



**SULFUR IN NATURAL GAS ANALYSIS**

SN/PRIMARY DB KEY		NAME/DESCRIP :	<b>HAWKINS RANCH</b>
LEASE #/ PROJECT #:			<b>HAWKINS RANCH 10-7B</b>
FIELD/AREA:			<b>SEPARATOR</b>
PROJECT NO. :	<b>202003118</b>	ANALYSIS NO. :	<b>03</b>
COMPANY NAME :	<b>LARAMIE ENERGY, LLC</b>	ANALYSIS DATE:	<b>MARCH 28, 2020 09:10</b>
OFFICE / BRANCH:	<b>GRAND JUNCTION, CO</b>	SAMPLE DATE :	<b>MARCH 23, 2020 11:50</b>
CUSTOMER REF:		TO:	
PRODUCER :		EFFECTIVE DATE:	
<b>***FIELD DATA***</b>			
SAMPLE CYCLE:		SAMPLE TYPE:	<b>SPOT</b>
SAMPLE PRES. :	psig	PROBE :	
FLOW PRES. :	psig	CYLINDER NO. :	<b>1L TEDLAR</b>
LAB PRES:	psig	SAMPLED BY :	<b>GALE MCENDREE</b>
SAMPLE TEMP. : 68	°f	SAMPLING COMPANY:	<b>EMPACT</b>
AMBIENT TEMP.:	°f	H2S BY STAIN TUBE:	- ppm
H2O BY STAIN TUBE:	#/mmcf	CO2 BY STAIN TUBE:	- Mol %
FIELD COMMENTS:			
LAB COMMENTS:			

<u>COMPONENT</u>	<u>SULFUR ppm mole (ul/L)</u>
Hydrogen Sulfide (H2S)	3.8
Carbonyl Sulfide (COS)/Sulfur Dioxide (SO2)	BDL
Methanethiol (MeSH)	0.1
Ethanethiol (EtSH)	BDL
Dimethylsulfide (DMS)	BDL
Carbon Disulfide (CS2)	BDL
i-Propanethiol (i-PrSH)	BDL
t-Butanethiol (t-BuSH)	BDL
n-Propanethiol (n-PrSH)	BDL
Methylethylsulfide (MES)	BDL
s-Butanethiol (s-BuSH)	BDL
i-Butanethiol (i-BuSH)	BDL
Thiophene (TP)	BDL
Diethylsulfide (DES)	BDL
n-Butanethiol (n-BuSH)	BDL
Dimethyldisulfide (DMDS)	BDL
Unidentified Sulfurs - Light Ends	BDL
Methylthiophenes (MTP)	BDL
2-Ethylthiophene (2-ETP)	BDL
Methylethyldisulfide (MEDS)	BDL
Dimethylthiophenes (DMTP)	BDL
Diethyldisulfide (DEDS)	BDL
Benzothiophene (BzTP)	BDL
Unidentified Sulfurs - Mid Range	BDL
Methylbenzothiophenes (MBzTP)	BDL
Dimethylbenzothiophenes (DMBzTP)	BDL
Trimethylbenzothiophenes (TMBzTP)	BDL
Dibenzothiophenes (DBzTP)	BDL
Methyldibenzothiophenes (MDBzTP)	BDL
<u>Unidentified Sulfurs - Heavy Ends</u>	<u>BDL</u>
<b>TOTAL SULFUR</b>	<b>3.9</b>

\* ASTM D5504      \*\* DETECTION LIMIT DETERMINED TO BE 0.1 ppm (ul/L) Sulfur - BDL (BELOW DETECTION LIMIT)  
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