0039577

# ENGINEERING CHANGE NOTICE

Page 1 of 21

1. ECN 614122

Proj. ECN

| 2. ECN Category (mark one) | 3. Originator's Name, Organization, MSIN, and Telephone No. | | 4. Date |
|---|---|---|---|
| Supplemental [X]<br>Direct Revision []<br>Change ECN []<br>Temporary []<br>Standby []<br>Supersedure []<br>Cancel/Void [] | R. K. Ledgerwood 86A10/RD1CA N3-05 6-2193 | | November 17, 1994 |
| | 5. Project Title/No./Work Order No.<br>NA | 6. Bldg./Sys./Fac. No.<br>NA | 7. Impact Level<br>~~NA~~ Q D |
| | 8. Document Numbers Changed by this ECN (includes sheet no. and rev.)<br>WHC-SD-EN-AP-161, Rev 0 | 9. Related ECN No(s).<br>NA | 10. Related PO No.<br>NA |

| 11a. Modification Work | 11b. Work Package No. | 11c. Modification Work Complete | 11d. Restored to Original Condition (Temp. or Standby ECN only) |
|---|---|---|---|
| [] Yes (fill out Blk. 11b)<br>[X] No (NA Blks. 11b, 11c, 11d) | NA | NA<br>Cog. Engineer Signature & Date | NA<br>Cog. Engineer Signature & Date |

12. Description of Change

WHC-SD-EN-AP-161, Rev 0, "Fitness-for-Intended-Use Evaluation Recommendations for Hanford Site 600 Area Wells."

*Increase scope of document to include attached Appendix B.*

| 13a. Justification (mark one) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Criteria Change | [x] | Design Improvement | [] | Environmental | [] | | |
| As-Found | [] | Facilitate Const. | [] | Const. Error/Omission | [] | Design Error/Omission | [] |

13b. Justification Details

Expands plan application in accordance with WAC 173-160 well decommissioning criteria.

14. Distribution (include name, MSIN, and no. of copies)

See Distribution Sheet

RELEASE STAMP

OFFICIAL RELEASE BY WHC DATE DEC 9 1994

Sta. 21

DEC 1994 RECEIVED EDMC

A-7900-013-2 (06/92) GEF095
Engineering Change Notice

A-7900-013-1 (04/94)

| ENGINEERING CHANGE NOTICE | Page 2 of 2 | 1. ECN (use no. from pg. 1) 614122 |
|---|---|---|

| 15. Design Verification Required | 16. Cost Impact | | | | 17. Schedule Impact (days) | | |
|---|---|---|---|---|---|---|---|
| | ENGINEERING | | CONSTRUCTION | | | | |
| [] Yes | Additional | [] $ NA | Additional | [] $ NA | Improvement | [] NA | |
| [X] No | Savings | [] $ | Savings | [] $ | Delay | [] | |

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

| | | | | | |
|---|---|---|---|---|---|
| SDD/DD | [] | Seismic/Stress Analysis | [] | Tank Calibration Manual | [] |
| Functional Design Criteria | [] | Stress/Design Report | [] | Health Physics Procedure | [] |
| Operating Specification | [] | Interface Control Drawing | [] | Spares Multiple Unit Listing | [] |
| Criticality Specification | [] | Calibration Procedure | [] | Test Procedures/Specification | [] |
| Conceptual Design Report | [] | Installation Procedure | [] | Component Index | [] |
| Equipment Spec. | [] | Maintenance Procedure | [] | ASME Coded Item | [] |
| Const. Spec. | [] | Engineering Procedure | [] | Human Factor Consideration | [] |
| Procurement Spec. | [] | Operating Instruction | [] | Computer Software | [] |
| Vendor Information | [] | Operating Procedure | [] | Electric Circuit Schedule | [] |
| OM Manual | [] | Operational Safety Requirement | [] | ICRS Procedure | [] |
| FSAR/SAR | [] | IEFD Drawing | [] | Process Control Manual/Plan | [] |
| Safety Equipment List | [] | Cell Arrangement Drawing | [] | Process Flow Chart | [] |
| Radiation Work Permit | [] | Essential Material Specification | [] | Purchase Requisition | [] |
| Environmental Impact Statement | [] | Fac. Proc. Samp. Schedule | [] | | [] |
| Environmental Report | [] | Inspection Plan | [] | | [] |
| Environmental Permit | [] | Inventory Adjustment Request | [] | | [] |

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

| Document Number/Revision | Document Number/Revision | Document Number Revision |
|---|---|---|
| NA | NA | NA |

20. Approvals

| Signature | Date | Signature | Date |
|---|---|---|---|
| OPERATIONS AND ENGINEERING | | ARCHITECT-ENGINEER | |
| Cog Engineer R K Ledgerwood RK Ledgerwood | 11-17-94 | PE | |
| Cog. Mgr. M G Gardner MG Gardner | 11/17/94 | QA | |
| QA W R Thackaberry W.R. Thackaberry | 11-18-94 | Safety | |
| Safety | | Design | |
| Security | | Environ. | |
| Environ. | | Other | |
| Program R R Thompson R.R. Thompson | 11/18/94 | | |
| Tank Waste Remediation System | | | |
| Facilities Operations | | DEPARTMENT OF ENERGY | |
| Restoration & Remediation | | Signature or Letter No. | |
| Operations & Support Services | | M J Furman | M J Furman 11/23/94 |
| IRM | | ADDITIONAL | |
| Other S P Luttrell J.D. Woodard for S.P. Luttrell per telecon | 11-18-94 | R D Hildebrand | R D Hildebrand 11-18-94 |
| T F Kisenwether Thomas F. Kisenwether (BHI) | 11-18-94 | C H Gunion | Clarke H. Gunion 11-23-94 |
| | | R Chong N/A | 11-18-94 |

WHC-SD-EN-AP-161, Rev 0, Appendix B

Subject: 600 Area Well Decommissioing Planned for 1st and 2nd Quarter FY 1995 by WHC Well Services

This Appendix B to WHC-SD-EN-AP-161 lists Hanford Site wells selected for decommissioning during the 1st and/or 2nd quarters of FY 1995 under the well decommissioning charter of WHC Well Services.

Groundwater monitoring wells subject to the Hanford Facility RCRA Permit (Permit), Condition II.F.2, are currently in compliant condition and in active use. These wells are currently not identified as requiring decommissioning. However, the Second Responsiveness Summary for the subject permit provided by the Washington State Department of Ecology (Department) states the Department's understanding that orphan wells have been identified as those wells which are not claimed and are not in use and that these wells are considered "RCRA" wells by the Hanford Administration. Approximately 455 wells have been designated "orphan". The Department goes on to state that they (the Department) "will pursue enforcement action outside of this permit to assess and remediate and/or abandon (to Chapter 173-160 WAC standards), where applicable, those wells not being addressed by this permit."

A map of the well locations, construction summary drawings, resource protection groundwater well structure fitness for use checklists for each well, and a diagram of the decommissioning process to be followed for each well are attached. Selection of wells to be decommissioned used one or more of the following critera:

1. No declared owner or use, i.e., orphan status (RCRA).
2. Located in the 600 Area.
3. Deep boreholes lacking annular seals that have the potential for interconnection of aquifers or upward leakage from confined aquifers.
4. Relatively near Columbia or Yakima Rivers or North of Gable Butte/Gable Mountain and/or within ~5 kilometers of the rivers.
5. Relatively near waste burial sites.

One well listed in the table (699-49-111, Enyeart) is a deep well tapping the upper Cold Creek artesian system. It should be decommissioned to protect the confined aquifer resource which has had sharp declines in head due to irrigation use. One well south of Gable Mountain on the Hanford Site (699-54-37B) connects the unconfined and multiple basalt interbeds.

The two other 600 Area wells were selected as being orphan wells relatively near the Columbia or Yakima Rivers or waste sites.

Table 1. 600 AREA WELLS SELECTED FOR DECOMMISSIONING

| Well Number | Hanford N/S | Coordinates E/W | Date Drill | Depth Drill | Casing Elev | Comments | Owner | Recommended Disposition |
|---|---|---|---|---|---|---|---|---|
| 699-49-111 | N 49,381 | W111,355 | Nov 22 | 1,092 | 913.13 | Enyeart | PNL-char | Decommission |
| 699-54-37B | N 54,140 | W 36,806 | Dec 23 | 970 | 533.75 | Haynes stock well | Orphan | Decommission |
| 699-63-89 | N 62,751 | W 88,504 | Apr 73 | 218 | 512.4 | UGB-1 | Orphan | Decommission |
| 699-101-48C | N101,476 | W 47,985 | May 43 | 77 | 388.59 | Test well #5 | Orphan | Decommission |

ECN-614122
Pg. 4 of 21

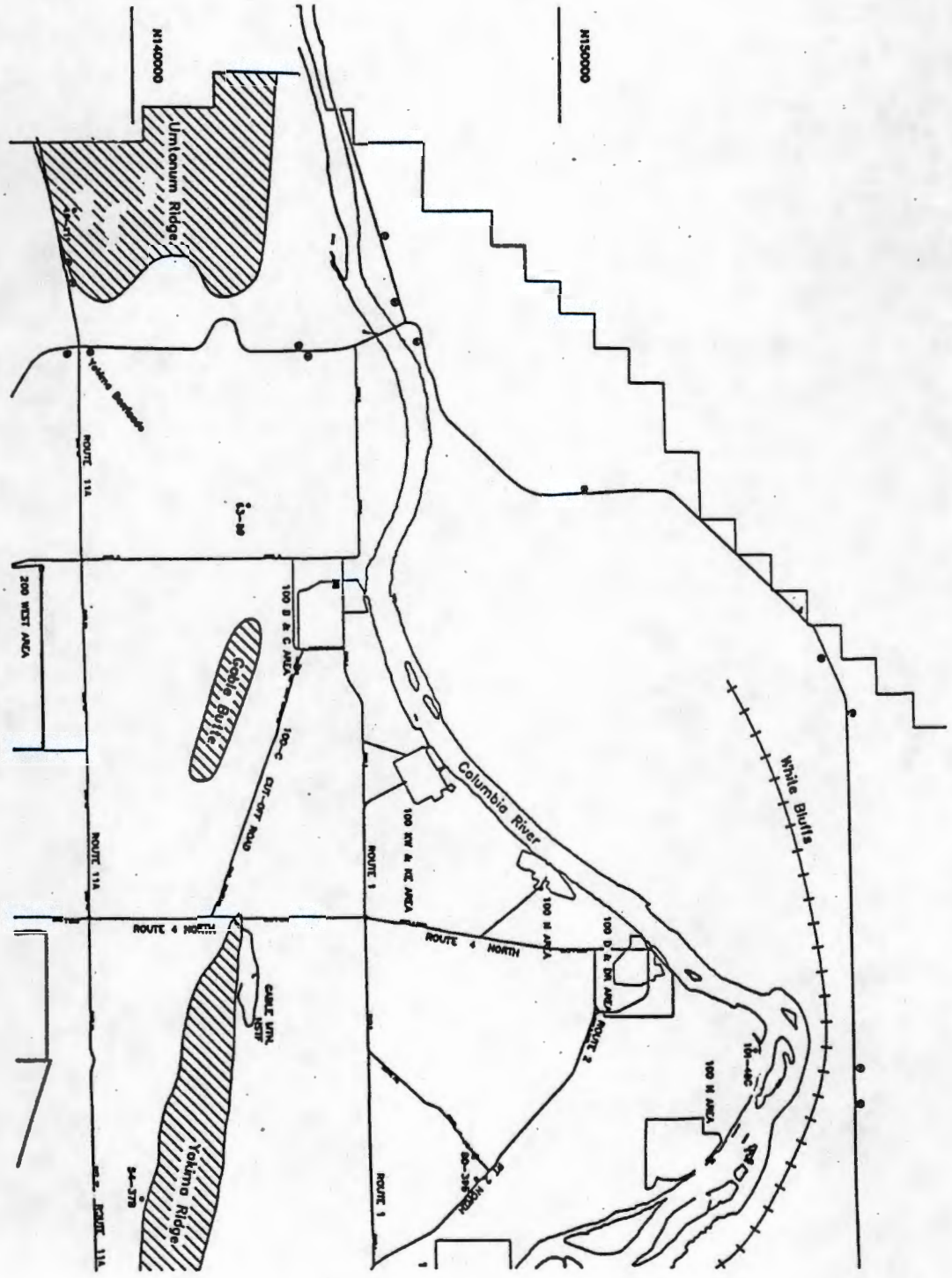



Figure 1. Location Map of Wells Selected for Decommissioning

# Fitness-for-Intended Use Evaluation Recommendations For Hanford Site 600 Area Wells

| RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST | 1. Well No. 699-49-111A |
|---|---|
| | Page 1 of 2 |

2. Has a need for use of the well been identified and documented?
[ No ] No potential user identified

3. Is well presently in use?
[ Yes ] PNL sitewide characterization

4. Is casing sealed in accordance with IAW WAC 173-160-075?
[ No ] No documentation of annular seal

4a. Natural barriers preserved?
[ ND ] Well may connect aquifers

4b. Aquifer/strata pentrated permanently sealed?
[ No ] No seals documented, well may allow upward flows

4c. Annulus sealed against surface water?
[ No ] No surface seal documented, has concrete pad

4d. Casing overlap more than 8 ft; packed and grouted?
[ N/A ] Not applicable

5. If not in use, is well capped IAW WAC 173-160-085?
[ Yes ] Capped and locked.

6. Is design and construction IAW WAC 173-160-500?
[ No ] No annular seal documented

6a. Saturated formation/aquifers not connected?
[ No ] May allow leakage from confined artesian aquifer

6b. Cuttings/development water handled IAW WAC 173-303?
[ N/A ] Drilled before applicable date of WAC 173-303

6c. Well properly indentified?
[ No ] No permanent identification

7. Is surface protection IAW WAC 173-160-510?
[ No ] Has 6-ft round concrete pad, no surface seal documented

7a. Well capped and protected?
[ N/A ] Not applicable

7b. Protective posts, surface pad or cover installed?
[ N/A ] Not applicable

7c. Surface protection waived or variance obtained?
[ N/A ] Not applicable

7d. Is existing surface protection damaged?
[ N/A ] Not applicable

8. Are casing materials IAW 173-160-520?
[ N/A ] Not applicable

9. Was drill rig/drilling equipment cleaned IAW WAC 173-160-530?
[ N/A ] Not applicable

9a. Drill rig/equipment casing/screen cleaned?
[ N/A ] Not applicable

9b. Filter pack cleaned? Material compatible?
[ N/A ] Not applicable

RCRA/CERCLA MONITORING WELL?

10. Does water sample from vertical screened interval represent horizontal stratigraphy?
[ N/A ] Not applicable

10a. Screened interval documented?
[ N/A ] Not applicable

10b. Vertical lithology documented?
[ Yes ] Has driller's log

A-6000-451 (06/93)

## RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST

1. Well No. 699-49-111A



11. Is design and construction IAW WAC 173-160-540?
[ N/A ] Not applicable

11a. Screen commercially fabricated of material nonreactive to subsurface conditions?
[ N/A ] Not applicable

11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen.
[ N/A ] Not applicable

11c. Well has been developed.
[ N/A ] Not applicable

11d. Annulus grouted with bentonite or bentonite/cement mixture.
[ N/A ] Not applicable

12. Does water sample meet established acceptance criteria?
Sample is less than 5 NTU and sand free.
[ N/A ] Not applicable

13. Data Sources Used:
Logs:
Driller's: Not documented Date: 12/09/22 Company: _____
Geologist: Not applicable Date: _____ Company: _____
Geophysical: N/A Date: _____ Company: _____
Television: N/A Date: _____ Company: _____

Publications: Title, Author, Date
HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993

Databases:
WHC Well Services

Field Check: WHC Well Services Date: 11/09/94 Company: _____

Other:

14. Comments: Identify evaluation criteria addressed by number:

15. Status

| | | |
|---|---|---|
| Well is acceptable for intended use | [ No ] | Well may allow upward flow |
| Well is acceptable for intended use if variance is granted | [ NA ] | Not applicable |
| Rehabilitation required to continue intended use | [ No ] | Not applicable |
| Remediation required to achieve intended use | [ No ] | Well has no identified user |
| Decommission, well is unneeded or cannot be remediated | [ Yes ] | PNL has terminated need |
| Other _____ | [ _____ ] | _____ |

16. Status Recommendation
Done By: Name: R. K. Ledgerwood Title: Principal Scientist Date: 11/16/94

A-6000-451R (06/93)

## WELL CONSTRUCTION AND COMPLETION SUMMARY

| | |
|---|---|
| Drilling Method: Cable tool | Sample Method: Hard tool (nom) |
| Drilling Fluid Used: Not documented | Additives Used: Not documented |
| Driller's Name: N C Jannsen | WA State Lic Nr: Not documented |
| Drilling Company: Not documented | Company Location: Not documented |
| Date Started: Not documented | Date Complete: 090ct22 |

WELL NUMBER: 699-49-111A A8805 TEMPORARY WELL NO: Enyeart 699-50-111

Hanford Coordinates: N/S N 49,381 E/W W 111,355

State Coordinates: N 454,397.11 E 2,183,843.98

Start Card #: Not documented T 13N R 24E S 3601

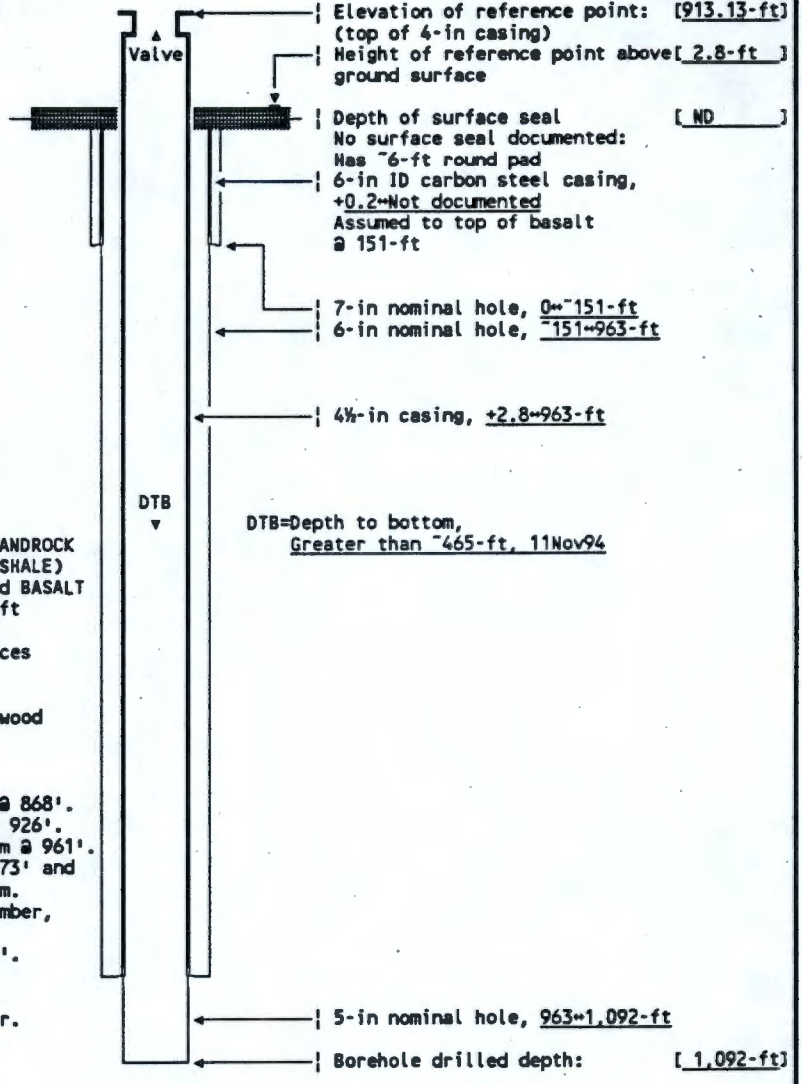
Elevation Ground surface: 910.32-ft Brass cap

Depth to water: 93psi 1924
(Ground surface) 40.6-ft 01Jun94

GENERALIZED STRATIGRAPHY / Driller's Log

0-10: Eolian SOIL
10-60: GRAVEL
60-128: SAND and CLAY
128-151: GRAVEL
151-316: BASALT
316-375: Yellow, sticky CLAY
375-385: Blue CLAY
385-399: Black BASALT
399-417: SAND and GRAVEL
417-486: Blue BASALT
486-493: Soft MATERIAL
493-504: SAND
504-523: Gray BASALT
523-547: Soft CONGLOMERATE
547-582: Gray fractured BASALT
582-685: Black, hard BASALT
685-714: Gray BASALT
714-717: Black SAND formation
717-828: Gray/blue BASALT
828-833: Gray ROCK, similar to SANDROCK
833-963: (Alternating SAND/CLAY/SHALE)
963-1,056: Black, hard, fractured BASALT
1,056-1,060: (Crevice and hard/soft streaks)
1,060-1,082: Hard BASALT w/crevices
1,082-1,084: Honeycombed BASALT
1,084-1,085: Hard GROUND
1,085-1,092: BASALT w/petrified wood and green SHALE

DRILLER'S NOTES:
Water raised within 30' of top @ 868'.
Water comes within 15' of top @ 926'.
Water flowing over casing 3-4gpm @ 961'.
Struck a small seam in rock @ 973' and flow increased from ~18 to 25gpm.
Before reaching base of this member, flow had increased to 50gpm.
Water increased again @ @ 1,060'.
Heavy flow of water @ 1,084-ft.
Water so strong @ 1,092-ft that tools would not drop any further.




Elevation of reference point: [913.13-ft] (top of 4-in casing)
Height of reference point above ground surface [2.8-ft]
Depth of surface seal [ND]
No surface seal documented: Has ~6-ft round pad
6-in ID carbon steel casing, +0.2-Not documented
Assumed to top of basalt @ 151-ft
7-in nominal hole, 0-~151-ft
6-in nominal hole, ~151-963-ft
4½-in casing, +2.8-963-ft
DTB=Depth to bottom, Greater than ~465-ft, 11Nov94
5-in nominal hole, 963-1,092-ft
Borehole drilled depth: [1,092-ft]

Drawing By: RKL/6N49W111.ASB
Date : 15Nov94
Reference : HANFORD WELLS

## DIAGRAMMATIC WELL DECOMMISSIONING PROCESS

Drilling Method: Cable tool
Drilling Fluid Used: Not documented
Driller's Name: N C Jannsen
Drilling Company: Not documented
Date Started: Not documented

Sample Method: Hard tool (nom)
Additives Used: Not documented
WA State Lic Nr: Not documented
Company Location: Not documented
Date Complete: 090ct22

WELL NUMBER: 699-49-111A A8805
TEMPORARY WELL NO: Enyeart 699-50-111
Hanford Coordinates: N/S N 49,381 E/W W 111,355
State Coordinates: N 454,397.11 E 2,183,843.98
Start Card #: Not documented T 13N R 24E S 36D1
Elevation Ground surface: 910.32-ft Brass cap

Depth to water: 93psi 1924
(Ground surface) 40.6-ft 01Jun94

DIAGRAMMATIC DECOMMISSIONING ACTIVITIES (Depths from ground surface)

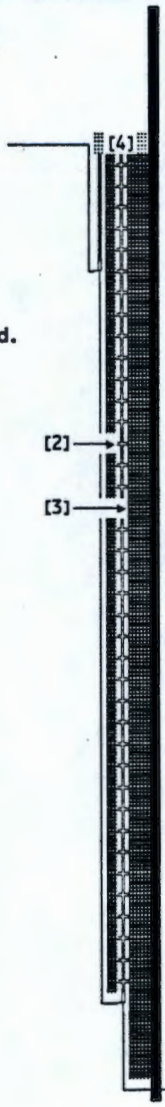
1] Establish depth to bottom.

2] Perforate from ~3-ft to bottom.

3] Cement grout w/tremmie to ~3-ft in stages.

4] Cut casing @ ~3-ft. Remove pad. Place cement or metal cap and fill to grade.

NOTE:
Order of work to be determined by field conditions.




Elevation of reference point: [913.13-ft]
(top of 4-in casing)
Height of reference point above ground surface [ 2.8-ft ]

Depth of surface seal [ ND ]
No surface seal documented:
Has ~6-ft round pad

6-in ID carbon steel casing, +0.2-Not documented
Assumed to top of basalt @ 151-ft

7-in nominal hole, 0-~151-ft
6-in nominal hole, ~151-963-ft

4½-in casing, +2.8-963-ft

DTB=Depth to bottom,
Greater than ~465-ft, 11Nov94

5-in nominal hole, 963-1,092-ft

Borehole drilled depth: [ 1,092-ft]

Drawing By: RKL/6N49W111.PLN
Date : 16Nov94
Reference : HANFORD WELLS

| RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST | 1. Well No. 699-54-37B<br>Page 1 of 2 |
|---|---|

2. Has a need for use of the well been identified and documented?
[ No ] No potential user identified

3. Is well presently in use?
[ No ] No use identifed

4. Is casing sealed in accordance with IAW WAC 173-160-075?
[ No ] No documentation of annular seal

4a. Natural barriers preserved?
[ No ] Well may connect aquifers

4b. Aquifer/strata pentrated permanently sealed?
[ No ] No seals documented, well may aquifer interconnection

4c. Annulus sealed against surface water?
[ No ] No surface seal documented

4d. Casing overlap more than 8 ft; packed and grouted?
[ N/A ] Not applicable

5. If not in use, is well capped IAW WAC 173-160-085?
[ Yes ] Capped, not locked

6. Is design and construction IAW WAC 173-160-500?
[ No ] No annular seal documented

6a. Saturated formation/aquifers not connected?
[ No ] May allow interconnection of confined/unconfined aquifers

6b. Cuttings/development water handled IAW WAC 173-303?
[ N/A ] Drilled before applicable date of WAC 173-303

6c. Well properly indentified?
[ No ] No permanent identification

7. Is surface protection IAW WAC 173-160-510?
[ No ] No surface seal documented

7a. Well capped and protected?
[ N/A ] Not applicable

7b. Protective posts, surface pad or cover installed?
[ N/A ] Not applicable

7c. Surface protection waived or variance obtained?
[ N/A ] Not applicable

7d. Is existing surface protection damaged?
[ N/A ] Not applicable

8. Are casing materials IAW 173-160-520?
[ N/A ] Not applicable

9. Was drill rig/drilling equipment cleaned IAW WAC 173-160-530?
[ N/A ] Not applicable

9a. Drill rig/equipment casing/screen cleaned?
[ N/A ] Not applicable

9b. Filter pack cleaned? Material compatible?
[ N/A ] Not applicable

RCRA/CERCLA MONITORING WELL?

10. Does water sample from vertical screened interval represent horizontal stratigraphy?
[ N/A ] Not applicable

10a. Screened interval documented?
[ N/A ] Not applicable

10b. Vertical lithology documented?
[ Yes ] Has driller's log

A-6000-451 (06/93)

ECN-614122
Pg. 11 of 21

## RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST

1. Well No. 699-54-37B



11. Is design and construction IAW WAC 173-160-540?
[ N/A ] Not applicable

11a. Screen commercially fabricated of material nonreactive to subsurface conditions?
[ N/A ] Not applicable

11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen.
[ N/A ] Not applicable

11c. Well has been developed.
[ N/A ] Not applicable

11d. Annulus grouted with bentonite or bentonite/cement mixture.
[ N/A ] Not applicable

12. Does water sample meet established acceptance criteria?
Sample is less than 5 NTU and sand free.
[ N/A ] Not applicable

13. Data Sources Used:
Logs:
Driller's: Jannsen Drilling Co Date: During23 Company: _____
Geologist: Not applicable Date: _____ Company: _____
Geophysical: N/A Date: _____ Company: _____
Television: N/A Date: _____ Company: _____

Publications: Title, Author, Date
HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993

Databases:
WHC Well Services

Field Check: WHC Well Services Date: 11/10/94 Company: _____

Other:

14. Comments: Identify evaluation criteria addressed by number:

15. Status

| | | |
|---|---|---|
| Well is acceptable for intended use | [ No ] | Well may interconnection |
| Well is acceptable for intended use if variance is granted | [ NA ] | Not applicable |
| Rehabilitation required to continue intended use | [ No ] | Not applicable |
| Remediation required to achieve intended use | [ No ] | Well has no identified user |
| Decommission, well is unneeded or cannot be remediated | [ Yes ] | Well has no identifed need |
| Other _____ | [ _____ ] | _____ |

16. Status Recommendation
Done By: Name: R. K. Ledgerwood Title: Principal Scientist Date: 11/16/94

A-6000-451R (06/93)

## WELL CONSTRUCTION AND COMPLETION SUMMARY

Drilling Method: Cable tools
Drilling Fluid Used: Not documented
Driller's Name: N C Jannsen?
Drilling Company: Jannsen Drilling
Date Started: During 1921

Sample Method: Hard tool (nom)
Additives Used: Not documented
WA State Lic Nr: Not documented
Company Location: Portland OR
Date Complete: During 1923

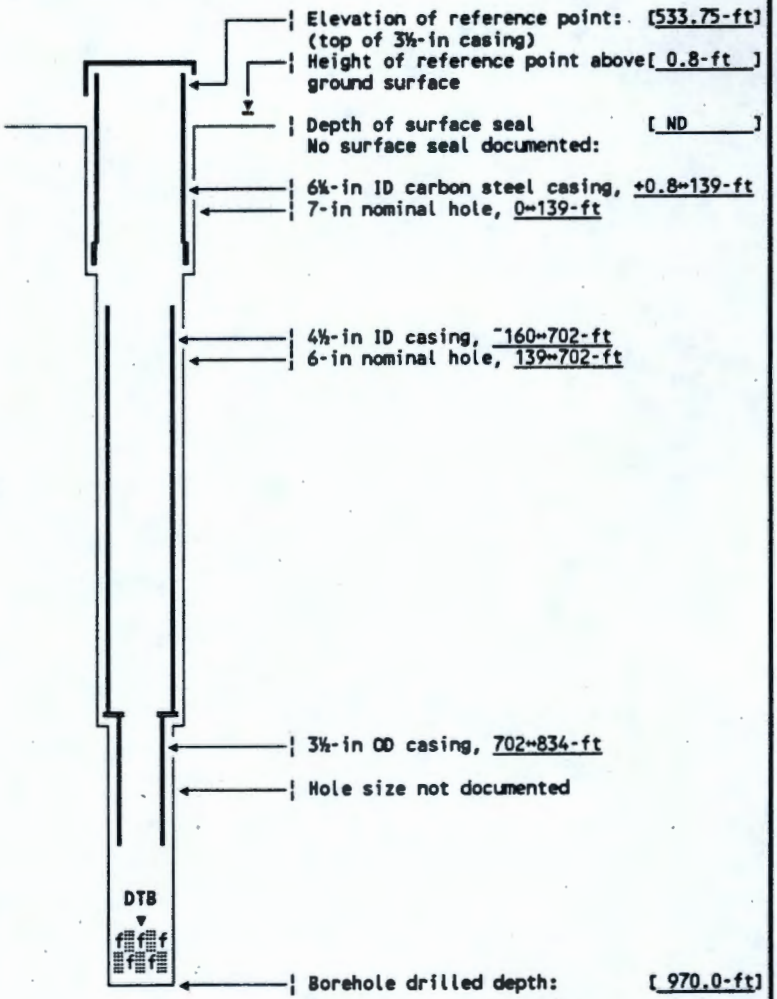
WELL NUMBER: 699-54-37B A8861
TEMPORARY WELL NO: Haynes Stock
Hanford Coordinates: N/S N 54,140 E/W W 36,806
State Coordinates: N 459,347 E 2,258,380
Start Card #: Not documented T 13N R 27E S 30H1
Elevation Ground surface: 533.0-ft Estimated

Depth to water: 150-ft 1923
(Ground surface) 124.7-ft 10Nov94

GENERALIZED STRATIGRAPHY / Geologist's Log

0-135: Cemented SAND and GRAVEL
135-307: Black BASALT
307-320: "Honeycomb" BASALT
320-339: Black BASALT
339-350: Gray BASALT
350-377: Black BASALT
377-387: "Broken ROCK"
387-408: Black BASALT
408-481: Blue BASALT
481-487: SANDSTONE
487-494: Brown SHALE
494-514: Blue SHALE
514-517: Gray and black hard SAND
517-544: Gray hard ROCK
544-599: Blue hard BASALT
599-772: Soft BASALT
772-790: BASALT mixed w/green ROCK
790-805: Black BASALT
805-824: SHALE and broken ROCK
824-908: Black BASALT
908-913: SAND
913-952: SHALE
952-954: SAND and SHALE
954-966: Oil showing SAND
966-970: SAND
970 : BASALT

REMEDIATIONS:
Sep57 by Row-Roberts
Pulled about 160-ft of "5-inch stove pipe."
Depth to bottom 148-ft.
Oct75 by M Bultena
Cleaned out wood and cuttings to 923-ft w/small tools.




Drawing By: RKL/6N54W37B.ASB
Date : 15Nov94
Reference : HANFORD WELLS

ECN 614122
Pg. 13 of 21

## DIAGRAMMATIC WELL DECOMMISSIONING PROCESS

Drilling Method: Cable tools
Drilling Fluid Used: Not documented
Driller's Name: N C Jannsen?
Drilling Company: Jannsen Drilling
Date Started: During 1921

Sample Method: Hard tool (nom)
Additives Used: Not documented
WA State Lic Nr: Not documented
Company Location: Portland OR
Date Complete: During 1923

WELL NUMBER: 699-54-37B A8861
TEMPORARY WELL NO: Haynes Stock
Hanford Coordinates: N/S N 54,140 E/W W 36,806
State Coordinates: N 459,347 E 2,258,380
Start Card #: Not documented
T 13N R 27E S 30H1
Elevation Ground surface: 533.0-ft Estimated

Depth to water: 150-ft 1923
(Ground surface) 124.7-ft 10Nov94

DIAGRAMMATIC
DECOMMISSIONING ACTIVITIES
(Depths from ground surface)

1] Establish depth to bottom. and top of 4½-in casing.

2] Perforate 3½-in casing, ~702-834-ft (or as found).

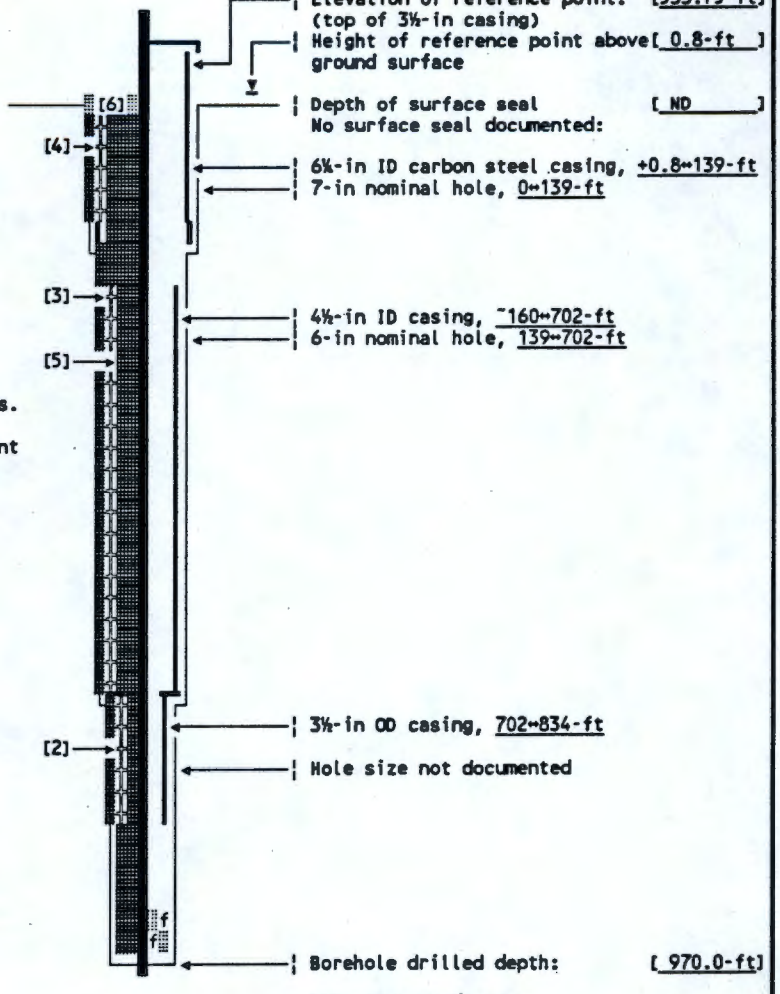
3] Perforate 4½-in casing, ~160-702-ft (or as found).

4] Perforate 6¼-in casing, ~3-139-ft.

5] Cement grout from total depth back to 3-ft w/tremmie in stages.

6] Cut casing @ ~3-ft. Place cement or metal cap and fill to grade.

NOTE:
Order of work to be determined by field conditions.




Drawing By: RKL/6N54W37B.PLN
Date : 16Nov94
Reference : HANFORD WELLS

ECN-614122
Pg. 14 of 21

| RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST | 1. Well No. 699-63-89 |
|---|---|
| | Page 1 of 2 |

2. Has a need for use of the well been identified and documented?
[ No ] No potential user identified

3. Is well presently in use?
[ No ] No use identifed

4. Is casing sealed in accordance with IAW WAC 173-160-075?
[ No ] No documentation of annular seal

4a. Natural barriers preserved?
[ NA ] Well terminates within first basalt flow

4b. Aquifer/strata pentrated permanently sealed?
[ No ] No seals documented

4c. Annulus sealed against surface water?
[ No ] No surface seal documented

4d. Casing overlap more than 8 ft; packed and grouted?
[ N/A ] Not applicable

5. If not in use, is well capped IAW WAC 173-160-085?
[ Yes ] Capped, not locked

6. Is design and construction IAW WAC 173-160-500?
[ No ] No annular seal documented

6a. Saturated formation/aquifers not connected?
[ NA ] Probably penetrates unconfined aquifer only

6b. Cuttings/development water handled IAW WAC 173-303?
[ N/A ] Drilled before applicable date of WAC 173-303

6c. Well properly indentified?
[ No ] No permanent identification

7. Is surface protection IAW WAC 173-160-510?
[ No ] No surface seal documented

7a. Well capped and protected?
[ N/A ] Not applicable

7b. Protective posts, surface pad or cover installed?
[ N/A ] Not applicable

7c. Surface protection waived or variance obtained?
[ N/A ] Not applicable

7d. Is existing surface protection damaged?
[ N/A ] Not applicable

8. Are casing materials IAW 173-160-520?
[ N/A ] Not applicable

9. Was drill rig/drilling equipment cleaned IAW WAC 173-160-530?
[ N/A ] Not applicable

9a. Drill rig/equipment casing/screen cleaned?
[ N/A ] Not applicable

9b. Filter pack cleaned? Material compatible?
[ N/A ] Not applicable

RCRA/CERCLA MONITORING WELL?

10. Does water sample from vertical screened interval represent horizontal stratigraphy?
[ N/A ] Not applicable

10a. Screened interval documented?
[ N/A ] Not applicable

10b. Vertical lithology documented?
[ Yes ] Has driller's log

A-6000-451 (06/93)

ECN-614122
Pg. 15 of 21

| RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST | 1. Well No. 699-63-89 |
|---|---|
| | Page 2 of 2 |

11. Is design and construction IAW WAC 173-160-5407
[ N/A ] Not applicable

11a. Screen commercially fabricated of material nonreactive to subsurface conditions?
[ N/A ] Not applicable

11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen.
[ N/A ] Not applicable

11c. Well has been developed.
[ N/A ] Not applicable

11d. Annulus grouted with bentonite or bentonite/cement mixture.
[ N/A ] Not applicable

12. Does water sample meet established acceptance criteria?
Sample is less than 5 NTU and sand free.
[ N/A ] Not applicable

13. Data Sources Used:
Logs:
Driller's: Soil Sampling Service Date: 04/30/73 Company: _____
Geologist: R. Ledgerwood Date: 04/30/73 Company: ARHCO
Geophysical: N/A Date: _____ Company: _____
Television: N/A Date: _____ Company: _____

Publications: Title, Author, Date
HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993

Databases:
WHC Well Services

Field Check: WHC Well Services Date: 11/10/94 Company: _____

Other:

14. Comments: Identify evaluation criteria addressed by number:

15. Status

| | | |
|---|---|---|
| Well is acceptable for intended use | [ No ] | Well lacks seals |
| Well is acceptable for intended use if variance is granted | [ NA ] | Not applicable |
| Rehabilitation required to continue intended use | [ No ] | Not applicable |
| Remediation required to achieve intended use | [ No ] | Well has no identified user |
| Decommission, well is unneeded or cannot be remediated | [ Yes ] | Well has no identifed need |
| Other _____ | [ _____ ] | _____ |

16. Status Recommendation
Done By: Name: R. K. Ledgerwood Title: Principal Scientist Date: 11/16/94

A-6000-451R (06/93)

## WELL CONSTRUCTION AND COMPLETION SUMMARY

Drilling Method: Air rotary
Drilling Fluid Used: None
Driller's Name: Not documented
Drilling Company: Soil Sampling Ser.
Date Started: In 1973

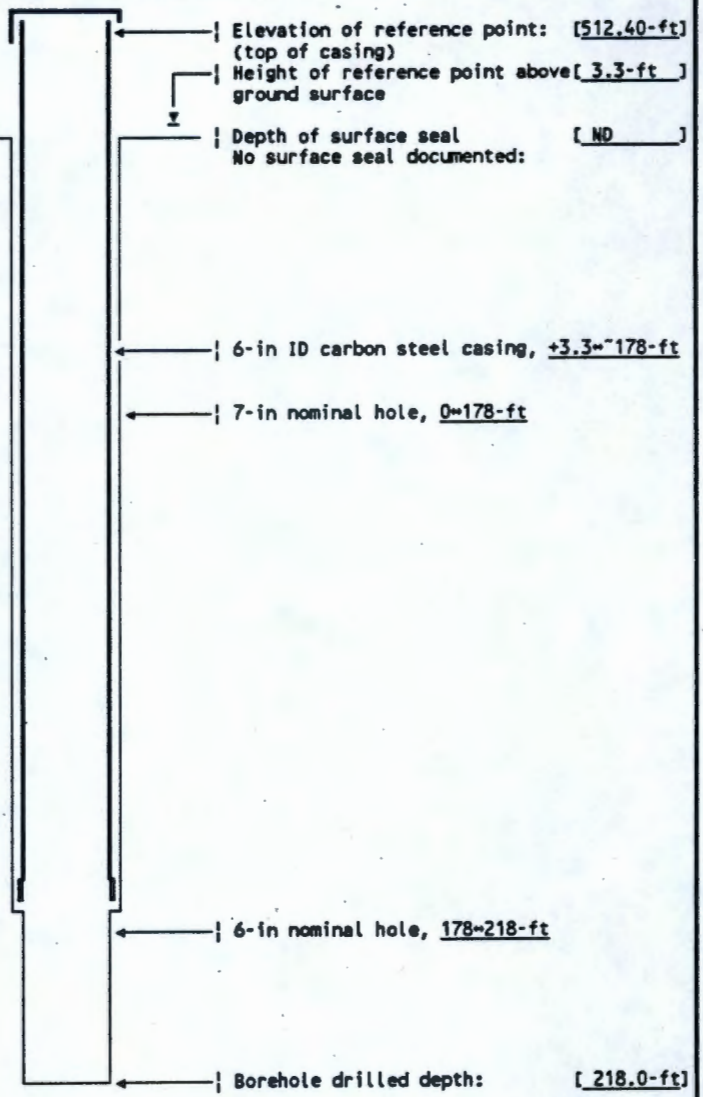
Sample Method: Air returns
Additives Used: None
WA State Lic Nr: Not documented
Company Location: Puyallup, WA
Date Complete: Apr73

WELL NUMBER: 699-63-89 A8956
TEMPORARY WELL NO: UGB-1
Hanford Coordinates: N/S N 62,751 E/W W 88,504
State Coordinates: N 467,826 E 2,206,660
Start Card #: Not documented
T 13N R 25E S 9R1
Elevation Ground surface: 509.1-ft Estimated

Depth to water: 97.6 Apr73
(Ground surface) 96.9-ft 10Nov94

GENERALIZED STRATIGRAPHY / Geologist's Log

0-8: Basalt BOULDERS
8-10: Sandy cobble GRAVEL
10-22: Sandy GRAVEL w/COBBLES & BOULDERS
BOULDER @ 16-17-ft
22-32: Silty cse GRAVEL
32-34: Silty fine-med SAND
34-36: Silty fine-med GRAVEL
36-40: Med-cse GRAVEL
40-42: Silty fine-med GRAVEL
42-46: Med-cse GRAVEL w/fine SAND
46-52: Cse GRAVEL w/cse black SAND
52-54: BOULDERS & COBBLES
54-128: Sandy GRAVEL
128-132: Gravelly SAND
132-135: SAND
135-153: Silty sandy GRAVEL
153-158: Gravelly SAND
158-163: Sandy silty GRAVEL w/CLAY frags
163: Brown SILT layer
163-172: Sandy GRAVEL
172-176: Silty sandy GRAVEL
176-178: Sandy GRAVEL
178-209: Vesicular and palagonitic BASALT
209: Possible ASH layer
209-218: BASALT




Drawing By: RKL/6N63W89.ASB
Date : 15Nov94
Reference : HANFORD WELLS

## DIAGRAMMATIC WELL DECOMMISSIONING PROCESS

Drilling Method: Air rotary
Drilling Fluid Used: None
Driller's Name: Not documented
Drilling Company: Soil Sampling Ser.
Date Started: In 1973

Sample Method: Air returns
Additives Used: None
WA State Lic Nr: Not documented
Company Location: Puyallup, WA
Date Complete: Apr73

WELL NUMBER: 699-63-89 A8956
TEMPORARY WELL NO: UGB-1
Hanford Coordinates: N/S N 62,751 E/W W 88,504
State Coordinates: N 467,826 E 2,206,660
Start Card #: Not documented T 13N R 25E S 9R1
Elevation Ground surface: 509.1-ft Estimated

Depth to water: 97.6 Apr73
(Ground surface) 96.9-ft 10Nov94

DIAGRAMMATIC DECOMMISSIONING ACTIVITIES
(Depths from ground surface)

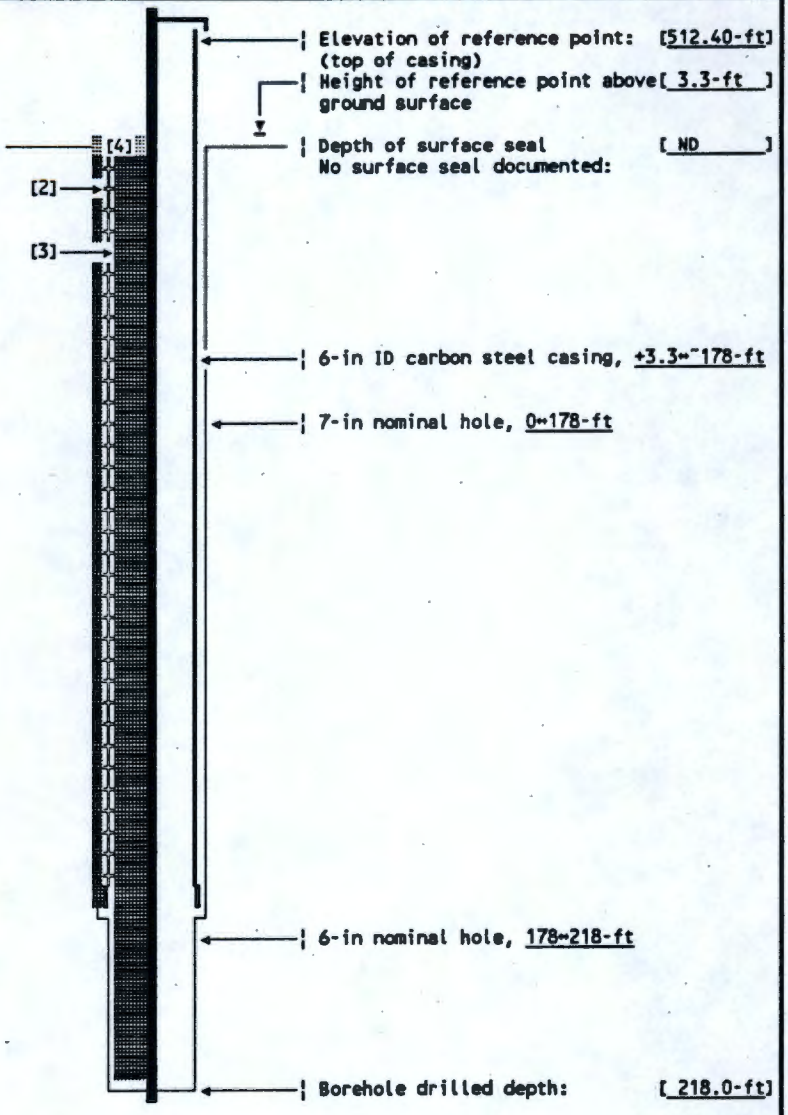
1] Establish depth to bottom.

2] Perforate 6-in casing, 3-178-ft.

3] Grout with cement or bentonite grout, 3-218-ft.

4] Cut casing @ ~3-ft. Place cement or metal cap and fill to grade.

NOTE:
Order of work to be determined by field conditions.




Drawing By: RKL/6N63W89.PLN
Date : 16Nov94
Reference : HANFORD WELLS

ECN-614122
Pg. 18 of 21

| RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST | 1. Well No. 699-101-48C<br>Page 1 of 2 |
|---|---|

2. Has a need for use of the well been identified and documented?
[ No ] No potential user identified

3. Is well presently in use?
[ No ] No use identifed

4. Is casing sealed in accordance with IAW WAC 173-160-075?
[ No ] No documentation of annular seal

4a. Natural barriers preserved?
[ NA ] Well terminates within top of unconfined aquifer

4b. Aquifer/strata pentrated permanently sealed?
[ No ] No seals documented

4c. Annulus sealed against surface water?
[ No ] No surface seal documented

4d. Casing overlap more than 8 ft; packed and grouted?
[ N/A ] Not applicable

5. If not in use, is well capped IAW WAC 173-160-085?
[ Yes ] Capped and locked

6. Is design and construction IAW WAC 173-160-500?
[ No ] No annular seal documented

6a. Saturated formation/aquifers not connected?
[ NA ] Penetrates unconfined aquifer only

6b. Cuttings/development water handled IAW WAC 173-303?
[ N/A ] Drilled before applicable date of WAC 173-303

6c. Well properly indentified?
[ No ] No permanent identification

7. Is surface protection IAW WAC 173-160-510?
[ No ] No surface seal documented

7a. Well capped and protected?
[ N/A ] Not applicable

7b. Protective posts, surface pad or cover installed?
[ N/A ] Not applicable

7c. Surface protection waived or variance obtained?
[ N/A ] Not applicable

7d. Is existing surface protection damaged?
[ N/A ] Not applicable

8. Are casing materials IAW 173-160-520?
[ N/A ] Not applicable

9. Was drill rig/drilling equipment cleaned IAW WAC 173-160-530?
[ N/A ] Not applicable

9a. Drill rig/equipment casing/screen cleaned?
[ N/A ] Not applicable

9b. Filter pack cleaned? Material compatible?
[ N/A ] Not applicable

RCRA/CERCLA MONITORING WELL?

10. Does water sample from vertical screened interval represent horizontal stratigraphy?
[ N/A ] Not applicable

10a. Screened interval documented?
[ N/A ] Not applicable

10b. Vertical lithology documented?
[ Yes ] Has driller's log

A-6000-451 (06/93)

## RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST

1. Well No. 699-101-48C

Page 2 of 2

11. Is design and construction IAW WAC 173-160-540?
[ N/A ] Not applicable

11a. Screen commercially fabricated of material nonreactive to subsurface conditions?
[ N/A ] Not applicable

11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen.
[ N/A ] Not applicable

11c. Well has been developed.
[ N/A ] Not applicable

11d. Annulus grouted with bentonite or bentonite/cement mixture.
[ N/A ] Not applicable

12. Does water sample meet established acceptance criteria?
Sample is less than 5 NTU and sand free.
[ N/A ] Not applicable

13. Data Sources Used:
Logs:
Driller's: Not documented Date: 05/30/43 Company: _____
Geologist: N/A Date: _____ Company: _____
Geophysical: N/A Date: _____ Company: _____
Television: N/A Date: _____ Company: _____
Publications: Title, Author, Date
HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993
Databases:
WHC Well Services
Field Check: WHC Well Services Date: 11/03/94 Company: _____
Other:

14. Comments: Identify evaluation criteria addressed by number:

15. Status

| | | |
|---|---|---|
| Well is acceptable for intended use | [ No ] | Well lacks seals |
| Well is acceptable for intended use if variance is granted | [ NA ] | Not applicable |
| Rehabilitation required to continue intended use | [ No ] | Not applicable |
| Remediation required to achieve intended use | [ No ] | Well has no identified user |
| Decommission, well is unneeded or cannot be remediated | [ Yes ] | Well has no identified need |
| Other _____ | [ _____ ] | _____ |

16. Status Recommendation Done By: Name: R. K. Ledgerwood Title: Principal Scientist Date: 11/16/94

A-6000-451R (06/93)

## DIAGRAMMATIC WELL DECOMMISSIONING PROCESS

Drilling Method: Cable tool
Drilling Fluid Used: Not documented
Driller's Name: Not documented
Drilling Company: Not documented
Date Started: Not documented

Sample Method: Hard tool (nom)
Additives Used: Not documented
WA State Lic Nr: Not documented
Company Location: Not documented
Date Complete: May43

WELL NUMBER: 699-101-48C A9102
TEMPORARY WELL NO: Test Well #5
Hanford Coordinates: N/S N 101,476 E/W W 47,985
State Coordinates: N 506,654 E 2,247,080
Start Card #: Not documented T 14N R 26E S 12E3
Elevation Ground surface: 388.3-ft Estimated

Depth to water: Not documented
(Ground surface) Not documented

DIAGRAMMATIC DECOMMISSIONING ACTIVITIES (Depths from ground surface)

1] Clean well to total depth or refusal.

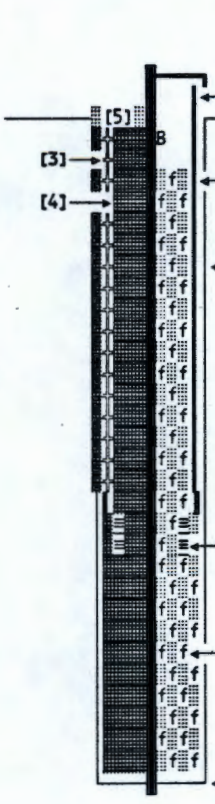
2] Make television inspection to establish screen and casing status, (necessity as decided in field).

3] Perforate casing ~3-47-ft, (or as determined in field).

4] Grout with cement or bentonite from hole bottom to ~3-ft.

5] Cut casing @ ~3-ft. Place cement or metal cap and fill to grade.

NOTE:
Order of work to be determined by field conditions.




Elevation of reference point: [388.59-ft] (top of casing)
Height of reference point above ground surface [ 0.3-ft ]
Depth of surface seal [ ND ]
No surface seal documented:
6-in ID carbon steel casing, +0.3~43-ft (assumed pullback from 77-ft)
7-in nominal hole, 0~77-ft
DTB=Depth to bottom, 6.5-ft, 03Nov94
Screen, assumed 42~47-ft, 6-in telescoping
Assumed fill, 47~77-ft
Borehole drilled depth: [ 77.0-ft ]

Drawing By: RKL/6N10148C.PLN
Date : 16Nov94
Reference : HANFORD WELLS

## WELL CONSTRUCTION AND COMPLETION SUMMARY

| | |
|---|---|
| Drilling Method: Cable tool | Sample Method: Hard tool (nom) |
| Drilling Fluid Used: Not documented | Additives Used: Not documented |
| Driller's Name: Not documented | WA State Lic Nr: Not documented |
| Drilling Company: Not documented | Company Location: Not documented |
| Date Started: Not documented | Date Complete: May43 |

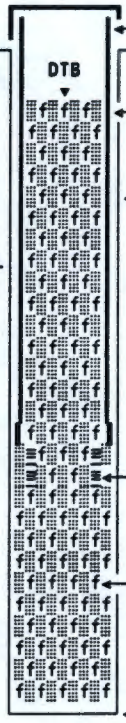
WELL NUMBER: 699-101-48C A9102 TEMPORARY WELL NO: Test Well #5
Hanford Coordinates: N/S N 101,476 E/W W 47,985
State Coordinates: N 506,654 E 2,247,080
Start Card #: Not documented T 14N R 26E S 12E3
Elevation Ground surface: 388.3-ft Estimated

Depth to water: Not documented
(Ground surface) Not documented

GENERALIZED STRATIGRAPHY / Driller's Log

0-21: BOULDERS, COBBLES, coarse GRAVEL with some sand and sandy CLAY in the openings
21-24: SAND and COBBLES
24-43: Coarse GRAVEL and COBBLES with some SAND
43-45: Medium and coarse GRAVEL with very little SAND
45-47: SAND and fine GRAVEL
47-49: Clay bound medium and coarse GRAVEL
49-77: Fine yellow SANDSTONE - calcareous cement

NOTE ON LOG:
Screen set with bottom at 47'
Pipe left in the hole 43'3"




Elevation of reference point: [388.59-ft] (top of casing)
Height of reference point above ground surface [ 0.3-ft ]
Depth of surface seal [ ND ]
No surface seal documented:
6-in ID carbon steel casing, +0.3-43-ft (assumed pullback from 77-ft)
7-in nominal hole, 0-77-ft
DTB=Depth to bottom, 6.5-ft, 03Nov94
Screen, assumed 42-47-ft, 6-in telescoping
Assumed fill, 47-77-ft
Borehole drilled depth: [ 77.0-ft ]

Drawing By: RKL/6N10148C.ASB
Date : 15Nov94
Reference : HANFORD WELLS

# DISTRIBUTION SHEET

| To | From | Page 1 of 1 |
|---|---|---|
| Distribution | R. K. Ledgerwood | DateNovember 17, 1994 |
| Project Title/Work Order | | EDT No. NA |
| A supplemental revision by ECN to "Fitness-For-Intended-Use Evaluation Recommendations for Hanford Site 600 Area Wells, WHC-SD-EN-AP-161, Rev 0." | | ECN No. 614122 |

| Name | MSIN | Text With All Attach. | Text Only | Attach./ Appendix Only | EDT/ECN Only |
|---|---|---|---|---|---|
| J. W. Cammann | H6-06 | X | | | |
| M. A. Chamness | K6-84 | X | | | |
| J. R. Duong | N3-05 | X | | | |
| J. W. Fassett | H6-06 | X | | | |
| M. G. Gardner (5) | N3-06 | X | | | |
| C. H. Gunion | A5-20 | X | | | |
| R. K. Ledgerwood | N3-05 | X | | | |
| S. P. Luttrell | K6-96 | X | | | |
| A. L. Schatz | N3-05 | X | | | |
| D. E. Skoglie | N3-05 | X | | | |
| R. R. Thompson | H6-32 | X | | | |
| T. J. Wood | N3-05 | X | | | |
| EDMC (2) | H6-08 | X | | | |
| Central Files (2) | L8-04 | X | | | |