

Okanagan Falls Landfill

2022 Annual Report

Operational Certificate: 15279



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I. INTRODUCTION AND SITE BACKGROUND

The OFLF is currently operated as a natural attenuation landfill under Operational Certificate (OC) 15279 updated June 28, 2011 for the RDOS by the British Columbia Ministry of Environment and Climate Change Strategy (BC MoE). EcoScape Environmental Consultants Ltd (EECL) was retained by the Regional District of Okanagan-Similkameen (RDOS) to prepare the 2022 Environmental Monitoring Report for the Okanagan Falls Landfill (OFLF); their report is attached. The Regional District of Okanagan-Similkameen compiled the operational information for this landfill.

The Okanagan Falls Landfill (OFLF) site is located approximately four (4) kilometres east of Okanagan Falls town site, with access along Allendale Lake Road. The legal description of the site is part of Lot 2710, Similkameen Division of Yale District (S.D.Y.D), commencing at a point 91 metres south of the northeast corner of Sublot 10 of Lot 2710, Plan 1189, which is situated on 8.2 hectares of land, and is leased from the Provincial Crown by the RDOS. Landfilling operations are reported to have commenced at the OFLF prior to 1979.

This report presents the monitoring and operational activities for the 2022 reporting period from January 1 to December 31, 2022. The report was prepared in accordance with the annual landfill reporting requirements outlined in Section 4.4 of the OC. To help the regulator aid in assessment of compliance, we provide a concordance table (Table I below), which outlines the Operational Certificate 15279 section requirement and the corresponding report information section.

Effective November 2004, the OFLF became the Regional Receiving Facility for Demolition, Renovation and Construction (DRC) waste. Therefore, the OFLF no longer accepts Municipal Solid Waste containing Food Waste; instead, it is directed to the Campbell Mountain Landfill. In October 2021, a Design, Operation and Closure (DOC) Plan was completed for the Okanagan Falls Landfill Facility (SHA 2019).

Waste accepted at the facility includes co-mingled solid waste containing recyclable materials, largely inert, resulting from the construction, remodeling, repair and demolition of structures, roads, sidewalks and utilities, utility maintenance, and seasonal or storm-related cleanup. The waste may include asphalt, bricks, concrete, other masonry materials, soil, wood and wood products, gypsum or wall board, etc. Additionally, recyclable materials such as wood and yard waste, scrap metal, propane tanks, tires, and batteries continue to be accepted at the OFLF.

Table I: Operational Certificate 15279 Concordance Table

Approved Schedule Condition	Corresponding Report Information Section
Section 4.1 Municipal Solid Waste Management	
4.1.1 - Provide and maintain a weigh scale and record the weight of refuse discharged to the landfill over a 24-hour period	2.4 Waste Disposal and Table 2
Approved Schedule Condition	
Section 4.1 Municipal Solid Waste Management	
4.1.2 - Record the weight or volume of recyclable and reusable materials not being discharged and that are being separated, stored or processed at the landfill over a 24-hour period.	2.3 Waste Diversion Activities and Table 2
4.1.3 - If possible, density tests should be performed utilizing a known scaled volume of representative compacted refuse at a frequency of at least once per year and reported in kg per m ³ .	2.5 Landfill Volume Consumed
Section 4.2 - Vegetation Monitoring	
4.2 - Inspect vegetation during the growing season in the vicinity of the landfill at least once per year to determine if any environmental impacts are occurring and take appropriate remedial action if necessary.	2022 Environmental Monitoring Report, Section 4.2.1 Groundwater Monitoring Protocols
Section 4.3 - Monitoring Program	
4.3.1 - Monitoring Program	2022 Environmental Monitoring Report , Section 4.2 Monitoring Program
4.3.3 - Sampling Techniques	2022 Environmental Monitoring Report, Section 4.2.1 Groundwater Monitoring Protocols
4.3.4 - Analyses	2022 Environmental Monitoring Report , Completed by CARO Analytical in Kelowna, BC a CALA accredited laboratory
4.4 - Annual Report	
4.4.1 (a) - Type and tonnage of waste received, recycled and landfilled	2.3 Waste Diversion Activities, 2.4 Waste Disposal, 2.5 Landfill Volume Consumed, Table 2
4.4.1 (b) - Current topographic map of the active landfill area and soil stockpiles	Figure 1(a) Site Layout, and 1(b) Topographical
4.4.1 (c) - Updated estimates for the remaining capacity, closure for the current phase and closure date for the current landfill report	2.7 Remaining Life Capacity
4.4.1 (d) - Any new information or proposed changes relating to the facilities and Design and Operation Plan	2.8 2022 Operation Plan
4.4.1 (e) - Open burning activity, if applicable, including amount of material received for burning, number of burns and updates from a wood waste audit	None

4.4 - Annual Report - Continued	
4.4.1 (f) - Occurrences or observations of wildlife at the facility	None recorded
4.4.1 (g) - A statement regarding progress in reducing the waste stream, in accordance with the hierarchy of reduce, reuse and recycle principles.	2.3 Waste Diversion Activities, 2.4 Waste Disposal, Table 2
Approved Schedule Condition	Corresponding Report Information Section
Section 4.1 Municipal Solid Waste Management	
4.4.1 (h) - The results of all monitoring programs as specified in this Operational Certificate. Data interpretation and trend analysis, as well as an evaluation of the impacts of the discharges on the receiving environment in the previous year shall be carried out by a qualified professional	2022 Environmental Monitoring Report
4.4.1 (i) - The methods and amounts of leachate collection, treatment and disposal, if applicable	Not Applicable

2. LANDFILL OPERATION AND MANAGEMENT

2.1 OKANAGAN FALLS LANDFILL (OFLF) OPERATIONS

The OFLF was operated during the report period by Wildstone Engineering Contractor personnel. As of November 2004, the OFLF no longer accepts Municipal Waste containing Food Waste. Residents and businesses in the area divert these materials to the Campbell Mountain Landfill for disposal. Through favourable tipping fees, demolition, land clearing, and construction waste is encouraged to be brought to the OFLF from the Region. The landfill accepts recyclable materials.

Wastes that are prohibited from disposal at the OFLF, according to Section 4.12 of the OC, include the following:

- Hazardous Wastes other than those specifically authorized in the Hazardous Waste Regulation;
- Bulk liquids, semisolid sludge which contain free liquid;
- Liquid or semisolid wastes (septage, black water, and sewage treatment sludge);
- Automobiles, white goods and other large metallic objects;
- Biomedical waste; and
- Dead animals and slaughter house, fish hatchery wastes, and farming wastes or cannery wastes and byproducts.

The landfill operated from 10:00 a.m. to 1:45 p.m. Monday through Friday and on Saturdays 10:00 a.m. to 1:45 p.m. April to the end of November. The landfill is closed on Sundays and all statutory holidays.

Equipment used at the site includes the following:

- Komatsu WA320-8 Loader;
- John Deere 270D Excavator, and Komatsu PC 200 Excavator (spare);
- 1,500 gallon Water Truck S/A International 4700;
- CAT 816 F Compactor; and Rex Trashmaster 345 Compactor(spare);
- Ford D 5000 Tandem Axel Bin Truck.

Currently, the OFLF's active face is covered with 0.15 m of daily cover consisting of a mixture of native soil excavated on site and chipped overs (consisting mainly of dirt with fine wood mixed in) from the DLC sort facility.

The contractor performed three sorts of stockpiled Demolition, Renovation and Construction (DRC) materials in 2022 Details on the sort are included in Appendix II.

In 2022, there were 9,735 loads (a 10% reduction from 2021) over the Okanagan Falls Landfill scale.

2.2 OFLF FACILITIES

The entrance to the OFLF is located near the north-east corner of the site off Allendale Lake Road. An access gate controls entrance and/or exit. A page wire fence contains the east, west and south perimeter of the landfill, with a chainlink fence along the north boundary. The entrance gate is locked when the site is closed to prevent unauthorized vehicle entry and uncontrolled waste disposal.

The Scale and Scale House Facility as well as the landfill operator's trailer are located near the entrance at the north end of the Site.

Demolition sorting is done in the south east corner of the site.

2.3 WASTE DIVERSION ACTIVITIES

Recyclable materials brought to the OFLF such as cardboard, mixed paper, aluminum cans, plastic packaging, glass containers, E-waste, batteries and fluorescent bulbs are stored in containers located in front of the scale. Asphalt shingles, concrete, commercial glass, scrap metal, tires, wood and yard waste and pressurized tanks, are placed in designated locations on the Site. The facility also operates a mattress/box spring reduction program. The Site was a RecycleBC depot but stopped being one in 2015.

The OFLF operates a Demolition, Renovation and Construction (DRC) Sort Facility for mixed Demolition waste that has been assessed to WorkSafeBC standards ensuring no asbestos or other hazardous waste is delivered to site. Mixed Demolition Construction and Renovation materials are sorted into recyclables, compostables, and operationally beneficial materials.

In 2022 the demolition materials are excavator crushed and loaded into a hopper the finer materials are screened and the bulkier items are directed to a conveyor sorting table where the materials are manually sorted into garbage, metal and wood, the fines are stockpiled and utilized as Alternate Daily Cover, the misting system in use previously is no longer used as it was resulting in leachate concerns, instead presorting is more closely monitored to reduce dust. Additional information on the results of this sort is attached as Appendix II.

Figure 1a: March 2023 Okanagan Falls Landfill Site Layout

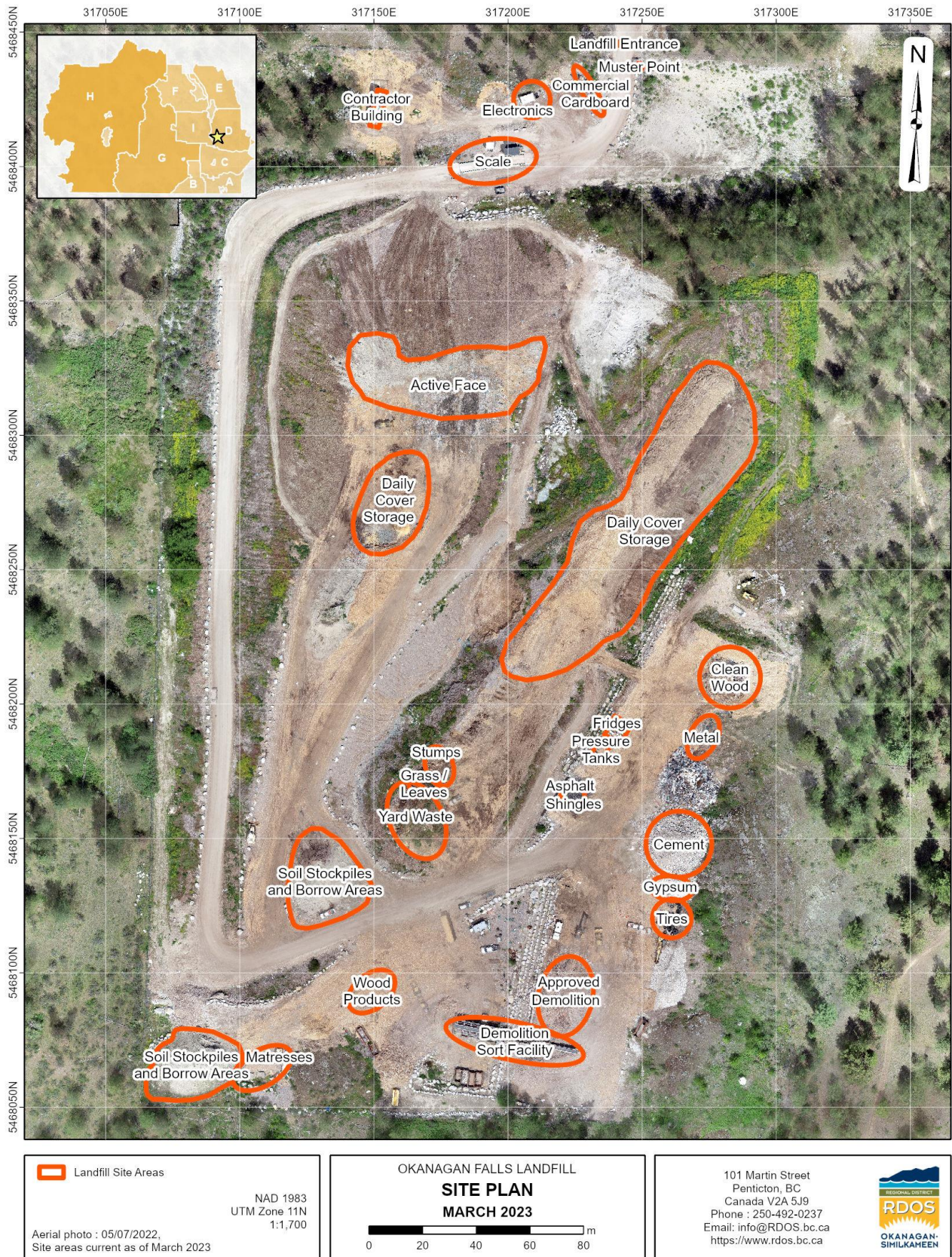
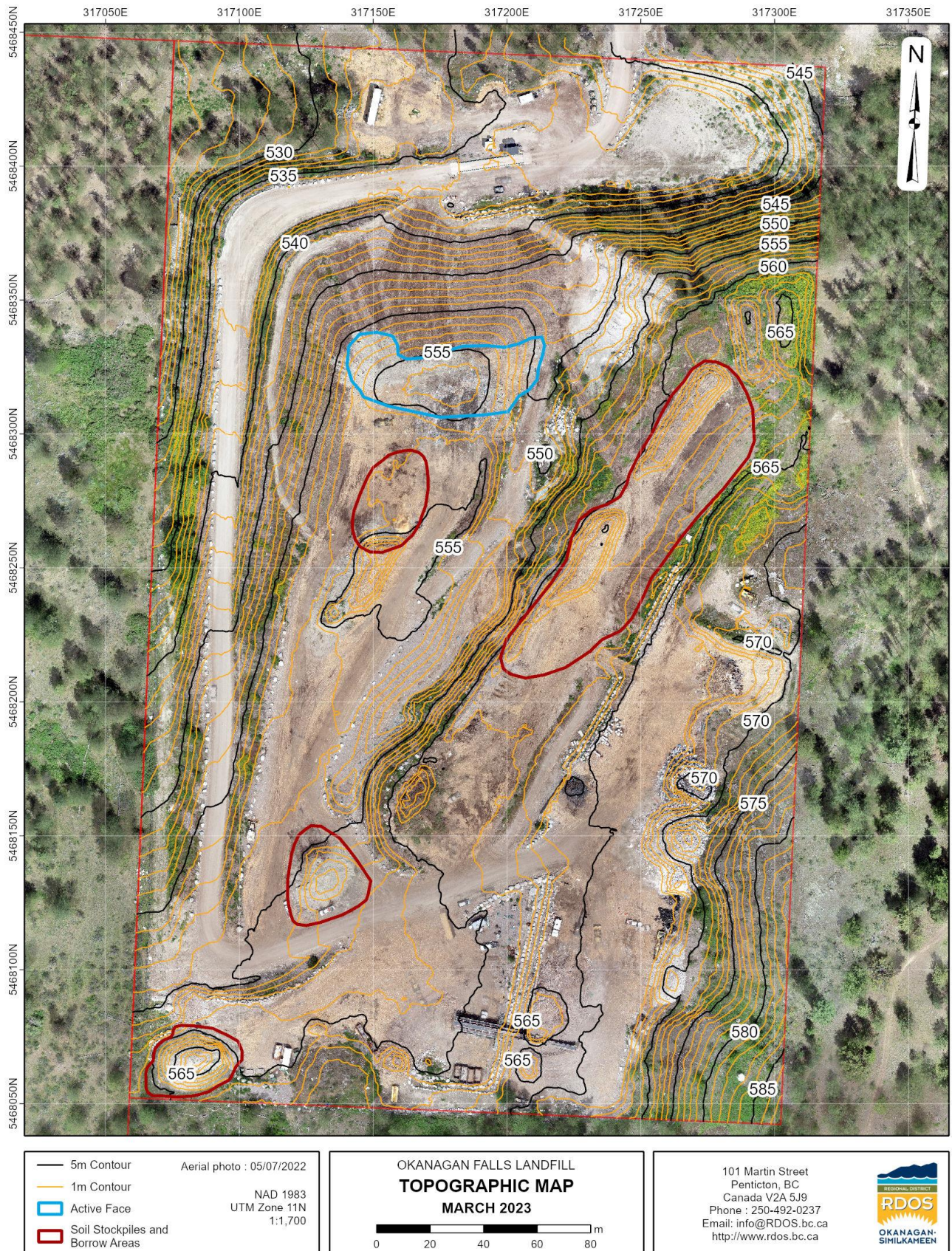


Figure I(b): March 2023 Okanagan Falls Landfill Topographical Map



2.4 WASTE DISPOSAL

All wastes received daily at the Okanagan Falls Landfill for disposal and recycling are scaled and recorded. Table 2, below provides the yearly total. We have provided the 2015 through 2022 data for comparison.

There was a 75% increase in materials disposed in 2022 as compared to 2021. This follows a 67% increase from 2019-2021. There was 18x increase in hauled Assessed Co-mingled Demolition materials to the sorting facility compared to 2021. This DRC landfill is starting to take hold of the construction community as being a valuable resource, there is no other private sector options for DRC recycling.

Table 2: Summary of Waste and Diverted Materials

Tonnes	2015	2016	2017	2018	2019	2020	2021	2022
Agricultural Plastics	0.125	1.375	6	3.69	6.94	3.41	4.21	1.65
Asbestos	0	0	0	0	0	0	0	0
Bulky Waste			6.31	3.08	4.82	0	0	12.3
Burnt material	3.69	0	0	0	0	0	0	0
Construction Mixed	181.1	100	193.9	31.82	0	28.64	9.47	11.71
Construction Mixed – Out Service						4.01	0	1.97
Controlled Waste	0		7.9	0	39.54	6.15	2.95	4.73
Curbside Bulky Waste Area 'D'	11.59	14.54	14.08	25.05	26.21	20.61	20.89	12.29
Demolition/Renovation Mixed Non-Assessed	254.5	162.9	111.1	116.54	67.27	10.22	41.17	7
Demolition Sort Facility Refuse			30.5	39.1	37.82	90.2	107.98	1167
Garbage – Commercial Account	579	756.1	732.1	1062.19	1023.98	1515.08	1410.93	984
Garbage – Refuse Non-Commercial					385.88	304.43	339.75	846
Garbage - Non-Service Area					28.85	3.07	0	2
Garbage - Containing Food Waste	7.575	3.74	0	0	0	0	0	0
Gypsum			1	40.59	56.79	81.61	152.93	105.78
Illegal Dumping	0.14	0	0.95	.72	0	6.1	.8	0
Lead Painted Materials					1.18	0	0	0.87
Noxious Weeds/Infested Vegetation	12.89	7.625	8.3	3.3	7.6	39.94	23.51	40.55
Preserved Wood	43.42	36.4	74.91	90.62	98.63	104.42	155.18	65.07
Prohibited Waste					0.27	5.85	.1	4.32
PRIOR CATEGORIES								
Demolition/Renovation Mixed	1091	437						
Demolition/Renovation Outside Service Area	9.165	20.77						634
TOTAL Disposed at Site	2195	1539	1181	1414	1786	2224	2270	3987

Cover Material (tonnes)	2015	2016	2017	2018	2019	2020	2021	2022
Clean Earth Fill	278.6	787.1	2952	1617.58	1524.73	7578.73	4540.52	1962
Contaminated Soil	0	2367	0	322.97	0	0	0	0
Sod								
Commercial Glass	828.1	924.9	1179	1000.52	792.07	713.66	649.87	716
Operation Cover - Sorted Demolition			2.3	745.81	See notes	378	456.8	807
Tar and Gravel and Asphalt Roofing		113.2	164.2	254	241.6	243.6	18.55	29.6
TOTAL Contributed for Cover Material	1107	4376	4295	3941	2558.4	8914	5666	3514

Recycled Material (tonnes)	2015	2016	2017	2018	2019	2020	2021	2022
Asphalt Shingles	160.2	141.5	112.7	64.48	161.65	106.12	370.51	262
Batteries		0	0.12	0.09	0.16	0	0	0
Biosolids (OK Falls/Keremeos)	122.1	118	101.5	121.69	0	116	84.76	0
Commercial Cardboard	9.86	1.92	0	0	No record	9.54	0	23
Concrete, Asphalt, Ceramic, Rock	202.4	705.5	174.1	813.11	405.84	284.8	838.94	302.9
Concrete Bulky						1.87	61.78	0
Concrete (Sort Facility)			22.4	102.67	41.57	69.8	100.63	59.7
Fruit Waste (Banned)					0.05	0	0	0
Gypsum	27.17	47.72	73.3	0	0	0	0	106
Metal	68	0	99.09	207.99	0		79.53	55.2
Metal Recovered wood waste						2.85	0	25.44
Timber Waste/Processed Organics White		13.81	140.9	136.41	119.8	0	0	0
Tree Stumps (m3 converted)	0	0	0	91.2	0	41.6	60.50	14.1
Wood Salvaged						0.5	0	0
Wood Product Contaminated(m3 converted)	1014	1629	791	1187.32	317.6	630.3	544	385
Wood Clean (m3 converted)						444.3	865.13	369.9
Wood Clean Small Dimension					92.25	219.73	61.02	69
Yard Waste Small Dimension	314.3	68.58	101.8	114.62	251.28	139.55	100.4	199
Organics (m3 converted) Yard Waste	638.4	970.9	292.6	1263.45	603.6	1214.7	1363.23	489.9
Small Pressurized Tanks (units converted)		0.009	0.11	0.04	0.1	0.1134	.16	0
Large Pressurized Tanks (units converted)		0.326	2.951	0.68	6.0	0.9384	.67	13.4
Tires (units converted)	5.126	5.83	0	4.63	3.41	7.29	8.32	76.8
Tires on Rims (units converted)	2.046	0	0	0	1.33	0.588	3.39	2.4
Tires Oversized	5.34	4.79	0.07	0	0	0.15	0	0
Residential Recycling (tonnes)	2015	2016	2017	2018	2019	2020	2021	2022
Mixed Blue Bag Recycling	2.375	0	0	0	0	0	0	0
RecycleBC Fibre						0	0	0
RecycleBC Containers						0	0	0
RecycleBC Film Plastic						0	0	0
RecycleBC Polystyrene Colour						0	0	0
RecycleBC Polystyrene White						0	0	0
RecycleBC Glass						0	0	0
TOTAL Diverted from the Landfill	2571	3708	1919	4111	2046	3291	4543	2043

Supplemental Information

Demolition/Renovation Mixed Assessed (tonnes)			575.1	739.5	1126.42	985.25	1955.64	1886
Demolition/Renovation Outside Service Area (tonnes)			88	410.8	591.76	567.93	689.90	634
Agricultural Organics (tonnes in Organics)	21.95	32.18	40.56	19.28	77.82	20.32	1.32	0
Electronic Waste (tonnes incl. Campbell Mtn)	0.88	1.145	0.79	1.5	0.54	0.61	.58	0
Yard Waste								2636
Stumps / Logs								0
White Wood (WTE shipped out)								477
Contaminated Wood								385
Demolition Wood								2144
Animal Bedding (Shipped offsite)								0
Mattress / Box spring Diversion (units)	201	186	162	232	208	344	442	340
Refrigeration Units (units)	159	120	180	189	179	215	219	125
Loads Received at Scale (number)			7557	7497	9708	10831	10745	9735

Table 3: Loads at Scale Per Month 2022

OK Falls Landfill	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Loads	301	392	1066	1089	967	1112	968	1521	1040	1017	557	249	9,735

Notes:

The tonnage data from recycled Asphalt Roofing, Batteries, Metal, Tree Stumps, White Wood, Organics, Propane Tanks, Tires, Tires with Rims, MMBC, BCUOMA and Regeneration materials supplied by contractors.

‘Tar and Gravel and Asphalt Roofing’ under the Cover Material is determined by taking the total materials received at Asphalt Roofing less the amount recycled plus Tar and Gravel roofing received. Tar and Gravel roofing weights (non-recyclable but good for cover) is weighted with Asphalt Roofing (recyclable).

The majority of ‘Operational Cover – Sorted Demolition’ was transported to the Oliver Landfill in 2022. A portion was kept onsite as recorded.

Conversion estimates to tonnage used

AVERAGE White Wood		0.23	tonnes/m ³
AVERAGE Organics		0.35	tonnes/m ³
AVERAGE Tree Stumps		0.3	tonnes/m ³
Propane Tanks Small	0.00045 tonnes/unit		
Propane Tanks Large		0.0136	tonnes/unit
Tires (no longer used)		0.011	tonnes/unit
Rims from Tires		0.014	tonnes/unit

2.5 LANDFILL PER CAPITA RATES

The Ok Falls Landfill serves a combined area with the Campbell Mountain Landfill so per capita rates of disposal are provided in the CML report.

2.6 LANDFILL VOLUME CONSUMED

Refuse compaction rates are a function of the type and size of compaction equipment utilized and the nature of the refuse. As indicated above, an 816 F CAT Compactor is currently used to compact the refuse and is estimated to yield an in-situ refuse density of approximately 0.6 tonnes/m³.

The apparent waste density of 4:1 garbage to cover was used to estimate landfill airspace consumption.

Based on the above compaction rate, the estimated landfill volume consumed by the placement of refuse during the reporting period is 3,987 tonnes (expected 2,247 tonnes), cover soil is 996 m³.

2.7 APPROVED DESIGN VOLUME

In the 2021 Design, Operations and Closure Plan, contours for the landfill were completed for final closure giving the remaining airspace total of 205,846 m³.

2.8 REMAINING OF LF LIFE CAPACITY

The 2021 Okanagan Falls Landfill DOCP by SHA Consulting estimates the remaining airspace to be approximately 220,287 m³ as of spring 2021. It is calculated that the remainder of phase I (2027) and 2, provide 42 years of waste filling resulting in final closure in 2062.

2.9 2022 OPERATION PLAN

OFLF operating hours for 2022 are planned to be Monday to Friday between 10:00 am and 1:45 pm and Saturdays from March to the end of November between 10:00 am and 1:45 pm.

2.10 OPERATION AND MAINTENANCE EXPENDITURES

The financial summary for the Okanagan Falls Landfill is a joint budget with the Campbell Mountain Landfill. These expenditures include OFLF Operator costs, labour costs for the gatehouse attendant and other miscellaneous expenses. The income statement and budget for the landfill is presented below.

Table 4: Financial Summary for 2021 for CMLF and OKLF

GL Account	Actual	Budget
Revenues		
1-3500-1000 - TAX REQUISITION	-	-
1-3500-2700 – INTEREST INCOME	420,449	-
1-3500-4600 - FEES - REFUSE DISPOSAL	4,078,669	3,214,215
1-3500-4605 - REFUSE DISPOSAL - OK FALLS	505,168	464,600
1-3500-4610 - GYPSUM DISP. FEES	0	102,010
1-3500-4620 - ORGANIC DISPOSAL FEES	0	220,180
1-3500-4630 - SCRAP METAL RECYCLING	252,086	85,850
1-3500-4640 - MMBC REVENUE TO CML	0	10,180
1-3500-4670 – LIQUID WASTE FEES	-	-
1-3500-6000 - TRANSFER FROM RESERVE	0	1,665,520
1-3500-6080 - TRANSFER FROM CLOSURE RESERVE FUND	0	797,062
1-3500-6290 - TRANSFER FROM OPERATING RESERVE	0	22,470
1-3500-8010 – PROV GRANT – Organics Composting Facility Contingent on Grant Approval	-	600,000
1-3500-8900 – FEDERAL GRANTS	51,328	-
1-3500-9000 - MISCELLANEOUS REVENUE	45,738	42,844
1-3500-9001-WOOD CHIPPING RECOVERABLE	-	7,613
1-3500-9990 - PRIOR YEARS SURPLUS	-	-
TOTAL REVENUE	\$4,932,988	\$4,177,492

GL Account	Actual	Budget
Expenses		
2-3500-1000 – SALARIES & WAGES	707,135	3,270
2-3500-1050 – PART TIME WAGES	80,245	-
2-3500-1400 – ADMINISTRATION CHARGES	184,551	184,551
2-3500-2500 – OPERATIONS CMLF	138,691	96,900
2-3500-2501 - OPERATIONS OKFL	28,030	15,530
2-3500-2502 – OPERATIONS SHADOW BID	-	-
2-3500-2529 – AG WOOD CHIPPING	11,162	30,000
2-3500-2593 - GYPSUM RECYCLING	-	30,000
2-3500-3000 – CONSULTANTS CMLF	10,435	56,536
2-3500-3001 – CONSULTANTS OKFL	-	86,478
2-3500-3520 - CONTRACT SERVICES - OPS OK FALLS	478,279	352,205
2-3500-3521 - CONTRACT SERVICES - OPS CMLS	744,059	848,173
2-3500-3522 - CONTRACT SERVICES - RECYCLING	173,394	105,604
2-3500-3523 - CONTRACT SERVICES - RECYCLING - OTHER	14,290	17,000
2-3500-3525 - CONTRACT SERVICES - WOOD WASTE CHIP	595,503	420,000
2-3500-3526 - CONTRACT SERVICES - WOOD WASTE CHIP OK FALLS	110,067	33,000
2-3500-3527 - CONTRACT SERVICES - SHINGLE RECYCLE	-	18,270
2-3500-3528 CONTRACT SERVICES – CONCRET CRUSHING	27,931	116,725
2-3500-3529 - CONTRACT SERVICES - SHINGLE RECYCLE OK FALLS	-	7,540
2-3500-3530 - HHW DISPOSAL CONTRACTOR	87,906	79,170
2-3500-4000 - EDUCATION & TRAINING CMLF	892	2,538
2-3500-4001 - EDUCATION & TRAINING OKLF	-	761
2-3500-5000 - ENVIRONMENTAL CONTROL CMLF	18,072	15,530
2-3500-5001 - ENVIRONMENTAL CONTROL OKLF	1,836	2,071
2-3500-5100 - ENVIRONMENTAL MONITORING CMLF	21,344	15,530
2-3500-5101 - ENVIRONMENTAL MONITORING OKLF	5,396	6,212
2-3500-5400 – DEPRECIATION	-	12,482
2-3500-5500 - CAPITAL EXPENDITURES CMLF	45,736	-
2-3500-5502 - CAPITAL EXPENDITURES Funding of Operations	-	12,350
2-3500-5503 - CAPITAL EXPENDITURES Access Upgrades and Scales	-	-
2-3500-5504 - CAPITAL EXPENDITURES Organics Composting Facility (conditional on Grant)	-	600,000
2-3500-5505 - CAPITAL EXPENDITURES Rezoning COMMUNICATIONS	-	-

GL Account	Actual	Budget
Expenses (continued)		
2-3500-5506 - CAPITAL EXPENDITURES Leachate Implementation Plan Phase 3	-	-
2-3500-5507 - CAPITAL EXPENDITURES Bio Cover Design & Implementation (waiting Ministry Approval)	-	-
2-3500-5508 – CAPITAL EXPENDITURES Design Operations & Closure Master Plan	-	-
2-3500-5509 – CAPITAL EXPENDITURES Design Operations & Closure Master Plan Continued	-	-
2-3500-5510 – CAPITAL EXPENDITURES Completion of Master Plan	-	-
2-3500-5511 – CAPITAL EXPENDITURES Funding of Operations	-	-
2-3500-6000 - INSURANCE – PROPERTY	4,971	2,531
2-3500-6050 - INSURANCE – LIABILITY	16,414	18,652
2-3500-6150 - INSURANCE - ENVIRONMENTAL	29,887	39,341
2-3500-6200 - LEGAL FEES CMLF	83	2,838
2-3500-6210 – LEGAL FEES OKFL	-	1,015
2-3500-7000 – SUPPLIES	1,573	3,045
2-3500-8010 - ADVERTISING - PUBLIC EDUCATION CMLF	-	14,423
2-3500-8011 - ADVERTISING - PUBLIC EDUCATION OKFL	-	609
2-3500-8200 - TRAVEL/LEASING CMLF	37,689	37,271
2-3500-8250 - TRAVEL/LEASING OKFL	531	3,045
2-3500-8500 – UTILITIES CMLF	37,584	36,720
2-3500-8510 - UTILITIES OKFL	531	3,045
2-3500-8700 - LANDFILL LEASE	105,209	109,072
2-3500-9200 - TRANSFER TO CLOSURE RESERVE CMLF	-	231,420
2-3500-9201 - TRANSFER TO CLOSURE RESERVE OKLF	-	121,800
2-3500-9202 – TRANSFER TO VEHICLE REPLACEMENT RESERVE	-	-
2-3500-9205 - TRANSFER TO RESERVES RE INTEREST	-	-
2-3500-9260 - TRANSFER TO IMPAIRMENT RESERVE	111,650	113,883
2-3500-9270 - TRANSFER TO CAPITAL RESERVE CMLF	106,677	108,811
2-3500-9271 - TRANSFER TO CAPITAL RESERVES OKLF	112,005	114,245
2-3500-9290-TRANSFER TO OPERATING RESERVE	10,150	10,353
2-3500-9650-BAD DEBTS EXPENSE CMLF	-	-
2-3500-9655-BAD DEBTS EXPENSE OKLF	-	-
TOTAL EXPENSES	\$3,673,795	\$4,177,492
Reserves		
Ok Falls Reserve Balances:	Dec 2021	Dec 2022
Capital Reserve*	\$867,786	\$1,110,340

*The Capital Reserve combines both the Closure and Capital Reserve contributions.

2.1.1 LANDFILL GAS MANAGEMENT

An Initial Landfill Gas Generation Assessment Report was prepared in 2018 by GHD. Approximately 93,611 tonnes of waste has been landfilled at the Site since 1979. A landfill is termed a regulated landfill site under the Regulation if it has 100,000 tonnes or more of MSW in place or receives 10,000 or more tonnes of MSW in any calendar year after 2008.

As a result, the Site is not considered a ‘regulated landfill site’ as per Section 4(5) of the Regulation.

The estimated 2020 methane generation for the Site was approximately 75 tonnes. As the regulatory threshold is 1,000 tonnes of methane per year was not exceeded, the RDOS does not need to submit a LFG Management Design Plan to the MOE at this time.

The waste-in-place tonnage threshold should be reviewed no later than in 2023.

Unique concerns have been identified relating to demolition landfills, including concentrated hydrogen sulfide production due to gypsum and fires due to wood waste. The RDOS will consider operational requirements to minimize these risks. A proposed solid cap of 600 mm of silty sand and gravel with 300 mm of vegetated topsoil is expected to be sufficient to allow the gas to vent to the atmosphere.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 LANDFILL OPERATION CONCLUSIONS

C1 Excluding composted/recycled materials which were diverted from the landfill, 3,987 tonnes (not including cover material) were landfilled at the OFLF.

3.2 LANDFILL OPERATION RECOMMENDATIONS

R1 A new Design, Operations and Closure Plan was completed in 2021 and includes an updated fill plan.

3.3 ENVIRONMENTAL CONCLUSIONS AND RECOMMENDATIONS

The attached 2022 Environmental Monitoring Report by EcoScape Environmental Consultants Ltd. contains additional Environmental Conclusions and Recommendations.

4. REFERENCES

Sperling Hansen Associates (SHA), 2021. Okanagan Falls Landfill Design, Operation and Closure Plan,

GHD Limited (GHD), 2018. Initial Landfill Gas Generation Assessment Report Okanagan Falls Landfill, Ref No. 11139565 (03)

HBHE Consulting (HBHE), 2017. Okanagan Falls Landfill Life-Cycle Cost Analysis, October 2017

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APPENDIX I

2022 Environmental Monitoring Report

APPENDIX II

2022 Wildstone Demolition Sort Facility Statistics