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June 26th, 2022

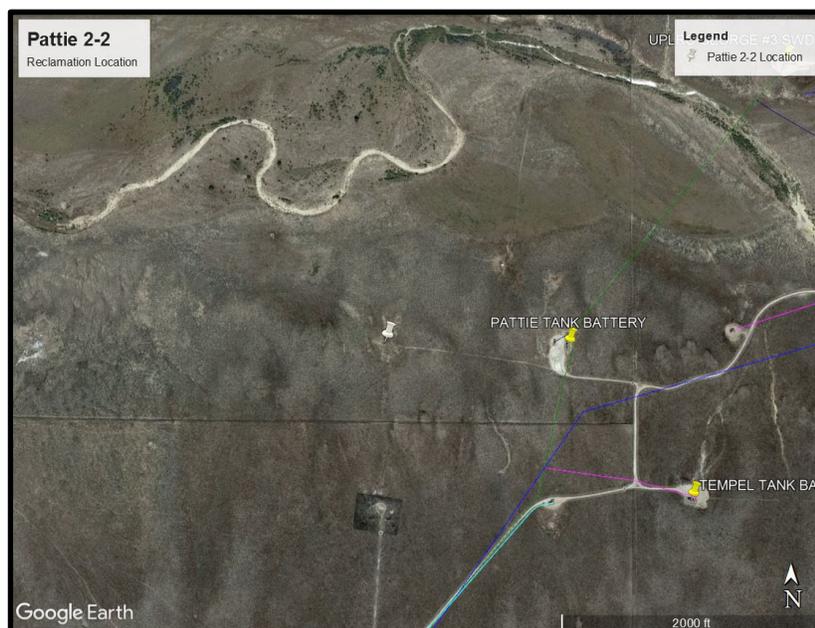
Mr. Jason Kosola, P.G.
Southeast Environmental Protection Specialist
Colorado Oil & Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

RE: Pattie 2-2
API # 05-061-06780
Results of investigation and Pending Excavation
COGCC Remediation Project# 22774

Mr. Kosola:

Mull Drilling Co., Inc (Mull) is providing this update to the Colorado Oil and Gas Commission (COGCC) for results of a preliminary Soils Investigation at the Pattie 2-2 Location. It is also being submitted to provide an estimated mobilization for excavation ion of late Fall 2022. This time frame is out of lesser prairie chicken breeding season – minimizing effects to local biota. (The excavation assumes Mull receives landowner permissions for the planned work). The location in question was brought to Mull’s attention through submission of a Form 4 sundry filed in 2021, requesting Final Reclamation Inspection. The Pattie 2-2 was abandoned in 11/26/2007.

During an Aerial Drone inspection of the area on 11/1/21, Ryan Costa, a COGCC Reclamation Official, observed that there was a portion of the location – approximately 100’ x 100’ – that did



Site Location

not display the appropriate 80% vegetative regrowth. It was noted that there may be soil issues in the area that are impacting any potential regrowth.

Investigation

After Mull received permission from the COGCC and the landowner an Environmental Professional Charles Kellenhoffer of APTIM Environmental mobilized to the location on April 19th, 2022 to verify the presence of any soil impacts. The location was sampled with a Photo Ionization Detector (PID) for hydrocarbons under approved soil sampling techniques and then secondary sampling occurred for Table 915-1 analysis: a total of 7 locations were sampled during the investigation. All samples were taken within the first foot of the surface with a steel auger. During the investigation, it did not appear that there was any impact below 1 ft in depth. To see a visual representation of the sampling location please look to ***Figure 1***. There were no positive results for PID readings above background.

During this investigation, APTIM took 4 background samples around the perimeter of the area to measure the background. This allowed Mull to determine the native background analytical for purposes of later reclamation. All samples were submitted to Pace Laboratories of Kansas for analysis following approved chain of custody protocols. Please see the attached Lab Report: ***Pace Project # 60398351*** for the analytical. Or for tabulated results, please look to ***Table 915-1*** in the attached files.

Results

The results at the location exhibited signs of legacy hydrocarbon exploration with the core locations displaying elevated SAR ratios that in one case were above cleanup concentrations. Please look to ***Figure 2*** for the highlighted approximate area of excavation and individual SAR results. The potential excavation area appears to be the area of highest impact. Accordingly, with land-owner permissions Mull will mobilize to the area in the coming months and excavate the area in question down to an appropriate level – between 6” – 12” – and then back fill with clean soils. These soil’s will then be mixed with the surrounding area to mitigate relatively high levels of SAR and Conductivity. Approximately 70 cubic yards are to be excavated and replaced during the operation.

It was noted that all the sample locations exhibited elevated arsenic levels, including those in the background. As a result, arsenic is being disregarded as a cleanup parameter for Mull’s remedial action objectives. However, during this operation Mull will take approximately 2 samples at the base of the excavation to determine the level of cleanup that has occurred. These samples shall conform to Table 915-1 as appropriate for the state of Colorado.

Soils at this location will be disposed to Phantom Landfill of Penrose Colorado, EPA #COR000208454 or a similar permitted Colorado or Kansas Facility under an approved waste profile. Clean soils shall then be transported and placed in the excavated area as required to re-contour the area. The area shall then be tilled, replanted with an approved NRCS seed mix and slated for reclamation responsibilities.

Should there be any questions or concerns feel free to contact us,

A handwritten signature in black ink that reads "James Beilman". The signature is written in a cursive, flowing style.

James Beilman, PG, CPG
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Attachments:

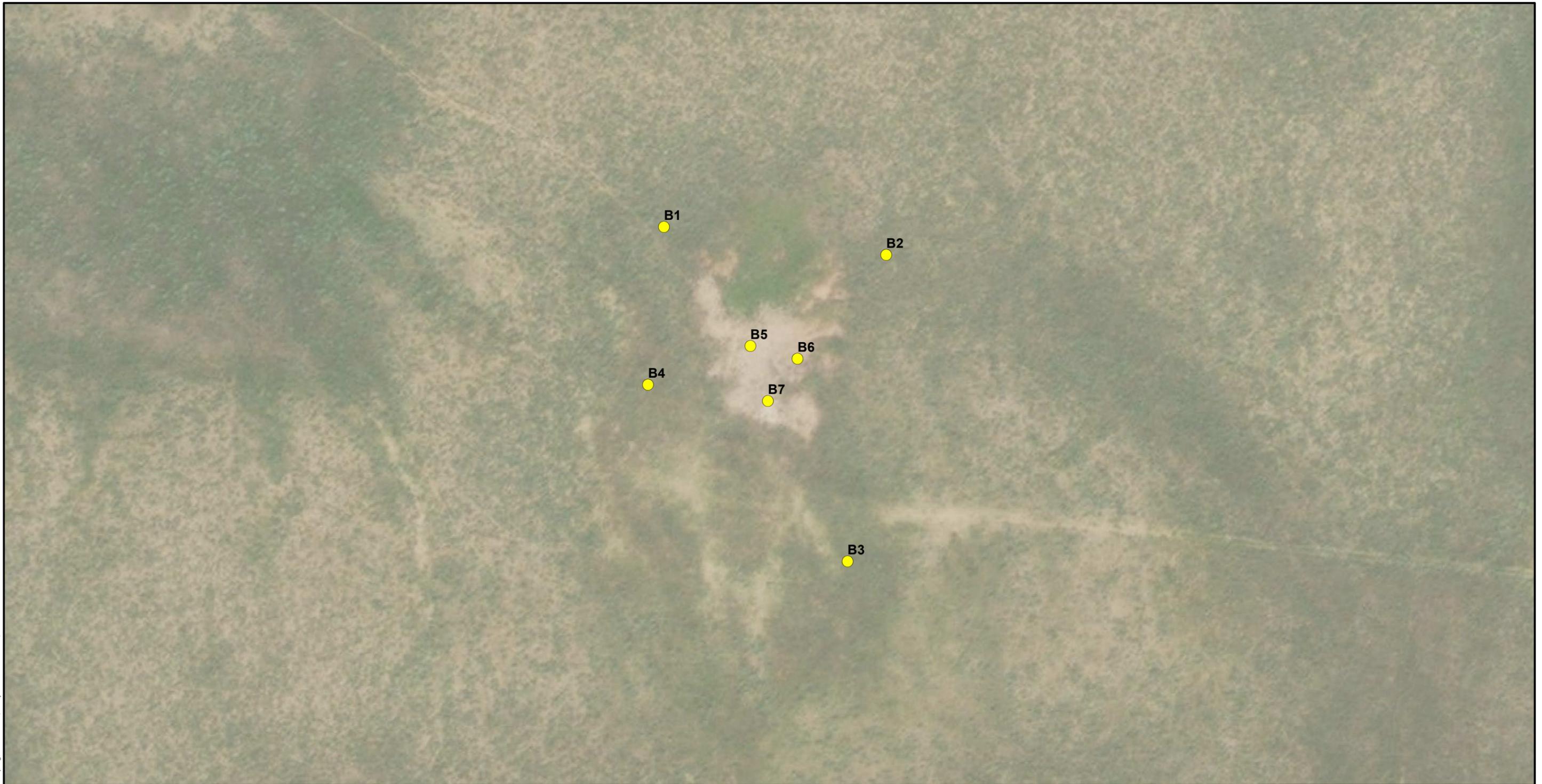
Figure 1 – Sampling Locations

Figure 2 – Pending Excavation Area

Table 915 -1 Sampling Results

Lab Report: 60398351

F:\Projects\Williams\Pattie\GIS_Documents\Project_Maps\Pattie Sampling Locations.mxd; Analyst: Heather Volmer; Date: 5/19/2022 1:32:21 PM



Legend:

● Sample Location

Notes:

1. Background imagery is from ESRI World Imagery basemap, from Maxar, dated August 6, 2021.



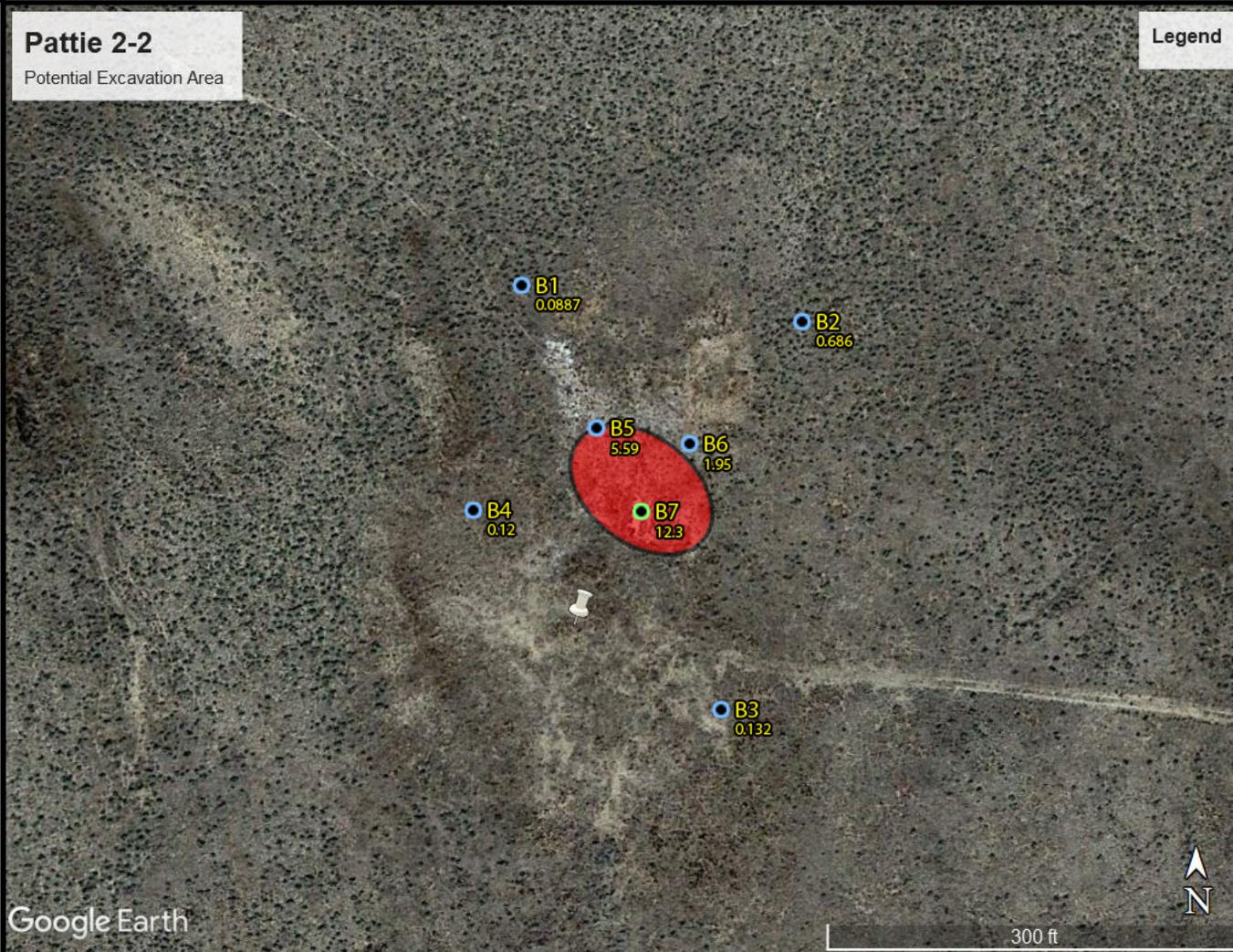
Williams (Bargath, LLC)	
Kiowa County, Colorado	
FIGURE NUMBER 1	Pattie 2-2 Kiowa County, Colorado
 6380 S. Fiddlers Green Circle Suite 310 Greenwood Village, CO 80111 www.APTIM.com	

Figure 2: Potential Excavation Area

Pattie 2-2

Pattie 2-2
Potential Excavation Area

Legend



Legend

Highlighted Points are for SAR

Green Highlighted Point is above cleanup limits

Red Highlighted area is potential excavation area: app. 70 Cubic Yards

Regulatory Limits as COGCC promulgated table 915-1

Location:	Latitude: 38.601554	Longitude: -102.755665	COGCC Project #	22774
State:	Colorado			
County:	Kiowa			



Table 915-1 : Pattie 2-2 Location

4/19/2022

CLEANUP CONCENTRATIONS			B1 (Background)	B2 (Background)	B3 (Background)	B4 (Background)	B5	B6	B7
Contaminant of Concern	Concentrations		38.602101 -102.756032	38.601962 -102.755157	38.601071 -102.755316	38.601580 -102.756077	38.601760 -102.755729	38.601676 -102.755511	38.601578 -102.755667
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500mg/kg		7.2 J	2.4 J	2.4 J	37.6 J	37.6 J	25.6	39
Soils and Groundwater - liquid hydrocarbons including condensate and oil	below visual detection limits		None						
Soil Suitability for Reclamation									
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm		0.0386	0.0121	0.0124	0.0127	3.18	1.01	2.06
Sodium adsorption ratio (SAR) (by saturated paste method)	<6		0.0887	0.686	0.132	0.12	5.59	1.95	12.3
pH (by saturated paste method)	6-8.3		6.99	8.1	7.92	7.85	8.01	7.85	7.98
boron (hot water soluble soil extract)	2mg/l		0.0524 J	0.00528	0.0101 J	0.0118 J	0.984	0.166	1.75
Organic Compounds in Groundwater									
benzene	5µg/l		NA						
toluene	560 to 1,000µg/l		NA						
ethylbenzene	700µg/l		NA						
xylenes (sum of o-, m- and p- isomers = total xylenes)	1,400 to 10,000µg/l		NA						
naphthalene	140µg/l		NA						
1,2,4-trimethylbenzene	67µg/l		NA						
1,3,5-trimethylbenzene	67µg/l		NA						
Groundwater Inorganic Parameters									
total dissolved solids (TDS)	<1.25 X local background		NA						
chloride ion	250mg/l or <1.25 X local background		NA						
sulfate ion	250mg/l or <1.25 X local background		NA						
Soils	Residential Soil Screening Level Concentrations (mg/kg)	Protection of Groundwater Soil Screening Level Concentrations (mg/kg)							
Organic Compounds in Soils									
benzene	1.2	0.0026 (M)	0.0077	0.006	0.0094	0.0073	0.011	0.01	0.0065
toluene	490	0.69 (M)	0.011 J	0.0093 J	0.014 J	0.011 J	0.017 J	0.016 J	0.011 J
ethylbenzene	5.8	0.78 (M)	0.0026 J	0.0019 J	0.0030 J	0.0026 J	0.0038 J	0.0038 J	0.0026 J
xylenes (sum of o-, m- and p- isomers = total xylenes)	58	9.9 (M)	0.010 J	0.0083 J	0.014 J	0.011 J	0.018	0.0017	0.012 J
1,2,4-trimethylbenzene	30	0.0081 (R)	0.00088 J	0.0010 J	0.0015 J	0.0013 J	0.0021 J	0.0017 J	0.0013 J
1,3,5-trimethylbenzene	27	0.0087 (R)	ND						
acenaphthene	360	0.55 (R)	ND						
anthracene	1800	5.8 (R)	ND						
benz(a)anthracene	1.1	0.011 (R)	ND						
benzo(b)fluoranthene	1.1	0.3 (R)	ND	0.0018 J	ND	ND	ND	ND	ND
benzo(k)fluoranthene	11	2.9 (R)	ND						
benzo(a)pyrene	0.11	0.24 (M)	ND						
chrysene	110	9 (R)	ND	ND	ND	ND	0.0028 J	ND	ND
dibenzo(a,h)anthracene	0.11	0.096 (R)	ND						
fluoranthene	240	8.9 (R)	ND	0.0042	ND	ND	ND	ND	ND
fluorene	240	0.54 (R)	ND						
indeno(1,2,3-cd)pyrene	1.1	0.98 (R)	ND						
1-methylnaphthalene	18	0.006 (R)	ND	ND	ND	ND	0.0046	ND	0.0022 J
2-methylnaphthalene	24	0.019 (R)	ND	ND	ND	ND	0.0054	ND	0.0019 J
naphthalene	2	0.0038 (R)	ND	ND	ND	ND	0.0025 J	ND	ND
pyrene	180	1.3 (R)	ND	0.0032 J	ND	ND	0.0023 J	ND	0.0035
Metals in Soils									
arsenic	0.68	0.29 (M)	2.1	1.8	2	2.2	3.8	2.3	2.7
barium	15000	82 (M)	28.3	24.7	27.3	24.3	168	41.3	96.4
cadmium	71	0.38 (M)	0.085 J	0.098 J	0.080 J	0.074 J	0.25 J	0.14 J	0.29 J
chromium (VI)	0.3	0.00067 (R)	ND						
copper	3100	46 (M)	2.3	2.2	2.5	2.6	10.3	3.5	5.5
lead	400	14 (M)	3.7	4	3.4	3.5	8.4	5	5.8
nickel	1500	26 (R)	2.6	2.3	2.8	2.7	9.1	3.7	6.3
selenium	390	0.26 (M)	ND	ND	ND	ND	0.65 J	ND	ND
silver	390	0.8 (R)	ND						
zinc	23000	370 (R)	12.2	13.2	12.2	11.2	25.6	16.8	23.1

The letter "(R)" following a protection of Groundwater soil screening level indicates the concentration is derived from a risk-based approach. The letter "(M)" following a protection of Groundwater soil screening level indicates the concentration is derived from the drinking water MCL.