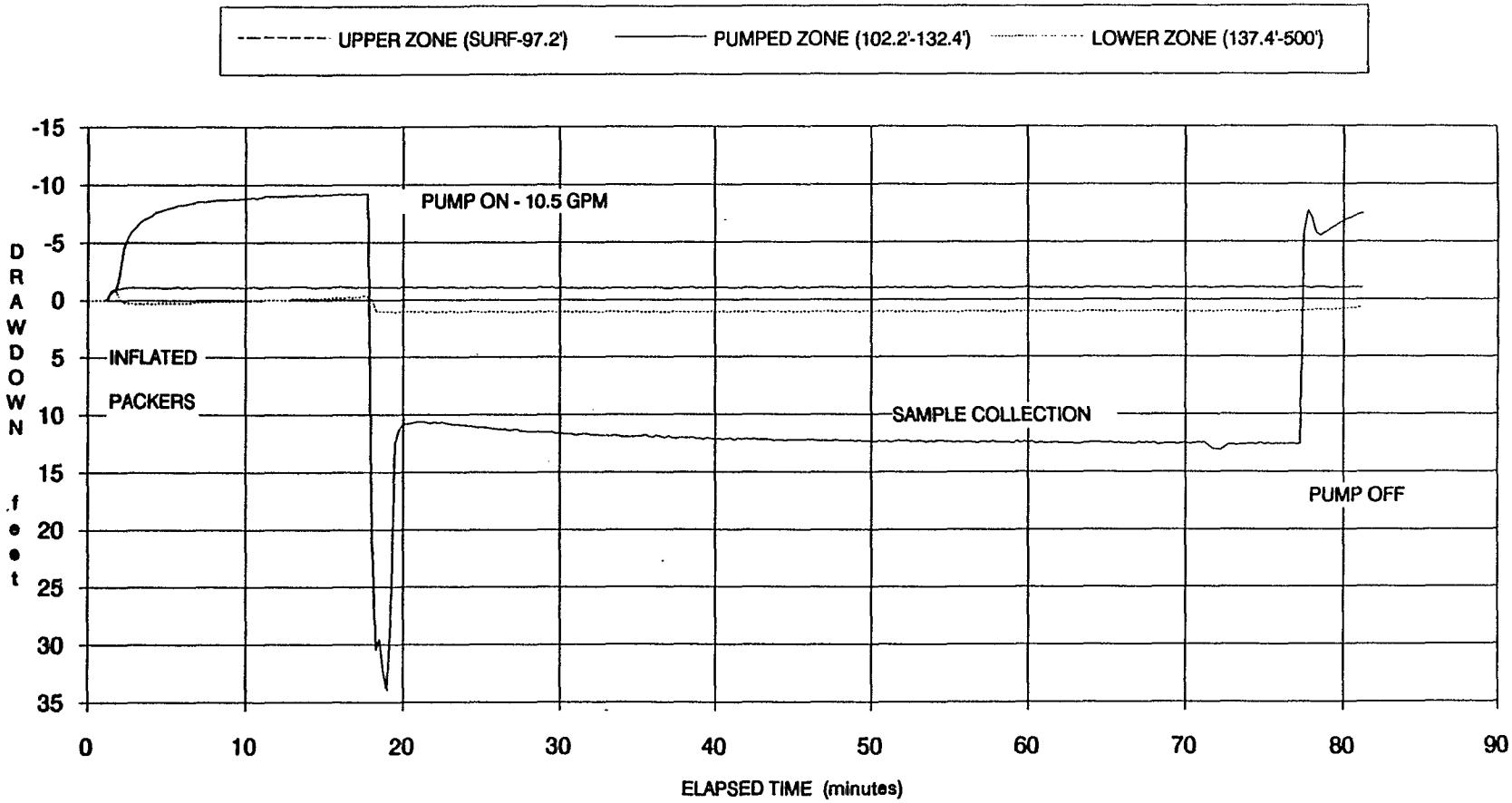
AR302790

PACKER TEST: TB-1 (ZONE 2b)



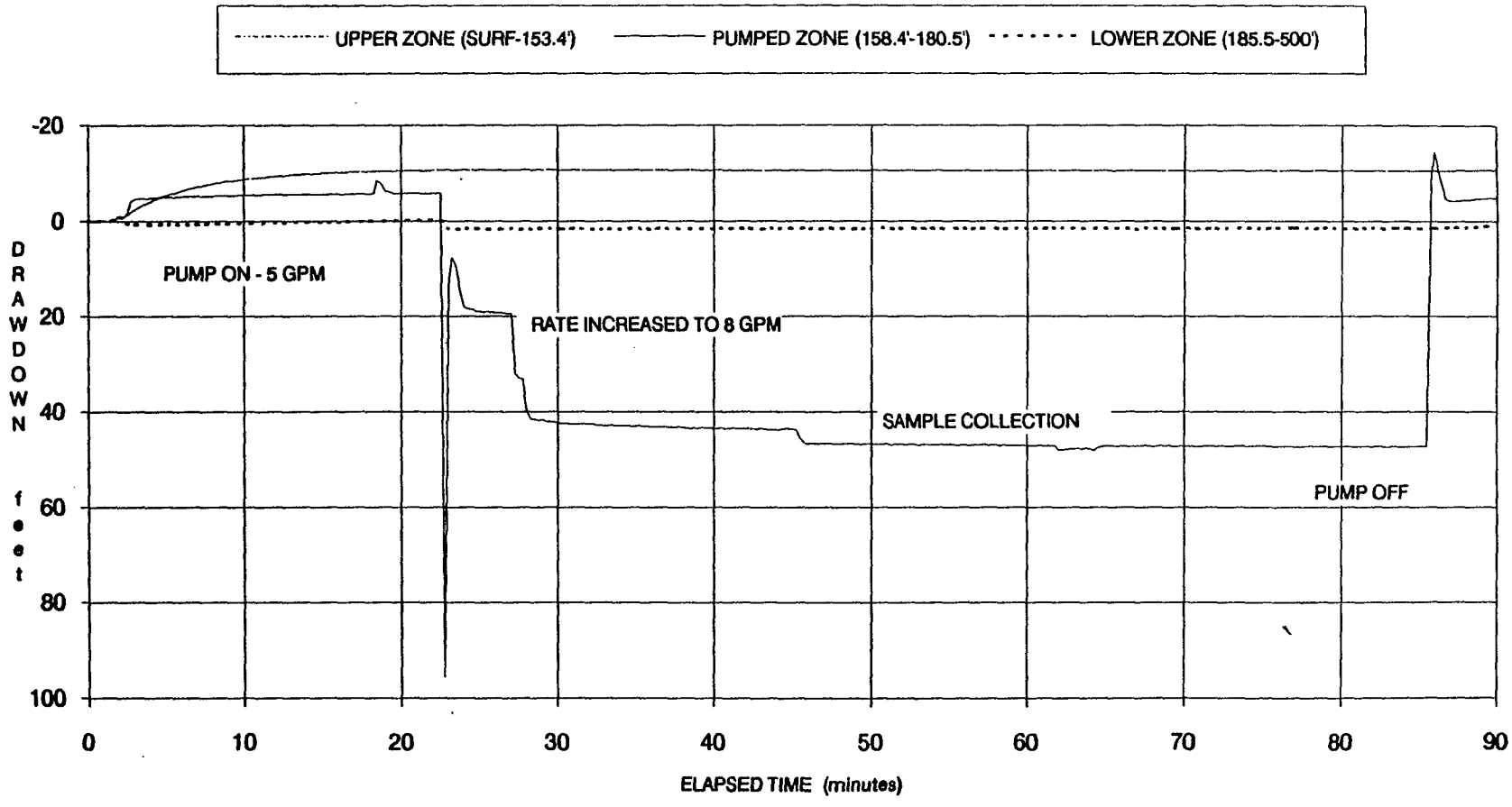
AR302791

PACKER TEST: TB-1 (ZONE 3)



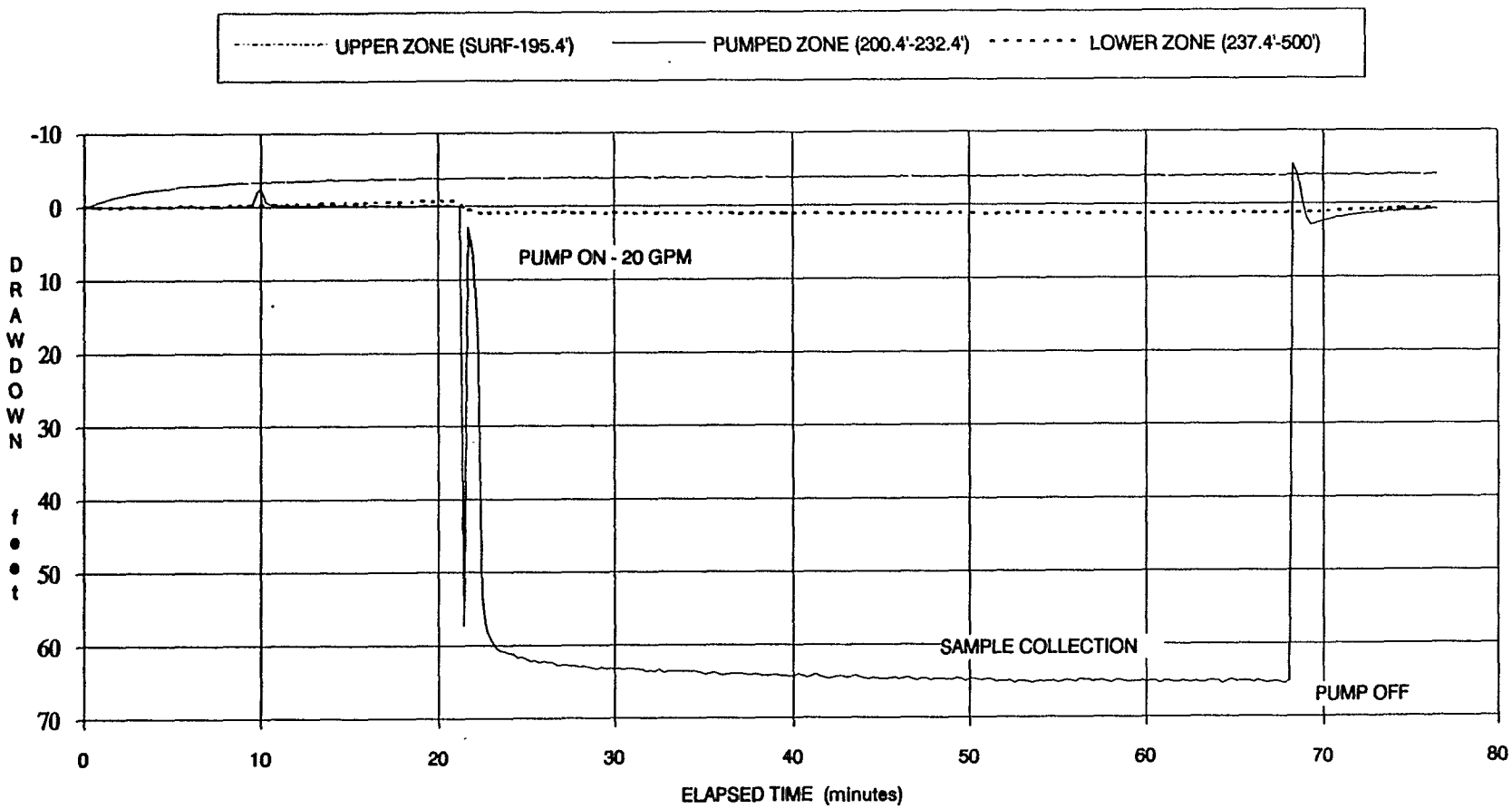
AR302792

PACKER TEST: TB-1 (ZONE 4)



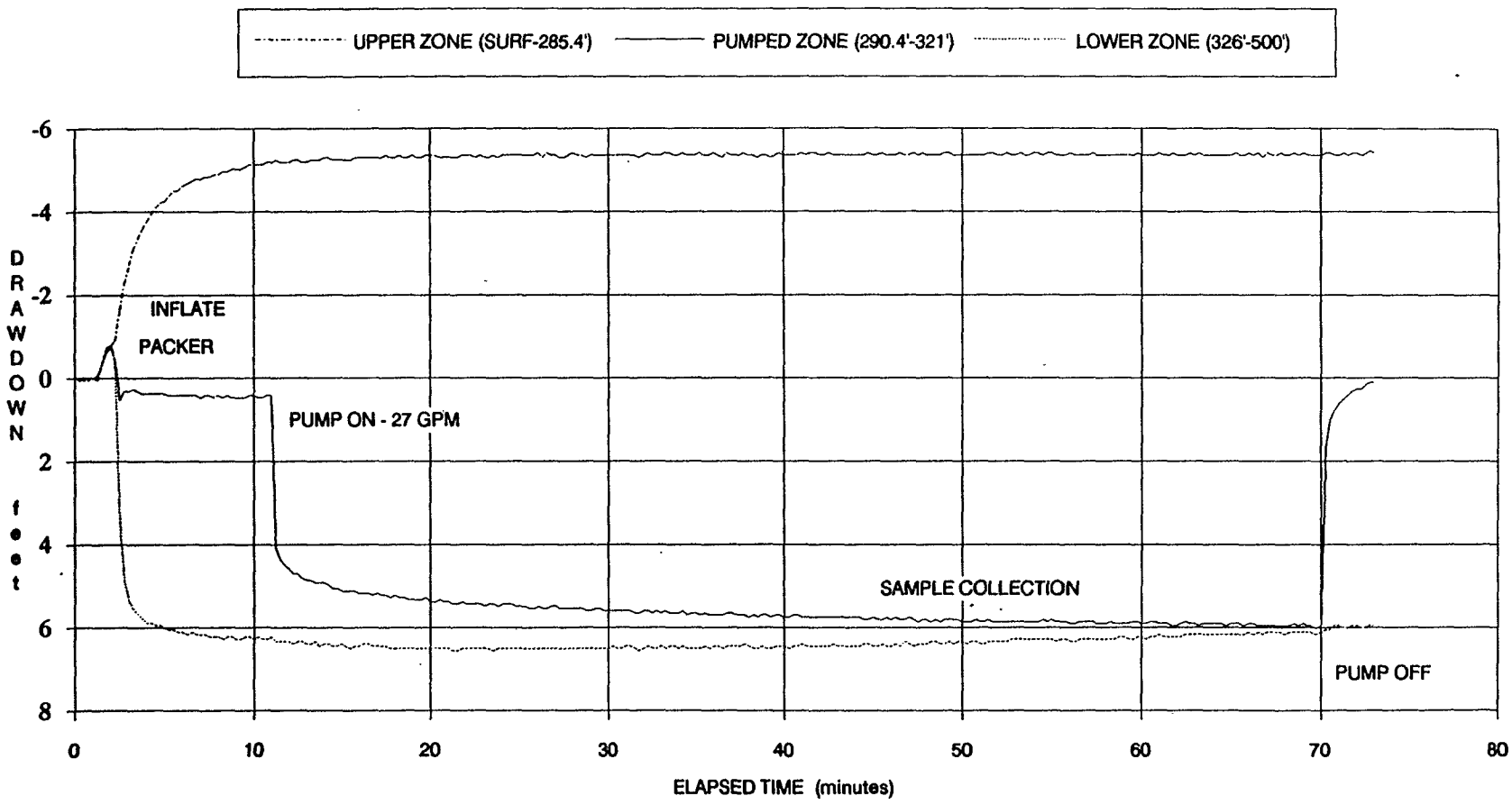
AR302793

PACKER TEST: TB-1 (ZONE 5)



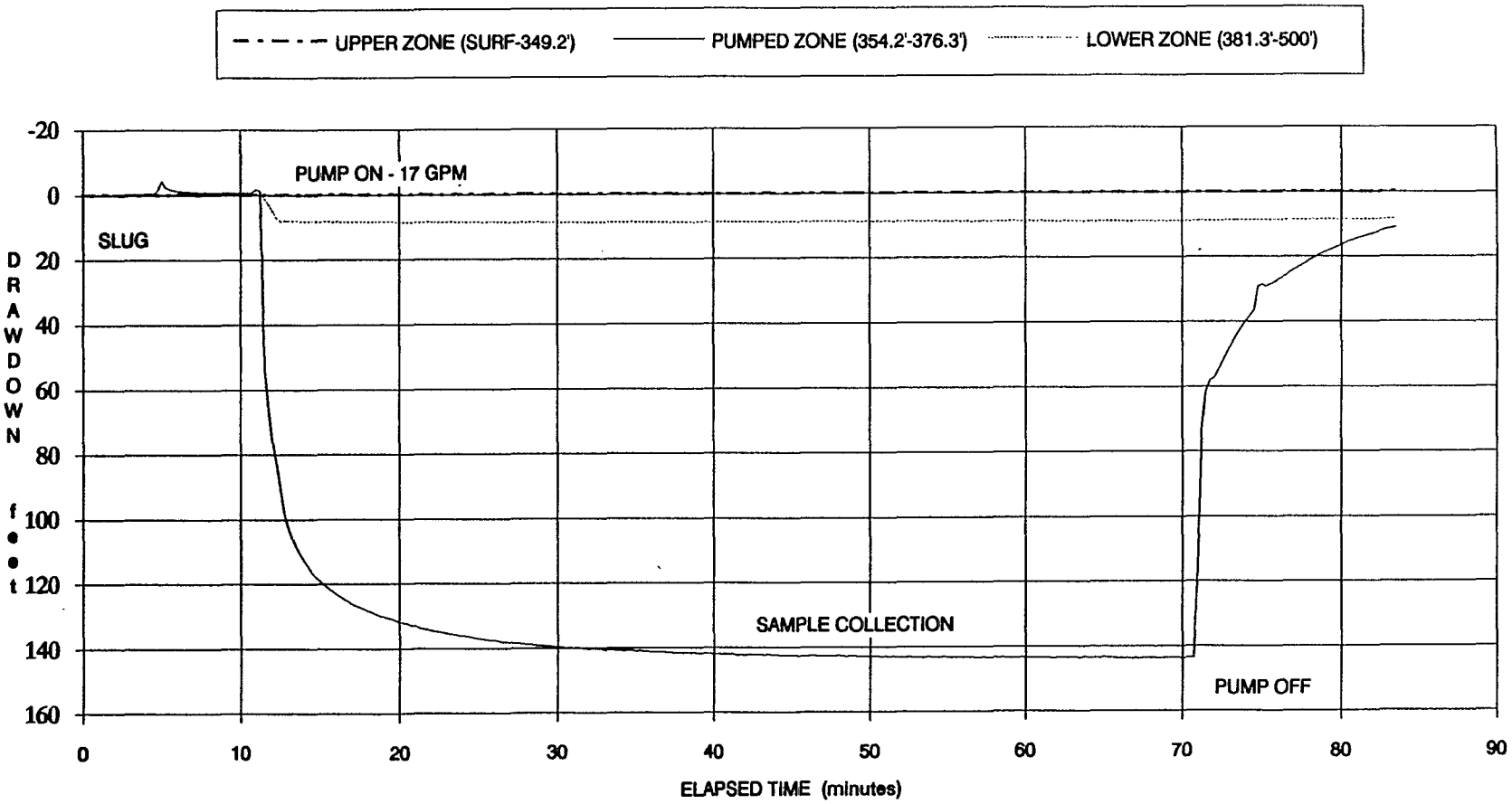
AR302794

PACKER TEST: TB-1 (ZONE 6)



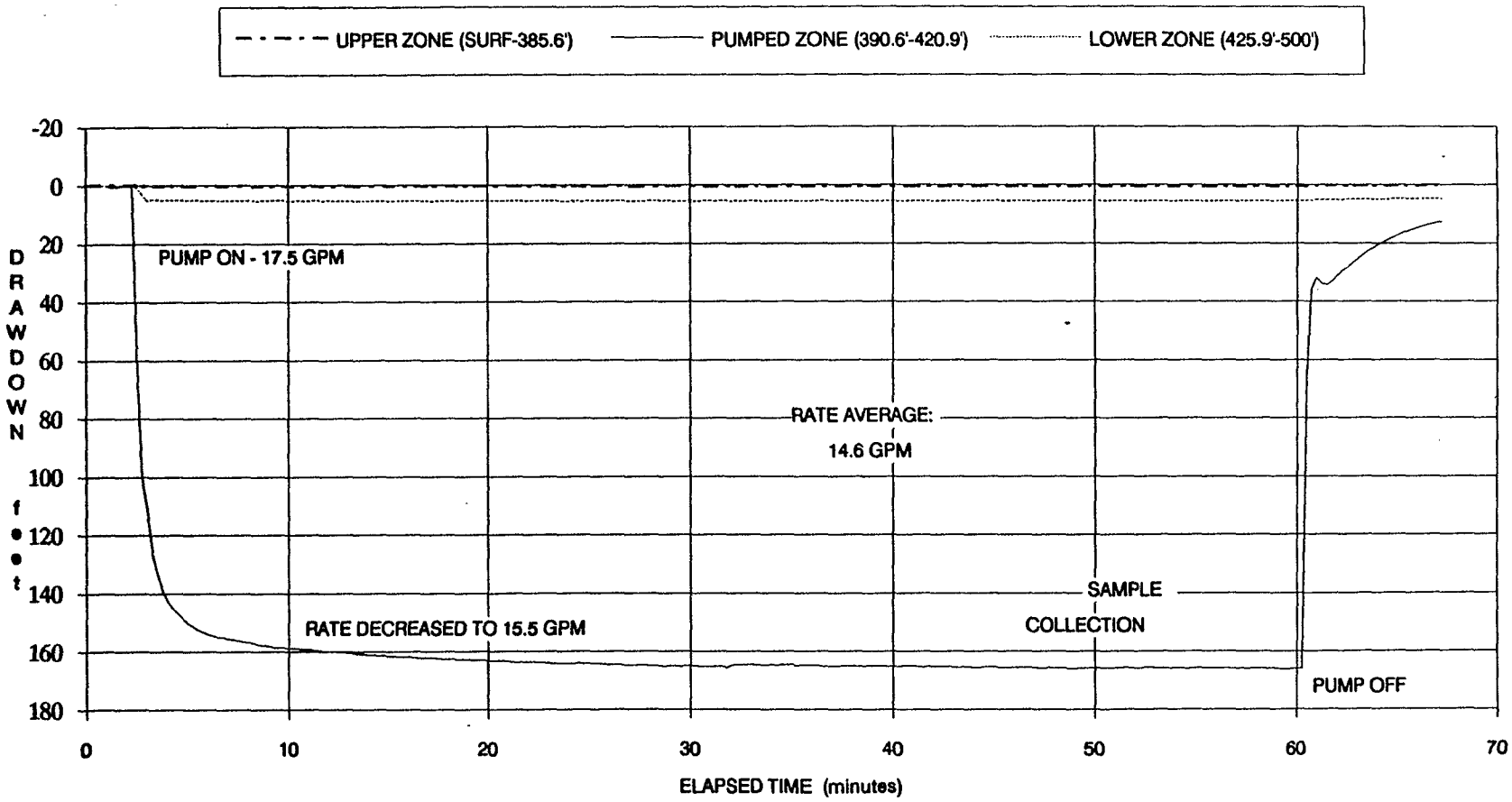
AR302795

PACKER TEST: TB-1 (ZONE 7)



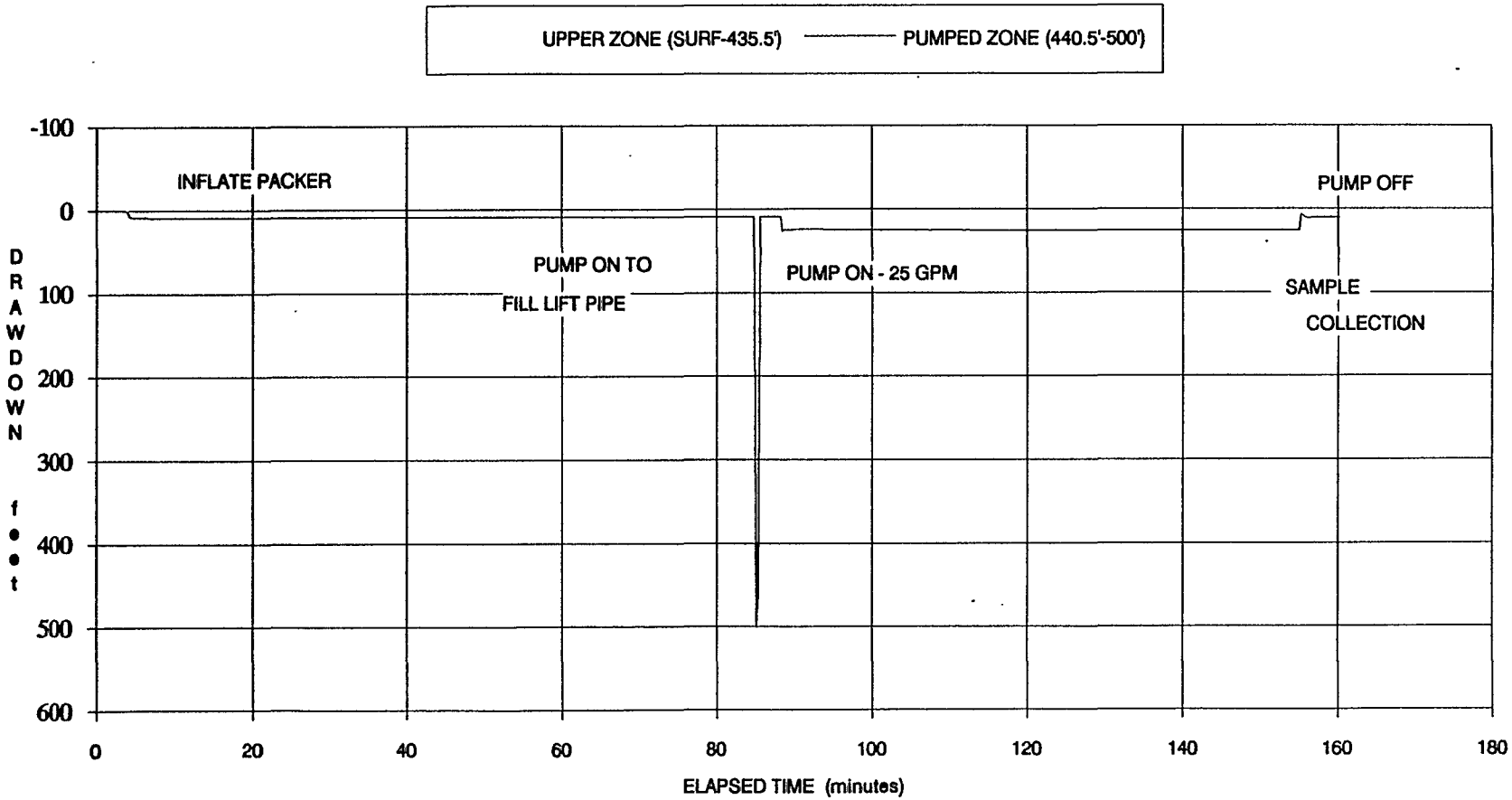
AR302796

PACKER TEST: TB-1 (ZONE 8)



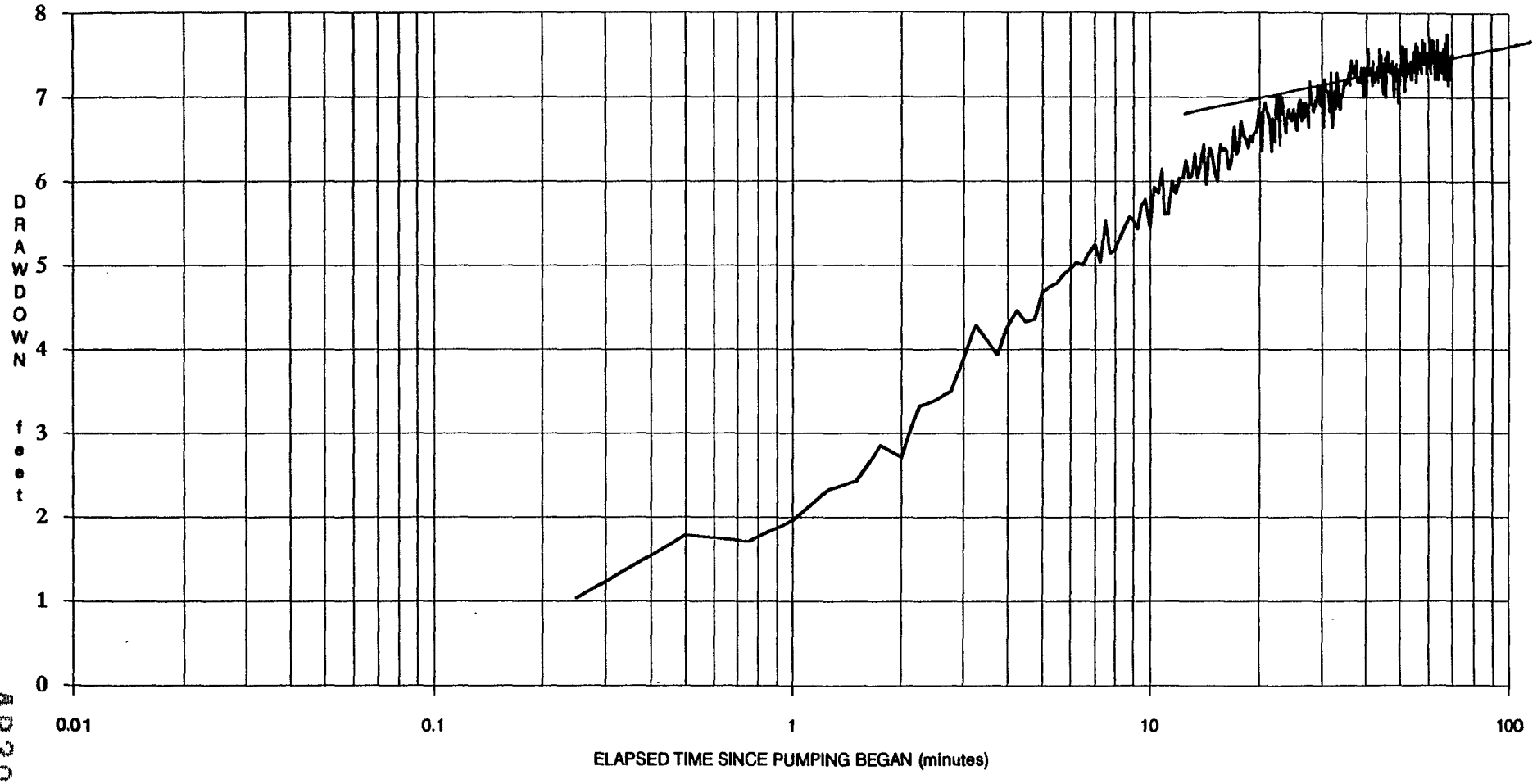
AR302797

PACKER TEST: TB-1 (ZONE 9)



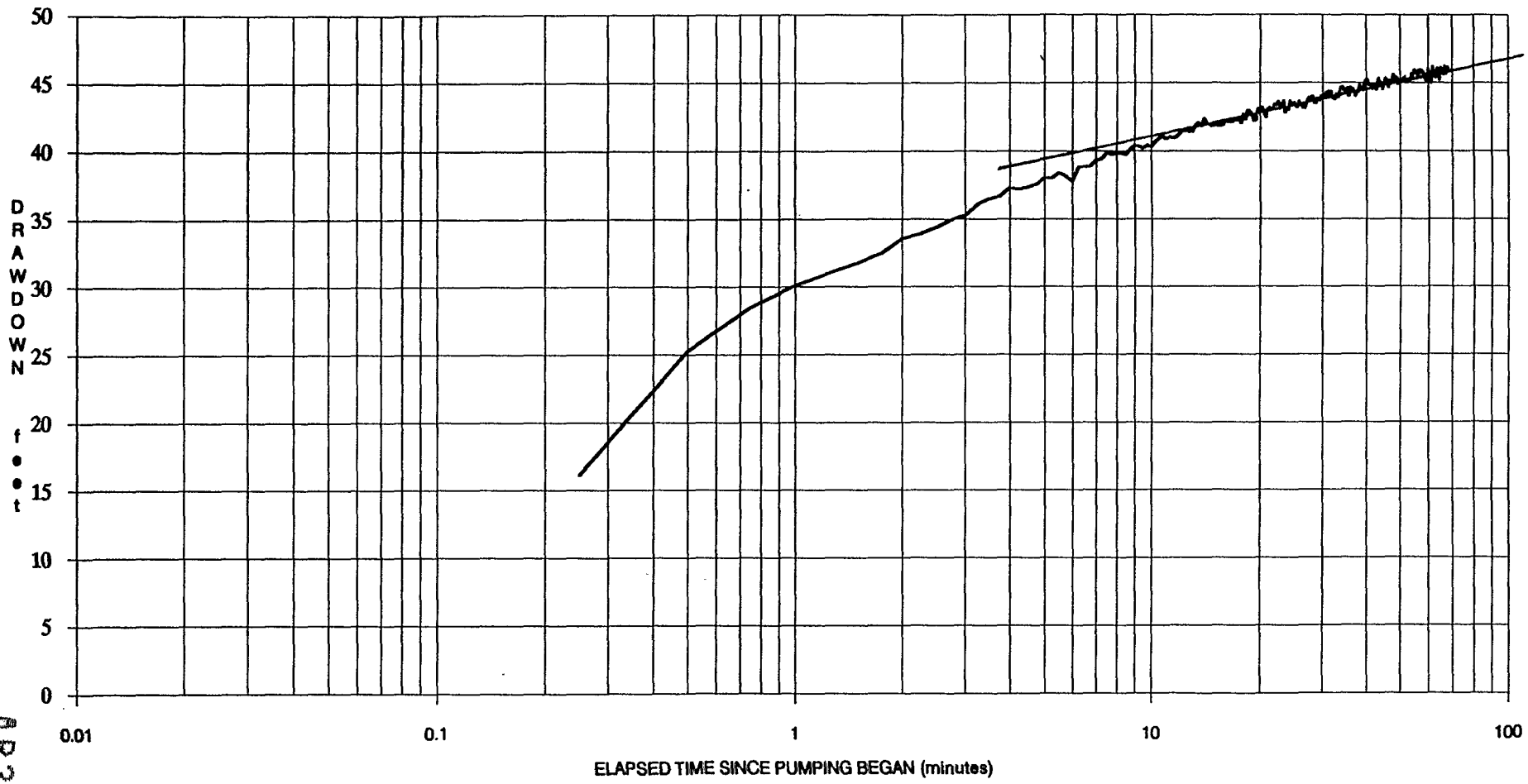
AR302798

PACKER TEST: TB-2 (ZONE 3)



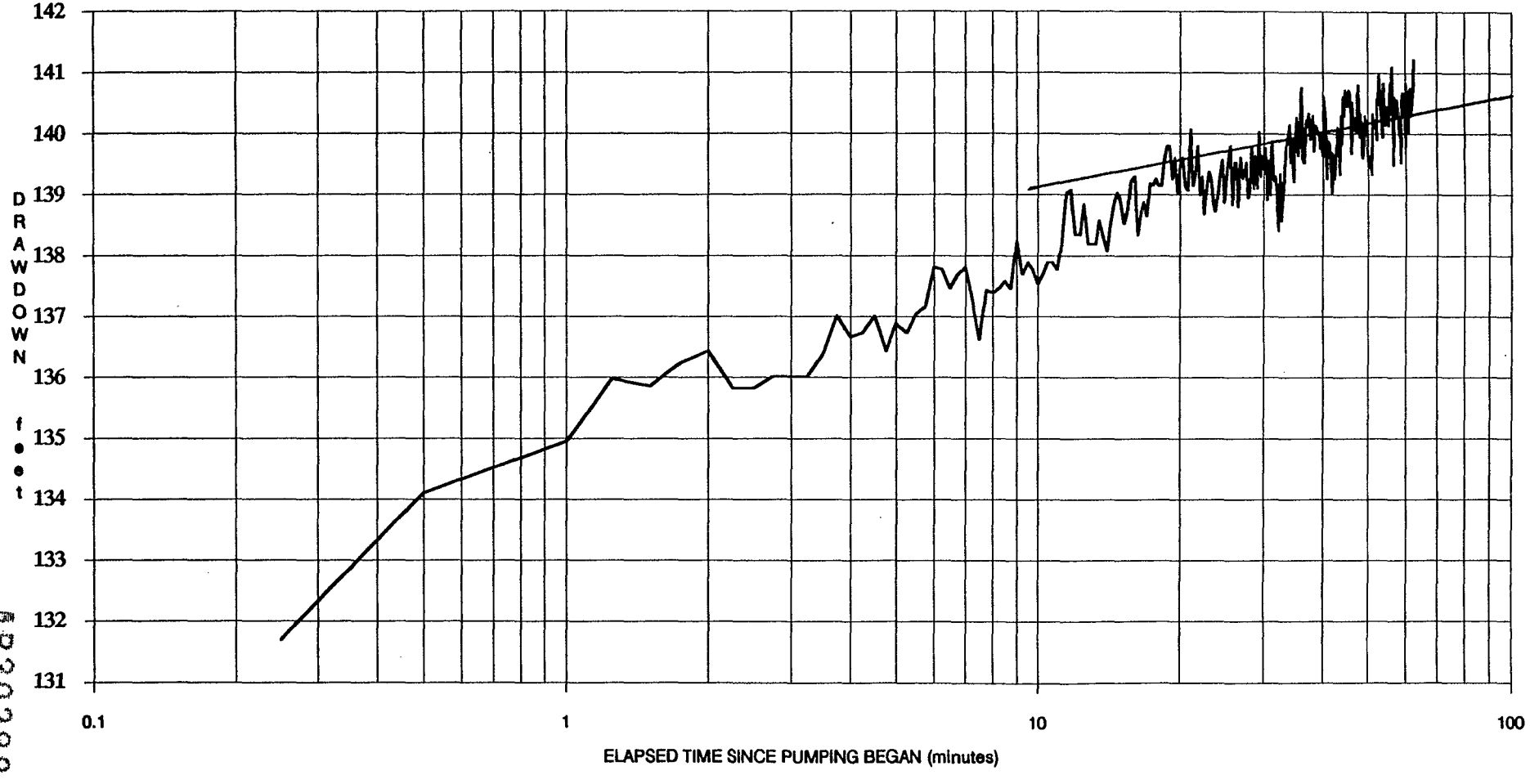
AR302799

PACKER TEST: TB-2 (ZONE 6)



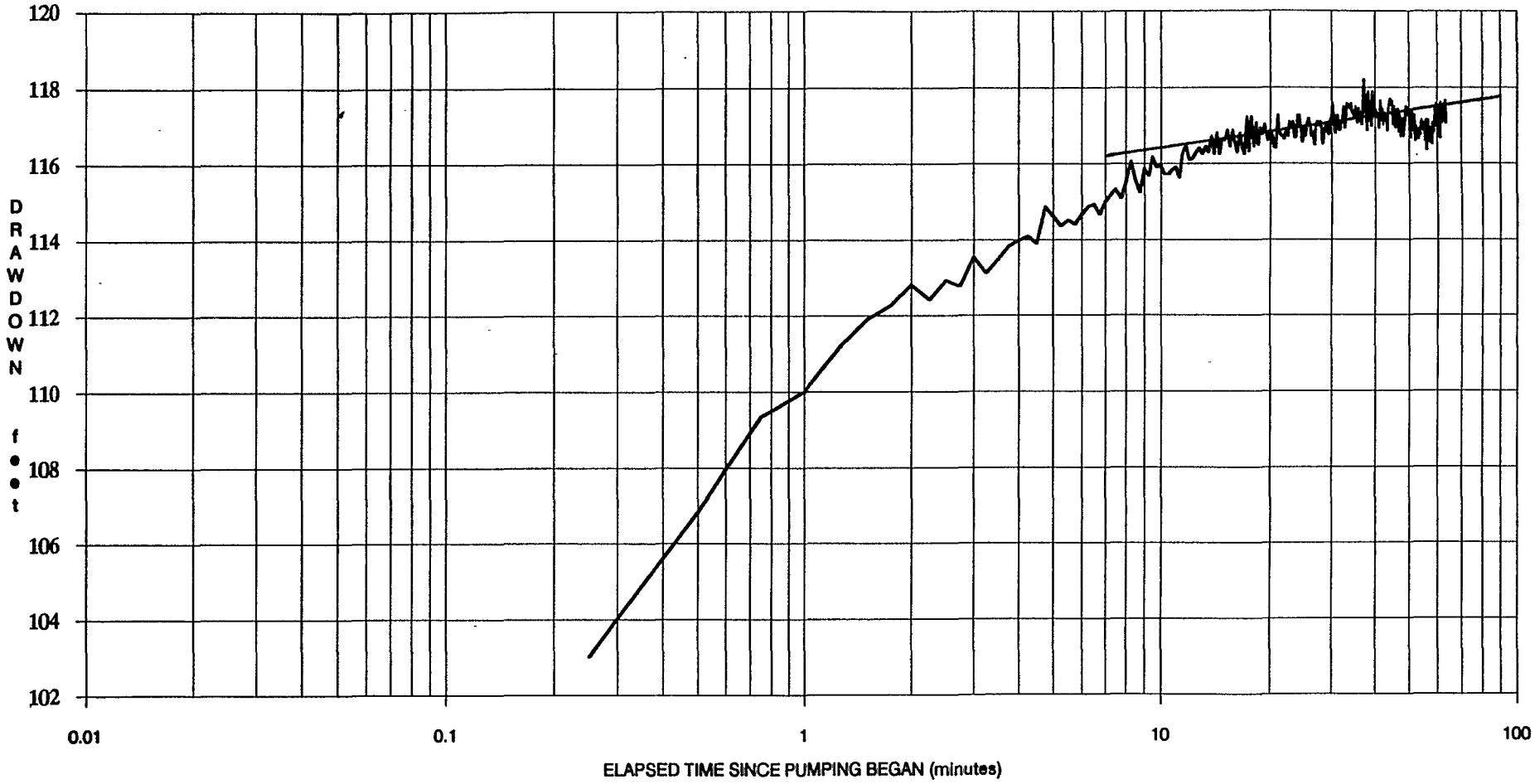
AR302800

PACKER TEST: TB-4 (ZONE 6)



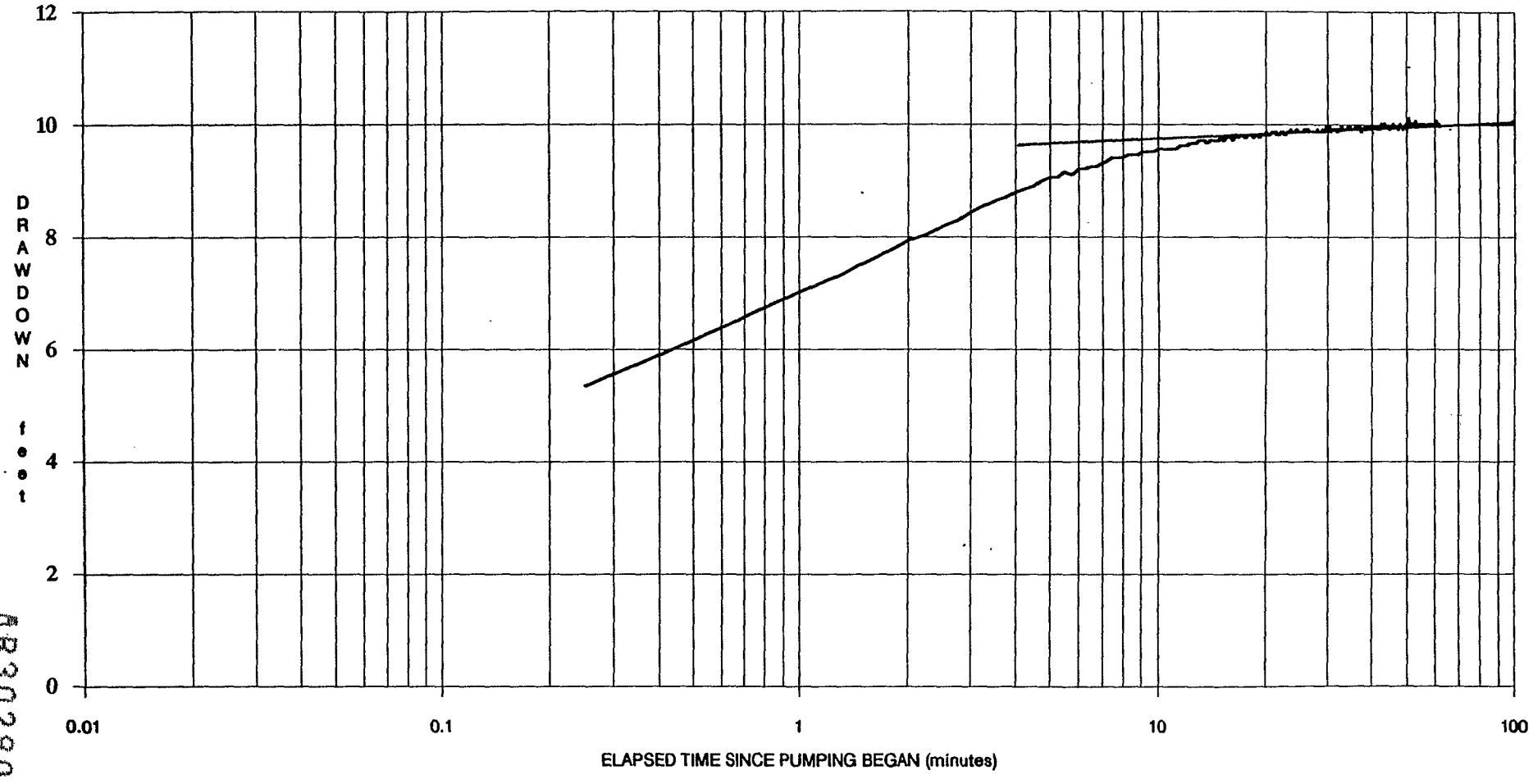
AR302801

PACKER TEST: TB-5 (ZONE 5)



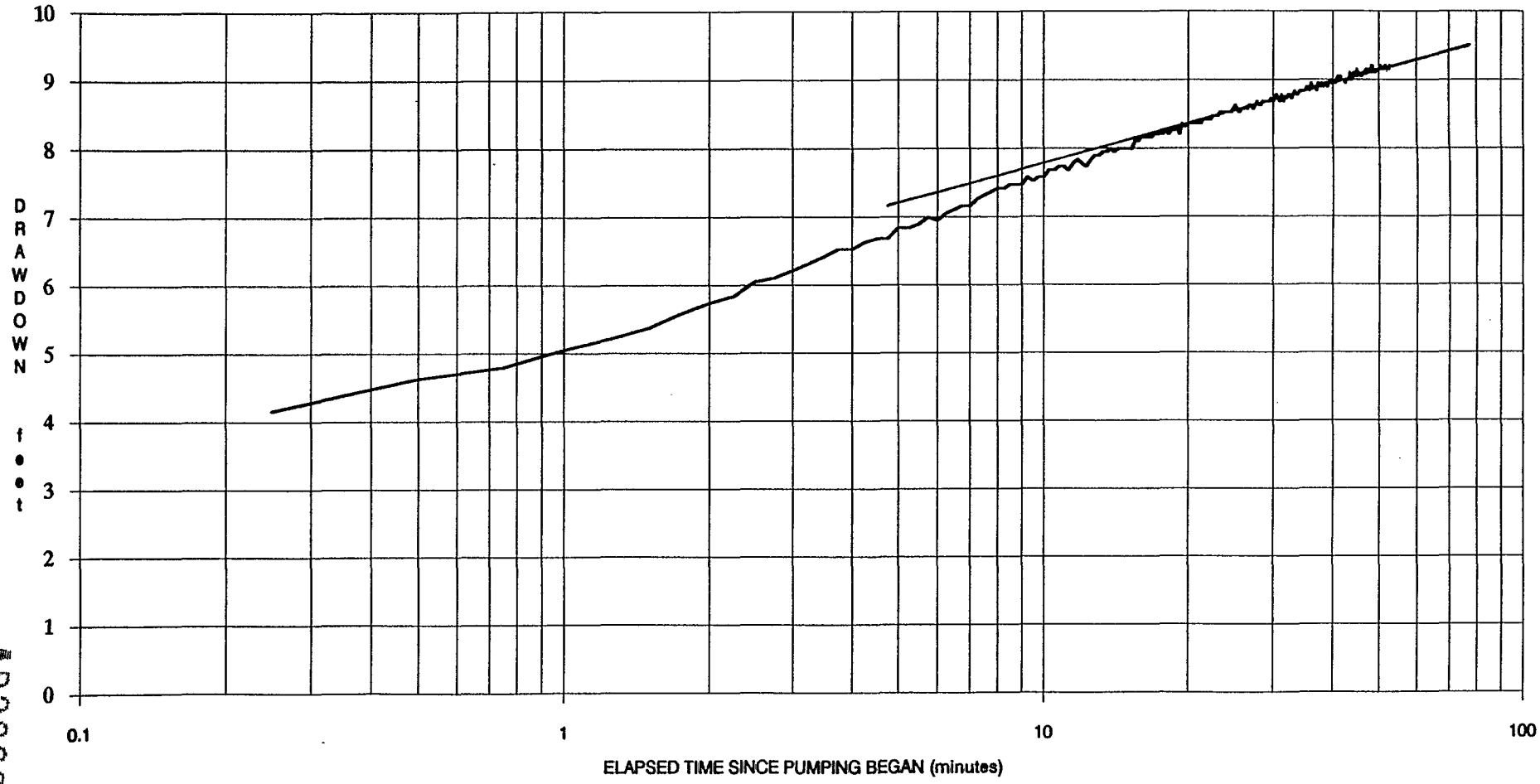
AR302802

PACKER TEST: TB-6 (ZONE 2)



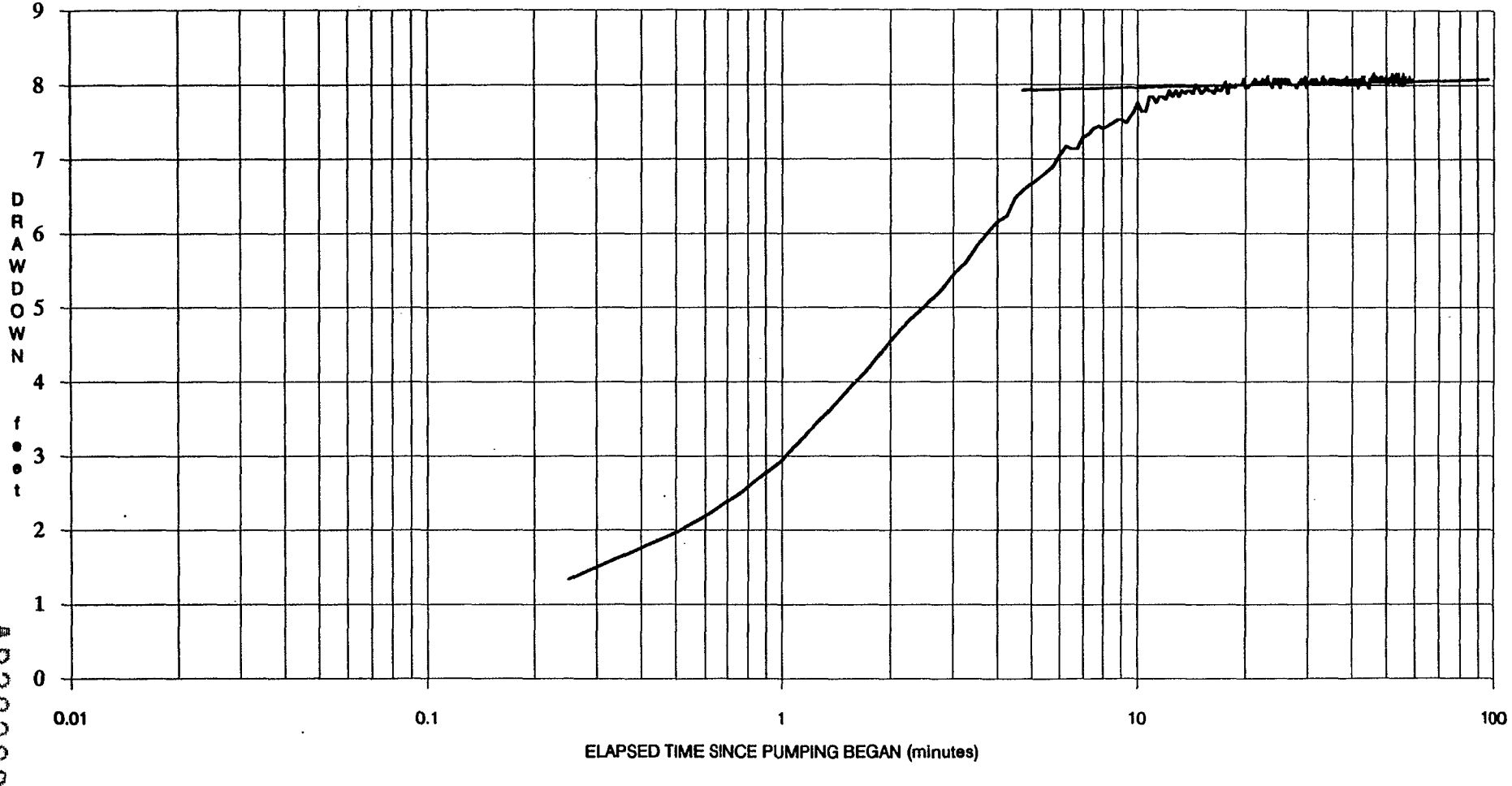
AR302803

PACKER TEST: TB-6 (ZONE 5)



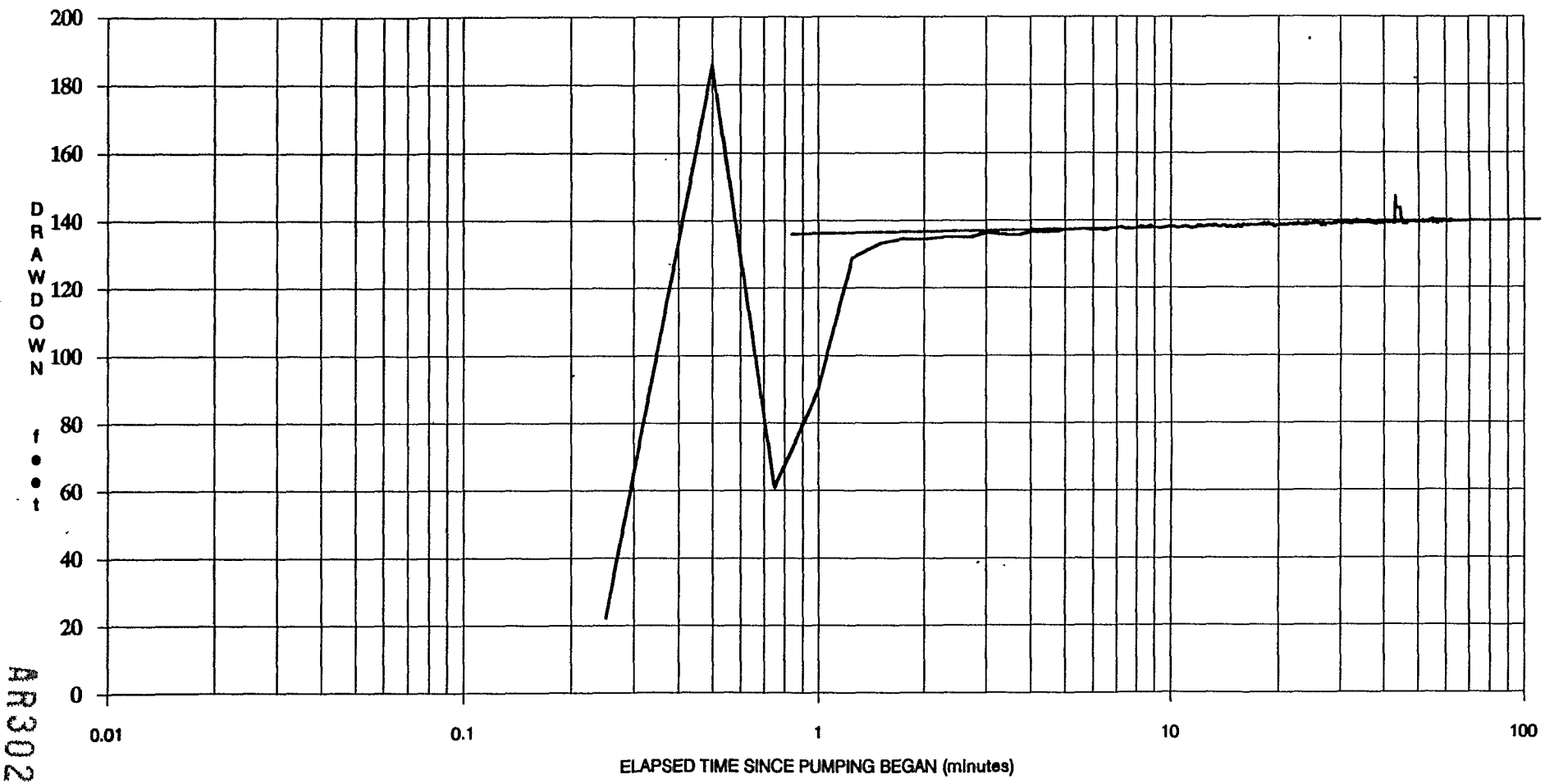
AR302804

PACKER TEST: TB-10 (ZONE 1)



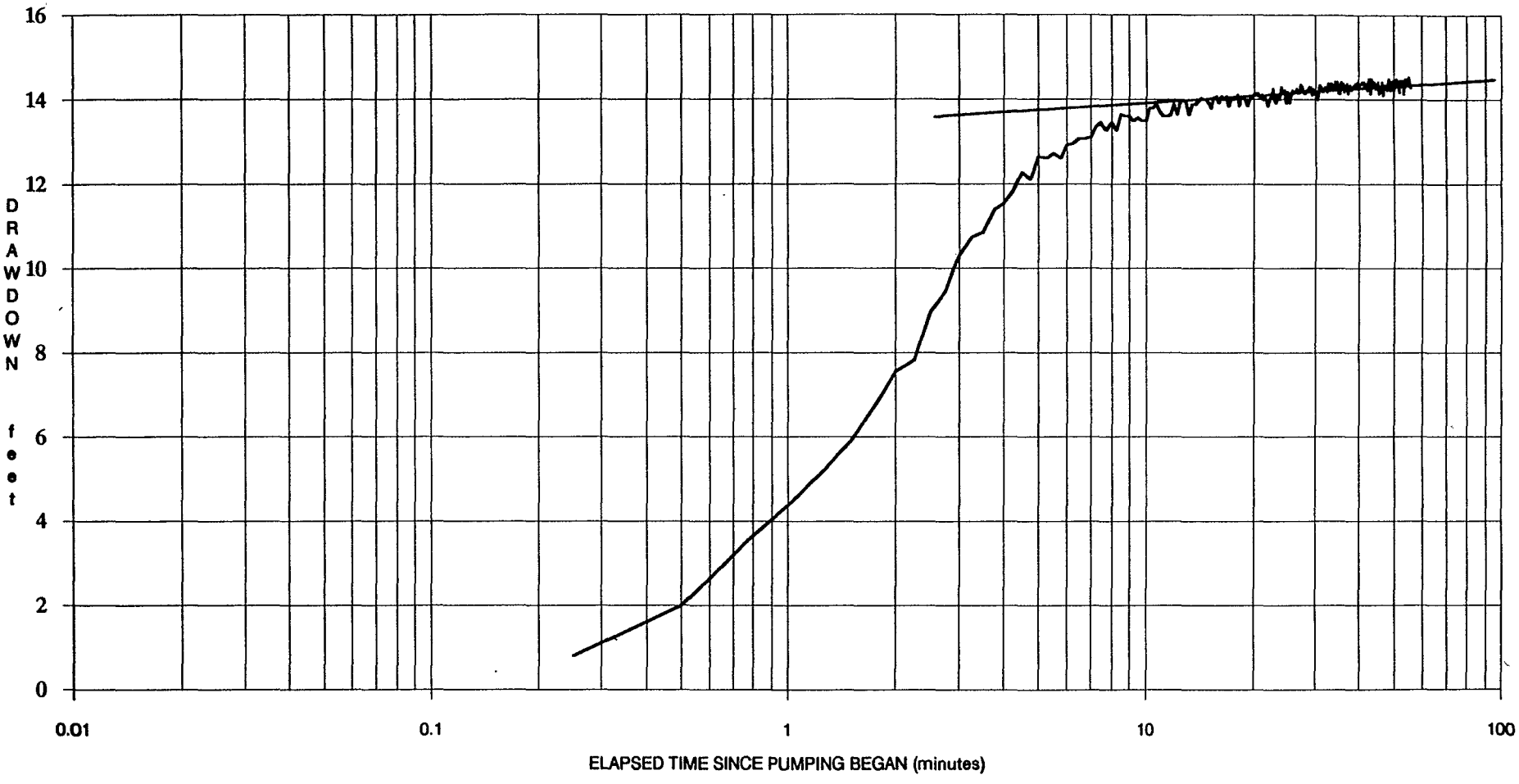
AR302805

PACKER TEST: PW-1R (ZONE 3)



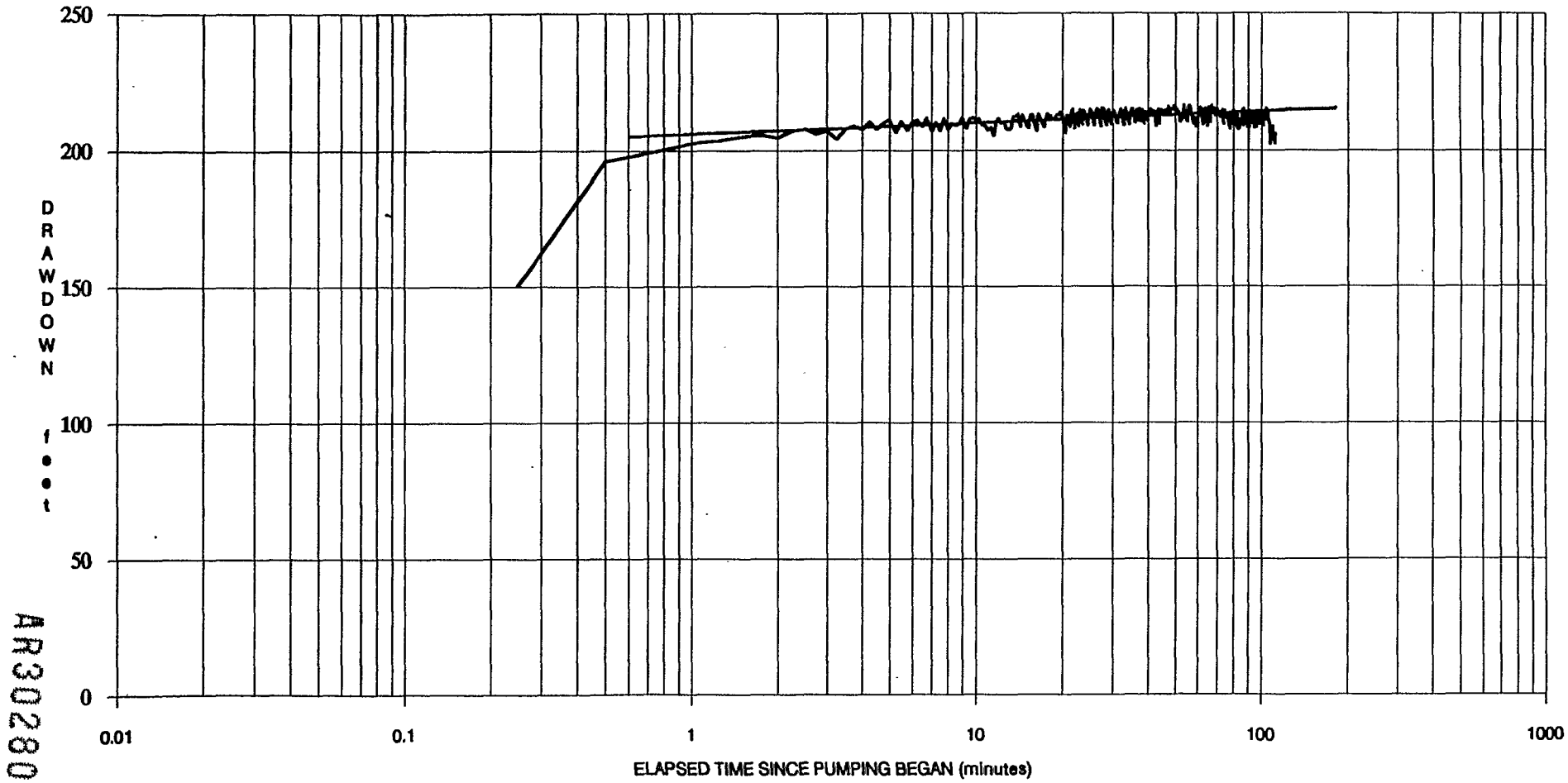
AR302806

PACKER TEST: PW-7 (ZONE 1B)



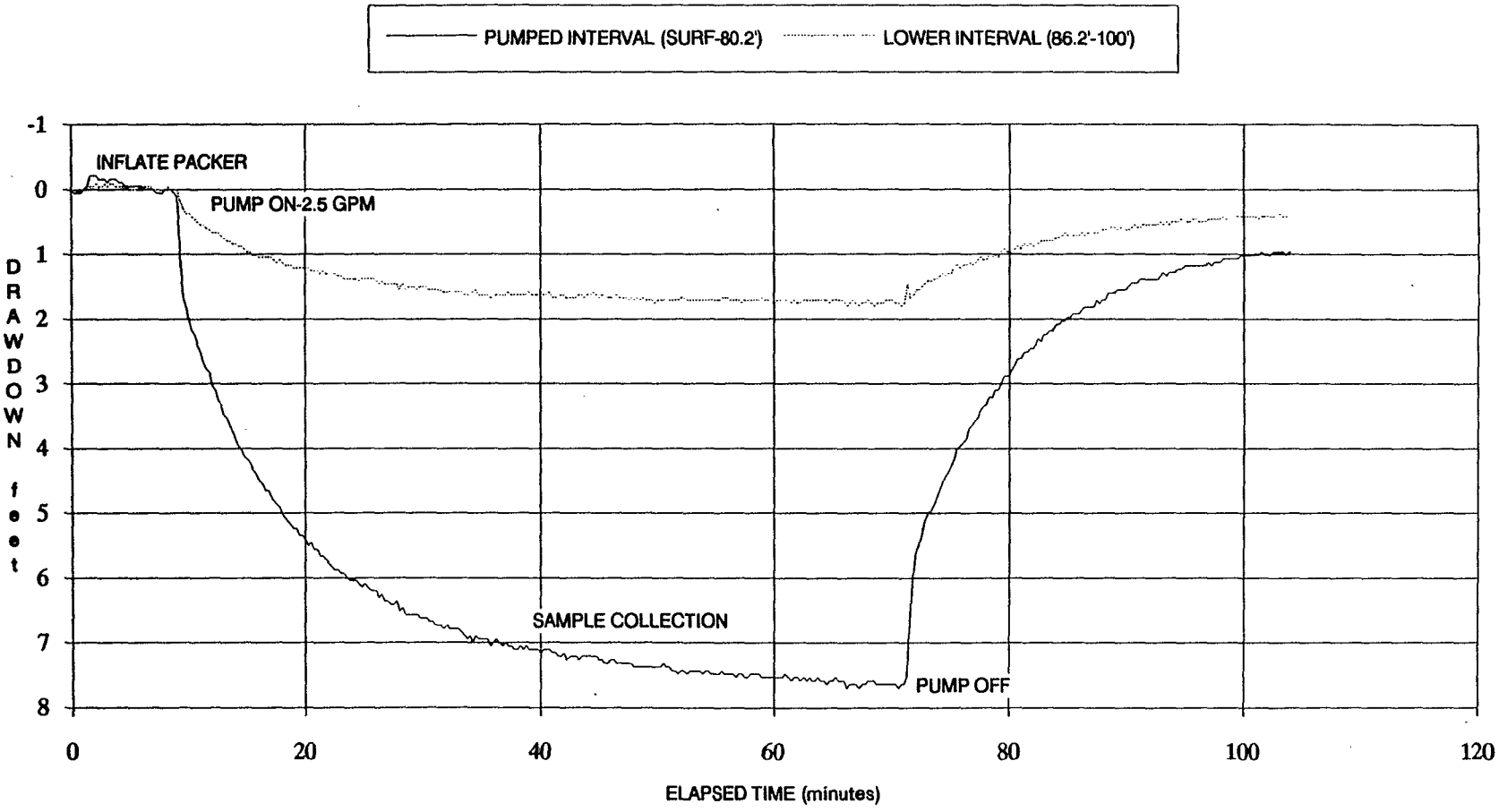
AR302807

PACKER TEST: PW-7 (ZONE 6)



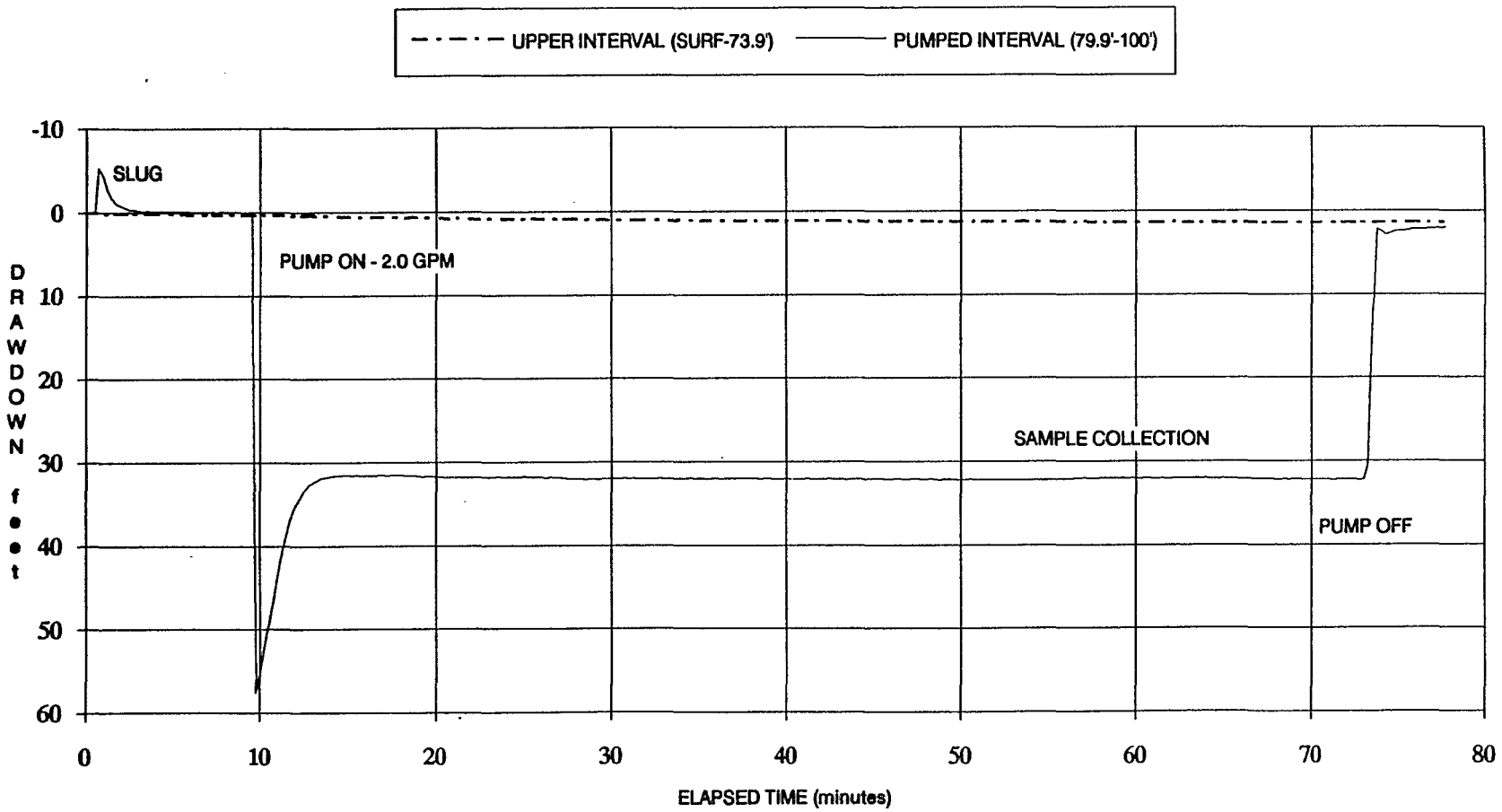
AR302808

PACKER TEST: TB-2 (ZONE 1)



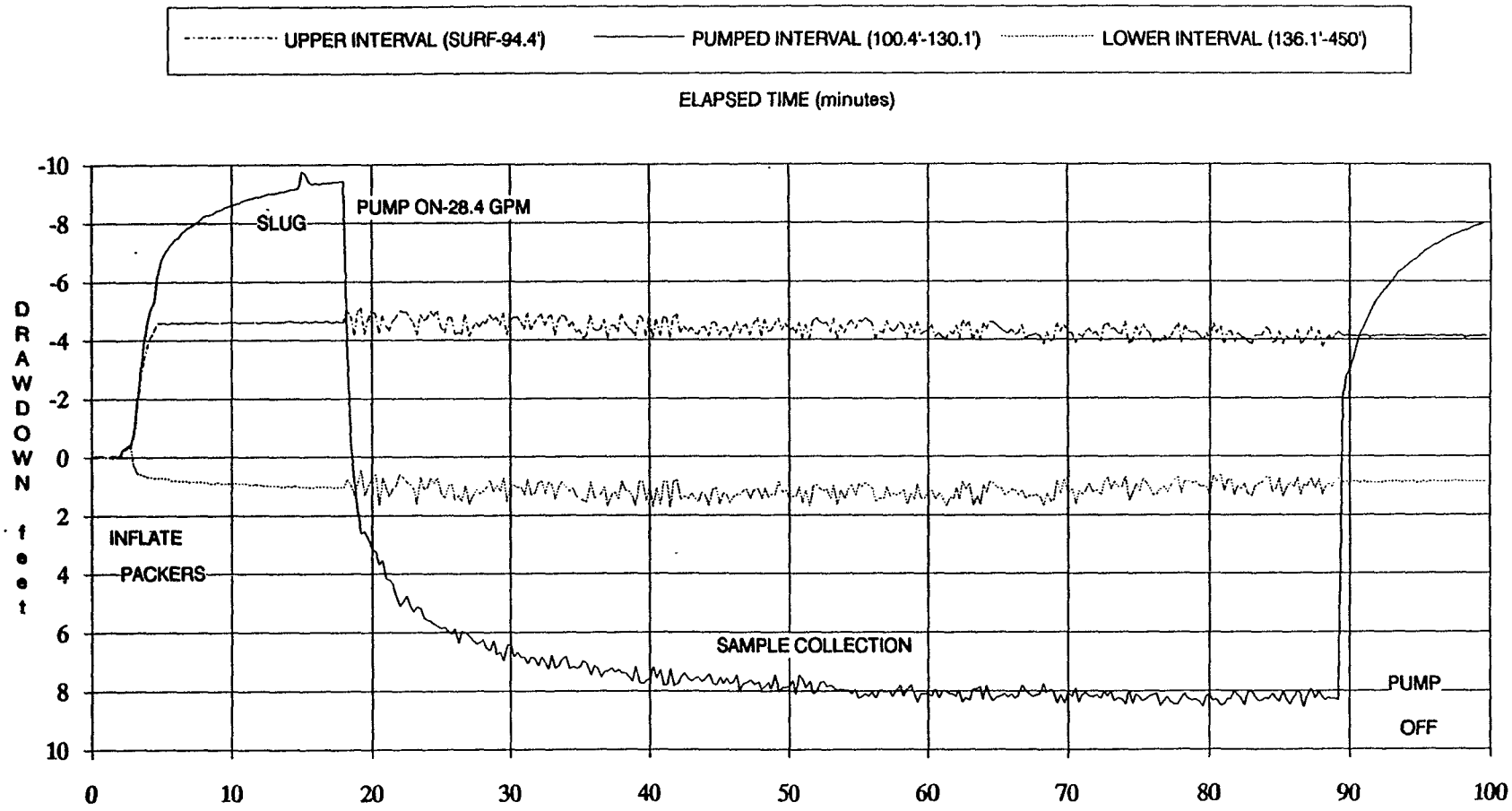
AR302809

PACKER TEST: TB-2 (ZONE 2)



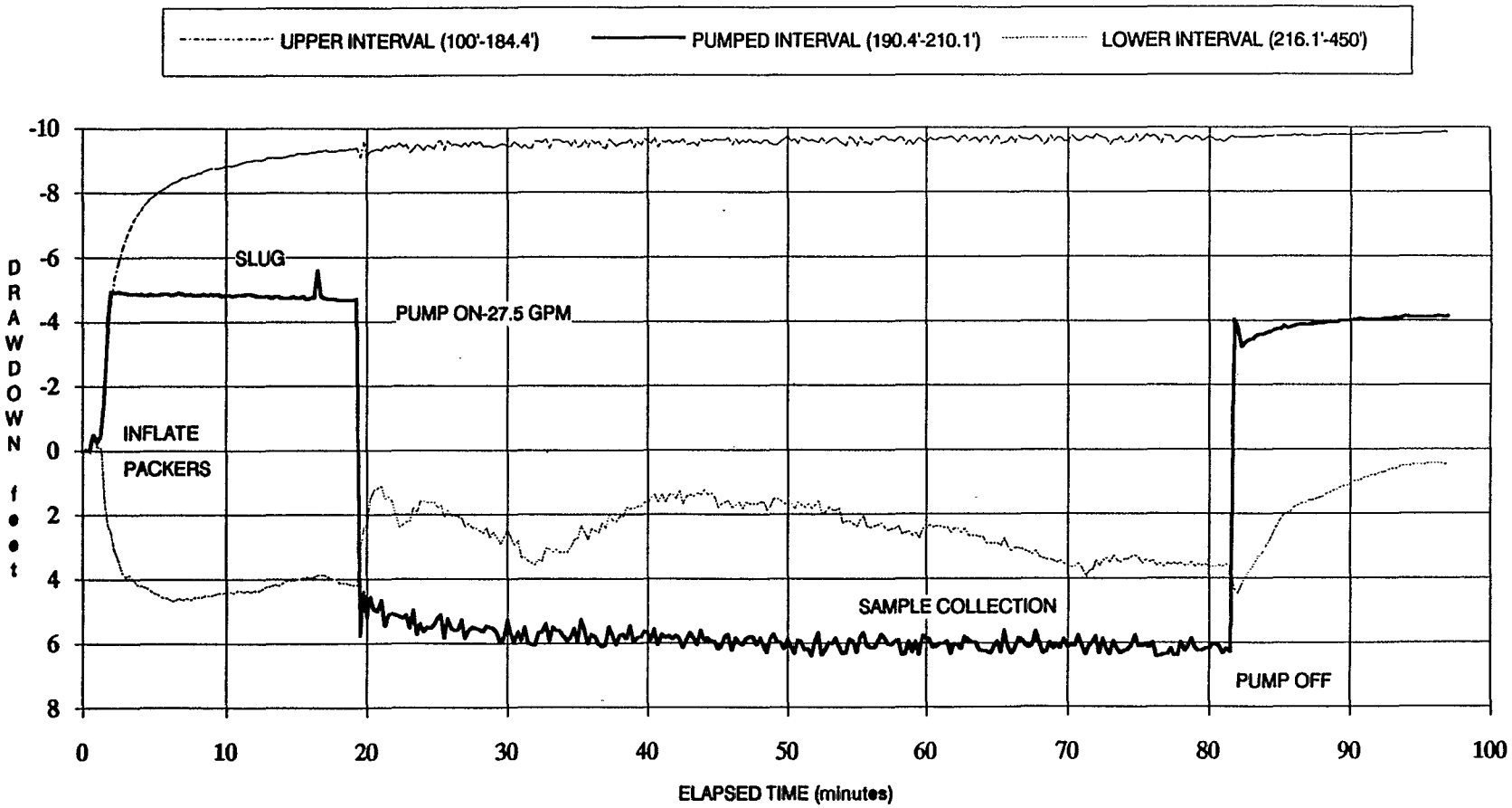
AR302810

PACKER TEST: TB-2 (ZONE 3)



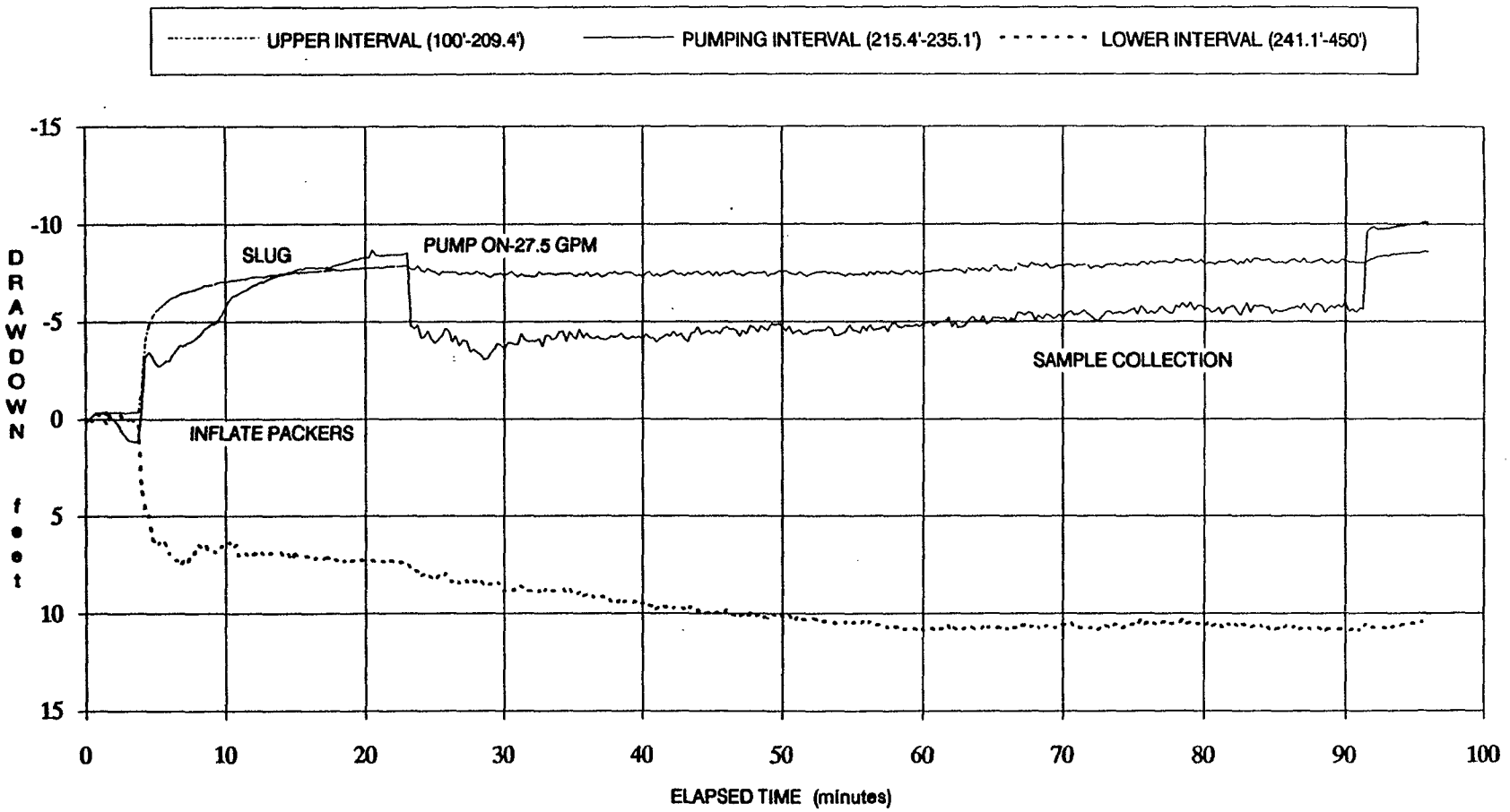
AR302811

PACKER TEST: TB-2 (ZONE 4)



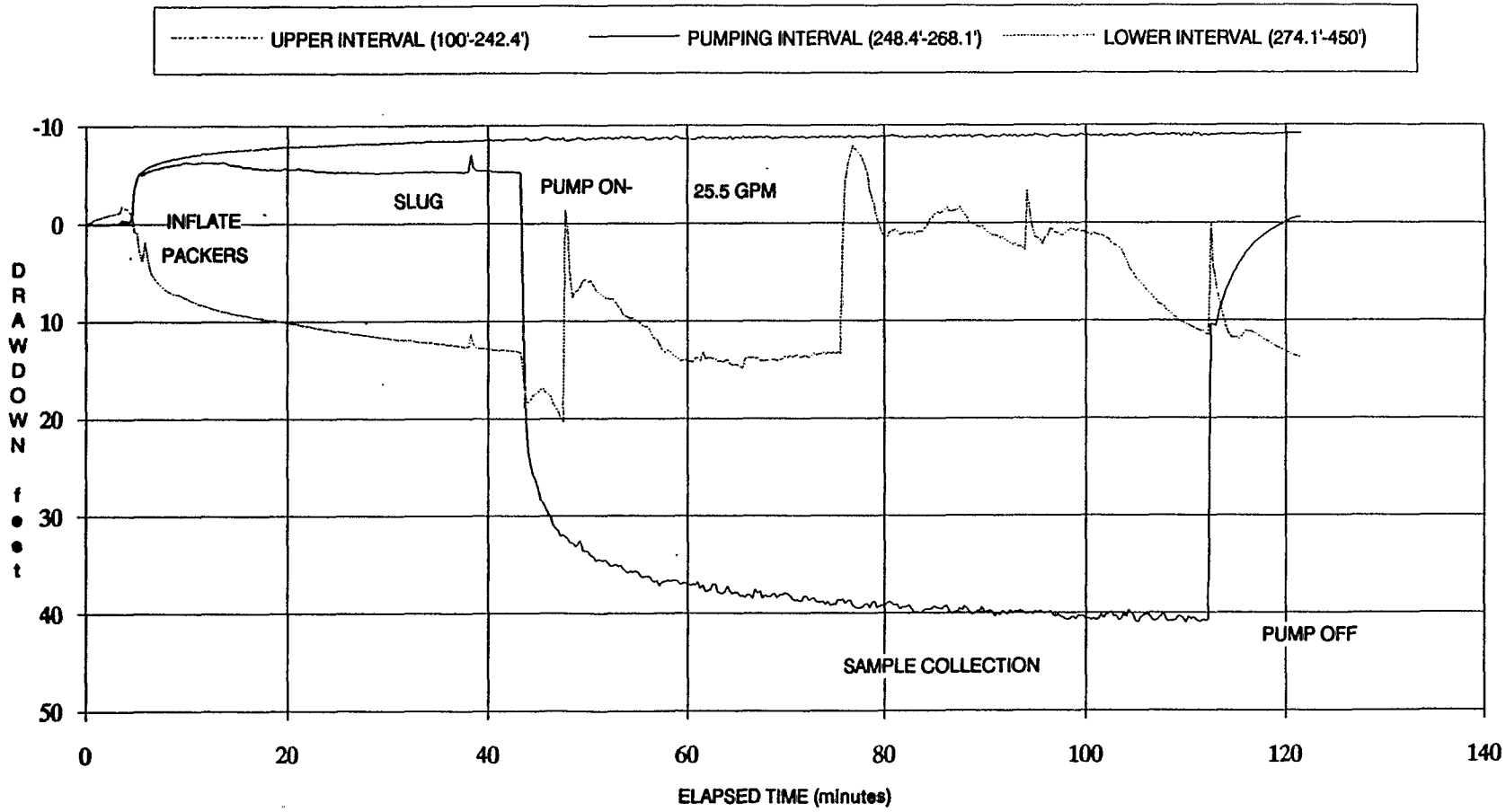
AR302812

PACKER TEST: TB-2 (ZONE 5)



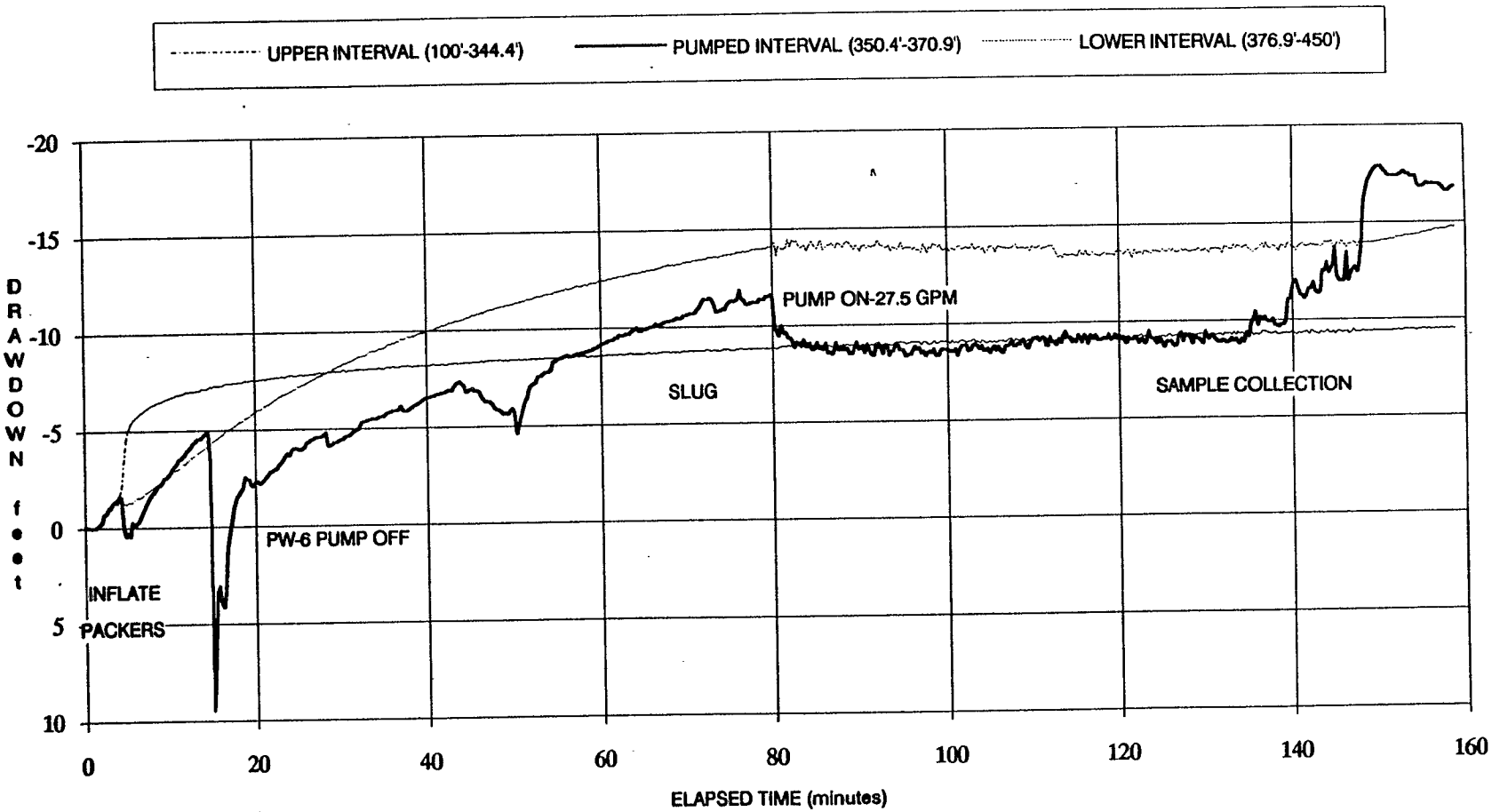
AR302813

PACKER TEST: TB-2 (ZONE 6)



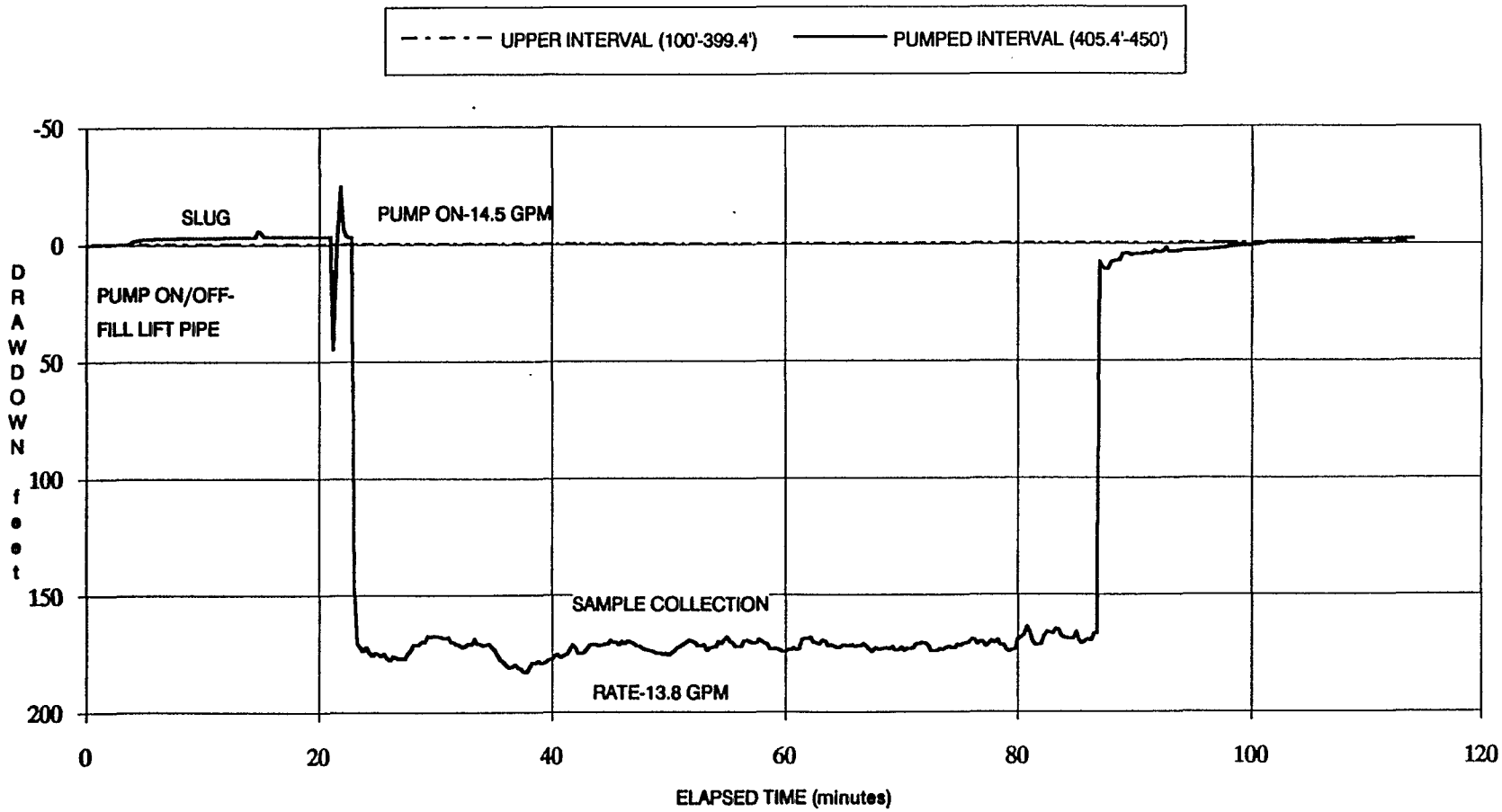
AR302814

PACKER TEST: TB-2 (ZONE 7)



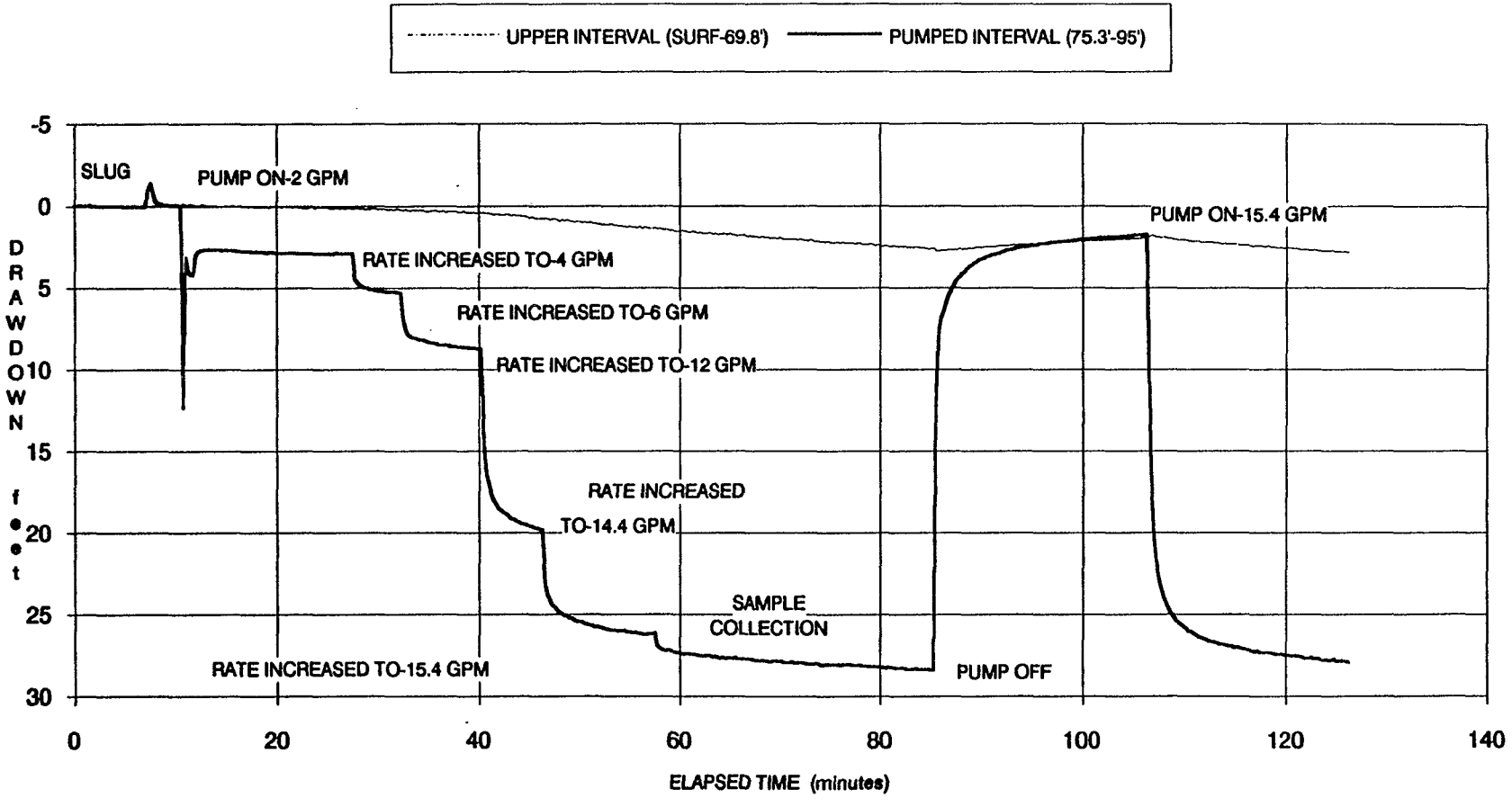
AR302815

PACKER TEST: TB-2 (ZONE 8)



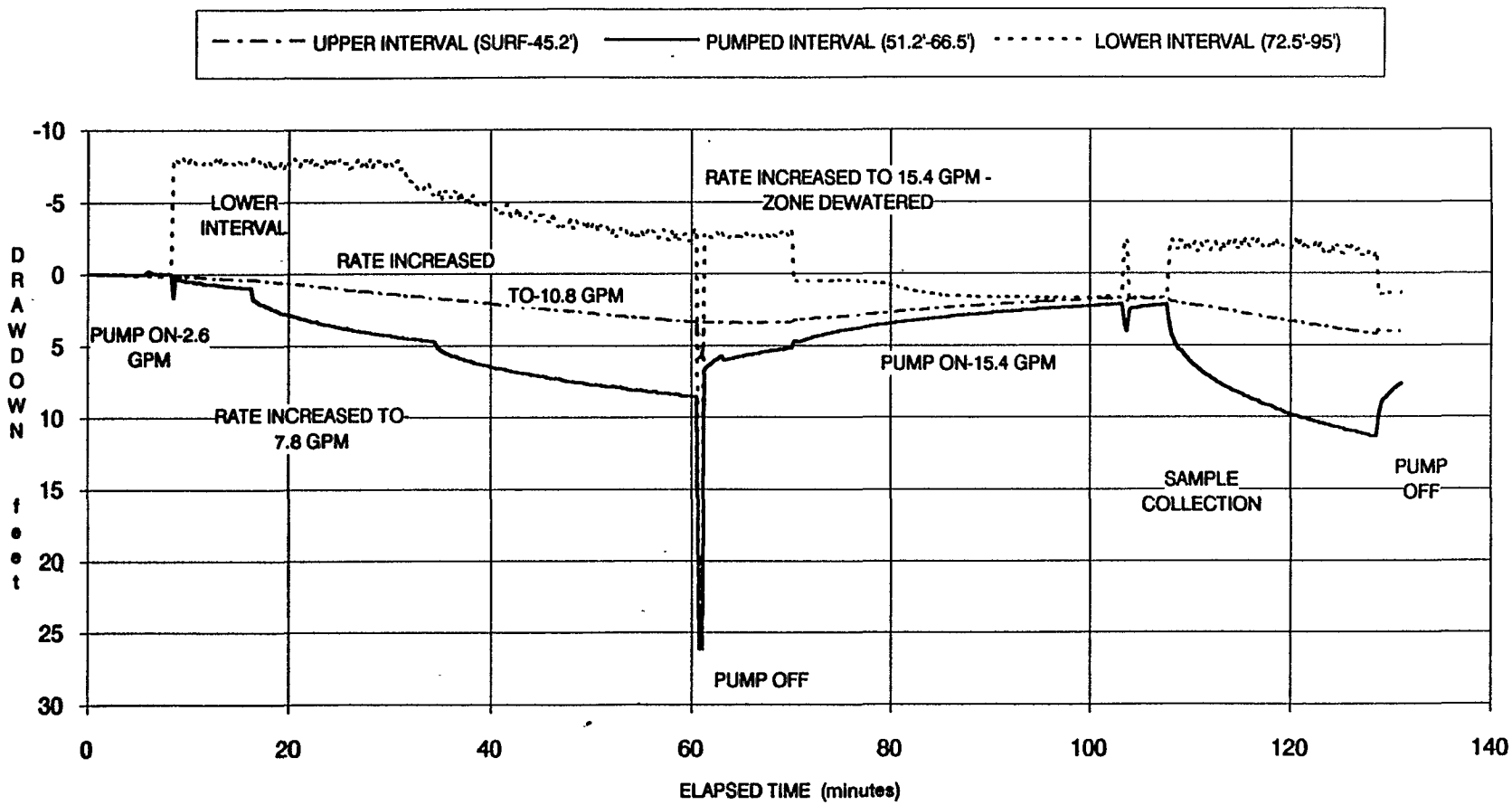
AR302816

PACKER TEST: TB-3 (ZONE 1)



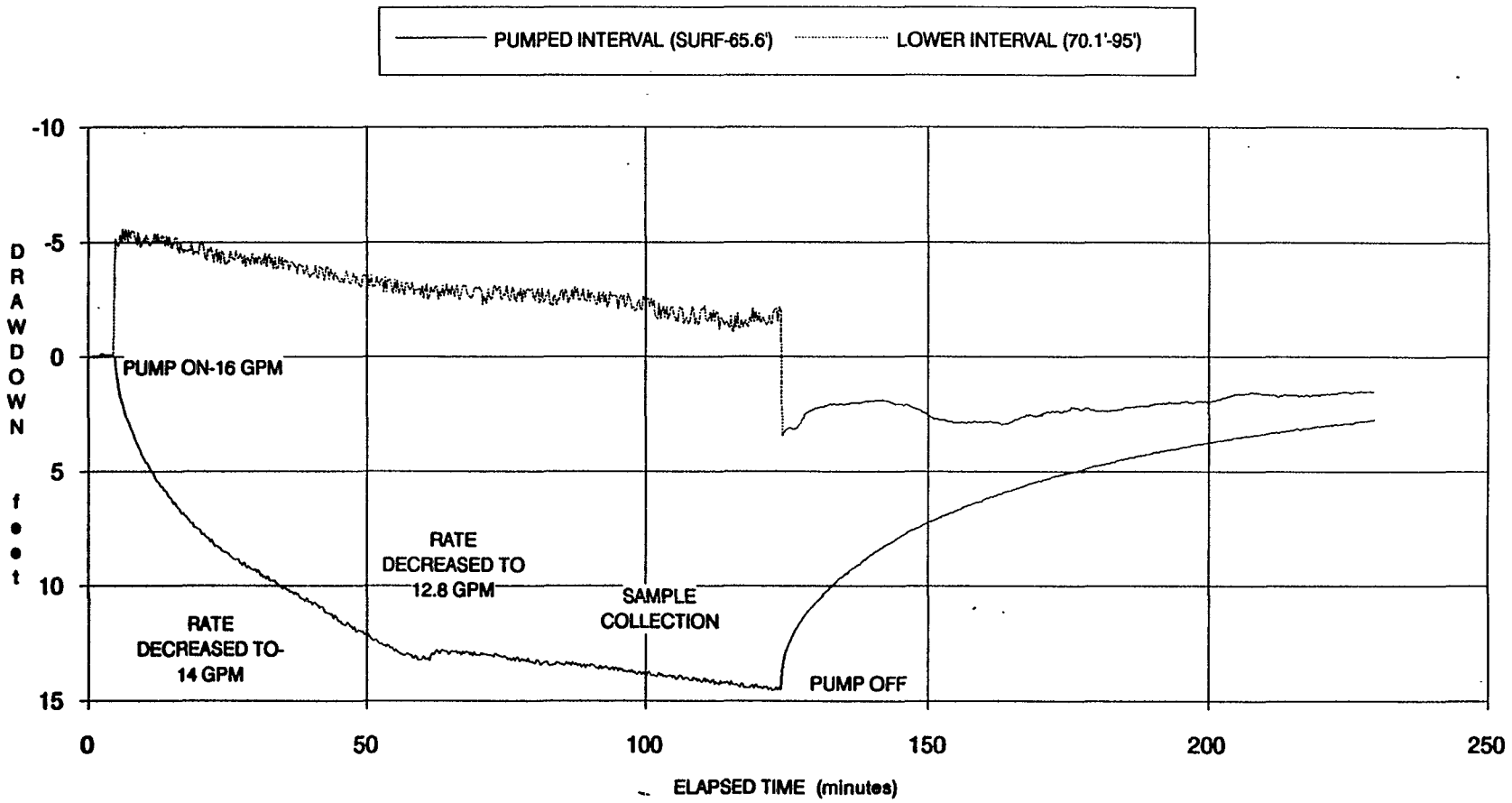
AR302817

PACKER TEST: TB-3 (ZONE 3)



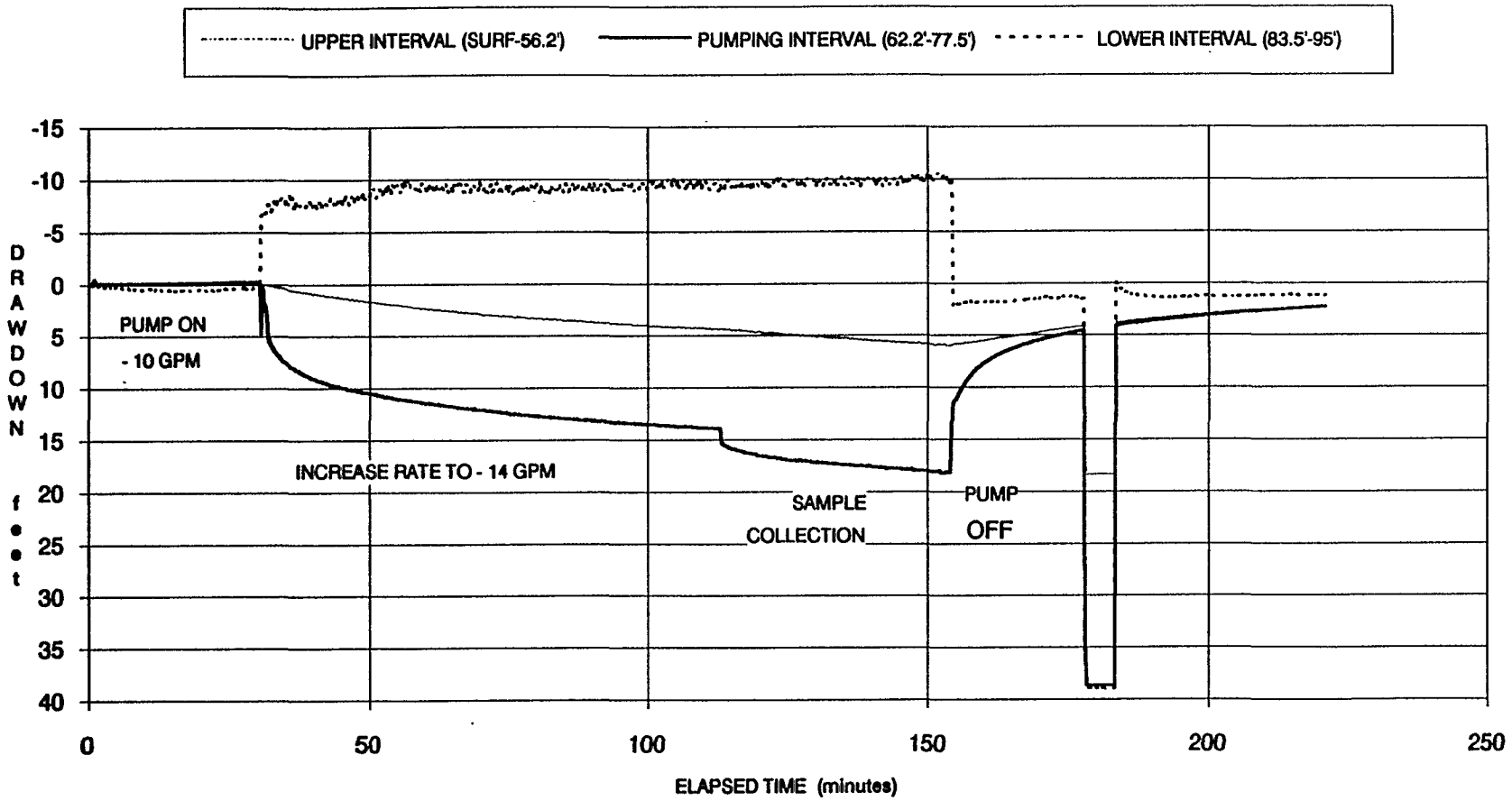
AR302818

PACKER TEST: TB-3 (ZONE 4)



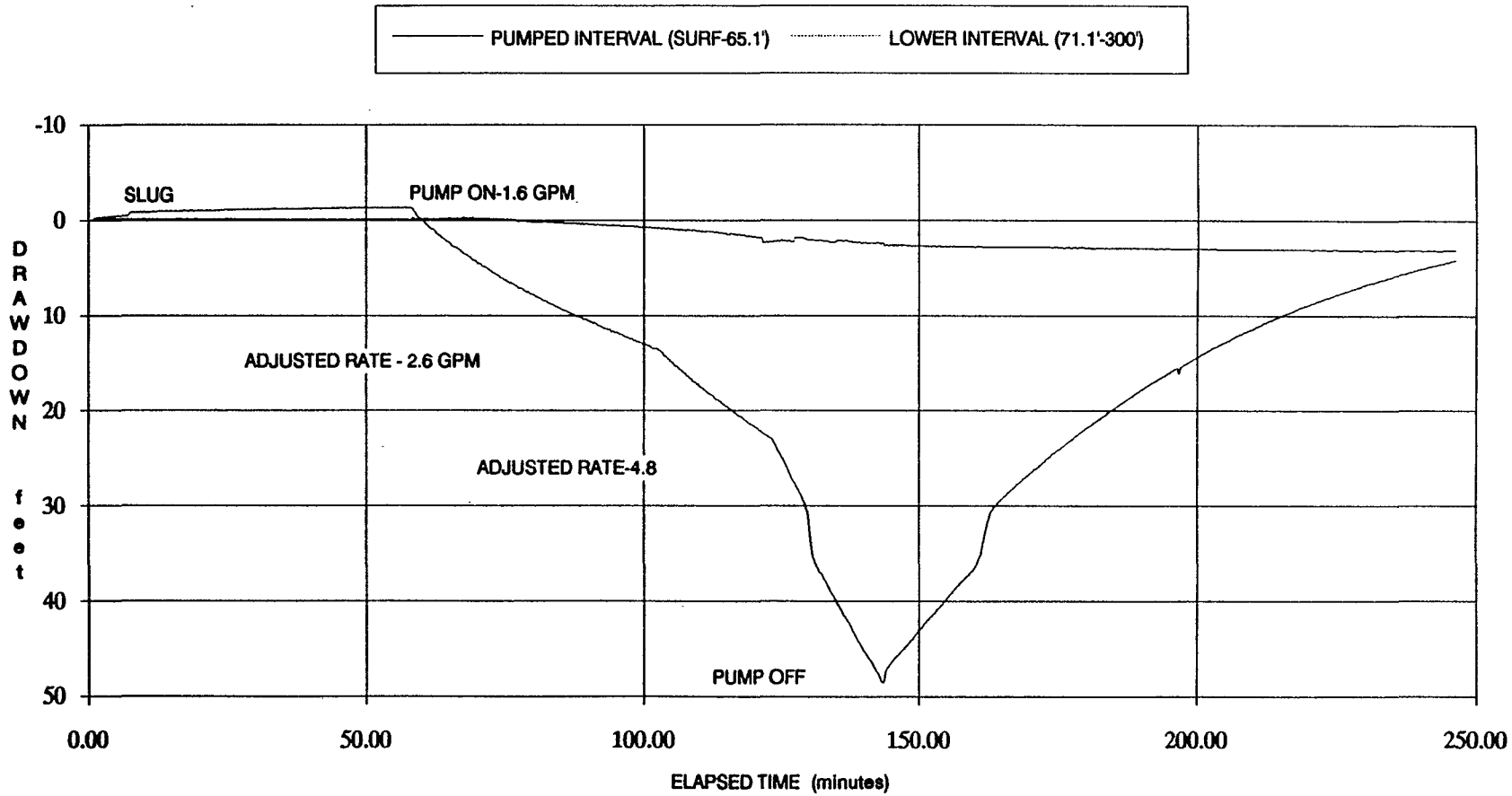
AR302819

PACKER TEST: TB-3 (ZONE 5)



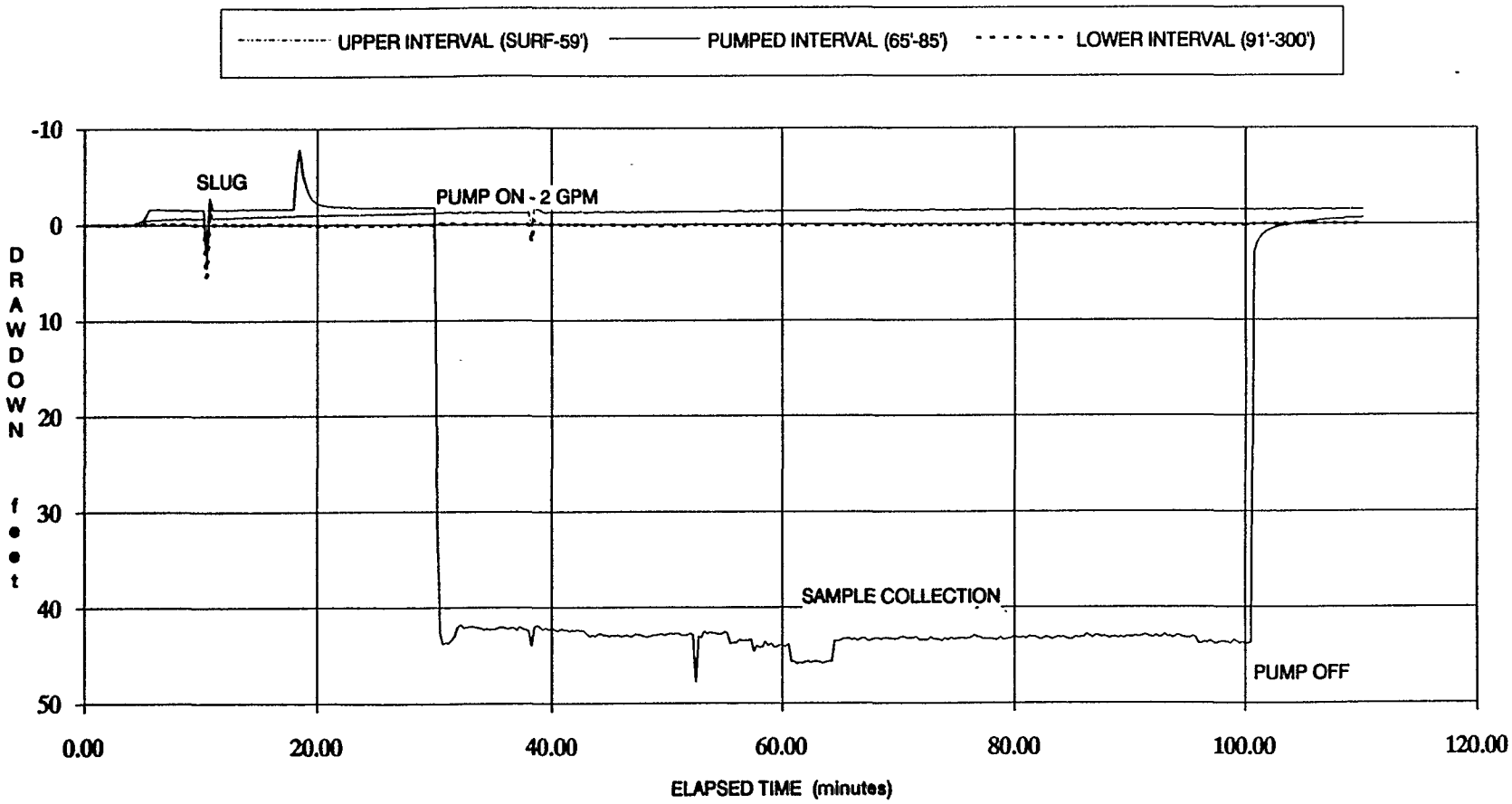
AR302820

PACKER TEST: TB-4 (ZONE 1)



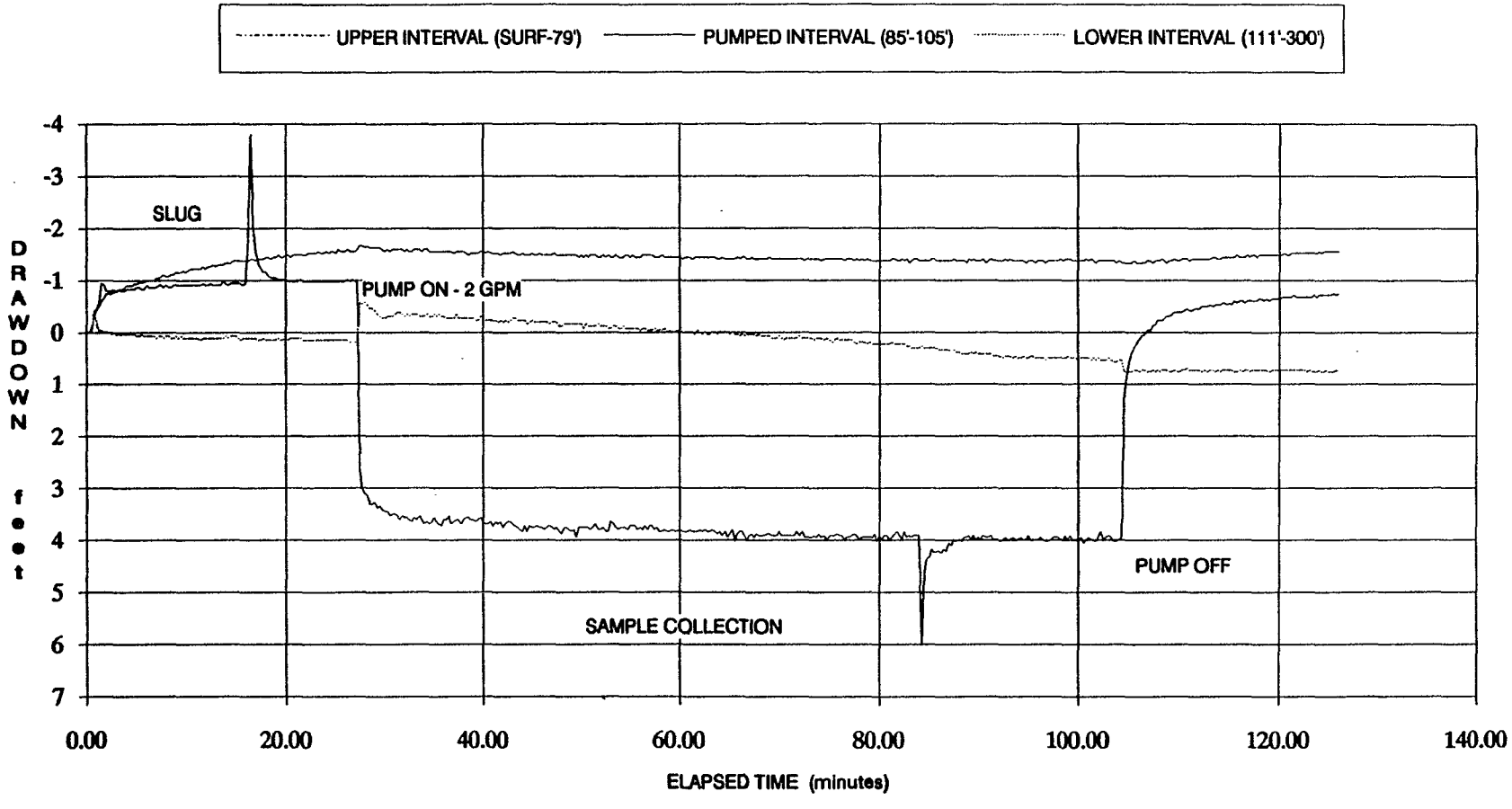
AR302821

PACKER TEST: TB-4 (ZONE 2)



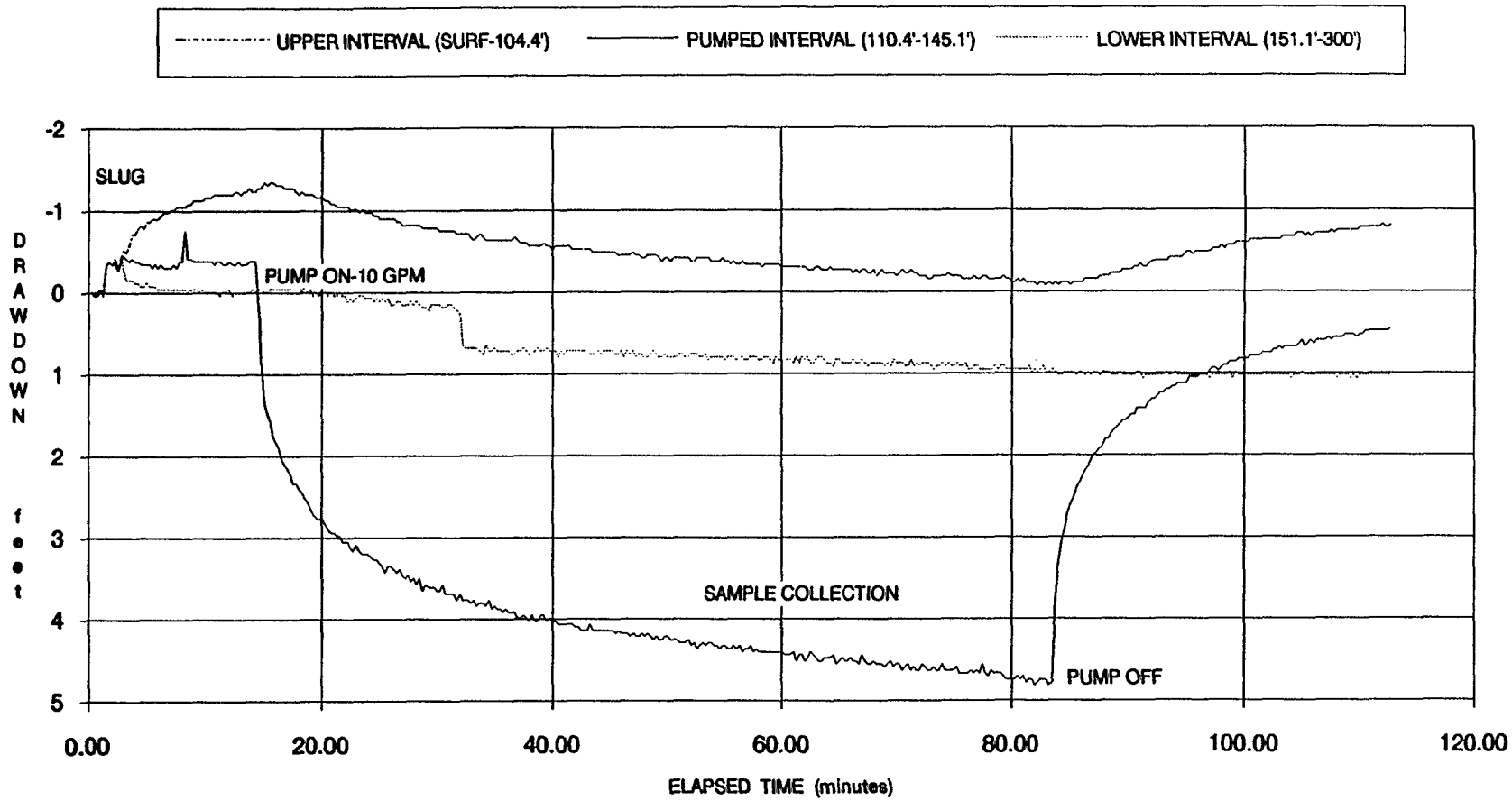
AR302822

PACKER TEST: TB-4 (ZONE 3)



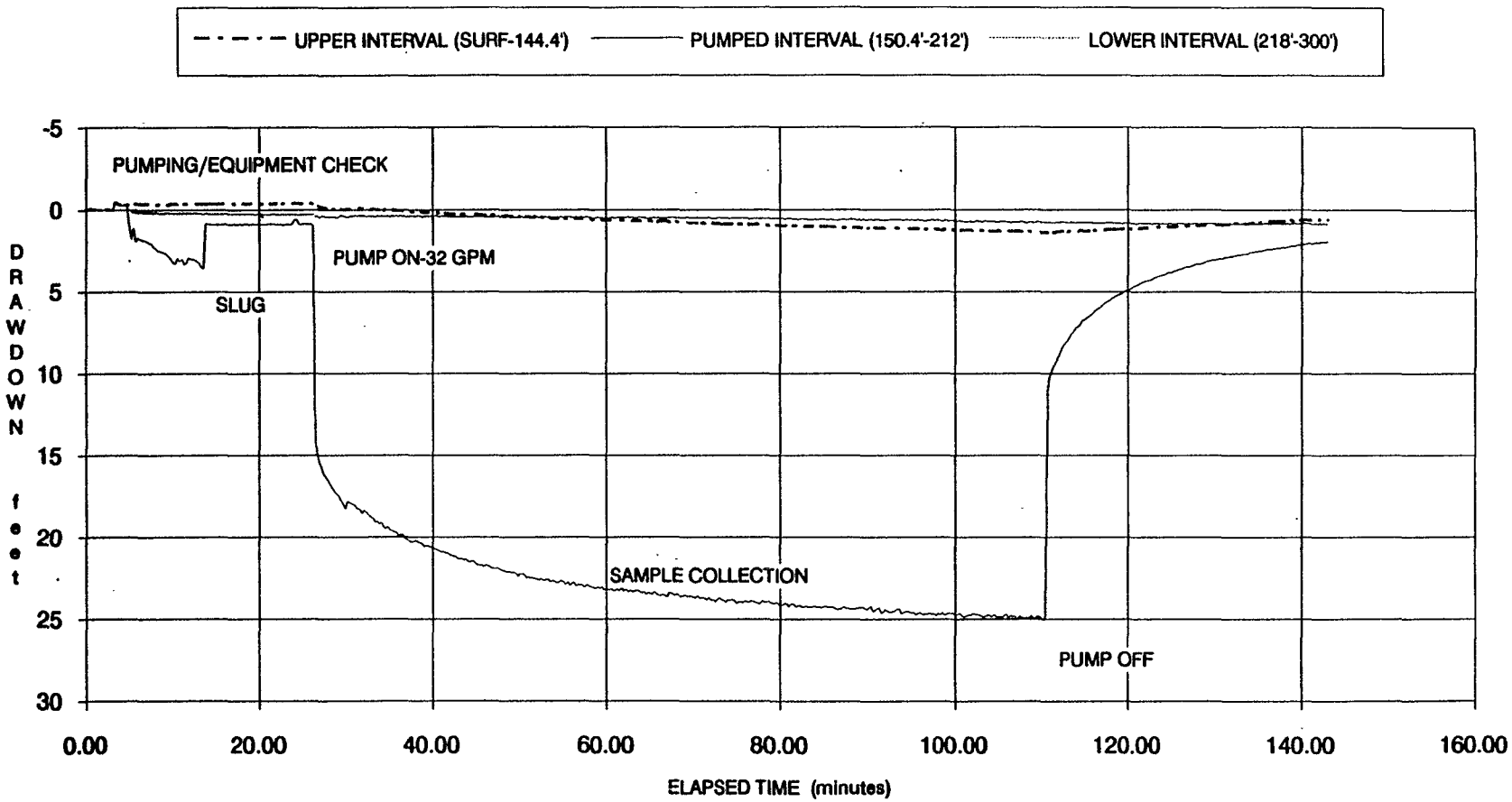
AR302823

PACKER TEST: TB-4 (ZONE 4)



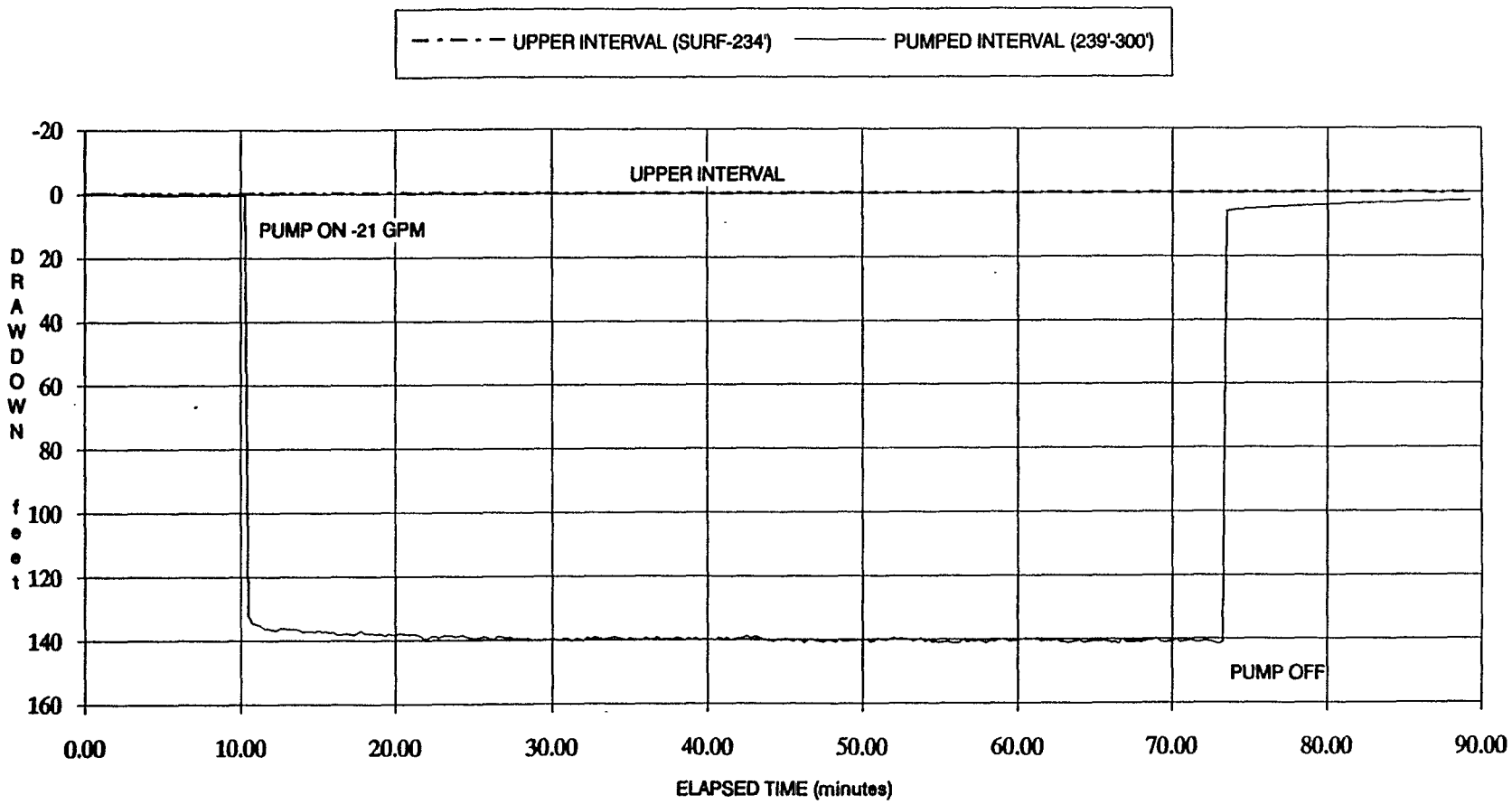
AR302824

PACKER TEST: TB-4 (ZONE 5)



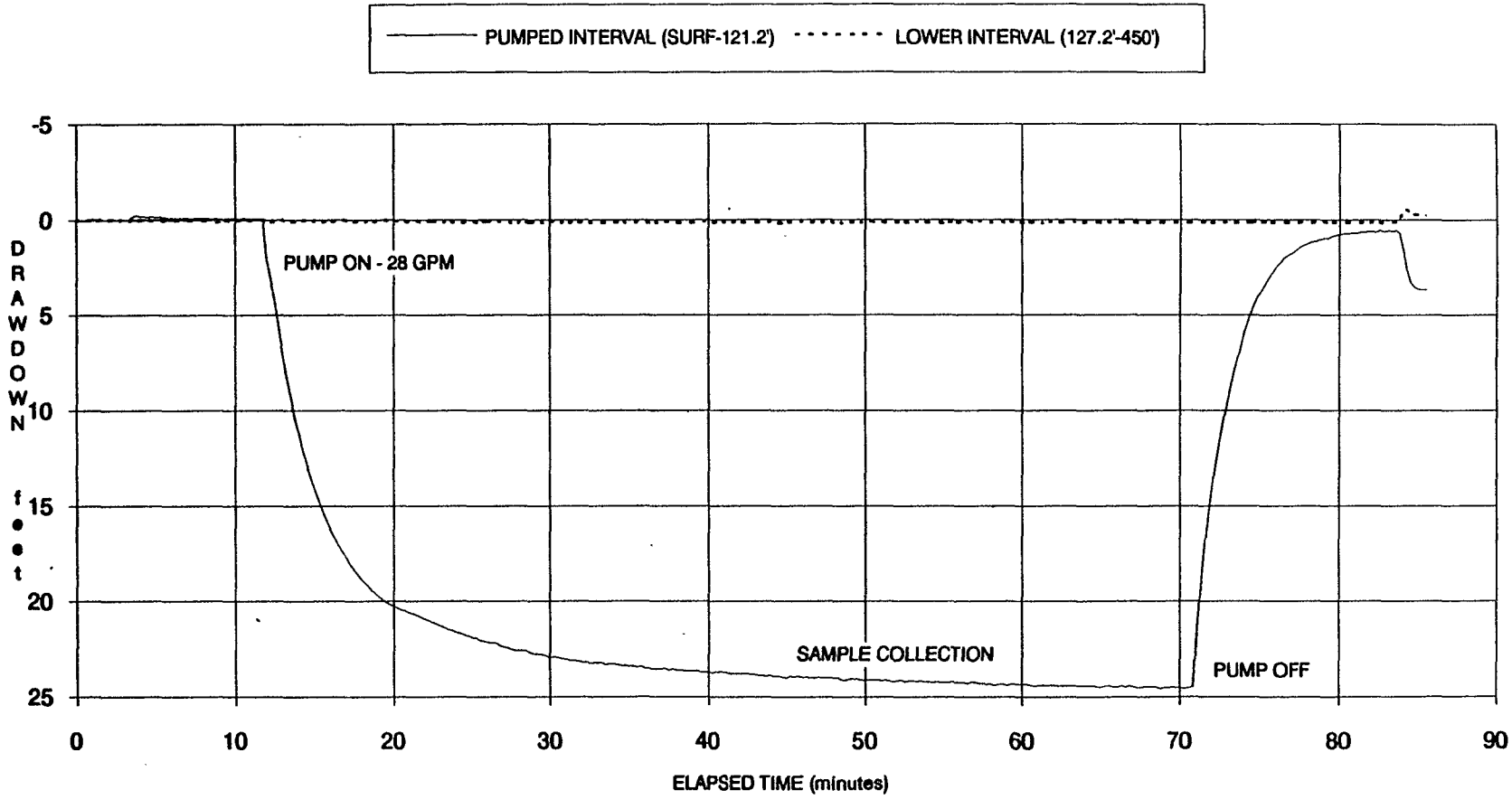
AR302825

PACKER TEST: TB-4 (ZONE 6)



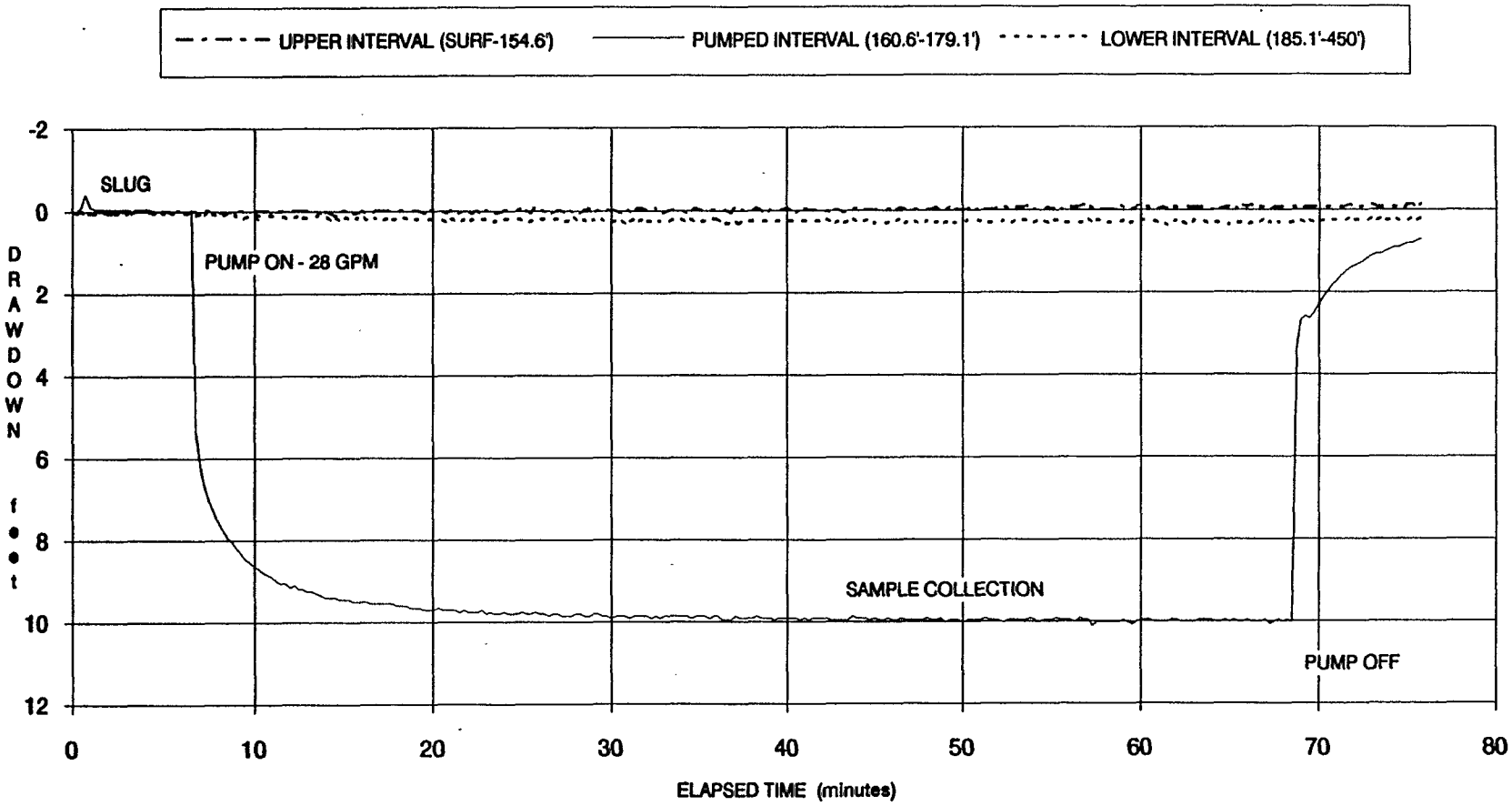
AR302826

PACKER TEST: TB-6 (ZONE 1)



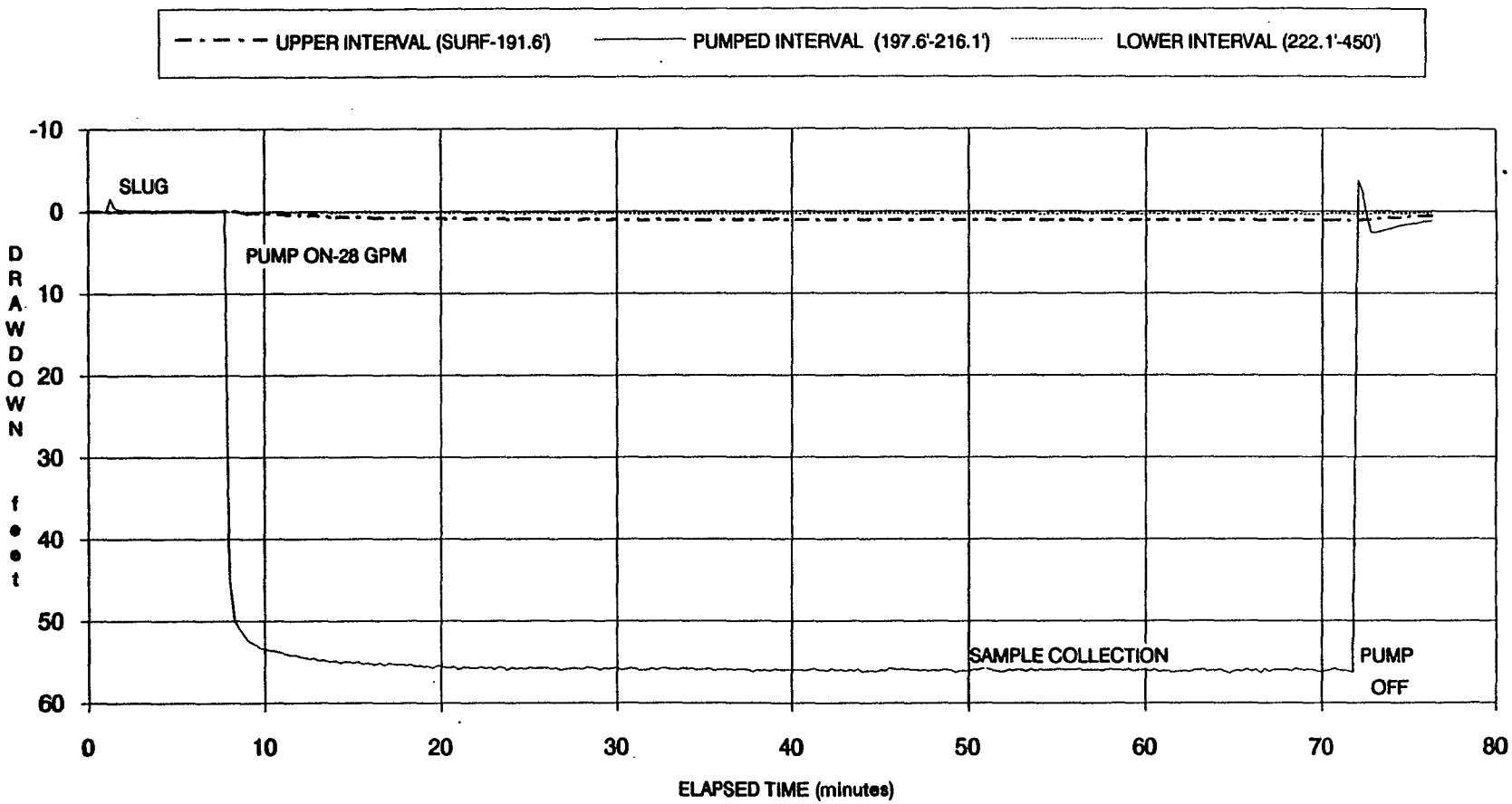
AR302827

PACKER TEST: TB-6 (ZONE 2)



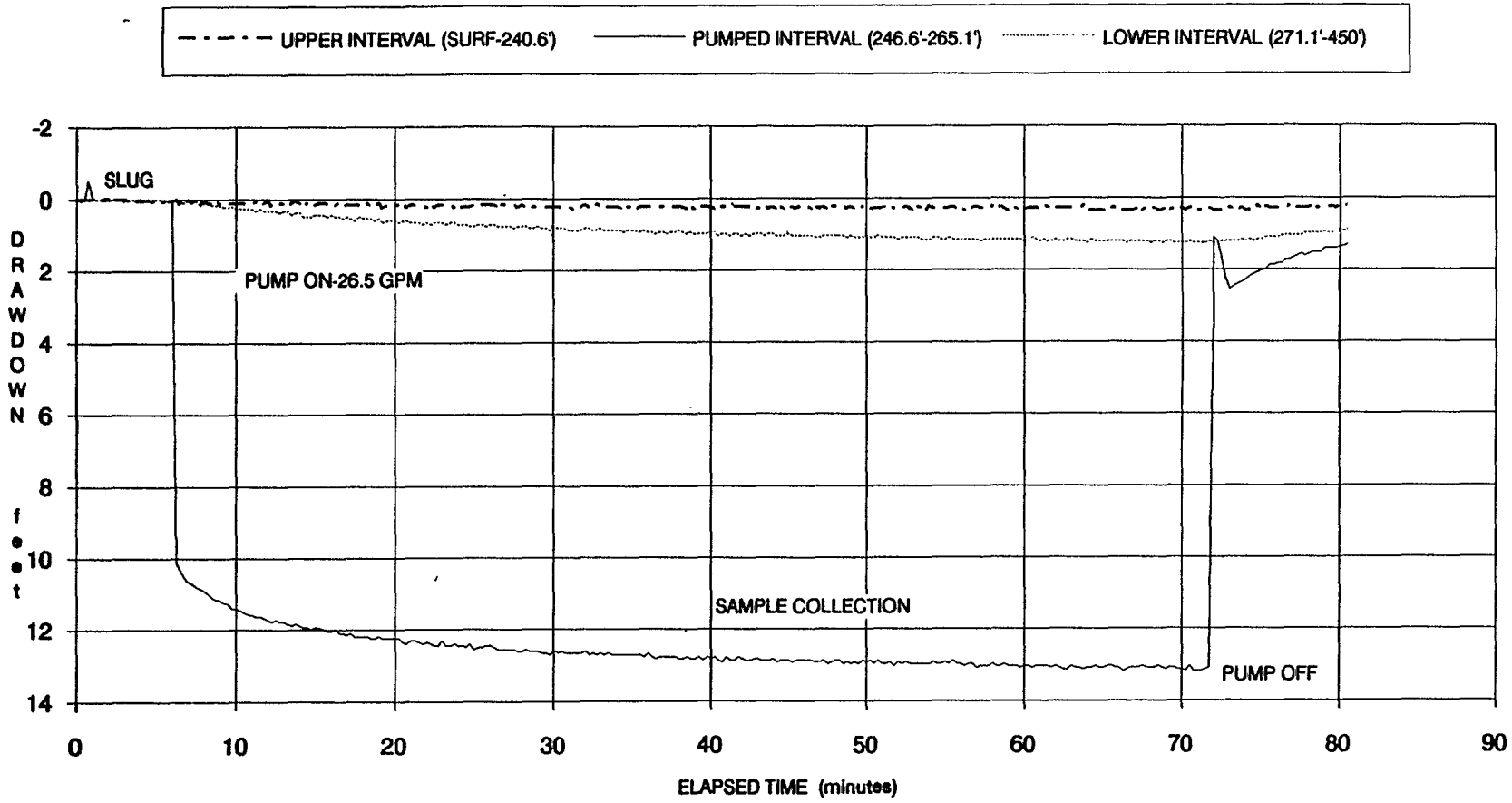
AR302828

PACKER TEST: TB-6 (ZONE 3)



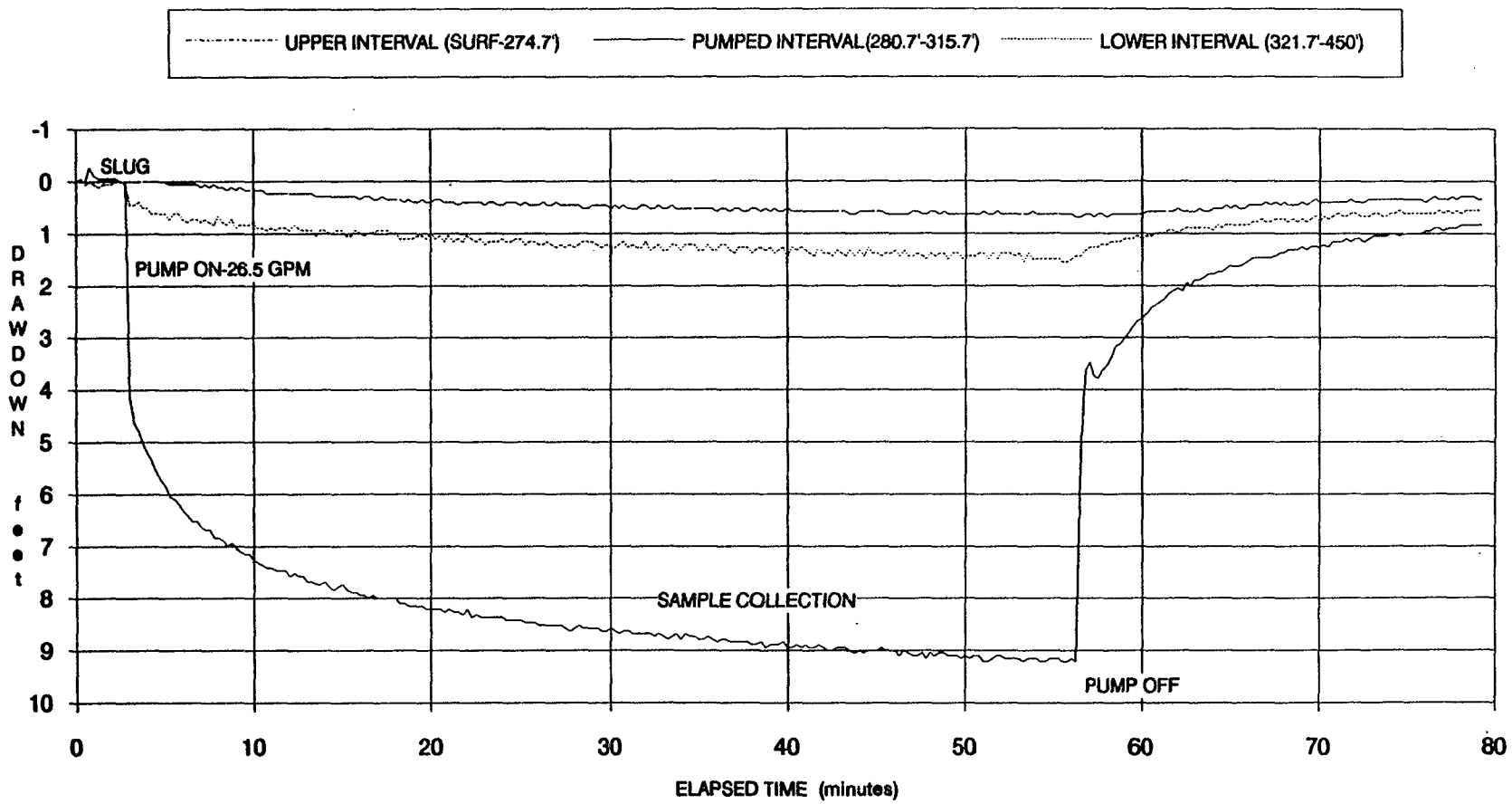
AR302829

PACKER TEST: TB-6 (ZONE 4)



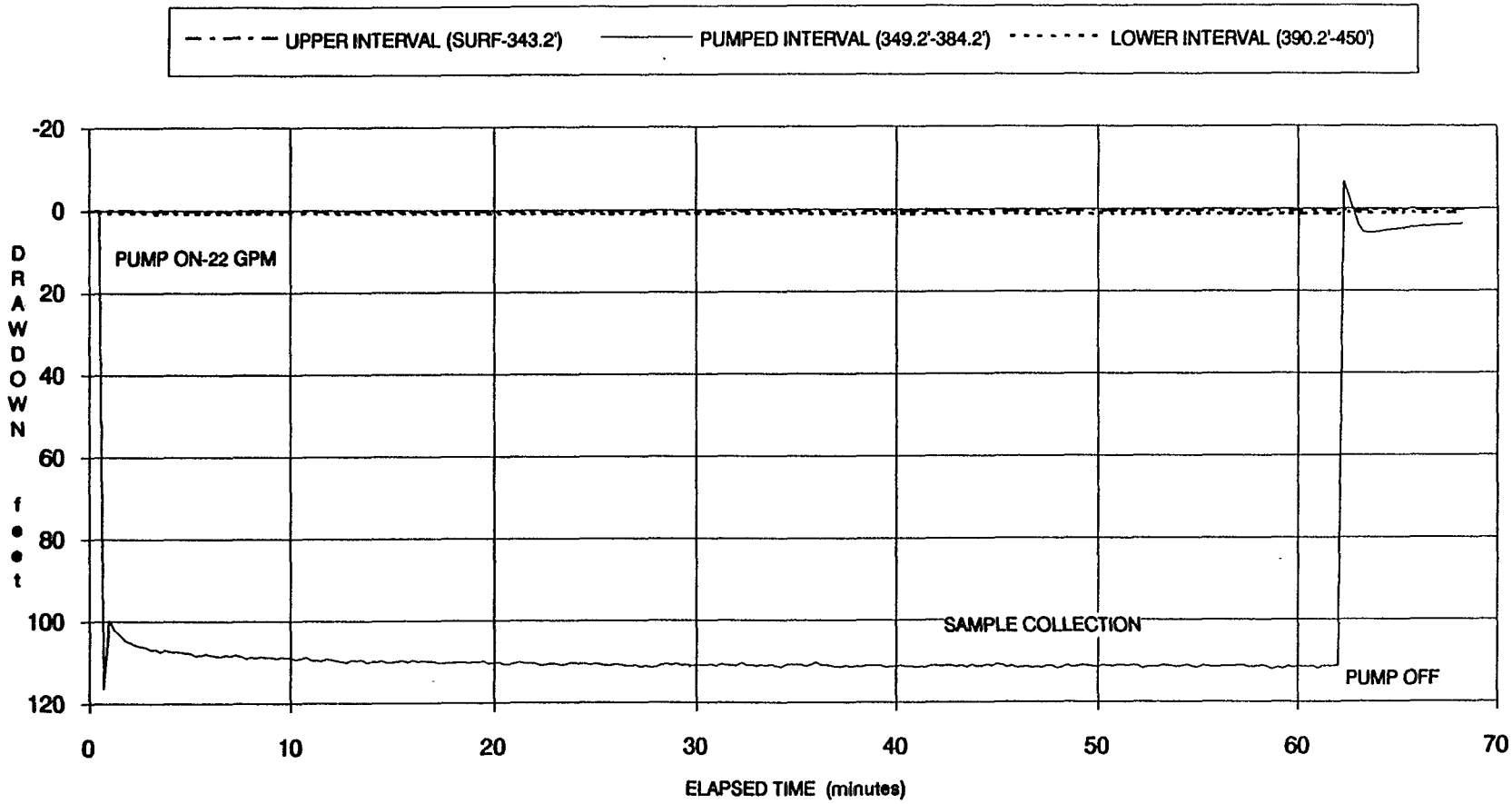
AR302830

PACKER TEST: TB-6 (ZONE 5)

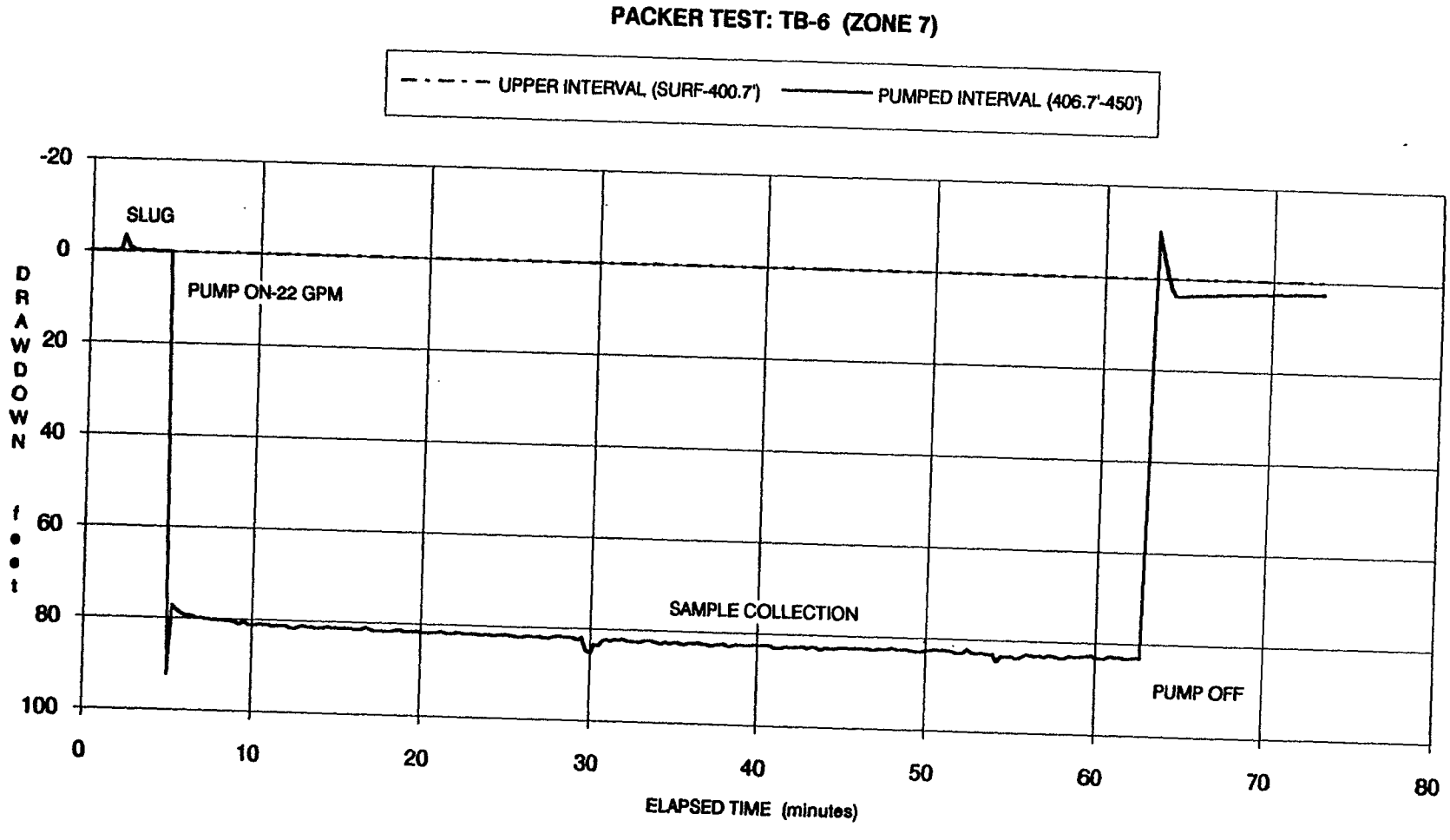


AR302831

PACKER TEST: TB-6 (ZONE 6)

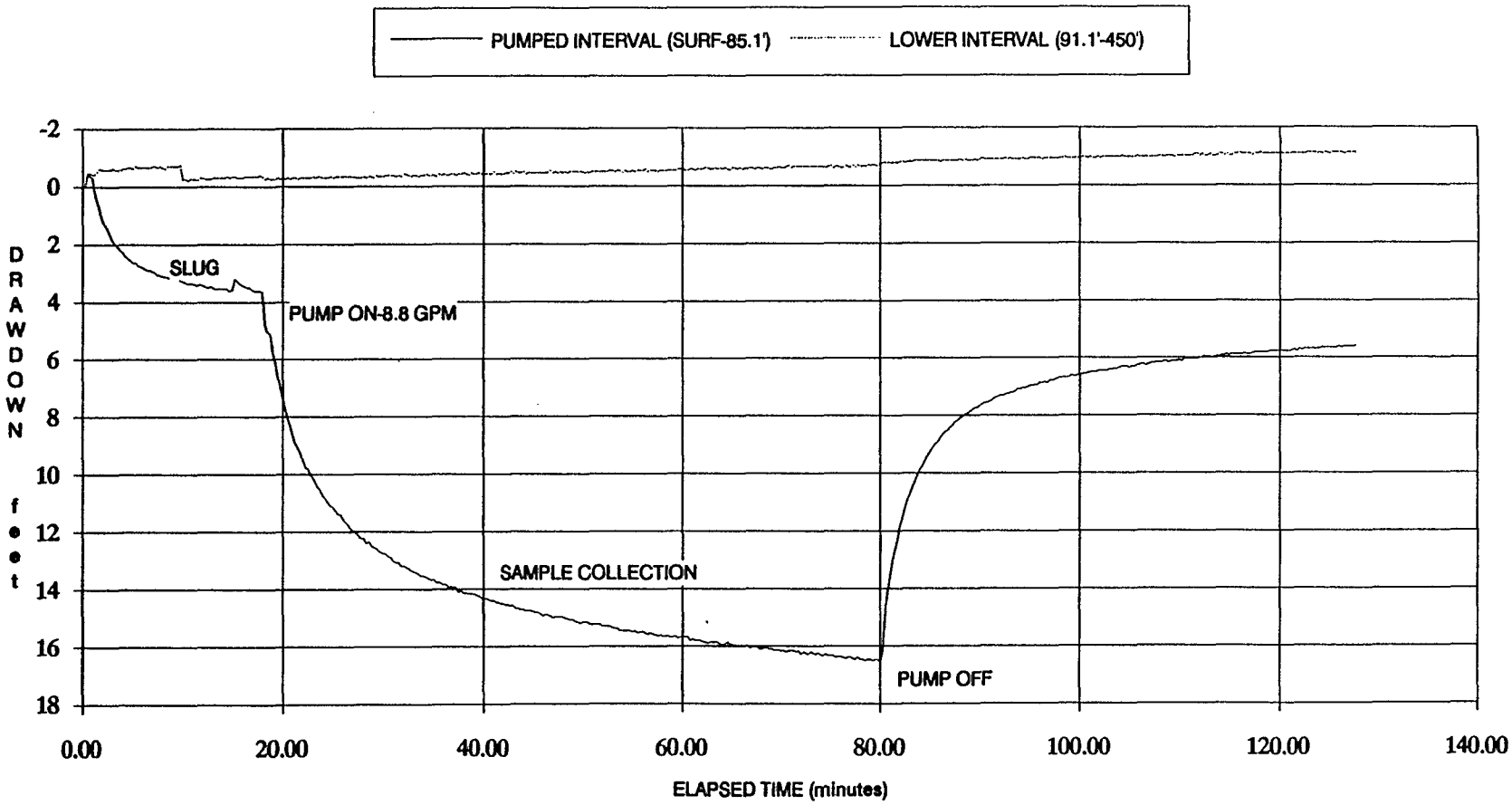


AR302832


PACKER TEST: TB-6 (ZONE 7)
UPPER INTERVAL (SURF-400.7')
PUMPED INTERVAL (406.7'-450')
SLUG
PUMP ON-22 GPM
SAMPLE COLLECTION
PUMP OFF
DRAWDOWN feet
-20
0
20
40
60
80
100
0
10
20
30
40
50
60
70
80
ELAPSED TIME (minutes)

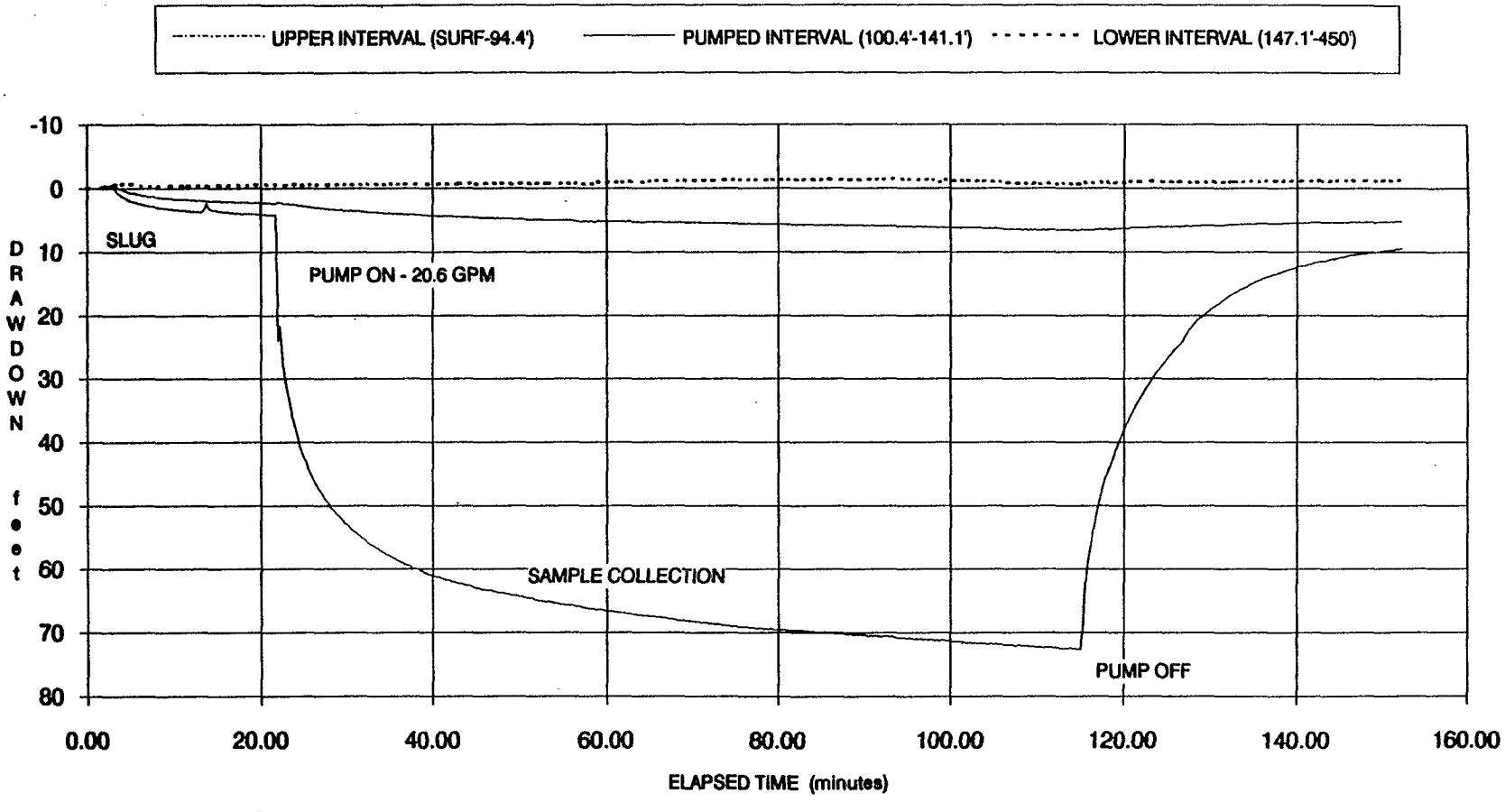
AR302833

PACKER TEST: TB-5 (ZONE 1)



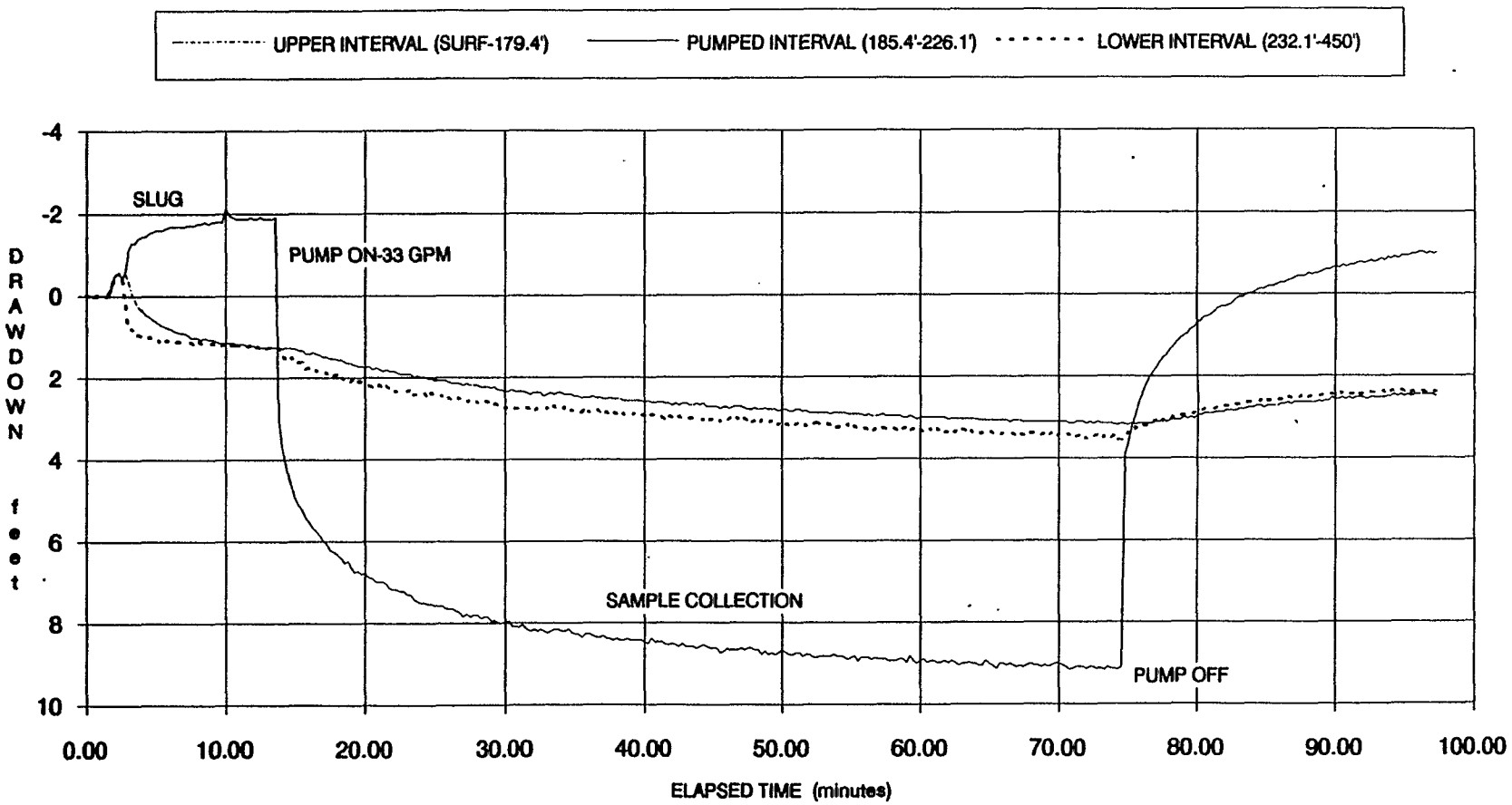
AR302834

PACKER TEST: TB-5 (ZONE 2)



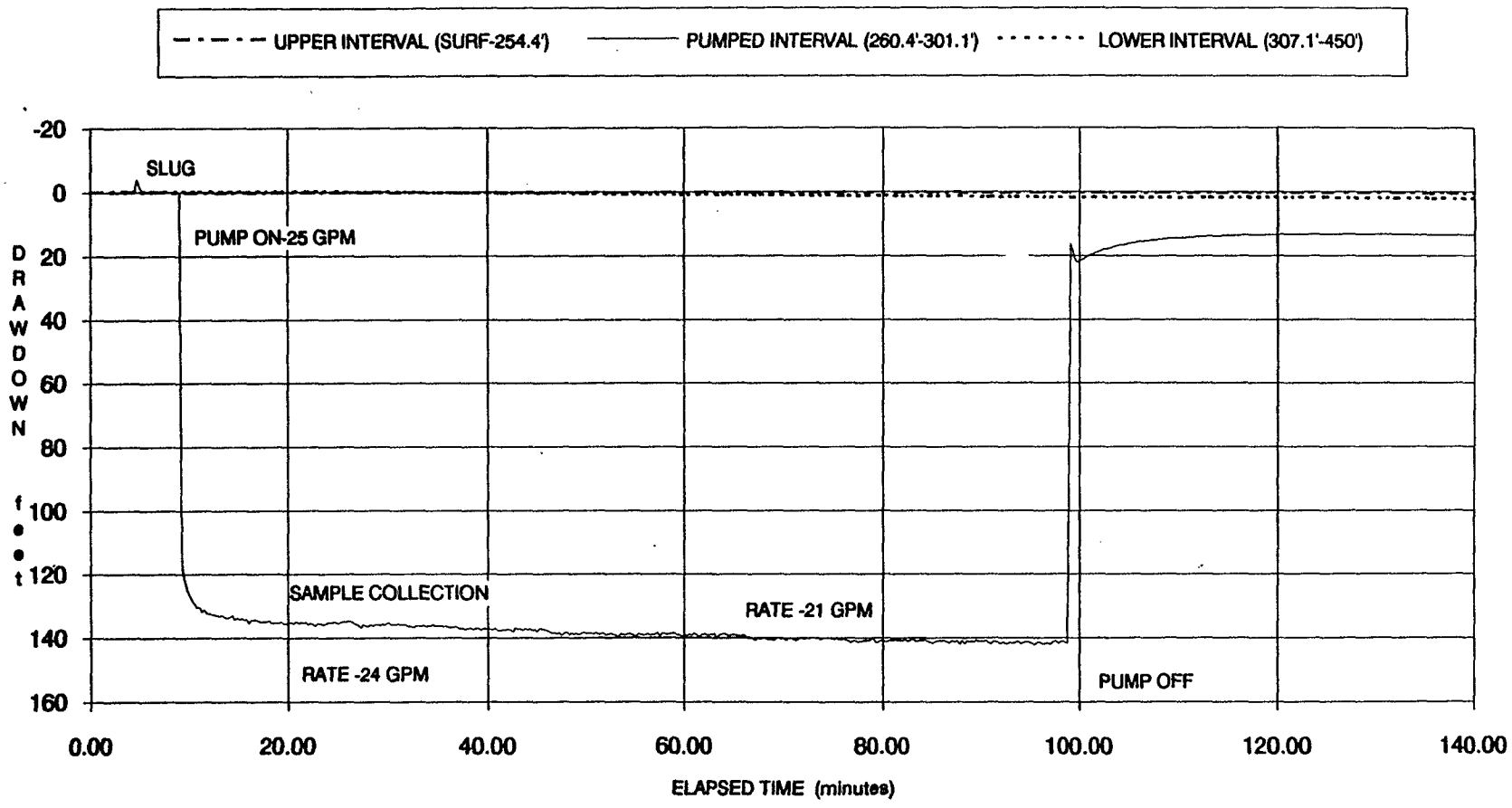
AR302835

PACKER TEST: TB-5 (ZONE 3)



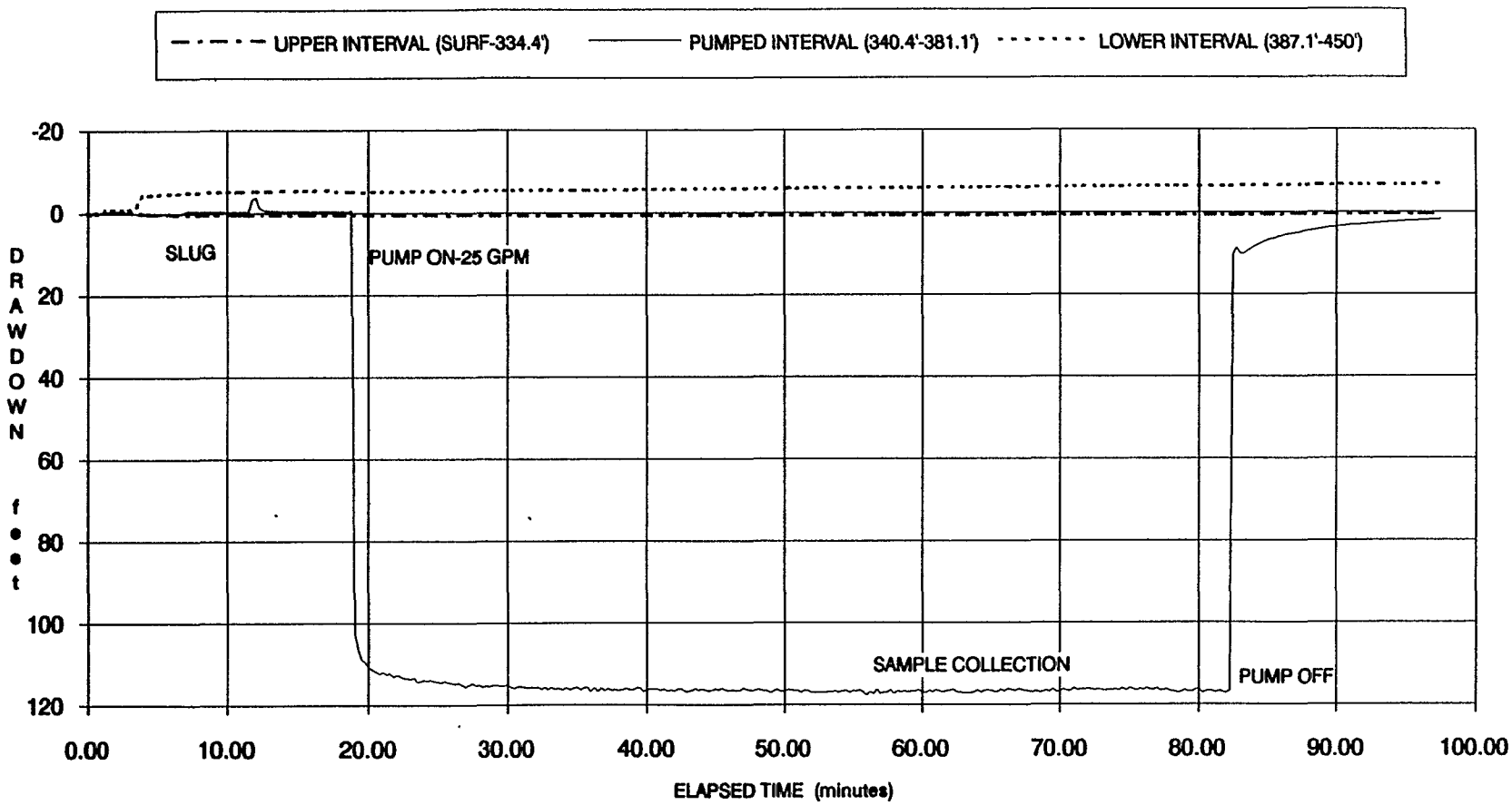
AR302836

PACKER TEST: TB-5 (ZONE 4)



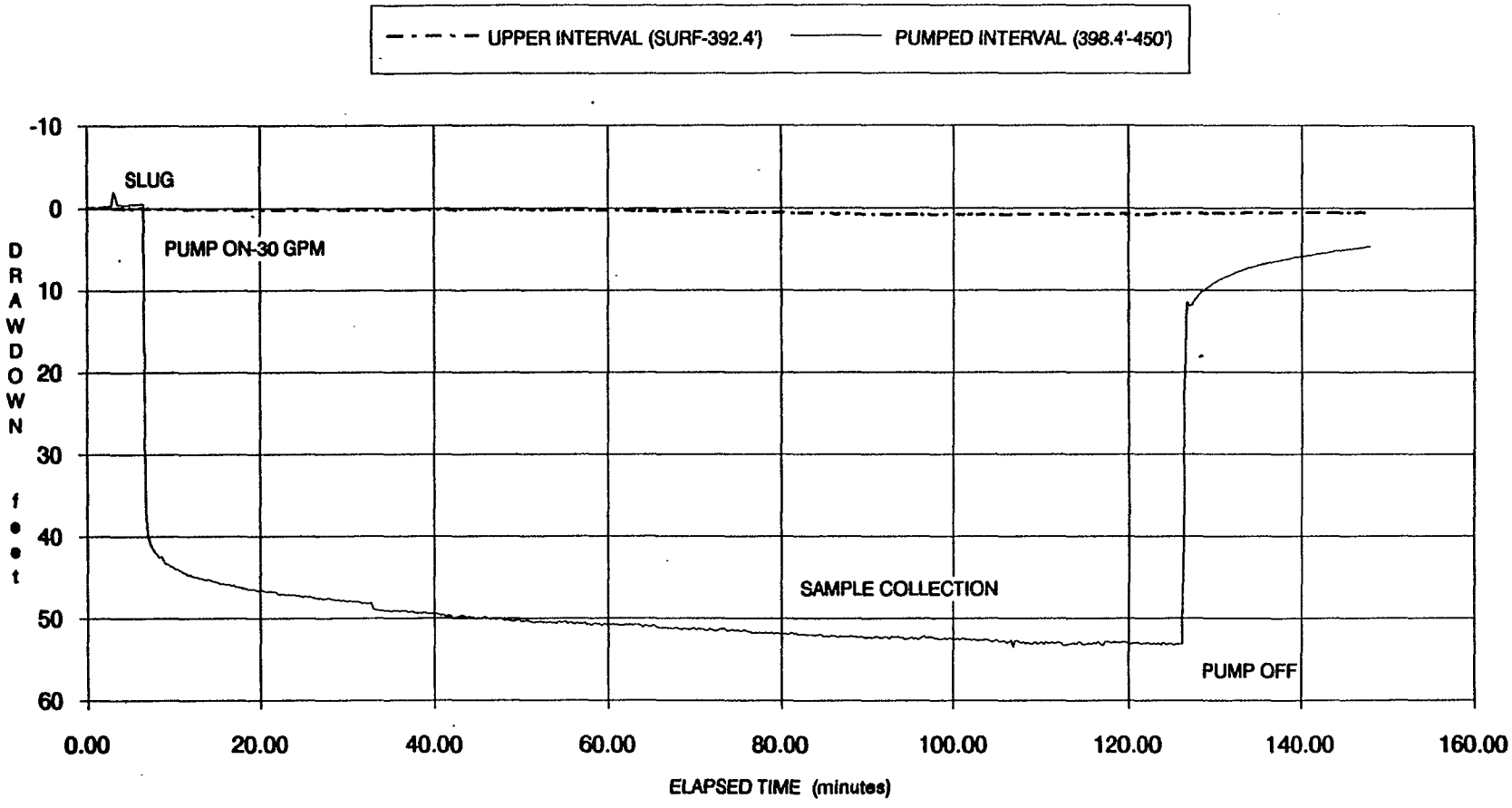
AR302837

PACKER TEST: TB-5 (ZONE 5)



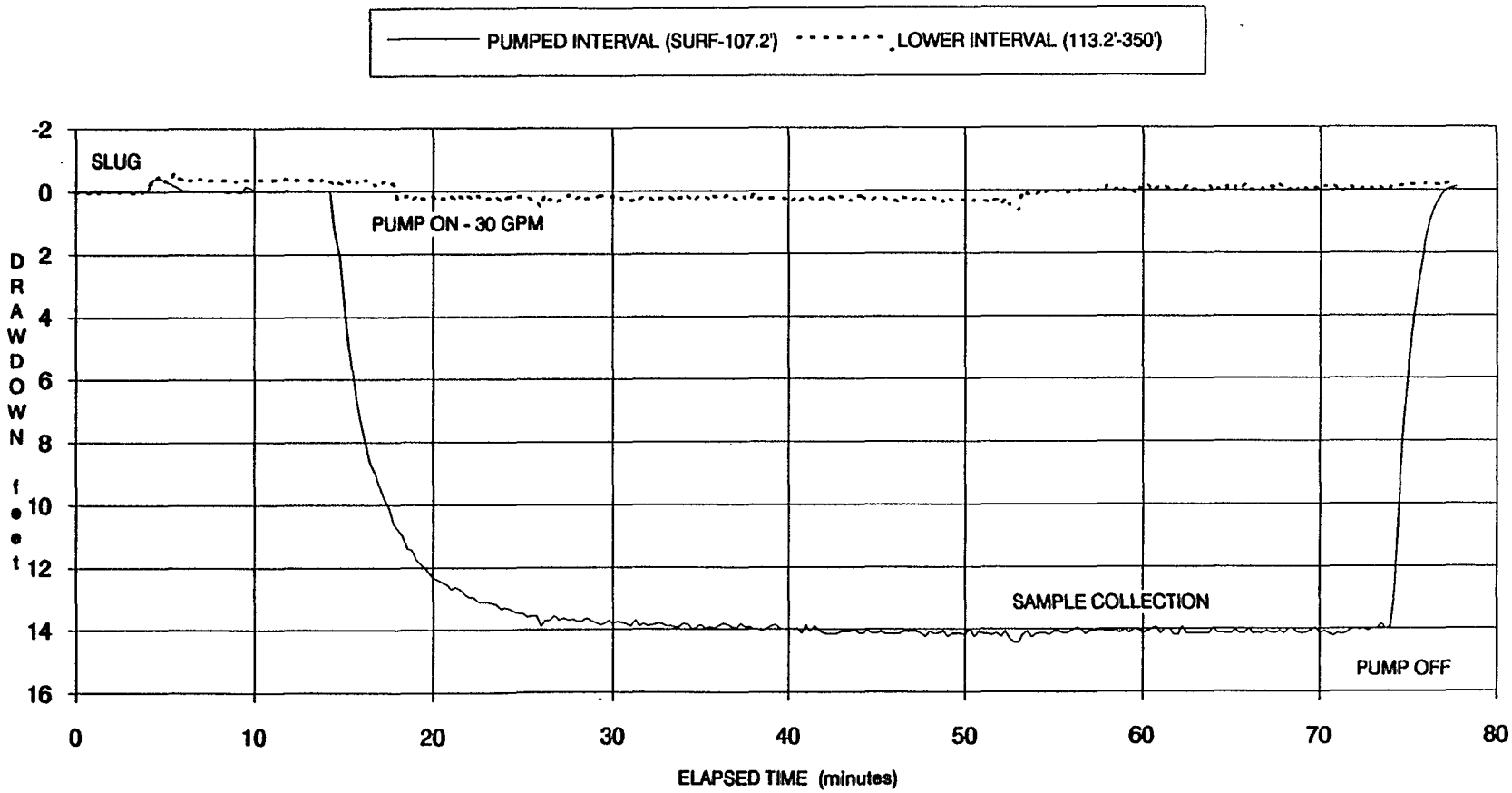
AR302838

PACKER TEST: TB-5 (ZONE 6)



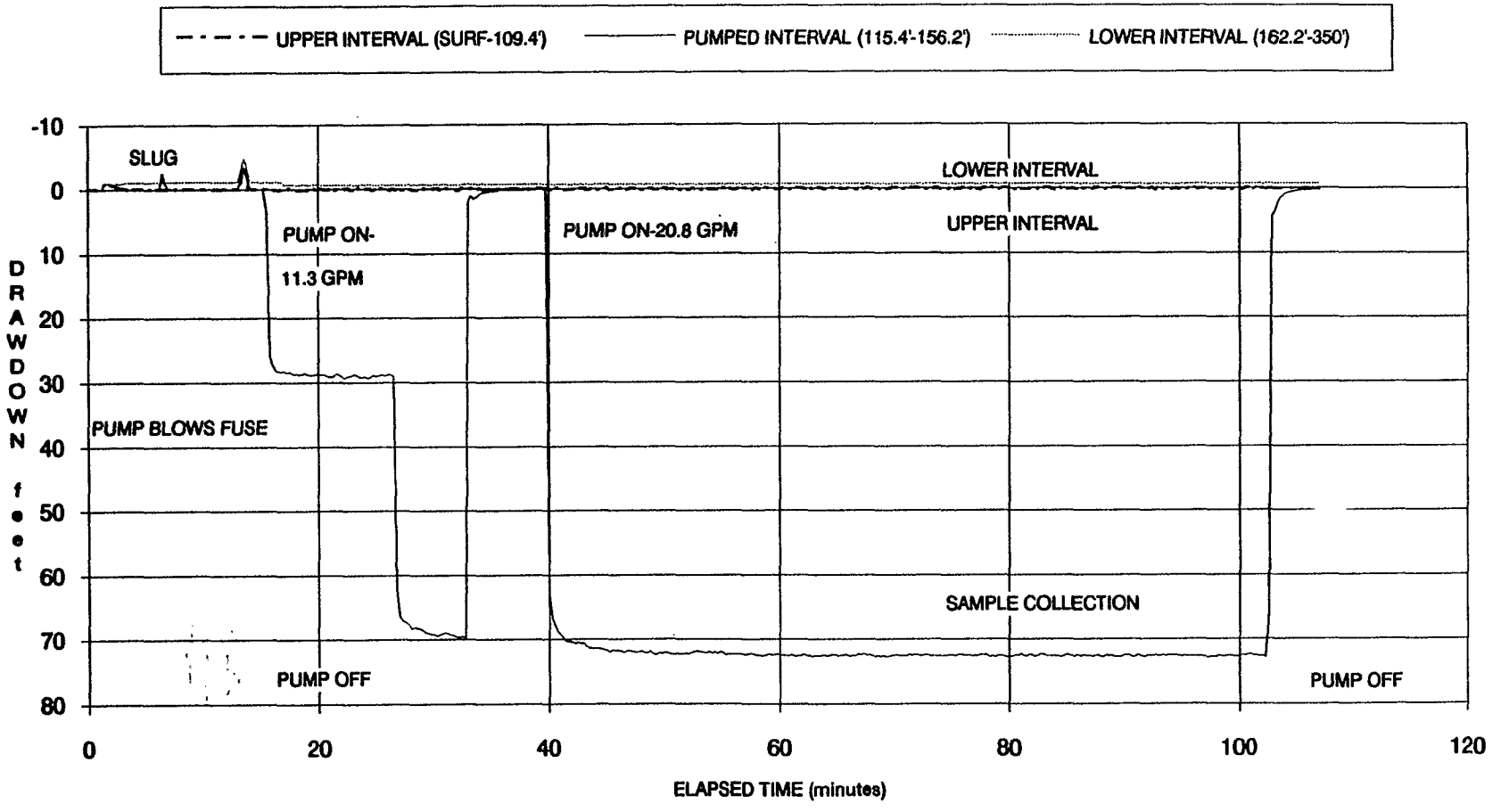
AR302839

PACKER TEST: TB-7 (ZONE 1)



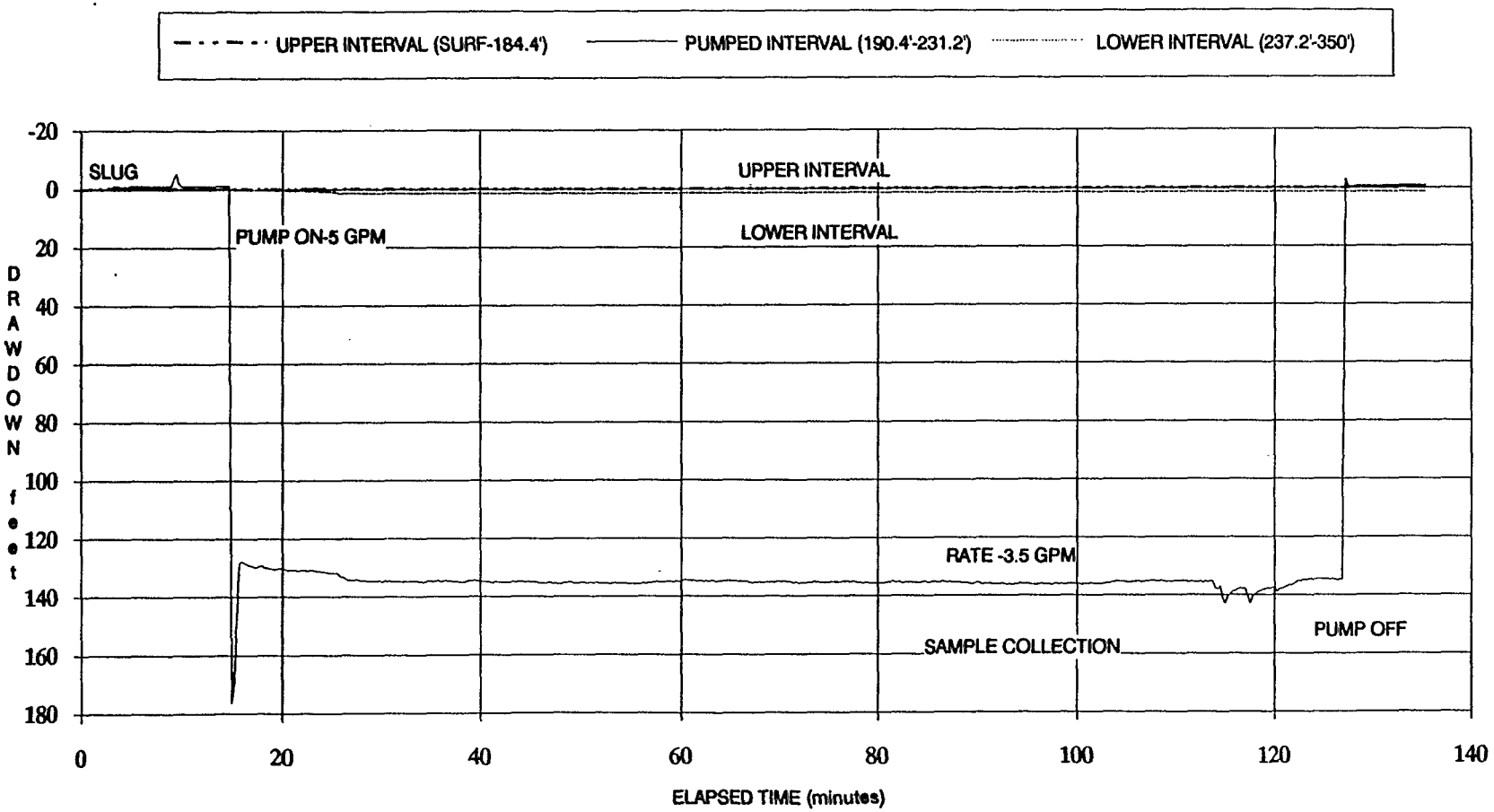
AR302840

PACKER TEST: TB-7 (ZONE 2)



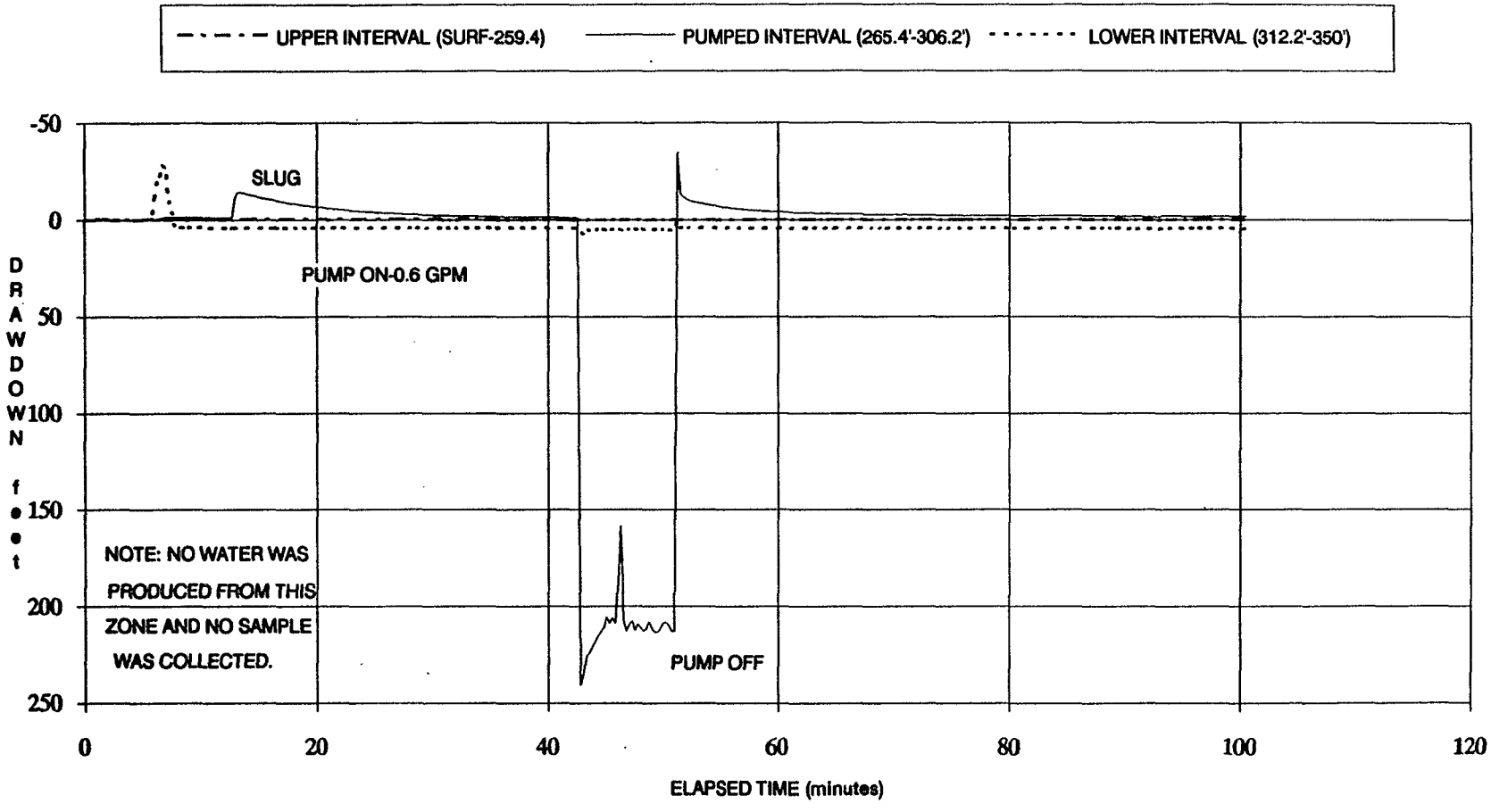
AR302841

PACKER TEST: TB7 (ZONE 3)



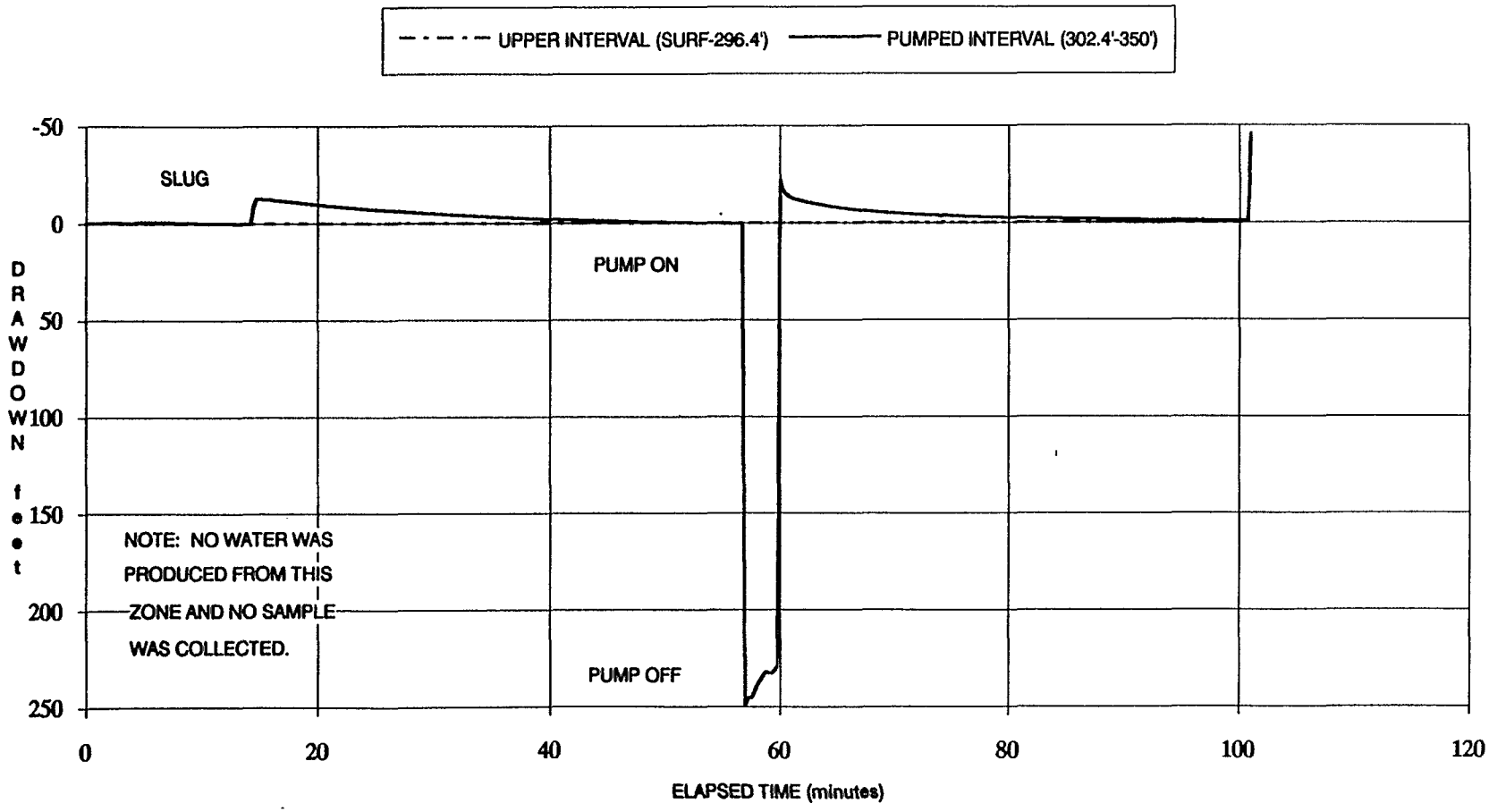
AR302842

PACKER TEST: TB-7 (ZONE 4)



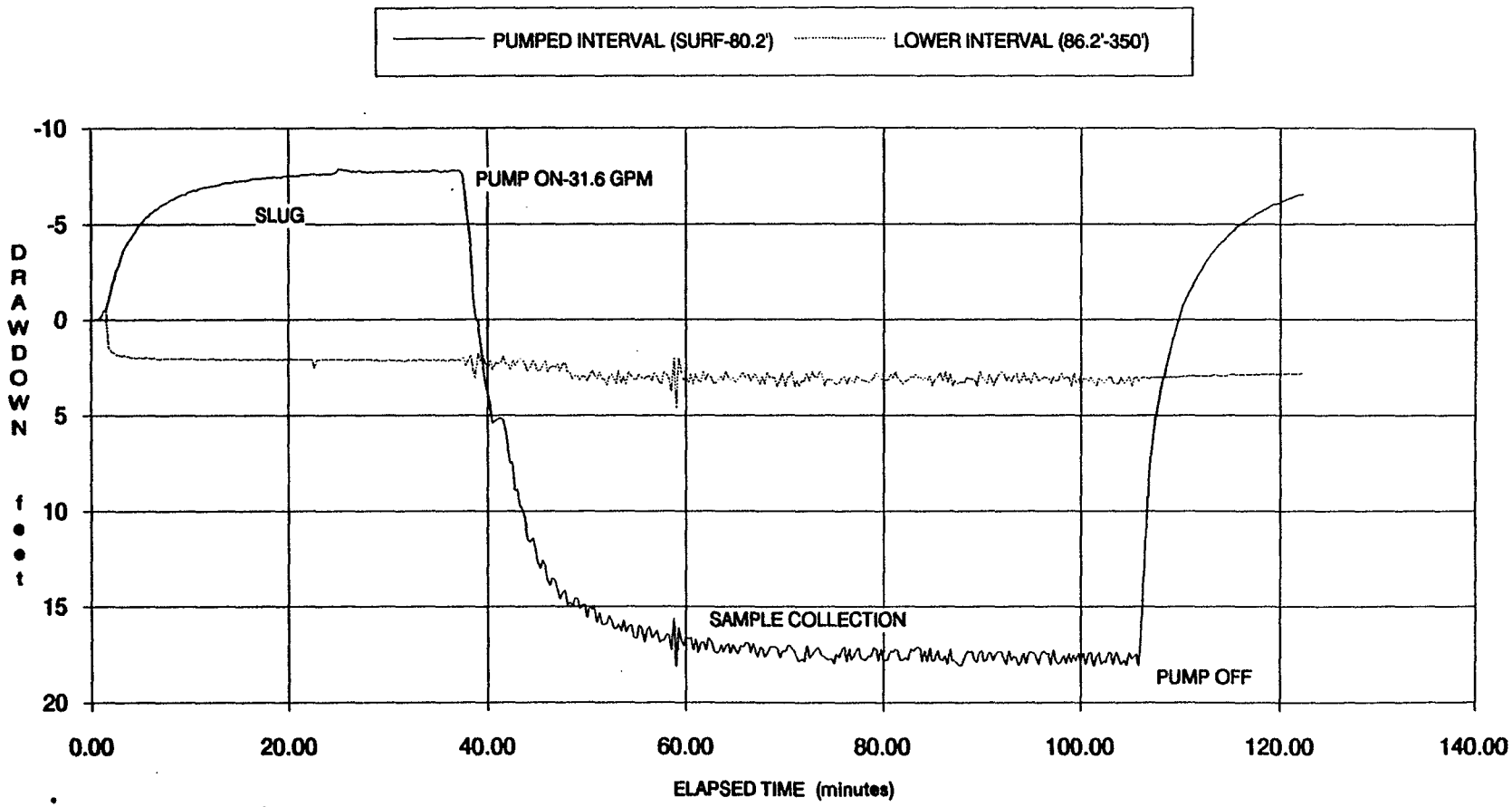
AR302843

PACKER TEST: TB-7 (ZONE 5)



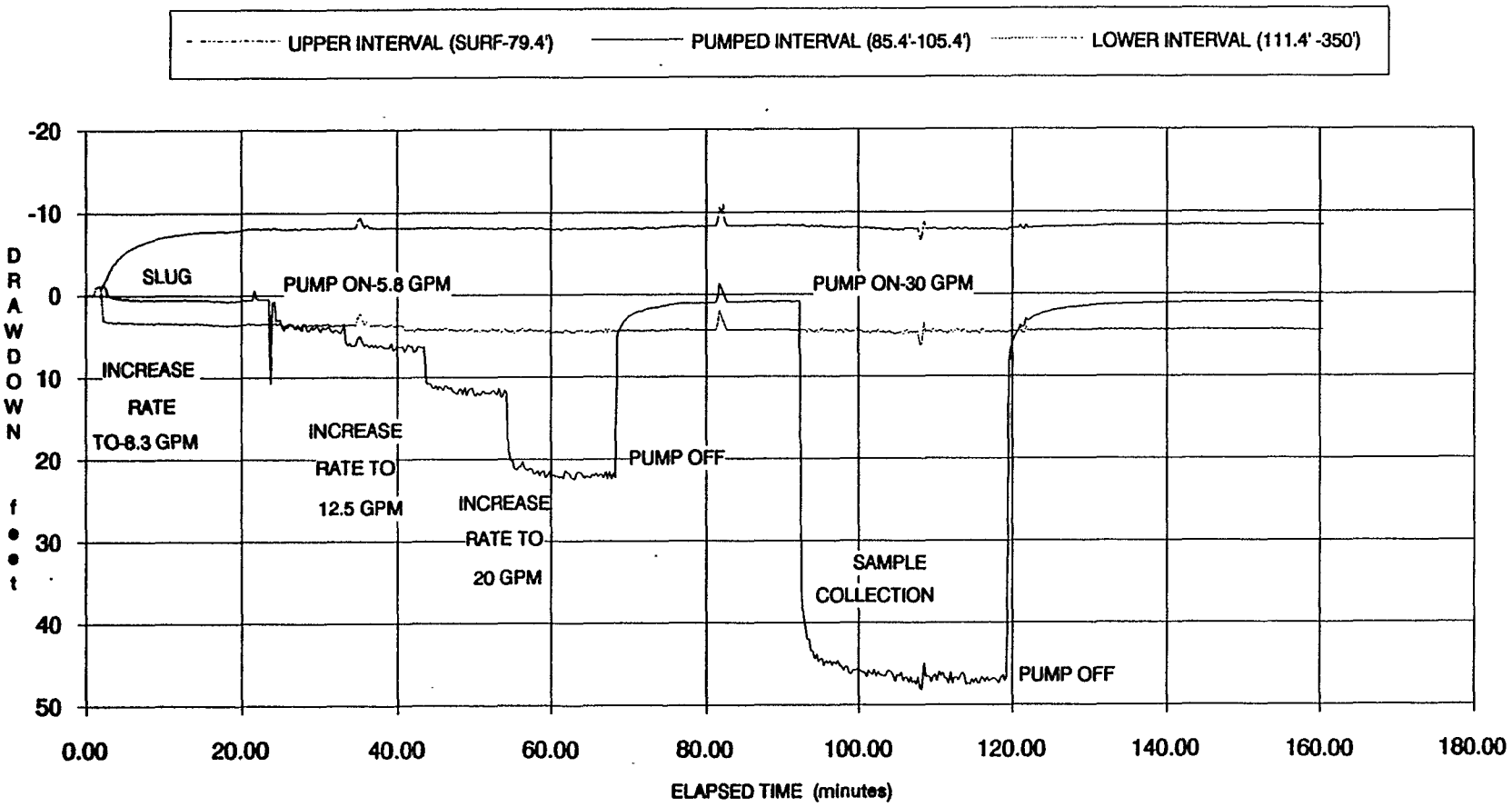
AR302841

PACKER TEST: TB-8 (ZONE 1B)



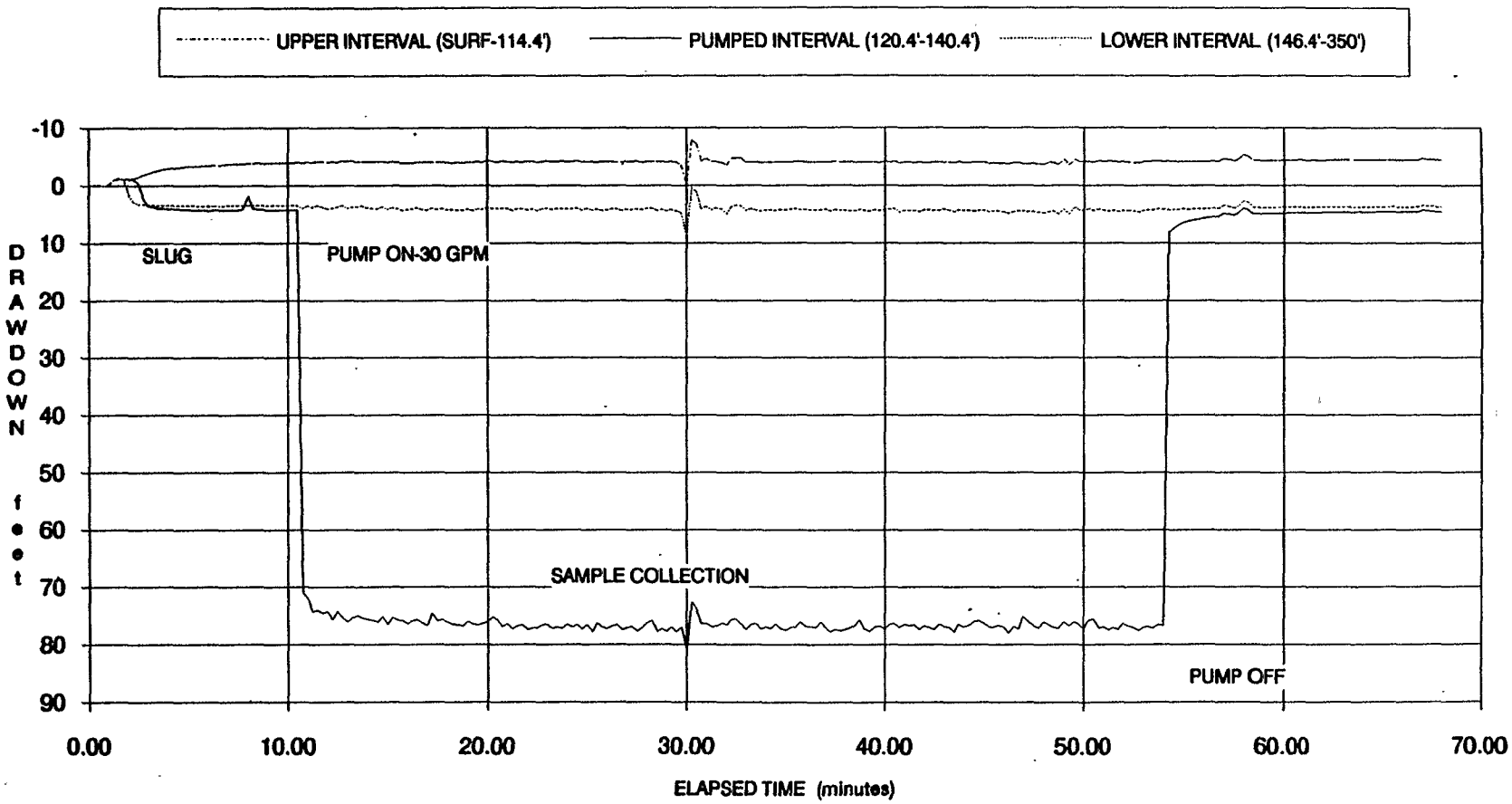
AR302845

PACKER TEST: TB-8 (ZONE 2)

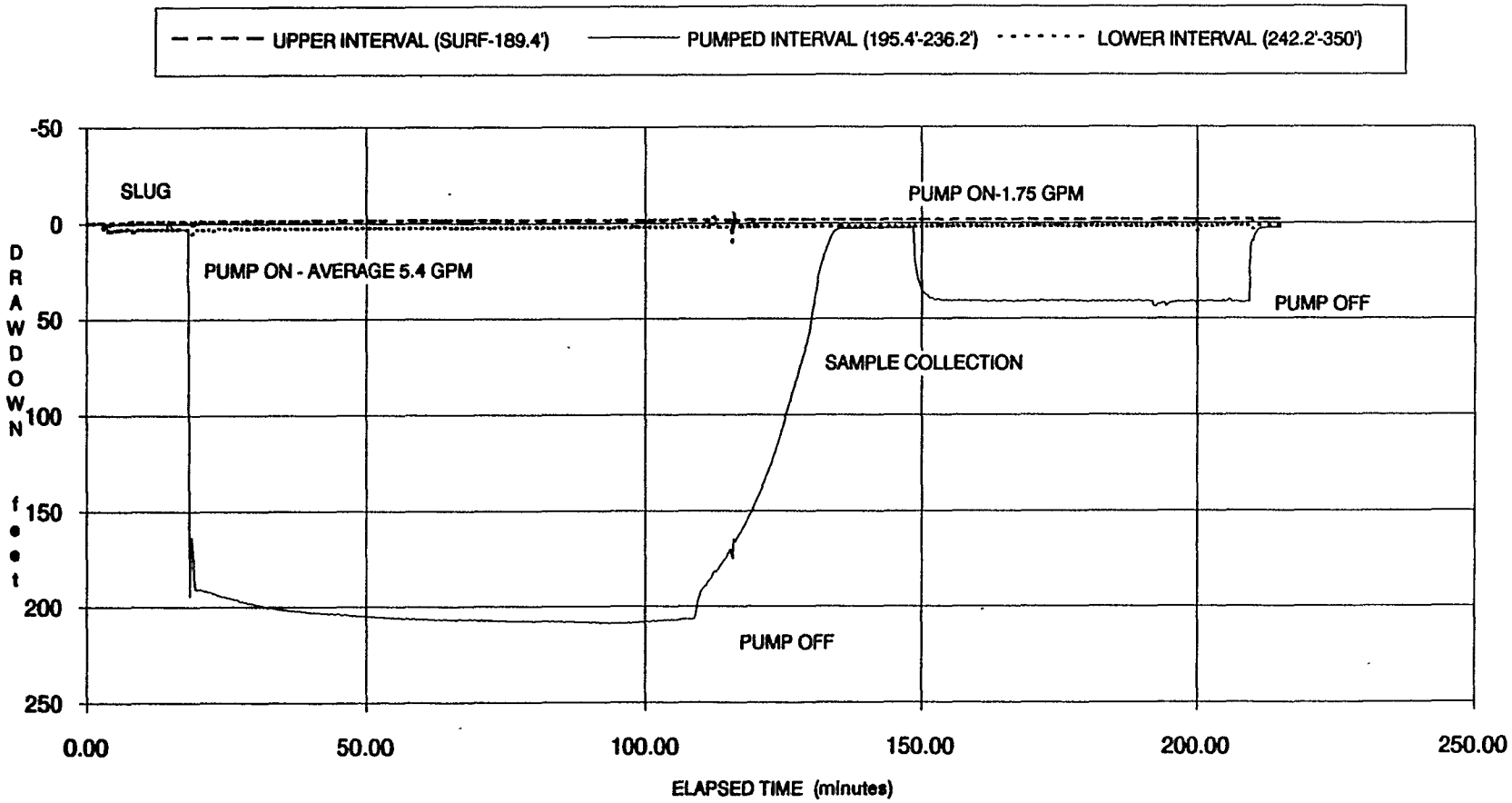


AR302846

PACKER TEST: TB-8 (ZONE 3)

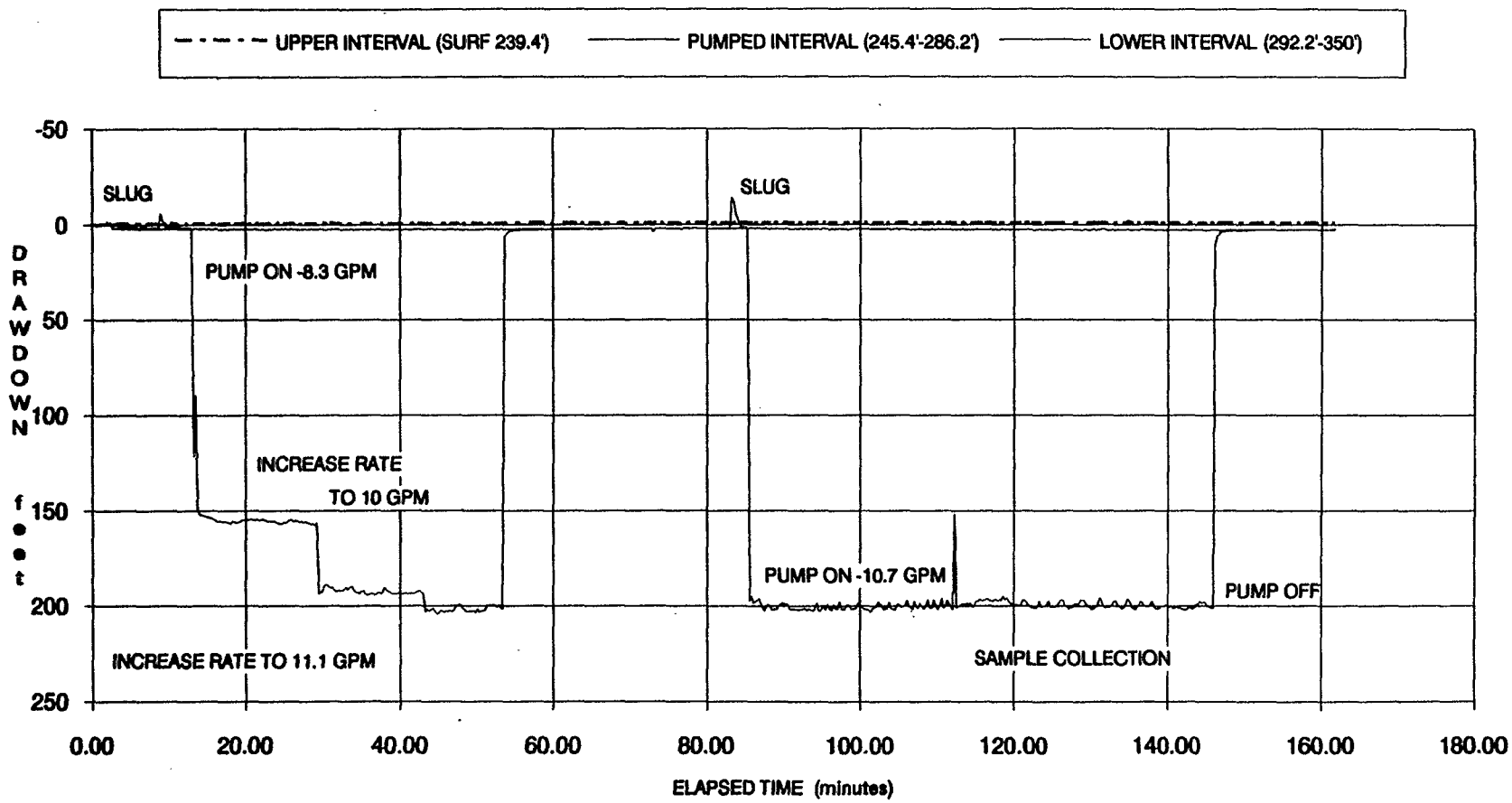


PACKER TEST: TB-8 (ZONE 4)



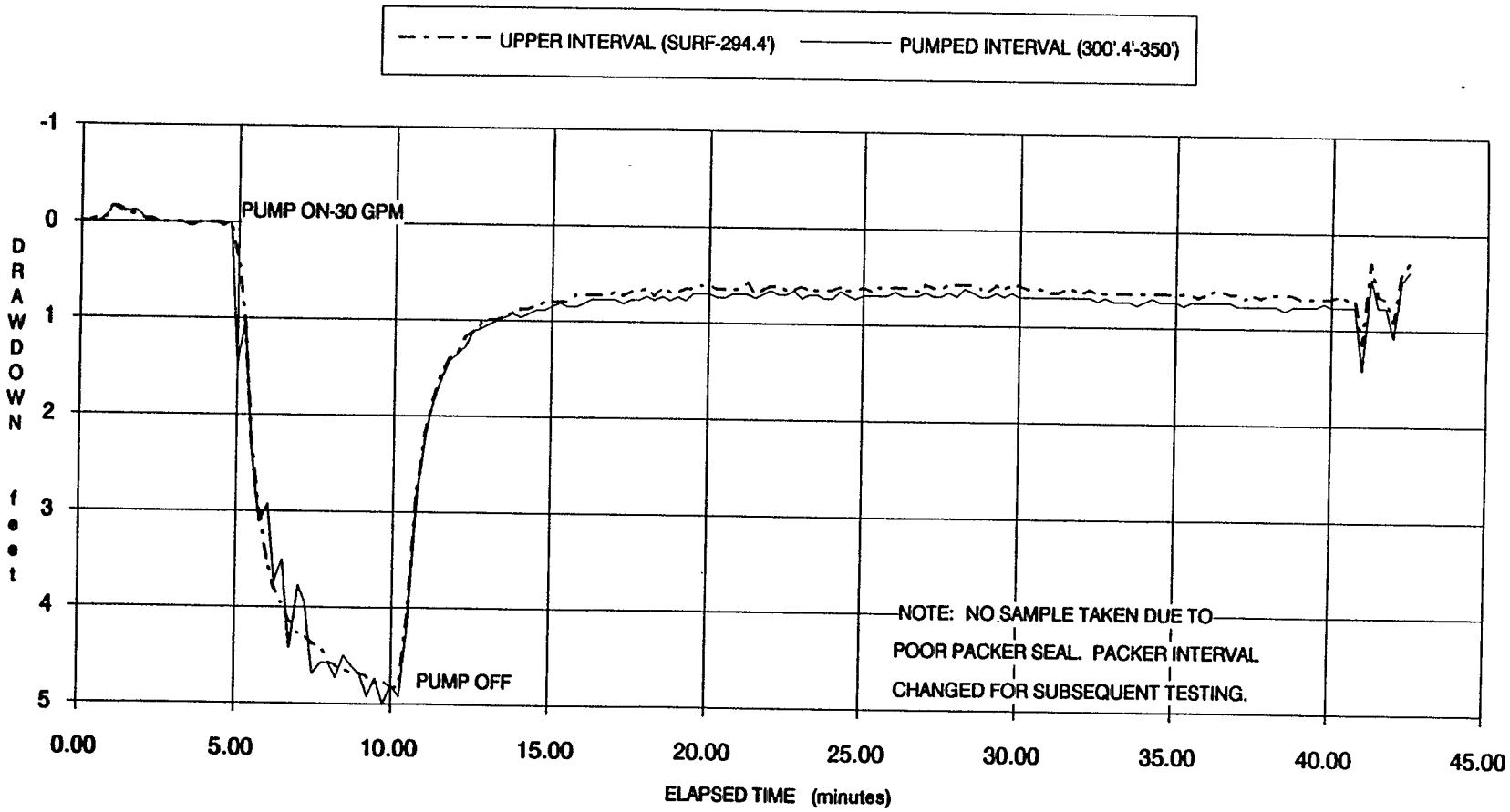
AR302848

PACKER TEST: TB-8 (ZONE 5)



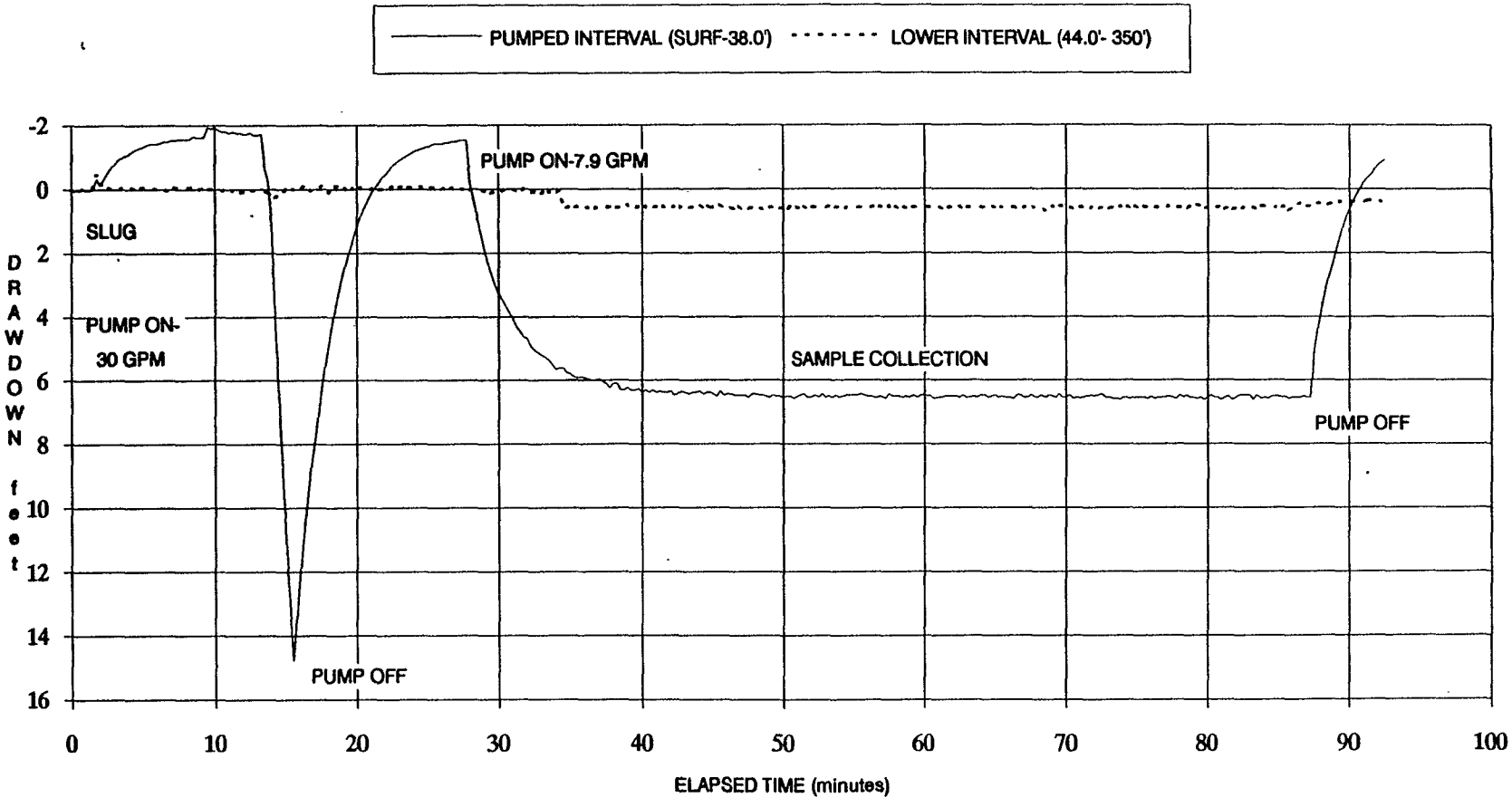
AR302849

PACKER TEST: TB-8 (ZONE 6)



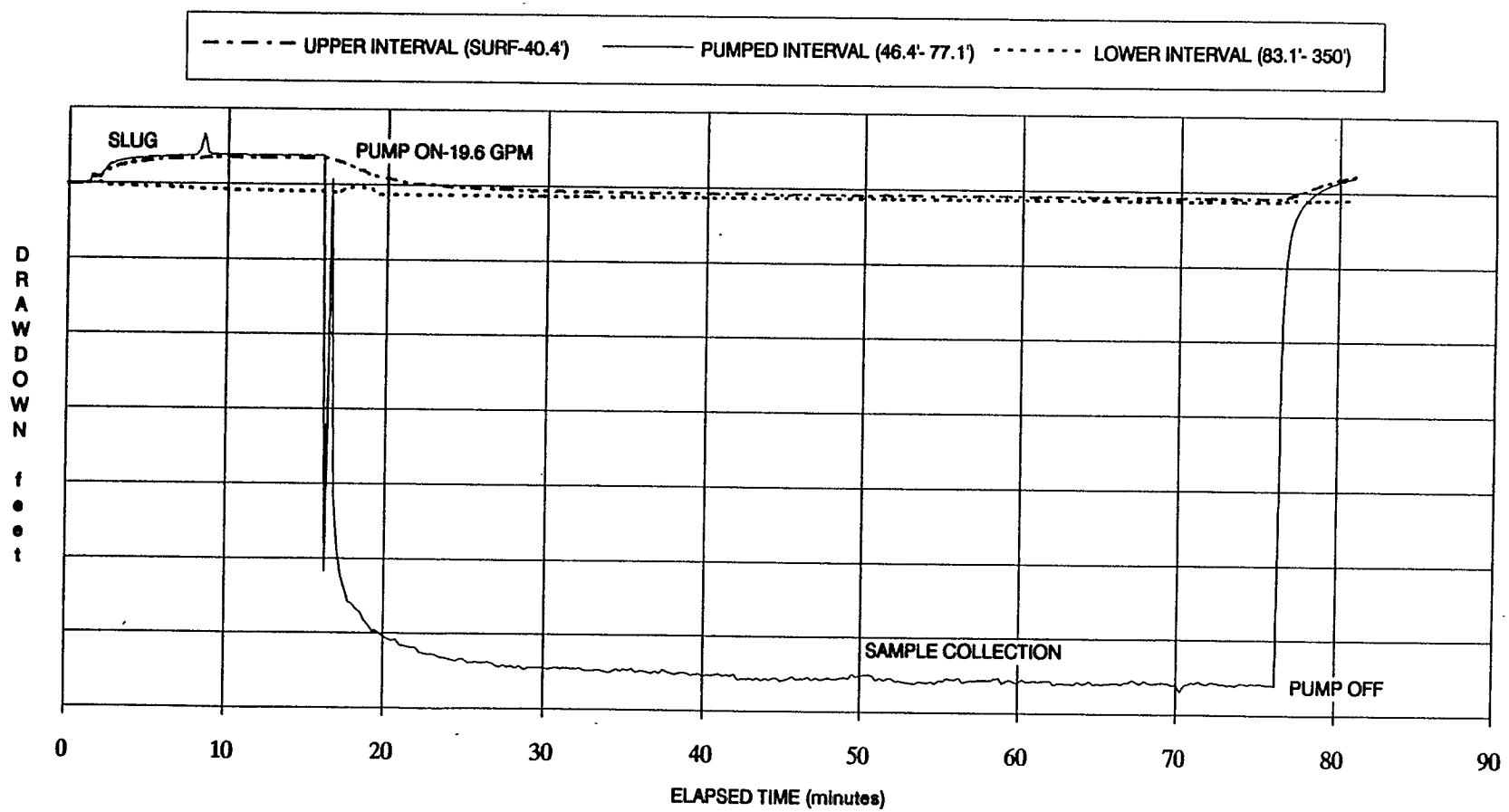
AR302850

PACKER TEST: TB-10 (ZONE 1)



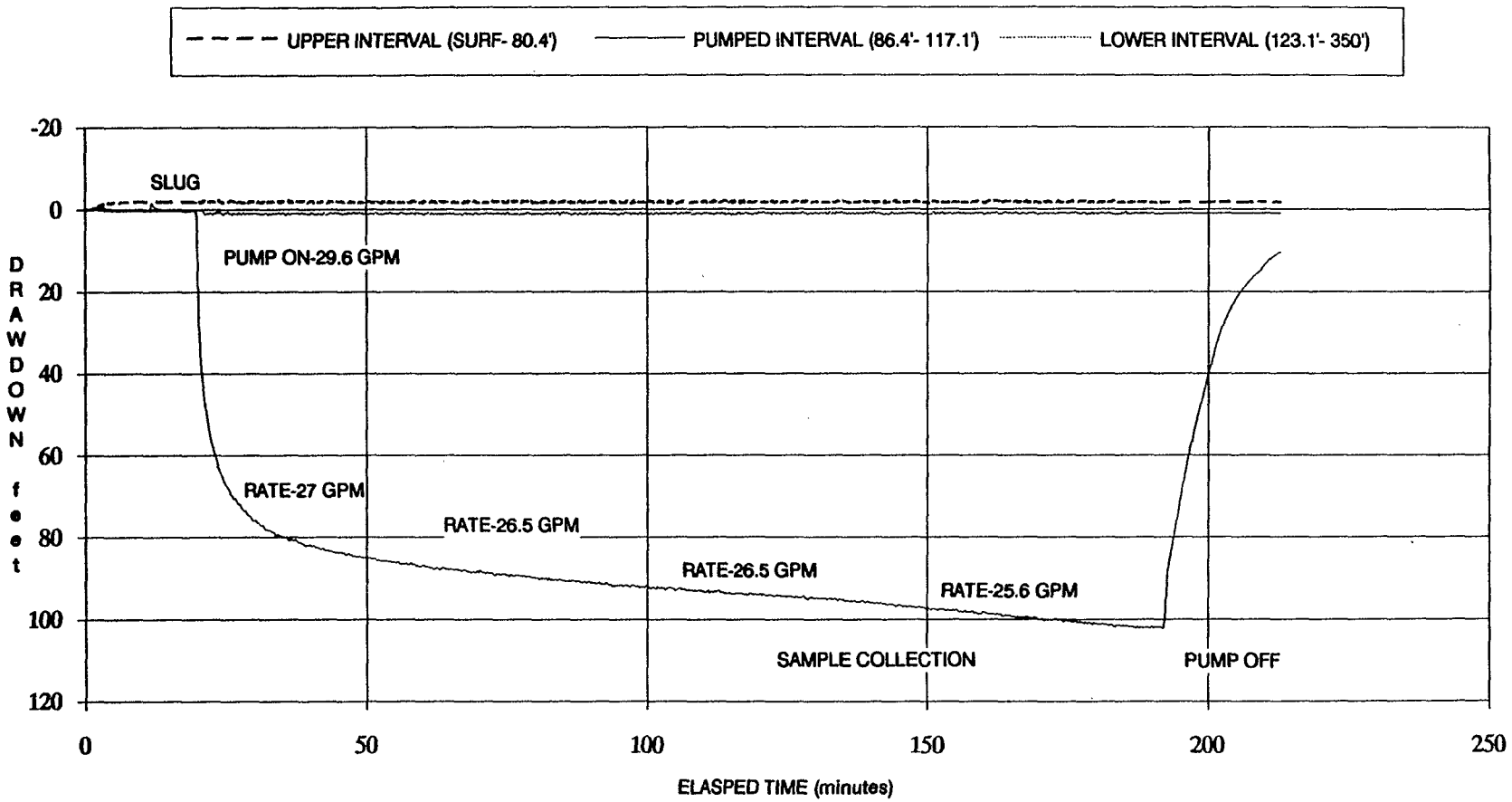
AR302851

PACKER TEST: TB-10 (ZONE 2)



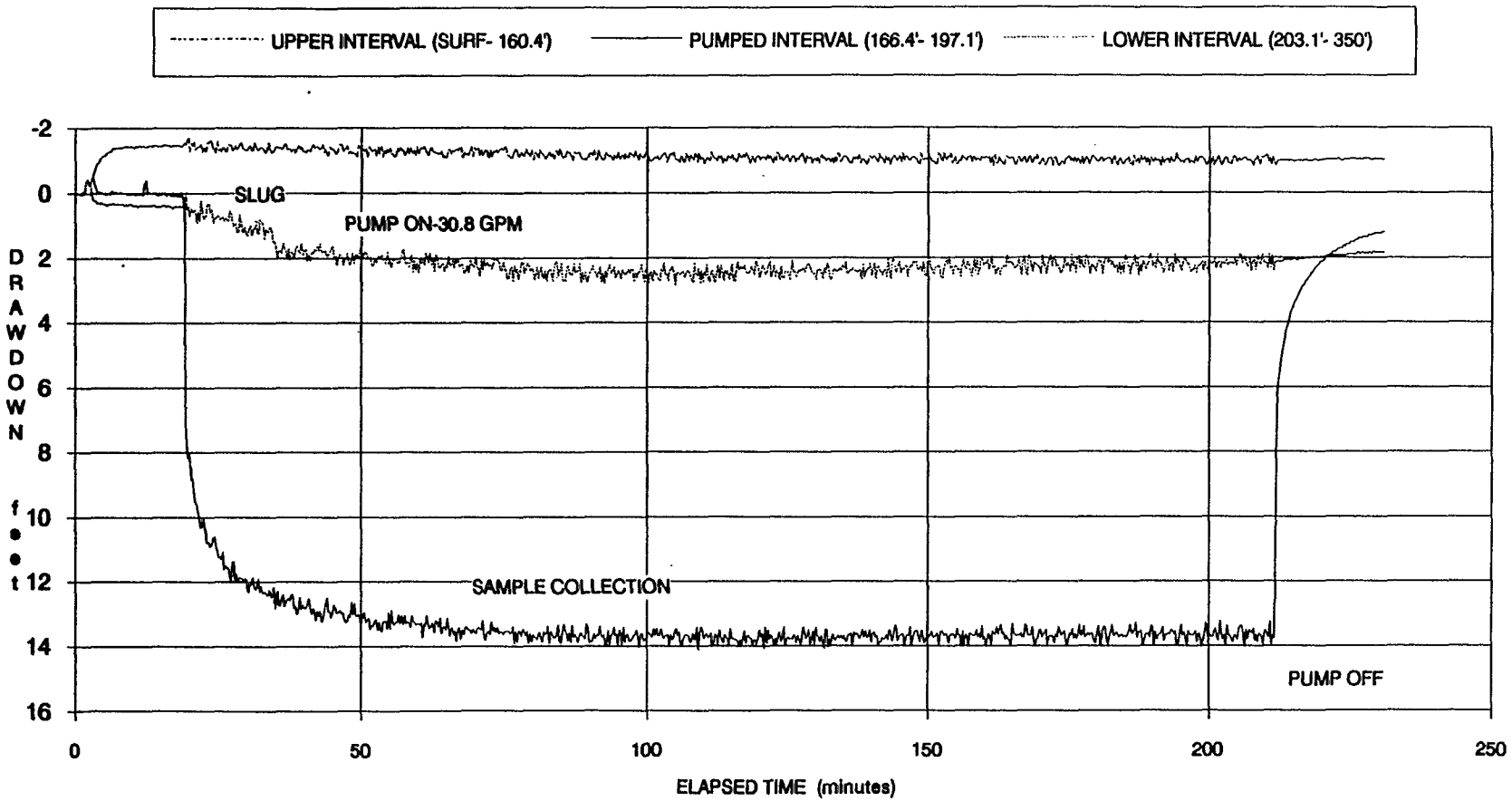
AR302852

PACKER TEST: TB-10 (ZONE 3)



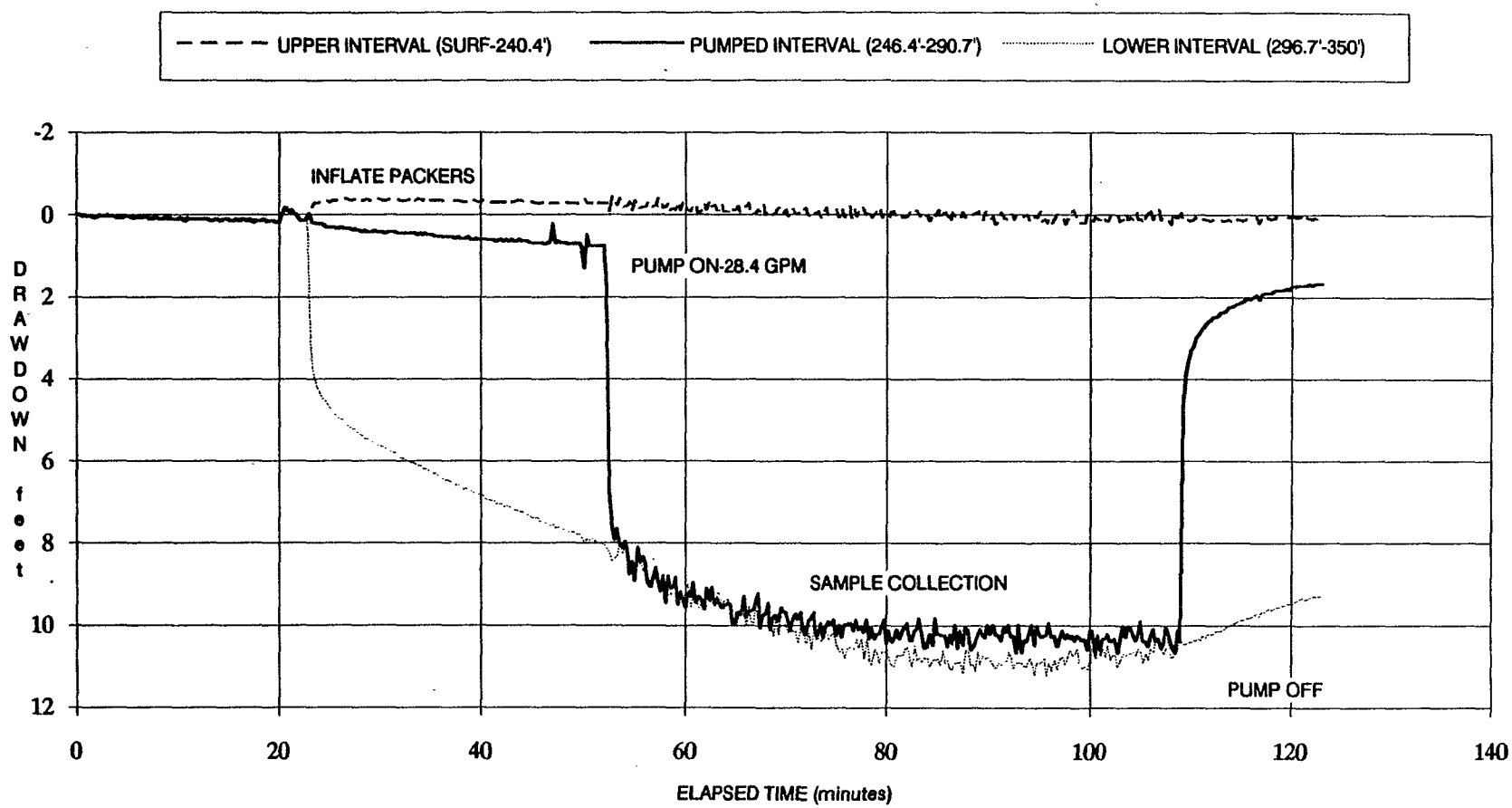
AR302853

PACKER TEST: TB-10 (ZONE 4)



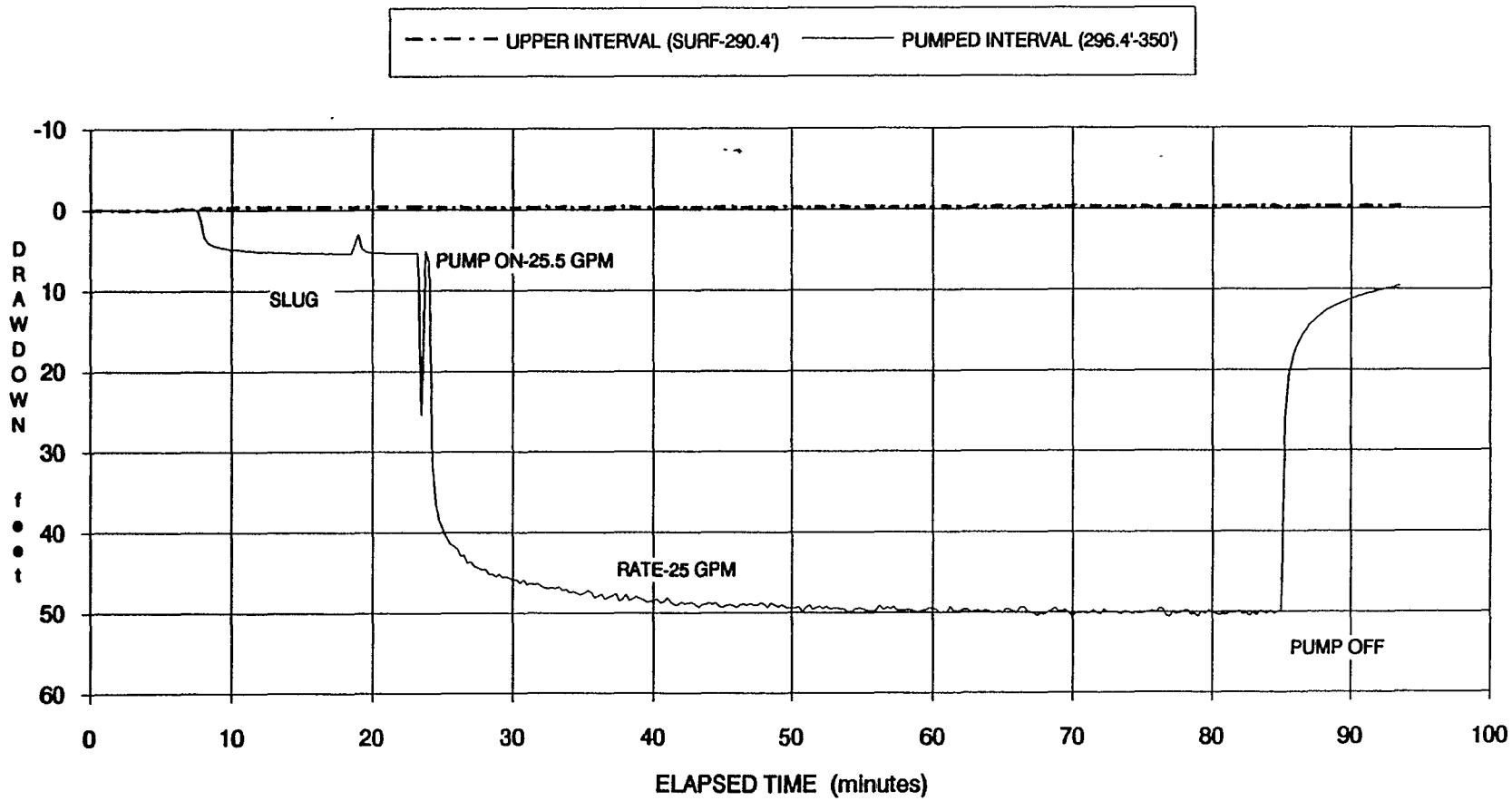
AR302854

PACKER TEST: TB-10 (ZONE 5)



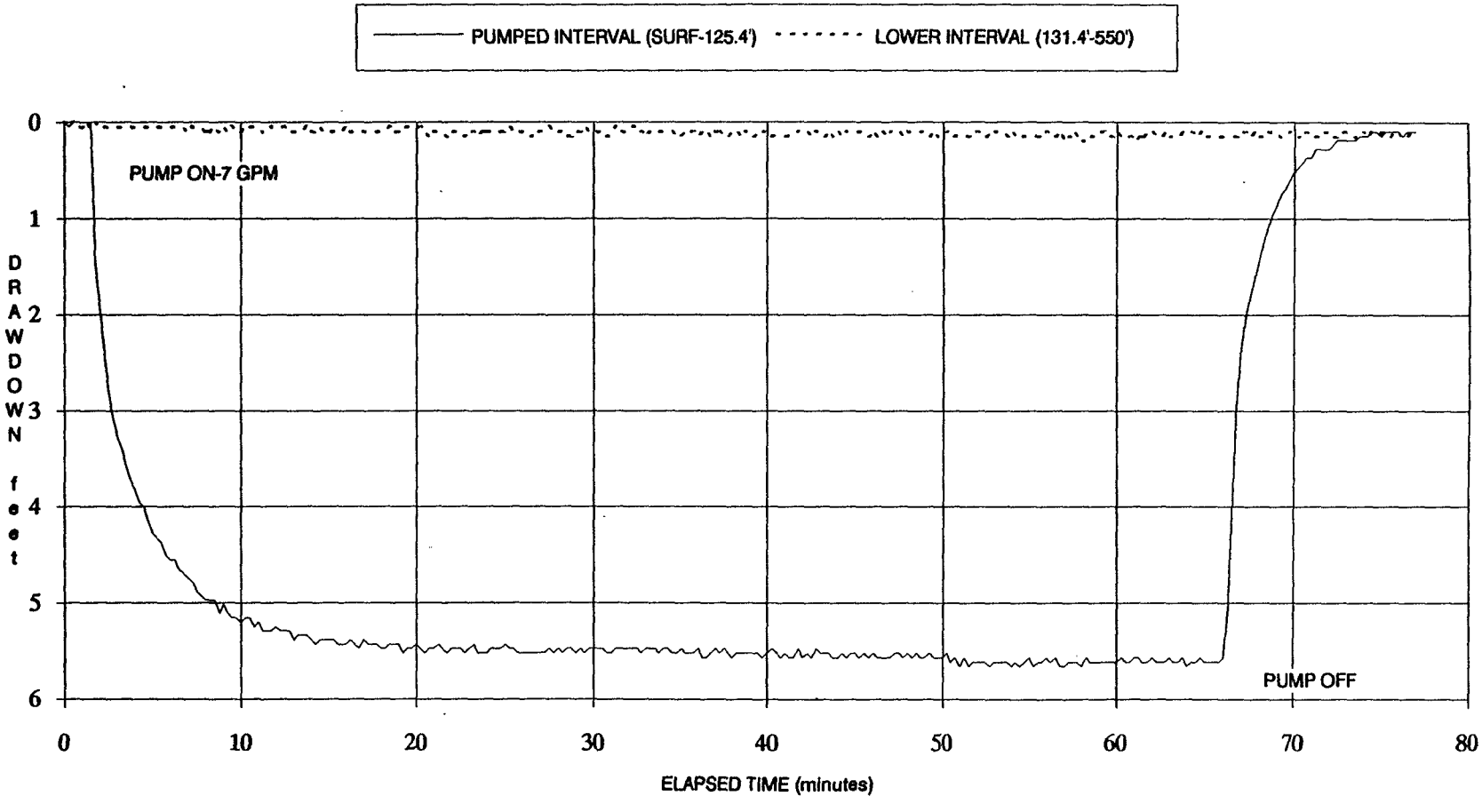
AR302855

PACKER TEST: TB-10 (ZONE 6)



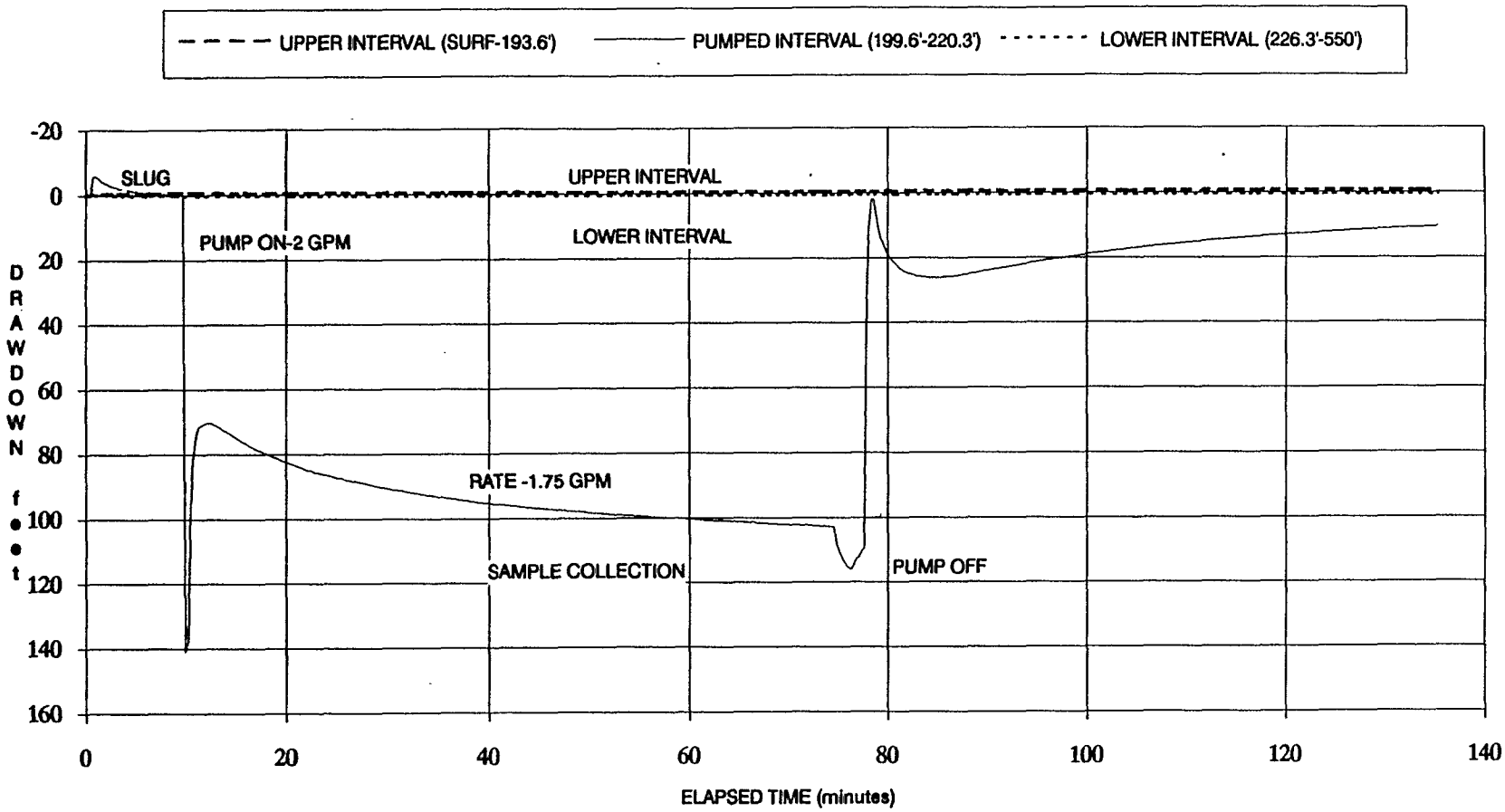
AR302856

PACKER TEST: PW-1R (ZONE 1B)



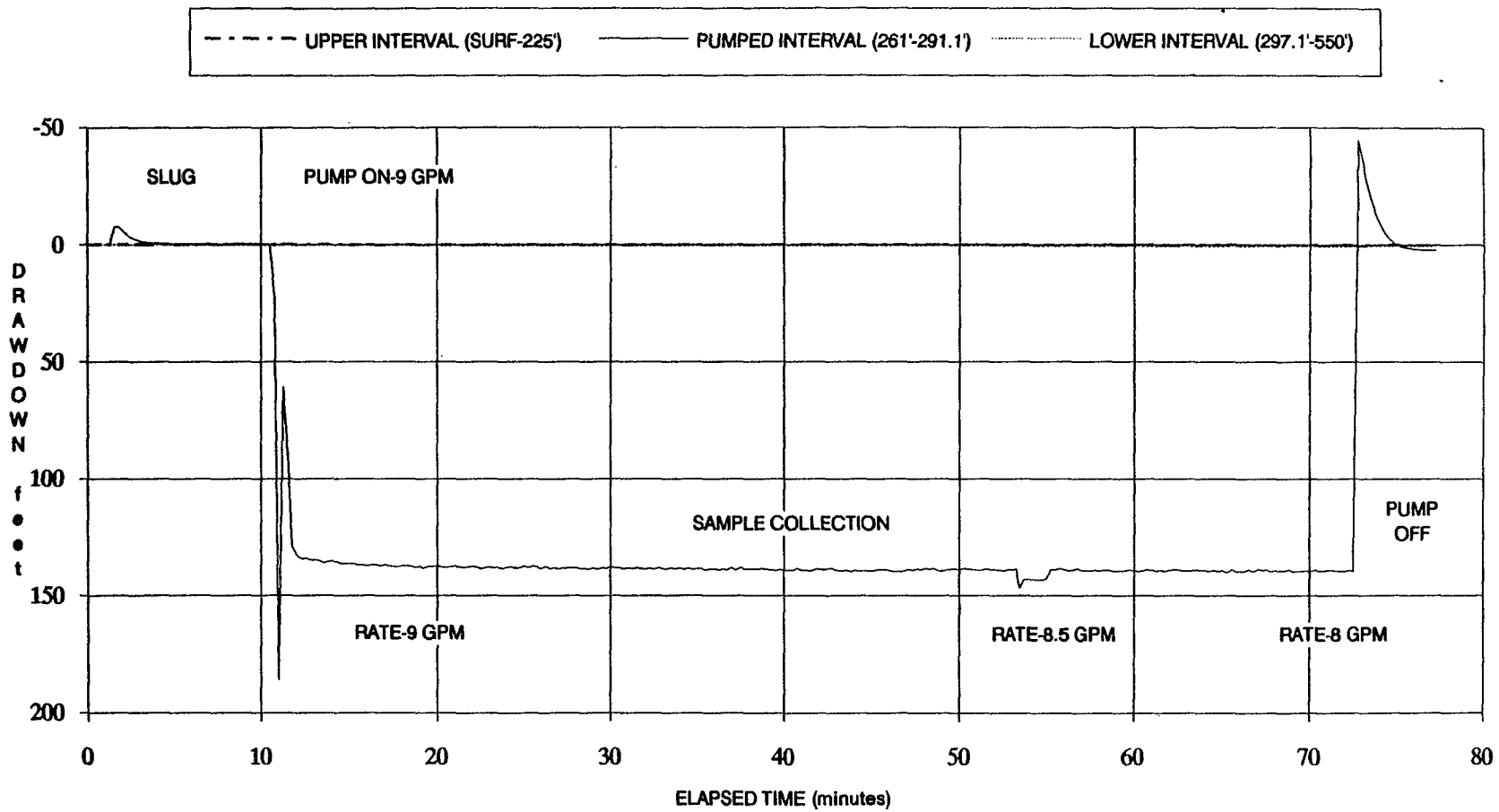
AR302857

PACKER TEST: PW-1R (ZONE 2B)



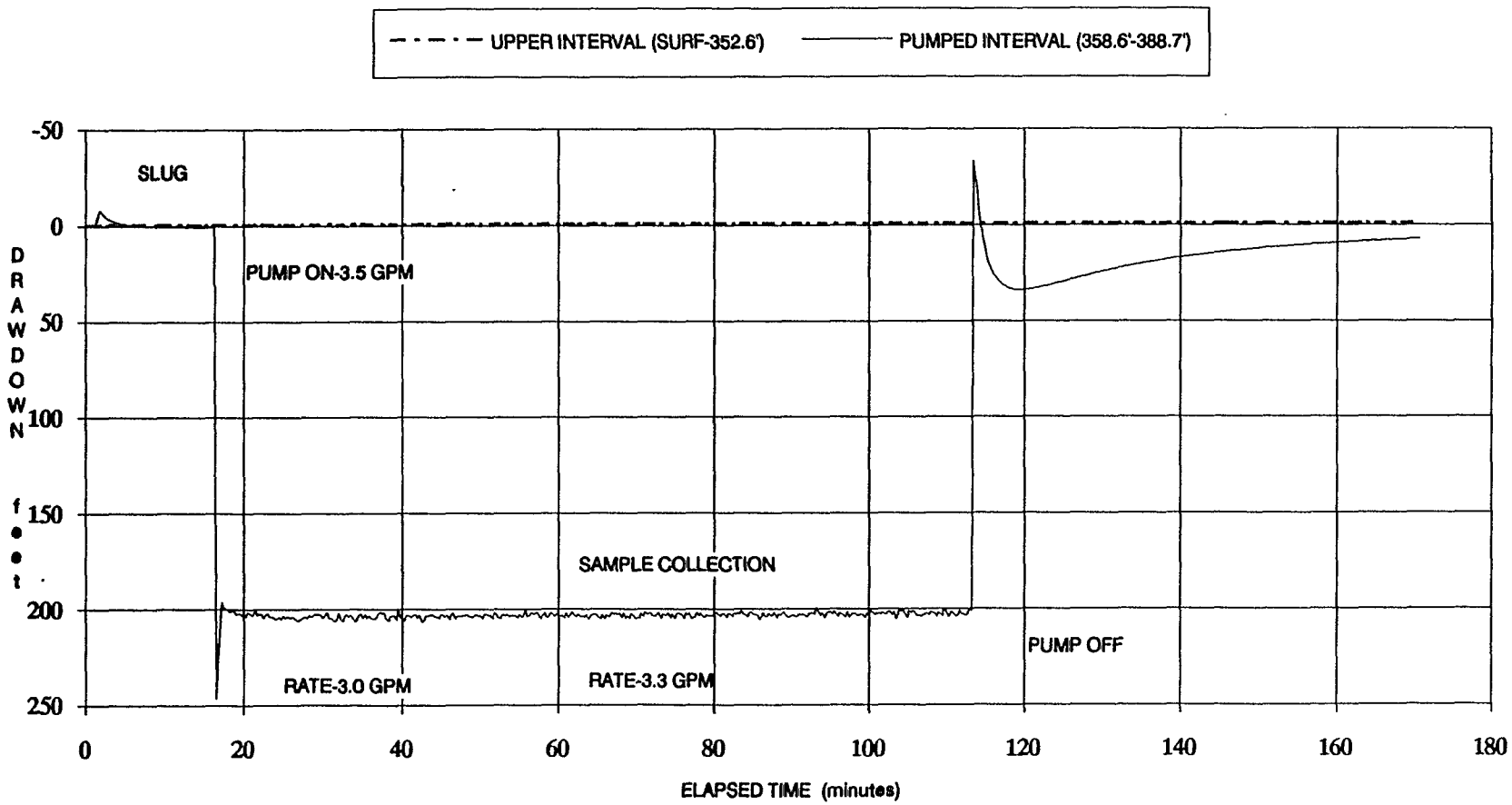
AR302858

PACKER TEST: PW-1R (ZONE 3)



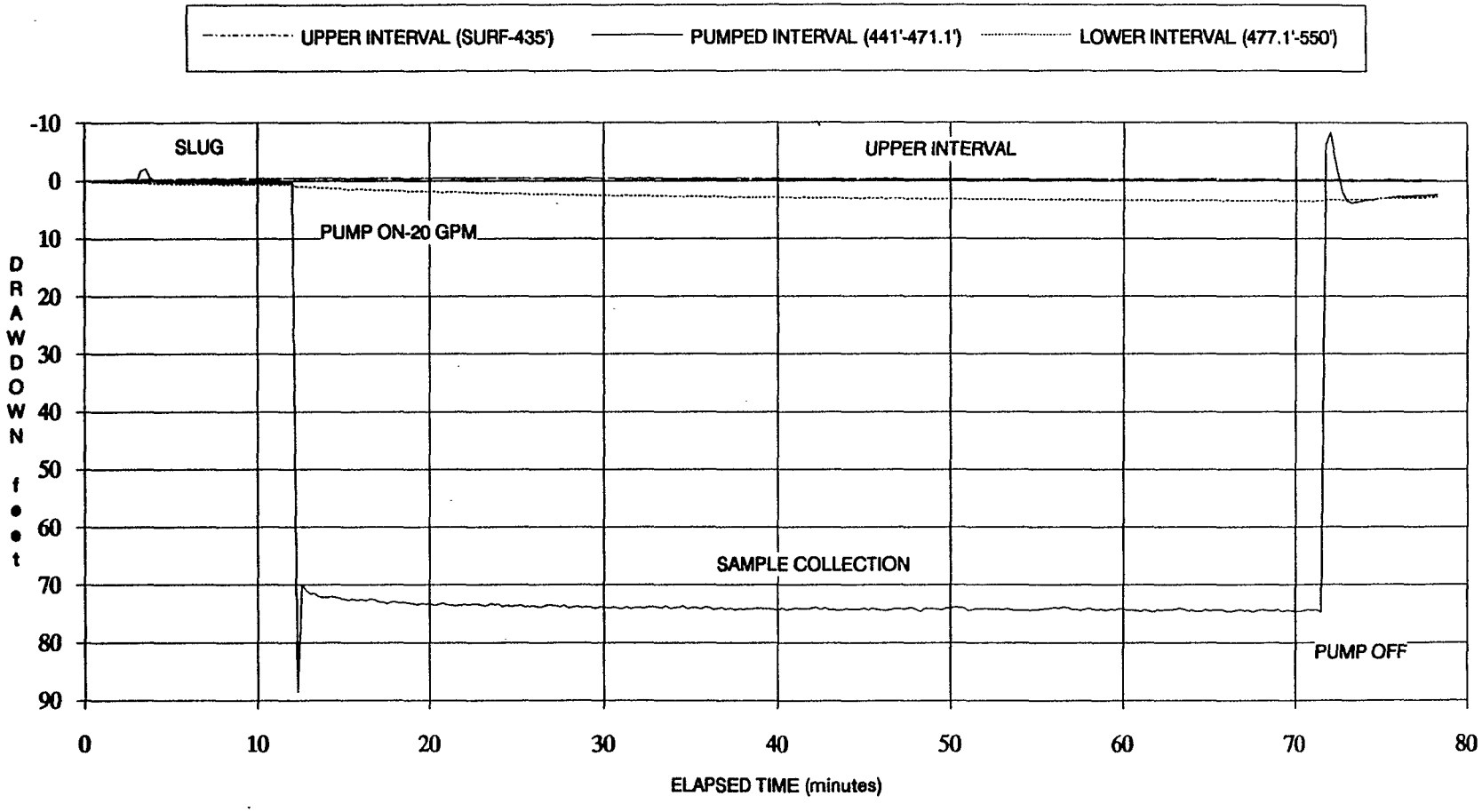
AR302859

PACKER TEST: PW-1R (ZONE 4)



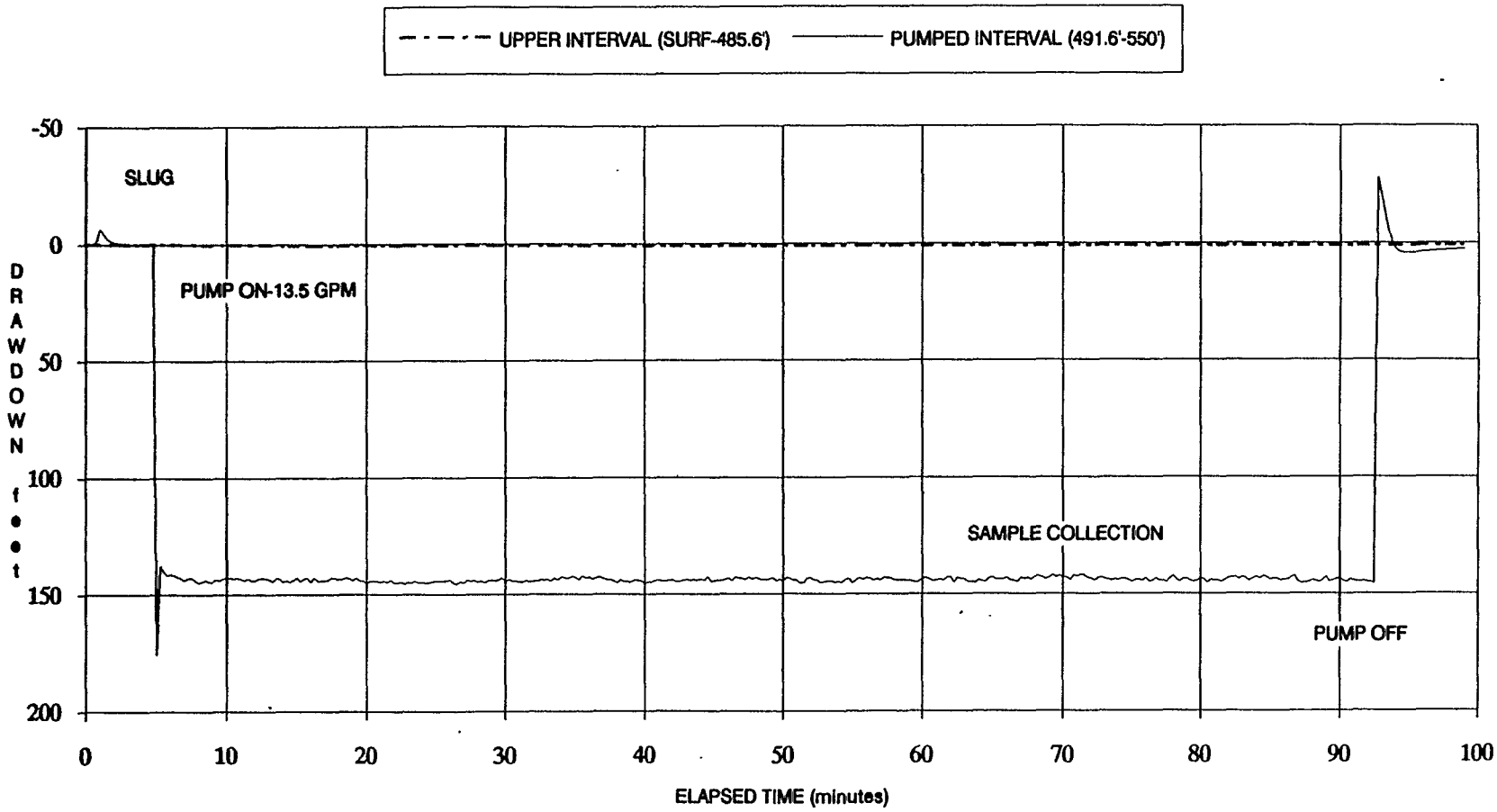
AR302860

PACKER TEST: PW-1R (ZONE 5)



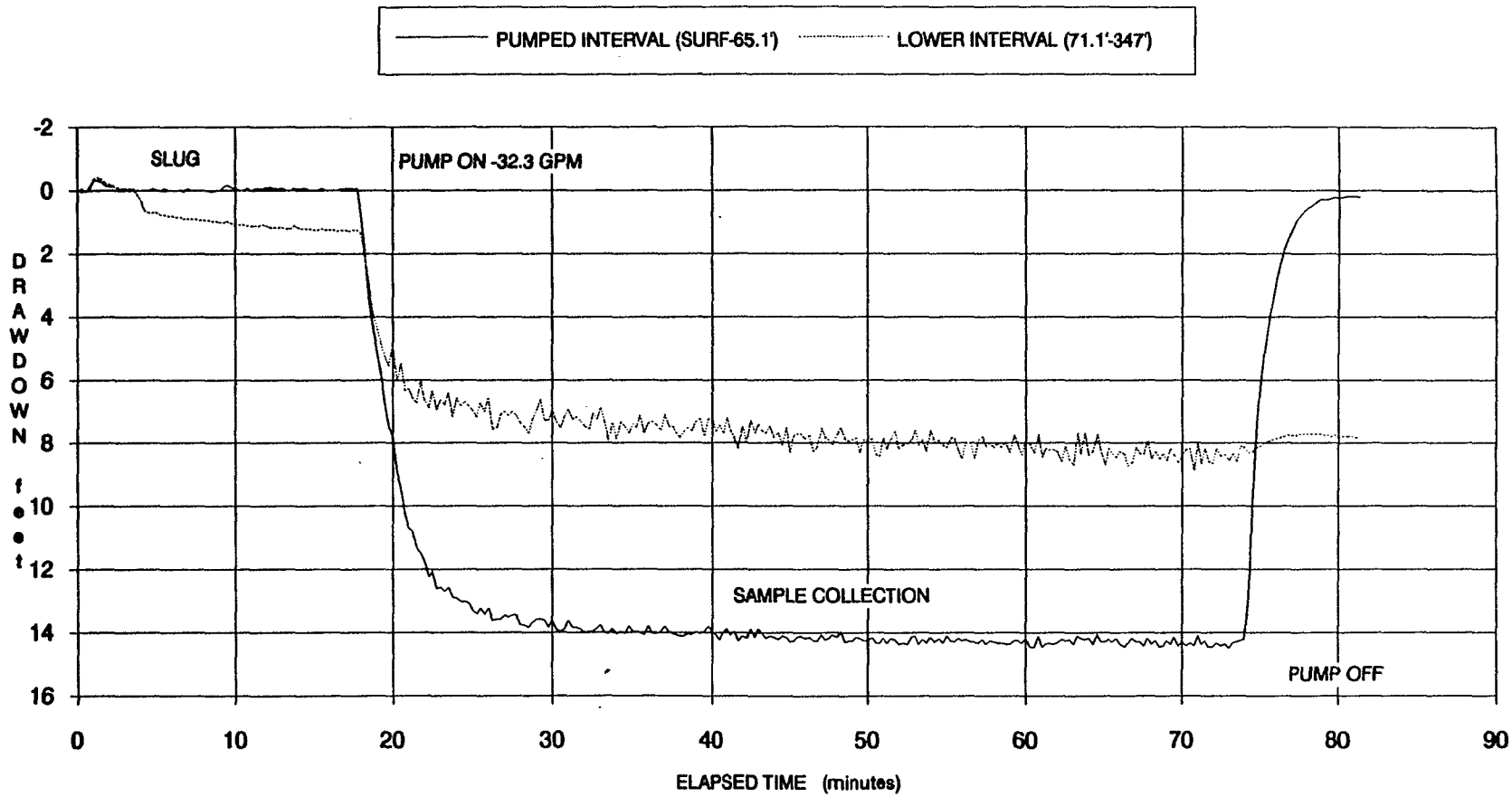
AR302861

PACKER TEST: PW-1R (ZONE 6)



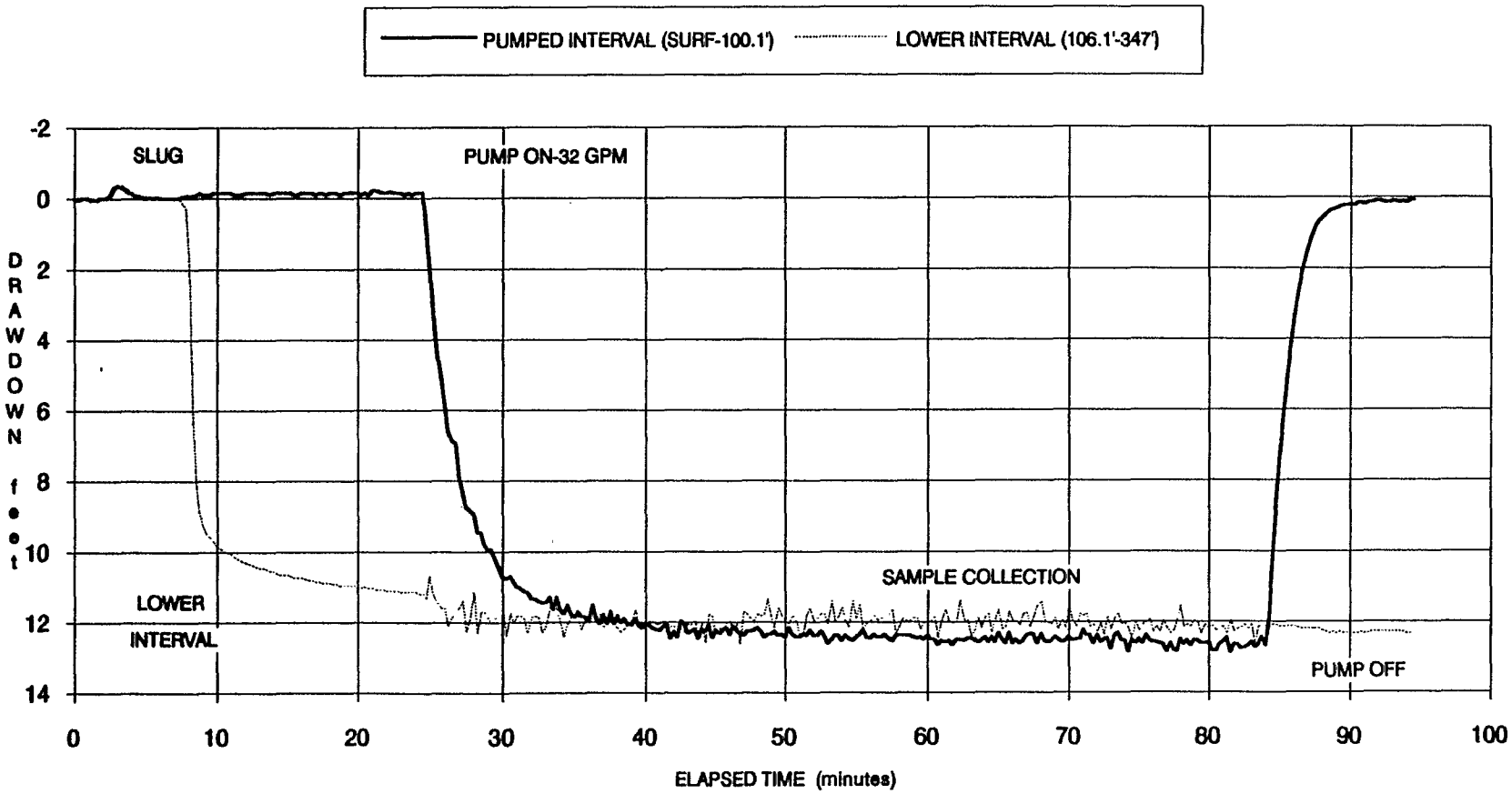
AR302862

PACKER TEST: PW-7 (ZONE 1B)



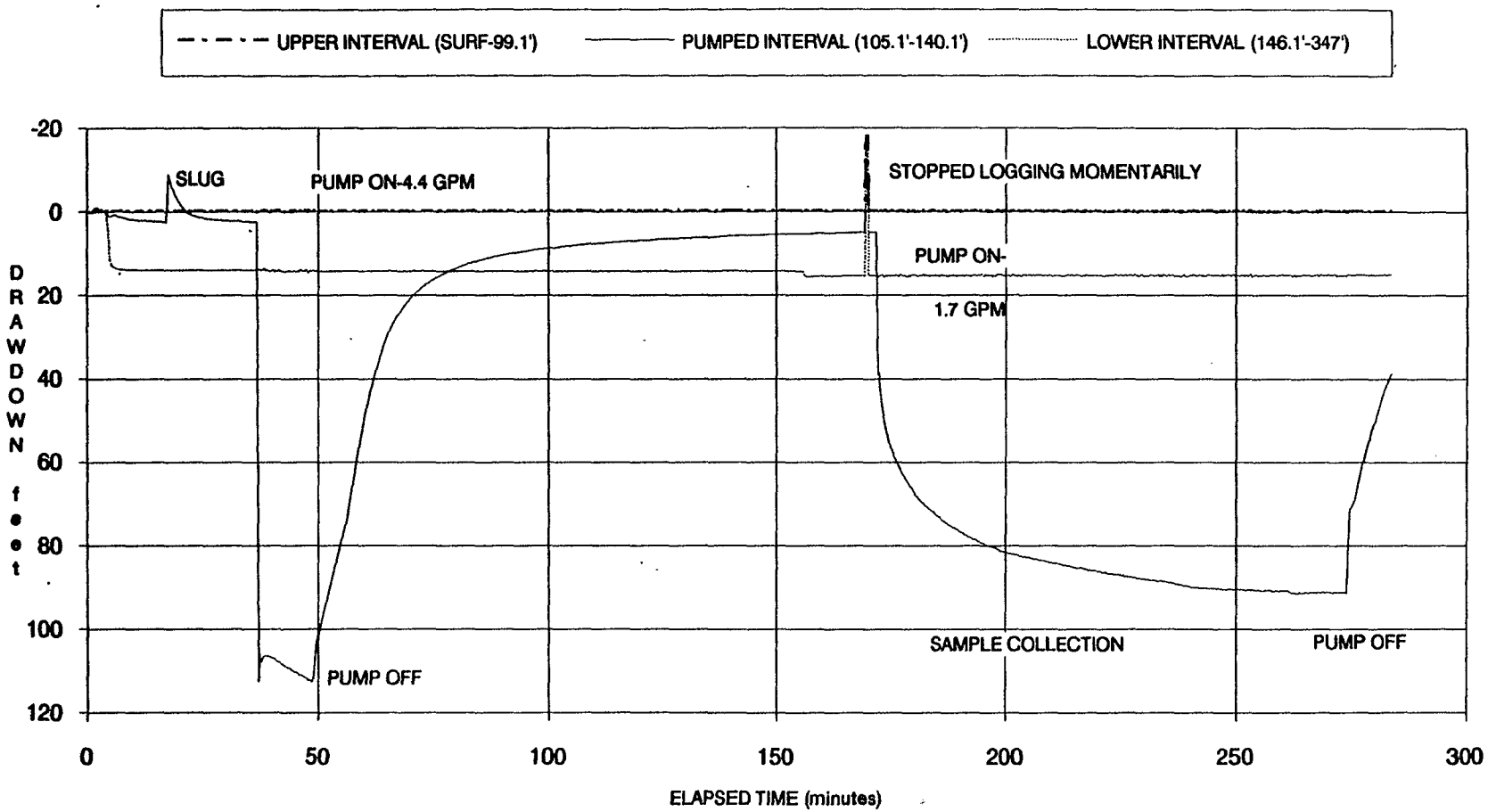
AR302863

PACKER TEST: PW-7 (ZONE 2)



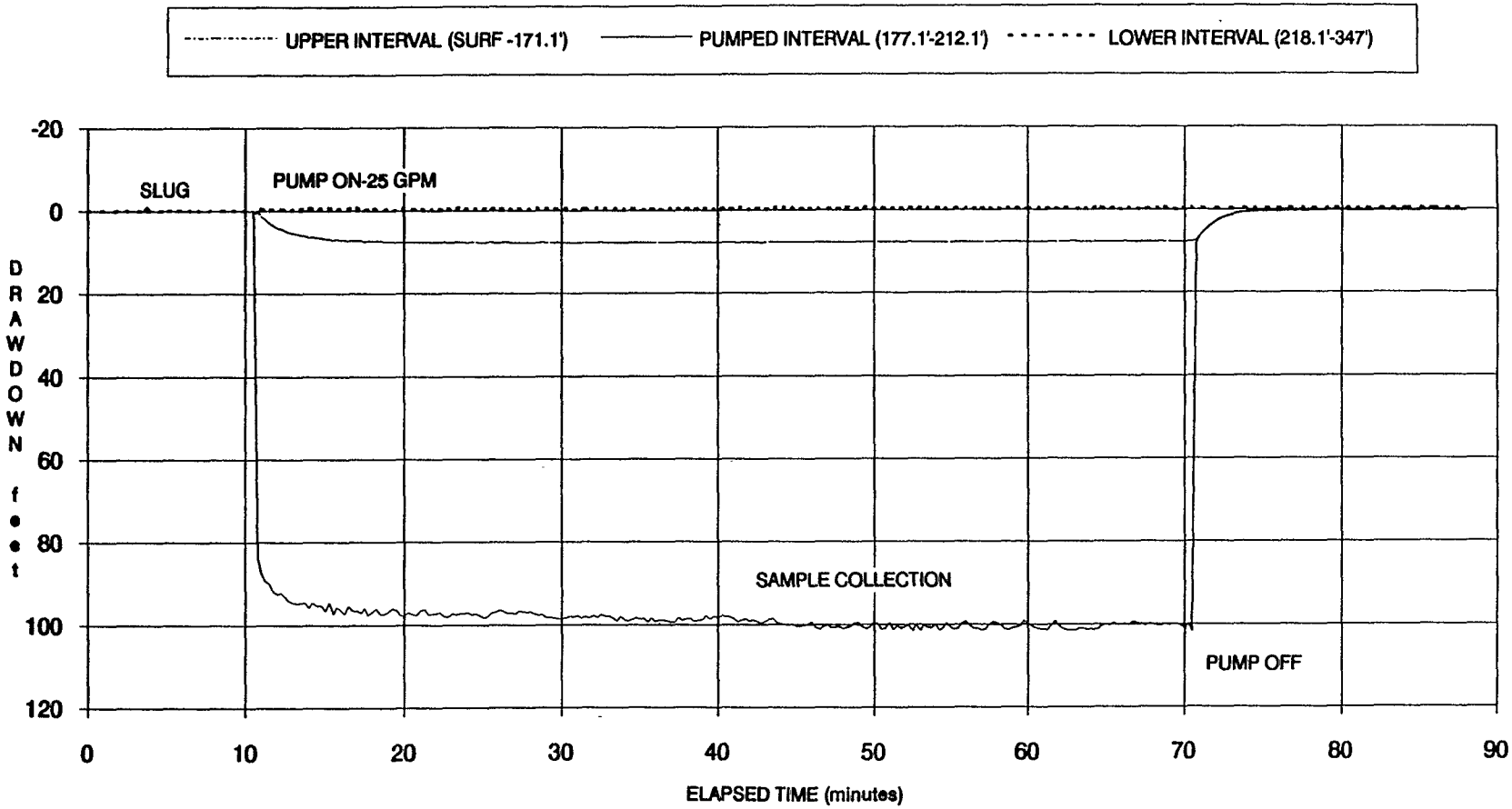
AR302864

PACKER TEST: PW-7 (ZONE 3)



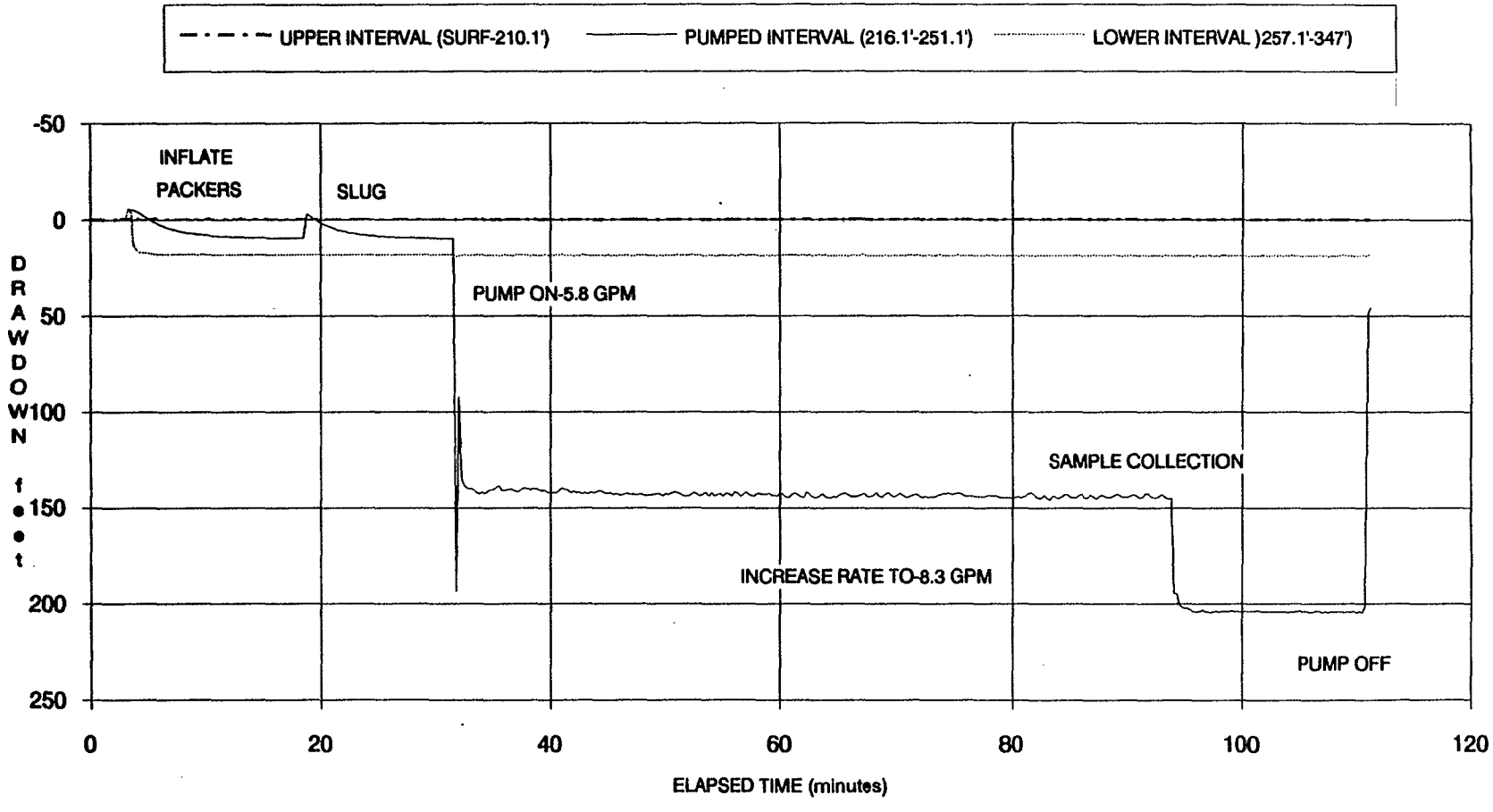
AR302865

PACKER TEST: PW-7 (ZONE 4)



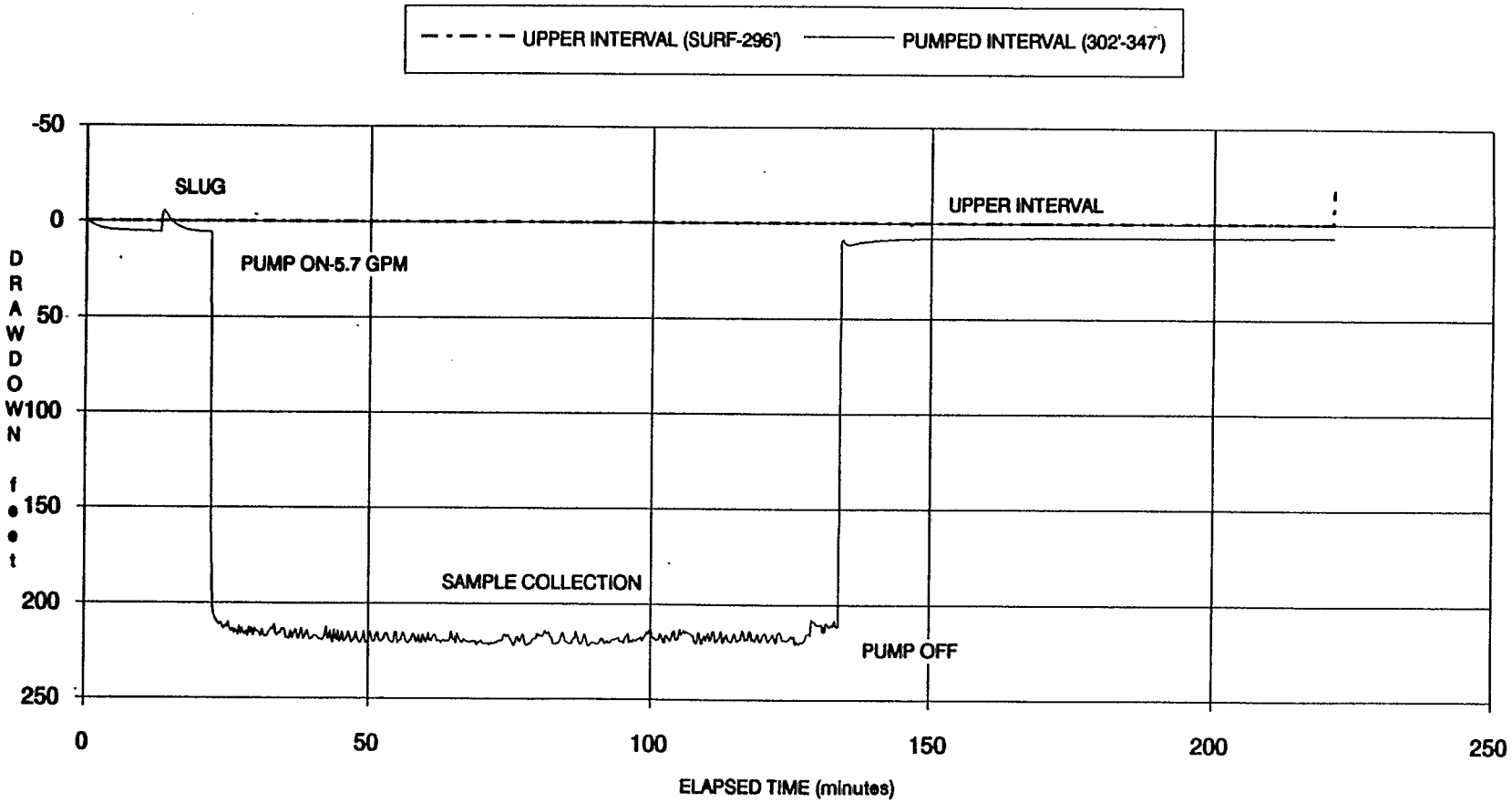
AR302866

PACKER TEST: PW-7 (ZONE 5)



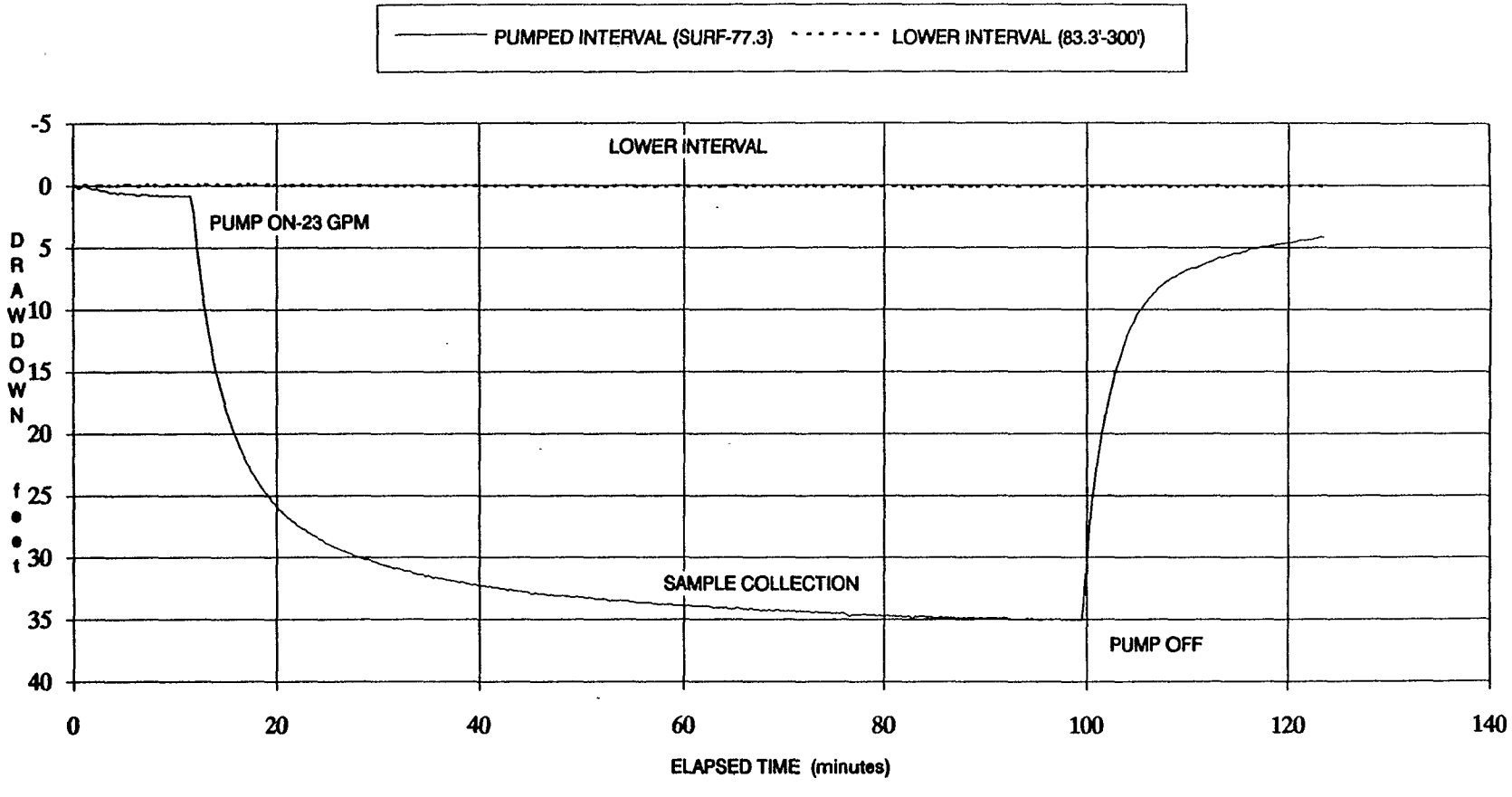
AR302867

PACKER TEST: PW-7 (ZONE 6)



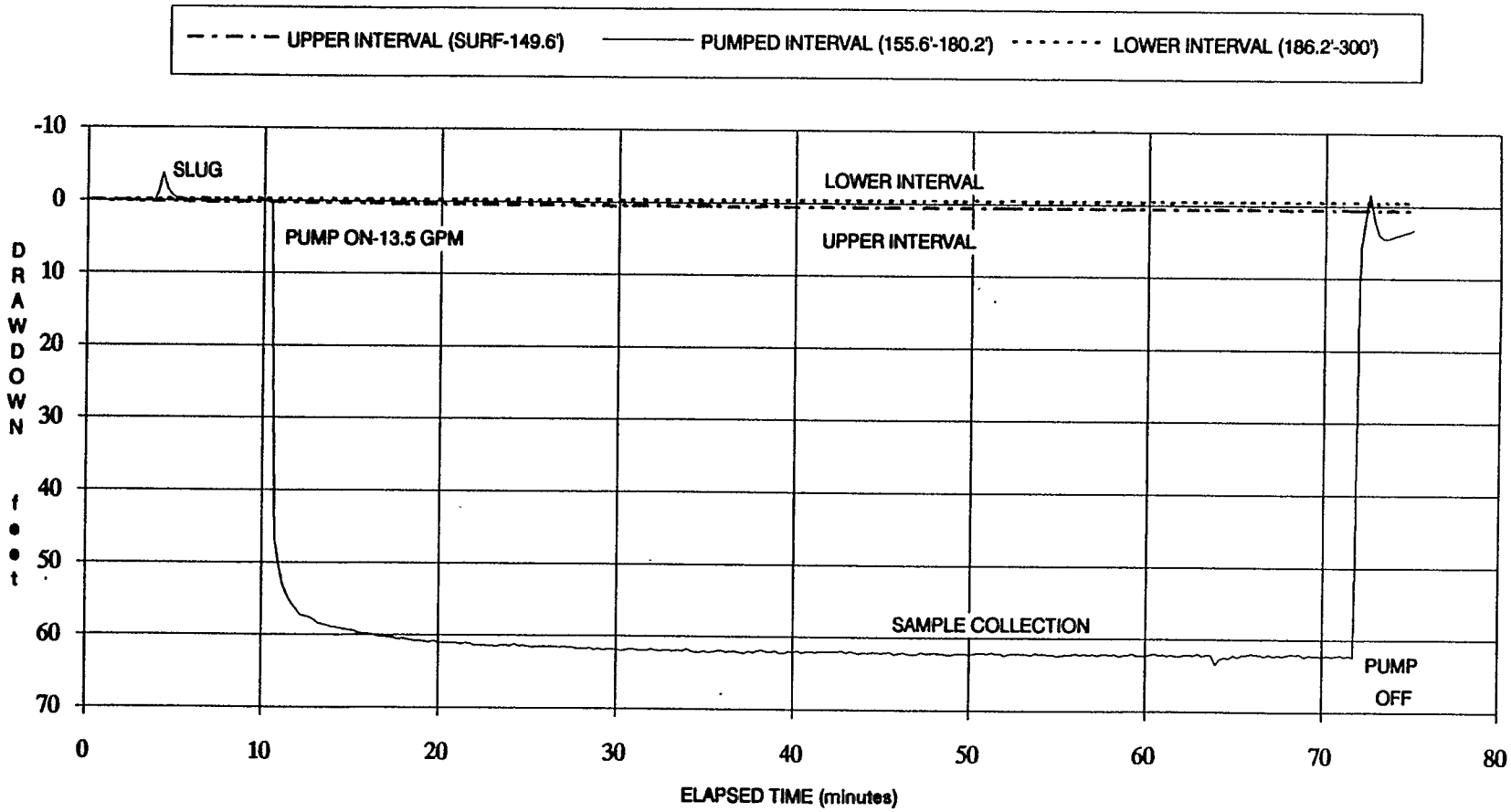
AR302868

PACKER TEST: TB-9 (ZONE 1)



AR302869

PACKER TEST: TB-9 (ZONE 2)



AR302870