



Ministry of Environment

Information Sheet

on

Cobble Hill Holdings/ South Island Aggregates

Lot 21 Historical Records Review



This Information Sheet provides a summary of the Ministry of Environment's (MOE) review of historical soil records pertaining to Lot 21, a portion of which is regulated under a *Mines Act* Permit issued to South Island Aggregates Ltd. for operation of the rock quarry. The records were obtained through an Order issued by the Ministry of Energy and Mines (MEM).

The review was conducted as part of the MOE's effort to evaluate the quality of soils on Lot 21, and if possible determine if the soil deposited on the site was done in accordance with requirements in the *Mines Act* Permit and the Contaminated Sites Regulation (CSR), which prescribes the quality of soils that can be received and deposited on a given parcel of land, depending on the land use.

What are the requirements that must be met?

- For the portion of Lot 21 which lies inside the *Mines Act* permit boundary, deposited soil must meet the CSR standards (listed in Schedules 4 & 5) to protect human and environmental health for residential land use because this is the land use prescribed in the permit.
- For other portions of Lot 21, deposited soil must meet the CSR standards (Schedules 4 & 5) to protect human and environmental health for industrial land use because this is the current land use of the lot.
- For all of Lot 21, soils being transported to this site must either meet CSR Schedule 7 or have a valid Contaminated Soil Relocation Agreement (CSRA).

How were the records assessed to determine if requirements were met?

- Records obtained by MEM in response to the Order were provided to MOE for review
- Records were evaluated to determine:
 1. the origin of soil used as fill at the site (i.e. where the soil came from), to determine who may be responsible for obtaining a CSRA if one was required
 2. Where the fill soil received was actually deposited on site, to determine which standards (i.e. residential or industrial) must be met
 3. The quality of the soil deposited on the site, to determine whether the results met the applicable standards
- Records consisted of soil shipping slips and analytical results obtained for random monthly soil samples of soil received at Lot 21, between 2008 and 2013
 - Soil shipping slips provided the weight of soil deposited and the general origin or source (i.e. Shipping contractor's name or city) of the soil received and deposited on Lot 21

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- From 2008-2013, a random daily soil sample was taken from the soil received for deposit at the site. For each month between 2008-2013, two randomly selected daily soil samples collected in a particular month underwent chemical analysis for: metals, volatile petroleum hydrocarbons, extractable petroleum hydrocarbons, mono-aromatic hydrocarbons and in some cases, phenolics and polycyclic aromatic hydrocarbons.
- The analytical results for the monthly random samples (120 samples total) were compared to the CSR Schedules 4 and 5 residential and industrial soil standards and to CSR Schedule 7 soil standards for relocations triggering CSRAs.

Who was involved in the records review?

- MEM staff issued the Order to South Island Aggregates Ltd. requiring the company to produce the records, and MOE staff from the Land Remediation Section conducted the review of records.

What were the findings of the historical records review?

1. No exceedances of CSR Schedule 4, 5 or 7 standards for volatile petroleum hydrocarbons, extractable petroleum hydrocarbons, mono-aromatic hydrocarbons or phenolics were found.
2. For metals, infrequent exceedances of Schedule 5 or 7 soil standards were found for three metals: chromium, lead and zinc. A single exceedance was noted for tin. Excluding the single exceedance for tin, a total of 30 of 120 samples (25%) of analyzed soil samples exceeded chromium, lead or zinc standards.
3. For the majority of the metal exceedances found, 25/30 or 83% were only relevant to CSR Schedule 7 (i.e. soil relocation). Since soil pH was not analyzed and the CSR schedule 5 standards for lead and zinc are pH dependent, the 12 lead and 13 zinc results cannot be verified as exceedances. Only the exceedances (5/30 or 17%) seen for chromium could be conclusively shown to exceed a Schedule 5 residential and/or industrial standard for protection of human health.
4. Very few records specifically identified the origin of the deposited soil (i.e. provided city and street address of the source site) and no records contained detailed information relating to where specifically on the site the soils were deposited. Although most sample results were within acceptable standards, the records could not be used to definitively confirm whether or not soil deposited on the site was deposited according to the requirements for the specific deposit location.
5. Although the data in the records does not raise any major concerns, the records on their own cannot be relied on to characterize the soil on the site as a whole, nor can they be used to definitively confirm whether or not all soils on the site were deposited in accordance with all the applicable requirements. The results of MOE's limited surficial soil sampling summarized in the companion Information Sheet *Lot 21 Surficial Soil Sampling May 2015* provide additional insight into these issues.

Next Steps?

No further action is planned at this time.