

**TABLE 1**  
**MDP 4 PIT**  
**SOIL ANALYTICAL RESULTS**  
**MAMM CREEK FIELD**  
**VANGUARD OPERATING, LLC**

Parameter	Standard	BG01	BG02	BG03	BG04
Depth (feet)					
Sample Date		9/16/2014	9/16/2014	9/16/2014	9/16/2014

**Inorganics**

Electrical Conductivity (mmhos/cm)	4
SAR (none)	12
pH, Lab (Standard Units)	6 to 9

**Metals**

Arsenic (mg/Kg)	0.39	<b>6.2</b>	<b>5.4</b>	<b>3.4</b>	<b>2.2</b>
Barium (mg/Kg)	15000				
Cadmium (mg/Kg)	70				
Chromium+3 Calculated (mg/Kg)	120000				
Chromium, Hexavalent (mg/Kg)	23				
Copper (mg/Kg)	3100				
Lead (mg/Kg)	400				
Mercury (mg/Kg)	23				
Nickel (mg/Kg)	1600				
Selenium (mg/Kg)	390				
Silver (mg/Kg)	390				
Zinc (mg/Kg)	23000				

**Organic Compounds**

TPH-DRO (mg/Kg)	
TPH-GRO (mg/kg)	
TPH-Total (mg/kg)	500
Benzene (mg/kg)	0.17
Toluene (mg/kg)	85
Ethylbenzene (mg/kg)	100
Xylenes, Total (mg/kg)	175
Acenaphthene (mg/kg)	1000
Anthracene (mg/kg)	1000
Benzo (a) anthracene (mg/kg)	0.22
Benzo (b) fluoranthene (mg/kg)	0.22
Benzo (k) fluoranthene (mg/kg)	2.2
Benzo (a) pyrene (mg/kg)	0.022
Chrysene (mg/kg)	22
Dibenz (a,h) anthracene (mg/kg)	0.022
Fluoranthene (mg/kg)	1000
Fluorene (mg/kg)	1000
Indeno (1,2,3-cd) pyrene (mg/kg)	0.22
Naphthalene (mg/kg)	23
Pyrene (mg/kg)	1000

**Notes:**

< - less than stated laboratory reporting limit  
 Bold indicates result is equal to or exceeds the applicable standard  
 Basic Standards for Soil are from 2 CCR 404-1, Table 910-1, effective April 2009  
 GRO - Gasoline range organics  
 TPH-Total - sum of TPH-GRO and TPH-DRO

mg/kg - milligrams per kilogram  
 mmhos/cm - millimhos per centimeter  
 TPH - Total petroleum hydrocarbons (C6-C28)  
 DRO - Diesel range organics  
 SAR - Sodium adsorption ratio



**TABLE 1 (Continued)**  
**MDP 4 PIT**  
**SOIL ANALYTICAL RESULTS**  
**MAMM CREEK FIELD**  
**VANGUARD OPERATING, LLC**

Parameter	Standard	PB01	PB02	PB03	PB04
Depth (feet)					
Sample Date		9/16/2014	9/16/2014	9/16/2014	9/16/2014

**Inorganics**

Electrical Conductivity (mmhos/cm)	4	3.6	2.5	2.1	2.0
SAR (none)	12	2.6	2.9	1.2	1.7
pH, Lab (Standard Units)	6 to 9	8.3	8.2	8.2	8.3

**Metals**

Arsenic (mg/Kg)	0.39	<b>15</b>	<b>6.0</b>	<b>17</b>	<b>7.6</b>
Barium (mg/Kg)	15000	420	810	120	700
Cadmium (mg/Kg)	70	<0.66	<0.68	<0.70	<0.69
Chromium+3 Calculated (mg/Kg)	120000	7.5	7.7	6.6	9.0
Chromium, Hexavalent (mg/Kg)	23	<0.55	<0.55	<0.55	<0.57
Copper (mg/Kg)	3100	9.4	8.4	6.0	9.0
Lead (mg/Kg)	400	14	11	14	12
Mercury (mg/Kg)	23	0.42	0.14	0.19	0.15
Nickel (mg/Kg)	1600	8.0	8.6	7.7	10
Selenium (mg/Kg)	390	2.6	2.2	2.4	2.5
Silver (mg/Kg)	390	<1.7	<1.7	<1.8	<1.7
Zinc (mg/Kg)	23000	36	35	29	35

**Organic Compounds**

TPH-DRO (mg/Kg)		<4.6	100	24	33
TPH-GRO (mg/kg)		<2.8	<2.8	<2.8	<2.9
TPH-Total (mg/kg)	500	<7.4	100	24	33
Benzene (mg/kg)	0.17	<0.033	<0.033	<0.033	<0.034
Toluene (mg/kg)	85	<0.033	<0.033	<0.033	<0.034
Ethylbenzene (mg/kg)	100	<0.033	<0.033	<0.033	<0.034
Xylenes, Total (mg/kg)	175	<0.1	<0.099	<0.1	<0.1
Acenaphthene (mg/kg)	1000	<0.0074	<0.0073	<0.0073	<0.0076
Anthracene (mg/kg)	1000	<0.0074	<0.0073	<0.0073	<0.0076
Benzo (a) anthracene (mg/kg)	0.22	<0.0074	<0.0073	0.012	<0.0076
Benzo (b) fluoranthene (mg/kg)	0.22	<0.0074	<0.0073	0.012	<0.0076
Benzo (k) fluoranthene (mg/kg)	2.2	<0.0074	<0.0073	<0.0073	<0.0076
Benzo (a) pyrene (mg/kg)	0.022	<0.0074	<0.0073	0.0084	<0.0076
Chrysene (mg/kg)	22	<0.0074	<0.0073	0.0098	<0.0076
Dibenz (a,h) anthracene (mg/kg)	0.022	<0.0074	<0.0073	<0.0073	<0.0076
Fluoranthene (mg/kg)	1000	<0.0074	<0.0073	0.013	<0.0076
Fluorene (mg/kg)	1000	<0.0074	<0.0073	<0.0073	<0.0076
Indeno (1,2,3-cd) pyrene (mg/kg)	0.22	<0.0074	<0.0073	0.041	<0.0076
Naphthalene (mg/kg)	23	<0.0074	0.018	0.021	0.063
Pyrene (mg/kg)	1000	<0.0074	<0.0073	0.017	<0.0076

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GRO - Gasoline range organics

TPH-Total - sum of TPH-GRO and TPH-DRO

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

TPH - Total petroleum hydrocarbons (C6-C28)

DRO - Diesel range organics

SAR - Sodium adsorption ratio



**TABLE 1 (Continued)**  
**MDP 4 PIT**  
**SOIL ANALYTICAL RESULTS**  
**MAMM CREEK FIELD**  
**VANGUARD OPERATING, LLC**

Parameter	Standard	PB05	PB06
Depth (feet)			
Sample Date		9/16/2014	9/16/2014

**Inorganics**

Electrical Conductivity (mmhos/cm)	4	2.6	1.4
SAR (none)	12	2.6	1.7
pH, Lab (Standard Units)	6 to 9	8.3	8.2

**Metals**

Arsenic (mg/Kg)	0.39	<b>6.0</b>	<b>8.5</b>
Barium (mg/Kg)	15000	550	580
Cadmium (mg/Kg)	70	<0.65	<0.76
Chromium+3 Calculated (mg/Kg)	120000	9.0	9.7
Chromium, Hexavalent (mg/Kg)	23	<0.55	<0.57
Copper (mg/Kg)	3100	14	16
Lead (mg/Kg)	400	14	15
Mercury (mg/Kg)	23	0.052	0.064
Nickel (mg/Kg)	1600	11	12
Selenium (mg/Kg)	390	2.8	2.6
Silver (mg/Kg)	390	<1.6	<1.9
Zinc (mg/Kg)	23000	51	55

**Organic Compounds**

TPH-DRO (mg/Kg)		14	12
TPH-GRO (mg/kg)		<2.8	<2.9
TPH-Total (mg/kg)	500	14	12
Benzene (mg/kg)	0.17	<0.033	<0.034
Toluene (mg/kg)	85	<0.033	<0.034
Ethylbenzene (mg/kg)	100	<0.033	<0.034
Xylenes, Total (mg/kg)	175	<0.1	<0.1
Acenaphthene (mg/kg)	1000	<0.0073	<0.0076
Anthracene (mg/kg)	1000	<0.0073	<0.0076
Benzo (a) anthracene (mg/kg)	0.22	<0.0073	<0.0076
Benzo (b) fluoranthene (mg/kg)	0.22	<0.0073	<0.0076
Benzo (k) fluoranthene (mg/kg)	2.2	<0.0073	<0.0076
Benzo (a) pyrene (mg/kg)	0.022	<0.0073	<0.0076
Chrysene (mg/kg)	22	<0.0073	<0.0076
Dibenz (a,h) anthracene (mg/kg)	0.022	<0.0073	<0.0076
Fluoranthene (mg/kg)	1000	<0.0073	<0.0076
Fluorene (mg/kg)	1000	<0.0073	<0.0076
Indeno (1,2,3-cd) pyrene (mg/kg)	0.22	<0.0073	<0.0076
Naphthalene (mg/kg)	23	<0.0073	<0.0076
Pyrene (mg/kg)	1000	<0.0073	<0.0076

**Notes:**

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Basic Standards for Soil are from 2 CCR 404-1, Table 910-1, effective April 2009

GRO - Gasoline range organics

TPH-Total - sum of TPH-GRO and TPH-DRO

mg/kg - milligrams per kilogram

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