

TABLE 1
SOIL ANALYTICAL RESULTS
MILLER 14A-36
GARFIELD COUNTY, COLORADO
VANGUARD OPERATING LLC

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	SP-01	SP-02	SP-03	TERM-01	NWALL@4.5'	SWALL@8.5'	Bottom@11'	EWALL@9'	WWALL@8'
Sample Date			7/13/2017	7/13/2017	7/13/2017	7/13/2017	7/18/2017	7/18/2017	7/18/2017	7/18/2017	7/18/2017
Sample Type			SURFACE	SURFACE	SURFACE	SURFACE	EXCAVATION	EXCAVATION	EXCAVATION	EXCAVATION	EXCAVATION
Arsenic	0.39	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	15,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	70	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (III)	120,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	23	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	3,100	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	23	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	1,600	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	390	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	390	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	23,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
EC	4.0	mmhos/cm	6.6	14	3.4	2.1	4.0	3.6	3.5	3.7	0.25
pH	6 - 9	SU	9.06	8.78	8.39	8.81	9.63	8.69	8.69	8.62	9.41
SAR	12	unitless	35	52	5.0	2.5	23	8.2	10	8.4	1.2
TPH-GRO		mg/kg	<3.2	7.8	<3.6	<3.2	<3.3	<3.1	<3.2	<3.3	<3.4
TPH-DRO		mg/kg	<5.6	<6.4	<5.9	<5.5	<5.6	<5.5	<5.7	<5.6	12
TPH	500	mg/kg	<5.6	7.8	<5.9	<5.5	<5.6	<5.5	<5.7	<5.6	12
Benzene	0.17	mg/kg	<0.038	0.099	<0.043	<0.038	<0.040	<0.037	<0.039	<0.040	0.14
Toluene	85	mg/kg	<0.038	0.41	<0.043	<0.038	<0.040	<0.037	<0.039	<0.040	0.48
Ethylbenzene	100	mg/kg	<0.038	<0.049	<0.043	<0.038	<0.040	<0.037	<0.039	<0.040	0.078
Total Xylenes	175	mg/kg	<0.11	0.98	<0.13	<0.11	<0.12	<0.11	<0.12	<0.12	1.4
Acenaphthene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(A)anthracene	0.22	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(B)fluoranthene	0.22	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(K)fluoranthene	2.2	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(A)pyrene	0.022	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	22	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.022	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3,C,D)pyrene	0.22	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	23	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:

< - less than the stated reporting limit

BOLD indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

NA - not analyzed

SU - standard unit

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics



TABLE 2
SURFACE WATER ANALYTICAL RESULTS
MILLER 14A-36
GARFIELD COUNTY, COLORADO
VANGUARD OPERATING LLC

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	WDC-U-01	WDC-D-01
Sample Date			7/13/2017	7/13/2017
Sample Type			SURFACE WATER	SURFACE WATER
Benzene	5	µg/L	<0.0010	<0.0010
Toluene	1,000	µg/L	<0.0010	<0.0010
Ethylbenzene	700	µg/L	<0.0010	<0.0010
Total Xylenes	10,000	µg/L	<0.0030	<0.0030

NOTES:

< - less than the stated reporting limit

BOLD indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

µg/L - micrograms per liter

