

**STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING CALLED  
BY THE OIL CONSERVATION DIVISION FOR  
THE PURPOSE OF CONSIDERING:**

**CASE NO. 13199  
ORDER NO. R-11720-A**

**APPLICATION OF MELROSE OPERATING COMPANY TO RE-INSTATE AND  
AMEND DIVISION ORDER NO. R-11720 FOR ITS ARTESIA UNIT  
WATERFLOOD PROJECT, EDDY COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on January 22, 2004 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 2<sup>nd</sup> day of August, 2004, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

**FINDS THAT:**

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) By Order No. R-2876 issued in Case No. 3213 on March 5, 1965, the Division, upon the application of International Oil and Gas Corporation, approved a waterflood project in the Artesia Queen-Grayburg-San Andres Pool (3230) in Sections 25 and 26, Township 17 South, Range 28 East, NMPM, Eddy County, New Mexico. This waterflood was subsequently expanded by Division Order No. R-3311, issued in Case No. 3653 on September 11, 1967, to include additional lands within Sections 34, 35 and 36, Township 17 South, Range 28 East, NMPM, and Sections 2 and 3, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico.

(3) The above-described secondary recovery project is designated the Artesia Unit Waterflood Project and encompasses the following described 2240.78 acres, more or less, in Eddy County, New Mexico comprising the Artesia Unit Area, which was the subject of Division Order No. R-3310, issued in Case No. 3652 on September 11, 1967:

TOWNSHIP 17 SOUTH, RANGE 28 EAST, NMPM

Section 25: SW/4 SW/4  
Section 26: NW/4 SW/4, S/2 S/2  
Section 34: SE/4  
Section 35: All  
Section 36: W/2 NW/4, SE/4 NW/4, and SW/4

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM

Section 2: NW/4 NE/4, N/2 NW/4, SW/4 NW/4, W/2 SW/4, and SE/4 SW/4  
Section 3: All.

(4) Melrose Operating Company ("Melrose" or "Applicant") is the current operator of the Artesia Unit Waterflood Project with approximately sixteen (16) injection wells and approximately thirty-five (35) producing wells

(5) On February 5, 2002, the Division entered Order R-11720, in Case 12709, approving the Melrose application that sought to: (i) amend Division Administrative Order WFX-768, issued on November 28, 2000, which order authorized Melrose to convert its Artesia Unit Wells No. 23 (API No. 30-015-01746) and 29 (API No. 30-015-01742), located respectively in Units "L" and "N" of Section 35, Township 17 South, Range 28 East, NMPM, Eddy County, New Mexico to injection wells within the Artesia Unit Waterflood Project; and (ii) expand its Artesia Unit Waterflood Project, pursuant to Division Rule 701 (G), by converting the following described 14 Artesia Unit Wells into injection wells:

Well No.	API No.	Section	Well Description	Original Depth (ft)	Current Depth (ft)	Current Depth (ft)
2	30-015-01563	M-26-17S-28E	330' FS & WL	1,897 - 2,135	1830	379
3	30-015-01565	N-26-17S-28E	330' FSL & 1750' FWL	1,932 - 2,142	1850	386
10	30-015-01749	C-35-17S-28E	360' FNL & 1952' FWL	1,959 - 2,173	1880	392
11	30-015-02654	D-35-17S-28E	360' FN & WL	1,914 - 2,140	1850	383
12	30-015-01745	E-35-17S-28E	1980' FNL & 660' FWL	1,998 - 2,290	1940	400
13	30-015-01754	F-35-17S-28E	1980' FN & WL	2,040 - 2,300	1990	408
16	30-015-01759	E-36-17S-28E	1980' FNL & 660' FWL	2,236 - 2,654	2156	447
17	30-015-01761	F-36-17S-28E	1980' FN & WL	2,306 - 2,685	2260	461
18	30-015-01762	K-36-17S-28E	1980' FS & WL	2,356 - 2,750	2290	471

19	30-015-01760	L-36-17S-28E	1980' FSL & 660' FWL	2,296 – 2,584	2240	459
44	30-015-01796	E-3-18S-28E	2310' FNL & 990' FWL	2,085 – 2,420	2025	417
46	30-015-02541	F-3-18S-28E	2310' FNL & 2267' FWL	2,125 – 2,419	2075	425
54	30-015-01801	K-3-18S-28E	1654' FSL & 2272' FWL	2,170 – 2,406	2120	434
57	30-015-01795	L-3-18S-28E	1570' FSL & 1070' FWL	2,322 – 2,432	2312	464

(6) Further, by Order No. R-11720, the Division required Melrose to complete within one year from the date of the order remedial action on thirty-eight (38) wellbores within the one-half mile Area of Review ("AOR") where there are approximately two hundred and fifteen (215) wells which have penetrated to or through the Artesia Queen-Grayburg-San Andres Pool, including thirty-five (35) plugged and abandoned wells, nineteen (19) wells with open hole completions, seventy-nine (79) wells with production casing, seventy-six (76) wells with deep producing casing, one well with deep production liner within intermediate casing, and five (5) wells with no Division data available.

(7) Order No. R-11720 provided, among other things, that if injection operations for an approved injection well did not commence within one-year after the effective date of the order, then injection approval for that well would otherwise terminate unless the operator requests in writing a time extension for good cause.

(8) As of February 5, 2003, Melrose had commenced injecting water into the above-described Artesia Unit Wells No. 10, 23, 29, and 44. However, as of February 5, 2003, Melrose failed to commence injection operations into the above-described Artesia Unit Wells No. 2, 3, 11, 12, 13, 16, 17, 18, 19, 46, 54, and 57, or had not requested a time extension. As of February 5, 2003, Division Order No. R-11720 injection approval expired on these twelve wells.

(9) Melrose now seeks to have Division Order No. R-11720 re-instated and amended as follows:

(a) Alter the injection pattern in Section 3, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico by deleting water injection into the Artesia Unit Wells No. 44 and 57 and adding its Artesia Unit Well No. 53 (API No. 30-015-01788), located 1650 feet from the South and East lines (Unit J) of Section 3 as an injection well, through perforations from 2180 feet to 2500 feet.

(b) Expanding the Artesia Unit Waterflood Project by converting the existing Artesia Unit Well No. 21 (API No. 30-015-01748), located 1980 feet from the South and East lines (Unit J) of Section 35, Township 17 South, Range 28 East, NMPM, Eddy County, New Mexico, into a new injection well through perforations from 2200 feet to 2510 feet.

(c) Temporarily postponing injection authority into the Penrose interval of the Queen formation as found from a depth of 1682 feet to 1703 feet on Compensated Z-Dens I/Compensated Neutron/Gamma Ray electric log (see Exhibit No. 5 presented at the hearing) run on August 31, 1997 in the SDX Resources, Inc. Artesia Unit Well No. 69 (API No. 30-015-29700), located 430 feet from the North line and 990 feet from the West line (Unit D) of Section 35.

(d) Apply a radius of endangering calculation to delete the necessity for remedial action on the plugged and abandoned Donnelly Drilling Company, Inc. Sinclair State "B" Well No. 3 (API No. 30-015-01765), located 660 feet from the South line and 1980 feet from the East line (Unit O) of Section 36, Township 17 South, Range 28 East, NMPM, Eddy County, New Mexico.

(e) Increase of wellhead surface injection pressure for the following wells:

- (i) Artesia Unit Well No. 7 to 1350 psi;
- (ii) Artesia Unit Well No. 23 to 1050 psi;
- (iii) Artesia Unit Well No. 26 to 1480 psi; and
- (iv) Artesia Unit Well No. 59 to 1170 psi.

(f) Increase the wellhead surface injection pressure Unit/Project-wide to not less than 1263 psi.

(g) Allow Melrose two additional years in which to complete remedial action on any well within the amended half-mile AOR.

(10) At the time of the hearing, Melrose advised the Division that it did not believe it had sufficient evidence to justify the requested injection pressure increases for its Artesia Unit Wells No. 7, 23, 26, and 59 nor the 1263-psi. Unit/Project-wide surface injection pressure increase, and therefore requested that the Division retain the 0.2 psi/foot of depth from the surface to the uppermost injection perforation surface pressure limitation requirements of Order R-11720.

(11) The operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells. This will ensure that the operator complies with Sections 70-2-12.B (2), (4), (7), (14), and (15) of the New Mexico Oil and Gas Act, N.M.S.A 1978.

(12) By deleting its plan to utilize the above-described Artesia Unit Wells No. 44 and 57, located respectively in Units "E" and "L" of Section 3, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico, as water injection wells, Melrose has eliminated the need to perform remedial action on the five (5) following described wells:

Well Name	Well No.	Section	Interval
Maloney Chambers State Well No. 1	30-015-02559	H-4-18S-28E	2390' FNL & 1070' FEL
Levers State Well No. 1	30-015-02580	P-4-18S-28E	1070' FS & EL
Levers State Well No. 2	30-015-02581	P-4-18S-28E	250' FSL & 1070' FEL
Levers State Well No. 3	30-015-02582	P-4-18S-28E	250' FS & EL
Vintage Drilling L.L.C.'s Carper Levers Well No. 2	30-015-01705	M-34-17S-28E	330' FS & WL

(13) Melrose testified that prior to the expiration of Division Order No. R-11720 the required remedial action on the following four wells were either performed to the satisfaction of or met with approval by the supervisor of the Division's district office in Artesia:

Well Name	Well No.	Section	Interval
Artesia Unit Well No. 14	30-015-01755	G-35-17S-28E	1980' FN & EL
BP America Production Company's Empire Abo Unit "G" Well No. 37	30-015-01734	L-35-17S-28E	2310' FSL & 330' FWL
Artesia Unit Well No. 28	30-015-01732	M-35-17S-28E	990' FSL & 330' FWL
Artesia Unit Well No. 29	30-015-01742	N-35-17S-28E	990' FSL & 1650' FWL

(14) With the inclusion of the two additional injection wells, the above-described Artesia Unit Wells No. 21 and 53, Melrose submitted supplemental information within the revised AOR not previously presented.

(15) The two proposed Artesia Unit Wells No. 46 and 54 still requires cement to be circulated in the production string from the top of the existing cement to the surface prior to injection operations.

(16) By using the same method of calculation of cement tops used in Case No. 12709, the evidence presented by Melrose demonstrates that there are still fifteen (15) problem wellbores requiring remedial action before injection into the Artesia Queen-Grayburg-San Andres Pool can commence in any injection well located within ½ mile of any of these fifteen (15) wells described below:

(a) Prior to commencing injection into any injection well within ½ mile of the Welch State Well No. 1 (30-015-01729), located 2310 feet from the North line and 250 feet from the West line (Unit E) of section 35, Township 17 South, range 28 East, NMPM, Eddy County, New Mexico, Melrose should be required to: (i) re-enter and re-plug this well in a manner approved by the Supervisor of the Division's Artesia District Office; or (ii) provide additional geologic, engineering or well data to the Supervisor of the Division's Artesia District Office that will demonstrate that this wells, in its current condition, will not serve as a conduit for the migration of fluid from the proposed injection zone.

(b) Prior to commencing injection into any injection well located within ½ mile of the following four wells, Melrose proposes to run a cement bond log on these four wells to determine cement tops behind the production casing; if the cement behind the production casing is not sufficient to isolate the injection interval, Melrose will perform remedial cement work on the well(s) in a manner approved by the supervisor of the a Division's Artesia District Office:

Well Name	API No.	Truss	Cement Location
Artesia Unit Well No. 40	30-015-01799	C-3-18S-28E	1070' FNL & 1570' FWL
Artesia Unit Well No. 45	30-015-01775	F-3-18S-28E	2390' FNL & 1570' FWL
Artesia Unit Well No. 58	30-015-01791	M-3-18S-28E	1070' FSL & 250' FWL
Levers State Well No. 4	30-015-02583	P-4-18S-28E	1070' FSL & 250' FEL

(c) Prior to commencing injection into any injection well located within  $\frac{1}{2}$  mile of the following three wells, Melrose proposes to dig out the wellheads on these three wells to determine whether surface casing is present; in addition Melrose purposes to run a cement bond log on these three wells to determine cement tops behind the production casing, and if the cement behind the production casing is not sufficient to isolate the injection interval, Melrose will perform remedial cement work on the well(s) in a manner approved by the supervisor of the a Division's Artesia District Office:

Well Number	Well ID	Well Name	Well Depth
43	30-015-01790	E-3-18S-28E	1980' FNL & 250' FWL
56	30-015-01797	K-3-18S-28E	1570' FS & WL
55	30-015-01798	K-3-18S-28E	2390' FSL & 1570' FWL

(d) Prior to commencing injection into any injection well located within  $\frac{1}{2}$  mile of the following seven wells, Melrose should be required to consult with the supervisor of the Division's district office in Artesia and present additional engineering data to demonstrate that the cement behind the production casing in the well(s) is sufficient to effectively isolate the injection interval; if the cement behind the production casing is not sufficient to isolate the injection interval, Melrose will perform remedial cement work on the well(s) in a manner approved by the supervisor of the a Division's Artesia District Office:

Well Number	Well ID	Well Name	Well Depth
Artesia Unit Well No. 33	30-015-01758	N-36-17S-28E	330' FSL & 1631' FWL
Artesia Unit Well No. 35	30-015-01785	C-2-18S-28E	330' FNL & 1650' FWL
Artesia Unit Well No. 37	30-015-01800	A-3-18S-28E	990' FN & EL
BP America Production Company's Empire Abo Unit "E" Well No. 39	30-015-01735	B-25-17S-28E	660' FNL & 1980' FEL
Artesia Unit Well No. 42	30-015-02547	D-3-18S-28E	990' FNL & 330' FWL
Artesia Unit Well No. 53	30-015-07880	J-3-18S-28E	1650' FS & EL
Artesia Unit Well No. 54	30-015-01801	K-3-18S-28E	1654' FSL & 272' FWL

(17) The evidence further presented by Melrose demonstrates that injection into the Penrose interval of the upper Artesia Queen-Grayburg-San Andres Pool can be postponed until such time as any injection well located within ½ mile of the following nine (9) wells, Melrose should be required to consult with the supervisor of the Division's district office in Artesia and present additional engineering data to demonstrate that the cement behind the production casing in the well(s) is sufficient to effectively isolate the upper Penrose injection interval; if the cement behind the production casing is not sufficient to isolate the Penrose interval injection interval, Melrose will perform remedial cement work on the well(s) in a manner approved by the supervisor of the a Division's Artesia District Office. Otherwise injection into the lower portion of the Artesia Queen-Grayburg-San Andres Pool may commence into any injection wells located within ½ mile of any of the nine (9) wells described below:

Well Name and No.	API No.	Direction	Completion
Artesia Unit Well No. 27	30-015-01709	P-34-17S-28E	705' FSL & 550' FEL
Artesia Unit Well No. 15	30-015-02126	H-35-17S-28E	1980' FNL & 990' FEL
Artesia Unit Well No. 31	30-015-01744	P-35-17S-28E	990' FS & EL
Artesia Unit Well No. 7	30-015-10080	D-36-17S-28E	480' FNL & 330' FWL
BP America Production Company's Empire Abo Unit "E" Well No. 39	30-015-01735	B-25-17S-28E	660' FNL & 1980' FEL
Artesia Unit Well No. 42	30-015-02547	D-3-18S-28E	990' FNL & 330' FWL
Artesia Unit Well No. 53	30-015-07880	J-3-18S-28E	1650' FS & EL
Artesia Unit Well No. 54	30-015-01801	K-3-18S-28E	1654' FSL & 272' FWL

(18) Applicant presented engineering testimony on the plugged and abandoned Donnelly Drilling Company, Inc. Sinclair State "B" Well No. 3 [as described above in Finding Paragraph No. (9) (d)] that injected fluids from its above-described Artesia Unit Well No. 18 would not endanger fresh water sources by providing a conduit for injected waters to migrate up-hole into shallower fresh water aquifers; however, Melrose failed to demonstrate that such injection fluids would be confined within the injection interval and not migrate from the Sinclair State "B" Well No. 3 into other hydrocarbon bearing formations thereby causing waste.

(19) Prior to commencing injection operations into its Artesia Unit Well No. 18, Melrose will be required to re-enter and re-plug the above-described Donnelly Drilling Company, Inc. Sinclair State "B" Well No. 3 in a manner approved by the Division's Artesia district office.



(20) The proposed re-instatement and amendment to Division Order No. R-11720, with the exception of Finding Paragraph No. (19) above, will afford the applicant the opportunity to produce its just and equitable share of the oil and gas in the affected pool, will result in the recovery of hydrocarbons that would otherwise be left in the ground and wasted, exhibits sounding engineering practices, is in the best interest of conservation, and protects correlative rights.

(21) The injection authority granted herein for any of the wells subject to the order should terminate two years after the date of this order if the operator has not commenced injection operations into the well. Any extension of time for any well should be after notice and hearing.

**IT IS THEREFORE ORDERED THAT:**

(1) Pursuant to the application of Melrose Operating Company ("Melrose" or "Applicant") Division Order No. R-11720, issued in Case No. 12709 on February 5, 2002, is hereby superseded by this order.

(2) The authority granted by Division Order No. R-11720 for Melrose to convert its: (i) Artesia Unit Well No. 44 (API No. 30-015-01796), located 2310 feet from the North line and 990 feet from the West line (Unit E); and (ii) Artesia Unit Well No. 57 (API No. 30-015-01795), located 1570 feet from the South line and 1070 feet from the West line (Unit L), both wells in Section 3, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico, is hereby rescinded.

(3) Those portions of Division Order No. R-3311, issued in Case No. 3653 on September 11, 1967 and Division Administrative Orders WFX-385, dated February 6, 1973, and WFX-470, dated November 21, 1978, relating to injection authority for the aforementioned Artesia Unit Wells No. 10, 16, 18 and 44 should be superseded by this order.

(4) Further, pursuant to the request of Melrose, the Division hereby certifies that the applicant has satisfactorily complied with the remedial cementing requirements set forth within Division Administrative Order No. WFX-768, dated November 28, 2000, and is hereby authorized to commence injection into its: (i) Artesia Unit Well No. 23 (API No. 30-015-01746), located 1980 feet from the South line and 660 feet from the West line (Unit L); and (ii) Artesia Unit Well No. 29 (API No. 30-015-01742), located 990 feet from the South line and 1650 feet from the West line (Unit N), both wells in Section 35, Township 17 South, Range 28 East, NMPM, Eddy County, New Mexico.

(5) Melrose is hereby granted authorization to expand its Artesia Unit Waterflood Project by converting the following fourteen wells into water injection wells, with injection into the Artesia Queen-Grayburg-San Andres Pool (3230) through the gross perforated interval from approximately 1897 feet to 2750 feet:

Well No.	Well Name	Section	Interval	Perforated Interval (Feet)	Depth (Feet)	Perforated Interval (Feet)
2	30-015-01563	M-26-17S-28E	330' FS & WL	1,897 - 2,135	1830	379
3	30-015-01565	N-26-17S-28E	330' FSL & 1750' FWL	1,932 - 2,142	1850	386
10	30-015-01749	C-35-17S-28E	360' FNL & 1952' FWL	1,959 - 2,173	1880	392
11	30-015-02654	D-35-17S-28E	360' FN & WL	1,914 - 2,140	1850	383
12	30-015-01745	E-35-17S-28E	1980' FNL & 660' FWL	1,998 - 2,290	1940	400
13	30-015-01754	F-35-17S-28E	1980' FN & WL	2,040 - 2,300	1990	408
16	30-015-01759	E-36-17S-28E	1980' FNL & 660' FWL	2,236 - 2,654	2156	447
17	30-015-01761	F-36-17S-28E	1980' FN & WL	2,306 - 2,685	2260	461
18	30-015-01762	K-36-17S-28E	1980' FS & WL	2,356 - 2,750	2290	471
19	30-015-01760	L-36-17S-28E	1980' FSL & 660' FWL	2,296 - 2,584	2240	459
21	30-015-01748	J-35-17S-28E	1980' FS & EL	2,200 - 2,510	2150	440
46	30-015-02541	F-3-18S-28E	2310' FNL & 2267' FWL	2,125 - 2,419	2075	425
53	30-015-07880	F-3-18S-28E	1650' FS & EL	2,180 - 2,500	2150	436
54	30-015-01801	K-3-18S-28E	1654' FSL & 2272' FWL	2,170 - 2,406	2120	434

**PROVIDED HOWEVER THAT:**

(6) Prior to commencing injection operations into the above-described Artesia Unit Wells No. 46 and 54, Applicant shall cement the production casing string from the top of the cement to the surface.

(7) Prior to commencing injection into any injection well within ½ mile of the Welch State Well No. 1 (30-015-01729), located 2310 feet from the North line and 250 feet from the West line (Unit E) of section 35, Township 17 South, range 28 East, NMPM, Eddy County, New Mexico, Melrose shall: (i) re-enter and re-plug this well in a manner approved by the supervisor of the Division's Artesia district office; or (ii) provide additional geologic, engineering or well data to the Supervisor of the Division's Artesia District Office that will demonstrate that this wells, in its current condition, will not serve as a conduit for the migration of fluid from the proposed injection zone

(8) Prior to commencing injection operations into its above-described Artesia Unit Well No. 18, Melrose shall re-enter and re-plug the Donnelly Drilling Company, Inc. Sinclair State "B" Well No. 3 (API No. 30-015-01765), located 660 feet from the South line and 1980 feet from the East line (Unit O) of Section 36, Township 17 South, Range 28 East, NMPM, Eddy County, New Mexico, in a manner approved by the supervisor of the Division's Artesia district office.

(9) Prior to commencing injection into any injection well located within ½ mile of the following four wells, Melrose shall run a cement bond log on these four wells to determine cement tops behind the production casing; if the cement behind the production casing is not sufficient to isolate the injection interval, Melrose will perform remedial cement work on the well(s) in a manner approved by the supervisor of the a Division's Artesia District Office:

Well Name	Well No.	Unit	Original Depth
Artesia Unit Well No. 40	30-015-01799	C-3-18S-28E	1070' FNL & 1570' FWL
Artesia Unit Well No. 45	30-015-01775	F-3-18S-28E	2390' FNL & 1570' FWL
Artesia Unit Well No. 58	30-015-01791	M-3-18S-28E	1070' FSL & 250' FWL
Levers State Well No. 4	30-015-02583	P-4-18S-28E	1070' FSL & 250' FEL

(10) Prior to commencing injection into any injection well located within ½ mile of the following three wells, Melrose shall dig out the wellheads on these three wells to determine whether surface casing is present; in addition Melrose shall run a cement bond log on these three wells to determine cement tops behind the production casing; if the cement behind the production casing is not sufficient to isolate the injection interval, Melrose shall perform remedial cement work on the well(s) in a manner approved by the supervisor of the a Division's Artesia district office:

Well No.	Well No.	Unit	Original Depth
43	30-015-01790	E-3-18S-28E	1980' FNL & 250' FWL
56	30-015-01797	K-3-18S-28E	1570' FS & WL
55	30-015-01798	K-3-18S-28E	2390' FSL & 1570' FWL

(11) Prior to commencing injection into any injection well located within ½ mile of the following seven wells, Melrose shall consult with the supervisor of the Division's

district office in Artesia and present additional engineering data to demonstrate that the cement behind the production casing in the well(s) is sufficient to effectively isolate the injection interval; if the cement behind the production casing is not sufficient to isolate the injection interval, Melrose must perform remedial cement work on the well(s) in a manner approved by the supervisor of the a Division's Artesia district office:

Well Name and No.	Well No.	Section	Interval
Artesia Unit Well No. 33	30-015-01758	N-36-17S-28E	330' FSL & 1631' FWL
Artesia Unit Well No. 35	30-015-01785	C-2-18S-28E	330' FNL & 1650' FWL
Artesia Unit Well No. 37	30-015-01800	A-3-18S-28E	990' FN & EL
BP America Production Company's Empire Abo Unit "E" Well No. 39	30-015-01735	B-25-17S-28E	660' FNL & 1980' FEL
Artesia Unit Well No. 42	30-015-02547	D-3-18S-28E	990' FNL & 330' FWL
Artesia Unit Well No. 53	30-015-07880	J-3-18S-28E	1650' FS & EL
Artesia Unit Well No. 54	30-015-01801	K-3-18S-28E	1654' FSL & 272' FWL

(12) Injection into the Penrose interval of the upper Artesia Queen-Grayburg-San Andres Pool can be postponed until such time as any injection well located within ½ mile of the following nine (9) wells. Melrose is hereby required to consult with the supervisor of the Division's district office in Artesia and present additional engineering data to demonstrate that the cement behind the production casing in the well(s) is sufficient to effectively isolate the upper Penrose injection interval; if the cement behind the production casing is not sufficient to isolate the Penrose interval injection interval, Melrose must perform remedial cement work on the well(s) in a manner approved by the supervisor of the a Division's Artesia district office. Otherwise injection into the lower portion of the Artesia Queen-Grayburg-San Andres Pool shall commence into any injection wells located within ½ mile of any of the nine (9) wells described below:

Well Name and No.	Well No.	Section	Interval
Artesia Unit Well No. 27	30-015-01709	P-34-17S-28E	705' FSL & 550' FEL
Artesia Unit Well No. 15	30-015-02126	H-35-17S-28E	1980' FNL & 990' FEL
Artesia Unit Well No. 31	30-015-01744	P-35-17S-28E	990' FS & EL
Artesia Unit Well No. 7	30-015-10080	D-36-17S-28E	480' FNL & 330' FWL
BP America Production Company's Empire Abo Unit "E" Well No. 39	30-015-01735	B-25-17S-28E	660' FNL & 1980' FEL

Artesia Unit Well No. 42	30-015-02547	D-3-18S-28E	990' FNL & 330' FWL
Artesia Unit Well No. 53	30-015-07880	J-3-18S-28E	1650' FS & EL
Artesia Unit Well No. 54	30-015-01801	K-3-18S-28E	1654' FSL & 272' FWL

(13) The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(14) Injection shall be accomplished through 2-3/8 inch internally plastic-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation in each well. The casing-tubing annulus shall be filled with an inert fluid, and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(15) The injection wells or pressurization system shall be equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure to 0.2 psi/foot of depth to the uppermost injection perforation, all as shown in Ordering Paragraph No. (5) above.

(16) Prior to commencing injection operations, the casing in each well shall be pressure tested throughout the interval from the surface down to the proposed packer setting depth to assure the integrity of such casing.

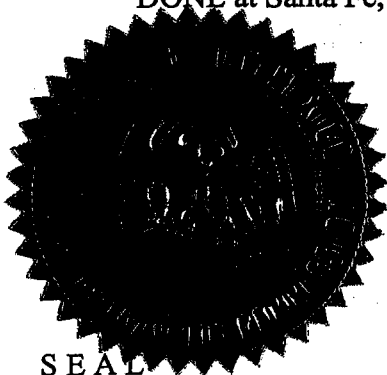
(17) The operator shall give advance notice to the supervisor of the Division's Artesia district office of the date and time: (i) injection equipment will be installed; (ii) the mechanical integrity pressure tests shall be conducted on the proposed injection wells; and (iii) remedial work will be conducted on any of the wells referenced above in Ordering Paragraphs No. (6), (7), (8), (9), (10), (11), and (12), so these operations may be witnessed.

(18) The operator shall immediately notify the supervisor of the Division's Artesia district office of the failure of the tubing, casing, or packer in any of the injection wells, or the leakage of water, oil or gas from or around any producing or plugged and abandoned well within the project area, and shall take all steps as may be timely and necessary to correct such failure or leakage.

(19) The injection authority granted herein for any of the wells subject to the order shall terminate three years after the date of this order if the operator has not commenced injection operations into the well. Any extension of time for any well shall be after notice and hearing.

(20) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

A handwritten signature in black ink, appearing to read "Mark E. Fesmire".

MARK E. FESMIRE, P. E.  
Director