

Southwest GEOSCIENCE

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September 7, 2012

Lewisville Independent School District
340 Lake Haven
Lewisville, Texas 75057
Attention: Mr. Paul Siddall

Re: Air Quality Monitoring Report
Killough LHS-North
1301 Summit Avenue
Lewisville, Texas
SWG Project 0112100

Southwest Geoscience ("SWG") is pleased to submit the following letter report summarizing the results of the air quality monitoring conducted in April 2012 and August 2012 near Killough LHS-North, located at 1301 Summit Avenue in Lewisville, Texas. SWG collected a continuous air sample for two separate periods utilizing a real-time infrared gas detection / gas chromatograph system. The pollutants of concern include volatile organic compounds (VOC), hydrogen sulfide (H₂S), oxygen (O₂) and carbon dioxide (CO₂). VOCs are emitted from well-drilling activities as hydrocarbons are released from the well bore. Some VOC may have short-term health effects. H₂S is a poisonous gas that is occasionally found in hydrocarbon formations.

The sampling that began on April 26, 2012 indicated expected levels of O₂ (20.9%), CO₂ (0.01%), VOC (0.00 parts per million (ppm)) and H₂S (0.00 ppm). The sampling that began on August 24, 2012 indicated expected levels of O₂ (20.9%), CO₂ (0.01%), and H₂S (0.00 ppm). VOC concentration averaged 12.9 ppm over the sampling period, including 6.88 ppm propane, and 6.02 ppm butane (all isomers).

The United States Environmental Protection Agency (USEPA) has not established ambient air quality standards for VOCs. The American Conference of Governmental and Industrial Hygienists (ACGIH) has not established exposure values for VOCs or propane, but they have established a Threshold Limit Value (i.e., the average exposure on an 8 hrs/day, 40 hrs/week work schedule) for butane (800 ppm). The average butane concentration recorded during the August 24, 2012 sampling event is less than 1% of the TLV standard.

Thank you for this opportunity to provide you with this information. Please contact me at (214) 350-5469 for further assistance.

Sincerely yours,

SOUTHWEST GEOSCIENCE



Darren G. Bowden
Corporate Director
Industrial Hygiene Services

Attachment: Analytical

~VERSION INFORMATION

VERS . 2 : CWLS Log ASCII Standard Version
WRAP . NO : One Line per Depth Step
DLM . SPACE : Delimiter between data columns - one or more spaces
~WELL INFORMATION
START .ft 2 : First Depth
STOP .ft 16833 : Last Depth
STEP .ft 1 : Depth Increment
NULL . -999.25 : NULL Value
COMP . : Well Operator
WELL . : Well Name
FLD . : Field
LOC . : Location
SRVC . : iBall Instruments (R)
DATE . 08/24/2012 : LAS Export Date
CTRY . : Country
PROV . : Province (required if CTRY = CA)
UWI . : Unique Well ID (required if CTRY = CA)
LIC . : License (required if CTRY = CA)
STAT . : State (required if CTRY = US)
CNTY . : County (required if CTRY = US)
API . : API Number (required if CTRY = US)
Surface Coords:
LATI .DEG : Latitude - see Surface Coords comment above
LONG .DEG : Longitude - see Surface Coords comment above
GDAT . : Geodetic Datum

~PARAMETER

There are no parameters

~CURVE

Depth .ft : Depth channel
ROP .min/ft : Rate Of Penetration - Min Per Foot as received
TG .ppm : Total Sum Detected Gasses
C1 .ppm : Methane ppm
C2 .ppm : Ethane ppm
C3 .ppm : Propane ppm
iC4 .ppm : Normal Butane ppm
nC4 .ppm : Iso Butane ppm
C4 .ppm : Iso + Normal Butane ppm
TG2 .ppm : Total Sum Detected Gasses
GAMMA .APIUnits : Gamma Ray
O2 .Percent : Oxygen percent of total
CO2 .Percent : Carbon Dioxide percent of total
H2S .ppm : Hydrogen Sulfide (Sulphide) ppm
OILIND .Units : Oil Indicator
MFM .Ohms : Mud Conductivity
MWOUT .lb/gal : Mud Density Pounds Per Gallon
MTOUT .Fahrenheit : Mud Temperature In Farenheit
CORFLOW .lpm : Mud Sensor Core Flow Liters Per Minute

Table with 13 columns: #Depth, ROP, TG, C1, C2, C3, C4, iC4, nC4, TG2, GAMMA, O2, CO2, H2S, OILIND, MFM, MWOUT, MTOUT, CORFLOW. Values are mostly 0 or 1, with some non-zero values like 218, 211, 21.1.

~ASCII

10 0 218 211 4 2 0 1 1 1 218 0 21.1 0 0 0 0 0 0 0 8/21/2012 11:53

