



Victoria File: 26250-20/22571  
Site ID: 22571

October 18, 2019

Ms. Alexandra Deglow, P.Ge.  
Ministry of Transportation and Infrastructure  
4B – 940 Blanshard Street  
PO Box 9850 Stn Prov Govt  
Victoria, BC V8W 9T5  
Phone: 604-527-2268  
[alexandra.deglow@gov.bc.ca](mailto:alexandra.deglow@gov.bc.ca)

Dear Ms. Deglow:

**Re: Preliminary Determination - Meade Creek Gravel Pit (Pit #009),  
Lake Cowichan, British Columbia**

Please find enclosed a Preliminary Determination respecting the site referenced above and be advised of the following:

1. The Director has made a Preliminary Determination that the site is not contaminated because the numerical standards and criteria of the Contaminated Sites Regulation have been met at the site.
2. Information about the site will be included in the Site Registry established under the *Environmental Management Act*.
3. The provisions of this Preliminary Determination are without prejudice to the right of the Director to make orders or impose requirements as the Director may deem necessary in accordance with applicable laws. Nothing in this Preliminary Determination will restrict or impair the Director's power in this regard.
4. A qualified environmental consultant should be available to identify, characterize and appropriately manage:
  - (a) any environmental media that may be contaminated, or
  - (b) soil which may exceed the standards triggering a Contaminated Soil Relocation Agreement set out in section 40 of the Contaminated Sites Regulationand may be encountered during any future subsurface work at the site.

5. Groundwater wells that are no longer required must be properly decommissioned in accordance with the *Water Sustainability Act's* Groundwater Protection Regulation.

This is to advise that the Director will consider submissions received within 35 days after delivery of this Preliminary Determination before a Final Determination is made.

If you require clarification of any aspect of this Preliminary Determination, please contact the undersigned at 778-698-4885 (toll free via Enquiry BC at 1-800-663-7867).

Yours truly,



J. Brooke  
Senior Contaminated Sites Officer

Enclosure

cc: Ian Mace, Environment & Geoscience business unit of SNC-Lavalin Inc.,  
202 – 890 Crace Street, Nanaimo, BC V9R 2T3 [ian.mace@snclavalin.com](mailto:ian.mace@snclavalin.com)

Alan Walker, Approved Professional, Environment & Geoscience business unit of SNC-Lavalin Inc., 8648 Commerce Court, Burnaby, BC V5A 4N6 [alan.walker@snclavalin.com](mailto:alan.walker@snclavalin.com)

Keith Lawrence, Cowichan Valley Regional District,  
175 Ingram Street, Duncan, BC V9L 1N8 [keith.lawrence@cvrd.bc.ca](mailto:keith.lawrence@cvrd.bc.ca)

CSAP Society, 613 – 744 West Hastings Street, Vancouver, BC V6C 1A5  
[cschachtel@csapsociety.bc.ca](mailto:cschachtel@csapsociety.bc.ca)

Bryan Brassington, TELUS Communications Inc.,  
25 York Street, Floor 22, Toronto, ON M5J 2V5



**PRELIMINARY DETERMINATION**  
(Pursuant to Section 44 of the *Environmental Management Act*)

I have made a Preliminary Determination that the site identified in Schedule A of this document **is not** a contaminated site.

This Preliminary Determination is qualified by the requirements and conditions specified in Schedule B.

The site does not have concentrations of the substances specified in Schedule C that exceed the applicable standards and criteria prescribed in the Contaminated Sites Regulation for determining whether a site is a contaminated site.

I have issued this Preliminary Determination based on a review of relevant information including the documents listed in Schedule D. I, however, make no representation or warranty as to the accuracy or completeness of that information.

This is to advise that I will consider submissions received 35 days after delivery of this Preliminary Determination before a Final Determination is made.

In accordance with the *Environmental Management Act*, I will notify persons with an interest in the subject site once a Final Determination is made.

This Preliminary Determination should not be construed as an assurance that there are no hazards present at the site.

October 18, 2019

Date Issued

J.A. Brooke  
For Director, *Environmental Management Act*

## Schedule A

The site covered by this Preliminary Determination is for Meade Creek Gravel Pit (#009), Cowichan Lake, British Columbia which is more particularly known and described as:

Commencing at the northwest corner of Parcel A (DD42136I), District Lot 27, Cowichan Lake District, except part in Plan 7262RW (PID 010-652-728).

Thence, at a bearing of 91 degrees 49 minutes 0 seconds a distance of 140.78 m.

Thence, at a bearing of 118 degrees 22 minutes 17 seconds a distance of 198.34 m. Thence,

at a bearing of 107 degrees 30 minutes 25 seconds a distance of 31.08 m. Thence, at a

bearing of 118 degrees 49 minutes 11 seconds a distance of 426.72 m. Thence, at a bearing of

124 degrees 31 minutes 55 seconds a distance of 30.63 m. Thence, at a bearing of

118 degrees 50 minutes 9 seconds a distance of 56.89 m.

Thence, at a bearing of 180 degrees 31 minutes 19 seconds a distance of 273.07 m. Thence,

at a bearing of 320 degrees 25 minutes 54 seconds a distance of 35.49 m. Thence, at a

bearing of 316 degrees 1 minute 48 seconds a distance of 35.49 m.

Thence, at a bearing of 311 degrees 37 minutes 37 seconds a distance of 35.49 m. Thence, at

a bearing of 307 degrees 13 minutes 30 seconds a distance of 35.49 m. Thence, at a bearing

of 302 degrees 49 minutes 21 seconds a distance of 35.49 m. Thence, at a bearing of

299 degrees 31 minutes 15 seconds a distance of 17.75 m. Thence, at a bearing of

297 degrees 19 minutes 10 seconds a distance of 17.75 m. Thence, at a bearing of

295 degrees 5 minutes 32 seconds a distance of 16.58 m.

Thence, at a bearing of 292 degrees 50 minutes 11 seconds a distance of 16.58 m. Thence, at

a bearing of 290 degrees 34 minutes 54 seconds a distance of 16.58 m. Thence, at a bearing

of 288 degrees 19 minutes 34 seconds a distance of 16.58 m. Thence, at a bearing of

286 degrees 4 minutes 21 seconds a distance of 16.58 m.

Thence, at a bearing of 283 degrees 21 minutes 59 seconds a distance of 128.56 m. Thence,

at a bearing of 283 degrees 14 minutes 26 seconds a distance of 137.53 m. Thence, at a

bearing of 287 degrees 16 minutes 0 seconds a distance of 13.12 m.

Thence, at a bearing of 288 degrees 55 minutes 47 seconds a distance of 13.12 m. Thence, at

a bearing of 286 degrees 57 minutes 14 seconds a distance of 14.43 m. Thence, at a bearing

of 288 degrees 47 minutes 21 seconds a distance of 14.43 m. Thence, at a bearing of

290 degrees 9 minutes 38 seconds a distance of 15.54 m.

Thence, at a bearing of 292 degrees 5 minutes 12 seconds a distance of 15.54 m.

Thence, at a bearing of 295 degrees 27 minutes 42 seconds a distance of 18.00 m. Thence, at

a bearing of 297 degrees 44 minutes 39 seconds a distance of 18.00 m. Thence, at a bearing

of 300 degrees 1 minute 39 seconds a distance of 18.00 m.



October 18, 2019

Date Issued

J.A. Brooke

For Director, *Environmental Management Act*

Thence, at a bearing of 302 degrees 18 minutes 33 seconds a distance of 18.00 m. Thence, at a bearing of 304 degrees 35 minutes 32 seconds a distance of 18.00 m. Thence, at a bearing of 306 degrees 10 minutes 0 seconds a distance of 16.24 m.

Thence, at a bearing of 308 degrees 13 minutes 35 seconds a distance of 16.24 m. Thence, at a bearing of 309 degrees 51 minutes 17 seconds a distance of 17.31 m. Thence, at a bearing of 312 degrees 3 minutes 31 seconds a distance of 17.31 m.

Thence, at a bearing of 314 degrees 15 minutes 47 seconds a distance of 17.31 m. Thence, at a bearing of 316 degrees 15 minutes 35 seconds a distance of 101.60 m. Thence, at a bearing of 0 degrees 34 minutes 26 seconds a distance of 206.25 m to the point of commencement, and comprising an area of 22.7 hectares.

The site contains part of a legal parcel as depicted in an engineering drawing number 647955-LET1, provided in *Addendum to Preliminary Site Investigation, Meade Creek Gravel Pit (Pit #009), Lake Cowichan, BC*, prepared by SNC-Lavalin Inc., August 1, 2019.

The approximate centre of the site using the NAD (North American Datum) 1983 convention is:

Latitude: 48° 49' 55"  
Longitude: 124° 5' 11"

October 18, 2019

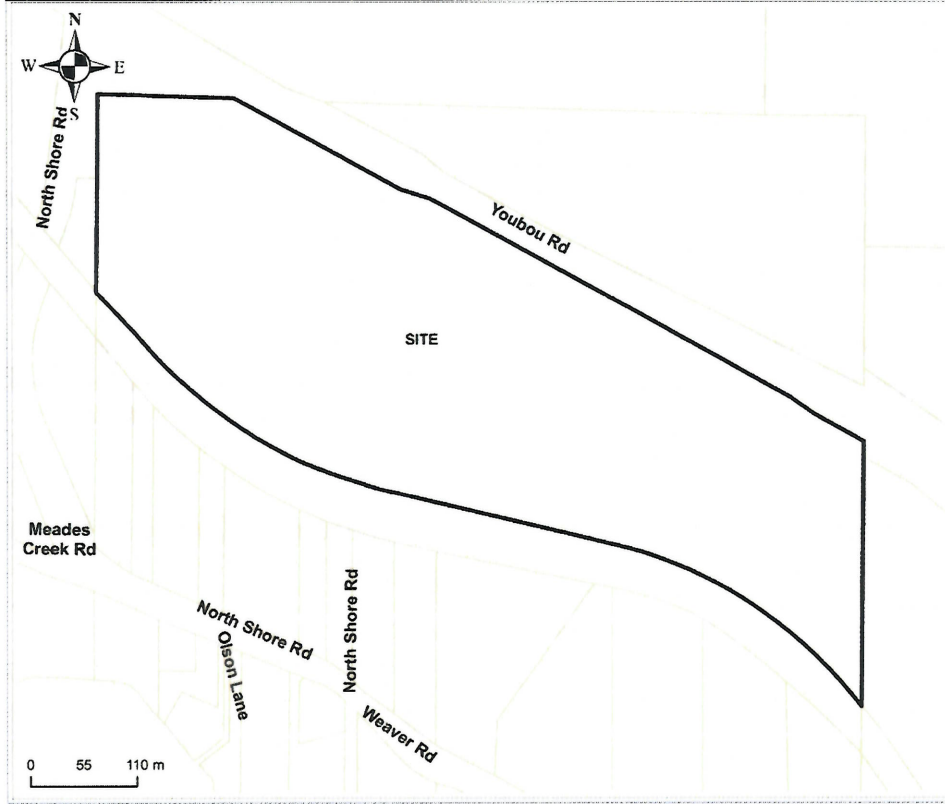
Date Issued

Site Identification Number 22571  
Version 9.0 R



J.A. Brooke  
For Director, *Environmental Management Act*  
3 of 12

Site Plan - Parcel A, PPlan DD 462136I, Lake Cowichan, BC



Location Map - Parcel A, PPlan DD 462136I, Lake Cowichan, BC



October 18, 2019

Date Issued

Site Identification Number 22571

Version 9.0 R

J.A. Brooke  
For Director, *Environmental Management Act*  
4 of 12

**Schedule B**

**Requirements and Conditions**

This Schedule contains no requirements or conditions.

October 18, 2019

Date Issued

Site Identification Number 22571  
Version 9.0 R



---

J.A. Brooke  
For Director, *Environmental Management Act*  
5 of 12

## Schedule C

### Substances and Uses

***Substances evaluated in soil for reverted wildland land soil use:***

To meet numerical standards prescribed for defining whether a site is contaminated:

acenaphthene	83-32-9	dibromochloromethane	124-48-1
aluminum	7429-90-5	dibromoethane, 1,2-	106-93-4
anthracene	120-12-7	dichlorobenzene, 1,2-	95-50-1
anthraquinone, 9,10-	84-65-1	dichlorobenzene, 1,3-	541-73-1
antimony	7440-36-0	dichlorobenzene, 1,4-	106-46-7
arsenic	7440-38-2	dichloroethane, 1,1-	75-34-3
barium	7440-39-3	dichloroethane, 1,2-	107-06-2
benz(a)anthracene	56-55-3	dichloroethylene, 1,1-	75-35-4
benzene	71-43-2	dichloroethylene, 1,2-cis-	156-59-2
benzo(a)pyrene	50-32-8	dichloroethylene, 1,2-trans-	156-60-5
benzo(b+j)fluoranthene	205-99-2&205-82-3	dichloromethane	75-09-2
benzo(k)fluoranthene	207-08-9	dichloropropane, 1,2-	78-87-5
beryllium	7440-41-7	dichloropropene, 1,3- (cis+trans)	542-75-6
boron	7440-42-8	dichloropropene, 1,3-cis-	10061-01-5
bromodichloromethane	75-27-4	dichloropropene, 1,3-trans-	10061-02-6
bromoform	75-25-2		
butadiene, 1,3-	106-99-0	dimethylbenz(a)anthracene, 7,12-	57-97-6
cadmium	7440-43-9	ethylbenzene	100-41-4
carbon Tetrachloride	56-23-5	ethylene glycol	107-21-1
chloride ion	16887-00-6	fluoranthene	206-44-0
chlorobenzene	108-90-7	fluorene	86-73-7
chloroform	67-66-3	HEPHs	n/a
chloronaphthalene, 2-	91-58-7	indeno(1,2,3-cd)pyrene	193-39-5
chromium	7440-47-3	iron	7439-89-6
chromium, hexavalent	18540-29-9	isopropylbenzene	98-82-8
chromium, trivalent	16065-83-1	lead	7439-92-1
chrysene	218-01-9	LEPHs	n/a
cobalt	7440-48-4	lithium	7439-93-2
copper	7440-50-8	manganese	7439-96-5
dibenz(a,h)anthracene	53-70-3	mercury	7439-97-6



October 18, 2019

Date Issued

Site Identification Number 22571

Version 9.0 R

J.A. Brooke

For Director, *Environmental Management Act*

6 of 12



methyl tert-butyl ether [MTBE]	1634-04-4	tetrachloroethylene	127-18-4
methylcholanthrene, 3-	56-49-5	thallium	7440-28-0
methylnaphthalene, 1-	90-12-0	tin	7440-31-5
methylnaphthalene, 2-	91-57-6	toluene	108-88-3
molybdenum	7439-98-7	trichloroethane, 1,1,1-	71-55-6
naphthalene	91-20-3	trichloroethane, 1,1,2-	79-00-5
nickel	7440-02-0	trichloroethylene	79-01-6
phenanthrene	85-01-8	trichlorofluoromethane	75-69-4
propylbenzene, 1-	103-65-1	triethylene glycol	112-27-6
pyrene	129-00-0	trimethylbenzene, 1,3,5-	108-67-8
quinoline	91-22-5	tungsten	7440-33-7
selenium	7782-49-2	uranium	7440-61-1
silver	7440-22-4	vanadium	7440-62-2
sodium ion	7440-23-5	vinyl chloride	75-01-4
strontium	7440-24-6	VPHs	n/a
styrene	100-42-5	xylenes	1330-20-7
tetrachloroethane, 1,1,1,2-	630-20-6	zinc	7440-66-6
tetrachloroethane, 1,1,2,2-	79-34-5		

October 18, 2019

Date Issued

Site Identification Number 22571  
Version 9.0 R



J.A. Brooke

For Director, *Environmental Management Act*

7 of 12

***Substances evaluated in vapour for residential land vapour use:***

To meet numerical standards prescribed for defining whether a site is contaminated:

acetone	67-64-1	methyl ethyl ketone [MEK]	78-93-3
benzene	71-43-2	methyl isobutyl ketone [MIBK]	108-10-1
bromobenzene	108-86-1	methyl tert-butyl ether [MTBE]	1634-04-4
bromodichloromethane [BDCM]	75-27-4	methylcyclohexane	108-87-2
bromomethane	74-83-9	naphthalene	91-20-3
butadiene, 1,3-	106-99-0	n-decane	124-18-5
carbon disulfide	75-15-0	n-hexane	110-54-3
carbon tetrachloride	56-23-5	tetrachloroethane, 1,1,2,2-	79-34-5
chlorobenzene	108-90-7	tetrachloroethylene	127-18-4
dibromoethane, 1,2-	106-93-4	toluene	108-88-3
dibromomethane	74-95-3	trichlorobenzene, 1,2,4-	120-82-1
dichloroethane, 1,1-	75-34-3	trichloroethane, 1,1,1-	71-55-6
dichloroethane, 1,2-	107-06-2	trichloroethane, 1,1,2-	79-00-5
dichloroethylene, 1,2-cis-	156-59-2	trichloroethylene	79-01-6
dichloroethylene, 1,2-trans-	156-60-5	trimethylbenzene, 1,2,4-	95-63-6
dichloromethane	75-09-2	trimethylbenzene, 1,3,5-	108-67-8
dichloropropane, 1,2-	78-87-5	vinyl chloride	75-01-4
ethyl acetate	141-78-6	VPHv	n/a
ethylbenzene	100-41-4	xylenes	1330-20-7
isopropylbenzene	98-82-8		

October 18, 2019

Date Issued

Site Identification Number 22571

Version 9.0 R



J.A. Brooke

For Director, *Environmental Management Act*

8 of 12

***Substances evaluated in water for freshwater aquatic life water use:***

To meet numerical standards prescribed for defining whether a site is contaminated:

acenaphthene	83-32-9	dichloropropene, 1,3-trans-	10061-02-6
acridine	260-94-6	EPHw <sub>10-19</sub>	n/a
aluminum	7429-90-5	ethylbenzene	100-41-4
anthracene	120-12-7	ethylene glycol	107-21-1
antimony	7440-36-0	fluoranthene	206-44-0
arsenic	7440-38-2	fluorene	86-73-7
barium	7440-39-3	lead	7439-92-1
benz(a)anthracene	56-55-3	LEPHw	n/a
benzene	71-43-2	lithium	7439-93-2
benzo(a)pyrene	50-32-8	mercury	7439-97-6
benzo(b+j)fluoranthene	205-99-2&205-82-3	methyl tert-butyl ether [MTBE]	1634-04-4
beryllium	7440-41-7	methylnaphthalene, 1-	90-12-0
boron	7440-42-8	methylnaphthalene, 2-	91-57-6
bromodichloromethane [BDCM]	75-27-4	molybdenum	7439-98-7
bromoform	75-25-2	naphthalene	91-20-3
cadmium	7440-43-9	nickel	7440-02-0
carbon tetrachloride	56-23-5	phenanthrene	85-01-8
chloride	16887-00-6	propylene glycol, 1,2-	57-55-6
chlorobenzene	108-90-7	pyrene	129-00-0
chloroform	67-66-3	quinoline	91-22-5
chromium	7440-47-3	selenium	7782-49-2
chrysene	218-01-9	silver	7440-22-4
cobalt	7440-48-4	sodium	7440-23-5
copper	7440-50-8	tetrachloroethane, 1,1,1,2-	630-20-6
dibenz(a,h)anthracene	53-70-3	tetrachloroethane, 1,1,2,2-	79-34-5
dibromochloromethane [DBCM]	124-48-1	tetrachloroethylene	127-18-4
dichlorobenzene, 1,2-	95-50-1	thallium	7440-28-0



October 18, 2019

Date Issued

Site Identification Number 22571  
Version 9.0 R

J.A. Brooke  
For Director, *Environmental Management Act*  
9 of 12

dichlorobenzene, 1,3-	541-73-1	tin	7440-31-5
dichlorobenzene, 1,4-	106-46-7	titanium	7440-32-6
dichloroethane, 1,1-	75-34-3	toluene	108-88-3
dichloroethane, 1,2-	107-06-2	trichloroethane, 1,1,1-	71-55-6
dichloroethylene, 1,1-	75-35-4	trichloroethane, 1,1,2-	79-00-5
dichloroethylene, 1,2-cis-	156-59-2	trichloroethylene	79-01-6
dichloroethylene, 1,2-trans-	156-60-5	trichlorofluoromethane	75-69-4
dichloromethane	75-09-2	triethylene glycol	112-27-6
dichloropropane, 1,2-	78-87-5	uranium	7440-61-1
dichloropropene, 1,3- (cis+trans)	542-75-6	vanadium	7440-62-2
dichloropropene, 1,3-cis-	10061-01-5	VHw <sub>6-10</sub>	n/a
vinyl chloride	75-01-4		
VPHw	n/a		
xylenes	1330-20-7		
zinc	7440-66-6		

***Substances evaluated in water for drinking water use:***

To meet numerical standards prescribed for defining whether a site is contaminated:

acenaphthene	83-32-9	fluorene	86-73-7
aluminum	7429-90-5	isopropylbenzene	92-82-8
anthracene	120-12-7	lead	7439-92-1
antimony	7440-36-0	lithium	7439-93-2
arsenic	7440-38-2	methyl tert-butyl ether	1634-04-4
barium	7440-39-3	methylnaphthalene, 1-	90-12-0
benz(a)anthracene	56-55-3	methylnaphthalene, 2-	91-57-6
benzene	71-43-2	mercury	7439-97-6
benzo(a)pyrene	50-32-8	molybdenum	7439-98-7
benzo(b)fluoranthenes	205-99-2	nickel	7440-02-0
benzo(j)fluoranthenes	205-82-3	nitrate (as N)	14797-55-8
beryllium	7440-41-7	nitrite (as N)	14797-65-0
boron	7440-42-8	pyrene	129-00-0
butadiene, 1,3-	106-99-0	quinoline	91-22-5



October 18, 2019

Date Issued

Site Identification Number 22571  
Version 9.0 R

J.A. Brooke  
For Director, *Environmental Management Act*  
10 of 12

cadmium	7440-43-9	selenium	7782-49-2
chloride ion	16887-006	sodium ion	17341-25-2
chromium	7440-47-3	strontium	7440-24-6
chrysene	218-01-9	tin	7440-31-5
cobalt	7440-48-4	toluene	108-88-3
copper	7440-50-8	1,3,5-Trimethylbenzene	108-67-8
dibenz(a,h)anthracene	53-70-3	tungsten	7440-33-7
dibromoethane, 1,2-	106-93-4	uranium	7440-61-1
dichloroethane, 1,2-	107-06-2	vanadium	7440-62-2
EPHW <sub>10-19</sub>	NA	VHW <sub>6-10</sub>	NA
naphthalene	91-20-3	xylenes, total	1330-20-7
ethylbenzene	100-41-4	zinc	7440-66-6
fluoranthene	206-44-0		

October 18, 2019

Date Issued

Site Identification Number 22571

Version 9.0 R



J.A. Brooke

For Director, *Environmental Management Act*

11 of 12

## Schedule D

### Documents

- *Summary of Site Condition*, prepared by Alan Walker, SNC-Lavalin Inc., July 23, 2019.
- *Addendum to Preliminary Site Investigation, Meade Creek Gravel Pit (Pit #009), Lake Cowichan, BC, Submission CSAP # 19-015*, prepared by Ian Mace and Alan Walker, SNC-Lavalin Inc., July 23, 2019.
- *Stage 2 Preliminary Site Investigation, Meade Creek Gravel Pit (Pit #009), Lake Cowichan, BC*, prepared by Chris Trenholm and Ian Mace, SNC-Lavalin Inc., April 15, 2019.
- *Stage 1 Preliminary Site Investigation, Meade Creek Gravel Pit (Pit #009), Cowichan Lake, BC*, prepared by Janet Jeffery and Ian Mace, SNC-Lavalin Inc., August 17, 2017.

October 18, 2019

Date Issued

Site Identification Number 22571

Version 9.0 R



J.A. Brooke  
For Director, *Environmental Management Act*  
12 of 12