APPENDIX DATA

ATTACHMENT G: WIPP BOREHOLE UPDATE

This page intentionally left blank

1

WIPP BOREHOLES

2 The Department of Energy (DOE) prepared DOE/WIPP 95-2092, Rev. 1, Waste Isolation Pilot

3 Plant Borehole Data Report (CCA Appendix BH) to serve as a central document providing data

4 on boreholes used in characterizing the site. The report contained a comprehensive database on

- 5 wells drilled in support of the WIPP and boreholes that were located within the 16-section Land
- 6 Withdrawal Area.
- 7 This report was categorized into seven groups of boreholes: commercially drilled boreholes,
- 8 DOE wells, geologic exploration boreholes, hydrologic test boreholes, potash boreholes,
- 9 subsurface exploration boreholes, and Water Quality Sampling Program boreholes. There were
- 10 179 boreholes in the report. At the time of the CCA, 80 of those boreholes were being used as
- 11 monitoring wells. The rest of the boreholes were plugged and abandoned after being drilled for
- 12 their specific purpose, i.e., potash information, hydrocarbon information, or WIPP site
- 13 characterization information.
- 14 This report updates all of the monitoring wells identified in CCA Appendix BH and adds the new
- 15 monitoring wells drilled since the initial certification. This report also adds the wells that were in 16 use but inadvertently omitted from CCA Appendix BH
- 16 use but inadvertently omitted from CCA Appendix BH.

Well Name	CCA Monitoring Status	CRA Monitoring Status	Depth	Year Drilled	Year Plugged
AEC-7	Culebra	Culebra	4734 ft	1974	N/A
AEC-8	Bell Canyon	Bell Canyon	4922 ft	1974	N/A
B-1	Observation	Observation	58 ft	1978	N/A
B-1A	Observation	Observation	13 ft	1978	N/A
B-4	Observation	Observation	39 ft	1978	N/A
B-4A	Observation	Observation	14 ft	1978	N/A
B-13	Observation	Observation	28 ft	1978	N/A
B-16	Observation	Observation	31 ft	1978	N/A
B-18	Observation	Observation	33 ft	1978	N/A
B-20	Observation	Observation	14 ft	1978	N/A
B-20A	Observation	Observation	34 ft	1978	N/A
B-38	Observation	Observation	50 ft	1979	N/A
B-54	Observation	Observation	210 ft	1979	N/A
D-268	Culebra	Rancher's Water Well	1411 ft	1984	1999
DOE-1	Culebra	Culebra	4057 ft	1982	N/A
DOE-2	Culebra	Magenta	4325 ft	1984	N/A
ERDA-9	Culebra	Culebra	2886 ft	1976	N/A
H-1	Culebra/Magenta	Plugged	856 ft	1976	2001
H-2A	Culebra	Culebra	672 ft	1977	N/A
H-2B1	Magenta	Magenta	661 ft	1977	N/A

Table DATA-G-1. Monitoring Well Status

l		

Well Name	CCA Monitoring Status	CRA Monitoring Status	Depth	Year Drilled	Year Plugged
H-2B2	Culebra	Culebra	660 ft	1984	N/A
H-2C	Magenta	Culebra	795 ft	1977	N/A
H-3B1	Magenta	Magenta	902 ft	1976	N/A
H-3B2	Culebra	Culebra	725 ft	1983	N/A
H-3B3	Magenta	Culebra	730 ft	1983	N/A
H-3D	Dewey Lake	Dewey Lake	554 ft	1987	N/A
H-4A	not in use	Plugged	532 ft	1978	2000
H-4B	Culebra	Culebra	529 ft	1978	N/A
H-4C	Magenta	Magenta	661 ft	1978	N/A
H-5A	Culebra	Culebra	930 ft	1978	N/A
H-5B	Culebra	Culebra	925 ft	1978	N/A
H-5C	Magenta	Magenta	1076 ft	1978	N/A
H-6A	Culebra	Culebra	637 ft	1978	N/A
H-6B	Culebra	Culebra	640 ft	1978	N/A
H-6C	Culebra	Culebra	741 ft	1978	N/A
H-7A	not in use	Plugged	154 ft	1979	2000
H-7B1	Culebra	Culebra	286 ft	1979	N/A
H-7B2	Culebra	Culebra	295 ft	1983	N/A
H-7C	not in use	not in use	420 ft	1979	N/A
H-8A	Magenta	Magenta	505 ft	1979	N/A
H-8B	not in use	Rancher's Water Well	624 ft	1979	1987
H-8C	Rustler	Rustler	808 ft	1979	N/A
H-9A	Culebra	Plugged	692 ft	1979	2002
H-9B	Culebra	Culebra	708 ft	1979	N/A
H-9C	Culebra	Magenta	816 ft	1979	N/A
H-10A	Magenta	Magenta	1318 ft	1979	N/A
H-10B	Magenta	Plugged	1398 ft	1979	2002
H-10C	not in use	Culebra	1550 ft	1979	N/A
H-11B1	Culebra	Culebra	785 ft	1983	N/A
H-11B2	Culebra	Magenta	776 ft	1983	N/A
H-11B3	Culebra	Plugged	789 ft	1983	2002
H-11B4	not in use	Culebra	765 ft	1988	N/A
H-12	Culebra	Culebra	1001 ft	1983	N/A
H-14	Culebra	Magenta	589 ft	1986	N/A
H-15	Culebra	Magenta	900 ft	1986	N/A
H-16	Dewey Lake	not in use	851 ft	1987	N/A

Well Name	CCA Monitoring Status	CRA Monitoring Status	Depth	Year Drilled	Year Plugged
H-17	Culebra	Culebra	880 ft	1987	N/A
H-18	Culebra	Magenta	840 ft	1987	N/A
H-19B0	not in use	Culebra	779 ft	1995	N/A
H-19B2	not in use	Culebra	785 ft	1995	N/A
H-19B3	not in use	Culebra	785 ft	1995	N/A
H-19B4	not in use	Culebra	782 ft	1995	N/A
H-19B5	not in use	Culebra	786 ft	1995	N/A
H-19B6	not in use	Culebra	788 ft	1995	N/A
H-19B7	not in use	Culebra	785 ft	1995	N/A
P-14	Culebra	Plugged	1545 ft	1976	1999
P-15	Culebra	Plugged	1465 ft	1976	2002
P-17	Culebra	Culebra	1660 ft	1976	N/A
P-18	Culebra	Plugged	1998 ft	1976	2002
WIPP-12	Culebra	Culebra	3928 ft	1978	N/A
WIPP-13	Culebra	Culebra	3856 ft	1978	N/A
WIPP -18	Culebra	Magenta	1060 ft	1978	N/A
WIPP-19	Culebra	Culebra	1038 ft	1978	N/A
WIPP-21	Culebra	Culebra	1045 ft	1978	N/A
WIPP-22	Culebra	Culebra	1450 ft	1978	N/A
WIPP-25	Culebra/Magenta	Culebra/Magenta	650 ft	1978	N/A
WIPP-26	Culebra	Culebra	503 ft	1978	N/A
WIPP-27	Culebra/Magenta	Culebra	592 ft	1978	N/A
WIPP-28	Rustler	Plugged	801 ft	1978	1999
WIPP-29	Culebra	Culebra	377 ft	1978	N/A
WIPP-30	Culebra/Magenta	Culebra/Magenta	913 ft	1978	N/A
WQSP-1	Culebra	Culebra	737 ft	1994	N/A
WQSP-2	Culebra	Culebra	846 ft	1994	N/A
WQSP-3	Culebra	Culebra	879 ft	1994	N/A
WQSP-4	Culebra	Culebra	800 ft	1994	N/A
WQSP-5	Culebra	Culebra	681 ft	1994	N/A
WQSP-6	Culebra	Culebra	617 ft	1994	N/A
WQSP-6A	Dewey Lake	Dewey Lake	225 ft	1994	N/A
	Wells Inadverte	ently Omitted From Appendix B	H of the CCA		
CB-1	Culebra	Culebra/Bell Canyon	4291 ft	1974	N/A
D-207	Potash/plugged	Plugged	1613 ft	1958	1958
H-19B	Not in Use/Capped	not in use/capped	40 ft	1995	N/A
H-19B1	plugged	Plugged	733 ft	1995	1995

 Table DATA-G-1.
 Monitoring Well Status — Continued

Well Name	CCA Monitoring Status	CRA Monitoring Status	Depth	Year Drilled	Year Plugged
I-457	Potash/plugged	Plugged	1885 ft	1976	1976
	New Monitoring	Wells Drilled During the First Cl	RA Time Peri	od	
C-2505	N/A	Santa Rosa/Dewey Lake	97 ft	1996	N/A
C-2506	N/A	Santa Rosa/Dewey Lake	69 ft	1996	N/A
C-2507	N/A	Santa Rosa/Dewey Lake	73 ft	1996	N/A
C-2737	N/A	Culebra/Magenta	710 ft	2001	N/A
C-2811	N/A	Santa Rosa/Dewey Lake	80 ft	2001	N/A
ES-001	N/A	Plugged	54 ft	1996	1996
ES-002	N/A	Plugged	19 ft	1996	1996
PZ-1	N/A	Santa Rosa	68 ft	1997	N/A
PZ-2	N/A	Santa Rosa	65 ft	1997	N/A
PZ-3	N/A	Santa Rosa	71 ft	1997	N/A
PZ-4	N/A	Santa Rosa	65 ft	1997	N/A
PZ-5	N/A	Santa Rosa	72 ft	1997	N/A
PZ-6	N/A	Santa Rosa	66 ft	1997	N/A
PZ-7	N/A	Santa Rosa	72 ft	1997	N/A
PZ-8	N/A	Santa Rosa	68 ft	1997	N/A
PZ-9	N/A	Santa Rosa	82 ft	1997	N/A
PZ-10	N/A	Santa Rosa	57 ft	1997	N/A
PZ-11	N/A	Santa Rosa	82 ft	1997	N/A
PZ-12	N/A	Santa Rosa	72 ft	1997	N/A

Table DATA-G-1. Monitoring Well Status — Continued

1 Individual Well Reports

- 2 This section provides data on the plugged wells and the new wells drilled during the CRA
- 3 monitoring period (July 1995 through September 2002).

4 <u>C-2505</u>

	<u>e 2903</u>		
5	Location: T22S-R31E-20	Spud Date: 09/23/1996	Total Depth: 97 ft
6	Status: Monitoring Well	Completed: 09/24/1996	Elevation: 3413 ft
7	Hole Size: 0-97 ft = 7 7/8"	Stratigraphy: 0-9 = Holocene	Deposits
8	Casing Size: 0-65 ft = $4\frac{1}{2}$ " PVC	9-12 = Mescale	ro Caliche Formation
9		12-49 = Gatuña	Formation
10		49-54 = Santa F	Rosa Formation Sandstone
11		54-65 = Dewey	Lake Formation Redbeds

1 2 3 4 5 6 7	<u>C-2506</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: 0-69 ft = 7 7/8" Casing Size: 0-65 ft = 4 $\frac{1}{2}$ " PVC	Spud Date: 09 Completed: 09 Stratigraphy:		ation ormation Sandstone
8 9 10 11 12 13 14	<u>C-2507</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: 0-73 ft = 7 7/8" Casing Size: 0-69 ft = 4 $\frac{1}{2}$ " PVC	Spud Date: 10 Completed: 10 Stratigraphy:		ation ormation Sandstone
15 16 17 18 19 20 21 22 23 24	<u>C-2737</u> Location: T22S-R31E-29 Status: Monitoring Well Hole Size: 0-710 ft = $12 \frac{1}{4}$ " Casing Size: 0-700 ft = 7" Fiberglass			ition Redbeds r Member olomite Member Member olomite Member
25 26 27 28 29 30 31	<u>C-2811</u> Location: T22S-R31E-29 Status: Monitoring Well Hole Size: No Report Casing Size: 0-80 ft = 2" PVC	Spud Date: 03 Completed: 03 Stratigraphy:		ation ormation Sandstone
32 33 34 35 36 37 28	<u>CB-1</u> Location: T23S-R31E-05 Status: Monitoring Well Casing Size: 0-650 ft = 13 $3/8$ " Notes: Originally drilled as a hydroc abandoned the well, it was turned over used to monitor the Culobra Delemit	er to DOE to be	2/08/1975 ion well. Before the op e utilized as a monitori	ng well. Currently

38 used to monitor the Culebra Dolomite Member and Bell Canyon Formation.

1 2 3 4 5 6 7	<u>D-207</u> Location: T22S-R31E-19 Status: Plugged Plug Date: 07/03/1958 Notes: Potash core hole located on brine water from total depth to 560 and soil.		
8 9 10 11 12 13 14 15	<u>D-268</u> Location: T22S-R30E-35 Status: Rancher's Water WellComp Hole Size: No Report Casing Size: 0-528 ft = 8 5/8" Notes: Originally drilled as a potas Plugged back to 493 ft and converter transferred.	Stratigraphy: No Report h core test, it was converted to	Total Depth: 1411 ft Elevation: No Report a monitoring well in 1988. use in 1999. Ownership
16 17 18 19 20	ES-001 Location: T22S-R31E-20 Status: Plugged Plug Date: 10/02/1996 Notes: Backfilled to land surface.	Spud Date: 10/02/1996 Completed: 10/02/1996 Drill cuttings and bentonite gel	Total Depth: 54 ft Elevation: 3413 ft used to plug well.
21 22 23 24 25	<u>ES-002</u> Location: T22S-R31E-20 Status: Plugged Plug Date: 10/03/1996 Notes: Backfilled to land surface w	Spud Date: 10/03/1996 Completed: 10/03/1996 vith drill cuttings and bentonite	Total Depth: 19 ft Elevation: 3413 ft gel used to plug well.
26 27 28 29 30 31	<u>H-1</u> Location: T22S-R31E-29 Status: Plugged Plug Date: $02/19/2001$ Casing Size: 0-848 ft = 7" Notes: Plugged to surface with cen	Spud Date: 05/20/1976 Completed: 06/10/1976 nent.	Total Depth: 856 ft Elevation: 3400 ft
32 33 34 35 36 37	<u>H-4A</u> Location: T22S-R31E-05 Status: Plugged Plug Date: $10/25/2000$ Casing Size: 0-364 ft = 5 1/2" Notes: Plugged to surface with cen	Spud Date: 04/30/1978 Completed: 05/23/1978 nent.	Total Depth: 532 ft Elevation: 3333 ft

1 2 3 4 5 6	<u>H-7A</u> Location: T23S-R30E-14 Status: Plugged Plug Date: $06/23/2000$ Casing Size: 0-109 ft = 7" Notes: Plugged to surface with cen	Spud Date: 09/18/1979 Completed: 10/18/1979 nent.	Total Depth: 154 ft Elevation: 3164 ft
7 8 9 10 11	<u>H-8B</u> Location: T24S-R30E-23 Status: Rancher's Water WellComp Casing Size: 0-574 ft = 7" Notes: Turned over to rancher for 1		Total Depth: 624 ft Elevation: 3434 ft
12 13 14 15 16 17	<u>H-9A</u> Location: T24S-R31E-04 Status: Plugged Plug Date: 02/11/2002 Casing Size: 0-570 ft = 7" Notes: Plugged to surface with cen	Spud Date: 07/09/1979 Completed: 09/05/1979 nent.	Total Depth: 692 ft Elevation: 3407 ft
18 19 20 21 22 23	<u>H-10B</u> Location: T23S-R32E-20 Status: Plugged Plug Date: 01/31/2002 Casing Size: 0-1346 ft = 7" Notes: Well bore was plugged with	Spud Date: 10/07/1979 Completed: 10/13/1979	Total Depth: 1398 ft Elevation: 3689 ft e surface.
24 25 26 27 28 29	<u>H-11B3</u> Location: T22S-R31E-33 Status: Plugged Plug Date: $08/28/2002$ Casing Size: 0-733 ft = 5 1/2" Notes: Well was plugged with cem	Spud Date: 12/01/1983 Completed: 01/04/1984 ent from the bottom to the surf	Total Depth: 789 ft Elevation: 3412 ft
30 31 32 33	<u>H-19B</u> Location: T22S-R31E-28 Status: Capped Casing Size: 0-38 ft = 20"	Spud Date: xx/xx/1995 Completed: xx/xx/1995	Total Depth: 40 ft Elevation: 3417 ft

33 Casing Size: 0-38 ft = 20"
34 Notes: Cap welded on surface casing.

1 2 3 4 5 6	<u>H-19B1</u> Location: T22S-R31E-28 Status: Plugged Plug Date: 03/19/1995 Notes: Well was plugged and aban retrievable.	Spud Date: 02/14 Completed: 03/19 doned because drill	9/1995	Total Depth: 733 ft Elevation: 3417 ft ne hole were not
7 8 9 10 11	<u>I-457</u> Location: T22S-R31E-27 Status: Plugged Plug Date: 07/22/1976 Notes: Potash core hole, plugged v	Spud Date: 07/08 Completed: 07/22 vith cement and all o	2/1976	Total Depth: 1885 ft Elevation: 3460 ft
12 13 14 15 16 17 18	<u>P-14</u> Location: T22S-R30E-24 Status: Plugged Plug Date: $08/26/1999$ Casing Size: 0-775 ft = 4 1/2" Notes: Hole was plugged back from well in 1979. Plugged in 1999 with		4/1976 with cement and co	
19 20 21 22 23 24 25	<u>P-15</u> Location: T22S-R31E-31 Status: Plugged Plug Date: $02/11/2002$ Casing Size: 0-635 ft = 4 1/2" Notes: In 1977, well was plugged b 2002 with cement from the bottom		5/1976 converted to monito	
26 27 28 29 30 31 32	<u>P-18</u> Location: T22S-R31E-26 Status: Plugged Plug Date: $02/28/2002$ Casing Size: 0-1138 ft = 4 1/2" Notes: Converted to monitoring we plugged in 2002 with cement from		5/1976 ging back well to 11	Total Depth: 1998 ft Elevation: 3479 ft 25 ft. Abandoned and
33 34 35 36 37	<u>PZ-1</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: 0-68 ft = $65/8$ " Casing Size: 0-62 ft = 2" PVC			

1 2 3 4 5 6 7 8	<u>PZ-2</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: 0-65 ft = $65/8$ " Casing Size: 0-62 ft = 2" PVC	Spud Date: 06 Completed: 0' Stratigraphy:	liche Formation nation Formation Sandstone
9 10 11 12 13 14 15 16	<u>PZ-3</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: 0-71 ft = $65/8$ " Casing Size: 0-65 ft = 2" PVC	Spud Date: 06 Completed: 0' Stratigraphy:	liche Formation nation Formation Sandstone
17 18 19 20 21 22 23 24	<u>PZ-4</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: 0-65 ft = 6 5/8" Casing Size: 0-60 ft = 2" PVC	Spud Date: 06 Completed: 07 Stratigraphy:	liche Formation nation Formation Sandstone
25 26 27 28 29 30 31 32	<u>PZ-5</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: $0-72$ ft = 6 5/8" Casing Size: $0-65$ ft = 2" PVC	Spud Date: 06 Completed: 07 Stratigraphy:	che Formation ttion Formation Sandstone
33 34 35 36 37 38 39 40	<u>PZ-6</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: 0-66 ft = 6 5/8" Casing Size: 0-62 ft = 2" PVC	Spud Date: 06 Completed: 07 Stratigraphy:	che Formation ation Formation Sandstone

1 2 3 4 5 6 7 8	<u>PZ-7</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: 0-72 ft = 6 5/8" Casing Size: 0-71 ft = 2" PVC	Spud Date: 06 Completed: 0' Stratigraphy:	liche Formation nation Formation Sandstone
9 10 11 12 13 14 15 16	<u>PZ-8</u> Location: T22S-R31E-21 Status: Monitoring Well Hole Size: 0-68 ft = $65/8$ " Casing Size: 0-68 ft = 2" PVC	Spud Date: 06 Completed: 0' Stratigraphy:	che Formation ation Formation Sandstone
17 18 19 20 21 22 23 24	<u>PZ-9</u> Location: T22S-R31E-21 Status: Monitoring Well Hole Size: $0-82$ ft = 6 5/8" Casing Size: $0-75$ ft = 2" PVC	Spud Date: 06 Completed: 0' Stratigraphy:	liche Formation nation Formation Sandstone
25 26 27 28 29 30 31 32	<u>PZ-10</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: 0-57 ft = $65/8$ " Casing Size: 0-54 ft = 2" PVC	Spud Date: 06 Completed: 07 Stratigraphy:	che Formation ation Formation Sandstone
33 34 35 36 37 38 39 40	<u>PZ-11</u> Location: T22S-R31E-20 Status: Monitoring Well Hole Size: $0-82$ ft = 6 5/8" Casing Size: $0-71$ ft = 2" PVC	Spud Date: 06 Completed: 07 Stratigraphy:	aliche Formation nation Formation Sandstone

1 <u>PZ-12</u>

2	Location: T22S-R31E-20	Spud Date: 06/23/1997	Total Depth: 72 ft
3	Status: Monitoring Well	Completed: 07/10/1997	Elevation: 3409 ft
4	Hole Size: $0-72 \text{ ft} = 6 5/8"$	Stratigraphy: 0-6 = Holocene D	eposits
5	Casing Size: 0-64 ft = 2" PVC	6-8 = Mescalero C	aliche Formation
6		8-39 = Gatuña For	mation
7		39-62 = Santa Ros	a Formation Sandstone
8		62-72 = Dewey La	ke Formation Redbeds
0			

9 <u>WIPP-28</u>

10	Location: T21S-R31E-18	Spud Date: 08/07/1978	Total Depth: 801 ft
1	Status: Plugged	Completed: 08/28/1978	Elevation: 3349 ft
12	Plug Data: $\frac{11}{20}/1000$	-	

- 12 Plug Date: 11/29/1999
- 13 Notes: All casing was removed and hole was plugged with cement.