

U.S. Patent No. 8,505,332
Claim 5
Monell 20 CO2Flex® Plant
(Sweetwater County, Wyoming)

Claim 5	Monell 20 Processing Plant (Sweetwater County, Wyoming) Ex. 2054, NGL Recovery Plant, Piping and Instrumentation Diagram (April 9, 2007 – Revised per PHA Review) Ex. 2055, NGL Fractionation System, Process Flow Diagram, (Nov. 11, 2024)
Claim 5 [5.1] The method of claim 1, wherein the sweet NGL rich stream comprises from 20 molar percent to 40 molar percent of the C3+ hydrocarbons from the carbon dioxide recycle stream, and	The composition for the Stream No. 3 “Carbon Dioxide Recycle Stream” is shown in EX2055 (“NGL Fractionation System, Process Flow Diagram”) at Page 4. The composition for the Stream No. 9 “Sweet NGL Rich Stream” is also shown in EX2055 at Page 4. The calculations on the attached spreadsheet confirm that the Stream No. 9 “Sweet NGL Rich Stream” has 50.8 molar percent of the C3+ hydrocarbons from the Stream No. 3 “Carbon Dioxide Recycle Stream,” above the limit of the 20-40 molar percent range specified in this Claim 5. (See O9, which is the sum of M9:M15 divided by the sum of C9:C15.)

Claim 5	Monell 20 Processing Plant (Sweetwater County, Wyoming) Ex. 2054, NGL Recovery Plant, Piping and Instrumentation Diagram (April 9, 2007 – Revised per PHA Review) Ex. 2055, NGL Fractionation System, Process Flow Diagram, (Nov. 11, 2024)
[5.2] wherein the purified carbon dioxide recycle stream comprises at least 94 molar percent of the carbon dioxide,	The composition for the Stream No. 4 “Purified Carbon Dioxide Recycle Stream” is shown in EX2055 at Page 4. The calculations on the attached spreadsheet confirm that the Stream No. No. 4 “Purified Carbon Dioxide Recycle Stream” has 100 molar percent of the carbon dioxide from the Stream No. 3 “Carbon Dioxide Recycle Stream,” which is within the at least 94 molar percent specified in this Claim 5. (See F6, which is E6 divided by C6.)
[5.3] at least 94 molar percent of the methane, and	The calculations on the attached spreadsheet confirm that the Stream No. No. 4 “Purified Carbon Dioxide Recycle Stream” has 100 molar percent of the methane from the Stream No. 3 “Carbon Dioxide Recycle Stream,” which is within the at least 94 molar percent specified in this Claim 5. (See F7, which is E7 divided by C7.)
[5.4] at least 93 molar percent of the ethane from the carbon dioxide recycle stream.	The calculations on the attached spreadsheet confirm that the Stream No. No. 4 “Purified Carbon Dioxide Recycle Stream” has 100 molar percent of the ethane from the Stream No. 3 “Carbon Dioxide Recycle Stream,” which is within the at least 93 molar percent specified in this Claim 5. (See F8, which is E8 divided by C8.)

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	A	B	C	D	E	F	G
1	EX2055	Carbon Dioxide Recycle Stream 3		Purified CO2 Recycle Stream 4			
2		Molar Flow Rate = 17.00 MMSCFD		Molar Flow Rate = 16.83 MMSCFD			C3-C8
3		Mole Frac.	MSCFD	Mole Frac.	MSCFD		Disregarded
4	H2S	0.0031	52	0.0030	51	0.0%	
5	N	0.0008	14	0.0008	14	100.4%	
6	CO2	0.9362	15,915	0.9492	15,975	100.4%	
7	C1	0.0218	371	0.0221	372	100.4%	
8	C2	0.0155	264	0.0158	265	100.4%	
9	C3	0.0116	196	0.0088	149	75.7%	48.5%
10	i-C4	0.0015	25	0.0002	3	12.5%	
11	n-C4	0.0031	52	0.0001	1	1.8%	
12	i-C5	0.0007	12	0.0000	0	0.0%	
13	n-C5	0.0006	10	0.0000	0	0.0%	
14	n-C6	0.0005	8	0.0000	0	0.0%	
15	n-C8	0.0006	10	0.0000	0	0.0%	
16	H2O	0.0041	69	0.0000	0	0.0%	
17		0.997		0.9970			

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	A	H	I	J	K	L	M	N	O
1	EX2055	Sour NGL Rich Stream 8			Sweet NGL Rich Stream 9				
2		Molar Flow Rate = 0.17 MMSCFD			Molar Flow Rate = 0.16 MMSCFD			C3-C8	
3		Mole Frac.	MSCFD		C3-C8	Mole Frac.	MSCFD		Recovered
4	H2S	0.0094	2	0.0%		0.0000	0		
5	N	0.0000	0	0.0%		0.0000	0	0.0%	
6	CO2	0.0500	8	0.1%		0.0000	0	0.0%	
7	C1	0.0000	0	0.0%		0.0000	0	0.0%	
8	C2	0.0000	0	0.0%		0.0000	0	0.0%	
9	C3	0.2791	47	24.2%	50.8%	0.2968	47	24.2%	50.8%
10	i-C4	0.1285	22	86.0%		0.1366	22	86.1%	
11	n-C4	0.2978	51	96.5%		0.3166	51	96.5%	
12	i-C5	0.0685	12	98.2%		0.0728	12	98.3%	
13	n-C5	0.0587	10	98.2%		0.0624	10	98.3%	
14	n-C6	0.0489	8	98.2%		0.0520	8	98.3%	
15	n-C8	0.0587	10	0.0%		0.0624	10	0.0%	
16	H2O	0.0004	0	0.0%		0.0004	0	0.0%	
17		0.9906				1.0000			

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	A	P	Q	R
1	EX2055	Acid Gas Stream 10		
2		Molar Flow Rate = 0.01 MMSCFD		
3		Mole Frac.	MSCFD	
4	H2S	0.1580	2	0.0%
5	N	0.0000	0	0.0%
6	CO2	0.8420	8	0.1%
7	C1	0.0000	0	0.0%
8	C2	0.0000	0	0.0%
9	C3	0.0000	0	0.0%
10	i-C4	0.0000	0	0.0%
11	n-C4	0.0000	0	0.0%
12	i-C5	0.0000	0	0.0%
13	n-C5	0.0000	0	0.0%
14	n-C6	0.0000	0	0.0%
15	n-C8	0.0000	0	0.0%
16	H2O	0.0000	0	0.0%
17				