AREA 30A AND 30B

AREA 30A: New Incinerator

Area Description		
Location	South of sewage treatment plant.	
Topography	Generally flat with slight slope to the northeast.	
Surface Drainage	Northeast.	
Background	New incinerator used to incinerate municipal waste.	
Historical Assessment Information		
Phase II Environmental Site Assessment (EBA 2009)	Number of test pits	0
	Number of surface soil samples	0
	Number of soil samples analyzed	0
	Number of soil samples with petroleum hydrocarbon impacts	0
	Number of soil samples with metal impacts	0
Comments: Not previously assessed		
2017/2018 Environmental Site Assessment Details		
Environmental Site Assessment Scope		
Utility Locate SOP followed?		Yes
EM 31 Geophysics Complete?		N/A
Number of test pits advanced		2 (2017)
Number of boreholes advanced		0
Number of hand auger locations advanced		0
Number of soil samples submitted for laboratory chemical analysis		2 (2017)
Number of boreholes completed as groundwater monitoring wells		0
Number of historical groundwater monitoring wells		0
Number of groundwater samples collected		0
Number of sediment and surface soil samples collected		0
Geophysics Findings		
N/A		
Soil Investigation and Conditions		
Maximum Depth of Investigation	1.1 mbgs (September 18, 2017)	
General Stratigraphy		

Description	Depth from (mbgs)	Depth to (mbgs)	Observations
Sand	0	0.2	Fill soil
Gravel or sand	0.2	1.1	Native soil

Combustible Vapour Concentrations (CVCs)	
Ranged from 2.2 ppm in sample 17A30ATP2-1 to 6.8 ppm in sample 17A30ATP1-1.	
Groundwater Conditions	
Depth to Groundwater	Inferred to be about 6 mbg based on groundwater elevation contours
Free Product Thickness (if present)	N/A

AREA 30A: New Incinerator

2017/2018 Environmental Site Assessment Results Summary

- Figure A30A-1 shows the test pit locations.
- Table A30A-1 summarizes soil lab results relative to guidelines.

General Site Observations

- Sampled both up-valley and down-valley directions, as we understand that prevailing wind directions change seasonally.
- No surface stains or ash was observed on the surface soils surrounding the incinerator.
- No evidence of environmental impact was observed in the test pits advanced.
- No additional work done in this area in 2018.

Soil: Petroleum Hydrocarbons (PHC, PAHs)

- Laboratory chemical results less than guidelines.

Soil: Metals

- The following metals exceeded CCME CEQGs: arsenic, barium, cadmium, copper, selenium, and zinc.
- Barium concentration in 17A30ATP2 at 0.25 mbgs also exceeded the preliminary background concentration.

Soil: Other PCOCs (PCBs, Dioxins and Furans)

- Laboratory results less than guidelines.

Soil: Routine (pH)

- Laboratory results within guidelines.

Groundwater: Petroleum Hydrocarbons

- N/A

Groundwater: Metals/Routine Parameters

- N/A

Groundwater: Other PCOCs

- N/A

Sediment: Petroleum Hydrocarbon

- N/A

Sediment: Metals

- N/A

Sediment: Other PCOCs

- N/A

Surface Water: Petroleum Hydrocarbons

- N/A

Surface Water: Metals/Nutrients

- N/A

Surface Water: Other PCOCs

- N/A

Grainsize Analysis

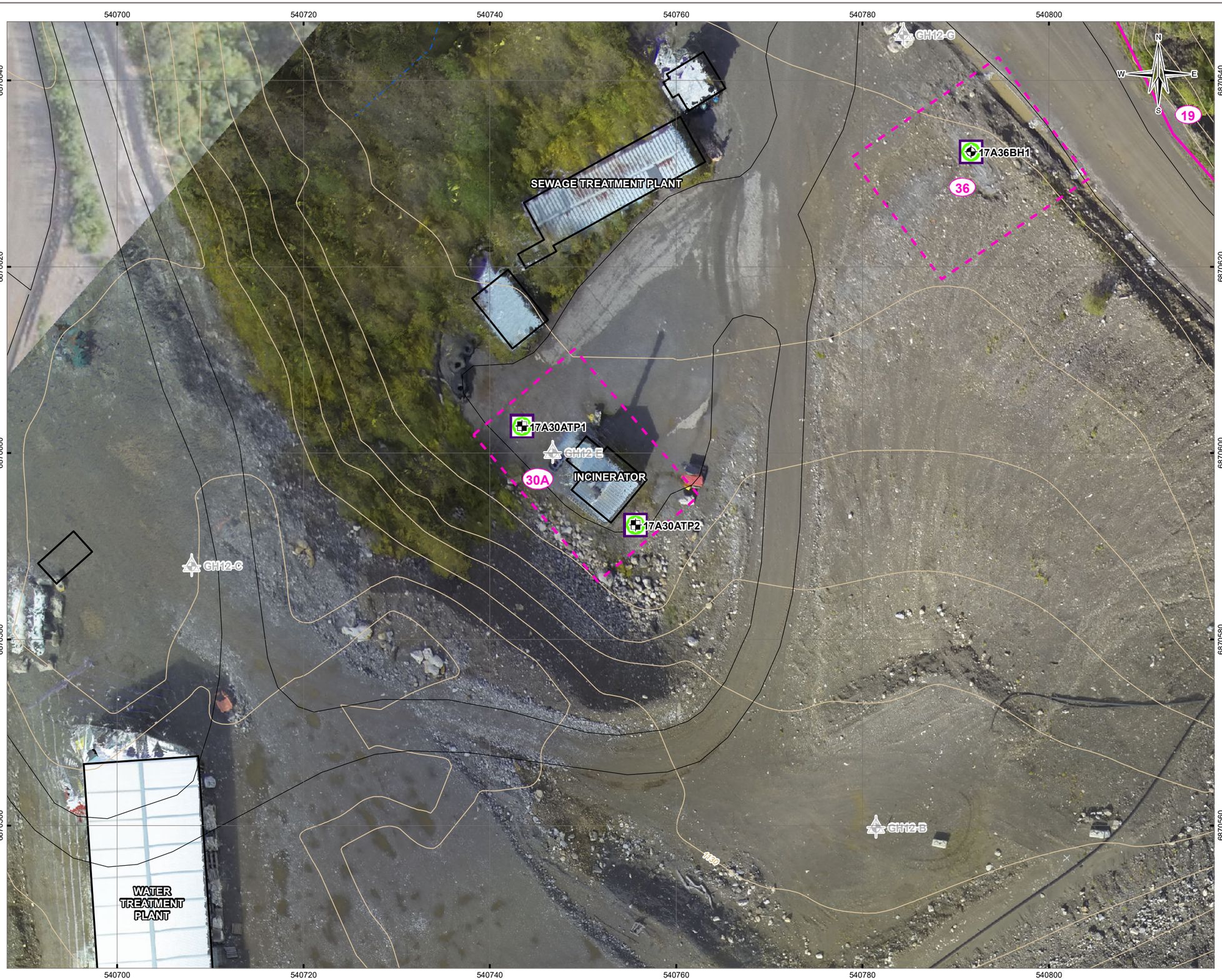
- N/A

Environmental Concerns

Location in AEC	Potential Source(s)	Identified Contaminated Media	Parameters Assessed and Contaminant(s) of Concern (COCs; bold & underline)
Downwind area(s) near incinerator	Incinerator exhaust	Soil	**Soil:** Metals, petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), Dioxins and Furans.

AREA 30A: New Incinerator

Discussion (Significance of the Results)
Soils: ▪ No environmental impacts related to incinerator were identified. ▪ Elevated metals concentrations above CCME CEQGs and background concentrations are similar to other areas of the mine site and unlikely to be related to the incinerator.
Attachments
Figure A30A-1 – Soil and Sediment Results Figure A30A-2 – Groundwater and Surface Water Results Table A30A-1 – Soil Analytical Results Test pit Logs Photographs



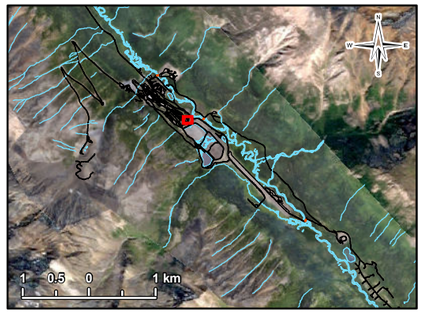
LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017 Borehole (BH)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well

Soil/Sediment Analytical Results

- No PHC Impact
- Metals exceedance of preliminary background concentrations, or in the absence of background concentrations, exceedance of CCME guidelines

- Building
- Road
- Ditch
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 30A
New Incinerator
Soil and Sediment Results

PROJECTION	DATUM	CLIENT
UTM Zone 9	NAD83	NORTH AMERICAN TUNGSTEN CORPORATION LTD

Scale: 1:400
5 2.5 0 5
Metres

TETRA TECH

FILE NO.					
WENW03039-03_Summary_A30A-1.mxd					
OFFICE	**DWN**	**CKD**	**APVD**	**REV**	A30A-1
Tt-VANC	SL	BB	BB	0	
DATE	**PROJECT NO.**				
June 22, 2020	ENW.WENW03039-03				

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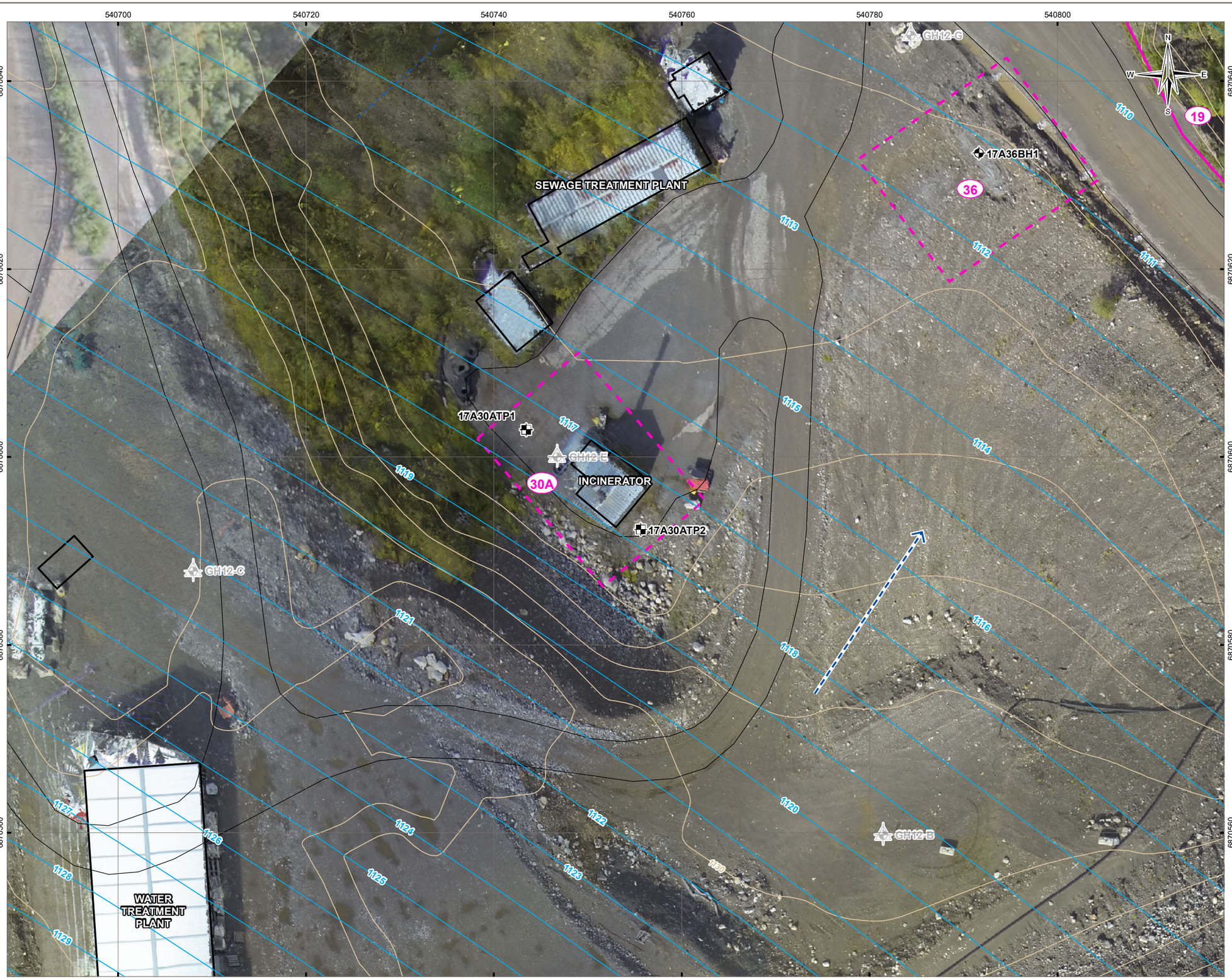

LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017 Borehole (BH)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well
- Inferred Groundwater Flow Direction
- Groundwater Contour (1 m asl; Fall 2017)
- Building
- Road
- Ditch
- Contour (2 m)

FIGWQG	Federal Interim Groundwater Quality Guidelines
CCME	Canadian Council of Ministers of the Environment
WQG	Water Quality Guidelines
AW	Freshwater Aquatic Life
EQGASW	Environmental Quality Guidelines for Alberta Surface Waters

NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 30A
New Incinerator
Groundwater and Surface Water Results

PROJECTION: UTM Zone 9	DATUM: NAD83	CLIENT: NORTH AMERICAN TUNGSTEN CORPORATION LTD
Scale: 1:400 (5 2.5 0 5 Metres)		TETRA TECH
FILE NO.: WENW03039-03_Summary_A30A-2.mxd		
OFFICE: Tt-VANC	DWN: SL / CKD: BB / APVD: SS / REV: 0	A30A-2
DATE: June 22, 2020	PROJECT NO.: ENW.WENW03039-03	

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Table A30A-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	A30	
				17A30ATP1	17A30ATP2
				17A30ATP1-1	17A30ATP2-1
				0.25 m	0.25 m
				2017-09-18	2017-09-18
Routine / Salinity					
pH	pH Units	6-8	NG	7.31	7.28
Moisture	%	NG	NG	12	8.8
Metals					
Antimony	mg/kg	20	NG	1	1.9
Arsenic	mg/kg	12	64	**23.7**	**23.1**
Barium	mg/kg	500	946	389	**1420**
Beryllium	mg/kg	4	NG	0.7	1.1
Cadmium	mg/kg	1.4	2.8	1.32	**2.13**
Chromium	mg/kg	64	NG	14	28
Cobalt	mg/kg	40	NG	12.4	18.8
Copper	mg/kg	63	NG	**286**	**199**
Lead	mg/kg	70	NG	19.4	24.6
Mercury	mg/kg	6.6	NG	0.68	0.1
Molybdenum	mg/kg	5	10	3.4	3.7
Nickel	mg/kg	45	72	22	43
Selenium	mg/kg	1	1.7	**1.6**	**1.5**
Silver	mg/kg	20	NG	<0.5	<0.5
Thallium	mg/kg	1	NG	0.3	0.5
Tin	mg/kg	5	NG	3	2.5
Uranium	mg/kg	23	NG	1.9	2.6
Vanadium	mg/kg	130	160	38	64
Zinc	mg/kg	200	462	129	**260**
Petroleum Hydrocarbons					
Benzene	mg/kg	0.03	NG	<0.005	<0.005
Toluene	mg/kg	0.1	NG	<0.05	<0.05
Ethylbenzene	mg/kg	0.082	NG	<0.01	<0.01
Xylenes (m & p)	mg/kg	NG	NG	-	-
Xylene (m)	mg/kg	NG	NG	<0.02	<0.02
Xylene (o)	mg/kg	NG	NG	<0.02	<0.02
Xylenes Total	mg/kg	0.1	NG	<0.05	<0.05
Volatile Hydrocarbons (VH6-10)	mg/kg	NG	NG	-	-
F1 (C6-C10)	mg/kg	30	NG	<10	<10
VPH C6-C10	mg/kg	NG	NG	-	-
F1 (C6-C10 / BTEX CORRECTED)	mg/kg	30	NG	<10	<10
F2 (C10-C16)	mg/kg	150	NG	<20	<20
F3 (C16-C34)	mg/kg	300	NG	115	110
F4: (C34-C50)	mg/kg	2800	NG	58	39
VPHs	mg/kg	NG	NG	-	-
Glycols					
Diethylene glycol	mg/kg	NG	NG	-	-
Ethylene glycol	mg/kg	960	NG	-	-
Propylene glycol	mg/kg	NG	NG	-	-
Tetraethylene Glycol	mg/kg	NG	NG	-	-
Triethylene Glycol	mg/kg	NG	NG	-	-
Polycyclic Aromatic Hydrocarbons (PAHs)					
IACR (CCME)	mg/kg	1	NG	<0.6	<0.6
B(a)P Total Potency Equivalent	mg/kg	0.6	NG	<0.05	<0.05
2-methylnaphthalene	mg/kg	NG	NG	<0.005	<0.005
Acenaphthene	mg/kg	NG	NG	<0.005	<0.005
Acenaphthylene	mg/kg	NG	NG	<0.005	<0.005
Anthracene	mg/kg	2.5	NG	<0.004	<0.004
Benz(a)anthracene	mg/kg	0.1	NG	<0.03	<0.03
Benzo(a) pyrene	mg/kg	0.1	NG	<0.03	<0.03
Benzo(b)fluoranthene	mg/kg	0.1	NG	<0.05	<0.05
Benzo(b+j)fluoranthene	mg/kg	NG	NG	<0.05	<0.05
Benzo(e)pyrene	mg/kg	NG	NG	-	-
Benzo(g,h,i)perylene	mg/kg	NG	NG	<0.05	<0.05
Benzo(k)fluoranthene	mg/kg	0.1	NG	<0.05	<0.05
Chrysene	mg/kg	NG	NG	<0.05	<0.05
Dibenz(a,h)anthracene	mg/kg	0.1	NG	<0.005	<0.005
Fluoranthene	mg/kg	50	NG	<0.01	<0.01
Fluorene	mg/kg	NG	NG	<0.02	<0.02
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	NG	<0.02	<0.02
Naphthalene	mg/kg	0.013	NG	<0.005	<0.005
Phenanthrene	mg/kg	0.046	NG	<0.02	<0.02
Pyrene	mg/kg	0.1	NG	<0.01	<0.01
Benzo(j)fluoranthene	ug/g	NG	NG	<0.05	<0.05
Polychlorinated Biphenyls (PCBs)					
Aroclor 1242	mg/kg	NG	NG	<0.05	<0.05
Aroclor 1254	mg/kg	NG	NG	<0.05	<0.05
Aroclor 1260	mg/kg	NG	NG	<0.05	<0.05
Aroclor 1262	mg/kg	NG	NG	-	-
PCBs (Sum of total)	mg/kg	0.5	NG	<0.05	<0.05

Table A30A-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	A30	
				17A30ATP1	17A30ATP2
				17A30ATP1-1	17A30ATP2-1
				0.25 m	0.25 m
				2017-09-18	2017-09-18
Volatile Organic Compounds (VOCs)					
Carbon	%	NG	NG	-	-
1-Methylnaphthalene	mg/kg	NG	NG	<0.005	<0.005
Acetone	mg/kg	NG	NG	-	-
Bromodichloromethane	mg/kg	NG	NG	-	-
Bromoform	mg/kg	NG	NG	-	-
Bromomethane	mg/kg	NG	NG	-	-
2-Butanone	mg/kg	NG	NG	-	-
Carbon tetrachloride	mg/kg	0.1	NG	-	-
Chlorobenzene	mg/kg	0.1	NG	-	-
Chloroethane	mg/kg	NG	NG	-	-
Chloroform	mg/kg	0.1	NG	-	-
Chloromethane	mg/kg	NG	NG	-	-
Dibromochloromethane	mg/kg	NG	NG	-	-
1,2-Dibromoethane	mg/kg	NG	NG	-	-
1,2-Dichlorobenzene	mg/kg	0.1	NG	-	-
1,3-Dichlorobenzene	mg/kg	0.1	NG	-	-
1,4-Dichlorobenzene	mg/kg	0.1	NG	-	-
1,1-Dichloroethane	mg/kg	0.1	NG	-	-
1,2-Dichloroethane	mg/kg	0.1	NG	-	-
1,1-Dichloroethene	mg/kg	0.1	NG	-	-
1,2-Dichloroethene (cis)	mg/kg	0.1	NG	-	-
1,2-Dichloroethene (trans)	mg/kg	0.1	NG	-	-
1,2-Dichloropropane	mg/kg	0.1	NG	-	-
1,3-Dichloropropene [cis]	mg/kg	NG	NG	-	-
1,3-Dichloropropene [trans]	mg/kg	NG	NG	-	-
Methyl t-Butyl Ether (MTBE)	mg/kg	NG	NG	-	-
Methylene Chloride	mg/kg	0.1	NG	-	-
4-Methyl-2-pentanone	mg/kg	NG	NG	-	-
Styrene	mg/kg	0.1	NG	-	-
1,1,1,2-Tetrachloroethane	mg/kg	NG	NG	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.1	NG	-	-
Tetrachloroethene	mg/kg	0.1	NG	-	-
1,2,4-Trichlorobenzene	mg/kg	0.05	NG	-	-
1,1,1-Trichloroethane	mg/kg	0.1	NG	-	-
1,1,2-Trichloroethane	mg/kg	0.1	NG	-	-
Trichloroethene	mg/kg	0.1	NG	-	-
Trichlorofluoromethane	mg/kg	NG	NG	-	-
Vinyl chloride	mg/kg	NG	NG	-	-
Dioxins and Furans					
Total PCDDs	ng/kg	NG	NG	44	3
Total PCDFs	ng/kg	NG	NG	14.3	<2
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ	NG	NG	0	0
1,2,3,7,8-Penta CDD (TEF 1.0)	TEQ	NG	NG	0	0
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ	NG	NG	0.0204	0
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ	NG	NG	0	0
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ	NG	NG	0	0
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ	NG	NG	0.053	0.0173
Octa CDD (TEF 0.0003)	TEQ	NG	NG	0.0104	0.000907
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ	NG	NG	0	0
1,2,3,7,8-Penta CDF (TEF 0.03)	TEQ	NG	NG	0	0
2,3,4,7,8-Penta CDF (TEF 0.3)	TEQ	NG	NG	0	0
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ	NG	NG	0	0
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ	NG	NG	0	0
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ	NG	NG	0	0
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ	NG	NG	0	0
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ	NG	NG	0.0135	0.00511
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ	NG	NG	0	0
Octa CDF (TEF 0.0003)	TEQ	NG	NG	0.00204	0
Total PCDDs and PCDFs (TEQ)	TEQ	4	NG	0.0993	0.0233
Sample Code				8740316	8740319
Lab Report Number				17Y262746	17Y262746

Notes:

[1] - Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standards (CWS) for Petroleum Hydrocarbons (PHC) in Soil (CCME 2008)

[2] - Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG) - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME 1999)

[3] - Northwest Territories Environmental Guideline for Contaminated Site Remediation (NWT CSR 2003)

[4] - Preliminary Background Concentration

Italic - Laboratory detection limit is greater one or more referenced guidelines

NG - No guideline

Shaded - Exceeds most stringent CCME CEQG or CWS PHC land-use guideline value

Bold - Exceeds most stringent NWT CSR land-use guideline value

Bold and Shaded - Exceeds most stringent CCME CEQC or CWS PHC land-use guideline value, and exceeds most stringent NWT CSR land-use guideline value

Red - Exceeds Preliminary Background Concentration

N/A - Not applicable

Blank - Not analyzed

North American Tungsten Corporation Ltd.

Testpit No: **17A30ATP1**

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	Ground Elev: 1122.943 m
Tungsten, Northwest Territories	UTM: 540743.427 E; 6870602.901 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Elevation (m)
0								
	Excavated	SAND (FILL) - silty, some gravel, damp, firm, brown, medium sand, (200 mm thick)						
		- red orange						
		GRAVEL - sandy, some cobbles, some silt, trace boulders, damp, dense, reddish brown		1-1	■			
		- some boulders						
1				1-2	■			1122
		END OF TESTPIT (1.1 metres) Note: Backfilled at completion						
2								1121
3								1120
4								1119
5								1118

TETRA TECH

Contractor: NATC	Completion Depth: 1.1 m
Drilling Rig Type: Rubber Tire backhoe	Start Date: 2017 September 18
Logged By: NH	Completion Date: 2017 September 18
Reviewed By: JW	Page 1 of 1

North American Tungsten Corporation Ltd.

Testpit No: **17A30ATP2**

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	Ground Elev: 1122.979 m
Tungsten, Northwest Territories	UTM: 540755.632 E; 6870592.3 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Elevation (m)
0								
	Excavated	SAND (FILL) - gravelly, some silt, trace to some cobbles, trace boulders, damp, dense, reddish brown						
		- brown		2-1	■			
		- silty, some gravel, no visible cobbles or boulders, damp, firm, brown, fine sand						
1				2-2	■			1122
		END OF TESTPIT (1.1 metres) Note: Backfilled at completion						
2								1121
3								1120
4								1119
5								1118

TETRA TECH

Contractor: NATC	Completion Depth: 1.1 m
Drilling Rig Type: Rubber Tire backhoe	Start Date: 2017 September 18
Logged By: NH	Completion Date: 2017 September 18
Reviewed By: JW	Page 1 of 1

Photo 1: Facing south. New incinerator building and fuel ASTs. (September 7, 2017)

Photo 2: Facing west. New incinerator building. ASTs visible to the right of building. (September 7, 2017)

Photo 3: Arrow indicates location of new incinerator. Photo provided by NATC. (August 13, 2013)

AREA 30B: Old Incinerator

Area Description			
Location	Southwest of Heavy Duty Maintenances Shop Building.		
Topography	Generally flat with slight slope to northeast.		
Surface Drainage	Northeast.		
Background	Old incinerator used to be located at this location for incineration of municipal waste.		
Historical Assessment Information			
Phase II Environmental Site Assessment (EBA 2009)	Number of test pits	0	
	Number of surface soil samples	0	
	Number of soil samples analyzed	0	
	Number of soil samples with petroleum hydrocarbon impacts	0	
	Number of soil samples with metal impacts	0	
Comments: Not previously assessed.			
2017 Environmental Site Assessment Details			
Environmental Site Assessment Scope			
Utility Locate SOP followed?		Yes – mitigation was to de-energize power.	
EM 31 Geophysics Complete?		N/A	
Number of test pits advanced		2 (2017)	
Number of boreholes advanced		0	
Number of hand auger locations advanced		0	
Number of soil samples submitted for laboratory chemical analysis		2 (2017)	
Number of boreholes completed as groundwater monitoring wells		0	
Number of historical groundwater monitoring wells		0	
Number of groundwater samples collected		0	
Number of sediment and surface soil samples collected		0	
Geophysics Findings			
N/A			
Soil Investigation and Conditions			
Maximum Depth of Investigation	1.0 mbgs (September 20, 2017)		
General Stratigraphy			
Description	**Depth from (mbgs)**	**Depth to (mbgs)**	**Observations**
Silt and Sand	0	1.0	Fill soil. Wood debris and slight PHC odour observed in 17A30BTP1.
Combustible Vapour Concentrations (CVCs)			
Ranged from 2.1 ppm in sample 17A30BTP2-2 to 34 ppm in sample 17A30BTP1-2.			
Groundwater Conditions			
Depth to Groundwater	about 10 m; inferred from local groundwater contours (Figure 30B-2).		
Free Product	N/A		
2017/2018 Environmental Site Assessment Results Summary			
▪ Figure A30B-1 shows test pit locations. ▪ Figure A30B-2 shows groundwater elevation contours. ▪ Table A30B-1 summarizes soil lab results relative to guidelines.			

AREA 30B: Old Incinerator

General Site Observations

- The old incinerator is no longer present in area.
- No surface stains or ash was observed on surface soils surrounding incinerator.
- Evidence of environmental impact including debris and PHC odour was identified in test pit 17A30BTP1.
- No further work was done in this area in 2018 (Area 30b covered under AEC16).

Soil: Petroleum Hydrocarbons (PHC, PAHs)

- Laboratory chemical results less than guidelines with exception of:
  - Sample 17A30BTP1-2 collected from depth of 1.0 m contained PHC and PAHs greater than guidelines.

Soil: Metals

- Various metals exceeding CCME CEQGs including arsenic, barium, cadmium, copper, molybdenum, nickel, selenium, and zinc.
- The following metals also exceeded preliminary background concentrations:
  - Barium (17A30BTP2 at 0.25 and 1.0 mbgs)
  - Cadmium (17A30BTP2 at 0.25 mbgs)
  - Nickel (17A30BTP2 at 0.25 mbgs)

Soil: Other PCOCs (VOCs, glycols, Dioxins and Furans)

- Laboratory results less than guidelines.

Soil: Routine (pH)

- Laboratory results within guidelines.

Groundwater: Petroleum Hydrocarbons

- N/A

Groundwater: Metals/Routine Parameters

- N/A

Groundwater: Other PCOCs

- N/A

Sediment: Petroleum Hydrocarbon

- N/A

Sediment: Metals

- N/A

Sediment: Other PCOCs

- N/A

Surface Water: Petroleum Hydrocarbons

- N/A

Surface Water: Metals/Nutrients

- N/A

Surface Water: Other PCOCs

- N/A

Grainsize Analysis

- N/A

Environmental Concerns

Location in AEC	Potential Source(s)	Identified Contaminated Media	Parameters Assessed and Contaminant(s) of Concern (COCs; bold & underline)
Area surrounding incinerator	Incinerator exhaust	Soil	**Soil: Metals**, **petroleum hydrocarbons (PHCs)**, **polycyclic aromatic hydrocarbons (PAHs)**, volatile organic compound (VOCs), glycols, Dioxins and Furans

AREA 30B: Old Incinerator

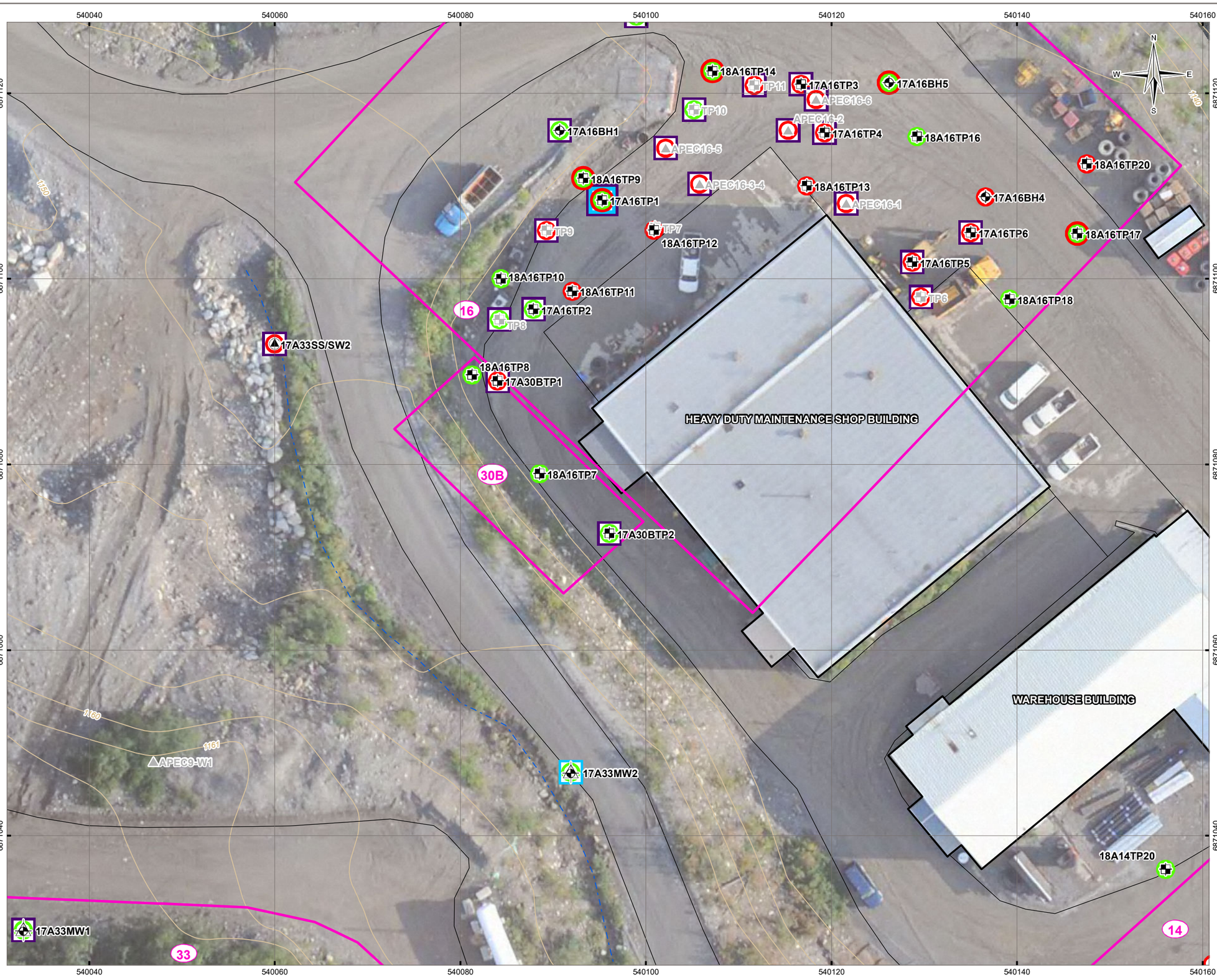
Discussion (Significance of Results)

Soils:

- The environmental impacts identified were horizontally delineated to southeast.
- The AEC is bounded by berm to southwest and northwest, and Heavy Duty Maintenance Shop (AEC 16) to northeast.
- Based on depth and composition, environmental impacts identified at test pit 17A30BTP1 may be associated with buried debris and/or impacts identified at Heavy Duty Maintenance Shop (See AEC 16 Summary), and not with former incinerator operations.
- The environmental impacts measured in 17A30BTP1 were not vertically delineated, however vertically delineation achieved for PHC affected area identified at Heavy Duty Maintenance Shop (AEC 16) suggest impacts at 17A30BTP1 are limited to depth of 1.5 mbgs.
- Glycols, VOCs, dioxins and furans were not detected and are no longer considered PCOCs in soil at this AEC.
- Based on current assessment results, maximum estimated depth of PHC and PAH impacts used to calculate contaminated soil volumes in affected area is 1.5 mbgs.
- Various metals exceeding CCME CEQGs and preliminary background concentrations (barium, cadmium, copper, and nickel).
- Metals concentrations are similar to other areas of mine site and unlikely to be related to old incinerator.

Attachments

Figure A30B-1 – Soil and Sediment Results
Figure A30B-2 – Groundwater Elevation Contours
Table A30B-1 – Soil Analytical Results
Test pit Logs
Photographs



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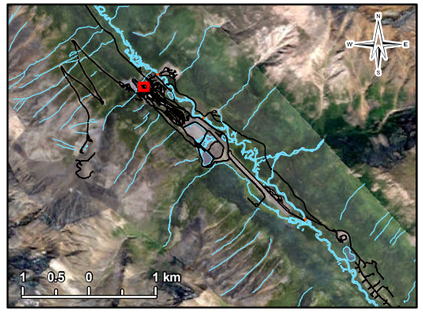
LEGEND

- Area of Environmental Concern (AEC)
- 2017 Monitoring Well (MW)
- 2017 Borehole (BH)
- 2017/2018 Testpit (TP)
- 2017 Surface Water/Sediment Sample (SW/SS)
- Historical Testpit
- Historical Shallow Soil Sample

Soil/Sediment Analytical Results

- PHC Impacts
- PHC Impacts, vertically delineated
- No PHC Impact
- Metals exceedance of preliminary background concentrations, or in the absence of background concentrations, exceedance of CCME guidelines
- Metals exceedance, vertically delineated
- No metals exceedance of CCME guidelines or preliminary background concentrations
- Building
- Road
- Ditch
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

AEC 30B
Old Incinerator
Soil and Sediment Results

PROJECTION	DATUM	CLIENT
UTM Zone 9	NAD83	NORTH AMERICAN TUNGSTEN CORPORATION LTD

Scale: 1:400
5 2.5 0 5
Metres

TETRA TECH

FILE NO. WENW03039-03_Summary_A30B-1.mxd

OFFICE	DWN	CKD	APVD	REV
Tt-VANC	SL	BB	BB	0

DATE June 22, 2020
PROJECT NO. ENW.WENW03039-03

A30B-1

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LEGEND

- Area of Environmental Concern (AEC)
- 2017 Monitoring Well (MW)
- 2017 Borehole (BH)
- 2017/2018 Testpit (TP)
- 2017 Surface Water/Sediment Sample (SW/SS)
- Historical Testpit
- Historical Shallow Soil Sample
- Inferred Groundwater Flow Direction
- Groundwater Contour (1 m asl; Fall 2017)

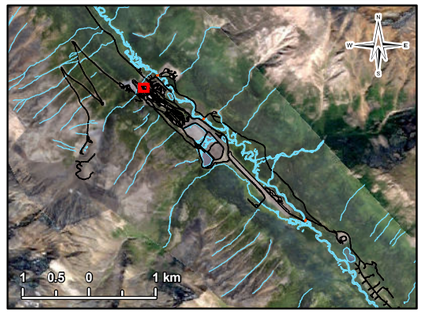
2017/2018 Groundwater Analytical Results

- Samples contain parameters that exceeded the preliminary background concentrations, or in the absence of background concentrations, FIGWQG
- Samples contain parameters that met the preliminary background concentrations, or in the absence of background concentrations, FIGWQG

2017 Surface Water Analytical Results

- Samples contain parameters that met the Flat River WQOs, or in the absence of WQOs, CCME WQG for the protection of AW or EQGASW
- Building
- Road
- Ditch
- Contour (2 m)

FIGWQG	Federal Interim Groundwater Quality Guidelines
CCME	Canadian Council of Ministers of the Environment
WQG	Water Quality Guidelines
AW	Freshwater Aquatic Life
EQGASW	Environmental Quality Guidelines for Alberta Surface Waters



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

AEC 30B
Old Incinerator
Groundwater and Surface Water Results

PROJECTION: UTM Zone 9	DATUM: NAD83	CLIENT: NORTH AMERICAN TUNGSTEN CORPORATION LTD	
Scale: 1:400 (5 2.5 0 5 Metres)		TETRA TECH	
FILE NO.: WENW03039-03_Summary_A30B-2.mxd			
OFFICE: Tt-VANC	DWN: SL / CKD: BB / APVD: SS / REV: 0		A30B-2
DATE: June 22, 2020	PROJECT NO.: ENW.WENW03039-03		

Table A30B-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	A30		
				17A30BTP1	17A30BTP2	
				17A30BTP1-2	17A30BTP2-1	17A30BTP2-2
				1.0 m	0.25 m	1.0 m
				2017-09-20	2017-09-20	2017-09-20
Routine / Salinity						
pH	pH Units	6-8	NG	7.96	7.9	7.91
Moisture	%	NG	NG	9.92	7.7	5.41
Metals						
Antimony	mg/kg	20	NG	0.6	5.2	3.1
Arsenic	mg/kg	12	64	**61.3**	**25.3**	**39.5**
Barium	mg/kg	500	946	423	**4900**	**7740**
Beryllium	mg/kg	4	NG	3.3	0.5	0.7
Cadmium	mg/kg	1.4	2.8	0.91	**3.07**	**1.55**
Chromium	mg/kg	64	NG	23	20	24
Cobalt	mg/kg	40	NG	16.2	19.1	17.5
Copper	mg/kg	63	NG	**192**	**64.5**	**110**
Lead	mg/kg	70	NG	17.3	22.3	23.1
Mercury	mg/kg	6.6	NG	0.42	0.08	0.12
Molybdenum	mg/kg	5	10	2.5	**7.8**	**5.3**
Nickel	mg/kg	45	72	30.1	**75.1**	**49.8**
Selenium	mg/kg	1	1.7	0.9	**1.5**	**1.2**
Silver	mg/kg	20	NG	<0.5	<0.5	<0.5
Thallium	mg/kg	1	NG	0.4	0.4	0.4
Tin	mg/kg	5	NG	2.9	0.3	0.7
Uranium	mg/kg	23	NG	3.3	1.9	2.5
Vanadium	mg/kg	130	160	35	70	61
Zinc	mg/kg	200	462	**228**	**433**	**269**
Petroleum Hydrocarbons						
Benzene	mg/kg	0.03	NG	<0.005	<0.005	<0.005
Toluene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.082	NG	<0.01	<0.01	<0.01
Xylenes (m & p)	mg/kg	NG	NG	-	-	-
Xylene (m)	mg/kg	NG	NG	<0.02	<0.02	<0.02
Xylene (o)	mg/kg	NG	NG	<0.02	<0.02	<0.02
Xylenes Total	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Volatile Hydrocarbons (VH6-10)	mg/kg	NG	NG	-	-	-
F1 (C6-C10)	mg/kg	30	NG	12	<10	<10
VPH C6-C10	mg/kg	NG	NG	-	-	-
F1 (C6-C10 / BTEX CORRECTED)	mg/kg	30	NG	12	<10	<10
F2 (C10-C16)	mg/kg	150	NG	**2050**	<20	<20
F3 (C16-C34)	mg/kg	300	NG	**1360**	<20	<20
F4: (C34-C50)	mg/kg	2800	NG	48	<20	<20
VPHs	mg/kg	NG	NG	-	-	-
Glycols						
Diethylene glycol	mg/kg	NG	NG	<10	<10	<10
Ethylene glycol	mg/kg	960	NG	<10	<10	<10
Propylene glycol	mg/kg	NG	NG	<10	<10	<10
Tetraethylene Glycol	mg/kg	NG	NG	<10	<10	<10
Triethylene Glycol	mg/kg	NG	NG	<10	<10	<10
Polycyclic Aromatic Hydrocarbons (PAHs)						
IACR (CCME)	mg/kg	1	NG	<0.6	<0.6	<0.6
B(a)P Total Potency Equivalent	mg/kg	0.6	NG	<0.05	<0.05	<0.05
2-methylnaphthalene	mg/kg	NG	NG	<0.05	<0.005	<0.005
Acenaphthene	mg/kg	NG	NG	<0.05	<0.005	<0.005
Acenaphthylene	mg/kg	NG	NG	<0.05	<0.005	<0.005
Anthracene	mg/kg	2.5	NG	<0.04	<0.004	<0.004
Benz(a)anthracene	mg/kg	0.1	NG	<0.03	<0.03	<0.03
Benzo(a) pyrene	mg/kg	0.1	NG	<0.03	<0.03	<0.03
Benzo(b)fluoranthene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Benzo(b+j)fluoranthene	mg/kg	NG	NG	<0.05	<0.05	<0.05
Benzo(e)pyrene	mg/kg	NG	NG	-	-	-
Benzo(g,h,i)perylene	mg/kg	NG	NG	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Chrysene	mg/kg	NG	NG	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	mg/kg	0.1	NG	<0.005	<0.005	<0.005
Fluoranthene	mg/kg	50	NG	0.03	<0.01	<0.01
Fluorene	mg/kg	NG	NG	<0.2	<0.02	<0.02
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	NG	<0.02	<0.02	<0.02
Naphthalene	mg/kg	0.013	NG	*<0.05*	<0.005	<0.005
Phenanthrene	mg/kg	0.046	NG	**0.4**	<0.02	<0.02
Pyrene	mg/kg	0.1	NG	**0.19**	<0.01	<0.01
Benzo(j)fluoranthene	ug/g	NG	NG	<0.05	<0.05	<0.05
Polychlorinated Biphenyls (PCBs)						
Aroclor 1242	mg/kg	NG	NG	-	-	-
Aroclor 1254	mg/kg	NG	NG	-	-	-
Aroclor 1260	mg/kg	NG	NG	-	-	-
Aroclor 1262	mg/kg	NG	NG	-	-	-
PCBs (Sum of total)	mg/kg	0.5	NG	-	-	-

Table A30B-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	A30		
				17A30BTP1	17A30BTP2	
				17A30BTP1-2	17A30BTP2-1	17A30BTP2-2
				1.0 m	0.25 m	1.0 m
				2017-09-20	2017-09-20	2017-09-20
Volatile Organic Compounds (VOCs)						
Carbon	%	NG	NG	-	-	-
1-Methylnaphthalene	mg/kg	NG	NG	0.75	<0.005	<0.005
Acetone	mg/kg	NG	NG	<0.5	<0.5	<0.5
Bromodichloromethane	mg/kg	NG	NG	<0.05	<0.05	<0.05
Bromoform	mg/kg	NG	NG	<0.05	<0.05	<0.05
Bromomethane	mg/kg	NG	NG	<0.05	<0.05	<0.05
2-Butanone	mg/kg	NG	NG	<0.5	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.1	NG	<0.02	<0.02	<0.02
Chlorobenzene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Chloroethane	mg/kg	NG	NG	<0.05	<0.05	<0.05
Chloroform	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Chloromethane	mg/kg	NG	NG	<0.05	<0.05	<0.05
Dibromochloromethane	mg/kg	NG	NG	<0.05	<0.05	<0.05
1,2-Dibromoethane	mg/kg	NG	NG	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,1-Dichloroethane	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,2-Dichloroethane	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,1-Dichloroethene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,2-Dichloroethene (cis)	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,2-Dichloroethene (trans)	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,2-Dichloropropane	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,3-Dichloropropene [cis]	mg/kg	NG	NG	<0.05	<0.05	<0.05
1,3-Dichloropropene [trans]	mg/kg	NG	NG	<0.05	<0.05	<0.05
Methyl t-Butyl Ether (MTBE)	mg/kg	NG	NG	<0.1	<0.1	<0.1
Methylene Chloride	mg/kg	0.1	NG	<0.05	<0.05	<0.05
4-Methyl-2-pentanone	mg/kg	NG	NG	<0.5	<0.5	<0.5
Styrene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	mg/kg	NG	NG	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Tetrachloroethene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,2,4-Trichlorobenzene	mg/kg	0.05	NG	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	mg/kg	0.1	NG	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Trichloroethene	mg/kg	0.1	NG	<0.01	<0.01	<0.01
Trichlorofluoromethane	mg/kg	NG	NG	<0.05	<0.05	<0.05
Vinyl chloride	mg/kg	NG	NG	<0.05	<0.05	<0.05
Dioxins and Furans						
Total PCDDs	ng/kg	NG	NG	2.5	-	-
Total PCDFs	ng/kg	NG	NG	<0.5	-	-
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ	NG	NG	0	-	-
1,2,3,7,8-Penta CDD (TEF 1.0)	TEQ	NG	NG	0	-	-
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ	NG	NG	0	-	-
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ	NG	NG	0	-	-
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ	NG	NG	0	-	-
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ	NG	NG	0.00332	-	-
Octa CDD (TEF 0.0003)	TEQ	NG	NG	0.000575	-	-
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ	NG	NG	0	-	-
1,2,3,7,8-Penta CDF (TEF 0.03)	TEQ	NG	NG	0	-	-
2,3,4,7,8-Penta CDF (TEF 0.3)	TEQ	NG	NG	0	-	-
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ	NG	NG	0	-	-
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ	NG	NG	0	-	-
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ	NG	NG	0	-	-
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ	NG	NG	0	-	-
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ	NG	NG	0	-	-
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ	NG	NG	0	-	-
Octa CDF (TEF 0.0003)	TEQ	NG	NG	0	-	-
Total PCDDs and PCDFs (TEQ)	TEQ	4	NG	0.00389	-	-
Sample Code				8751713	8751714	8751715
Lab Report Number				17Y263896	17Y263896	17Y263896

Notes:

[1] - Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standards (CWS) for Petroleum Hydrocarbons (PHC) in Soil (CCME 2008)

[2] - Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG) - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME 1999)

[3] - Northwest Territories Environmental Guideline for Contaminated Site Remediation (NWT CSR 2003)

[4] - Preliminary Background Concentration

Italic - Laboratory detection limit is greater one or more referenced guidelines

NG - No guideline

Shaded - Exceeds most stringent CCME CEQG or CWS PHC land-use guideline value

Bold - Exceeds most stringent NWT CSR land-use guideline value

Bold and Shaded - Exceeds most stringent CCME CEQC or CWS PHC land-use guideline value, and exceeds most stringent NWT CSR land-use guideline value

Red - Exceeds Preliminary Background Concentration

N/A - Not applicable

Blank - Not analyzed

North American Tungsten Corporation Ltd.

Testpit No: **17A30BTP1**

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	
Tungsten, Northwest Territories	UTM: 540084 E; 6871089 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Depth (ft)
0								0
	Excavated	SILT (FILL) - sandy, some gravel, some cobbles, trace boulders, damp, firm, brown, plastic and wood debris		1-1	■			1
		SAND (FILL) - gravelly, some silt, some cobbles, trace boulders, damp, brownish grey, slight hydrocarbon odour						2
1				1-2	■			3
		END OF TESTPIT (1.0 metre) Note: Backfilled at completion						4
2								5
								6
								7
								8
								9
3								10
								11
								12
4								13
								14
								15
5								16

TETRA TECH

Contractor: NATC	Completion Depth: 1 m
Drilling Rig Type: Rubber Tire backhoe	Start Date: 2017 September 20
Logged By: NH	Completion Date: 2017 September 20
Reviewed By: JW	Page 1 of 1

North American Tungsten Corporation Ltd.

Testpit No: **17A30BTP2**

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	Ground Elev: 1145.606 m
Tungsten, Northwest Territories	UTM: 540096.064 E; 6871072.576 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Elevation (m)
0	Excavated	SILT (FILL) - sandy, some gravel, some cobbles, trace boulders, damp, firm, brown, (300 mm thick)		2-1				1145
		SAND (FILL) - gravelly, some cobbles, trace silt, trace boulders, damp, brown		2-2				
1		END OF TESTPIT (1.0 metre) Note: Stopped due to refusal Backfilled at completion						1144
2								1143
3								1142
4								1141
5								

TETRA TECH

Contractor: NATC	Completion Depth: 1 m
Drilling Rig Type: Rubber Tire backhoe	Start Date: 2017 September 20
Logged By: NH	Completion Date: 2017 September 20
Reviewed By: JW	Page 1 of 1

Photo 1: Facing west. Location of old incinerator in centre of photograph. (September 20, 2017)

Photo 2: Arrow indicates location of former incinerator adjacent to Heavy Equipment Maintenance Shop. Photo provided by NATC. (May 29, 2014)

AREA 35

AREA 35: Former PCB Storage and Copper Concentrate Shed

Area Description			
Location	Northwest of Tailings Pond 1.		
Topography	Generally flat with a slight slope to northeast.		
Surface Drainage	Northeast.		
Background	Out of service Polychlorinated Biphenyls (PCB)-containing equipment was reportedly stored at former Copper Concentrate Shed.		
Historical Assessment Information			
Phase II Environmental Site Assessment (EBA 2009)	Number of test pits	0	
	Number of surface soil samples	0	
	Number of soil samples analyzed	0	
	Number of soil samples with petroleum hydrocarbon impacts	0	
	Number of soil samples with metal impacts	0	
Comments: Not previously assessed			
2017/2018 Environmental Site Assessment Details			
Environmental Site Assessment Scope			
Utility Locate SOP followed?		Yes	
EM 31 Geophysics Complete?		No	
Number of test pits advanced		2 (2017)	
Number of boreholes advanced		0	
Number of hand auger locations advanced		0	
Number of soil samples submitted for laboratory chemical analysis		2 (2017)	
Number of boreholes completed as groundwater monitoring wells		0	
Number of historical groundwater monitoring wells		0	
Number of groundwater samples collected		N/A	
Number of sediment and surface soil samples collected		N/A	
Geophysics Findings			
N/A			
Soil Investigation and Conditions			
Maximum Depth of Investigation	1.2 mbgs (September 17, 2017)		
General Stratigraphy			
Description	**Depth from (mbgs)**	**Depth to (mbgs)**	**Observations**
Various layers of sand and cobbles	0	1.2	Fill soil. Buried debris including metal and wood observed in 17A35TP1 and 17A35TP2.
Combustible Vapour Concentrations (CVC)			
Ranged from less than instrument detection limit to 5 ppm in soil sample 17A35TP1-2.			
Groundwater Conditions			
Depth to Groundwater	about 8 m; inferred from groundwater elevation contour map (Figure A35-2).		
Free Product	N/A		

AREA 35: Former PCB Storage and Copper Concentrate Shed

2017/2018 Environmental Site Assessment Results Summary

- Figure A35-1 shows test pit locations.
- Figure A35-2 shows groundwater elevation contours.
- Table A35-1 summarizes soil lab results relative to guidelines.

General Site Observations

- No PCB- containing equipment or other chemical storage was observed at AEC.
- No obvious signs of PCB impacts were observed.
- Debris containing fill soil was observed in test pits 17A35TP1 and 17A35TP2.
- No additional work was done in this area in 2018.

Soil: Petroleum Hydrocarbons (PHCs)

- N/A

Soil: Metals

- Generally, very high metals concentrations, particularly in 17A35TP1 at 1.0 mbgs.
- Metals exceeding CCME CEQGs include: arsenic, barium, cadmium, copper, molybdenum, nickel, selenium, tin, and zinc.
- The sample at 17A35TP1 had the highest concentration observed for copper at the site and is almost certainly impacted from copper concentrate.
- Most metals also exceed preliminary background concentrations, *except* for:
  - Arsenic (17A35TP2 at 0.25 mbgs).
  - Molybdenum (17A35TP2 at 0.25 mbgs).
  - Zinc (17A35TP2 at 0.25 mbgs).

Soil: Other PCOCs (PCBs)

- Laboratory results less than detection limits and guidelines for PCBs.

Soil: Routine (pH)

- Laboratory results within guidelines.

Groundwater: Petroleum Hydrocarbons

- N/A

Groundwater: Metals/Routine Parameters

- N/A

Groundwater: Other PCOCs

- N/A

Sediment: Petroleum Hydrocarbons

- N/A

Sediment: Metals

- N/A

Sediment: Other PCOCs

- N/A

Surface Water: Petroleum Hydrocarbons

- N/A

Surface Water: Metals/Nutrients

- N/A

Surface Water: Other PCOCs

- N/A

Grainsize Analysis

- N/A

AREA 35: Former PCB Storage and Copper Concentrate Shed

Potential Environmental Concerns			
Location in AEC	**Potential Source(s)**	**Identified Contaminated Media**	**Parameters Assessed and Contaminant(s) of Concern (COCs; bold & underline)**
Area near entrance and downgradient of former Copper Concentrate Shed	Leaks or releases of PCBs from PCB-containing equipment	Soil	**Soil: <u>Metals</u>**, PCBs

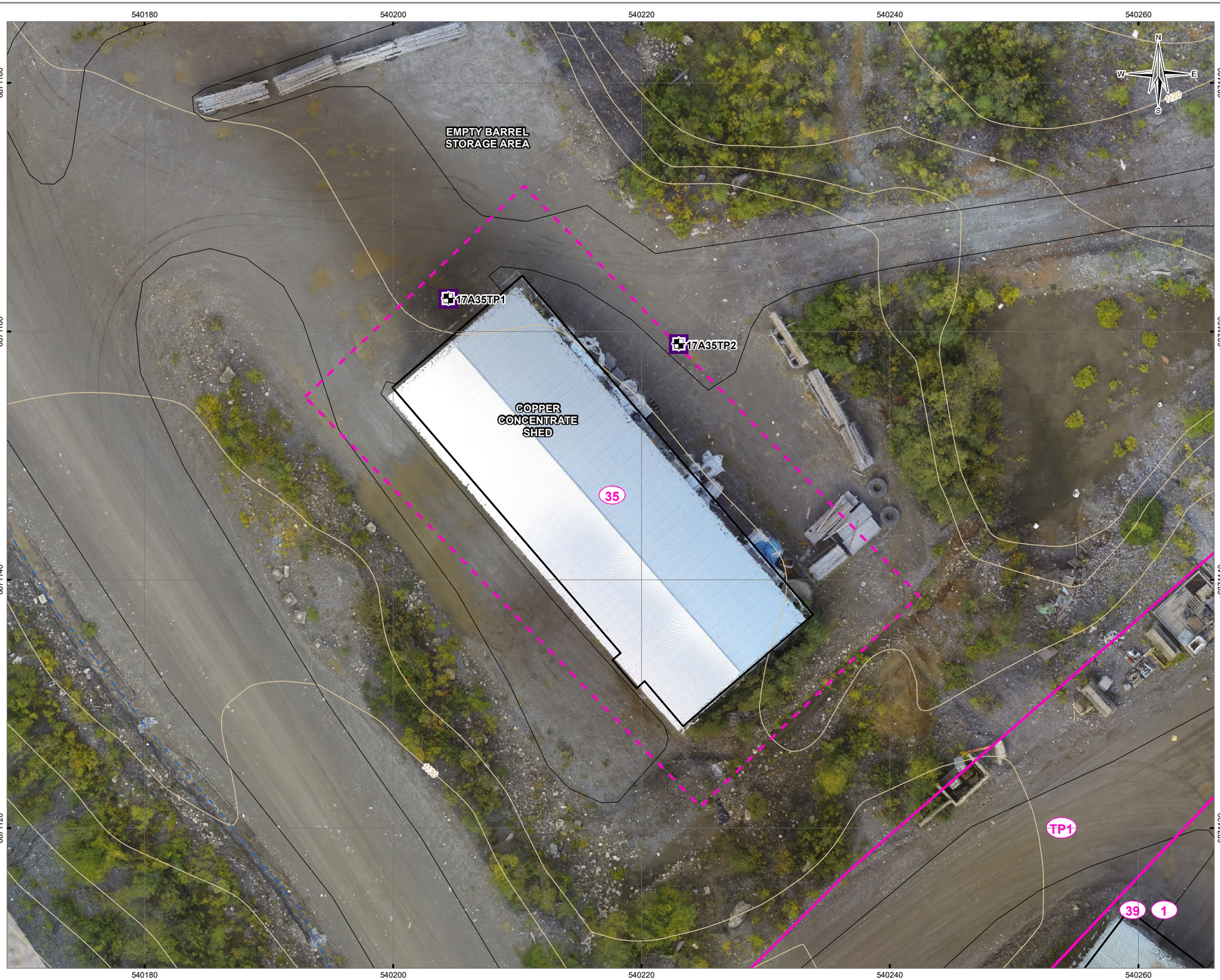
Discussion (Significance of Results)

<u>Soils:</u>

- Based on assessment results, there is no evidence of substantial environmental impacts associated with historical PCB storage.
- Soil samples contained high metals concentrations.
- Sample 17A35TP1 at 1.0 mbgs contained highest copper concentration observed at site (20,500 mg/kg), along with arsenic, cadmium, molybdenum, nickel, selenium, tin and zinc all exceeding CCME CEQGs and preliminary background concentrations.
- It is likely that soil 17A35TP1 is contaminated with copper concentrate spilled in vicinity of copper concentrate shed.

Attachments

Figure A35-1 – Soil and Sediment Results
Figure A35-2 – Groundwater Elevation Contours
Table A35-1 – Soil Analytical Results
Test pit Logs
Photographs

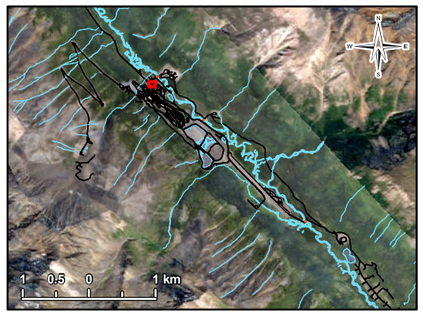


LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017/2018 Testpit (TP)

Soil/Sediment Analytical Results

- Metals exceedance of preliminary background concentrations, or in the absence of background concentrations, exceedance of CCME guidelines
- Building
- Road
- Ditch
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 35
Former PCB Storage at Copper Concentrate Shed
Soil and Sediment Results

PROJECTION UTM Zone 9	**DATUM** NAD83				**CLIENT** NORTH AMERICAN TUNGSTEN CORPORATION LTD
Scale: 1:300 5 2.5 0 5 Metres					TETRA TECH
FILE NO. WENW03039-03_Summary_A35-1.mxd					
OFFICE Tt-VANC	**DWN** SL	**CKD** BB	**APVD** BB	**REV** 0	A35-1
DATE June 22, 2020	**PROJECT NO.** ENV.WENW03039-03				

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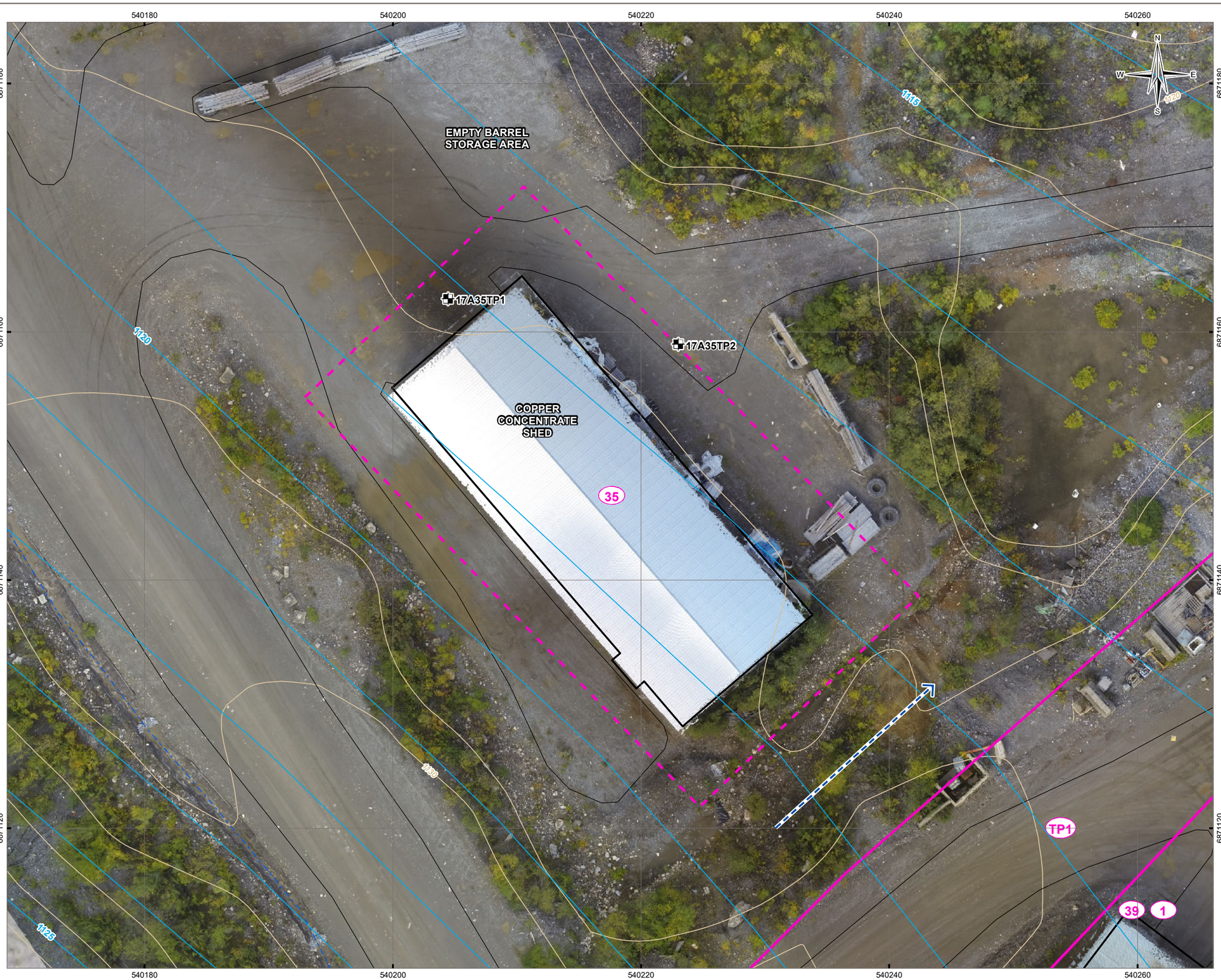
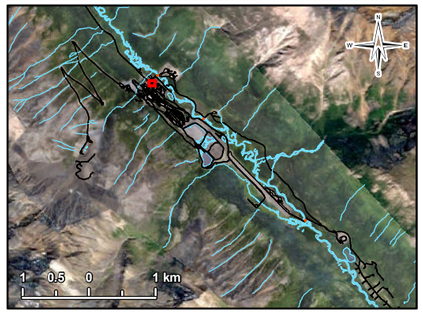


LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017/2018 Testpit (TP)
- Inferred Groundwater Flow Direction
- Groundwater Contour (1 m asl; Fall 2017)
- Building
- Road
- Ditch
- Contour (2 m)

FIGWQG	Federal Interim Groundwater Quality Guidelines
CCME	Canadian Council of Ministers of the Environment
WQG	Water Quality Guidelines
AW	Freshwater Aquatic Life
EQGASW	Environmental Quality Guidelines for Alberta Surface Waters



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE PHASE III ESA

Area 35 Former PCB Storage at Copper Concentrate Shed Groundwater and Surface Water Results

PROJECTION: UTM Zone 9	DATUM: NAD83			CLIENT: NORTH AMERICAN TUNGSTEN CORPORATION LTD
Scale: 1:300 (5 2.5 0 5 Metres)				TETRA TECH
FILE NO.: WENW03039-03_Summary_A35-2.mxd				
OFFICE: Tt-VANC	DWN: SL	CKD: BB	APVD: SS	REV: 0
DATE: June 22, 2020	PROJECT NO.: ENW.WENW03039-03			A35-2

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Table A35-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	AREA 35	
				17A35TP1	17A35TP2
				17A35TP1-2	17A35TP2-1
				1.0 m	0.25 m
				2017-09-17	2017-09-17
Routine / Salinity					
pH	pH Units	6-8	NG	7.24	7.7
Moisture	%	NG	NG	-	-
Metals					
Antimony	mg/kg	20	NG	6.9	5.8
Arsenic	mg/kg	12	64	71.6	**23.7**
Barium	mg/kg	500	946	281	4120
Beryllium	mg/kg	4	NG	0.8	0.3
Cadmium	mg/kg	1.4	2.8	13.2	3.39
Chromium	mg/kg	64	NG	23	11
Cobalt	mg/kg	40	NG	34.5	18.2
Copper	mg/kg	63	NG	**20500**	59.3
Lead	mg/kg	70	NG	40.6	16.1
Mercury	mg/kg	6.6	NG	0.81	0.07
Molybdenum	mg/kg	5	10	25.7	**7.5**
Nickel	mg/kg	45	72	93.4	84.1
Selenium	mg/kg	1	1.7	7.5	2.6
Silver	mg/kg	20	NG	14.1	<0.5
Thallium	mg/kg	1	NG	0.6	0.4
Tin	mg/kg	5	NG	**30.7**	<0.2
Uranium	mg/kg	23	NG	3.6	2.4
Vanadium	mg/kg	130	160	104	86
Zinc	mg/kg	200	462	1650	**395**
Polychlorinated Biphenyls (PCBs)					
Aroclor 1242	mg/kg	NG	NG	<0.05	<0.05
Aroclor 1254	mg/kg	NG	NG	<0.05	<0.05
Aroclor 1260	mg/kg	NG	NG	<0.05	<0.05
Aroclor 1262	mg/kg	NG	NG	-	-
PCBs (Sum of total)	mg/kg	0.5	NG	<0.05	<0.05
Sample Code				8742814	8742815
Lab Report Number				17Y263066	17Y263066

Notes:

[1] - Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standards (CWS) for Petroleum Hydrocarbons (PHC) in Soil (CCME 2008)

[2] - Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG) - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME 1999)

[3] - Northwest Territories Environmental Guideline for Contaminated Site Remediation (NWT CSR 2003)

[4] - Preliminary Background Concentration

Italic - Laboratory detection limit is greater one or more referenced guidelines

NG - No guideline

Shaded - Exceeds most stringent CCME CEQG or CWS PHC land-use guideline value

Bold - Exceeds most stringent NWT CSR land-use guideline value

Bold and Shaded - Exceeds most stringent CCME CEQC or CWS PHC land-use guideline value, and exceeds most stringent NWT CSR land-use guideline value

Red - Exceeds Preliminary Background Concentration

N/A - Not applicable

Blank - Not analyzed

North American Tungsten Corporation Ltd.

Testpit No: **17A35TP1**

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	Ground Elev: 1126.327 m
Tungsten, Northwest Territories	UTM: 540204.443 E; 6871162.648 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Elevation (m)
0	Excavated	SAND (FILL) - silty, some gravel, trace rootlets, damp, loose, brown, wood debris						1126
		- reddish brown		1-1	■			
		- trace to some cobbles, buried metal bar						
1				1-2	■			
		END OF TESTPIT (1.2 metres) Note: Backfilled at completion						1125
2								1124
3								1123
4								1122
5								

TETRA TECH

Contractor: NATC	Completion Depth: 1.2 m
Drilling Rig Type: Track Mounted	Start Date: 2017 September 17
Logged By: NH	Completion Date: 2017 September 17
Reviewed By: JW	Page 1 of 1

North American Tungsten Corporation Ltd.

Testpit No: **17A35TP2**

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	
Tungsten, Northwest Territories	UTM: 540223 E; 6871159 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Depth (ft)
0								0
	Excavated	SAND (FILL) - silty, some gravel, trace cobbles, damp, soft, greyish brown						
		- gravelly, some silt, trace to some cobbles, dense, lots of wood debris		2-1				1
		- unknown line						2
		- buried organics						3
1		COBBLES (FILL) - sandy, some gravel, some boulders, damp, loose, brown		2-2				
		END OF TESTPIT (1.2 metres) Note: Backfilled at completion						4
2								5
								6
								7
								8
								9
3								10
								11
								12
4								13
								14
								15
5								16

TETRA TECH

Contractor: NATC	Completion Depth: 1.2 m
Drilling Rig Type: Track Mounted	Start Date: 2017 September 17
Logged By: NH	Completion Date: 2017 September 17
Reviewed By: JW	Page 1 of 1

Photo 1: Arrow indicates location of former PCB storage at copper concentrate shed. Photo provided by NATC. (August 13, 2013)

Photo 2: Facing southeast at copper concentrate shed. (October 3, 2017)

AREA 36

AREA 36: Former Fueling Area

Area Description	
Location	Northeast of Sewage Treatment Plant and Incinerator, adjacent Tailings Pond 4.
Topography	Generally flat with a slight slope to northeast.
Surface Drainage	Northeast towards Flat River.
Background	Historical gasoline fueling area for townsite residents.

Historical Assessment Information		
Phase II Environmental Site Assessment (EBA 2009)	Number of test pits	0
	Number of surface soil samples	0
	Number of soil samples analyzed	0
	Number of soil samples with petroleum hydrocarbon impacts	0
	Number of soil samples with metal impacts	0
Comments: Not previously assessed.		

2017/2018 Environmental Site Assessment Details	
Environmental Site Assessment Scope	
Utility Locate SOP followed?	Yes
EM 31 Geophysics Completed?	Yes
Number of test pits advanced	0
Number of boreholes advanced	1 (2017)
Number of hand auger locations advanced	0
Number of soil samples submitted for laboratory chemical analysis	2 (2017)
Number of boreholes completed as groundwater monitoring wells	0
Number of historical groundwater monitoring wells	0
Number of groundwater samples collected	N/A
Number of sediment and surface soil samples collected	N/A

Geophysics (EM 31 Apparent Terrain Conductivity) Findings

- As indicated on Figure A36-3 survey was completed at former fueling area.
- Background apparent terrain conductivity values for area are generally between 5 to 10 mS/m. These values are represented by cool colours shown on figure.
- Areas of higher than background apparent terrain conductivity values are not observed.
- Negative apparent terrain conductivity values are likely caused by a buried utility or buried metal. This area is labeled on figure with a thick black rectangle.
- No other areas of anomalous results are seen in data.

Soil Investigation and Conditions

Maximum Depth of Investigation	6.1 mbgs (September 21, 2017)

General Stratigraphy

Description	Depth from (mbgs)	Depth to (mbgs)	Observations
Silt	0	1.9	Fill soil
Sand	1.9	2.6	Fill soil
Cobbles	2.6	3.0	Native soil
Sand	3.0	6.1	Native soil

Combustible Vapour Concentrations (CVC)

Ranged from 0.6 ppm in 17A36BH1-3 to 1.3 ppm in soil sample 17A36BH1-1

AREA 36: Former Fueling Area

Groundwater Conditions	
Depth to Groundwater	N/A
Free Product	N/A

2017/2018 Environmental Site Assessment Results Summary

- Figure A36-1 shows borehole locations.
- Figure A36-2 shows groundwater elevation contours.
- Figure A36-3 shows geophysics results.
- Table A36-1 summarizes soil lab results relative to guidelines.

General Site Observations

- No residual fueling infrastructure was observed.
- No obvious signs of environmental impacts were observed.
- No additional work was done in this area in 2018.

Soil: Petroleum Hydrocarbons (PHCs, PAHs)

- Laboratory chemical results less than guidelines**.**

Soil: Metals

- Various exceedances of CCME CEQGs including arsenic, barium, cadmium, copper, molybdenum, selenium, and zinc.
- The following metals also exceeded preliminary background concentrations:
  - Barium (17A36BH1 at 2.0 mbgs)
  - Selenium (17A36BH1 at 2.0 mbgs)

Soil: Other PCOCs (VOCs)

- Laboratory results less than detection limits and guidelines

Soil: Routine (pH)

- Laboratory results within guidelines.

Groundwater: Petroleum Hydrocarbons

- N/A

Groundwater: Metals/Routine Parameters

- N/A

Groundwater: Other PCOCs

- N/A

Sediment: Petroleum Hydrocarbons

- N/A

Sediment: Metals

- N/A

Sediment: Other PCOCs

- N/A

Surface Water: Petroleum Hydrocarbons

- N/A

Surface Water: Metals/Nutrients

- N/A

Surface Water: Other PCOCs

- N/A

Grainsize Analysis

- N/A

AREA 36: Former Fueling Area

Environmental Concerns			
Location in AEC	**Potential Source(s)**	**Identified Contaminated Media**	**Parameters Assessed and Contaminant(s) of Concern (COCs; bold & underline)**
Beneath and down-gradient of former fueling area	Fuel releases	Soil	**Soil: <u>Metals</u>**, petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs)

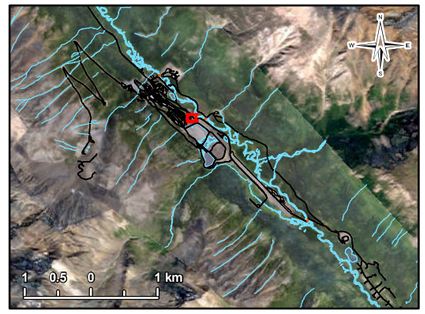
Discussion (Significance of Results)

<u>Soils:</u>

- Metals concentrations generally similar to other areas at Cantung Mine site, so not likely related to fueling area activities.

Attachments

Figure A36-1 – Soil and Sediment Results
Figure A36-2 – Groundwater elevation contours
Figure A36-3 – Geophysics Results
Table A36-1 – Soil Analytical Results
Borehole Logs
Photographs



LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017 Borehole (BH)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well

Soil/Sediment Analytical Results

- No PHC Impact
- Metals exceedance of preliminary background concentrations, or in the absence of background concentrations, exceedance of CCME guidelines
- Building
- Road
- Ditch
- Watercourse
- Contour (2 m)

NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 36
Former Fueling Area
Soil and Sediment Results

PROJECTION UTM Zone 9	**DATUM** NAD83	**CLIENT** NORTH AMERICAN TUNGSTEN CORPORATION LTD	
Scale: 1:400 (5 2.5 0 5 Metres)		TETRA TECH	
FILE NO. WENW03039-03_Summary_A36-1.mxd			
OFFICE Tt-VANC	**DWN** SL / **CKD** BB / **APVD** BB / **REV** 0		A36-1
DATE June 22, 2020	**PROJECT NO.** ENW.WENW03039-03		

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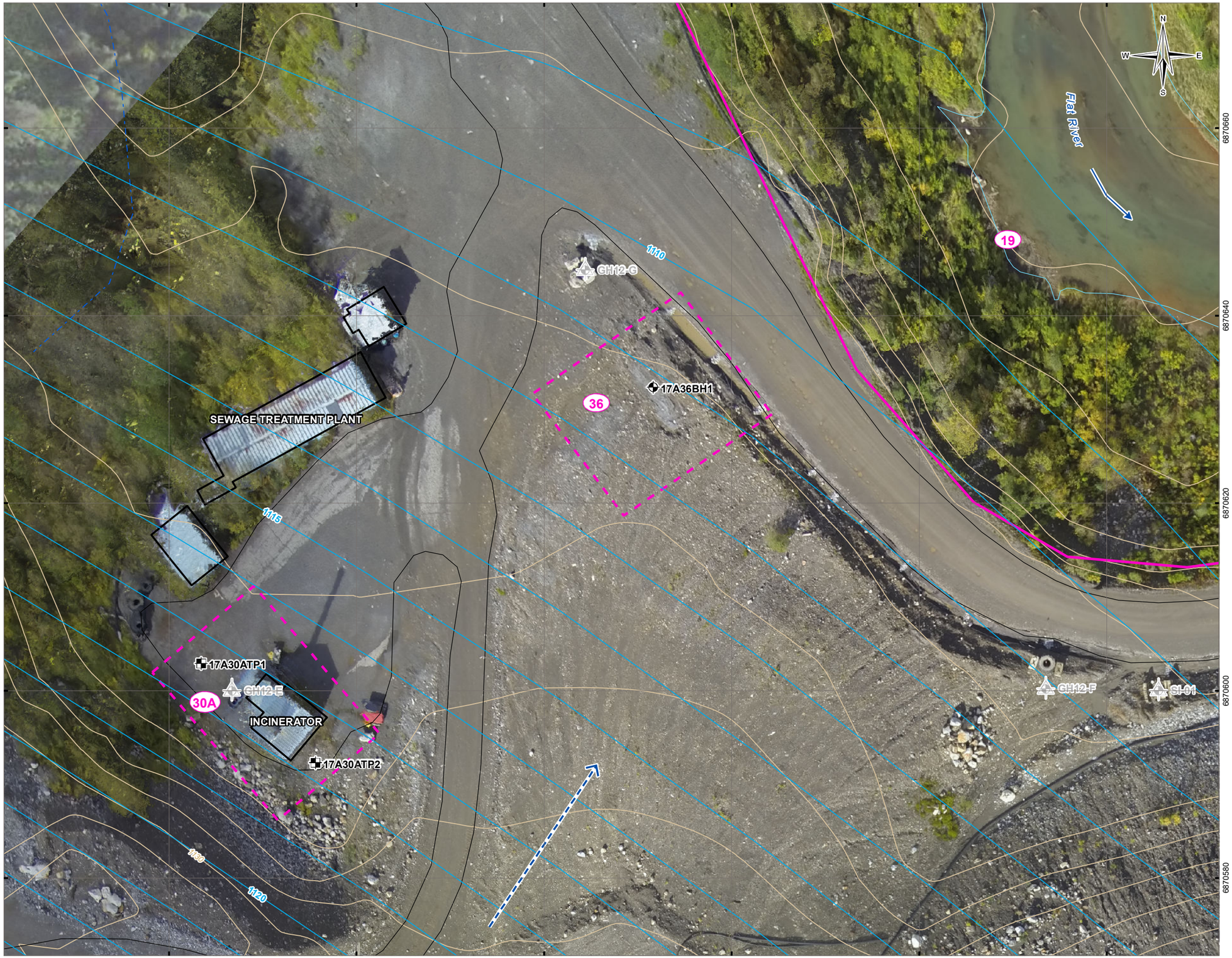
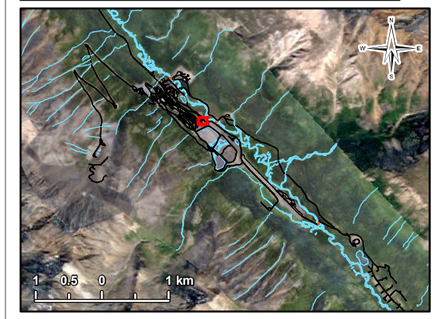


LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017 Borehole (BH)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well
- Inferred Groundwater Flow Direction
- Groundwater Contour (1 m asl; Fall 2017)
- Building
- Road
- Ditch
- Watercourse
- Contour (2 m)

FIGWQG	Federal Interim Groundwater Quality Guidelines
CCME	Canadian Council of Ministers of the Environment
WQG	Water Quality Guidelines
AW	Freshwater Aquatic Life
EQGASW	Environmental Quality Guidelines for Alberta Surface Waters



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 36
Former Fueling Area
Groundwater and Surface Water Results

PROJECTION: UTM Zone 9		DATUM: NAD83			CLIENT: NORTH AMERICAN TUNGSTEN CORPORATION LTD
Scale: 1:400 (5 2.5 0 5 Metres)					TETRA TECH
FILE NO.: WENW03039-03_Summary_A36-2.mxd					
OFFICE: Tt-VANC	DWN: SL	CKD: BB	APVD: SS	REV: 0	A36-2
DATE: June 22, 2020	PROJECT NO.: ENW.WENW03039-03				

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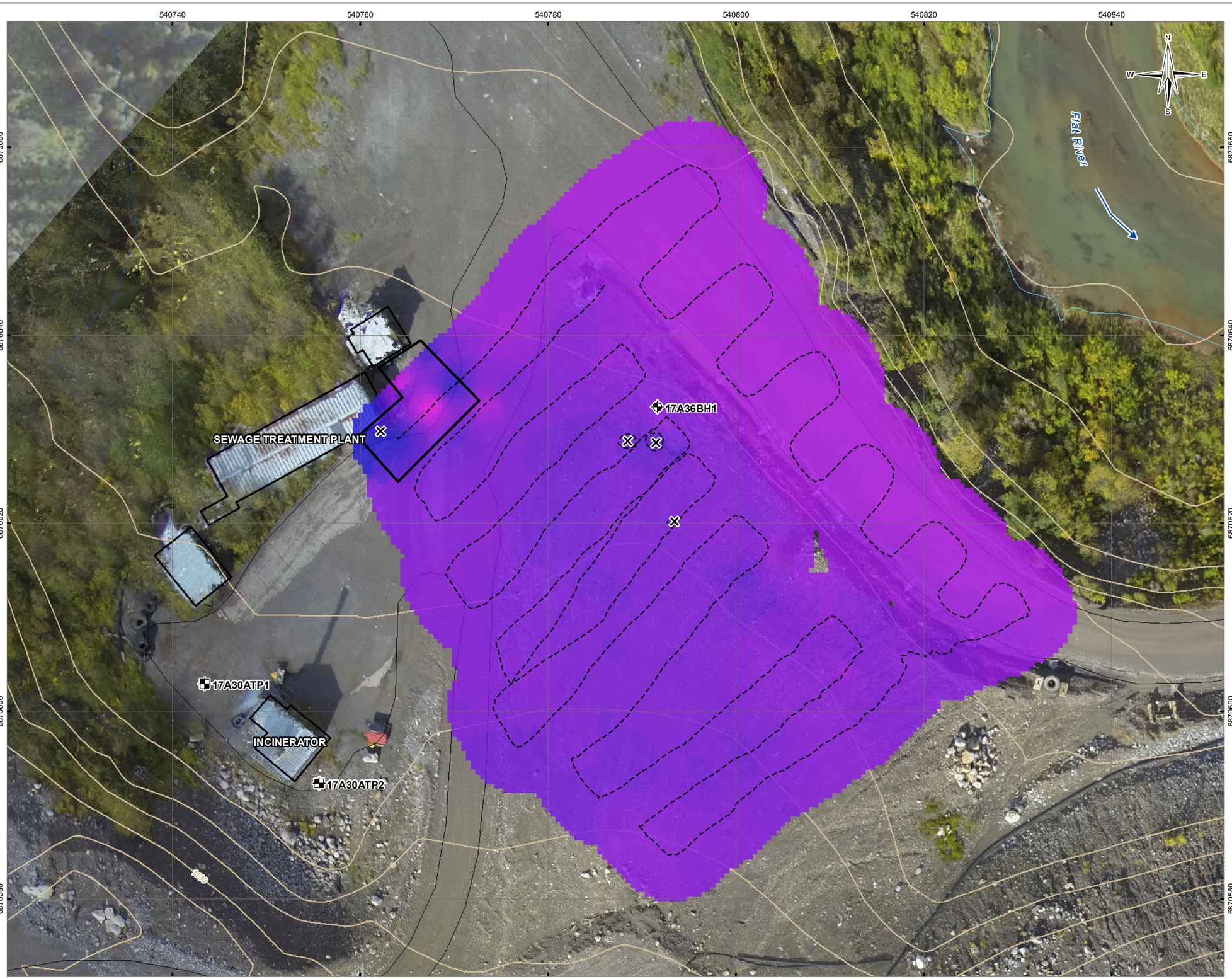
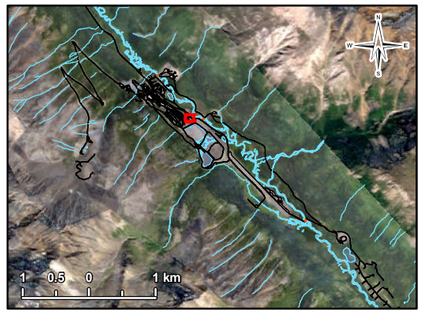


LEGEND

- Survey Track
- Surface Metal
- Potential Buried Utility
- 2017 Borehole (BH)
- 2017/2018 Testpit (TP)
- Building
- Road
- Ditch
- Watercourse
- Contour (2 m)

Apparent Terrain Conductivity (mS/m)

500
200
150
100
50
0



NOTES

All locations and area boundaries are approximate.
Negative apparent terrain conductivity values likely due to EM field created by a utility or metal response.
EM31 S/N: 8411031 | Data collected: September 8, 2017.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 36
Former Fueling Area
EM31 Apparent Terrain Conductivity Survey

PROJECTION UTM Zone 9	**DATUM** NAD83			**CLIENT** NORTH AMERICAN TUNGSTEN CORPORATION LTD
Scale: 1:400 5 2.5 0 5 Metres				TETRA TECH
FILE NO. WENW03039-03_Summary_A36-3.mxd				
OFFICE Tt-VANC	**DWN** SL	**CKD** DSM	**APVD** SS	**REV** 0
DATE June 22, 2020	**PROJECT NO.** ENW.WENW03039-03			**A36-3**

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Table A36-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	A36	
				17A36BH1	
				17A36BH1-1	17A36BH1-2
				0.45 m	2.0 m
				2017-09-21	2017-09-21
Routine / Salinity					
pH	pH Units	6-8	NG	7.25	7.83
Moisture	%	NG	NG	14	8.06
Metals					
Antimony	mg/kg	20	NG	1.2	2.6
Arsenic	mg/kg	12	64	**37.1**	**20.7**
Barium	mg/kg	500	946	**821**	**1700**
Beryllium	mg/kg	4	NG	1.1	0.6
Cadmium	mg/kg	1.4	2.8	**1.82**	**2.04**
Chromium	mg/kg	64	NG	22	23
Cobalt	mg/kg	40	NG	15.5	13
Copper	mg/kg	63	NG	**192**	**130**
Lead	mg/kg	70	NG	20.2	18.8
Mercury	mg/kg	6.6	NG	0.51	0.6
Molybdenum	mg/kg	5	10	3.9	**5.4**
Nickel	mg/kg	45	72	31.7	41.3
Selenium	mg/kg	1	1.7	**1.4**	**1.8**
Silver	mg/kg	20	NG	<0.5	<0.5
Thallium	mg/kg	1	NG	0.4	0.3
Tin	mg/kg	5	NG	2.8	1.1
Uranium	mg/kg	23	NG	2.2	2
Vanadium	mg/kg	130	160	49	62
Zinc	mg/kg	200	462	**207**	**228**
Particle Size					
>75 µm	%	NG	NG	75	68
Grain Size	N/A	NG	NG	Coarse	Coarse
Petroleum Hydrocarbons					
Benzene	mg/kg	0.03	NG	<0.005	<0.005
Toluene	mg/kg	0.1	NG	<0.05	<0.05
Ethylbenzene	mg/kg	0.082	NG	<0.01	<0.01
Xylenes (m & p)	mg/kg	NG	NG	-	-
Xylene (m)	mg/kg	NG	NG	<0.02	<0.02
Xylene (o)	mg/kg	NG	NG	<0.02	<0.02
Xylenes Total	mg/kg	0.1	NG	<0.05	<0.05
Volatile Hydrocarbons (VH6-10)	mg/kg	NG	NG	-	-
F1 (C6-C10)	mg/kg	30	NG	<10	<10
VPH C6-C10	mg/kg	NG	NG	-	-
F1 (C6-C10 / BTEX CORRECTED)	mg/kg	30	NG	<10	<10
F2 (C10-C16)	mg/kg	150	NG	<20	<20
F3 (C16-C34)	mg/kg	300	NG	24	<20
F4: (C34-C50)	mg/kg	2800	NG	23	23
VPHs	mg/kg	NG	NG	-	-
Polycyclic Aromatic Hydrocarbons (PAHs)					
IACR (CCME)	mg/kg	1	NG	<0.6	<0.6
B(a)P Total Potency Equivalent	mg/kg	0.6	NG	<0.05	<0.05
2-methylnaphthalene	mg/kg	NG	NG	<0.005	<0.005
Acenaphthene	mg/kg	NG	NG	<0.005	<0.005
Acenaphthylene	mg/kg	NG	NG	<0.005	<0.005
Anthracene	mg/kg	2.5	NG	<0.004	<0.004
Benz(a)anthracene	mg/kg	0.1	NG	<0.03	<0.03
Benzo(a) pyrene	mg/kg	0.1	NG	<0.03	<0.03
Benzo(b)fluoranthene	mg/kg	0.1	NG	<0.05	<0.05
Benzo(b+j)fluoranthene	mg/kg	NG	NG	<0.05	<0.05
Benzo(e)pyrene	mg/kg	NG	NG	-	-
Benzo(g,h,i)perylene	mg/kg	NG	NG	<0.05	<0.05
Benzo(k)fluoranthene	mg/kg	0.1	NG	<0.05	<0.05
Chrysene	mg/kg	NG	NG	<0.05	<0.05
Dibenz(a,h)anthracene	mg/kg	0.1	NG	<0.005	<0.005
Fluoranthene	mg/kg	50	NG	<0.01	<0.01
Fluorene	mg/kg	NG	NG	<0.02	<0.02
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	NG	<0.02	<0.02
Naphthalene	mg/kg	0.013	NG	<0.005	<0.005
Phenanthrene	mg/kg	0.046	NG	<0.02	<0.02
Pyrene	mg/kg	0.1	NG	<0.01	<0.01
Benzo(j)fluoranthene	ug/g	NG	NG	<0.05	<0.05

Table A36-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	A36	
				17A36BH1	
				17A36BH1-1	17A36BH1-2
				0.45 m	2.0 m
				2017-09-21	2017-09-21
Volatile Organic Compounds (VOCs)					
Carbon	%	NG	NG	-	-
1-Methylnaphthalene	mg/kg	NG	NG	<0.005	<0.005
Acetone	mg/kg	NG	NG	<0.5	<0.5
Bromodichloromethane	mg/kg	NG	NG	<0.05	<0.05
Bromoform	mg/kg	NG	NG	<0.05	<0.05
Bromomethane	mg/kg	NG	NG	<0.05	<0.05
2-Butanone	mg/kg	NG	NG	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.1	NG	<0.02	<0.02
Chlorobenzene	mg/kg	0.1	NG	<0.05	<0.05
Chloroethane	mg/kg	NG	NG	<0.05	<0.05
Chloroform	mg/kg	0.1	NG	<0.05	<0.05
Chloromethane	mg/kg	NG	NG	<0.05	<0.05
Dibromochloromethane	mg/kg	NG	NG	<0.05	<0.05
1,2-Dibromoethane	mg/kg	NG	NG	<0.05	<0.05
1,2-Dichlorobenzene	mg/kg	0.1	NG	<0.05	<0.05
1,3-Dichlorobenzene	mg/kg	0.1	NG	<0.05	<0.05
1,4-Dichlorobenzene	mg/kg	0.1	NG	<0.05	<0.05
1,1-Dichloroethane	mg/kg	0.1	NG	<0.05	<0.05
1,2-Dichloroethane	mg/kg	0.1	NG	<0.05	<0.05
1,1-Dichloroethene	mg/kg	0.1	NG	<0.05	<0.05
1,2-Dichloroethene (cis)	mg/kg	0.1	NG	<0.05	<0.05
1,2-Dichloroethene (trans)	mg/kg	0.1	NG	<0.05	<0.05
1,2-Dichloropropane	mg/kg	0.1	NG	<0.05	<0.05
1,3-Dichloropropene [cis]	mg/kg	NG	NG	<0.05	<0.05
1,3-Dichloropropene [trans]	mg/kg	NG	NG	<0.05	<0.05
Methyl t-Butyl Ether (MTBE)	mg/kg	NG	NG	<0.1	<0.1
Methylene Chloride	mg/kg	0.1	NG	<0.05	<0.05
4-Methyl-2-pentanone	mg/kg	NG	NG	<0.5	<0.5
Styrene	mg/kg	0.1	NG	<0.05	<0.05
1,1,1,2-Tetrachloroethane	mg/kg	NG	NG	<0.05	<0.05
1,1,2,2-Tetrachloroethane	mg/kg	0.1	NG	<0.05	<0.05
Tetrachloroethene	mg/kg	0.1	NG	<0.05	<0.05
1,2,4-Trichlorobenzene	mg/kg	0.05	NG	<0.05	<0.05
1,1,1-Trichloroethane	mg/kg	0.1	NG	<0.05	<0.05
1,1,2-Trichloroethane	mg/kg	0.1	NG	<0.05	<0.05
Trichloroethene	mg/kg	0.1	NG	<0.01	<0.01
Trichlorofluoromethane	mg/kg	NG	NG	<0.05	<0.05
Vinyl chloride	mg/kg	NG	NG	<0.05	<0.05
Sample Code				8757727	8757728
Lab Report Number				17Y264579	17Y264579

Notes:

[1] - Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standards (CWS) for Petroleum Hydrocarbons (PHC) in Soil (CCME 2008)

[2] - Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG) - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME 1999)

[3] - Northwest Territories Environmental Guideline for Contaminated Site Remediation (NWT CSR 2003)

[4] - Preliminary Background Concentration

Italic - Laboratory detection limit is greater one or more referenced guidelines

NG - No guideline

Shaded - Exceeds most stringent CCME CEQG or CWS PHC land-use guideline value

Bold - Exceeds most stringent NWT CSR land-use guideline value

Bold and Shaded - Exceeds most stringent CCME CEQC or CWS PHC land-use guideline value, and exceeds most stringent NWT CSR land-use guideline value

Red - Exceeds Preliminary Background Concentration

N/A - Not applicable

Blank - Not analyzed

North American Tungsten Corporation Ltd.

Borehole No: **17A36BH1**

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	Ground Elev: 1118.656 m
Tungsten, Northwest Territories	UTM: 540791.63 E; 6870632.363 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Elevation (m)
0								
0	Sonic	SAND - silty, trace to some gravel, fine to medium sand and gravel		1-1		25% particles <75 µm (ie. smaller than sand particle)		1118
1								
2		SILT - some sand, trace to some gravel, damp, brown, fine gravel		1-2		32% particles <75 µm (ie. smaller than sand particle)		1117
3		COBBLES						1116
		SAND - trace gravel, damp, fine to coarse sand, fine gravel						1115
4								
5		- gravelly		1-3				1114
6								1113
		END OF BOREHOLE (6.10 metres) Note: Backfilled at completion						1112
7								
8								1111
9								1110
10								1109
11								1108
12								1107
13								1106
14								1105
15								1104

TETRA TECH

Contractor: Boart Longyear	Completion Depth: 6.1 m
Drilling Rig Type: Track Mounted	Start Date: 2017 September 21
Logged By: MG	Completion Date: 2017 September 21
Reviewed By: JW	Page 1 of 1

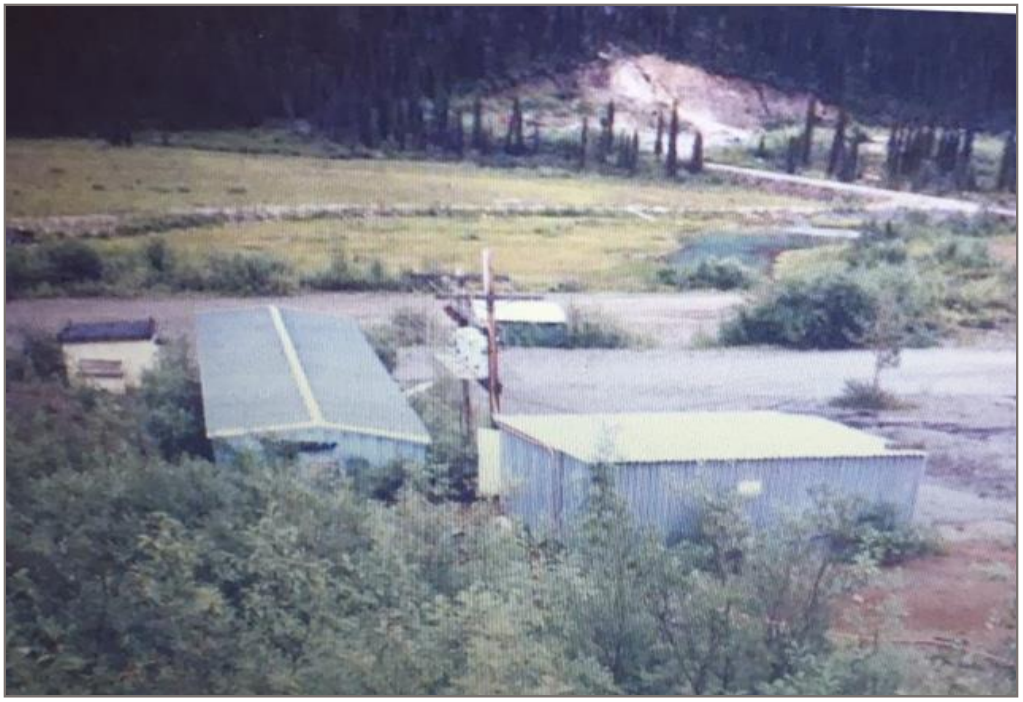


Photo 1: Former fueling area to the right of image. Sewage treatment plant visible on left. Photo provided by NATC.

Photo 2: Location of former Town Site fueling area (circled). Photo provided by NATC. (August 13, 2013)

AREA 37

AREA 37: Airstrip

Area Description	
Location	Southeast of Tailings Pond 3 (TP3).
Topography	Relatively flat with a slight downward slope to northeast.
Surface Drainage	Northeast.
Background	A fuel cache made up of a geosynthetic-lined cell is present on northeast portion of Airstrip. The cache stores drums of fuel for aviation fueling. Airstrip material is understood to be composed of mixed waste rock and granular fill materials.

Environmental Concerns			
Location in AEC	**Potential Source(s)**	**Identified Contaminated Media**	**Parameters Assessed and Contaminant(s) of Concern (COCs; bold & underline)**
Northeast portion of AEC, area down-gradient of fuel cash	Leak or releases from fuel drums	Soil	**Soil: <u>metals,</u>** petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), metals, glycols, volatile organic compounds (VOCs)

Historical Assessment Information		
Previous Phase II Environmental Site Assessment Results (EBA 2008)	Not in scope for EBA 2008	
Airstrip investigation program completed by Phase Geochemistry in 2011 (Phase 2014a).	Number of Rinse pH/EC analyses	25
	Number of ABA analyses	25
	Number of multi-element ICP analyses	25
	Number of shake flask extraction analyses	6
	Number of field barrel analyses	-

Comments: The test pits were noted to consist predominantly of till, that was largely unoxidized except for an occasional layer that was slightly red-brown with trace oxidation. Mineralogy was dominated by quartz (~60%) with lesser muscovite (20 to 30%), clinochlore (3 to 4%) and minor to trace amounts of feldspars, carbonates and other accessory minerals. With the exception of 2 samples, both of which had sulphide contents less than 0.05%, all runway samples classify as non-acid generating (NAG).

Solids metal content were generally within the range of what is considered average for limestone hosted rocks types. Occasionally levels more than 10 times crustal abundances were seen for As, Ba, Cd, Mo, Ni, W and Zn, possibly indicating anomalous levels though not necessarily implying a potential for metal leaching. Soluble metals as determined by leach extraction tests were at low concentrations.

2017/2018 Environmental Site Assessment Details	
Environmental Site Assessment Scope	
Utility Locate SOP followed?	Yes
EM 31 Geophysics Complete?	No
Number of test pits advanced	2 (near fuel cache) (2017)
Number of boreholes advanced	0
Number of hand auger locations advanced	0
Number of soil samples collected for acid rock drainage/metal leaching	4 (2017)
Number of soil samples submitted for laboratory chemical analysis	3 (2017)
Number of soil samples submitted for acid rock drainage analysis	1 (2017)
Number of boreholes completed as groundwater monitoring wells	0
Number of historical groundwater monitoring wells	0
Number of groundwater samples collected	N/A
Number of sediment and surface soil samples collected	N/A

AREA 37: Airstrip

Geophysics Findings

N/A

Soil Investigation and Conditions

Maximum Depth of Investigation	3.0 mbgs (September 18, 2017)

General Stratigraphy

Description	Depth from (mbgs)	Depth to (mbgs)	Observations
Sand	0	0.2	Fill soil.
Layers of sand and gravel	0.2	3.0	Native soil.

Combustible Vapour Concentrations (CVCs)

Ranged from less than instrument detection limit to 4.8 ppm (in soil samples 17A37TP1-1 and 17A37TP2-4)

Groundwater Conditions

Depth to Groundwater	N/A
Free Product	N/A

2017/2018 Environmental Site Assessment Results Summary

- Figure A37-1 shows test pit locations and soil results.
- Table A37-1 summarizes soil lab results relative to guidelines.

General Site Observations

- Fuel cache liner appeared to be in good condition.
- No evidence of leak or releases from fuel cache.
- No obvious signs of environmental impacts.
- Airstrip appears to be primarily composed of fill material (reworked alluvium and till) with lesser amounts of waste rock. The exact proportions of material types is unknown.
- Minor and localized iron oxidation observed on select fragments of rock (possibly waste rock).
- There is a gravel pit adjacent to airstrip where building material for airstrip was likely sourced. A sample from this quarry (17A37-Quarry) was collected for reference.
- No additional work was done in this area in 2018.

Soil: Petroleum Hydrocarbons (PHC)

Laboratory results less than detection limits and guidelines.

Soil: Metals

- One soil sample analyzed for metals (17A37TP2 at 3.0 mbgs).
- Metals exceeding CCME CEQGs include arsenic, barium, cadmium, molybdenum, nickel, selenium, and zinc.
- All metals concentrations below preliminary background concentrations, except for barium and selenium.

Soil: Other PCOCs (PAHs, glycols, VOCs)

Laboratory results less than detection limits and guidelines.

Soil: Acid Rock Drainage

- Sample 17A37-03: classified NAG (NPR=2.74), sulphide sulphur content 0.12 S%, sulphate sulphur <0.01 S%, inorganic carbon content 0.5 CO_2%, paste pH 7.8.

Soil: Routine (pH)

- Laboratory results within guidelines with exception of:
  - Sample 17A37TP2-4 at a depth of 3.0 mbgs - pH value outside guideline range.

Groundwater: Petroleum Hydrocarbons,

- N/A

Groundwater: Metals/Routine Parameters

- N/A

AREA 37: Airstrip

Groundwater: Other PCOCs

- N/A

Sediment: Petroleum Hydrocarbons

- N/A

Sediment: Metals

- N/A

Sediment: Other PCOCs

- N/A

Surface Water: Petroleum Hydrocarbons

- N/A

Surface Water: Metals/Nutrients

- N/A

Surface Water: Other PCOCs

- N/A

Grainsize Analysis

- Sample 17A37TP2-4 collected from a depth of 3.0 mbgs indicated coarse grained soil type (92%>75um).

Discussion (Significance of the Results)

- Lab results for single sample collected for metals analysis is consistent with historical data. Historical data indicating occasional element concentrations greater than 10 times crustal abundances shown for arsenic, barium, cadmium, molybdenum, nickel, tungsten and zinc. These results possibly indicate anomalous levels though not necessarily implying a potential for metal-leaching. Soluble metals as determined by leach extraction tests were low.
- Observed metals concentrations similar to other areas of Cantung Mine site.
- Historical data reported concentrations of selenium of 1 mg/kg in 24 of 25 samples. This is equal to CCME CEQG value.

Conclusion:

- Current and historical results do not indicate risk of ARD/ML from airstrip materials. Airstrip materials expected to remain NAG with low potential for metal leaching.
- No evidence of environmental impacts from fuel drum cache.

Attachments

Figure A37-1 – Soil and Sediment Results

Table A37-1 – Soil Analytical Results

Test pit Logs

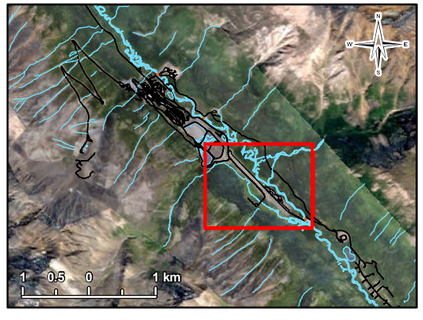
Photographs

LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well
- Historical Testpit
- Historical Surface Water Sample

Soil/Sediment Analytical Results

- PHC Impacts
- No PHC Impact
- Metals exceedance of preliminary background concentrations, or in the absence of background concentrations, exceedance of CCME guidelines
- Building
- Road
- Bridge
- Ditch
- Watercourse
- Contour (5 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 37
Airstrip
Soil and Sediment Results

PROJECTION UTM Zone 9	**DATUM** NAD83	**CLIENT** NORTH AMERICAN TUNGSTEN CORPORATION LTD	
Scale: 1:5,000 — 100 50 0 100 Metres		TETRA TECH	
FILE NO. WENW03039-03_Summary_A37-1.mxd			
OFFICE Tt-VANC	**DWN** SL / **CKD** BB / **APVD** BB / **REV** 0		**A37-1**
DATE June 22, 2020	**PROJECT NO.** ENW.WENW03039-03		

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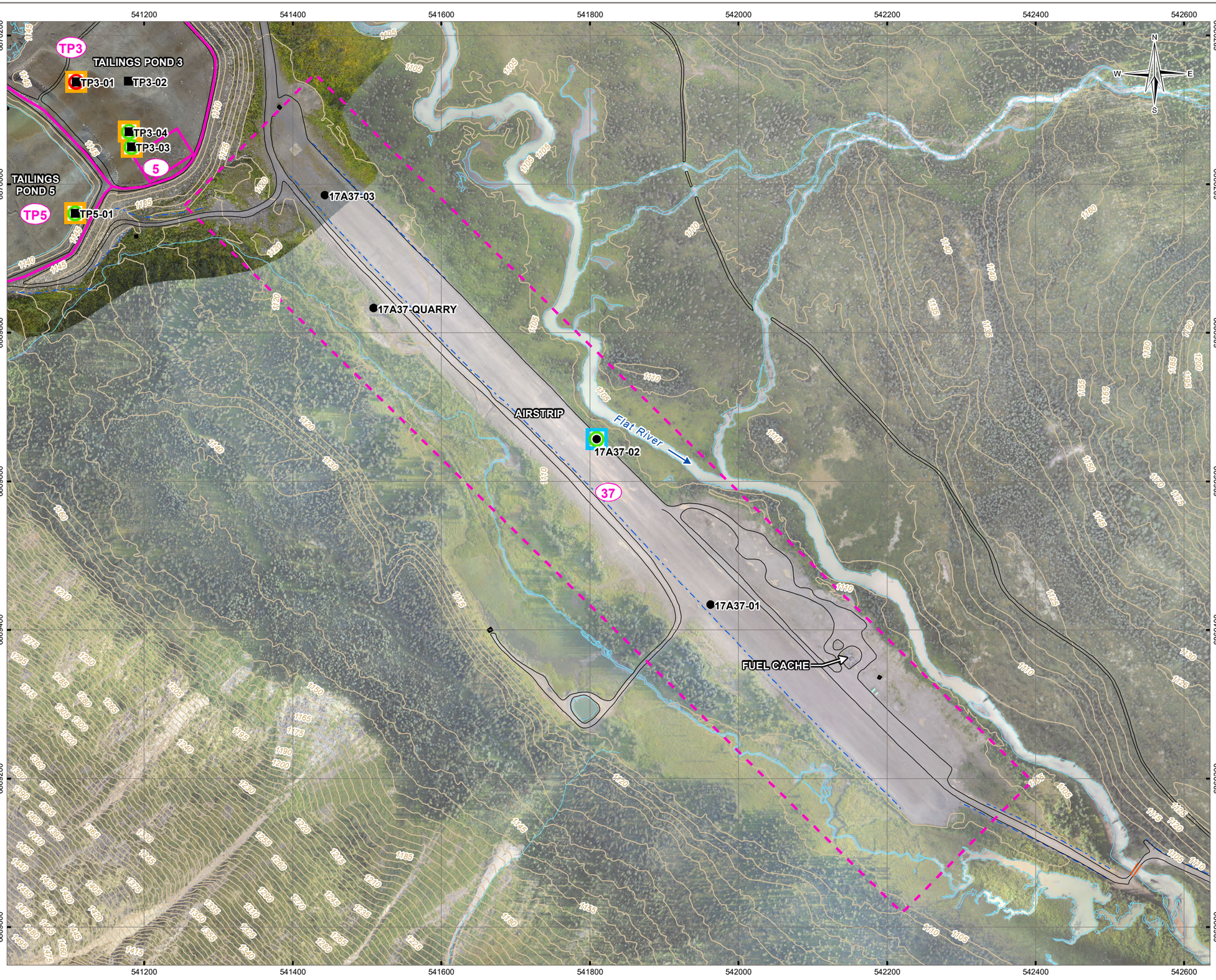
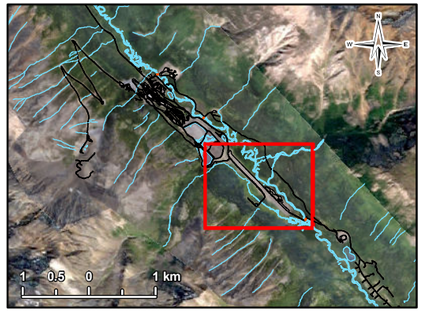


LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017 Rock Sample for ARD/ML
- 2017 Tailings Sample for ARD/ML

Acid Rock Drainage (ARD) Analytical Results

- Paste pH <7
- Paste pH >7
- Potentially Acid Generating (PAG)/Uncertain
- Non Acid Generating (NAG)
- Building
- Road
- Bridge
- Ditch
- Watercourse
- Contour (5 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 37
Airstrip
Acid Rock Drainage Results

PROJECTION UTM Zone 9		**DATUM** NAD83			**CLIENT** NORTH AMERICAN TUNGSTEN CORPORATION LTD
Scale: 1:5,000 — 100 50 0 100 Metres					TETRA TECH
FILE NO. WENW03039-03_Summary_A37-2.mxd					
OFFICE Tt-VANC	**DWN** SL	**CKD** BB	**APVD** SK	**REV** 0	A37-2
DATE June 22, 2020	**PROJECT NO.** ENW.WENW03039-03				

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Table A37-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	AREA 37		
				17A37TP1		17A37TP2
				17A37TP1-1	17A37TP1-2	17A37TP2-4
				0.25 m	1.0 m	3.0 m
				2017-09-18	2017-09-18	2017-09-19
Routine / Salinity						
pH	pH Units	6-8	NG	-	-	**8.18**
Moisture	%	NG	NG	11.2	7.5	8.56
Metals						
Antimony	mg/kg	20	NG	-	-	3.8
Arsenic	mg/kg	12	64	-	-	**25**
Barium	mg/kg	500	946	-	-	**2890**
Beryllium	mg/kg	4	NG	-	-	0.5
Cadmium	mg/kg	1.4	2.8	-	-	**2.54**
Chromium	mg/kg	64	NG	-	-	18
Cobalt	mg/kg	40	NG	-	-	12.7
Copper	mg/kg	63	NG	-	-	37.8
Lead	mg/kg	70	NG	-	-	17.9
Mercury	mg/kg	6.6	NG	-	-	0.07
Molybdenum	mg/kg	5	10	-	-	**5.4**
Nickel	mg/kg	45	72	-	-	**65**
Selenium	mg/kg	1	1.7	-	-	**2**
Silver	mg/kg	20	NG	-	-	<0.5
Thallium	mg/kg	1	NG	-	-	0.3
Tin	mg/kg	5	NG	-	-	<0.2
Uranium	mg/kg	23	NG	-	-	1.9
Vanadium	mg/kg	130	160	-	-	66
Zinc	mg/kg	200	462	-	-	**363**
Particle Size						
>75 µm	%	NG	NG	-	-	92
Grain Size	N/A	NG	NG			Coarse
Petroleum Hydrocarbons						
Benzene	mg/kg	0.03	NG	<0.005	<0.005	<0.005
Toluene	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.082	NG	<0.01	<0.01	<0.01
Xylenes (m & p)	mg/kg	NG	NG	-	-	-
Xylene (m)	mg/kg	NG	NG	<0.02	<0.02	<0.02
Xylene (o)	mg/kg	NG	NG	<0.02	<0.02	<0.02
Xylenes Total	mg/kg	0.1	NG	<0.05	<0.05	<0.05
Volatile Hydrocarbons (VH6-10)	mg/kg	NG	NG	-	-	-
F1 (C6-C10)	mg/kg	30	NG	<10	<10	<10
VPH C6-C10	mg/kg	NG	NG	-	-	-
F1 (C6-C10 / BTEX CORRECTED)	mg/kg	30	NG	<10	<10	<10
F2 (C10-C16)	mg/kg	150	NG	<20	<20	<20
F3 (C16-C34)	mg/kg	300	NG	<20	<20	<20
F4: (C34-C50)	mg/kg	2800	NG	<20	<20	<20
VPHs	mg/kg	NG	NG	-	-	-
Glycols						
Diethylene glycol	mg/kg	NG	NG	-	-	<10
Ethylene glycol	mg/kg	960	NG	-	-	<10
Propylene glycol	mg/kg	NG	NG	-	-	<10
Tetraethylene Glycol	mg/kg	NG	NG	-	-	<10
Triethylene Glycol	mg/kg	NG	NG	-	-	<10
Polycyclic Aromatic Hydrocarbons (PAHs)						
IACR (CCME)	mg/kg	1	NG	-	-	<0.6
B(a)P Total Potency Equivalent	mg/kg	0.6	NG	-	-	<0.05
2-methylnaphthalene	mg/kg	NG	NG	-	-	<0.005
Acenaphthene	mg/kg	NG	NG	-	-	<0.005
Acenaphthylene	mg/kg	NG	NG	-	-	<0.005
Anthracene	mg/kg	2.5	NG	-	-	<0.004
Benz(a)anthracene	mg/kg	0.1	NG	-	-	<0.03
Benzo(a) pyrene	mg/kg	0.1	NG	-	-	<0.03
Benzo(b)fluoranthene	mg/kg	0.1	NG	-	-	<0.05
Benzo(b+j)fluoranthene	mg/kg	NG	NG	-	-	<0.05
Benzo(e)pyrene	mg/kg	NG	NG	-	-	-
Benzo(g,h,i)perylene	mg/kg	NG	NG	-	-	<0.05
Benzo(k)fluoranthene	mg/kg	0.1	NG	-	-	<0.05
Chrysene	mg/kg	NG	NG	-	-	<0.05
Dibenz(a,h)anthracene	mg/kg	0.1	NG	-	-	<0.005
Fluoranthene	mg/kg	50	NG	-	-	<0.01
Fluorene	mg/kg	NG	NG	-	-	<0.02
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	NG	-	-	<0.02
Naphthalene	mg/kg	0.013	NG	-	-	<0.005
Phenanthrene	mg/kg	0.046	NG	-	-	<0.02
Pyrene	mg/kg	0.1	NG	-	-	<0.01
Benzo(j)fluoranthene	ug/g	NG	NG	-	-	<0.05

Table A37-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	AREA 37		
				17A37TP1		17A37TP2
				17A37TP1-1	17A37TP1-2	17A37TP2-4
				0.25 m	1.0 m	3.0 m
				2017-09-18	2017-09-18	2017-09-19
Volatile Organic Compounds (VOCs)						
Carbon	%	NG	NG	-	-	0.28
1-Methylnaphthalene	mg/kg	NG	NG	-	-	<0.005
Acetone	mg/kg	NG	NG	-	-	<0.5
Bromodichloromethane	mg/kg	NG	NG	-	-	<0.05
Bromoform	mg/kg	NG	NG	-	-	<0.05
Bromomethane	mg/kg	NG	NG	-	-	<0.05
2-Butanone	mg/kg	NG	NG	-	-	<0.5
Carbon tetrachloride	mg/kg	0.1	NG	-	-	<0.02
Chlorobenzene	mg/kg	0.1	NG	-	-	<0.05
Chloroethane	mg/kg	NG	NG	-	-	<0.05
Chloroform	mg/kg	0.1	NG	-	-	<0.05
Chloromethane	mg/kg	NG	NG	-	-	<0.05
Dibromochloromethane	mg/kg	NG	NG	-	-	<0.05
1,2-Dibromoethane	mg/kg	NG	NG	-	-	<0.05
1,2-Dichlorobenzene	mg/kg	0.1	NG	-	-	<0.05
1,3-Dichlorobenzene	mg/kg	0.1	NG	-	-	<0.05
1,4-Dichlorobenzene	mg/kg	0.1	NG	-	-	<0.05
1,1-Dichloroethane	mg/kg	0.1	NG	-	-	<0.05
1,2-Dichloroethane	mg/kg	0.1	NG	-	-	<0.05
1,1-Dichloroethene	mg/kg	0.1	NG	-	-	<0.05
1,2-Dichloroethene (cis)	mg/kg	0.1	NG	-	-	<0.05
1,2-Dichloroethene (trans)	mg/kg	0.1	NG	-	-	<0.05
1,2-Dichloropropane	mg/kg	0.1	NG	-	-	<0.05
1,3-Dichloropropene [cis]	mg/kg	NG	NG	-	-	<0.05
1,3-Dichloropropene [trans]	mg/kg	NG	NG	-	-	<0.05
Methyl t-Butyl Ether (MTBE)	mg/kg	NG	NG	-	-	<0.1
Methylene Chloride	mg/kg	0.1	NG	-	-	<0.05
4-Methyl-2-pentanone	mg/kg	NG	NG	-	-	<0.5
Styrene	mg/kg	0.1	NG	-	-	<0.05
1,1,1,2-Tetrachloroethane	mg/kg	NG	NG	-	-	<0.05
1,1,2,2-Tetrachloroethane	mg/kg	0.1	NG	-	-	<0.05
Tetrachloroethene	mg/kg	0.1	NG	-	-	<0.05
1,2,4-Trichlorobenzene	mg/kg	0.05	NG	-	-	<0.05
1,1,1-Trichloroethane	mg/kg	0.1	NG	-	-	<0.05
1,1,2-Trichloroethane	mg/kg	0.1	NG	-	-	<0.05
Trichloroethene	mg/kg	0.1	NG	-	-	<0.01
Trichlorofluoromethane	mg/kg	NG	NG	-	-	<0.05
Vinyl chloride	mg/kg	NG	NG	-	-	<0.05
Sample Code				8740305	8740313	8751548
Lab Report Number				17Y262746	17Y262746	17Y263896

Notes:

[1] - Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standards (CWS) for Petroleum Hydrocarbons (PHC) in Soil (CCME 2008)

[2] - Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG) - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME 1999)

[3] - Northwest Territories Environmental Guideline for Contaminated Site Remediation (NWT CSR 2003)

[4] - Preliminary Background Concentration

Italic - Laboratory detection limit is greater one or more referenced guidelines

NG - No guideline

Shaded - Exceeds most stringent CCME CEQG or CWS PHC land-use guideline value

Bold - Exceeds most stringent NWT CSR land-use guideline value

Bold and Shaded - Exceeds most stringent CCME CEQC or CWS PHC land-use guideline value, and exceeds most stringent NWT CSR land-use guideline value

Red - Exceeds Preliminary Background Concentration

N/A - Not applicable

Blank - Not analyzed

North American Tungsten Corporation Ltd.

Testpit No: 17A37TP1

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	Ground Elev: 1107.642 m
Tungsten, Northwest Territories	UTM: 542160.651 E; 6869351.044 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Elevation (m)
0	Excavated	SAND (FILL) - gravelly, some silt, trace cobbles, damp, dense, brown, trace oxides		1-1				1107
		- some cobbles, reddish brown						
		SAND - gravelly, trace silt, damp, dense, coarse sand						
1		- trace cobbles, trace boulders		1-2				1106
		GRAVEL - sandy, trace to some cobbles, damp, dense, brown						
2				1-3				1105
				1-4				
3		END OF TESTPIT (3.0 metres) Note: Backfilled at completion						1104
4								
								1103
5								

TETRA TECH

Contractor: NATC	Completion Depth: 3 m
Drilling Rig Type: Rubber Tire backhoe	Start Date: 2017 September 18
Logged By: NH	Completion Date: 2017 September 18
Reviewed By: JW	Page 1 of 1

North American Tungsten Corporation Ltd.

Testpit No: **17A37TP2**

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	Ground Elev: 1107.458 m
Tungsten, Northwest Territories	UTM: 542159.661 E; 6869368.356 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Elevation (m)
0	Excavated	SILT (FILL) - sandy, some gravel, trace rootlets, damp, firm, brown, (100 mm thick)						
		SAND - gravelly, some silt, some cobbles, damp, dense, reddish brown, (300 mm thick)		2-1				
		GRAVEL - some sand, some cobbles, damp to moist, loose, brown						1107
1		- cobbly		2-2				
								1106
2				2-3				
		SAND (GLACIOFLUVIAL) - some gravel, some cobbles, trace silt, damp to moist, loose, brown, coarse sand						1105
3				2-4		8% particles <75 µm (ie. smaller than sand particle)		
		END OF TESTPIT (3.0 metres) Note: Backfilled at completion						1104
4								
								1103
5								

TETRA TECH

Contractor: NATC	Completion Depth: 3 m
Drilling Rig Type: Rubber Tire backhoe	Start Date: 2017 September 19
Logged By: NH	Completion Date: 2017 September 19
Reviewed By: JW	Page 1 of 1

Photo 1: Airstrip. Looking northwest toward mine site. (October 1, 2017)

Photo 2: Typical mixed material in airstrip including crushed waste rock and fill. Minor oxidation alteration and weathering of select fragments is noted. (October 1, 2017)

Photo 3: Sample 17A37-01 on edge of airstrip.
(October 1, 2017)

Photo 4: Airstrip fueling area visible on the right. Photo provided by NATC.
(August 13, 2013)

AREA 45

AREA 45: Former PCB Storage Area – Tailings Pond 4

Area Description		
Location	Beneath Tailings Pond 4.	
Topography	Generally flat.	
Surface Drainage	Variable based on Tailings Pond surface grades.	
Background	It was reported that shed with potential polychlorinated biphenyls (PCB)-containing equipment was located in this area prior to construction of Tailings Pond 4. Location was taken off historical drawings and photographs.	
Historical Assessment Information		
Phase II Environmental Site Assessment (EBA 2008)	Number of test pits	0
	Number of surface soil samples	0
	Number of soil samples analyzed	0
	Number of soil samples with petroleum hydrocarbon impacts	0
	Number of soil samples with metal impacts	0
Comments: Not previously assessed		
2017 Environmental Site Assessment Details		
Environmental Site Assessment Scope		
Utility Locate SOP followed?		Yes
EM 31 Geophysics Completed?		No
Number of test pits advanced		0
Number of boreholes advanced		1
Number of hand auger locations advanced		0
Number of soil samples submitted for laboratory chemical analysis		1
Number of boreholes completed as groundwater monitoring wells		0
Number of historical groundwater monitoring wells		0
Number of groundwater samples collected		N/A
Number of sediment and surface soil samples collected		N/A
Geophysics Findings		
N/A		
Soil Investigation and Conditions		
Maximum Depth of Investigation	21.60 mbgs (September 29, 2017)	
General Stratigraphy		

Description	Depth from (mbgs)	Depth to (mbgs)	Observations
Sand	0	20.7	Tailings
Sand	20.7	21.3	Native soil
Bedrock	21.3	21.6	-

Combustible Vapour Concentrations (CVC)
Less than instrument detection limit.

AREA 45: Former PCB Storage Area – Tailings Pond 4

Groundwater Conditions	
Depth to Groundwater	N/A
Free Product	N/A

2017 Environmental Site Assessment Results Summary

- Figure A45-1 shows borehole locations.
- Table A45-1 summarizes soil chemical results relative to guidelines.

General Site Observations

- No PCB- containing equipment or other chemical storage was observed at AEC.
- No obvious signs of PCB impacts were observed.

Soil: Petroleum Hydrocarbons (PHCs)

- N/A

Soil: Metals

- Sample from native material below Tailings Pond 4 exceeded CCME CEQGs for arsenic, barium, cadmium, molybdenum, selenium, and zinc.
- Barium concentrations also exceeded preliminary background concentration.
- Copper concentration below CCME CEQG.

Soil: Other PCOCs (PCBs)

- Laboratory results less than detection limits and guidelines.

Soil: Routine (pH)

- Laboratory results outside guidelines.

Groundwater: Petroleum Hydrocarbons

- N/A

Groundwater: Metals/Routine Parameters

- N/A

Groundwater: Other PCOCs

- N/A

Sediment: Petroleum Hydrocarbons

- N/A

Sediment: Metals

- N/A

Sediment: Other PCOCs

- N/A

Surface Water: Petroleum Hydrocarbons

- N/A

Surface Water: Metals/Nutrients

- N/A

Surface Water: Other PCOCs

- N/A

Grainsize Analysis

- N/A

Potential Environmental Concerns

Location in AEC	Potential Source(s)	Identified Contaminated Media	Parameters Assessed and Contaminant(s) of Concern (COCs; bold & underline)
Centre of Tailings Pond 4	Leaks or releases of PCBs from PCB-containing equipment	Soil	**Soil: <u>Metals</u>**, PCBs

AREA 45: Former PCB Storage Area – Tailings Pond 4

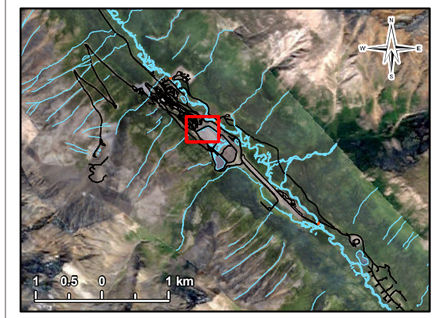
Discussion (Significance of Results)
Soils: ▪ Based on assessment results, there is no evidence of environmental impacts associated with historical PCB storage. ▪ Elevated metals concentrations above CCME CEQGs and proposed background are similar to other areas of Cantung Mine site and unlikely to be related to Former PCB Storage Area.
Attachments
Figure A45-1 – Soil and Sediment Results Figure A45-2 – Groundwater Contours Table A45-1 – Soil Analytical Results Borehole Logs Photographs

LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017 Monitoring Well (MW)
- 2017 Borehole (BH)
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well
- Historical Shallow Soil Sample
- Historical Surface Water Sample

Soil/Sediment Analytical Results

- PHC Impacts
- No PHC Impact
- Metals exceedance of preliminary background concentrations, or in the absence of background concentrations, exceedance of CCME guidelines
- Building
- Road
- Bridge
- Ditch
- Watercourse
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 45
Former PCB Storage Shed at TP4
Soil and Sediment Results

PROJECTION	DATUM	CLIENT
UTM Zone 9	NAD83	NORTH AMERICAN TUNGSTEN CORPORATION LTD

Scale: 1:1,500
20 10 0 20
Metres

TETRA TECH

FILE NO. WENW03039-03_Summary_A45-1.mxd

OFFICE	DWN	CKD	APVD	REV
Tt-VANC	SL	BB	BB	0

DATE June 22, 2020
PROJECT NO. ENW.WENW03039-03

A45-1

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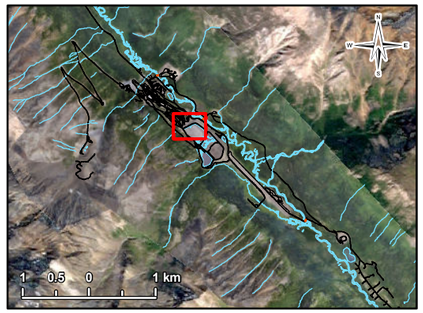
LEGEND

- Area of Environmental Concern (AEC)
- Area
- 2017 Monitoring Well (MW)
- 2017 Borehole (BH)
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well
- Historical Shallow Soil Sample
- Historical Surface Water Sample
- Inferred Groundwater Flow Direction
- Groundwater Contour (5 m asl; Fall 2017)

2017/2018 Groundwater Analytical Results

- Samples contain parameters that exceeded the preliminary background concentrations, or in the absence of background concentrations, FIGWQG
- Building
- Road
- Bridge
- Ditch
- Watercourse
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

Area 45
Former PCB Storage Shed at TP4
Groundwater and Surface Water Results

PROJECTION: UTM Zone 9	DATUM: NAD83			CLIENT: North American Tungsten Corporation Ltd.
Scale: 1:1,500 (20 10 0 20 Metres)				TETRA TECH
FILE NO.: WENW03039-03_Summary_A45-2.mxd				
OFFICE: Tt-VANC	DWN: SL	CKD: BB	APVD: SS	REV: 0
DATE: June 22, 2020	PROJECT NO.: ENW.WENW03039-03			A45-2

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Table A45-1: Soil Analytical Results

Parameter	Unit	Most Stringent of Referenced Guidelines[1,2,3]	Preliminary Background Concentration[4]	AREA 45
				17A45BH1
				17A45BH1-1
				20.7 m
				2017-09-29
Routine / Salinity				
pH	pH Units	6-8	NG	**8.32**
Moisture	%	NG	NG	-
Metals				
Antimony	mg/kg	20	NG	3.2
Arsenic	mg/kg	12	64	**14.4**
Barium	mg/kg	500	946	**1840**
Beryllium	mg/kg	4	NG	0.4
Cadmium	mg/kg	1.4	2.8	**2.03**
Chromium	mg/kg	64	NG	19
Cobalt	mg/kg	40	NG	9.5
Copper	mg/kg	63	NG	48.2
Lead	mg/kg	70	NG	11.4
Mercury	mg/kg	6.6	NG	0.21
Molybdenum	mg/kg	5	10	**6.9**
Nickel	mg/kg	45	72	42.2
Selenium	mg/kg	1	1.7	**1.2**
Silver	mg/kg	20	NG	<0.5
Thallium	mg/kg	1	NG	0.6
Tin	mg/kg	5	NG	0.3
Uranium	mg/kg	23	NG	1.6
Vanadium	mg/kg	130	160	64
Zinc	mg/kg	200	462	**215**
Polychlorinated Biphenyls (PCBs)				
Aroclor 1242	mg/kg	NG	NG	<0.05
Aroclor 1254	mg/kg	NG	NG	<0.05
Aroclor 1260	mg/kg	NG	NG	<0.05
Aroclor 1262	mg/kg	NG	NG	-
PCBs (Sum of total)	mg/kg	0.5	NG	<0.05
Sample Code				8799462
Lab Report Number				17V269663

Notes:

[1] - Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standards (CWS) for Petroleum Hydrocarbons (PHC) in Soil (CCME 2008)

[2] - Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG) - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME 1999)

[3] - Northwest Territories Environmental Guideline for Contaminated Site Remediation (NWT CSR 2003)

[4] - Preliminary Background Concentration

Italic - Laboratory detection limit is greater one or more referenced guidelines

NG - No guideline

Shaded - Exceeds most stringent CCME CEQG or CWS PHC land-use guideline value

Bold - Exceeds most stringent NWT CSR land-use guideline value

Bold and Shaded - Exceeds most stringent CCME CEQC or CWS PHC land-use guideline value, and exceeds most stringent NWT CSR land-use guideline value

Red - Exceeds Preliminary Background Concentration

N/A - Not applicable

Blank - Not analyzed

North American Tungsten Corporation Ltd.

Borehole No: 17A45BH1

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	Ground Elev: 1144.61 m
Tungsten, Northwest Territories	UTM: 540873.253 E; 6870372.935 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Elevation (m)
0		SAND (TAILINGS) - trace silt, damp, loose, grey						1144
1								1143
2								1142
3								1141
4								1140
5								1139
6								1138
7	Sonic							1137
8								1136
9								1135
10								1134
11								1133
12								1132
13								1131
14								1130
15								

TETRA TECH

Contractor: Boart Longyear	Completion Depth: 21.6 m
Drilling Rig Type: Track Mounted	Start Date: 2017 September 29
Logged By: MH	Completion Date: 2017 September 29
Reviewed By: JW	Page 1 of 2

North American Tungsten Corporation Ltd.

Borehole No: 17A45BH1

Project: Phase III Environmental Site Assessment	Project No: ENW.WENW03039-02 Task 002.2.2.6
Location: Cantung Mine	Ground Elev: 1144.61 m
Tungsten, Northwest Territories	UTM: 540873.253 E; 6870372.935 N; Z 9

Depth (m)	Method	Soil Description	Sample Type	Sample Number	Vapour readings (ppmv) 50 100 150 200	Notes and Comments	Backfill	Elevation (m)
15								
16	Sonic							1129
17								1128
18								1127
19								1126
20								1125
21		SAND - gravelly, some silt, damp, brown, fine to medium sand		1-1				1124
		BEDROCK - weathered, pulverized rock, granitic diorite						1123
22		END OF BOREHOLE (21.60 metres) Note: Backfilled at completion						1122
23								1121
24								1120
25								1119
26								1118
27								1117
28								1116
29								1115
30								

TETRA TECH

Contractor: Boart Longyear	Completion Depth: 21.6 m
Drilling Rig Type: Track Mounted	Start Date: 2017 September 29
Logged By: MH	Completion Date: 2017 September 29
Reviewed By: JW	Page 2 of 2

Photo 1: Panorama of TP4. Former PCB storage area. (September 9, 2017)

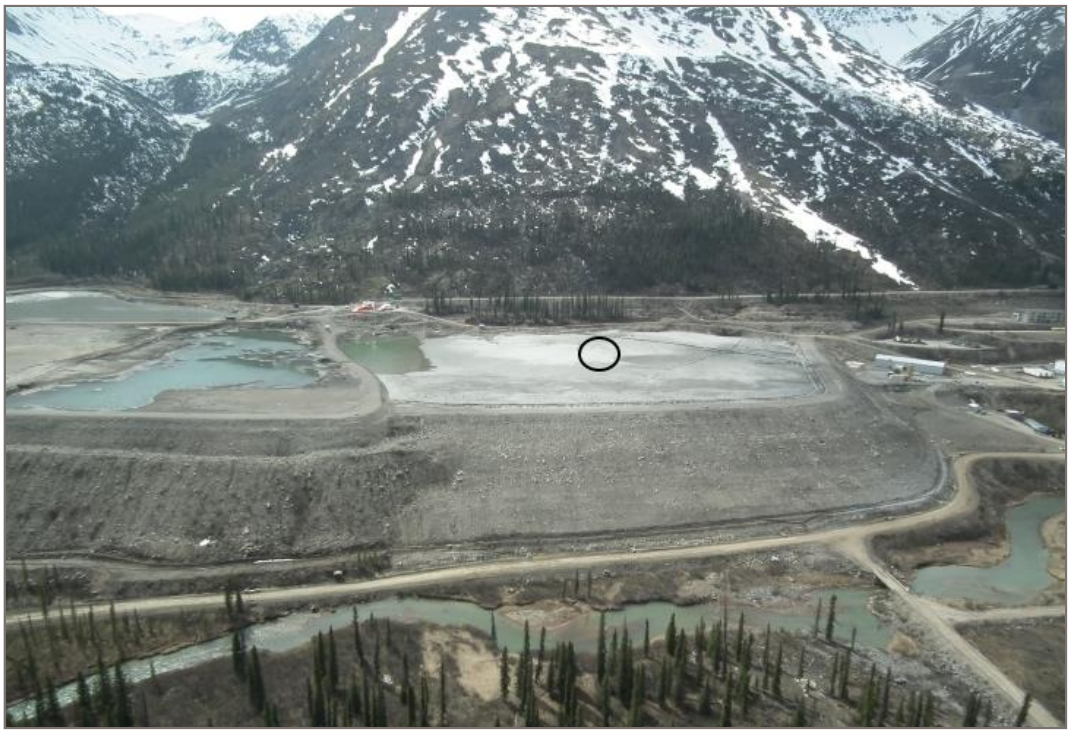


Photo 2: Facing west towards TP4. Circled area indicated approximate location of former PCB storage area. Photo provided by NATC (May 29, 2014).

APPENDIX B

SUMMARY OF PETROLEUM HYDROCARBON CONTAMINATED AREAS

B1.0 PETROLEUM HYDROCARBON CONTAMINATED ZONES

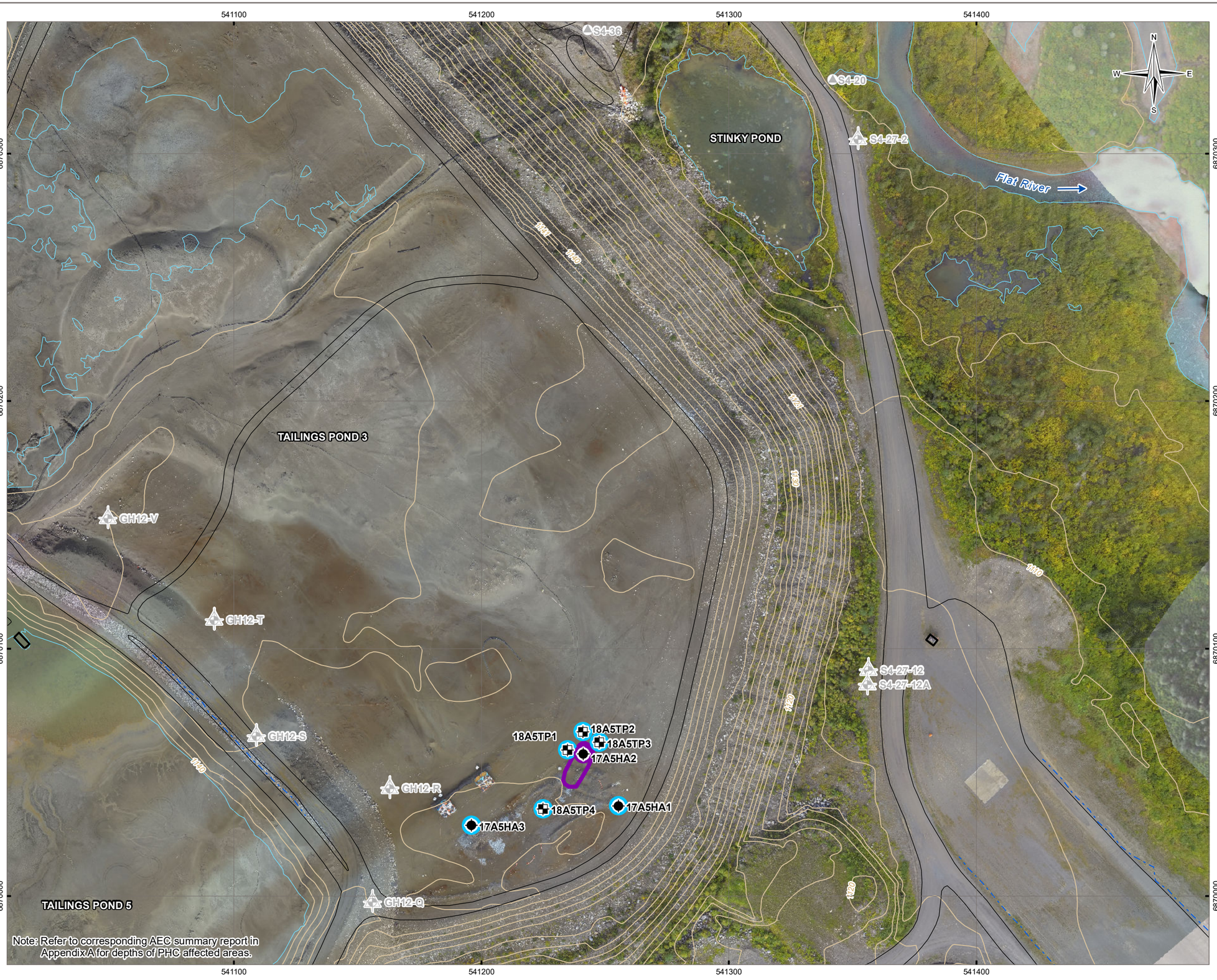
Nine PHC-contaminated zones with F2 to F4 concentrations greater than the management limits were delineated (Areas A through I) and are shown on Figures B1 to B9. Methods and assumptions used in these delineations are presented below. Separate zone letters were used rather than AEC numbers, since many contaminated areas spanned AEC boundaries. A summary of delineated areas, calculated volumes, and estimated percent delineation completed is presented in Table B-1.

B1.1 Petroleum Hydrocarbon Contaminated Extents Methods

- PHC affected areas are comprised of locations where soil samples contain one or more of PHC fractions F2 to F4 concentrations greater than the management limits.
- The horizontal extents of PHC impacts were estimated by:
  - Extrapolating a limit between assessment locations with PHC concentrations greater than the management limits and assessment locations with PHC concentrations less than the management limits; or
  - Determining an inferred limit based on historical land use, typical behaviour of PHC impacts in coarse grained soils, and professional judgement.
- The vertical extents of impacts were estimated by:
  - Applying the maximum depth interval of impacts if delineation was achieved at depths less than 1 m in an affected area; or
  - Applied a depth of 1 m, if impacts were not delineated or management limit exceedances extended beyond 1 m, because PHC contamination in soil is only a potential concern if the contamination occurs near surface (to depth of 1 m) based on the results of the current risk assessment.
- Unless otherwise shown in Figures B1 to B9, we have assumed that PHC impacts do not extend beneath building footprints.
- The volume of PHC affected soil was calculated by multiplying the PHC affected area shown in Figures B1 to B9 by the vertical extents of impacts estimated at the coinciding affected area.
- Percent delineated was calculated by the ratio of vertical and horizontal extents confirmed out of five potential limits (i.e., four sides and the base).

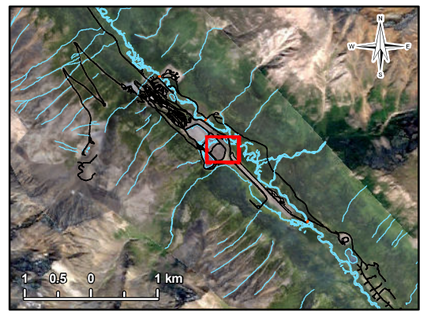
Table B1 - Summary of Petroleum Hydrocarbon Management Limit Exceedance Volumes

PHC Delineation Zone	Figure Reference Number	PHC Affected Area Location Description	CCME Management Limits			
			Estimated Extent Delineated (%)	Estimated Depth of Impact (m)	Estimated Area of Impact (m^2)	Estimated Volume of PHC Contaminated (m^3)
A	Figure B1	Affected area northeast of stockpile (17A5HA2)	80	0.5	121	61
					Subtotal	61
B	Figure B2	Affected area southeast of the Power House (APEC11-1, TP2)	100	1.0	30	30
		Affected area south of Power House (APEC11-7)	80	0.5	73	37
		Affected area south of Carpenters Shop (APEC11-8)	80	0.5	54	27
		Affected area east of Tungsten Concentrate Storage building (17A31HA2, 18A31TP8)	80	1.0	164	164
		Affected area south of Tungsten Concentrate Storage building (18A31TP9, APEC11A-W, APEC11A-1B, APEC11A-N, APEC11A-E and APEC11-2)	80	1.0	342	342
		Affected area east and south of Old Fuel Tank Farm (TP3, TP4, 17A14TP1, 17A14TP2, 17A14TP4, 17A14TP11, APEC11-4, 18A14TP21 to 18A14TP24.)	80	1.0	1296	1,296
		Affected area west of Old Fuel Tank Farm (OTF1, OTF2, 17A14TP9, 18A14TP15, 18A14TP17)	80	1.0	237	237
		Affected area north of Old Fuel Tank Farm (OTF (0,25), TP5)	100	1.0	45	45
		Affected area north of Former Fuel Tank Farm (OTF (0,10))	100	1.0	17	17
					Subtotal	2,195
C	Figure B3	Affected area northwest of Heavy Duty Maintenance Shop building (T17A30BTP1)	80	1.0	82	82
		Affected area north of Heavy Duty Maintenance Shop building (TP9, 17A16TP1)	80	1.0	135	135
		Affected area northeast of Heavy Duty Maintenance Shop building (TP11, APEC16-2, 18A16TP13, 18A16TP15)	80	1.0	335	335
		Affected area east of Heavy Duty Maintenance Shop building (TP6, 17A16TP6, 18A16TP17)	80	1.0	165	165
					Subtotal	717
D	Figure B4	Affected area east of Compressor Building/Backfill Plant (APEC17-1, APEC17-8, APEC17-9, 17A17TP3, 17A17BH4, 18A17TP11)	100	1.0	438	438
		Affected area southwest and west of Compressor Building/Backfill Plant (APEC17-2 to APEC17-7, APEC17-11, APEC 27-5, APEC27-6, 17A17BH1, 18A17TP17 - 18A17TP19, 18A17TP21)	80	1.0	740	740
		Affected area north of Compressor Building/Backfill Plant (APEC17-10)	100	1.0	55	55
					Subtotal	1,233
E	Figure B5	Affected area Upper Scrap area (Former Boneyard)-(17A21TP4)	100	1.0	49	49
					Subtotal	49
F	Figure B6	Affected area South and West of Diesel Transfer Station (APEC23-1,2,3,4,7,8,N,E,S, TP13A, 17A23TP1, 18A23TP6 to 18A23TP9)	80	1.0	307	307
					Subtotal	307
G	Figure B7	Affected area at Portal Fueling Tank (17A43TP2)	100	1.0	66	66
					Subtotal	66
H	Figure B8	Affected area at Drum Storage Area (17A50HA2)	80	0.5	37	19
					Subtotal	19
I	Figure B9	Impacted soil at residence #79 (17A6TP16)	100	1.0	41	41
					Subtotal	41
					TOTAL ESTIMATED VOLUME	**4,687**



LEGEND

- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well
- Historical Surface Water Sample
- PHC concentrations less than management limits within 1 m of surface
- PHC management exceedances within 1 m of surface
- Estimated PHC Affected Area (Management Limits)
- Building
- Road
- Ditch
- Watercourse
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

PHC Delineation Zone A Showing Management Limit Exceedances (AEC 5)

PROJECTION	DATUM	CLIENT
UTM Zone 9	NAD83	NORTH AMERICAN TUNGSTEN CORPORATION LTD

Scale: 1:1,500
20 10 0 20
Metres

TETRA TECH

FILE NO.				
WENW03039-03_B1_PHC_05.mxd				
OFFICE	**DWN**	**CKD**	**APVD**	**REV**
Tt-VANC	SL	BB	BB	0
DATE	**PROJECT NO.**			
OCTOBER 2020	ENW.WENW03039-03			

Figure B1

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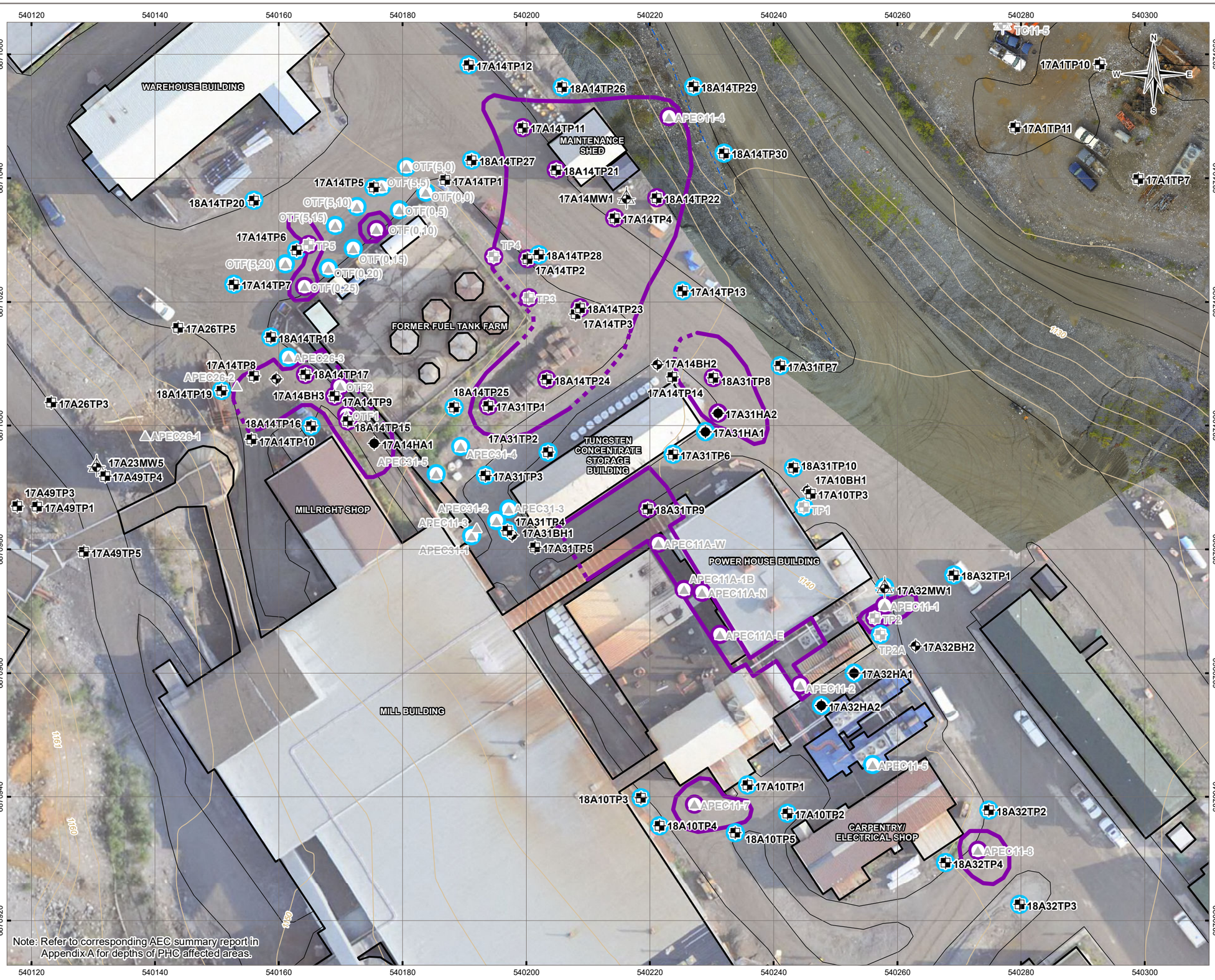

Note: Refer to corresponding AEC summary report in Appendix A for depths of PHC affected areas.

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LEGEND

- 2017 Monitoring Well (MW)
- 2017 Borehole (BH)
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well
- Historical Testpit
- Historical Shallow Soil Sample
- PHC concentrations less than management limits within 1 m of surface
- PHC management exceedances within 1 m of surface
- Estimated PHC Affected Area (Management Limits)
- Inferred PHC Extent (requires further assessment) (Management Limits)
- Building
- Road
- Ditch
- Contour (2 m)

NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

PHC Delineation Zone B
Showing Management Limit Exceedances
(AEC 10, AEC 14, AEC 31, and AEC 32)

PROJECTION	DATUM	CLIENT
UTM Zone 9	NAD83	NORTH AMERICAN TUNGSTEN CORPORATION LTD

Scale: 1:600
10 5 0 10
Metres

TETRA TECH

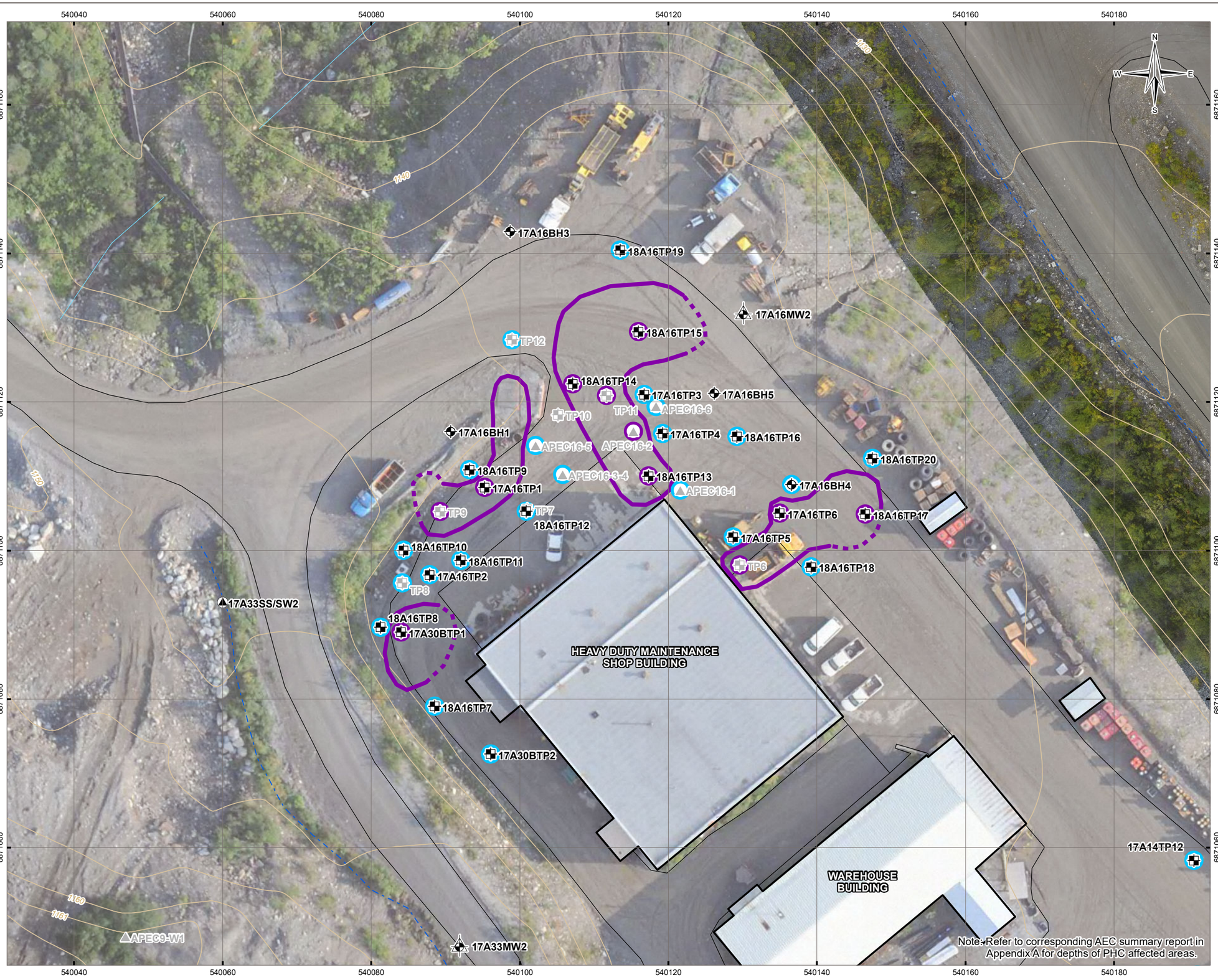
FILE NO.
WENW03039-03_B2_PHC_10_14_31_32.mxd

OFFICE	DWN	CKD	APVD	REV
Tt-VANC	SL	BB	BB	0

DATE
OCTOBER 2020

PROJECT NO.
ENW.WENW03039-03

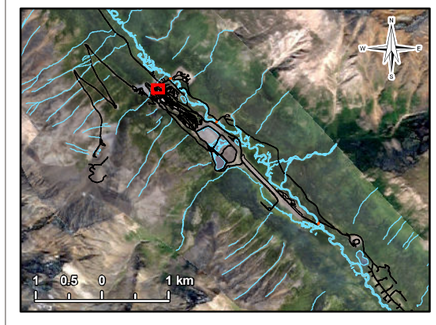
Figure B2



Note: Refer to corresponding AEC summary report in Appendix A for depths of PHC affected areas.

LEGEND

- 2017 Monitoring Well (MW)
- 2017 Borehole (BH)
- 2017/2018 Testpit (TP)
- 2017 Surface Water/Sediment Sample (SW/SS)
- Historical Testpit
- Historical Shallow Soil Sample
- PHC concentrations less than management limits within 1 m of surface
- PHC management exceedances within 1 m of surface
- Estimated PHC Affected Area (Management Limits)
- Inferred PHC Extent (requires further assessment) (Management Limits)
- Building
- Road
- Ditch
- Watercourse
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

PHC Delineation Zone C
Showing Management Limit Exceedances
(AEC 16 and AEC 30B)

PROJECTION UTM Zone 9	**DATUM** NAD83	**CLIENT** NORTH AMERICAN TUNGSTEN CORPORATION LTD
Scale: 1:500 — 10 5 0 10 — Metres		TETRA TECH
FILE NO. WENW03039-03_B3_PHC_16_30B.mxd		
OFFICE Tt-VANC	**DWN** SL / **CKD** BB / **APVD** BB / **REV** 0	**Figure B3**
DATE OCTOBER 2020	**PROJECT NO.** ENW.WENW03039-03	

Q:\Vancouver\GIS\ENVIRONMENTAL\WENW\WENW03039-03\Maps\PhaseII_ESA_v3\AppendixB\WENW03039-03_B3_PHC_16_30B.mxd modified 4/9/2019 by stephanie.leusink

539800 539820 539840 539860 539880 539900 539920

6871080 6871060 6871040 6871020 6871000

17A43TP2 18A43TP4 17A43BH1 17A43HA2 17A43HA1 17A43TP3 17A43HA4 17A43HA3 17A27TP4 ELECTRICAL COMPOUND 17A27TP5 17A27TP6 18A27TP8 APEC17-10 17A27TP7 18A17TP20 APEC27-7 17A27TP1 APEC27-3 17A27TP2 18A17TP11 17A17TP1 APEC17-9 17A17TP2 18A17TP8 17A27TP3 17A27BH1 APEC27-2 APEC27-6 COMPRESSOR BUILDING/ BACKFILL PLANT APEC17-8 17A17MW2 18A17TP22 17A17BH4 17A17BH3 17A17TP4 18A17TP12 18A17TP9 17A17TP7 APEC27-1 APEC27-5 S4-13 S4-13 SAMPLING SHED 18A17TP17 17A17BH1 17A17TP6 17A17TP3 APEC17-1 18A17TP15 18A17TP16 18A17TP18 17A17TP5 APEC27-4 18A17TP10 18A17TP23 MAIN PORTAL APEC17-7 18A17TP13 APEC17-11 APEC17-6 APEC17-4 APEC17-2 17A17HA2 APEC17-3.5 18A17TP19 17A17HA1 17A17HA3 18A17TP14 18A17TP21 FORMER BULK FUEL STORAGE

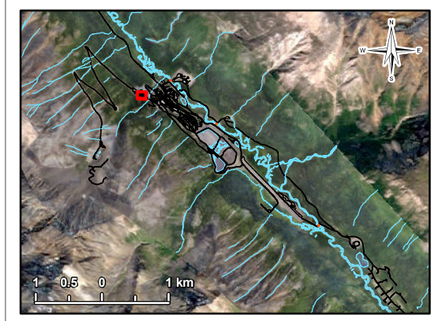
1190 1200 1210

N W E S

Note: Refer to corresponding AEC summary report in Appendix A for depths of PHC affected areas.

LEGEND

- 2017 Monitoring Well (MW)
- 2017 Borehole (BH)
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- Historical Shallow Soil Sample
- Historical Surface Water Sample
- PHC concentrations less than management limits within 1 m of surface
- PHC management exceedances within 1 m of surface
- Estimated PHC Affected Area (Management Limits)
- Inferred PHC Extent (requires further assessment) (Management Limits)
- Building
- Road
- Ditch
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

PHC Delineation Zone D Showing Management Limit Exceedances (AEC 17 and AEC 27)

PROJECTION	DATUM	CLIENT
UTM Zone 9	NAD83	NORTH AMERICAN TUNGSTEN CORPORATION LTD

Scale: 1:400
5 2.5 0 5
Metres

TETRA TECH

FILE NO.
WENW03039-03_B4_PHC_17_27.mxd

OFFICE	DWN	CKD	APVD	REV
Tt-VANC	SL	BB	BB	0

DATE
OCTOBER 2020

PROJECT NO.
ENW.WENW03039-03

Figure B4

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Note: Refer to corresponding AEC summary report in Appendix A for depths of PHC affected areas.

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LEGEND

- 2017 Borehole (BH)
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- 2017 Surface Water/Sediment Sample (SW/SS)
- Historical Shallow Soil Sample
- Historical Surface Water Sample
- PHC concentrations less than management limits within 1 m of surface
- PHC management exceedances within 1 m of surface
- Estimated PHC Affected Area (Management Limits)
- Building
- Road
- Ditch
- Watercourse
- Contour (2 m)

NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

PHC Delineation Zone E Showing Management Limit Exceedances (AEC 21)

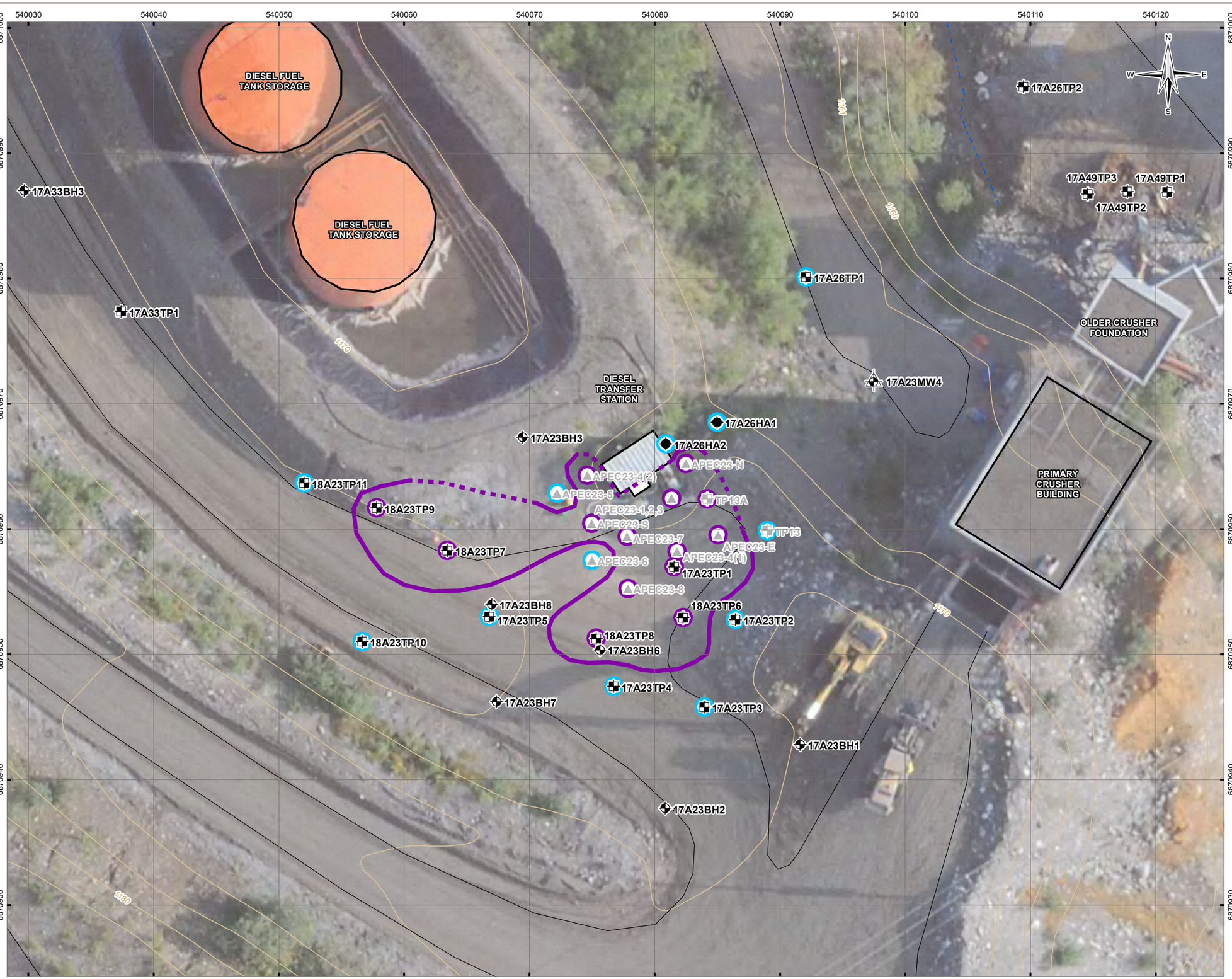
PROJECTION	DATUM	CLIENT
UTM Zone 9	NAD83	NORTH AMERICAN TUNGSTEN CORPORATION LTD

Scale: 1:800
10 5 0 10
Metres

TETRA TECH

FILE NO.				
WENW03039-03_B5_PHC_21.mxd				
OFFICE	**DWN**	**CKD**	**APVD**	**REV**
Tt-VANC	SL	BB	BB	0
DATE	**PROJECT NO.**			
OCTOBER 2020	ENW.WENW03039-03			

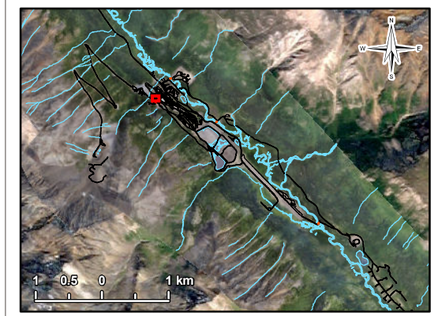
Figure B5



Q:\Vancouver\GIS\ENVIRONMENTAL\WENW\WENW03039-03\Maps\PhaseIII_ESA_v3\AppendixB\WENW03039-03_B6_PHC_23.mxd modified 4/9/2019 by stephanie.leusink

LEGEND

- 2017 Monitoring Well (MW)
- 2017 Borehole (BH)
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- Historical Testpit
- Historical Shallow Soil Sample
- PHC concentrations less than management limits within 1 m of surface
- PHC management exceedances within 1 m of surface
- Estimated PHC Affected Area (Management Limits)
- Inferred PHC Extent (requires further assessment) (Management Limits)
- Building
- Road
- Ditch
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

PHC Delineation Zone F Showing Management Limit Exceedances (AEC 23)

PROJECTION	DATUM	CLIENT
UTM Zone 9	NAD83	NORTH AMERICAN TUNGSTEN CORPORATION LTD

Scale: 1:300
5 2.5 0 5
Metres

TETRA TECH

FILE NO.				
WENW03039-03_B6_PHC_23.mxd				
OFFICE	**DWN**	**CKD**	**APVD**	**REV**
Tt-VANC	SL	BB	BB	0
DATE	**PROJECT NO.**			
OCTOBER 2020	ENW.WENW03039-03			

Figure B6

539780 539800 539820 539840 539860 539880 539900 539920

6871140 6871120 6871100 6871080 6871060 6871040

1190 1180 1170 1160 1150

EXISTING MINE WASTE ROCK

17A13MW1

PORTAL FUELING TANK

18A43TP5 17A43TP1 17A43TP2 18A43TP4 17A43BH1 17A43HA2 17A43HA1 17A43TP3 17A43HA4 17A43HA3

MINE DRY

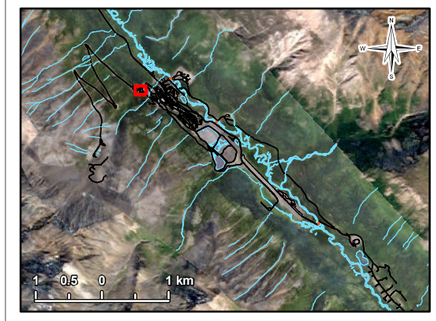
ELECTRICAL COMPOUND

17A27TP4 17A27TP5 17A27TP6 17A27TP7 18A17TP20 18A27TP8 APEC17-10 18A17TP11 17A17TP1 APEC27-7 APEC17-9 17A27TP1 APEC27-3 17A27TP2 17A17TP2 18A17TP8 17A27BH1 17A27TP3 17A17MW2 18A17TP22 APEC27-2 APEC27-6 APEC17-8 17A17BH4 COMPRESSOR BUILDING/ BACKFILL PLANT 17A17TP4 18A17TP12 18A17TP9 17A17TP7 17A17BH3 17A17TP3 APEC27-1 APEC27-5 APEC17-1 S4-13 SAMPLING SHED 17A17BH1 18A17TP15 17A17TP6 17A17TP5 18A17TP17 18A17TP18 18A17TP10 MAIN PORTAL APEC27-4 18A17TP16 APEC17-7 18A17TP13 18A17TP23

Note: Refer to corresponding AEC summary report in Appendix A for depths of PHC affected areas.

LEGEND

- 2017 Monitoring Well (MW)
- 2017 Borehole (BH)
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- Historical Shallow Soil Sample
- Historical Surface Water Sample
- PHC concentrations less than management limits within 1 m of surface
- PHC management exceedances within 1 m of surface
- Estimated PHC Affected Area (Management Limits)
- Building
- Road
- Ditch
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE PHASE III ESA

PHC Delineation Zone G Showing Management Limit Exceedances (AEC 43)

PROJECTION: UTM Zone 9	DATUM: NAD83	CLIENT: NORTH AMERICAN TUNGSTEN CORPORATION LTD	
Scale: 1:500 (10 5 0 10 Metres)			
FILE NO.: WENW03039-03_B7_PHC_43.mxd		TETRA TECH	
OFFICE: Tt-VANC	DWN: SL / CKD: BB / APVD: BB / REV: 0		Figure B7
DATE: OCTOBER 2020	PROJECT NO.: ENW.WENW03039-03		

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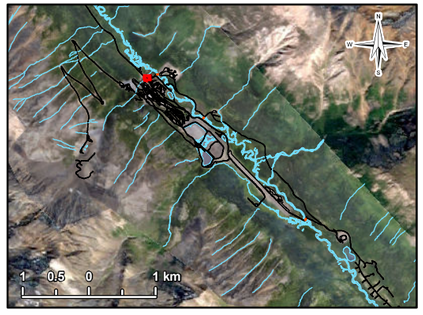
LEGEND

- 2017 Borehole (BH)
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- 2017 Surface Water/Sediment Sample (SW/SS)
- Historical Shallow Soil Sample
- Historical Surface Water Sample
- PHC concentrations less than management limits within 1 m of surface
- PHC management exceedances within 1 m of surface
- Estimated PHC Affected Area (Management Limits)
- Road
- Ditch
- Watercourse
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

PHC Delineation Zone H
Showing Management Limit Exceedances (AEC 50)

PROJECTION	DATUM	CLIENT
UTM Zone 9	NAD83	NORTH AMERICAN TUNGSTEN CORPORATION LTD

Scale: 1:250
5 2.5 0 5
Metres

TETRA TECH

FILE NO.
WENW03039-03_B8_PHC_50.mxd

OFFICE	DWN	CKD	APVD	REV
Tt-VANC	SL	BB	BB	0

DATE
OCTOBER 2020

PROJECT NO.
ENW.WENW03039-03

Figure B8

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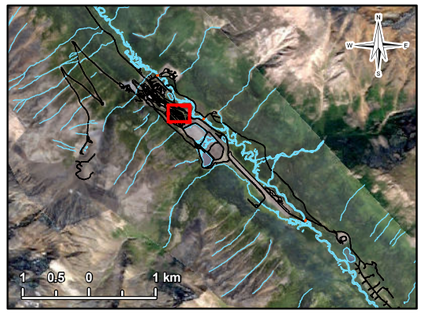
LEGEND

- 2017 Borehole (BH)
- 2017 Hand Auger (HA)
- 2017/2018 Testpit (TP)
- Historical Monitoring Well
- PHC concentrations less than management limits within 1 m of surface
- PHC management exceedances within 1 m of surface
- Estimated PHC Affected Area (Management Limits)
- Building
- Road
- Ditch
- Contour (2 m)



NOTES
All locations and area boundaries are approximate.
Base data source:
Data provided by INAC (2013).
Drone imagery at the borrow pit, tailings ponds, and interceptor ditch collected in 2018.

STATUS
ISSUED FOR USE

CANTUNG MINE
PHASE III ESA

PHC Delineation Zone I Showing Management Limit Exceedances (AEC 6)

PROJECTION UTM Zone 9	**DATUM** NAD83	**CLIENT** NORTH AMERICAN TUNGSTEN CORPORATION LTD	
Scale: 1:1,000 (20 10 0 20 Metres)		TETRA TECH	
FILE NO. WENW03039-03_B9_PHC_06.mxd			
OFFICE Tt-VANC	**DWN** SL / **CKD** BB / **APVD** BB / **REV** 0		**Figure B9**
DATE OCTOBER 2020	**PROJECT NO.** ENV.WENW03039-03		