From:	Gago, Jose L
To:	Murphy, Kathleen A, EMNRD
Cc:	Montgomery, Kelley A; Maxian, Amanda M
Subject:	RE: PMX 295 NH G/SA Unit #812
Date:	Wednesday, July 7, 2021 12:51:23 PM
Attachments:	C-108 Attachment Corrected 07-07-2021.pdf 72697 going lane office 11-4-13.rtf 72700 nm ocd sprinkler system well 11-4-13.rtf

Kathleen,

Attached is the corrected page 6. I also changed the language on section XI to reflect that the water well analysis had previously been provided as part of case 15103 (I'm attaching two of them for your reference anyway).

Regarding your question about the packer depth, in Case No. 15103, Order R-6199-F there are several references to the packer setting depth flexibility requested by Oxy. Below are the references for the request, geologic/OCD findings and OCD order/approval.

"The Commission Finds That:
5(h) to modify the packer setting depth required by R-6199-B Ordering Paragraph (3) to allow for the packer to be set anywhere above the uppermost injection perforations or casing shoe, provided the packer is set below the top of the Grayburg Formation;
7(e)The need for additional flexibility in the packer setting depth than what is currently allowed by Order No. R-6199-B
17. The geologic and other evidence presented demonstrates Oxy should be allowed to set packers in injection wells in the North Hobbs Unit anywhere above the uppermost injection perforations or casing shoes, so long as the packer is set below the top of the Grayburg formation.

It is Therefore Ordered That:
(11) Injection shall be accomplished through fiberglass-lined tubing and a nickel plated packer. The packer shall be set as close as practical to the uppermost injection perforations or casing shoe (of any open hole completion), so long as the packer set point remains below the top of the Grayburg formation."

Please let me know if you need additional information.

Thanks again,

Jose.

From: Murphy, Kathleen A, EMNRD <KathleenA.Murphy@state.nm.us>
Sent: Wednesday, July 07, 2021 9:32 AM
To: Gago, Jose L <Jose_Gago@oxy.com>
Cc: Montgomery, Kelley A <Kelley_Montgomery@oxy.com>; Maxian, Amanda M <Amanda_Maxian@oxy.com>

Subject: [EXTERNAL] RE: PMX 295 NH G/SA Unit #812

WARNING - This message is from an EXTERNAL SENDER - be CAUTIOUS, particularly with links and attachments.

On Page 6, Paragraph 7 this application describes the 312 well which was a well in PMX 294.

The application attached is PMX 295 and is for the 813 well. Sorry, I said it was for the 812 well.

Thus, does the paragraph need to be corrected for the 813 well.

From: Gago, Jose L <Jose_Gago@oxy.com>
Sent: Wednesday, July 7, 2021 5:46 AM
To: Murphy, Kathleen A, EMNRD <KathleenA.Murphy@state.nm.us>
Cc: Montgomery, Kelley A <Kelley_Montgomery@oxy.com>; Maxian, Amanda M <Amanda_Maxian@oxy.com>
Subject: RE: PMX 295 NH G/SA Unit #812

Kathleen,

Would you mind sending me the API number of the well? I didn't work on a C-108 for the NHGSAU 812. The one I worked on was a CTI for the NHGSAU 312.

Thanks,

Jose.

From: Murphy, Kathleen A, EMNRD <KathleenA.Murphy@state.nm.us>
Sent: Tuesday, July 06, 2021 3:57 PM
To: Gago, Jose L <Jose_Gago@oxy.com>
Cc: Montgomery, Kelley A <Kelley_Montgomery@oxy.com>
Subject: [EXTERNAL] PMX 295 NH G/SA Unit #812

WARNING - This message is from an EXTERNAL SENDER - be CAUTIOUS, particularly with links and attachments.

PMX 295, NH G/SA Unit #812 well

Here are a few questions and requests.

I assume you are sampling 2 freshwater wells adjacent to the #812.

C-108 Application, P6, #7—The AOR is for the #312 well. Does this need to be corrected?

Packer Setting Depth: can you send me the document from the case file where this is discussed, for my own learning purpose. I think there were a couple of case file associated with these orders so it might be complicated. (You can extract the pages if you like).

Thanks!

Kathleen Murphy

Petroleum Specialist- Advanced
Geologist/GIS Analyst
New Mexico Oil Conservation Division
1200 South St Francis Drive
Santa Fe, New Mexico 87505

505-365-3161

Email: kathleena.murphy@state.nm.us

** Please use email during this stressful time**

From: Gago, Jose L
To: Murphy, Kathleen A, EMNRD
Cc: Montgomery, Kelley A; Maxian, Amanda M
Subject: RE: PMX 295 NH G/SA Unit #812
Date: Wednesday, July 7, 2021 9:00:54 AM

Yes, that page needs to be corrected. All the information in the application, including the AOR, is for the 813. I will send you an updated page as well as the water well analysis.

Thanks for your help,

Jose.

From: Murphy, Kathleen A, EMNRD <KathleenA.Murphy@state.nm.us>
Sent: Wednesday, July 07, 2021 9:32 AM
To: Gago, Jose L <Jose_Gago@oxy.com>
Cc: Montgomery, Kelley A <Kelley_Montgomery@oxy.com>; Maxian, Amanda M <Amanda_Maxian@oxy.com>
Subject: [EXTERNAL] RE: PMX 295 NH G/SA Unit #812

On Page 6, Paragraph 7 this application describes the 312 well which was a well in PMX 294.

The application attached is PMX 295 and is for the 813 well. Sorry, I said it was for the 812 well.

Thus, does the paragraph need to be corrected for the 813 well.

From: Gago, Jose L <Jose_Gago@oxy.com>
Sent: Wednesday, July 7, 2021 5:46 AM
To: Murphy, Kathleen A, EMNRD <KathleenA.Murphy@state.nm.us>
Cc: Montgomery, Kelley A <Kelley_Montgomery@oxy.com>; Maxian, Amanda M <Amanda_Maxian@oxy.com>
Subject: RE: PMX 295 NH G/SA Unit #812

Kathleen,

Would you mind sending me the API number of the well? I didn't work on a C-108 for the NHGSAU 812. The one I worked on was a CTI for the NHGSAU 312.

Thanks,

Jose.

From: Murphy, Kathleen A, EMNRD <KathleenA.Murphy@state.nm.us>
Sent: Tuesday, July 06, 2021 3:57 PM
To: Gago, Jose L <Jose_Gago@oxy.com>
Cc: Montgomery, Kelley A <Kelley_Montgomery@oxy.com>
Subject: [EXTERNAL] PMX 295 NH G/SA Unit #812

PMX 295, NH G/SA Unit #812 well

Here are a few questions and requests.

I assume you are sampling 2 freshwater wells adjacent to the #812.

C-108 Application, P6, #7—The AOR is for the #312 well. Does this need to be corrected?

Packer Setting Depth: can you send me the document from the case file where this is discussed, for my own learning purpose. I think there were a couple of case file associated with these orders so it might be complicated. (You can extract the pages if you like).

Thanks!

Kathleen Murphy

Petroleum Specialist- Advanced
Geologist/GIS Analyst
New Mexico Oil Conservation Division
1200 South St Francis Drive
Santa Fe, New Mexico 87505

505-365-3161

Email: kathleena.murphy@state.nm.us

** Please use email during this stressful time**


STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

C-108 Application Attachment
Occidental Permian Ltd.
North Hobbs Unit No. 813
Lea County, New Mexico

I. This is a pressure maintenance project. The project qualifies for administrative approval.

II. OCCIDENTAL PERMIAN Ltd.
P.O. Box 4294 Houston, TX 77210-4294
Contact Party: Jose Gago, 832-646-4450

III. Injection well data sheet and wellbore schematic has been attached for NORTH HOBBS UNIT No. 813

IV. This is an expansion of an existing project authorized under Order No. R-6199-F.

V. The map with a two mile radius surrounding the injection well and a one half mile radius for area of review is attached.

VI. In accordance to Order No. R-6199-F Section 4 OCCIDENTAL PERMIAN Ltd certifies that: The area of review for well "NORTH HOBBS G/SA UNIT #813" (API: 30-25-34871) shows no substantive changes in the information furnished in support of Order No. R-6199-F concerning the status of construction of any well that penetrates the injection interval within the one-half (1/2) mile around the injection well, with the exemption of well W.D Grimes NCT A #4 (operated by Texland) that was P&A on May 2017. The wellbore diagram and tabulated well data is attached.

VII. The area of review is attached. If cement tops were not available, the top of cement was calculated using 1.32 cubic feet/sack of cement and 70% fill.

1. Average Injection Rate 4,000 BWPD / 15,000 MCFGPD
   Maximum Injection Rate 9,000 BWPD / 20,000 MCFGPD
2. This will be a closed system.
3. Average Surface Injection Pressure 1,100 PSIG
   Maximum Surface Injection Pressure
   - Produced Water 1,100 PSIG
   - CO_2 1,250 PSIG
   - CO_2 w/produced gas 1,770 PSIG

   (In accordance with Order No. R-6199-G, effective 7/18/13)
4. Source Water – San Andres Produced Water
   (Analysis previously provided at hearing, Case No. 14981)

VIII. The information was previously submitted as part of Order No. R-6199-F application

IX. This is an existing injection well. No stimulation is planned at this point.

X. Logs were filed at the time of drilling.

XI. The information was previously submitted as part of case No. 15103 Order R6199F – Effective May 22, 2014.

XII. N/A. This is not a disposal well.

XIII. Section 3 of Order No. R-6199-F allows the administrative approval, from the Division Director, of additional injection wells without notice and hearing. Notices to producers and surface owners for the water/CO_2 flood area were provided at the time of the application and hearing for Order No. R-6199-F.

MITCHELL ANALYTICAL LABORATORY

2638 Faudree
Odessa, Texas 79765-8538
561-5579

Company: ***Nalco Company***

Well Number:	Going Lane Office	Sample Temp:	70
Lease:	OXY	Date Sampled:	10/24/2013
Location:		Sampled by:	Bobby Hunt
Date Run:	10/31/2013	Employee #:	27-022
Lab Ref #:	13-nov-n72697	Analyzed by:	GR

Dissolved Gases

			Mg/L	Eq. Wt.	MEq/L
Hydrogen Sulfide	(H2S)		.00	16.00	.00
Carbon Dioxide	(CO2)	**NOT ANALYZED**			
Dissolved Oxygen	(O2)	**NOT ANALYZED**			

Cations

Calcium	(Ca++)		57.89	20.10	2.88
Magnesium	(Mg++)		21.03	12.20	1.72
Sodium	(Na+)		116.11	23.00	5.05
Barium	(Ba++)	**NOT ANALYZED**			
Manganese	(Mn+)		.00	27.50	.00
Strontium	(Sr++)	**NOT ANALYZED**			

Anions

Hydroxyl	(OH-)		.00	17.00	.00
Carbonate	(CO3=)		.00	30.00	.00
BiCarbonate	(HCO3-)		342.16	61.10	5.60
Sulfate	(SO4=)		56.00	48.80	1.15
Chloride	(Cl-)		103.11	35.50	2.90

Total Iron	(Fe)		0	18.60	.00
Total Dissolved Solids			696.30		
Total Hardness as CaCO3			230.95		
Conductivity MICROMHOS/CM			976		

pH 7.600 Specific Gravity 60/60 F. 1.000

CaSO4 Solubility @ 80 F. 19.15MEq/L, CaSO4 scale is unlikely

CaCO3 Scale Index

70.0	-.280	100.0	.070	130.0	.580
80.0	-.150	110.0	.310	140.0	.580
90.0	.070	120.0	.310	150.0	.810

Goins Lane Office	32°42’18.86”N	103°11’01.82”W

MITCHELL ANALYTICAL LABORATORY

2638 Faudree
Odessa, Texas 79765-8538
561-5579

Company: ***Nalco Company***

Well Number:	NM OCD Sprinkler System Well	Sample Temp:	70
Lease:	OXY	Date Sampled:	10/24/2013
Location:		Sampled by:	Bobby Hunt
Date Run:	10/31/2013	Employee #:	27-022
Lab Ref #:	13-nov-n72700	Analyzed by:	GR

Dissolved Gases

			Mg/L	Eq. Wt.	MEq/L
Hydrogen Sulfide	(H2S)		.00	16.00	.00
Carbon Dioxide	(CO2)	**NOT ANALYZED**			
Dissolved Oxygen	(O2)	**NOT ANALYZED**			

Cations

Calcium	(Ca++)		105.89	20.10	5.27
Magnesium	(Mg++)		12.15	12.20	1.00
Sodium	(Na+)		54.56	23.00	2.37
Barium	(Ba++)	**NOT ANALYZED**			
Manganese	(Mn+)		.02	27.50	.00
Strontium	(Sr++)	**NOT ANALYZED**			

Anions

Hydroxyl	(OH-)		.00	17.00	.00
Carbonate	(CO3=)		.00	30.00	.00
BiCarbonate	(HCO3-)		268.84	61.10	4.40
Sulfate	(SO4=)		54.00	48.80	1.11
Chloride	(Cl-)		111.12	35.50	3.13

Total Iron	(Fe)		0	18.60	.00
Total Dissolved Solids			606.58		
Total Hardness as CaCO3			314.54		
Conductivity MICROMHOS/CM			858		

pH 7.960 Specific Gravity 60/60 F. 1.000

CaSO4 Solubility @ 80 F. 18.02MEq/L, CaSO4 scale is unlikely

CaCO3 Scale Index

70.0	.237	100.0	.587	130.0	1.097
80.0	.367	110.0	.827	140.0	1.097
90.0	.587	120.0	.827	150.0	1.327

Nalco Company

NM OCD Sprinklers 32°43’05.88”N 103°09’44.88”W