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INTERIM CHANGE NOTICE (ICN)

TJA 3/22/00

A. Document No.: PNNL-12114 **Revision No.:** 1 September 1999

Document Title: RCRA Assessment Plan for Single-Shell Tank Waste Management Area S-SX at the Hanford Site, September 1999

Document's Original Author: V. G. Johnson and C. J. Chou

Effective Date of ICN: 03/27/2000

Change Requested By: V. G. Johnson

B. Action:
Make changes in the S-SX groundwater quality assessment plan, as described below in Section D. Attach this ICN to the front of the document.

C. Effect of Change:
Documents completion of planned drilling (PNNL-12114, Appendix A) of three new wells during CY 1999 for the ongoing assessment at WMA S-SX. One new well (299-W22-48) improves downgradient spatial coverage at the S Farm and two (299-W22-49 and 299-W22-50) are replacements for two downgradient wells at the SX Farm that will soon go dry. Also adds one new well (299-W23-19) that was originally drilled as a vadose characterization borehole that was completed as a groundwater monitoring well near single shell tank SX-115. The change adds these four new wells to the quarterly sampling and analysis schedule for WMA S-SX.

D. Reason for Change/Description of Change:

Reason for Change: Update groundwater quality assessment plan at WMA S-SX (PNNL-12114) and document completion of three new wells as planned in PNNL 12114.

Description of Change: (1) Mark through Figure A.2 and refer to the new figure (attached); (2) On page A.13, 2nd line, mark through "plus three new wells planned for FY 99" and write in "299-W22-48, 299-W22-49, 299-W22-50." (3) On page A.13, 4th line, "delete 41-09-39 and insert 299-W23-19." (4) Insert as-built diagrams for new wells 299-W22-48, 299-W22-49, 299-W22-50 and 299-W23-19, at the end of Appendix B. (5) Mark through the last sentence on page 1.1 and write in: "Hexavalent chromium is identified as a toxicity characteristic contaminant in the Dangerous Waste Permit for single shell tanks, as defined in WAC 173-303-090 (Dangerous Waste Characteristics)."

E. Document Management Decisions:

F. Approval Signatures
(Please Sign and Date)
Process Quality Department T. L. Almeida T L Almeida 3/22/00

Type of Change: (Check one):
X Minor X Major TJA 3/22/00

Approval Authority: S. P. Luttrell Steve P. Luttrell Date: 3-21-00

Other Approvals: V. G. Johnson (Technical) V. G. Johnson Date: 3-21-00

M. J. Hartman (Technical Review) Mary J Hartman Date: 21 Mar 00

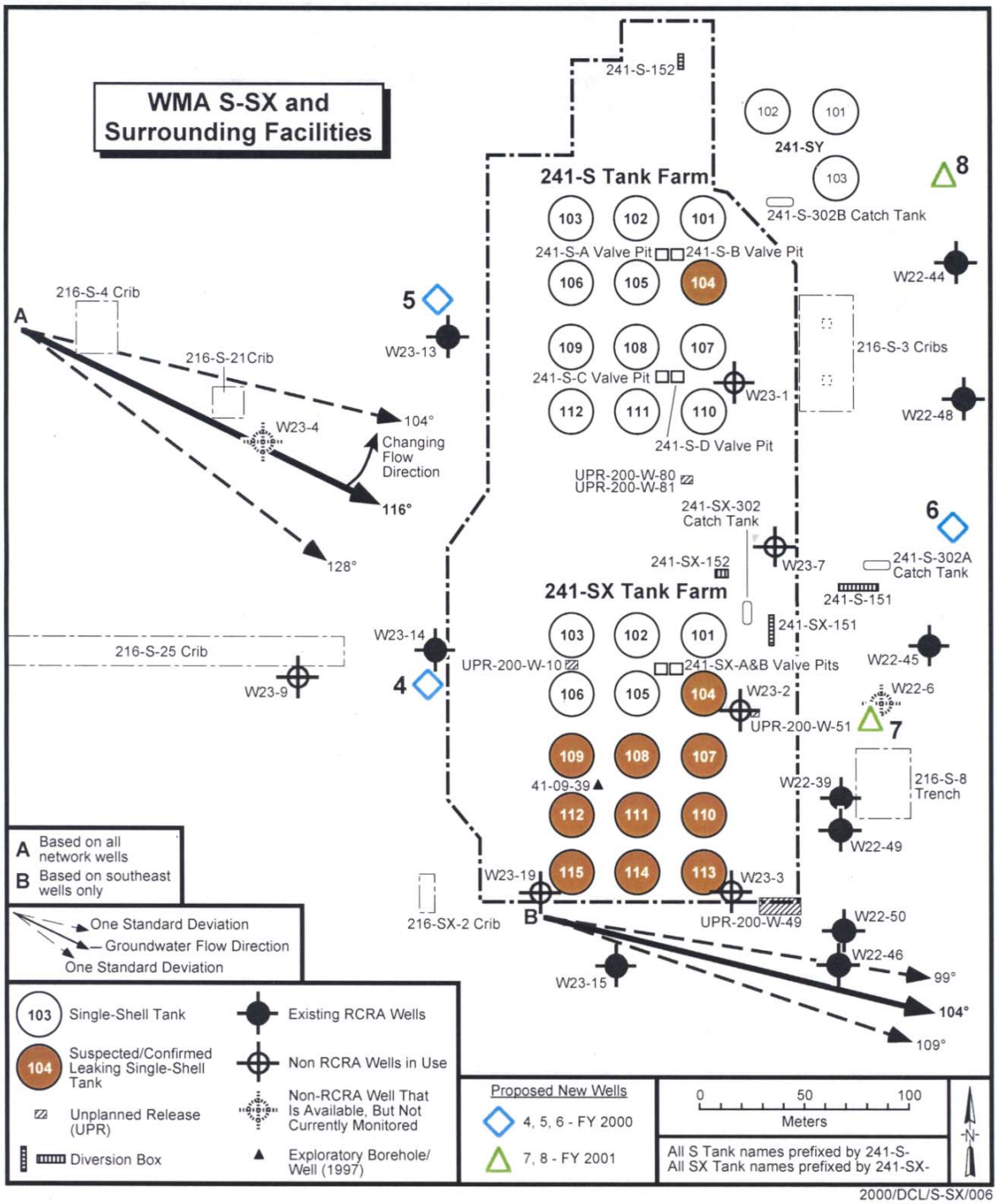

WMA S-SX and Surrounding Facilities
241-S-152
241-SY
102
101
103
241-S Tank Farm
241-S-302B Catch Tank
241-S-A Valve Pit
241-S-B Valve Pit
106
105
104
109
108
107
241-S-C Valve Pit
112
111
110
241-S-D Valve Pit
216-S-3 Cribs
W22-44
W22-48
W23-1
216-S-4 Crib
216-S-21Crib
W23-4
W23-13
5
104°
Changing Flow Direction
116°
128°
A
UPR-200-W-80
UPR-200-W-81
241-SX-302 Catch Tank
241-SX-152
W23-7
241-S-302A Catch Tank
241-S-151
6
241-SX Tank Farm
241-SX-151
W23-14
216-S-25 Crib
W23-9
UPR-200-W-10
241-SX-A&B Valve Pits
W22-45
W22-6
W23-2
UPR-200-W-51
7
4
41-09-39
W22-39
216-S-8 Trench
W22-49
115
114
113
W23-19
W23-3
216-SX-2 Crib
B
UPR-200-W-49
W22-50
W22-46
W23-15
99°
104°
109°
8
A Based on all network wells
B Based on southeast wells only
One Standard Deviation
Groundwater Flow Direction
One Standard Deviation
Single-Shell Tank
Suspected/Confirmed Leaking Single-Shell Tank
Unplanned Release (UPR)
Diversion Box
Existing RCRA Wells
Non RCRA Wells in Use
Non-RCRA Well That Is Available, But Not Currently Monitored
Exploratory Borehole/ Well (1997)
Proposed New Wells
4, 5, 6 - FY 2000
7, 8 - FY 2001
0
50
100
Meters
All S Tank names prefixed by 241-S-
All SX Tank names prefixed by 241-SX-
N
2000/DCL/S-SX/006

Figure A.2

WELL CONSTRUCTION AND COMPLETION SUMMARY

Drilling Method:	Cable Tool	Sample Method:	Grab/Split Spoon
Drilling Fluid Used:	water as needed	Additives Used:	None
Driller's Name:	M. Wraspir	WA State Lic Nr:	1909
Drilling Company:	Resonant Sonic Intl.	Company Location:	Woodland, Ca.
Date Started:	11Oct99	Date Completed:	08Nov99

WELL NUMBER: 299-W22-48 B8812 TEMPORARY WELL NO: Not Allowed

Coordinates: N Not documented

Coordinates: E Not documented

Start Card #: R43393

Elevation Ground Surface: Brass Marker

Depth to Water: 227.85 ft. ft 09Nov99
(Ground surface)

GENERALIZED STRATIGRAPHY Geologist's Log

0 - 3 ft : Silty Sandy GRAVEL
3 - 7 ft : SAND
7 - 10 ft : Sandy GRAVEL
10 - 10.5 ft : Silty SAND
10.5 - 41.5 ft : SAND

41.5 - 49 ft : Sandy GRAVEL
49 - 52.3 ft : SAND
52.3 - 58.5 ft : Gravelly SAND
58.5 - 61 ft : Sandy GRAVEL
61 - 91.5 ft : SAND

91.5 - 92.5 ft : Slightly Silty SAND
92.5 - 134.5 ft : SAND

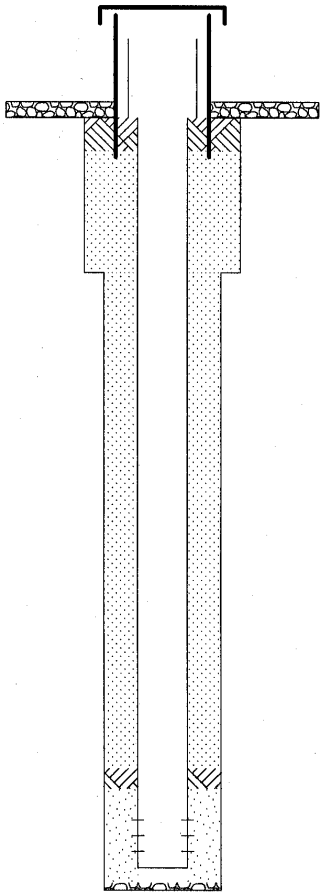
134.5 - 146 ft : Silty SAND

146 - 149 ft : Caliche
149 - 161 ft : Slightly Silty SAND

161 - 168.5 ft : SAND

168.5 - 170 ft : SILT (clastic dike)
170 - 189 ft : SAND

189 - 191.5 ft : Slightly Silty SAND
191.5 - 249 ft : Silty Sandy GRAVEL



249 ft : Borehole drilled depth

0 - 50 ft : 12-in. Cable Tool 11-3/4" CS Temp. Csg.
50 - 246 ft : 9-in. Cable Tool 8-5/8" CS Temp. Csg.

Elevation of Reference Point: m

Height of Reference Point Above Ground Surface:

Depth of Surface Seal: 10.8 ft.

Type of Surface Seal: 4x4 Concrete Pad

Fill	*Casing*	*Screen*
0 - 10.8 ft : 12-inch hole Cement Surface Seal	0 - 226.24 ft : 4 inch 4" 304 SS Sch. 5 Well Csg.	
10.8 - 50 ft : 12-inch hole Granular Bentonite		
50 - 209.6 ft : 9-inch hole Granular Bentonite		
209.6 - 216.1 ft : 9-inch hole Cement Seal		
216.1 - 246.5 ft : 9-inch hole 10/20 Silica Sand		226.24 - 241.25 ft : 4 inch 4" 304-SS Wire Wrap .010 Slot Scrn.
246.5 - 249 ft : 9-inch hole Slough	241.25 - 241.75 ft : 4 inch 4" PVC End Cap	

Drawing By:	JEA
Reference:	Hanford Wells
Revision:	0
Revision Date:	07Mar00
Print Date:	16Mar00

Report Form: WELLS Project File: WELLS.GPJ

WELL CONSTRUCTION AND COMPLETION SUMMARY

Drilling Method:	Cable Tool/Air Rotary	Sample Method:	Grab/Split Spoon
Drilling Fluid Used:	water as needed	Additives Used:	None
Driller's Name:	M. Wraspir	WA State Lic Nr:	1909
Drilling Company:	Resonant Sonic Intl.	Company Location:	Woodland, Ca.
Date Started:	26Oct99	Date Completed:	22Nov99

WELL NUMBER: 299-W22-49 B8813 TEMPORARY WELL NO: Not Allowed

Coordinates: N Not documented

Coordinates: E Not documented

Start Card #: R43394

Elevation Ground Surface: Brass Marker

Depth to Water: 217.3 ft 15Nov99
(Ground surface)

Elevation of Reference Point: m

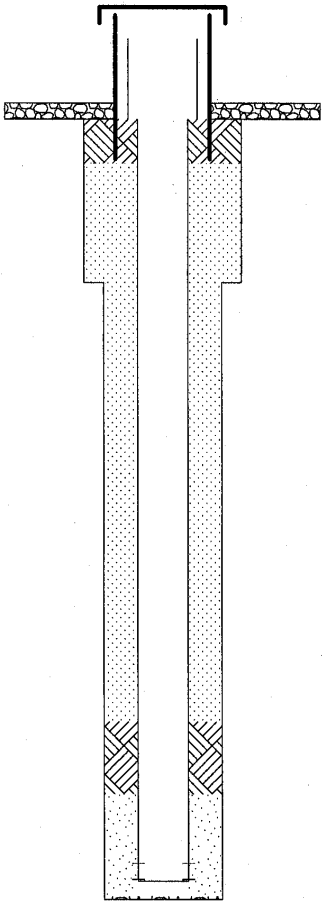
Height of Reference Point Above Ground Surface:

Depth of Surface Seal: 13.5 ft.

Type of Surface Seal: 4x4 Concrete Pad

GENERALIZED STRATIGRAPHY Geologist's Log

0 - 2 ft : Gravelly SAND
2 - 10.5 ft : SAND
10.5 - 14.5 ft : Gravelly SAND
14.5 - 27 ft : SAND
27 - 33.1 ft : Silty SAND
33.1 - 38 ft : Slightly Silty SAND
38 - 45 ft : Silty SAND
45 - 48 ft : Slightly Silty SAND
48 - 50 ft : Silty SAND
50 - 54 ft : Sandy GRAVEL
54 - 61 ft : Gravelly SAND
61 - 145 ft : SAND
145 - 150 ft : Gravelly SAND
150 - 154 ft : Sandy GRAVEL
154 - 160.5 ft : Gravelly SAND
160.5 - 167 ft : SAND
167 - 168 ft : GRAVEL
168 - 177 ft : Gravelly SAND
177 - 181 ft : Sandy GRAVEL
181 - 182.5 ft : Gravelly SAND
182.5 - 189 ft : Sandy GRAVEL
189 - 194 ft : Gravelly SAND
194 - 205 ft : Sandy GRAVEL
205 - 208 ft : Gravelly SAND
208 - 232 ft : Sandy GRAVEL
231 - 239 ft : Gravelly SAND



Fill	*Casing*	*Screen*
0 - 13.5 ft : 12-inch hole Cement Surface Seal	0 - 233.4 ft : 4 inch 4" 304 SS Sch. 5 well csg.	
13.5 - 50 ft : 12-inch hole Granular Bentonite		
50 - 184.6 ft : 9-inch hole Granular Bentonite		
184.6 - 206.6 ft : 9-inch hole Cement Seal		
206.6 - 238 ft : 9-inch hole 20/40 Silica Sand		227.9 - 232.9 ft : 4 inch 4" 304 SS Wire Wrap .010 Slot Scrn.
238 - 239 ft : 9-inch hole Slough	232.9 - 233.4 ft : 4 inch 4" PVC End Cap	

239 ft : Borehole drilled depth

0 - 50 ft : 12-in. Cable Tool w/11-3/4" CS Temp. Csg. to 50 ft.
50 - 239 ft : 9-in. Air Rotary w/8-5/8" CS Temp. Csg. to 239 ft.

Drawing By: JEA
Reference: Hanford Wells
Revision: 0
Revision Date: 07Mar00
Print Date: 16Mar00

Report Form: WELLS Project File: WELLS.GPJ

WELL CONSTRUCTION AND COMPLETION SUMMARY

Drilling Method:	Cable Tool & Air Rotary	Sample Method:	Grab/Split Spoon
Drilling Fluid Used:	N/A	Additives Used:	None
Driller's Name:	M. Wraspir	WA State Lic Nr:	1909
Drilling Company:	Resonant Sonic Intl.	Company Location:	Woodland, Ca.
Date Started:	10Nov99	Date Completed:	28Jan00

WELL NUMBER: 299-W22-50 B8814 TEMPORARY WELL NO: Not Allowed

Coordinates: N Not documented

Coordinates: E Not documented

Start Card #: R43396

Elevation Ground Surface: Brass Marker

Depth to Water: 219.25 ft. ft 26Jan00
(Ground surface)

Elevation of Reference Point: m

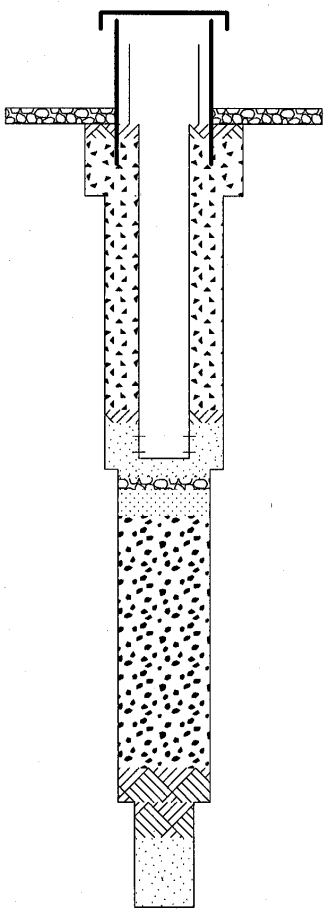
Height of Reference Point Above Ground Surface:

Depth of Surface Seal: 10.0 ft.

Type of Surface Seal: 4x4 Concrete Pad

GENERALIZED STRATIGRAPHY Geologist's Log

0 - 1.5 ft : Sandy GRAVEL
1.5 - 9 ft : SAND
9 - 14 ft : Gravelly SAND
14 - 59 ft : SAND
59 - 62.5 ft : Sandy GRAVEL
62.5 - 129 ft : SAND
129 - 130.5 ft : SILT
130.5 - 136 ft : Silty SAND
136 - 138 ft : Sandy SILT
138 - 142 ft : Calc. Silty Sandy GRAVEL
142 - 152 ft : Sandy GRAVEL
152 - 153 ft : SAND
153 - 156 ft : Sandy GRAVEL
156 - 175.5 ft : SAND
175.5 - 226 ft : Silty Sandy GRAVEL
226 - 229 ft : Sandy GRAVEL
229 - 231 ft : SAND
231 - 302 ft : Sandy GRAVEL
302 - 308 ft : SAND
308 - 313 ft : Gravelly Silty SAND
313 - 333 ft : Silty Sandy GRAVEL
333 - 334 ft : Silty Gravelly SAND
334 - 338 ft : Gravelly Sandy SILT
338 - 343 ft : Gravelly Silty SAND
343 - 348 ft : Gravelly Sandy SILT
348 - 385 ft : Gravelly SAND
385 - 415 ft : Sandy GRAVEL
415 - 422 ft : Silty SAND
422 - 435 ft : Gravelly SAND
457 - 496 ft : Ringold Lower Mud
496 - 547.5 ft : Ringold "A" GRAVEL



547.5 ft : Borehole drilled depth

0 - 50.39 ft : 12-in. Cable Tool 11-3/4" CS Temp. Csg. to 50.39 ft.
50.39 - 241 ft : 9-in. Cable Tool 8-5/8" CS Temp. Csg. to 241 ft.
241 - 474 ft : 7-in. Air Rotary/Sonic Assist 6-5/8" CS Temp. Csg. to 474 ft.
474 - 547.5 ft : 4.5-in. Air Rotary Open Hole to 547.5 ft.

Fill	*Casing*	*Screen*
0 - 10 ft : 12-inch hole Cement Surface Seal 10 - 50.39 ft : 12-inch hole #8 Bentonite Crumbles 50.39 - 199.5 ft : 9-inch hole #8 Bentonite Crumbles 199.5 - 208.2 ft : 9-inch hole Cement Seal 208.2 - 233.44 ft : 9-inch hole 20/40 Silica Sand 233.44 - 241 ft : 9-inch hole 4-6/6-9 Silica Sand 241 - 245.35 ft : 7-inch hole 4-6/6-9 Silica Sand 245.35 - 246 ft : 7-inch hole Cement Seal 246 - 247.35 ft : 7-inch hole 4-6/6-9 Silica Sand 247.35 - 255 ft : 7-inch hole Slough w/Bentonite 255 - 273.5 ft : 7-inch hole Bentonite 273.5 - 450.3 ft : 7-inch hole 3/8" Pea Gravel 450.3 - 474 ft : 7-inch hole Cement Seal 474 - 498.5 ft : 4.5-inch hole Cement Seal 498.5 - 547.5 ft : 4.5-inch hole 4-6/6-9 Silica Sand	0 - 217.95 ft : 4 inch 4" 304 SS Sch. 5 Well Csg. 232.96 - 233.44 ft : 4 inch 4" SS End Cap	217.95 - 232.96 ft : 4 inch 4" SS Wire Wrap .010 Slot Scrn.

Drawing By:	JEA
Reference:	Hanford Wells
Revision:	0
Revision Date:	07Mar00
Print Date:	16Mar00

Report Form: WELLS Project File: WELLS.GPJ

BECHTEL

WELL CONSTRUCTION AND COMPLETION SUMMARY

Drilling Method:	Air Rotary and Sonic	Sample Method:	Split Spoon
Drilling Fluid Used:	N/A	Additives Used:	None
Driller's Name:	Wesley Worth	WA State Lic Nr:	2273
Drilling Company:	Resonant Sonic Intl.	Company Location:	Woodland, Ca.
Date Started:	02Aug99	Date Completed:	17Nov99

WELL NUMBER: 299-W23-19 B8809 TEMPORARY WELL NO: Not Allowed

Coordinates: N Not documented

Coordinates: E Not documented

Start Card #: R42661

Elevation Ground Surface: Brass Marker

Depth to Water: 211.8 ft. ft 28Sep99
(Ground surface) 211.6 ft 04Nov99

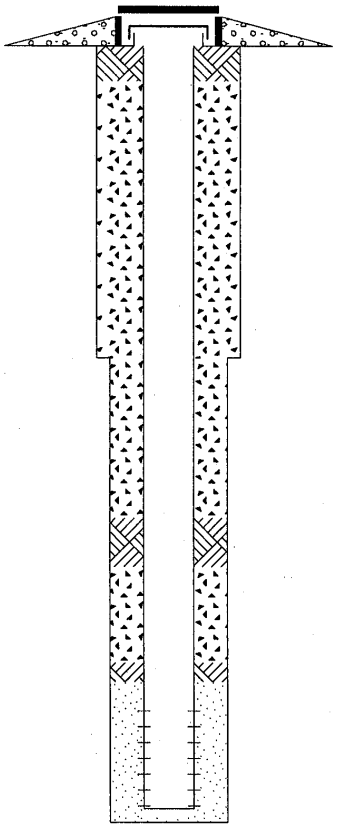
GENERALIZED STRATIGRAPHY Geologist's Log

Elevation of Reference Point: m

Height of Reference Point Above Ground Surface:

Depth of Surface Seal: 11.19 ft.

Type of Surface Seal: Subsurface Completion



Fill	*Casing*	*Screen*
0 - 11.19 ft : 11-inch hole Cement Surface Seal	0.6 - 211.6 ft : 4 inch 4" SS Sch. 40 Csg.	
11.19 - 99.04 ft : 11-inch hole Bentonite Crumbles		
99.04 - 149.73 ft : 9-inch hole Bentonite Crumbles		
149.73 - 165.08 ft : 9-inch hole Cement Grout Seal		
165.08 - 195.58 ft : 9-inch hole Bentonite Crumbles		
195.48 - 201.48 ft : 9-inch hole Cement Grout Seal		210.66 - 241.3 ft : 4 inch 4" SS .020 Slot Wire Wrap Screen
201.48 - 244.26 ft : 9-inch hole 10/20 Silica Sand	241.3 - 241.6 ft : 4 inch 4" SS End Cap	
244.26 - 246 ft : 9-inch hole 10/20 Silica Sand		

246 ft : Borehole drilled depth

0 - 99.04 ft : 10.75-in. 10-3/4" CS Temp. Csg. set at 99.04
99.04 - 246 ft : 8.62-in. 8-5/8" CS. Temp. Csg. set 243.86 ft.

Drawing By:	JEA
Reference:	Hanford Wells
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