

## **Titan Energy Mini Frack in Colleyville/Southlake, Texas**

Three air samples were collected in association with fracturing a well at the Titan Site. All three air samples detected a number of volatile organic chemicals. Some of the chemicals detected in the air samples exceeded the TCEQ Short Term and Long Term Effects Screening Levels.

The sulfur compound [Carbon Disulfide](#), a neurotoxin, was detected at 19.7 ppb which exceeded the TCEQ Short Term level of 10 ppb by a factor of 1.97 in the 2-2-12 sample. It exceeded the TCEQ Long Term level of 1 ppb by a factor of 13 times in the 2-1-12 sample.

The concentration of [Naphthylene](#) on 2-2-12 was 76 ppb. The TCEQ Long Term Effects Screening Level for Naphthylene is 10 ppb. The air sample on 2-2-12 exceeded the TCEQ Long Term level by a factor of 7.6 times.

All three air samples contained [Benzene](#), [Toluene](#) and [Xylene](#). These are the primary chemicals associated with sources of hydrocarbons. Benzene is a known human cancer causing agent. The Benzene level in the air sample collected on 2-2-12 (9:35 AM-9:35 PM) from the Titan Site was the highest, 12.8 ppb and exceeded the TCEQ Long Term level by a factor of 9.14. On 2-1-12 at Monroe Ct. the Benzene concentration in the air was 1.17 ppb. On 2-9-12 the Benzene concentration in the air at the Titan Colleyville site was 0.42 ppb. Apparently the most activity at the Titan Site that resulted in air emissions was occurring on 2-2-12, based on the air sampling dates.

The Toluene concentrations ranged from 1.52 ppb on 2-1-12 to 13.4 ppb 2-2-12. The Xylene concentrations ranged from 0.99 ppb on 2-1-12 to 8.16 ppb on 2-2-12 for m&p-Xylene and from 1.08 ppb on 2-9-12 to 3.03 ppb on 2-2-12 for o-Xylene. [Ethylbenzene](#), a possible human cancer causing agent, was only detected in the air sample of 2-2-12, 0.96 ppb. The air concentrations of Benzene, Ethylbenzene, Toluene and Xylene were highest during the 12 hour sampling period on 2-2-12.

The polynuclear aromatic hydrocarbon Naphthylene, a suspected cancer causing agent, was detected in all three air samples and ranged from 1.42 ppb on 2-9-12 to 76 ppb on 2-2-12. Once again the highest concentration was during the 12-hour sampling period on 2-2-12. The Naphthalene concentration on 2-2-12 exceeded the TCEQ Long Term Effects Screening Level of 10 ppb by a factor of 7.6 times.

The sulfur compound Carbon Disulfide was detected in all three air samples (0.81 ppb 2-9-12 to 19.7 ppb 2-2-12. On 2-2-12 [Carbonyl Sulfide](#) (7.8 ppb) and Dimethyl Disulfide (12.8 ppb) were also detected in the air sample from 2-2-12 collected from the Titan site.

[Chloromethane](#) was present in the air samples from all three sites. The Chloromethane ranged in concentration from 0.64 ppb on 2-9-12 to 1.14 ppb on 2-2-12. [Styrene](#), a possible human cancer causing agent was detected in the air sample collected 2-2-12 at a concentration of 1.29 ppb. 1,2,4-Trimethyl Benzene was also detected in the air sample

also collected on 2-2-12 at a concentration of 3.24 ppb.

The three air samples identified the presence of a number of carbon and sulfur based compounds in the air. A number of these compounds are known and possible human cancer causing agents. The air sample collected on 2-2-12 had the largest number of compounds detected and the highest concentration of each chemical detected of the three samples collected.

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