

TABLE 2-3c

Barnett Shale Impacts Review

Burlington Resources Oil & Gas Company LP
Naranjo-K South USW D1
Karnes County, Texas

- (1) Based on receptor and property line distances, is a full impacts review required for any air contaminant? (Is there a receptor or property line within the specified distance of the registration? The distances are 1/4 mile for PBR Level 1, 1/2 mile for PBR Level 2, and 1 mile for Standard Permit.) First the level of authorization must be known.

Based on the Registration Total Emission Rates, this authorization falls under:

PBR Level 1

What is the shortest distance in feet to any receptor from any facility/unit included in this registration?	2,637	ft
What is the shortest distance in feet to any property line from any facility/unit included in this registration?	50	ft

Based on the nearest receptor distance:

A full impacts review is NOT required for benzene.

Based on the nearest property line distance:

A full impacts review is required for H₂S, SO₂, and NO₂.

- (2) Based on the net project emission increases, is a full impacts review required for any air contaminant? (Are the net project emission increases less than any of the de-minimis rates?)

Net Project Emission Increases				
Air Contaminant Name	Emission Rates			
	steady state lb/hr	< 30 psig periodic lb/hr	≥ 30 psig periodic lb/hr	tpy
Benzene	0.00	0.14	0.84	0.04
H ₂ S	0.02	0.09	0.68	0.08
SO ₂	1.38	1.38	1.38	5.92
NO _x	0.49	0.49	0.49	2.15
Notes:				

De-minimis Rates	
Air contaminant	lb/hr
Benzene	0.039
H ₂ S	0.025
SO ₂	2
NO _x	4

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Based on the net project emission increases:

A full impacts review is required for benzene.
A full impacts review is required for H₂S.
A full impacts review is NOT required for SO₂.
A full impacts review is NOT required for NO₂.

(3)

Based on the project maximum predicted concentrations, is a full impacts review required for any air contaminant? (Are the project maximum predicted benzene concentrations $\leq 10\%$ of the applicable effects screening level (ESL) or $\leq 25\%$ of the applicable ESL when combined with project increases over 60-month period after rule effective date? Are project maximum predicted H₂S, SO₂, and NO_x concentrations \leq the significant impact level, SIL, also known as a de-minimis impact in Chapter 101 of 30 TAC, where the SIL = 4% of the applicable ambient air standard (AAQS)?)

ESLs and AAQSs needed for impacts review:	
ESLs and AAQSs	($\mu\text{g}/\text{m}^3$)
Benzene Short Term ESL	170
Benzene Long Term ESL	4.5
H ₂ S Hourly SAAQS	108
SO ₂ Hourly NAAQS	196
NO ₂ Hourly NAAQS	188

What is the <u>project</u> maximum predicted <u>1-hr</u> concentration of <u>benzene</u> in micrograms per cubic meter?	NA	($\mu\text{g}/\text{m}^3$)
Based on this:	A full impacts review is required for benzene on an hourly basis.	

What is the maximum predicted <u>1-hr</u> concentration of <u>benzene</u> in micrograms per cubic meter for the <u>project combined with previous project increases</u> over a 60-month period after the effective date of the this rule?	NA	($\mu\text{g}/\text{m}^3$)
Based on this:	A full impacts review is required for benzene on an hourly basis.	

What is the <u>project</u> maximum predicted <u>annual</u> concentration of <u>benzene</u> in micrograms per cubic meter?	NA	($\mu\text{g}/\text{m}^3$)
Based on this:	A full impacts review is required for benzene on an annual basis.	

What is the maximum predicted <u>annual</u> concentration of <u>benzene</u> in micrograms per cubic meter for the <u>project combined with previous project increases</u> over a 60-month period after the effective date of the this rule?	NA	($\mu\text{g}/\text{m}^3$)
Based on this:	A full impacts review is required for benzene on an annual basis.	

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What is the <u>project</u> maximum predicted <u>1-hr</u> concentration of <u>H₂S</u> in micrograms per cubic meter?	NA	(µg/m ³)
Based on this:	A full impacts review is required for H2S on an hourly basis.	
What is the <u>project</u> maximum predicted <u>1-hr</u> concentration of <u>SO₂</u> in micrograms per cubic meter?	9.62	(µg/m ³)
Based on this:	A full impacts review is required for SO2 on an hourly basis.	
What is the <u>project</u> maximum predicted <u>1-hr</u> concentration of <u>NO₂</u> in micrograms per cubic meter?	2.09	(µg/m ³)
Based on this:	A full impacts review is NOT required for NO2 on an hourly basis.	

(4)

Based on the above assessment from (1) - (3):

A full impacts review is NOT required for benzene.

A full impacts review is required for H2S.

A full impacts review is NOT required for SO2.

A full impacts review is NOT required for NO2.

TABLE 2-3d

Barnett Shale H₂S Full Impacts Review

Burlington Resources Oil & Gas Company LP
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H ₂ S Hourly SAAQS (µg/m ³):	108.00
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H ₂ S Hourly Steady State - Impact Review									
EPN	Source Name	Which impacts table corresponds to this EPN?	Steady state hourly estimated emissions for each EPN (lb/hr)	WR _{EPNx}	AAQS _{H₂S} , hourly (µg/m ³)	Distance from emission point to nearest property line (ft)	Height of emission release point (ft)	G _{EPNx}	E _{max,EPNx} , hourly,steadystate (lb/hr)
FL-1	Flare/Control Device 1	Flare/Therm Dest. Dev.	0.01	0.96	108.00	50.00	30.00	43.00	2.42
FUG	Equipment Fugitives	Fugitive	5.69E-04	0.04	108.00	50.00	3.00	2,625.00	1.54E-03
			E _{estimated,total, hourly,steadystate (lb/hr)}	Total			Passed		E _{max,total, hourly,steadystate (lb/hr)}
			0.02	1.00					2.42

H ₂ S Hourly Low Pressure Periodic - Impact Review									
EPN	Source Name	Which impacts table corresponds to this EPN?	Periodic (low P) hourly estimated emissions for each EPN (lb/hr)	WR _{EPNx}	AAQS _{H₂S} , hourly (µg/m ³)	Distance from emission point to nearest property line (ft)	Height of emission release point (ft)	G _{EPNx}	E _{max,EPNx} , hourly,periodic(low pressure) (lb/hr)
FL-1	Flare/Control Device 1	Flare/Therm Dest. Dev.	0.01	0.17	108.00	50.00	30.00	43.00	0.42
FUG	Equipment Fugitives	Fugitive	5.69E-04	0.01	108.00	50.00	3.00	2,625.00	2.70E-04
MSS-1	Maintenance, Startup, and Shutdown Emissions	Low P. Blowd./Purg./ Pig.	0.07	0.82	108.00	50.00	25.00	244.00	0.36
			E _{estimated,total, hourly,periodic (low pressure) (lb/hr)}	Total			Passed		E _{max,total, hourly,periodic(low pressure) (lb/hr)}
			0.09	1.00					0.79

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H ₂ S Hourly High Pressure Periodic - Impact Review									
EPN	Source Name	Which impacts table corresponds to this EPN?	Periodic (high P) hourly estimated emissions for each EPN (lb/hr)	WR _{EPNx}	AAQS _{H₂S} , hourly (µg/m ³)	Distance from emission point to nearest property line (ft)	Height of emission release point (ft)	G _{EPNx}	E _{max,EPNx} , hourly,periodic(high pressure) (lb/hr)
MSS-SEP-1	MSS Separator Maintenance 1	Proc. Vessel Vent	0.53	0.78	108.00	50.00	25.00	129.00	0.65
FL-1	Flare/Control Device 1	Flare/Therm Dest. Dev.	0.01	0.02	108.00	50.00	30.00	43.00	0.05
FUG	Equipment Fugitives	Fugitive	5.69E-04	8.42E-04	108.00	50.00	3.00	2,625.00	3.46E-05
MSS-1	Maintenance, Startup, and Shutdown Emissions	High P. Blowd./Purg./ Pig.	0.13	0.20	108.00	50.00	25.00	25.00	0.86
			E _{estimated,total, hourly,periodic (high pressure) (lb/hr)}	Total	Passed			E _{max,total, hourly,periodic(high pressure) (lb/hr)}	
			0.68	1.00				1.56	