

BW - 6

**OCD APD
AOR ½ Mile
Internal Policy**

2009

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, December 02, 2009 7:02 AM
To: Dade, Randy, EMNRD
Subject: FW: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)
Attachments: BW-6 APD Adviosry Internal Policy 1-29-09.docx

Randy:

This note was intended for you. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Wednesday, November 04, 2009 11:19 AM
To: Schmaltz, Randy
Cc: Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD
Subject: FW: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)

Randy:

Please find attached the Artesia District Office Contingency Plan for all wells drilled within ½ mile from the above subject facility.

Please contact me if you have questions. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 29, 2009 4:35 PM
To: VonGonten, Glenn, EMNRD
Cc: Price, Wayne, EMNRD; Griswold, Jim, EMNRD; Gum, Tim, EMNRD; Sanchez, Daniel J., EMNRD
Subject: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)

Glenn:

Please find attached my final version of the attached policy with Jim Griswold's and your comments included. Wayne may want to review it too? I believe it is ready to send to:

Kevin Wilson at I & W, Inc.
Dave Herrell at BLM

Copy: Tim Gum- District 2 & Jim Griswold- EB

Note that Jim Griswold is reviewing I & W, Inc.'s Contingency Plan (CP) and the finalized CP should be routed to the above persons and I & W, Inc. needs to contact the LEPC, Eddy County Hazmat, State Police, etc., and provide them each with a copy of the CP with any and all communication and cooperation necessary for these agencies to become more familiar with the I & W, Inc. facility and emergency response at the facility. Perhaps some mach brine collapse safety drills could be performed at the facility? Dave Herrell agrees that the Eddy County Emergency Plan should include the I & W, Inc. facility.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

**New Mexico Energy, Minerals
& Natural Resources Department
Oil Conservation Division**

**Internal Application Permit to Drill (APD)
Area-of-Review (1/2 Mile) Staff Policy for:**

**I & W Inc. Eugenie Brine Extraction Facility (BW-006)
SW/4 SW/4 Sec. 17, T 22 S, R 27 E
Eddy County**

January 30, 2009

**OCD District 2 (Artesia)
OCD Environmental Bureau (Santa Fe)**

Introduction:

The Oil Conservation Division hereby establishes a ½ mile Area of Review (AOR) for all APDs surrounding the existing brine wells at the I & W, Inc. facility (BW-006). The facility consists of two brine wells, the Eugenie Well No. 1 & 2. The brine wells are located on I & W Inc. property in Carlsbad just south of the intersection of U.S. Hwy. 285 and the Pecos Highway south (see Figure 1).

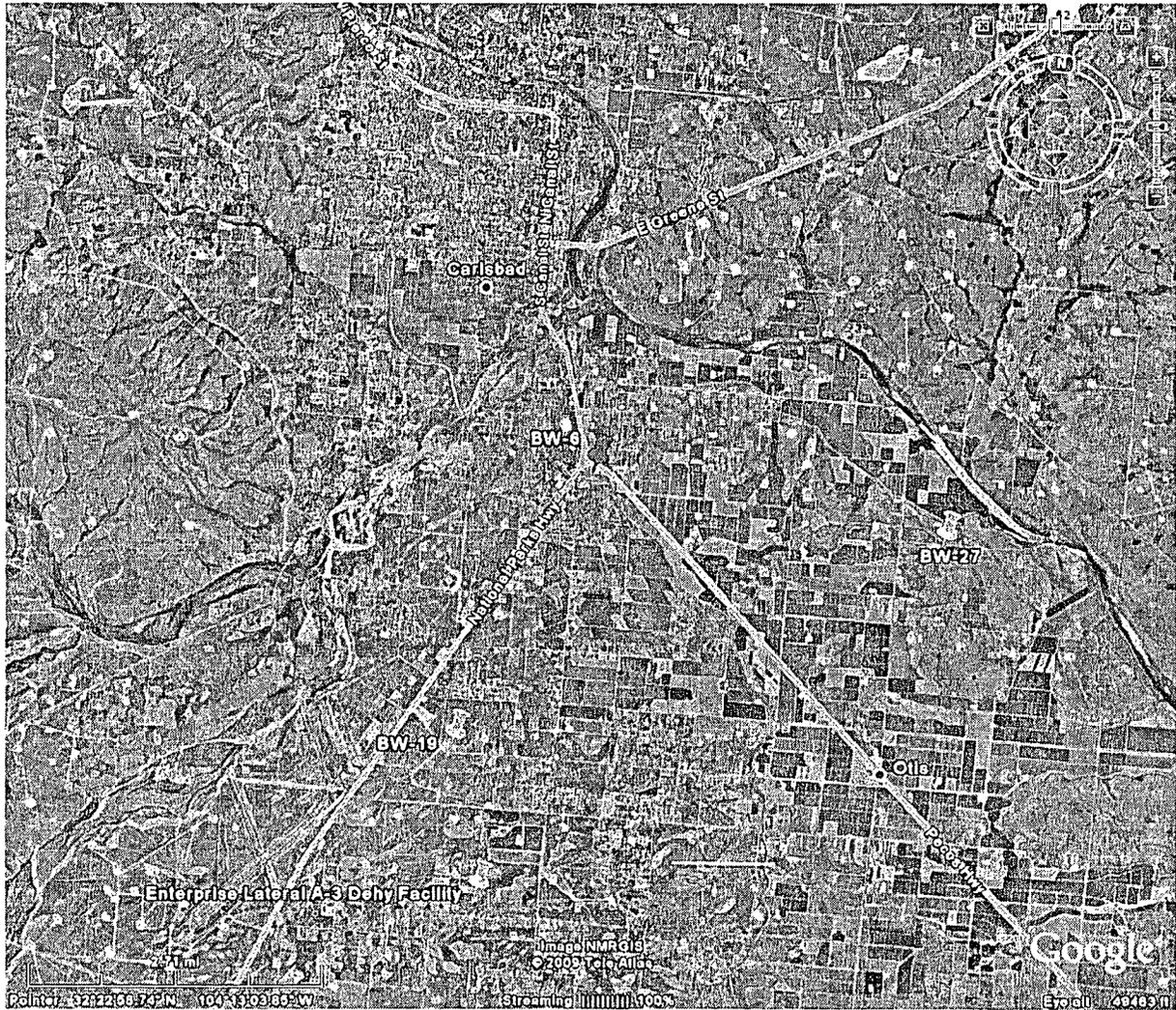


Figure 1

Brine Operation:

There was a two-brine well extraction system in operation, until Well No. 2 was plugged and abandoned in 1999. Well No. 1 was plugged and abandoned on 10/31/2008 (see Table 1 below).

API WellNo.	Comments	Well Name (Ongard)	Well#	Legal (Ongard)	N/S	E/W	Well Name (Non Ongard)	WellNo	S-T-R	County	Well Status
30-015-22574	[N 32.38813 W 104.21817]	EUGENIE	001	M 17 22S 27E	995 S	641 W	Eugenie	001	17-22S-27E	Eddy	10/31/2008
30-015-23031		EUGENIE	002	M 17 22S 27E	1288 S	497 W	Eugenie	002	17-22S-27E	Eddy	1999

Table 1**Well Construction:**

Well No. 1 was constructed with 9 5/8" casing set to 350 ft. bgl. The well was drilled to 663 ft. (see Table 2) and 7" casing was set at 456 ft. bgl. Tubing was set at a depth of about 601 ft. bgl before plug and abandonment.

Well No. 2 was constructed with 5 1/2" casing set at 285 ft. bgl. Tubing consisted of 2 7/8" tubing, which was perforated at 335 ft. bgl.

FIELD NO. 3,
 BOX 1591
 ODENNA, TEXAS 75760

JUNE 30, 1975

SALT & S

0 to 46	RED SOIL WITH GRAVEL
46 to 58	SAND & GRAVEL
58 to 62	LIME
62 to 65	RED BED
65 to 70	RED SAND
70 to 107	GRAVEL
107 to 149	BROWN CLAY w/GRAVEL & SAND
149 to 170	RED BED
170 to 178	LIME VERY HARD
178 to 225	RED BED
225 to 237	AMMONITE & RED BED
237 to 252	LIME & AMMONITE w/SOME GYP.
252 to 268	RED BED
268 to 285	LIME w/GYP, STRONG
285 to 305	GYP. w/COOL RED BED
305 to 320	GYP. w/AMMONITE
320 to 328	RED BED
328 to 350	AMMONITE w/LIME & SAND
350 to 410	RED SOIL & AMMONITE
410 to 430	AMMONITE w/SOME LIME
430 to 437	GREEN LIME (HARD) & AMMONITE
437 to 445	AMMONITE
445 to 455	AMMONITE & BLUE LIME
455 to 500	SALT
500 to 557	SALT & LIME LIME
557 to 576	SALT & BLUE SHALE VERY BEAUTIFUL
576 to 592	SALT
592 to 603	AMMONITE

Table 2

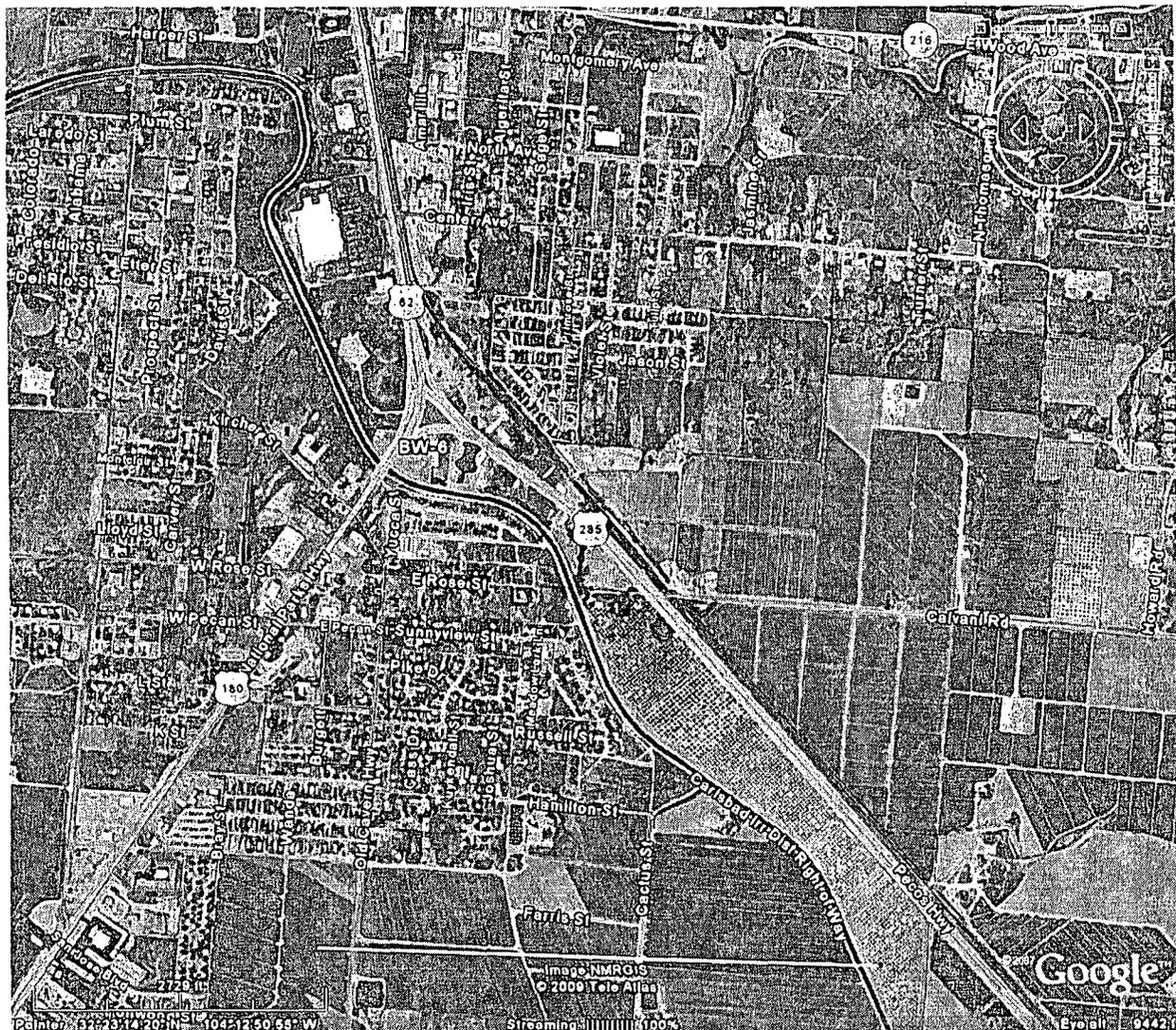


Figure 2

Owner/Operator Actions:

I & W Inc. voluntarily and permanently shut-in the brine well on July 22, 2008. The well was later plugged and abandoned on October 31, 2008. These actions were undertaken after the Jims Water Service (BW-005) brine well collapse on July 16, 2008 as a precautionary measure by the owner/operator. Due to its shallow depth and location in the City of Carlsbad, the brine well cavern is in close proximity to many infrastructure features, e.g., roads, railroads; irrigation canal, etc. (see Figures 2 & 3).



Figure 3

Internal APD AOR (1/2 mile) Policy:

More recently, the Loco Hills Brine Well No. 1 (BW-21) just north of Loco Hills, New Mexico collapsed in November of 2008. Brine Well No. 1 was plugged and abandoned on 7/7/2008. The collapse may have been caused by the drilling of a well that took on water at a similar depth interval and suspected by the OCD of being hydrogeologically connected with the salt cavern at Brine Well No. 1. Consequently, the collapse at Brine Well No. 1 may have been caused by the dewatering and/or loss of pressure in the cavern, which resulted in the destabilization of the ground around Brine Well No. 1. To avoid this in the future from occurring at this facility (BW-6), the OCD has developed an Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy (see Figure 4).



Map by: Jim Griswold, NMOCD

Figure 4

Eddy County Emergency Response Plan:

Ground water most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 45 feet with a TDS of approximately 200 mg/L. The brine well discharge permit addresses well construction, operation, monitoring of the well, associated surface facilities, and provides a contingency plan in the event of accidental spills, leaks and other accidental discharges in order to protect fresh water. However, the discharge permit does not address a catastrophic collapse scenario. The OCD is currently working with I & W Inc. to complete a Contingency Plan in addition to working with the Eddy County Hazmat, State Police and the Local Emergency Planning Committee (LEPC- Fire Marshal). OCD will require I & W, Inc. to submit a copy of its final Contingency Plan to the Eddy County Hazmat responders. In addition, the OCD will recommend to Eddy County that it's Emergency Plan include a scenario for a



Map by: Jim Griswold, NMOCD

Figure 6

Chavez, Carl J, EMNRD

From: Sanchez, Daniel J., EMNRD
Sent: Monday, February 16, 2009 7:52 AM
To: Chavez, Carl J, EMNRD
Cc: Bonham, Sherry, EMNRD
Subject: RE: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)

Carl,

Go ahead with your request.

From: Chavez, Carl J, EMNRD
Sent: Friday, February 13, 2009 3:52 PM
To: Sanchez, Daniel J., EMNRD
Cc: Bonham, Sherry, EMNRD
Subject: FW: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)

Daniel:

Per your request. If you guys approve, I think this should be scanned into OCD Online BW-6 under a thumbnail "OCD APD AOR ½ Mile Internal Policy w/ Date." Just a recommendation so we show what we're doing on these brine wells. Also, the final Contingency Plan that Jim is working on may need to be posted under "Facility Contingency Plan w/ Date." Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Friday, January 30, 2009 11:12 AM
To: Chavez, Carl J, EMNRD; VonGonten, Glenn, EMNRD
Cc: Price, Wayne, EMNRD; Griswold, Jim, EMNRD; Gum, Tim, EMNRD; Sanchez, Daniel J., EMNRD
Subject: RE: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)

Daniel:

Per our meeting this morning, Wayne requested that the final draft be forwarded to you, since OCD District 2 Office may need to develop an internal policy or something in writing with procedures in order to comply with the attached document. Please let me know if I can assist.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491

Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 29, 2009 4:35 PM
To: VonGonten, Glenn, EMNRD
Cc: Price, Wayne, EMNRD; Griswold, Jim, EMNRD; Gum, Tim, EMNRD; Sanchez, Daniel J., EMNRD
Subject: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)

Glenn:

Please find attached my final version of the attached policy with Jim Griswold's and your comments included. Wayne may want to review it too? I believe it is ready to send to:

Kevin Wilson at I & W, Inc.
Dave Herrell at BLM

Copy: Tim Gum- District 2 & Jim Griswold- EB

Note that Jim Griswold is reviewing I & W, Inc.'s Contingency Plan (CP) and the finalized CP should be routed to the above persons and I & W, Inc. needs to contact the LEPC, Eddy County Hazmat, State Police, etc., and provide them each with a copy of the CP with any and all communication and cooperation necessary for these agencies to become more familiar with the I & W, Inc. facility and emergency response at the facility. Perhaps some mach brine collapse safety drills could be performed at the facility? Dave Herrell agrees that the Eddy County Emergency Plan should include the I & W, Inc. facility.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, February 13, 2009 3:52 PM
To: Sanchez, Daniel J., EMNRD
Cc: Bonham, Sherry, EMNRD
Subject: FW: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)
Attachments: BW-6 APD Adviosry Internal Policy 1-29-09.docx

Daniel:

Per your request. If you guys approve, I think this should be scanned into OCD Online BW-6 under a thumbnail "OCD APD AOR 1/2 Mile Internal Policy w/ Date." Just a recommendation so we show what we're doing on these brine wells. Also, the final Contingency Plan that Jim is working on may need to be posted under "Facility Contingency Plan w/ Date." Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Friday, January 30, 2009 11:12 AM
To: Chavez, Carl J, EMNRD; VonGonten, Glenn, EMNRD
Cc: Price, Wayne, EMNRD; Griswold, Jim, EMNRD; Gum, Tim, EMNRD; Sanchez, Daniel J., EMNRD
Subject: RE: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)

Daniel:

Per our meeting this morning, Wayne requested that the final draft be forwarded to you, since OCD District 2 Office may need to develop an internal policy or something in writing with procedures in order to comply with the attached document. Please let me know if I can assist.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 29, 2009 4:35 PM
To: VonGonten, Glenn, EMNRD
Cc: Price, Wayne, EMNRD; Griswold, Jim, EMNRD; Gum, Tim, EMNRD; Sanchez, Daniel J., EMNRD
Subject: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)

Glenn:

Please find attached my final version of the attached policy with Jim Griswold's and your comments included. Wayne may want to review it too? I believe it is ready to send to:

Kevin Wilson at I & W, Inc.
Dave Herrell at BLM

Copy: Tim Gum- District 2 & Jim Griswold- EB

Note that Jim Griswold is reviewing I & W, Inc.'s Contingency Plan (CP) and the finalized CP should be routed to the above persons and I & W, Inc. needs to contact the LEPC, Eddy County Hazmat, State Police, etc., and provide them each with a copy of the CP with any and all communication and cooperation necessary for these agencies to become more familiar with the I & W, Inc. facility and emergency response at the facility. Perhaps some mach brine collapse safety drills could be performed at the facility? Dave Herrell agrees that the Eddy County Emergency Plan should include the I & W, Inc. facility.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

**New Mexico Energy, Minerals
& Natural Resources Department
Oil Conservation Division**

**Internal Application Permit to Drill (APD)
Area-of-Review (1/2 Mile) Staff Policy for:**

**I & W Inc. Eugenie Brine Extraction Facility (BW-006)
SW/4 SW/4 Sec. 17, T 22 S, R 27 E
Eddy County**

January 30, 2009

**OCD District 2 (Artesia)
OCD Environmental Bureau (Santa Fe)**

Introduction:

The Oil Conservation Division hereby establishes a ½ mile Area of Review (AOR) for all APDs surrounding the existing brine wells at the I & W, Inc. facility (BW-006). The facility consists of two brine wells, the Eugenie Well No. 1 & 2. The brine wells are located on I & W Inc. property in Carlsbad just south of the intersection of U.S. Hwy. 285 and the Pecos Highway south (see Figure 1).

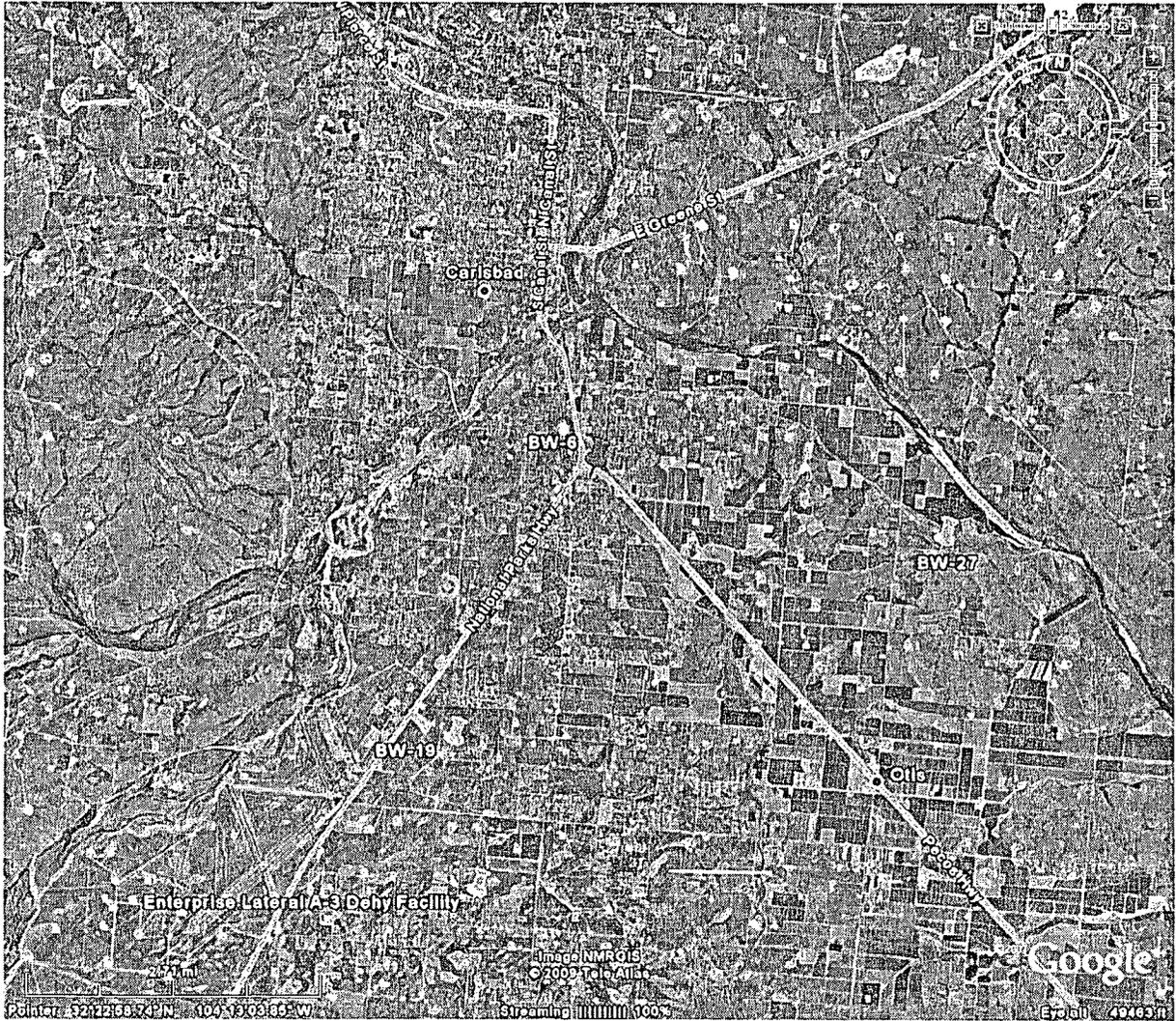


Figure 1

Brine Operation:

There was a two-brine well extraction system in operation, until Well No. 2 was plugged and abandoned in 1999. Well No. 1 was plugged and abandoned on 10/31/2008 (see Table 1 below).

API WellNo	Comments	Well Name (Ongard)	Well#	Legal (Ongard)	N/S	E/W	Well Name (Non Ongard)	WellNo	S-T-R	County	Well Status
30-015-22574	[N 32.38813 W 104.21817]	EUGENIE	001	M 17 22S 27E	995 S	641 W	Eugenie	001	17-22S-27E	Eddy	10/31/2008
30-015-23031		EUGENIE	002	M 17 22S 27E	1288 S	497 W	Eugenie	002	17-22S-27E	Eddy	1999

Table 1**Well Construction:**

Well No. 1 was constructed with 9 5/8" casing set to 350 ft. bgl. The well was drilled to 663 ft. (see Table 2) and 7" casing was set at 456 ft. bgl. Tubing was set at a depth of about 601 ft. bgl before plug and abandonment.

Well No. 2 was constructed with 5 1/2" casing set at 285 ft. bgl. Tubing consisted of 2 7/8" tubing, which was perforated at 335 ft. bgl.

P. 215. & 8.
 BOX 1591
 ODENSA, TEXAS 75750

JUNE 30, 1972

SALT & 1

0 to 46	TOP SOIL WITH GRAVEL
46 to 58	SAND & GRAVEL
58 to 62	LOESS
62 to 65	RED BED
65 to 76	RED SAND
76 to 107	GRAVEL
107 to 163	BROWN CLAY w/ GRAVEL & SAND
163 to 170	RED BED
170 to 178	LIME VERY HARD
178 to 225	RED BED
225 to 237	ANHYDRITE & RED BED
237 to 252	LIME & ANHYDRITE w/ SOME GRP.
252 to 268	RED BED
268 to 285	LIME w/ GRP, STRONGER
285 to 305	CLAY w/ ANHYDRITE
305 to 320	CLAY w/ ANHYDRITE
320 to 328	ANHYDRITE w/ LIME & SAND
328 to 410	RED SOIL & ANHYDRITE
410 to 430	ANHYDRITE w/ SOME LIME
430 to 437	GRAY LIME (HARD) & ANHYDRITE
437 to 445	ANHYDRITE
445 to 456	ANHYDRITE & GRAY LIME
456 to 535	SALT
535 to 567	SALT & SOME LIME
567 to 570	SALT & <u>BLUE SHALE VERY BRITTLE</u>
570 to 592	SALT
592 to 603	ANHYDRITE

Table 2



Figure 2

Owner/Operator Actions:

I & W Inc. voluntarily and permanently shut-in the brine well on July 22, 2008. The well was later plugged and abandoned on October 31, 2008. These actions were undertaken after the Jims Water Service (BW-005) brine well collapse on July 16, 2008 as a precautionary measure by the owner/operator. Due to its shallow depth and location in the City of Carlsbad, the brine well cavern is in close proximity to many infrastructure features, e.g., roads, railroads; irrigation canal, etc. (see Figures 2 & 3).



Figure 3

Internal APD AOR (1/2 mile) Policy:

More recently, the Loco Hills Brine Well No. 1 (BW-21) just north of Loco Hills, New Mexico collapsed in November of 2008. Brine Well No. 1 was plugged and abandoned on 7/7/2008. The collapse may have been caused by the drilling of a well that took on water at a similar depth interval and suspected by the OCD of being hydrogeologically connected with the salt cavern at Brine Well No. 1. Consequently, the collapse at Brine Well No. 1 may have been caused by the dewatering and/or loss of pressure in the cavern, which resulted in the destabilization of the ground around Brine Well No. 1. To avoid this in the future from occurring at this facility (BW-6), the OCD has developed an Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy (see Figure 4).



Map by: Jim Griswold, NMOCD

Figure 4

Eddy County Emergency Response Plan:

Ground water most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 45 feet with a TDS of approximately 200 mg/L. The brine well discharge permit addresses well construction, operation, monitoring of the well, associated surface facilities, and provides a contingency plan in the event of accidental spills, leaks and other accidental discharges in order to protect fresh water. However, the discharge permit does not address a catastrophic collapse scenario. The OCD is currently working with I & W Inc. to complete a Contingency Plan in addition to working with the Eddy County Hazmat, State Police and the Local Emergency Planning Committee (LEPC- Fire Marshal). OCD will require I & W, Inc. to submit a copy of its final Contingency Plan to the Eddy County Hazmat responders. In addition, the OCD will recommend to Eddy County that it's Emergency Plan include a scenario for a

potential brine well collapse scenario from this facility in the interest of public health and safety.



Map by: Jim Griswold, NMOCD

Figure 5

Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy:
OCD District 2 shall contact the Environmental Bureau whenever it receives any APDs located within a 1/2 mile Area-of-Review (AOR) from the brine wells at this facility (see Figures 4 - 6). District Office 2 staff and/or the District Supervisor shall make the preliminary determination and internally discuss the determination for approval and/or denial jointly with the Environmental Bureau Staff and/or Bureau Chief to reach consensus on a final determination.



Map by: Jim Griswold, NMOCD

Figure 6

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, January 30, 2009 11:12 AM
To: Chavez, Carl J, EMNRD; VonGonten, Glenn, EMNRD
Cc: Price, Wayne, EMNRD; Griswold, Jim, EMNRD; Gum, Tim, EMNRD; Sanchez, Daniel J., EMNRD
Subject: RE: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)
Attachments: BW-6 APD Adviosry Internal Policy 1-29-09.docx

Daniel:

Per our meeting this morning, Wayne requested that the final draft be forwarded to you, since OCD District 2 Office may need to develop an internal policy or something in writing with procedures in order to comply with the attached document. Please let me know if I can assist.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 29, 2009 4:35 PM
To: VonGonten, Glenn, EMNRD
Cc: Price, Wayne, EMNRD; Griswold, Jim, EMNRD; Gum, Tim, EMNRD; Sanchez, Daniel J., EMNRD
Subject: Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy Document (I & W, Inc. Carlsbad, NM- BW-006)

Glenn:

Please find attached my final version of the attached policy with Jim Griswold's and your comments included. Wayne may want to review it too? I believe it is ready to send to:

Kevin Wilson at I & W, Inc.
Dave Herrell at BLM

Copy: Tim Gum- District 2 & Jim Griswold- EB

Note that Jim Griswold is reviewing I & W, Inc.'s Contingency Plan (CP) and the finalized CP should be routed to the above persons and I & W, Inc. needs to contact the LEPC, Eddy County Hazmat, State Police, etc., and provide them each with a copy of the CP with any and all communication and cooperation necessary for these agencies to become more familiar with the I & W, Inc. facility and emergency response at the facility. Perhaps some mach brine collapse safety drills could be performed at the facility? Dave Herrell agrees that the Eddy County Emergency Plan should include the I & W, Inc. facility.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau

1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")



**New Mexico Energy, Minerals
& Natural Resources Department
Oil Conservation Division**

**Internal Application Permit to Drill (APD)
Area-of-Review (1/2 Mile) Staff Policy for:**

**I & W Inc. Eugenie Brine Extraction Facility (BW-006)
SW/4 SW/4 Sec. 17, T 22 S, R 27 E
Eddy County**

January 30, 2009

**OCD District 2 (Artesia)
OCD Environmental Bureau (Santa Fe)**

Introduction:

The Oil Conservation Division hereby establishes a 1/2 mile Area of Review (AOR) for all APDs surrounding the existing brine wells at the I & W, Inc. facility (BW-006). The facility consists of two brine wells, the Eugenie Well No. 1 & 2. The brine wells are located on I & W Inc. property in Carlsbad just south of the intersection of U.S. Hwy. 285 and the Pecos Highway south (see Figure 1).



Figure 1

Brine Operation:

There was a two-brine well extraction system in operation, until Well No. 2 was plugged and abandoned in 1999. Well No. 1 was plugged and abandoned on 10/31/2008 (see Table 1 below).

API WellNo	Comments	Well Name (Ongard)	Well#	Legal (Ongard)	N/S	E/W	Well Name (Non Ongard)	WellNo	S-T-R	County	Well Status
30-015-22574	[N 32.38813 W 104.21817]	EUGENIE	001	M 17 22S 27E	995 S	641 W	Eugenie	001	17-22S-27E	Eddy	10/31/2008
30-015-23031		EUGENIE	002	M 17 22S 27E	1288 S	497 W	Eugenie	002	17-22S-27E	Eddy	1999

Table 1

Well Construction:

Well No. 1 was constructed with 9 5/8" casing set to 350 ft. bgl. The well was drilled to 663 ft. (see Table 2) and 7" casing was set at 456 ft. bgl. Tubing was set at a depth of about 601 ft. bgl before plug and abandonment.

Well No. 2 was constructed with 5 1/2" casing set at 285 ft. bgl. Tubing consisted of 2 7/8" tubing, which was perforated at 335 ft. bgl.

P.L.R. & S.
 BOX 1581
 ODENSA, TEXAS 79740

JUNE 30, 1975

SALT & S

0 to 48	TOP SOIL WITH GRAVEL
48 to 58	SAND & GRAVEL
58 to 62	LIME
62 to 68	RED BED
68 to 76	RED SAND
76 to 107	GRAVEL
107 to 169	BROWN CLAY w/ GRAVEL & SAND
169 to 170	RED BED
170 to 178	LIME VERY HARD
178 to 225	RED BED
225 to 237	ANHYDRITE & RED BED
237 to 252	LIME & ANHYDRITE w/ SOME SAND
252 to 268	RED BED
268 to 289	LIME w/ GYP. SPINDERS
289 to 305	GYP. w/ SOME RED BED
305 to 320	GYP. w/ SAND
320 to 328	RED BED
328 to 380	ANHYDRITE w/ LIME & SAND
380 to 410	RED TUFF & ANHYDRITE
410 to 430	ANHYDRITE w/ SOME LIME
430 to 437	GRAY LIME (HARD) & ANHYDRITE
437 to 445	ANHYDRITE
445 to 496	ANHYDRITE & GRAY LIME
496 to 558	SALT
558 to 567	SALT & LIME LENS
567 to 576	SALT & BLUE SHALE VERY BRITTLE
576 to 582	SALT
582 to 603	ANHYDRITE

Table 2

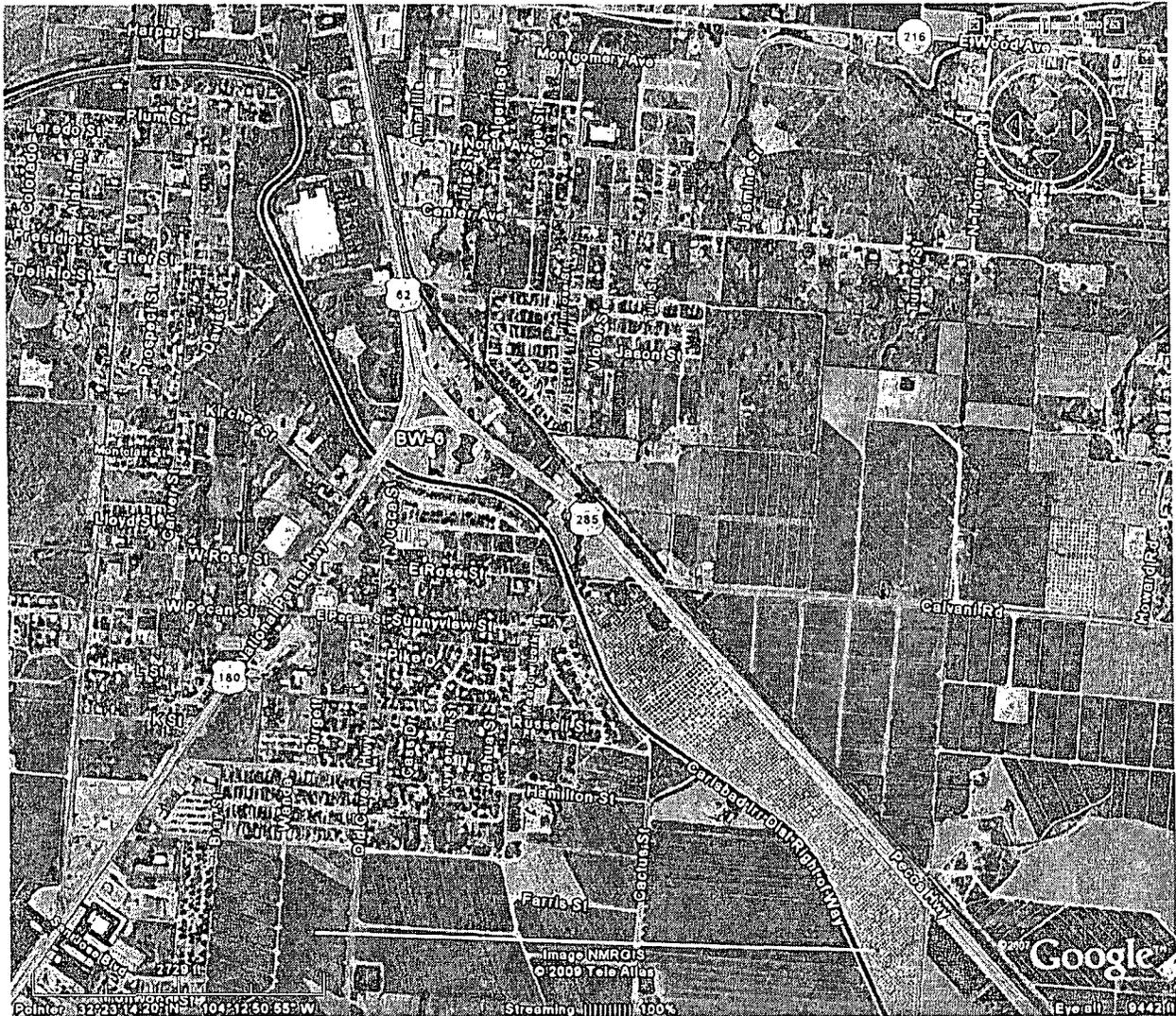


Figure 2

Owner/Operator Actions:

I & W Inc. voluntarily and permanently shut-in the brine well on July 22, 2008. The well was later plugged and abandoned on October 31, 2008. These actions were undertaken after the Jims Water Service (BW-005) brine well collapse on July 16, 2008 as a precautionary measure by the owner/operator. Due to its shallow depth and location in the City of Carlsbad, the brine well cavern is in close proximity to many infrastructure features, e.g., roads, railroads; irrigation canal, etc. (see Figures 2 & 3).



Figure 3

Internal APD AOR (1/2 mile) Policy:

More recently, the Loco Hills Brine Well No. 1 (BW-21) just north of Loco Hills, New Mexico collapsed in November of 2008. Brine Well No. 1 was plugged and abandoned on 7/7/2008. The collapse may have been caused by the drilling of a well that took on water at a similar depth interval and suspected by the OCD of being hydrogeologically connected with the salt cavern at Brine Well No. 1. Consequently, the collapse at Brine Well No. 1 may have been caused by the dewatering and/or loss of pressure in the cavern, which resulted in the destabilization of the ground around Brine Well No. 1. To avoid this in the future from occurring at this facility (BW-6), the OCD has developed an Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy (see Figure 4).



Map by: Jim Griswold, NMOCD

Figure 4

Eddy County Emergency Response Plan:

Ground water most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 45 feet with a TDS of approximately 200 mg/L. The brine well discharge permit addresses well construction, operation, monitoring of the well, associated surface facilities, and provides a contingency plan in the event of accidental spills, leaks and other accidental discharges in order to protect fresh water. However, the discharge permit does not address a catastrophic collapse scenario. The OCD is currently working with I & W Inc. to complete a Contingency Plan in addition to working with the Eddy County Hazmat, State Police and the Local Emergency Planning Committee (LEPC- Fire Marshal). OCD will require I & W, Inc. to submit a copy of its final Contingency Plan to the Eddy County Hazmat responders. In addition, the OCD will recommend to Eddy County that it's Emergency Plan include a scenario for a

potential brine well collapse scenario from this facility in the interest of public health and safety.



Map by: Jim Griswold, NMOCD

Figure 5

Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy:
OCD District 2 shall contact the Environmental Bureau whenever it receives any APDs located within a 1/2 mile Area-of-Review (AOR) from the brine wells at this facility (see Figures 4 - 6). District Office 2 staff and/or the District Supervisor shall make the preliminary determination and internally discuss the determination for approval and/or denial jointly with the Environmental Bureau Staff and/or Bureau Chief to reach consensus on a final determination.



Map by: Jim Griswold, NMOCD

Figure 6

Chavez, Carl J, EMNRD

From: Griswold, Jim, EMNRD
Sent: Friday, January 23, 2009 3:11 PM
To: Chavez, Carl J, EMNRD
Subject: BW-6

Hey Carl,

Try this one as well. It is closer.

Jim Griswold
Hydrologist
Environmental Bureau
ENMRD/Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
direct: 505.476.3465
email: jim.griswold@state.nm.us



I&W close aerial.jpg



Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Monday, January 26, 2009 2:16 PM
To: Gum, Tim, EMNRD
Subject: FW: I & W Inc. (BW-6) OCD Internal APD AOR (1/2 mile) Policy Draft
Attachments: BW-6 APD Adviosry & Internal Policy 1-26-09.docx

I hope you can find it. If not, please feel to modify the text for BW-21 as we discussed this morning so I can finalize. I am attaching an updated version of the above subject. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Price, Wayne, EMNRD
Sent: Monday, January 26, 2009 2:13 PM
To: Chavez, Carl J, EMNRD
Cc: VonGonten, Glenn, EMNRD; Gum, Tim, EMNRD
Subject: RE: I & W Inc. (BW-6) OCD Internal APD AOR (1/2 mile) Policy Draft

Please get them from Tim

From: Chavez, Carl J, EMNRD
Sent: Monday, January 26, 2009 1:45 PM
To: Price, Wayne, EMNRD
Cc: VonGonten, Glenn, EMNRD; Gum, Tim, EMNRD
Subject: FW: I & W Inc. (BW-6) OCD Internal APD AOR (1/2 mile) Policy Draft

Wayne:

Glenn said he never got Tim Gum's investigation results. Could you please send Tim Gum's investigation results to me so I may finalize the above internal policy after Glenn approves or comments? Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Monday, January 26, 2009 1:06 PM
To: VonGonten, Glenn, EMNRD
Subject: FW: I & W Inc. (BW-6) OCD Internal APD AOR (1/2 mile) Policy Draft

FYI, Wayne Price wanted me to develop internal policy on any wells drilled near the I & W brine wells near Carlsbad and he wanted me to work with Tim Gum on it.

Tim has provided feedback on the draft OCD Internal APD AOR (½ mile). He said that he sent you an e-mail investigation of the BW-21 collapse and the 6 – 8 offset well project (eastern zone well) that may have dewatered the cavern. Could you please forward Tim Gum's investigation to me so I may finalize the draft policy and resend it to you w/ Tim's comments. Tim doesn't think he held onto the e-mail. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Friday, January 23, 2009 6:07 PM
To: Gum, Tim, EMNRD
Cc: Price, Wayne, EMNRD
Subject: I & W Inc. (BW-6) OCD Internal APD AOR (1/2 mile) Policy Draft

Tim:

Please contact me to discuss the attached draft. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, January 23, 2009 6:07 PM
To: Gum, Tim, EMNRD
Cc: Price, Wayne, EMNRD
Subject: I & W Inc. (BW-6) OCD Internal APD AOR (1/2 mile) Policy Draft
Attachments: BW-6 APD Adviosry & Internal Policy 1-22-09.docx

Tim:

Please contact me to discuss the attached draft. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")

**New Mexico Energy, Minerals & Natural Resources
Department
Oil Conservation Division**

**Internal Application Permit to Drill (APD) Area-of-
Review (1/2 Mile) Staff Policy for:**

**I & W Inc. Eugenie Brine Extraction Facility (BW-006)
SW/4 SW/4 Sec. 17, T 22 S, R 27 E
Eddy County**

January 22, 2009

**OCD District 2 (Artesia)
OCD Environmental Bureau (Santa Fe)**

Introduction:

The New Mexico Oil Conservation Division hereby establishes a ½ mile Area of Review (AOR) for all Application Permit to Drill (APD) from brine wells at the I & W, Inc. facility (BW-006). The facility consists of two brine wells, the "Eugenie Well No. 1 & 2." The brine wells are located on I & W Inc. property just south of the intersection of U.S. Hwy. 285 and the Pecos Highway south of Carlsbad, New Mexico (see Figure 1).

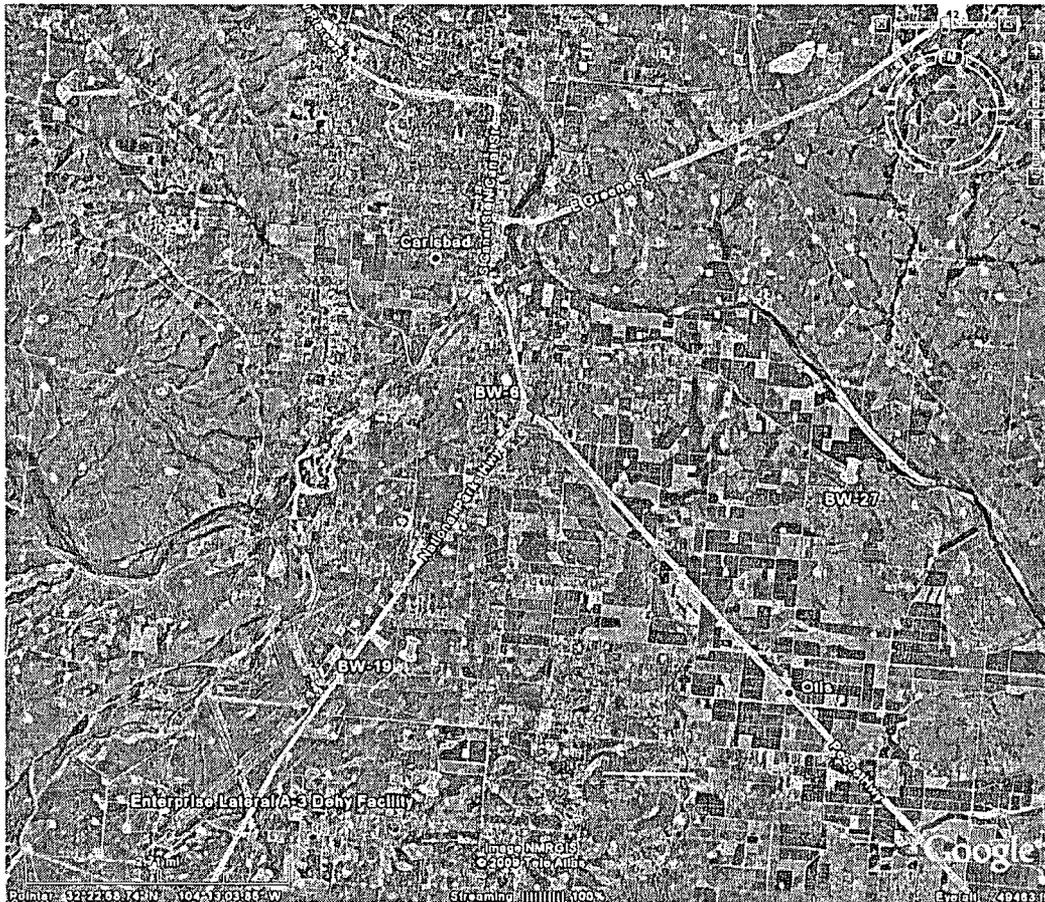


Figure 1

Brine Operation:

There was a two-brine well extraction system in operation, until Well No. 2 was plugged and abandoned in 1999. Well No. 1 was plugged and abandoned on 10/31/2008 (see Table 1 below).

API WellNo	Comments	Well Name (Ongard)	Well#	Legal (Ongard)	N/S	E/W	Well Name (Non-Ongard)	WellNo	S-T-R	County	Well Status
30-015-22574	{N 32.38813 W 104.21817}	EUGENIE	001	M 17 22S 27E	995 S	641 W	Eugenie	001	17-22S-27E	Eddy	10/31/2008
30-015-23031		EUGENIE	002	M 17 22S 27E	1288 S	497 W	Eugenie	002	17-22S-27E	Eddy	1999

Table 1

Well Construction:

Well No. 1 was constructed with 9 + 5/8 inch. dia. casing set to 350 ft. bgl. Seven inch casing dia. was drilled to 663 ft. TD (see Table 2) and pulled back and set at 456 ft. bgl. Tubing was set at a depth of about 601 ft. bgl before plug and abandonment.

Well No. 2 was constructed with five and 1/2 inch dia. casing with shoe depth set at 285 ft. bgl. Tubing consisted of two and 7/8 inch dia. tubing and perforation at depth of 335 ft. bgl.

P. 12. 1. 3.
 BOX 1391
 ODDESS, TEXAS 79760

JUNE 30, 1975

SALT & 1

0 to 46	TOP SOIL WITH GRAVEL
46 to 58	SAND & GRAVEL
58 to 62	SAND
62 to 65	MED BED
65 to 76	SAND
76 to 107	GRAVEL
107 to 163	BROWN CLAY w/ GRAVEL & SAND
163 to 170	MED BED
170 to 178	LIME VERY HARD
178 to 225	MED BED
225 to 237	ANHYDRITE & MED BED
237 to 252	LIME & ANHYDRITE w/ SOME GYP.
252 to 268	MED BED
268 to 285	LIME w/ GYP. STRONGER
285 to 303	GYP. w/ SOME MED BED
303 to 328	GYP. & ANHYDRITE
328 to 348	MED BED
348 to 360	ANHYDRITE w/ LIME & SAND
360 to 410	MED BED & ANHYDRITE
410 to 430	ANHYDRITE w/ SOME LIME
430 to 437	GRAY LIME (HARD) & ANHYDRITE
437 to 445	ANHYDRITE
445 to 455	ANHYDRITE & DARK LIME
455 to 465	SALT
465 to 467	SALT & DARK LIME
467 to 476	SALT & BLUE SHALE VERY LITTLE
476 to 552	SALT
552 to 663	ANHYDRITE

Table 2



Figure 3

Internal APD AOR (1/2 mile) Policy:

More recently, the Loco Hills Brine Well No. 1 (BW-21) just north of Loco Hills, New Mexico collapsed in November of 2008. Brine Well No. 1 was plugged and abandoned on 7/7/2008. The collapse may have been caused by the drilling of Brine Well No. 2 to replace Brine Well No. 1, which appears to have been hydrogeologically connected with the salt cavern in Brine Well No. 1? The collapse at Brine Well No. 1 appears to have been caused by dewatering and pressure loss in the cavern; thus, destabilizing the ground around plugged and abandoned Brine Well No. 1. To avoid this in the future, the OCD has developed an Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy at this facility (see Figure 4).



Map by: Jim Griswold, NMOCD

Figure 4

Eddy County Emergency Response Plan:

Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 45 feet with a TDS of approximately 200 mg/L. The OCD brine well discharge permit addresses well construction, operation, monitoring of the well, associated surface facilities, and provides a contingency plan in the event of accidental spills, leaks and other accidental discharges in order to protect fresh water. However, the OCD discharge permit does not address a catastrophic collapse scenario. The OCD is currently working with I & W Inc. to complete a Contingency Plan in addition to working with the Eddy County Hazmat, State Police and the Local Emergency Planning Committee (LEPC- Fire Marshal). In addition, the OCD will be recommending to Eddy County that their Eddy County Emergency Plan include a scenario for a potential brine well collapse scenario.



Map by: Jim Griswold, NMOCD

Figure 5

OCD District 2 (Artesia) shall contact the OCD Environmental Bureau (Santa Fe) whenever any APDs are received within a ½ mile Area-of-Review (AOR) from the brine wells at this facility (see Figure 6). The OCD staff and supervisors shall internally and jointly review all APDs within the AOR and establish agreement before District 2 issues any APD to drill in the AOR.



Map by: Jim Griswold, NMOCD

Figure 6

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, January 23, 2009 11:44 AM
To: Gum, Tim, EMNRD
Subject: FW: I and W

Could you please contact me today about this matter? Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

From: Price, Wayne, EMNRD
Sent: Thursday, January 22, 2009 3:06 PM
To: David_Herrell@blm.gov
Cc: Chavez, Carl J, EMNRD; Sanchez, Daniel J., EMNRD
Subject: RE: I and W

Carl, please handle immediately before you leave today. Also, I want in writing an internal procedure to make sure no APD is approved within ½ mile of the I&W site without our over site. Please contact Tim Gum on this issue. I do not any verbal understanding it must be in writing. If this is a problem please get Daniel Involved.

From: David_Herrell@blm.gov [mailto:David_Herrell@blm.gov]
Sent: Thursday, January 22, 2009 2:43 PM
To: Price, Wayne, EMNRD
Subject: I and W

I was working on a hazmat with the Eddy County hazmat coordinator, Robert Braider, and I asked him if I and W had contacted them about contingency planning. If I am not mistaken, you informed them in writing to do so. Robert later checked with all other local agencies and none had been contacted about this contingency planning.

Is this a concern? Le me know.

Thanks, Dave

(575) 234-2229, (575) 706-2783.

This inbound email has been scanned by the MessageLabs Email Security System.

Chavez, Carl J, EMNRD

From: Price, Wayne, EMNRD
Sent: Thursday, November 13, 2008 4:51 PM
To: Gum, Tim, EMNRD; Chavez, Carl J, EMNRD
Cc: Macquesten, Gail, EMNRD; Sanchez, Daniel J., EMNRD; Fesmire, Mark, EMNRD
Subject: New Drilling in proximately to I&W brine well

Dear Tim, please screen all APD's that would be within ½ mile radius of the Carlsbad I&W plugged brine well. The OCD Environmental Bureau would like to have the opportunity to assess the situation to determine if it would have an impact on the brine well.

Thank You.

Wayne Price-Environmental Bureau Chief
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505
E-mail wayne.price@state.nm.us
Tele: 505-476-3490
Fax: 505-476-3462