NM2 - ___7_____

MONITORING REPORTS YEAR(S):

___2016 - 2018___

BLAGG ENGINEERING, INC.
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USPS Certified: 7012 1010 0002 1168 7500

March 2, 2017

Mr. Brad Jones
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Annual Report: Permit NM-02-0007
BP Cahn Waste Management Facility
NW/4 Sec. 33 - T32N - R10W, San Juan County, NM

Dear Mr. Jones:

On behalf of BP America Production Co., Blagg Engineering, Inc. (BEI) is submitting this 2016 calendar year annual report for the Cahn Waste Management Facility, Permit NM-02-0007. Attached are spread sheets that summarize weekly evaporation pond and monthly sump monitoring test results.

General Pond Monitoring

Produced water inflow to the Cahn Evaporation Pond is through a pipeline from the Schneider Waste Management Facility. No other pipelines discharge water to the facility. During 2016 there was no inflow from the Schneider facility and the only water that entered the pond was from precipitation. Weekly monitoring has not indicated the generation of dissolved sulfide or hydrogen sulfide gas during any inspections.

Landfarm Treatment Zone Monitoring

No landfarm cells were constructed during the 2016 calendar year and no treatment zone monitoring was required or performed.

Evaporation Pond Sludge Thickness

Pond sludge thickness was measured on April 25, 2016. On this date the pond was dry with a layer of salt precipitation that covers the entire base. The average salt/sediment thickness was measured at 3.5 inches, with the majority of this accumulation being the salt precipitate.

Leak Detection System Monitoring

The primary top liner leak detection system was cut open in 2014 to conduct sub-liner soil sampling for preparation of a final facility closure plan. Although the liner cuts were temporarily repaired, in January, 2015 precipitation water began seeping through the cut liner and entering the sump water collection system. Since only precipitation water entered the pond in 2016, it is believed that the water entering the sump system is entirely from precipitation.

Questions or comments concerning this transmittal may be directed to myself at (505)320-1183 or to John Ritchie with BP at (505)326-9200.

Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.,
President

Attachments: Monitoring Spread Sheets

cc: Brandon Powell, NMOCD Aztec District Office
John Ritchie, BP SJ Operations Center

BP America Production Company
Cahn Waste Management Facility
Field Inspection Data Summary
2016

Inspection Date	Wind Speed (MPH)	Wind Direction (Degrees)	H2S (ppm)	Dissolved Sulfide (ppm)	Dissolved Oxygen (ppm)	Temp. (celcius)	pH	Free Board (feet)	Liner/Berm Integrity	Comments
01/04/2016	2-5	180	0.0	--	--	--	--	>3.4	N	Dry, trace precip water on top of salt
01/15/2016	5-8	45	0.0	--	--	--	--	>3.4	N	"
01/20/2016	10-15	270	0.0	--	--	--	--	>3.4	N	"
01/28/2016	3-5	135	0.0	0.0	TSTM	1.5	9.0	3.3	N	Precip water on top of salt
02/03/2016	5-8	0	0.0	--	--	--	--	3.3	N	Pond Frozen
02/08/2016	2-4	45	0.0	--	--	--	--	3.3	N	"
02/17/2016	5-8	45	0.0	0.0	TSTM	3.9	9.2	3.3	N	Precip water on top of salt
02/22/2016	Calm	--	0.0	0.0	TSTM	4.1	9.2	3.3	N	"
02/29/2016	4-6	180	0.0	0.0	TSTM	4.4	9.0	3.3	N	"
03/07/2016	8-10	270	0.0	0.0	TSTM	3.6	9.2	3.4	N	"
03/14/2016	5-10	235	0.0	--	--	--	--	>3.4	N	Dry, trace precip water on top of salt
03/24/2016	Calm	--	0.0	--	--	--	--	>3.4	N	"
03/29/2016	15-25	210	0.0	--	--	--	--	>3.4	N	Dry, salt covered base
04/05/2016	2-4	90	0.0	--	--	--	--	>3.4	N	"
04/11/2016	Calm	--	0.0	--	--	--	--	>3.4	N	"
04/18/2016	Calm	--	0.0	--	--	--	--	>3.4	N	"
04/25/2016	10-15	270	0.0	--	--	--	--	>3.4	N	"
04/25/2016	Measure Sludge: Average Thickness at 3.5-inches (primarily salt, minimum at 0-inches, maximum at 5.5-inches)									
05/04/2016	5-10	45	0.0	--	--	--	--	>3.4	N	Dry, trace precip water on top of salt
05/11/2016	2-6	180	0.0	--	--	--	--	>3.4	N	"
05/18/2016	8-12	270	0.0	--	--	--	--	>3.4	N	"
05/26/2016	5-10	235	0.0	--	--	--	--	>3.4	N	"
06/01/2016	4-8	90	0.0	--	--	--	--	>3.4	N	Dry, salt covered base
06/08/2016	10-15	260	0.0	--	--	--	--	>3.4	N	"

Inspection Date	Wind Speed (MPH)	Wind Direction (Degrees)	H2S (ppm)	Dissolved Sulfide (ppm)	Dissolved Oxygen (ppm)	Temp. (celcius)	pH	Free Board (feet)	Liner/Berm Integrity	Comments
06/14/2016	Calm	--	0.0	--	--	--	--	>3.4	N	"
06/20/2016	8-10	135	0.0	--	--	--	--	>3.4	N	"
06/27/2016	0-1	0	0.0	--	--	--	--	>3.4	N	"
07/01/2016	Calm	--	0.0	--	--	--	--	>3.4	N	"
07/07/2016	5-8	90	0.0	--	--	--	--	>3.4	N	"
07/15/2016	8-12	180	0.0	--	--	--	--	>3.4	N	"
07/19/2016	2-4	0	0.0	--	--	--	--	>3.4	N	"
07/25/2016	2-6	235	0.0	--	--	--	--	>3.4	N	"
08/03/2016	4-8	270	0.0	--	--	--	--	>3.4	N	"
08/10/2016	1-3	135	0.0	0.0	TSTM	22 C	9.1	3.4	N	Precip water on top of salt
08/15/2016	2-5	0	0.0	--	--	--	--	>3.4	N	Dry, salt covered base
08/22/2016	0-2	45	0.0	0.0	TSTM	18 C	9.0	3.4	N	Precip water on top of salt
08/29/2016	Calm	--	0.0	--	--	--	--	>3.4	N	Dry, salt covered base
09/02/2016	2-4	270	0.0	--	--	--	--	>3.4	N	"
09/07/2016	2-4	180	0.0	--	--	--	--	>3.4	N	"
09/13/2016	5-10	150	0.0	--	--	--	--	>3.4	N	"
09/23/2016	1-3	210	0.0	0.0	TSTM	7 C	9.0	>3.4	N	About 1-inch precip water on top of salt
09/26/2016	2-4	210	0.0	0.0	TSTM	11 C	9.1	>3.4	N	"
10/03/2016	5-15	180	0.0	--	--	--	--	>3.4	N	Trace precipitation water, TSTM
10/11/2016	4-8	0	0.0	--	--	--	--	>3.4	N	Dry, salt covered base
10/17/2016	5-10	270	0.0	--	--	--	--	>3.4	N	"
10/28/2016	5-10	45	0.0	--	--	--	--	>3.4	N	"
11/04/2016	Calm	--	0.0	--	--	--	--	>3.4	N	"
11/10/2016	3-5	270	0.0	0.0	TSTM	8 C	9.0	>3.4	N	About 1-inch precip water on top of salt
11/18/2016	1-4	135	0.0	0.0	TSTM	5 C	9.1	>3.4	N	About 1/2-inch precip water on top of salt
11/21/2016	8-12	45	0.0	0.0	TSTM	9 C	8.9	>3.4	N	About 2-inchs precip water on top of salt
12/01/2016	Calm	--	0.0	0.0	TSTM	2 C	9.0	>3.4	N	About 1-inch precip water on top of salt
12/07/2016	4-8	270	0.0	0.0	TSTM	3 C	9.1	>3.4	N	"
12/14/2016	Calm	--	0.0	0.0	TSTM	3 C	9.2	>3.4	N	"
12/23/2016	1-2	180	0.0	0.0	TSTM	2.6 C	9.0	3.2	N	About 3-inchs precip water on top of salt
12/27/2016	3-5	0	0.0	0.0	TSTM	0.9 C	9.2	3.2	N	"

Cahn Waste Management Facility
Monthly Sump Inspection Field Data
2016

		SW SUMP				SE SUMP				
Inspection Date	Water in Sumps	Dissolved Sulfide (ppm)	Dissolved Oxygen (ppm)	Temp. (celcius)	pH	Dissolved Sulfide (ppm)	Dissolved Oxygen (ppm)	Temp. (celcius)	pH	Comments
01/04/2016	Yes	0.0	1.10	3.9	9.2	0.0	0.65	4.0	9.0	Water in New Sump System Due to Cutting Through Liner for Closure Sampling in 2014. Water Inflow to Ponds OFF. Precip water only entering Sump Collection System.
02/03/2016	Yes	0.0	0.95	4.7	9.1	0.0	1.25	6.1	9.2	"
03/07/2016	Yes	0.0	1.66	9.2	9.1	0.0	1.05	9.4	9.3	"
04/05/2016	Yes	0.0	2.05	12.0	9.0	0.0	0.63	13.1	9.1	"
05/04/2016	Yes	0.0	1.45	17.0	9.2	0.0	0.76	17.4	9.0	"
06/01/2016	Yes	0.0	0.50	18.0	9.0	0.0	1.30	18.6	9.2	"
07/01/2016	Yes	0.0	1.16	22.0	9.1	0.0	0.55	21.1	9.1	"
08/03/2016	Yes	0.0	0.95	22.2	9.2	0.0	1.40	21.6	9.0	"
09/02/2016	Yes	0.0	1.05	18.8	8.9	0.0	1.25	18.0	9.2	"
10/03/2016	Yes	0.0	0.65	14.7	9.0	0.0	0.75	14.5	9.1	"
11/04/2016	Yes	0.0	1.80	11.1	9.2	0.0	1.45	11.0	8.9	"
12/01/2016	Yes	0.0	1.25	10.1	9.0	0.0	0.84	9.9	9.0	"

BLAGG ENGINEERING, INC.
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USPS Certified: 7012 1010 0002 1168 7470

February 23, 2016

Mr. Brad Jones
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Annual Report: Permit NM-02-0007
BP Cahn Waste Management Facility
NW/4 Sec. 33 - T32N - R10W, San Juan County, NM

Dear Mr. Jones:

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General Pond Monitoring

Produced water inflow to the Cahn Evaporation Pond is through a pipeline from the Schneider Waste Management Facility. No other pipelines discharge water to the facility. During 2015 there was no inflow from the Schneider facility and the only water that entered the pond was from precipitation. Weekly monitoring has not indicated the generation of dissolved sulfide or hydrogen sulfide gas during any inspections.

Landfarm Treatment Zone Monitoring

No landfarm cells were constructed during the 2015 calendar year and no treatment zone monitoring was required or performed.

Evaporation Pond Sludge Thickness

Pond sludge thickness was measured on November 18, 2015. On this date the pond had a trace amount of precipitation water on top of a salt precipitation that covers the entire base. The average salt/sediment thickness was measured at 3.7 inches, with the majority of this accumulation being the salt precipitate.

Leak Detection System Monitoring

The primary top liner leak detection system was cut open in 2014 to conduct sub-liner soil sampling for preparation of a final facility closure plan. Although the liner cuts were temporarily repaired, in January, 2015 precipitation water began seeping through the cut liner and entering the sump water collection system. Since only precipitation water entered the pond in 2015, it is believed that the water entering the sump system is entirely from precipitation. This sump water was periodically removed via pump truck.

Questions or comments concerning this transmittal may be directed to myself at (505)320-1183 or to John Ritchie with BP at (505)326-9200.

Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.,
President

Attachments: Monitoring Spread Sheets

cc: Brandon Powell, NMOCD Aztec District Office
John Ritchie, BP SJ Operations Center

BP America Production Company
Cahn Waste Management Facility
Field Inspection Data Summary
2015

Inspection Date	Wind Speed (MPH)	Wind Direction (Degrees)	H2S (ppm)	Dissolved Sulfide (ppm)	Dissolved Oxygen (ppm)	Temp. (celcius)	pH	Free Board (feet)	Liner/Berm Integrity	Comments
01/05/2015	2-4	From 120	0	NA	NA	NA	NA	>3.4'	NO	All Pond Inflow Off.
01/12/2015	3-5	From 0	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
01/20/2015	6-8	From 180	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
01/27/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
02/03/2015	3-5	From 270	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
02/09/2015	8-12	From 270	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
02/16/2015	6-8	From 135	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
02/23/2015	2-4	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
03/02/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
03/09/2015	3-5	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
03/16/2015	6-8	From 235	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
03/23/2015	2-4	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
03/30/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
04/02/2015	3-5	From 0	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
04/06/2015	2-4	From 180	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
04/15/2015	12-18	From 270	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
04/20/2015	6-8	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
04/27/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
05/04/2015	10-15	From 180	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
05/13/2015	2-4	From 310	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
05/20/2015	6-8	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
05/25/2015	8-12	From 180	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
06/01/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
06/08/2015	8-12	From 270	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry

Inspection Date	Wind Speed (MPH)	Wind Direction (Degrees)	H2S (ppm)	Dissolved Sulfide (ppm)	Dissolved Oxygen (ppm)	Temp. (celcius)	pH	Free Board (feet)	Liner/Berm Integrity	Comments
06/15/2015	2-4	From 0	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
06/22/2015	4-8	From 120	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
06/29/2015	3-5	From 180	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
07/06/2015	2-4	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
07/13/2015	6-8	From 270	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
07/20/2015	10-15	From 180	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
07/27/2015	2-4	From 0	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
08/05/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
08/12/2015	8-12	From 310	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
08/19/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
08/24/2015	2-4	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
09/02/2015	7-10	From 270	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
09/09/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
09/15/2015	10-15	From 180	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
09/21/2015	3-5	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
09/28/2015	6-8	From 135	0	NA	NA	NA	NA	>3.4'	NO	" Pond Dry
10/02/2015	10-15	From 180	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
10/07/2015	2-4	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
10/12/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
10/19/2015	6-8	From 270	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
10/26/2015	10-15	From 180	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
11/04/2015	3-5	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
11/10/2015	10-15	From 90	0	NA	NA	NA	NA	>3.4'	NO	Pond being pumped dry by vacuum truck
11/18/2015	2-4	From 90	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond. Measure Sludge.
11/23/2015	8-12	From 270	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
12/03/2015	3-5	From 270	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
12/07/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
12/14/2015	6-8	From 135	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
12/21/2015	4-8	From 120	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond
12/29/2015	Calm	NA	0	NA	NA	NA	NA	>3.4'	NO	" Trace Precip Water in Pond

Cahn Waste Management Facility
Monthly Sump Inspection Field Data
2015

		SW SUMP				SE SUMP				
Inspection Date	Water In Sumps	Dissolved Sulfide (ppm)	Dissolved Oxygen (ppm)	Temp. (celcius)	pH	Dissolved Sulfide (ppm)	Dissolved Oxygen (ppm)	Temp. (celcius)	pH	Comments
01/05/2015	Yes	0.0	0.75	4.9	9.3	0.0	1.08	4.7	9.1	Water in New Sump System Due to Cutting Through Liner for Closure Sampling. Water Inflow to Ponds OFF. Precip water entering Sump Collection System.
02/03/2015	Yes	0.0	1.86	5.8	9.0	0.0	1.44	6.0	9.0	"
03/02/2015	Yes	0.0	2.10	8.8	9.2	0.0	0.65	9.1	9.3	"
04/02/2015	Yes	0.0	0.55	11.1	9.0	0.0	1.80	13.0	9.2	"
05/04/2015	Yes	0.0	1.66	16.1	9.3	0.0	0.55	16.0	8.9	"
06/01/2015	Yes	0.0	1.01	18.0	8.9	0.0	2.05	18.4	9.0	"
07/06/2015	Yes	0.0	0.86	22.0	9.0	0.0	1.30	21.9	9.2	"
08/05/2015	Yes	0.0	1.06	22.6	9.2	0.0	1.25	22.9	9.1	"
09/02/2015	Yes	0.0	0.59	21.9	9.0	0.0	0.95	22.2	9.0	"
10/02/2015	Yes	0.0	1.36	21.0	9.1	0.0	1.54	21.3	9.1	"
11/04/2015	Yes	0.0	2.02	16.2	9.2	0.0	1.11	16.8	9.0	"
11/11/2015	Yes	--	--	--	--	--	--	--	--	Sumps being pumped dry with vac truck
12/03/2015	Yes	0.0	3.88	9.1	9.2	0.0	2.65	9.8	9.2	Precip water only entering sumps.