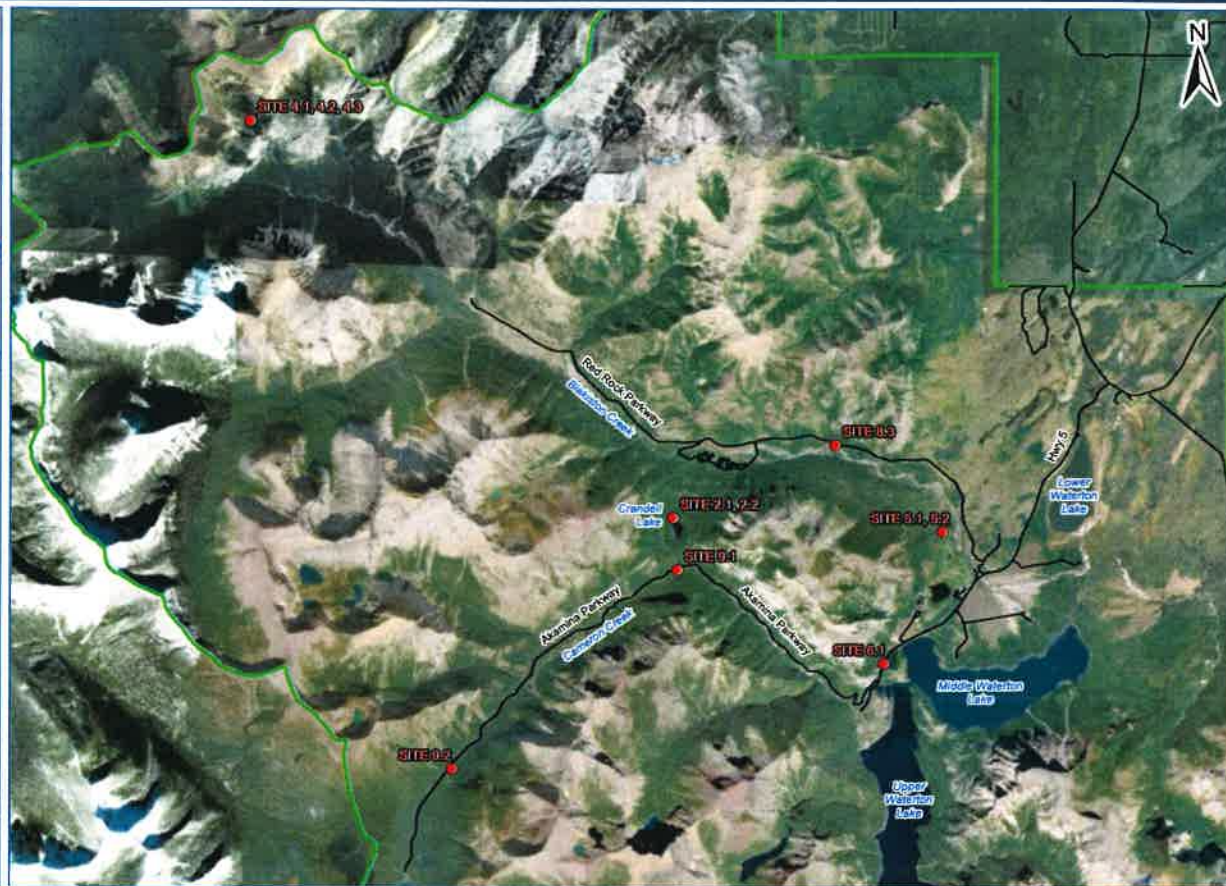
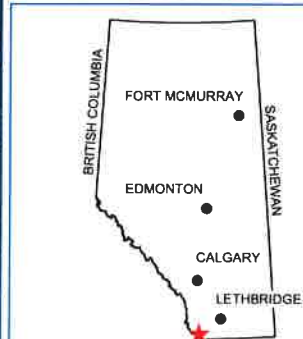


\\N:\hwy\GIS\Projects\GIS\Water\Water\Map\03_02356_Water\Remed1\MXD\GARDMAP_03_02356_1.mxd



LEGEND

- SITE LOCATION
- WATERTON LAKES NATIONAL PARK BOUNDARY



NOTES:

Basedata: Contains information licensed under the Open Government Licence - Alberta
Imagery: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Topo Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

DRAFT

SCALE: 1:100,000 METRES

WHEN PLOTTED CORRECTLY AT 11 x 17

WGS 1984 Web Mercator Auxiliary Sphere

THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN

PARKS CANADA AGENCY
WATERTON LAKES NATIONAL PARK, ALBERTA

SPECIFICATIONS FOR REMEDIATION
- NON PRIORITY SITES

SITE LOCATION PLAN

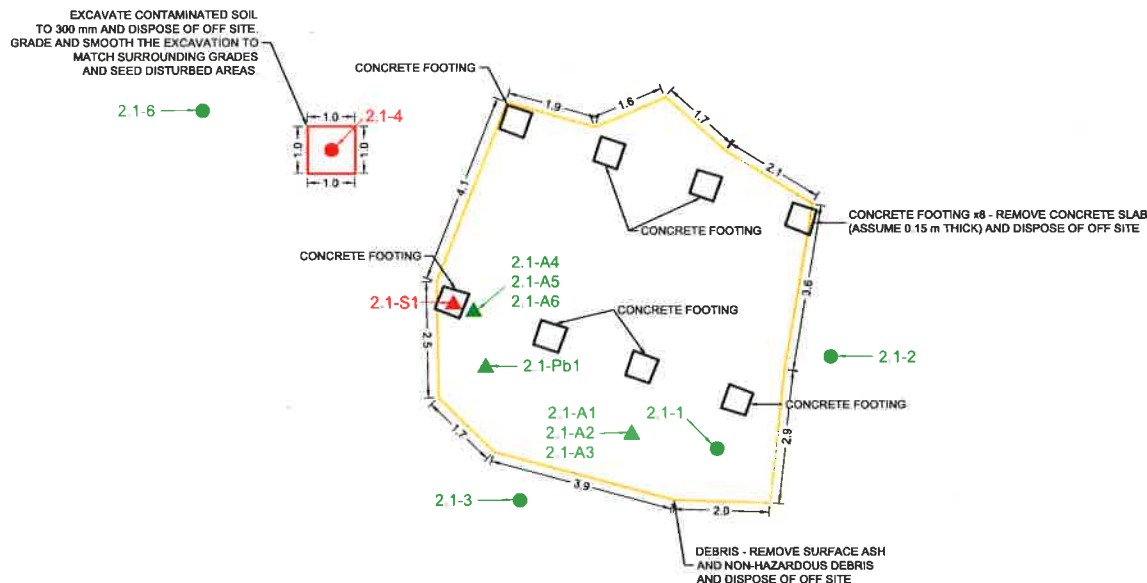
November 15, 2019	Rev 0.0	Drawing No
Project No. 203 02356 00000		1



- APPROXIMATE VOLUME OF ASH AND NON-HAZARDOUS DEBRIS TO BE REMOVED AND DISPOSED OF OFF SITE DEBRIS INCLUDES BUT IS NOT LIMITED TO ASH, WOODEN BEAMS, A METAL SOFFIT AND BURNT ASPHALT SHINGLES = 3 m³
- APPROXIMATE VOLUME OF IMPACTED SOIL TO BE REMOVED AND DISPOSED OF OFF SITE (EXCAVATION DEPTH OF 300 mm) = 0.3 m³
- APPROXIMATE VOLUME OF CONCRETE/FOUNDATION MATERIAL TO BE REMOVED AND DISPOSED OF OFF SITE = 3 m³

LEAD	
	mg/kg
CCME SOIL QG TIER 1 AL	70
CCME SOIL QG TIER 1 RL/PL	140
2.1-4	30-NOV-2018 120

2.1-4 SAMPLE EXCEEDS MOST STRINGENT OF CCME AL AND RL/PL SQG (COARSE GRAINED SOIL)



- LEGEND**
- SOIL SAMPLE LOCATION**
- CONCENTRATIONS OF ONE OR MORE PARAMETERS EXCEEDS THE REFERENCED CCME SQGS OR CWS GUIDELINES
 - CONCENTRATIONS OF ALL PARAMETERS ARE BELOW THE REFERENCED CCME SQGS OR CWS GUIDELINES
- BUILDING MATERIAL SAMPLE LOCATION**
- DEBRIS SAMPLE EXCEEDS REFERENCED GUIDELINES
 - DEBRIS SAMPLE BELOW REFERENCED GUIDELINES
- SITE FEATURE**
- PICNIC TABLE
 - FIRE PIT
 - SURVEYED SITE FEATURE
 - DEBRIS REMOVAL BOUNDARY
 - CONTAMINATED SOIL EXCAVATION BOUNDARY

SOIL SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
2.1-1	5441539.8	283262.3
2.1-2	5441541.8	283264.7
2.1-3	5441538.7	283258.2
2.1-4	5441546.1	283254.2
2.1-6	5441547.0	283251.5
2.1-A1	5441540.1	283260.5
2.1-A2	5441540.1	283260.5
2.1-A3	5441540.1	283260.5
2.1-A4	5441542.7	283257.2
2.1-A5	5441542.7	283257.2
2.1-A6	5441542.7	283257.2
2.1-S1	5441542.9	283256.8
2.1-Pb1	5441541.5	283257.5

Revision	Issued for Review	2019/12/17
Revision	Description	Date
Consultant's Name	Engineer's Stamp	
Parks Canada Agency Western and Northern Region	L'Agence Parcs Canada Ouest et Nord du Canada	
Project title SPECIFICATIONS FOR REMEDIATION WATERTON LAKES NATIONAL PARK ALBERTA NON-PRIORITY SITES		
Designed by: KL	Drawn by: JC	
Approved by: TW	Date: 2019/11/28	
Parks Canada Project Manager: LIZ BAKER		
Drawing title SITE 2.1: CRANDELL BACKCOUNTRY CAMPGROUND KITCHEN SHELTER PROPOSED REMEDIATION PLAN		
Project no: 203.02356.00001	Sheet: 1	Revision: 0

- APPROXIMATE VOLUME OF ASH AND NON-HAZARDOUS DEBRIS TO BE REMOVED AND DISPOSED OF OFF SITE. DEBRIS INCLUDES BUT IS NOT LIMITED TO ASH, WOODEN TENT PAD BORDERS AND METAL TIE DOWN BOLTS = 2 m³
- APPROXIMATE VOLUME OF IMPACTED SOIL TO BE REMOVED AND DISPOSED OF OFF SITE (EXCAVATION DEPTH OF 300 mm) = 20 m³

2.2-13
2.2-11
2.2-10

TENT PAD - REMOVE BURNT WOODEN TENT PAD SURROUNDS
GRADE AND SMOOTH TENT PAD TO CONTOUR WITH SURROUNDING
GROUND AND SEED DISTURBED AREAS

OUTHOUSE PAD
2.2-7
2.2-8
2.2-9

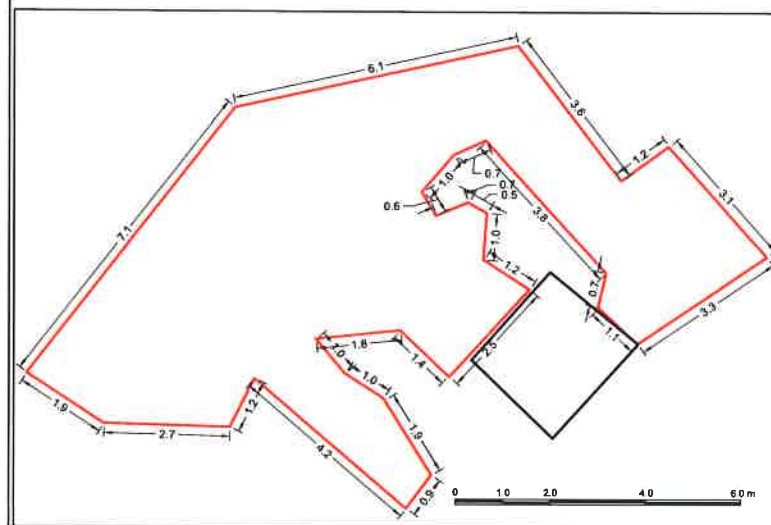
TENT PAD - REMOVE BURNT WOODEN TENT PAD SURROUNDS
GRADE AND SMOOTH TENT PAD TO CONTOUR WITH SURROUNDING
GROUND AND SEED DISTURBED AREAS
2.2-5
2.2-6



			NAPHTHALENE	BARIUM (NON-BARITE)
			mg/kg	mg/kg
CCME SOIL QG TIER 1 AL			0.013	750
CCME SOIL QG TIER 1 RL/PL			0.013	500
REFERENCE VALUE			0.086	720
2.2-2	30 NOV 2018		0.03	1,000
2.2-3	30 NOV 2018		0.021	460
2.2-10	30 NOV 2018		<0.005	520
2.2-11	30 NOV 2018		<0.005	510
2.2-13	15 MAY 2019		<0.005	530
2.2-14	15 MAY 2019		0.039	1,490
2.2-15	07 AUG 2019		-	810
2.2-16	07 AUG 2019		-	810
2.2-17	07 AUG 2019		-	800
2.2-18	07 AUG 2019		-	2,400
2.2-19	07 AUG 2019		-	700
2.2-20	07 AUG 2019		-	1,200
2.2-21	07 AUG 2019		-	2,500

SAMPLE EXCEEDS MOST STRINGENT OF CCME AL AND
RL/PL SQG (COARSE GRAINED SOIL), AND THE
REFERENCE VALUE

DETAIL



TENT PAD - REMOVE BURNT WOODEN TENT PAD SURROUNDS
GRADE AND SMOOTH TENT PAD TO CONTOUR WITH SURROUNDING
GROUND AND SEED DISTURBED AREAS

2.2-3
2.2-4

REFER TO DETAIL FOR DIMENSIONS

TENT PAD - REMOVE BURNT WOODEN TENT PAD SURROUNDS
GRADE AND SMOOTH TENT PAD TO CONTOUR WITH SURROUNDING
GROUND AND SEED DISTURBED AREAS

EXCAVATE CONTAMINATED SOIL
TO 300 mm AND DISPOSE OF OFF SITE.
GRADE AND SMOOTH THE EXCAVATION
AND SEED DISTURBED AREAS

SOIL SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
2.2-1	5441551.4	283401.5
2.2-2	5441553.2	283400.1
2.2-3	5441550.5	283386.0
2.2-4	5441558.5	283386.3
2.2-5	5441573.9	283378.4
2.2-6	5441570.9	283377.8
2.2-7	5441586.0	283366.9
2.2-8	5441584.6	283367.6
2.2-9	5441584.6	283367.6
2.2-10	5441595.9	283357.9
2.2-11	5441598.5	283356.4
2.2-13	5441600.7	283355.3
2.2-14	5441554.3	283398.5
2.2-15	5441552.8	283397.3
2.2-16	5441554.8	283397.1
2.2-17	5441554.5	283400.0
2.2-18	5441553.2	283403.5
2.2-19	5441557.9	283394.0
2.2-20	5441551.4	283392.4
2.2-21	5441550.2	283397.4

0 2.5 5.0 10.0 15.0m

- LEGEND**
- SOIL SAMPLE LOCATION**
- CONCENTRATIONS OF ONE OR MORE PARAMETERS EXCEEDS THE REFERENCED CCME SQGS OR CWS GUIDELINES
 - CONCENTRATIONS OF ALL PARAMETERS ARE BELOW THE REFERENCED CCME SQGS OR CWS GUIDELINES
- SITE FEATURE**
- SURVEYED SITE FEATURE
 - CONTAMINATED SOIL EXCAVATION BOUNDARY

Revision	Description	Date
C	Issued for Review	2019/12/17
Consultant's Name		Engineer's Stamp
SLR		

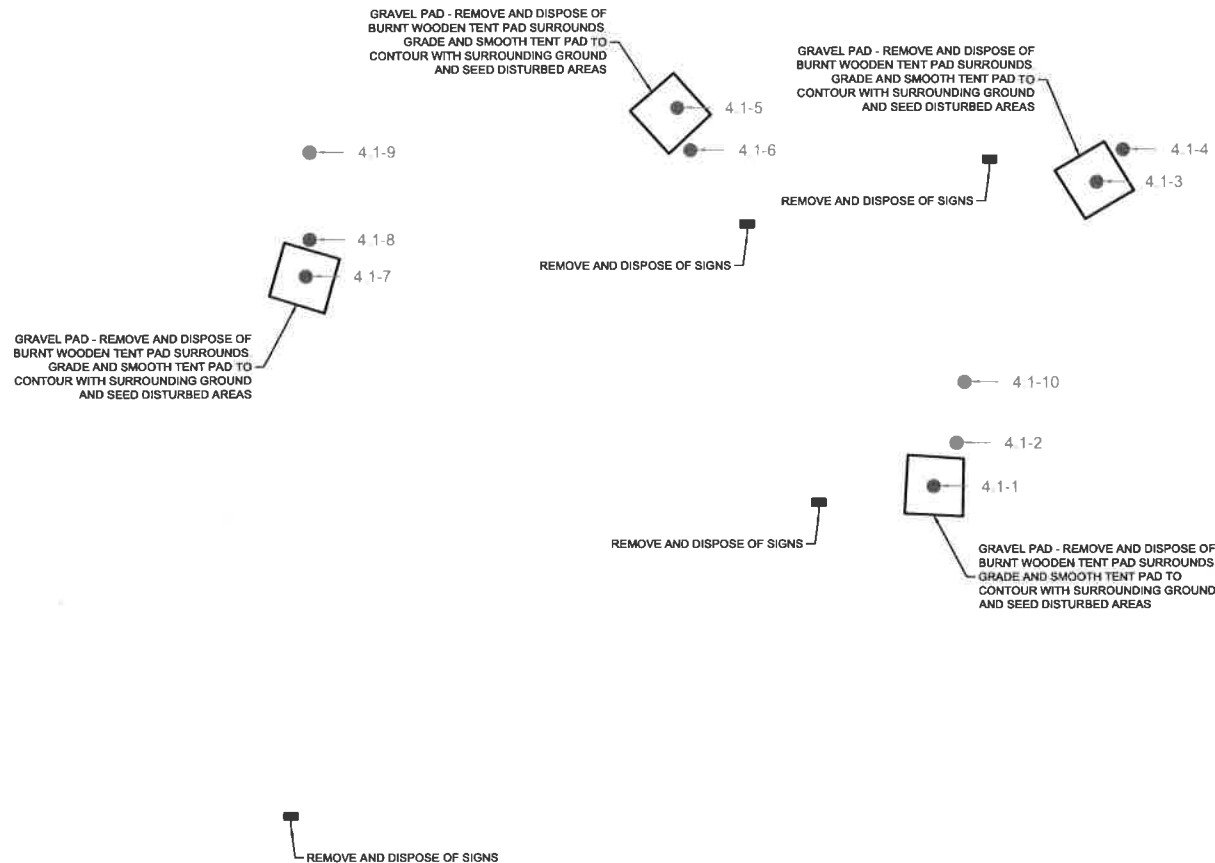
Parks Canada Agency	L'Agence Parcs Canada
Western and Northern Region	Ouest et Nord du Canada

Project title		
SPECIFICATIONS FOR REMEDIATION		
WATERTON LAKES NATIONAL PARK ALBERTA		
NON-PRIORITY SITES		
Designed by	Drawn by	
KL	JC	
Approved by	Date	
TW	2019/12/04	
Parks Canada Project Manager		
LIZ BAKER		
Drawing title		
SITE 2.2: CRANDELL BACKCOUNTRY CAMPGROUND CAMPSITES PROPOSED REMEDIATION PLAN		
Project no.	Sheet	Revision
203.02356-00001	1	0

- APPROXIMATE VOLUME OF ASH AND NON-HAZARDOUS DEBRIS TO BE REMOVED AND DISPOSED OF OFF SITE. DEBRIS INCLUDES BUT IS NOT LIMITED TO ASH, BURNT WOODEN BEAMS, MINOR PLASTIC, GLASS AND METAL FRAGMENTS = 2 m³



- LEGEND**
- SOIL SAMPLE LOCATION**
- CONCENTRATIONS OF ONE OR MORE PARAMETERS EXCEEDS THE REFERENCED CCME SQGS OR CWS GUIDELINES
 - CONCENTRATIONS OF ALL PARAMETERS ARE BELOW THE REFERENCED CCME SQGS OR CWS GUIDELINES
- SITE FEATURE**
- SIGN
 - SURVEYED SITE FEATURE



SOIL SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
4.1-1	5450334.4	274763.8
4.1-2	5450336.7	274765.0
4.1-3	5450350.5	274772.4
4.1-4	5450352.3	274773.7
4.1-5	5450354.5	274750.3
4.1-6	5450352.2	274751.0
4.1-7	5450345.6	274730.8
4.1-8	5450347.5	274731.0
4.1-9	5450352.1	274731.0
4.1-10	5450340.0	274765.4

0	Issued for Review	2019/12/17
Revision	Description	Date
Consultant's Name		Engineer's Stamp
SLR		
Parks Canada Agency		L'Agence Parcs Canada
Western and Northern Region		Ouest et Nord du Canada
Project title		
SPECIFICATIONS FOR REMEDIATION		
WATERTON LAKES NATIONAL PARK ALBERTA		
NON-PRIORITY SITES		
Designed by	KL	Drawn by
Approved by	TW	Date
Parks Canada Project Manager		2019/12/03
LIZ BAKER		
Drawing title		
SITE 4.1: GOAT LAKE BACKCOUNTRY CAMPGROUND		
CAMPSITES PROPOSED		
REMEDATION PLAN		
Project no.	Sheet	Revision
203.02356.0000	1	0

- APPROXIMATE VOLUME OF ASH AND NON-HAZARDOUS DEBRIS TO BE REMOVED AND DISPOSED OF OFF SITE. DEBRIS INCLUDES BUT IS NOT LIMITED TO ASH, BURNT WOOD, GLASS AND METAL = 0.5 m³

REMOVE AND DISPOSE OF REMAINS OF FOOD POLES



REMOVE AND DISPOSE OF MINOR METAL DEBRIS

OUTHOUSE - REMOVE AND DISPOSE OF NON-HAZARDOUS DEBRIS ASSOCIATED WITH THE FORMER OUTHOUSE STRUCTURE

SOIL SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
4.2-1	5450348.9	274703.5
4.2-2	5450348.3	274701.6
4.2-3	5450346.7	274705.3

0 1.0 2.0 4.0 6.0 m

LEGEND

SOIL SAMPLE LOCATION

- CONCENTRATIONS OF ONE OR MORE PARAMETERS EXCEEDS THE REFERENCED CCME SQGS OR CWS GUIDELINES
- CONCENTRATIONS OF ALL PARAMETERS ARE BELOW THE REFERENCED CCME SQGS OR CWS GUIDELINES

SITE FEATURE

- FOOD POLE
- METAL DEBRIS
- SURVEYED SITE FEATURE

Revision	Description	Date
C	Issued for Review	2019/12/17

Consultant's Name	Engineer's Stamp
SLR perkins+will	

Perks Canada Agency Western and Northern Region	L'Agence Perks Canada Ouest et Nord du Canada
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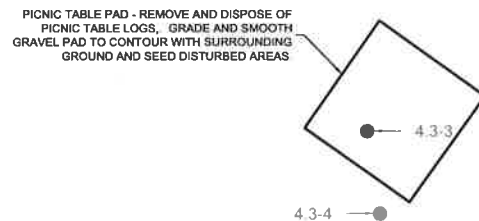
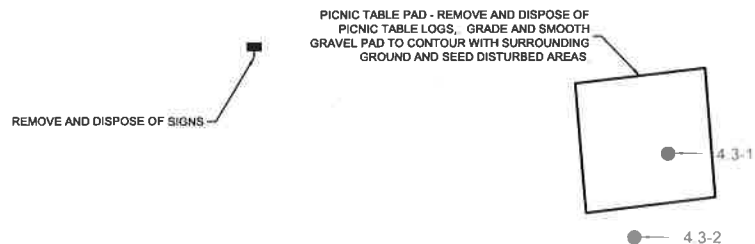
Project title
**SPECIFICATIONS FOR REMEDIATION
WATERTON LAKES NATIONAL PARK
ALBERTA
NON-PRIORITY SITES**

Designed by RL	Drawn by JC
Approved by YW	Date 2019/12/03
Perks Canada Project Manager LIZ BAKER	

Drawing title
**SITE 4.2: GOAT LAKE
BACKCOUNTRY OUTHOUSE
PROPOSED REMEDIATION
PLAN**

Project no. 203.02356.00001	Sheet 1	Revision 0
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- APPROXIMATE VOLUME OF NON-HAZARDOUS DEBRIS TO BE REMOVED AND DISPOSED OF OFF SITE
DEBRIS INCLUDES BUT IS NOT LIMITED TO BURNT WOOD = 2 m³



SOIL SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
4.3-1	5450319.6	274688.7
4.3-2	5450317.9	274688.0
4.3-3	5450305.7	274700.8
4.3-4	5450304.0	274701.1

0 1.0 2.0 4.0 8.0 m

LEGEND

SOIL SAMPLE LOCATION

- CONCENTRATIONS OF ONE OR MORE
PARAMETERS EXCEEDS THE REFERENCED
CCME SQGS OR CWS GUIDELINES
- CONCENTRATIONS OF ALL PARAMETERS
ARE BELOW THE REFERENCED CCME SQGS
OR CWS GUIDELINES

SITE FEATURE

- SIGN
- SURVEYED SITE FEATURE

0	Issued for Review	2019/12/17
Revision	Description	Date

Consultant's Name Engineer's Stamp



Parks Canada
Agence
Western and
Northern Region

L'Agence Parcs
Canada
Ouest et Nord
du Canada

Project Title
**SPECIFICATIONS FOR
REMEDiation
WATERTON LAKES NATIONAL PARK
ALBERTA
NON-PRIORITY SITES**

Designed by
KL

Drawn by
JC

Approved by
TW

Date
2018/12/03

Parks Canada Project Manager
LIZ BAKER

Drawing title
**SITE 4.3: GOAT LAKE
BACKCOUNTRY CAMPGROUND
PICNIC TABLES PROPOSED
REMEDiation PLAN**

Project no.
203.02356.00001

Sheet
1

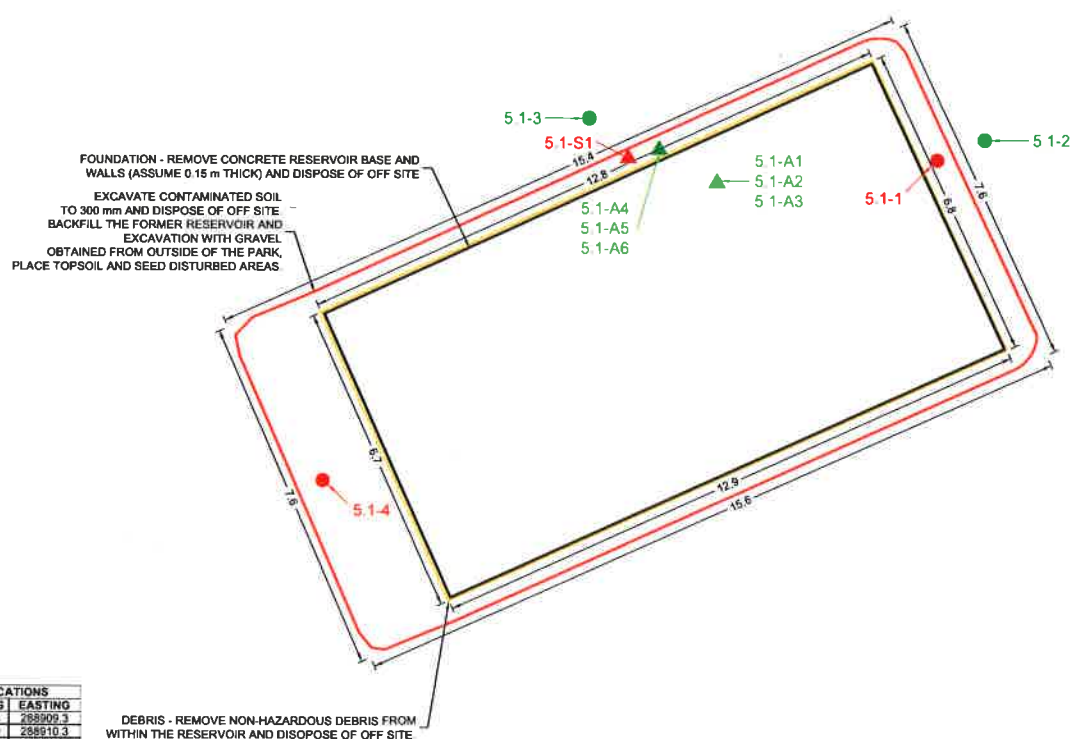
Revision
0

- APPROXIMATE VOLUME OF ASH AND NON-HAZARDOUS DEBRIS TO BE REMOVED AND DISPOSED OF OFF SITE. DEBRIS INCLUDES BUT IS NOT LIMITED TO ASH, BURNT WOODEN BEAMS, A METAL LADDER, BURNT WIRE MESH AND PLASTIC MATERIAL = 1 m³
- APPROXIMATE VOLUME OF IMPACTED SOIL TO BE REMOVED AND DISPOSED OF OFF SITE (EXCAVATION DEPTH OF 300 mm) = 10 m³
- APPROXIMATE VOLUME OF CONCRETE/FOUNDATION MATERIAL TO BE REMOVED AND DISPOSED OF OFF SITE = 17 m³
- APPROXIMATE VOLUME OF CLEAN IMPORTED BACKFILL TO BE COMPACTED AND GRADED TO MATCH EXISTING GRADE, COVERED IN TOPSOIL AND SEEDED = 180 m³

	INDENO(1,2,3-C,D)PYRENE	NAPHTHALENE	BARIUM (NON-BARITE)	LEAD
	mg/kg	mg/kg	mg/kg	mg/kg
CCME SOIL QG TIER 1 AL	0.1	0.013	750	70
CCME SOIL QG TIER 1 RL/PL	1	0.013	500	140
REFERENCE VALUE	0.009	0.066	720	-
5.1-1	5-DEC-2018	0.32	600	510
5.1-4	5-DEC-2018	0.11	180	40

SAMPLE EXCEEDS MOST STRINGENT OF CCME AL AND RL/PL SQG (COARSE GRAINED SOIL), AND THE REFERENCE VALUE

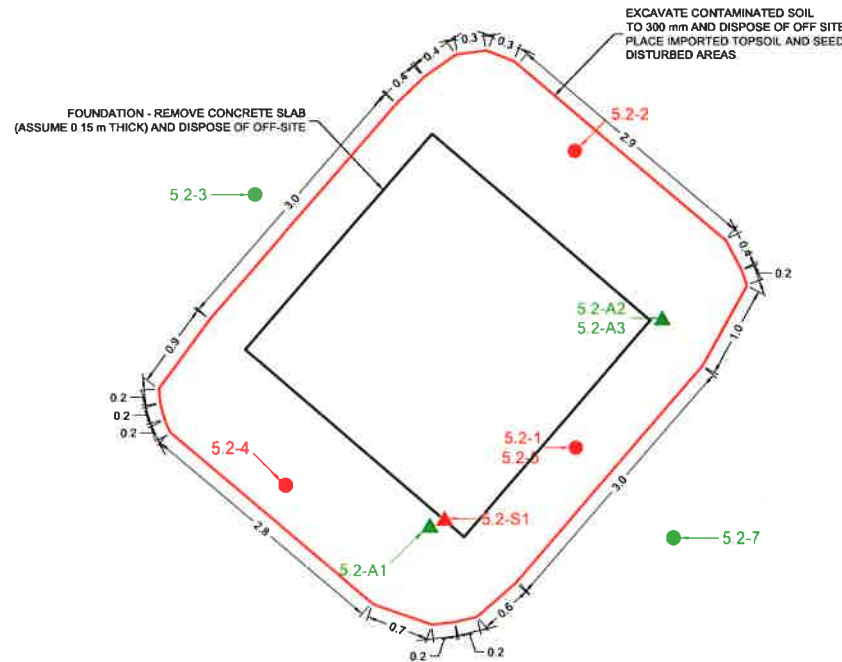
- LEGEND**
- SOIL SAMPLE LOCATION**
- CONCENTRATIONS OF ONE OR MORE PARAMETERS EXCEEDS THE REFERENCED CCME SQGS OR CWS GUIDELINES
 - CONCENTRATIONS OF ALL PARAMETERS ARE BELOW THE REFERENCED CCME SQGS OR CWS GUIDELINES
- BUILDING MATERIAL SAMPLE LOCATION**
- ▲ DEBRIS SAMPLE EXCEEDS REFERENCED GUIDELINES
 - ▲ DEBRIS SAMPLE BELOW REFERENCED GUIDELINES
- SITE FEATURE**
- SURVEYED SITE FEATURE
 - DEBRIS REMOVAL BOUNDARY
 - CONTAMINATED SOIL EXCAVATION BOUNDARY



- APPROXIMATE VOLUME OF IMPACTED SOIL TO BE REMOVED AND DISPOSED OF OFF SITE (EXCAVATION DEPTH OF 300 mm) = 4 m³
- APPROXIMATE VOLUME OF CONCRETE/FOUNDATION MATERIAL TO BE REMOVED AND DISPOSED OF OFF SITE = 2 m³
- APPROXIMATE VOLUME OF CLEAN IMPORTED BACKFILL TO BE COMPACTED AND GRADED TO MATCH EXISTING GRADE, COVERED IN TOPSOIL AND SEEDED = 4 m³

		NAPHTHALENE	ARSENIC (INORGANIC)	CHROMIUM (III + VI)	COPPER	LEAD	ZINC
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
CCME SOIL QG TIER 1 AL		0.013	12	64	63	70	250
CCME SOIL QG TIER 1 RL/PL		0.013	12	64	63	140	250
REFERENCE VALUE		0.086	-	-	-	-	-
5.2-1	5-DEC-2018	0.017	27	48	29	170	140
5.2-5	5-DEC-2018	0.017	110	120	87	490	530
5.2-2	5-DEC-2018	<0.005	3.5	70	0.8	310	65
5.2-4	5-DEC-2018	<0.005	4.8	43	9.7	150	57

SAMPLE EXCEEDS MOST STRINGENT OF CCME AL AND RL/PL SQG (COARSE GRAINED SOIL), AND THE REFERENCE VALUE



SOIL SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
5.2-1	5440963.5	288989.8
5.2-2	5440966.8	288989.8
5.2-3	5440965.1	288988.4
5.2-4	5440963.1	288986.7
5.2-5	5440963.5	288989.8
5.2-7	5440962.5	288990.8
BUILDING SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
5.2-A1	5440962.6	288988.2
5.2-A2	5440964.8	288990.7
5.2-A3	5440964.8	288990.7
5.2-S1	5440962.7	288988.4

- LEGEND**
- SOIL SAMPLE LOCATION**
- CONCENTRATIONS OF ONE OR MORE PARAMETERS EXCEEDS THE REFERENCED CCME SQGS OR CWS GUIDELINES
 - CONCENTRATIONS OF ALL PARAMETERS ARE BELOW THE REFERENCED CCME SQGS OR CWS GUIDELINES
- BUILDING MATERIAL SAMPLE LOCATION**
- DEBRIS SAMPLE EXCEEDS REFERENCED GUIDELINES
 - DEBRIS SAMPLE BELOW REFERENCED GUIDELINES
- SITE FEATURE**
- SURVEYED SITE FEATURE
 - CONTAMINATED SOIL EXCAVATION BOUNDARY

Revision		Issued for Review	2019/12/17
Consultant's Name		Engineer's Stamp	
SLR			
Parcs Canada Agency		L'Agence Parcs Canada	
Western and Northern Region		Ouest et Nord du Canada	
Project title			
SPECIFICATIONS FOR REMEDIATION			
WATERTON LAKES NATIONAL PARK ALBERTA			
NON-PRIORITY SITES			
Designed by	AD	Drawn by	JC
Approved by	TW	Date	2018/07/25
Parcs Canada Project Manager: LIZ BAKER			
Drawing title			
SITE 5.2: WATERTON GOLF COURSE LIGHTNING SHELTER SHED PROPOSED REMEDIATION PLAN			
Project no.	203.02356.00000	Sheet	1
		Revision	0

0 0.5 1.0 2.0 3.0 m

20250101 SAMPLE EXCEEDS MOST STRINGENT OF CCME AL AND RL/PL SQG (COARSE GRAINED SOIL), THE CCME CWS FOR PHC, AND THE REFERENCE VALUE

-

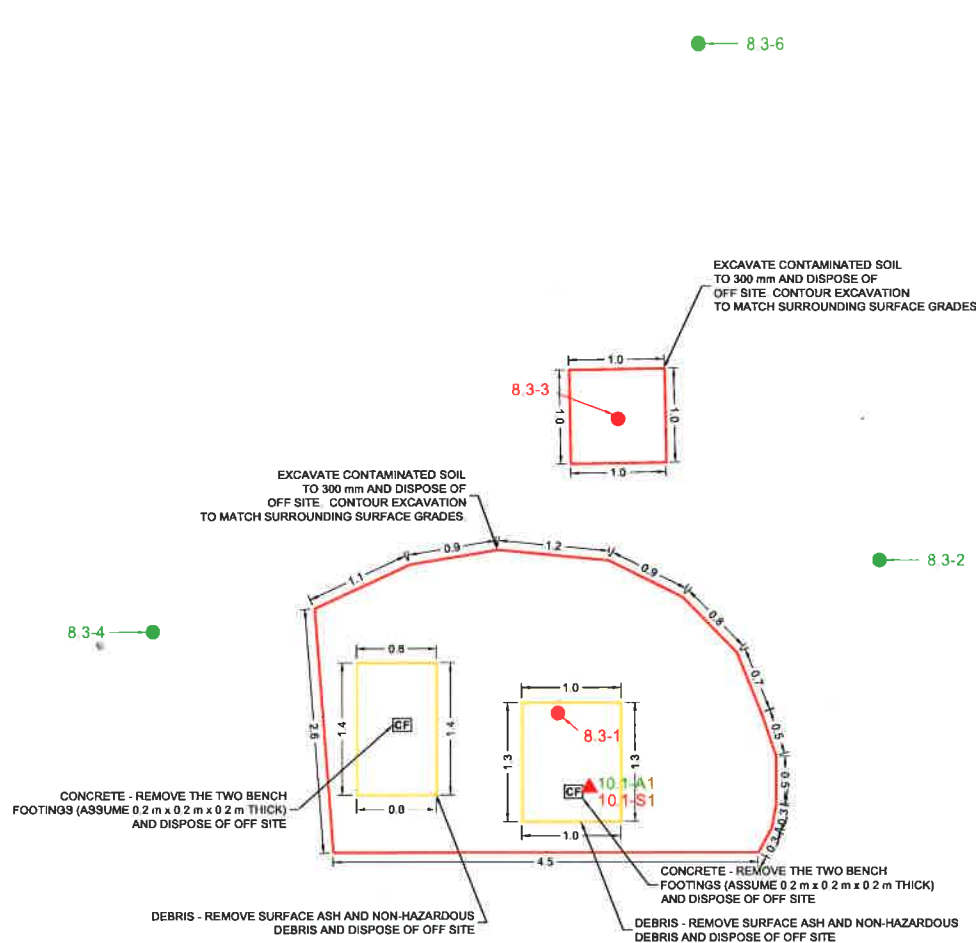


- APPROXIMATE VOLUME OF ASH AND NON-HAZARDOUS DEBRIS TO BE REMOVED AND DISPOSED OF OFF SITE. DEBRIS INCLUDES BUT IS NOT LIMITED TO ASH, METAL BENCH FRAME, A METAL SUPPORT FOR A SIGN, AND BURNT TIMBER = 2 m³
- APPROXIMATE VOLUME OF IMPACTED SOIL TO BE REMOVED AND DISPOSED OF OFF SITE (EXCAVATION DEPTH OF 300 mm) = 4.5 m³
- APPROXIMATE VOLUME OF CONCRETE/FOUNDATION MATERIAL TO BE REMOVED AND DISPOSED OF OFF SITE = 0.2 m³

		NAPHTHALENE	ARSENIC (INORGANIC)	COPPER
		mg/kg	mg/kg	mg/kg
CCME SOIL QG TIER 1 AL		0.013	12	83
CCME SOIL QG TIER 1 RL/PL		0.013	12	63
REFERENCE VALUE		0.086	-	-
8.3-1	28-NOV-2018	0.041	110	190
8.3-3	28-NOV-2018	0.03	22	58
8.3-6	13-MAY-2019	0.035	5.3	13

NOTE: SAMPLE EXCEEDS MOST STRINGENT OF CCME AL AND RL/PL SQG (COARSE GRAINED SOIL), AND THE REFERENCE VALUE

- LEGEND**
- SOIL SAMPLE LOCATION**
- CONCENTRATIONS OF ONE OR MORE PARAMETERS EXCEEDS THE REFERENCED CCME SQGS OR CWS GUIDELINES
 - CONCENTRATIONS OF ALL PARAMETERS ARE BELOW THE REFERENCED CCME SQGS OR CWS GUIDELINES
- BUILDING MATERIAL SAMPLE LOCATION**
- DEBRIS SAMPLE EXCEEDS REFERENCED GUIDELINES
 - DEBRIS SAMPLE BELOW REFERENCED GUIDELINES
- SITE FEATURE**
- CONCRETE FOOTING
 - SURVEYED SITE FEATURE
 - DEBRIS REMOVAL BOUNDARY
 - CONTAMINATED SOIL EXCAVATION BOUNDARY

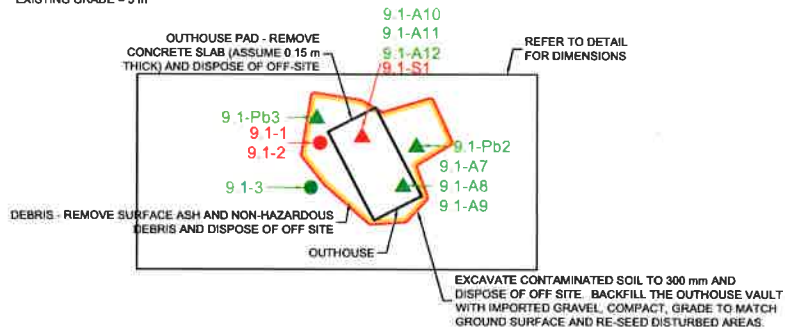


SOIL SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
8.3-1	5442927.1	286746.6
8.3-2	5442928.7	286750.0
8.3-3	5442930.2	286747.2
8.3-4	5442927.9	286742.3
8.3-6	5442934.2	286748.1
BUILDING SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
10.1-A1	5442926.3	286746.9
10.1-S1	5442926.3	286746.9



Revision		Issued for Review	2019/11/17
Description		Date	
Consultant's Name		Engineer's Stamp	
SLR			
Parcs Canada Agency		L'Agence Parcs Canada	
Western and Northern Region		Ouest et Nord du Canada	
Project title			
SPECIFICATIONS FOR REMEDIATION			
WATERTON LAKES NATIONAL PARK			
ALBERTA			
NON-PRIORITY SITES			
Designed by		Drawn by	
KL		JC	
Approved by		Date	
TW		2019/11/26	
PWGSC Project Manager			
LIZ BAKER			
Drawing title			
SITE 8.3: INDIGENEOUS HISTORY VIEWPOINT			
PROPOSED REMEDIATION EXTENTS			
Project no.	Sheet	Revision	
203.02356.00001	1	0	

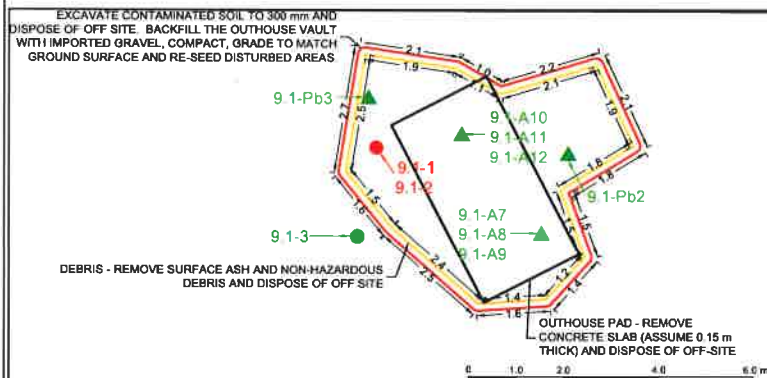
- APPROXIMATE VOLUME OF ASH AND NON-HAZARDOUS DEBRIS TO BE REMOVED AND DISPOSED OF OFF SITE. DEBRIS INCLUDES BUT IS NOT LIMITED TO ASH, A METAL STOVE, CONCRETE BLOCKS, METAL FRAMES OF TWO PICNIC TABLES, TWO UPRIGHT, BUT BURNT, TIMBER COLUMNS, BURNT WOODEN BEAMS, METAL, ONE METAL DOOR, CERAMIC TILES AND DRY WALL = 17 m³
- APPROXIMATE VOLUME OF IMPACTED SOIL TO BE REMOVED AND DISPOSED OF OFF SITE (EXCAVATION DEPTH OF 300 mm) = 4 m³
- APPROXIMATE VOLUME OF CONCRETE/FOUNDATION MATERIAL TO BE REMOVED AND DISPOSED OF OFF SITE = 7 m³
- APPROXIMATE VOLUME OF HAZARDOUS MATERIALS TO BE REMOVED AND DISPOSED OF OFF-SITE (INCLUDES BROWN PAINT IN POOR CONDITION ON THE PICNIC SHELTER BEAMS WHICH COVERS AN AREA OF APPROXIMATELY 1 m² IN TOTAL) = < 0.1 m³
- APPROXIMATE VOLUME OF CLEAN IMPORTED BACKFILL TO BE COMPACTED AND GRADED TO MATCH EXISTING GRADE = 5 m³



	NAPHTHALENE	PHENANTHRENE	CHROMIUM (III + VI)	TIN
	mg/kg	mg/kg	mg/kg	mg/kg
CCME SOILQG TIER 1 AL	0.013	0.046	64	5
CCME SOILQG TIER 1 RL/PL	0.013	0.046	64	50
REFERENCE VALUE	0.066			
9.1-1	30-NOV-2018	0.039	83	2.5
9.1-2	30-NOV-2018	6.13	0.042	40

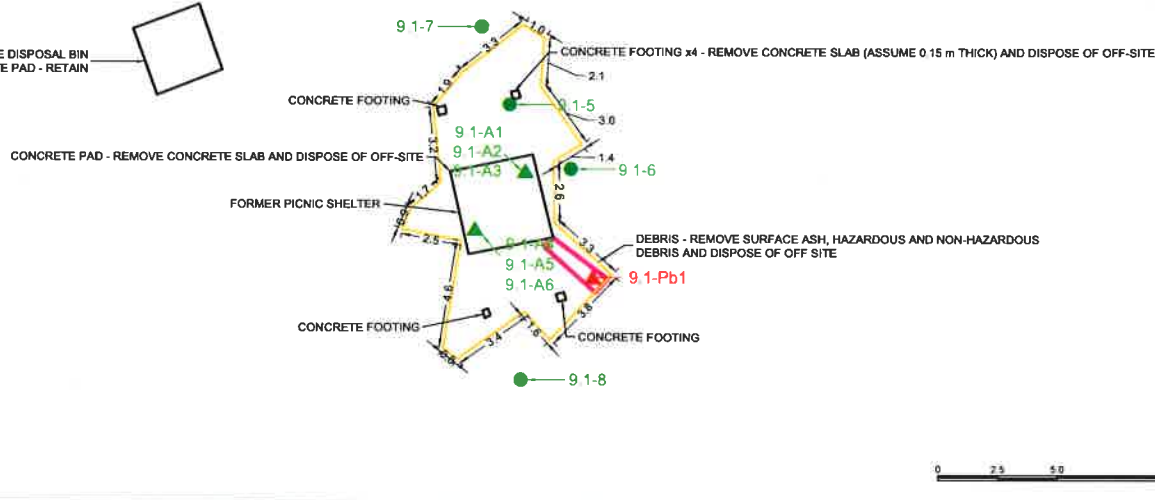
SAMPLE EXCEEDS MOST STRINGENT OF CCME AL AND RL/PL SOG (COARSE GRAINED SOIL), AND THE REFERENCE VALUE

DETAIL



- LEGEND**
- SOIL SAMPLE LOCATION**
- CONCENTRATIONS OF ONE OR MORE PARAMETERS EXCEEDS THE REFERENCED CCME SOQS OR CWS GUIDELINES
 - CONCENTRATIONS OF ALL PARAMETERS ARE BELOW THE REFERENCED CCME SOQS OR CWS GUIDELINES
- BUILDING MATERIAL SAMPLE LOCATION**
- DEBRIS SAMPLE EXCEEDS REFERENCED GUIDELINES
 - DEBRIS SAMPLE BELOW REFERENCED GUIDELINES
- SITE FEATURE**
- SURVEYED SITE FEATURE
 - DEBRIS REMOVAL BOUNDARY
 - CONTAMINATED SOIL EXCAVATION BOUNDARY
 - AREA OF OBSERVED LEAD-BASED PAINT

GARBAGE DISPOSAL BIN
CONCRETE PAD - RETAIN



SOIL SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
9.1-1	5440443.3	283288.6
9.1-2	5440443.3	283288.6
9.1-3	5440441.4	283288.2
9.1-4	5440445.2	283292.9
9.1-5	5440424.6	283308.6
9.1-6	5440421.9	283311.2
9.1-7	5440427.9	283307.4
9.1-8	5440413.0	283309.1
BUILDING SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
9.1-A1	5440421.7	283309.3
9.1-A2	5440421.7	283309.3
9.1-A3	5440421.7	283309.3
9.1-A4	5440419.2	283307.1
9.1-A5	5440419.2	283307.1
9.1-A6	5440419.2	283307.1
9.1-A7	5440441.4	283292.0
9.1-A8	5440441.4	283292.0
9.1-A9	5440441.4	283292.0
9.1-A10	5440443.5	283290.3
9.1-A11	5440443.5	283290.3
9.1-A12	5440443.5	283290.3
9.1-S1	5440443.5	283290.3
9.1-Pb1	5440417.2	283312.1
9.1-Pb2	5440443.1	283292.6
9.1-Pb3	5440444.3	283288.4

PHOTO - AND B-11 - 11817

Revision	Description	Date
1	Issued for Review	2019/11/26

Consultant's Name Engineer's Stamp



Parcs Canada Agency L'Agence Parcs Canada
Western and Northern Region Ouest et Nord du Canada

SPECIFICATIONS FOR REMEDIATION WATERTON LAKES NATIONAL PARK ALBERTA NON-PRIORITY SITES

Designed by KL Drawn by JC
Approved by TW Date 2019/11/26

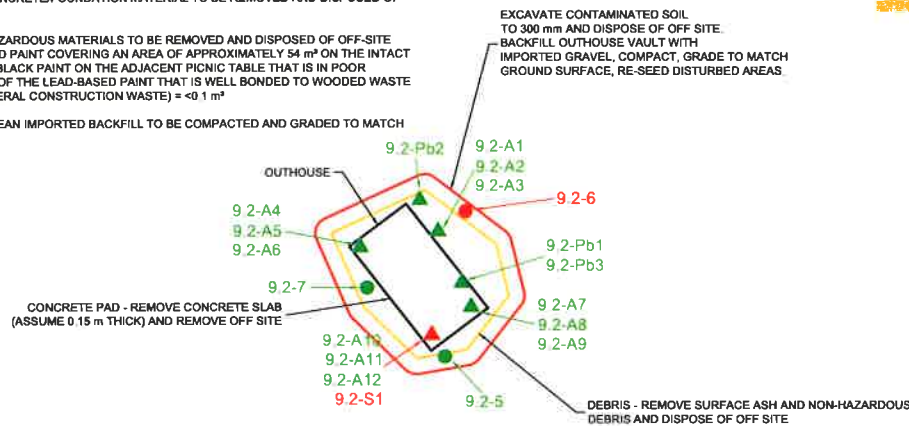
Parcs Canada Project Manager
LIZ BAKER

SITE 9.1: McNEALY'S DAY USE AREA PROPOSED REMEDIATION PLAN

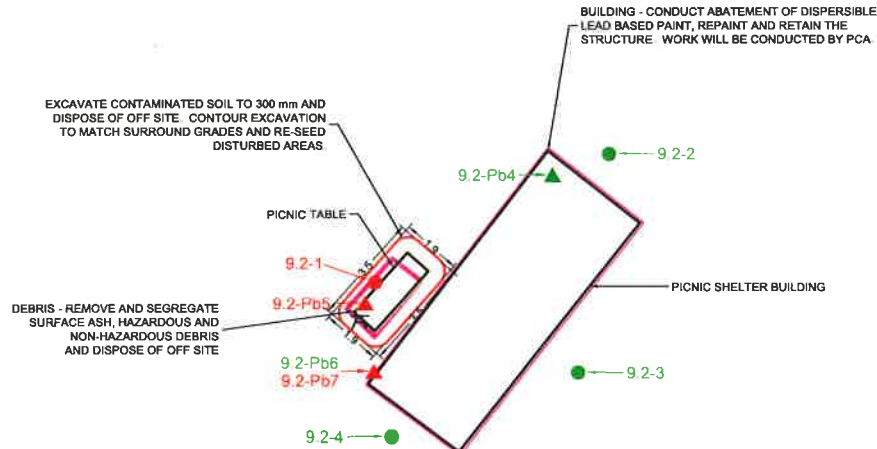
Project no. 203.02356.00001 Sheet 1 Revision 0

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- APPROXIMATE VOLUME OF ASH AND NON-HAZARDOUS DEBRIS TO BE REMOVED AND DISPOSED OF OFF SITE. DEBRIS INCLUDES BUT IS NOT LIMITED TO ASH, A METAL DOOR, A METAL VENTILATION FAN, BURNT METAL, PVC PIPE, WOOD, CERAMIC TILES AND DRYWALL = 2 m³
- APPROXIMATE VOLUME OF IMPACTED SOIL TO BE REMOVED AND DISPOSED OF OFF SITE (EXCAVATION DEPTH OF 300 mm) = 7.5 m³
- APPROXIMATE VOLUME OF CONCRETE/FOUNDATION MATERIAL TO BE REMOVED AND DISPOSED OF OFF SITE = 2 m³
- APPROXIMATE VOLUME OF HAZARDOUS MATERIALS TO BE REMOVED AND DISPOSED OF OFF-SITE (INCLUDES GREEN LEAD-BASED PAINT COVERING AN AREA OF APPROXIMATELY 54 m² ON THE INTACT PICNIC SHELTER AND 1 m² OF BLACK PAINT ON THE ADJACENT PICNIC TABLE THAT IS IN POOR CONDITION. THE REMAINDER OF THE LEAD-BASED PAINT THAT IS WELL BONDED TO WOODEN WASTE CAN BE DISPOSED OF AS GENERAL CONSTRUCTION WASTE) = <0.1 m³
- APPROXIMATE VOLUME OF CLEAN IMPORTED BACKFILL TO BE COMPACTED AND GRADED TO MATCH EXISTING GRADE = 5 m³



SOIL SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
9.2-1	5436397.0	278386.8
9.2-2	5436401.1	278384.2
9.2-3	5436394.2	278383.2
9.2-4	5436392.2	278387.3
9.2-5	5436412.6	278376.9
9.2-6	5436417.3	278377.5
9.2-7	5436414.8	278374.4
BUILDING SAMPLE LOCATIONS		
SAMPLE ID	NORTHING	EASTING
9.2-A1	5436416.6	278376.7
9.2-A2	5436416.6	278378.7
9.2-A3	5436416.6	278378.7
9.2-A4	5436416.1	278374.2
9.2-A5	5436416.1	278374.2
9.2-A6	5436416.1	278374.2
9.2-A7	5436414.2	278377.7
9.2-A8	5436414.2	278377.7
9.2-A9	5436414.2	278377.7
9.2-A10	5436413.3	278376.5
9.2-A11	5436413.3	278376.5
9.2-A12	5436413.3	278376.5
9.2-Pb1	5436415.0	278377.4
9.2-Pb2	5436415.0	278377.4
9.2-Pb3	5436417.6	278376.1
9.2-Pb4	5436400.4	278382.4
9.2-Pb5	5436396.3	278386.5
9.2-Pb6	5436394.1	278386.7
9.2-Pb7	5436394.1	278386.7
9.2-S1	5436413.3	278376.5



		NAPHTHALENE	ARSENIC (INORGANIC)	CHROMIUM (III + VI)	NICKEL
		mg/kg	mg/kg	mg/kg	mg/kg
	CCME SOIL QG TIER 1 AL	0.013	12	64	45
	CCME SOIL QG TIER 1 RL/PL	0.013	12	64	45
	REFERENCE VALUE	0.086	-	-	-
9.2-1	4-DEC-2018	0.014	5.7	110	53
9.2-6	4-DEC-2018	<0.005	19	27	12

WARNING SAMPLE EXCEEDS MOST STRINGENT OF CCME AL AND RL/PL SQG (COARSE GRAINED SOIL), AND THE REFERENCE VALUE



- LEGEND**
- SOIL SAMPLE LOCATION**
- CONCENTRATIONS OF ONE OR MORE PARAMETERS EXCEEDS THE REFERENCED CCME SQGS OR CWS GUIDELINES
 - CONCENTRATIONS OF ALL PARAMETERS ARE BELOW THE REFERENCED CCME SQGS OR CWS GUIDELINES
- BUILDING MATERIAL SAMPLE LOCATION**
- DEBRIS SAMPLE EXCEEDS REFERENCED GUIDELINES
 - DEBRIS SAMPLE BELOW REFERENCED GUIDELINES
- SITE FEATURE**
- PICNIC TABLE
 - SURVEYED SITE FEATURE
 - DEBRIS REMOVAL BOUNDARY
 - CONTAMINATED SOIL EXCAVATION BOUNDARY
 - AREA OF OBSERVED LEAD-BASED PAINT

0	Issued for Review	2019/12/17		
Revision	Description	Date		
Consultant's Name		Engineer's Stamp		
SLR				
Parks Canada Agency		L'Agence Parcs Canada		
Western and Northern Region		Ouest et Nord du Canada		
Project title				
SPECIFICATIONS FOR REMEDIATION WATERTON LAKES NATIONAL PARK ALBERTA NON-PRIORITY SITES				
Designed by	Drawn by			
KL	JC			
Approved by	Date			
TW	2019/11/28			
Parks Canada Project Manager LIZ BAKER				
Drawing title				
SITE 9.2: LITTLE PRAIRIE DAY USE AREA PROPOSED REMEDIATION EXTENTS				
Project no.	Sheet	Revision		
203-02356-00001	1	0		