#### SCS ENGINEERS

October 20, 2025 File No. 04225030.06

Ms. Danielle Gibson Washington State Department of Ecology Southwest Regional Office Toxics Cleanup Program 300 Desmond Drive Lacey, Washington 98503

Subject: Decommissioning of Monitoring Wells LB-6S, LB-5S, LB-5C and LB-5D

Closed Leichner Landfill

Vancouver, Washington 98662

Dear Ms. Gibson:

On behalf of Clark County, Washington, SCS Engineers (SCS) is pleased to present this letter documenting the decommissioning of four groundwater monitoring wells (LB-6S, LB-5S, LB-5C and LB-5D) located on the City of Vancouver (COV) property south of the closed Leichner Landfill in Vancouver, Washington (see Figure 1). The monitoring wells are part of the groundwater compliance monitoring network for the closed Leichner Landfill. The wells were decommissioned to accommodate site improvements related to COV's planned construction of its Operations Center.

The monitoring wells were decommissioned on September 15 through 18, 2025, in accordance with the *Work Plan for Groundwater and Landfill Gas Monitoring Network Modifications*<sup>1</sup> that was approved by the Washington Department of Ecology (Ecology) on May 29, 2024. As described in the approved work plan, (1) replacement monitoring wells (LB-5SR and LB-5DR) will be reinstalled after construction activities are completed and (2) replacement wells for LB-6S and LB-5C will not be reinstalled. LB-6S was approved by Ecology to be eliminated from the monitoring network<sup>2</sup>.

#### **DECOMMISSIONING MONITORING WELLS**

SCS subcontracted with Holt Services Inc. (Holt), a licensed drilling contractor based in Vancouver, Washington, to decommission the monitoring wells. A representative from SCS was onsite during the decommissioning activities to provide contractor oversight and construction quality assurance. There were no well reports for these monitoring wells on file with the Washington Department of Ecology (Ecology), so all four monitoring wells were required to be over drilled.

Before decommissioning, SCS arranged for public utility notification using the Washington Utility Notification Center to provide utility clearance within a 20-foot radius of each monitoring well.

Monitoring wells LB-6S, LB-5S, and LB-5C were installed as a singular 2-inch schedule 40 PVC wells within a single boring with an 8-inch steel casing above ground monument. Monitoring well LB-5D was installed using a telescoping casing, with a 12-inch steel casing from the surface and extended

<sup>&</sup>lt;sup>2</sup> Ecology, 2025. Support for Eliminating LB-6S from the Monitoring Network at Leichner Landfill, Letter from D.Gibson (Ecology) to B. Lary (SCS). May 19.



<sup>&</sup>lt;sup>1</sup> SCS, 2024. Work Plan for Groundwater and Landfill Gas Monitoring Network Modifications, Closed Leichner Landfill, Clark County, Washington, from B. Lary and L. Caruso (SCS) to Andrew Smith, Department of Ecology. April 15.

to a depth of 20' below ground surface (bgs) and an 8-inch casing down to 97' bgs. Holt received a variance from Ecology to leave the 12-inch and 8-inch casing in the ground and use 6-inch casing for over drilling down to the well's total depth; a copy of Ecology's variance letter is provided in Attachment 1. The LB-5 monitoring well cluster was located near the southeast corner of the property and LB-6S was located near the southwest corner of the property (Figure 1). Depth to water measured in each monitoring well prior to being decommissioned is shown below.

Table 1. Monitoring Well Information

	Depth to Bottom	Depth to Water	D 1 du
Monitoring Well	(ft bTOC)	(ft bTOC)	Backfill
			200 gallons bentonite grout
LB-6S	45	28.57	9 50-lb bags of bentonite chips
			150 gallons bentonite grout
LB-5S	52	16.71	32 50-lb bags of bentonite chips
			300 gallons bentonite grout
LB-5C	94.5	34.41	16 50-lb bags of bentonite chips
			200 gallons of bentonite grout
LB-5D	135.5	39.13	14 50-lb bags of bentonite chips

ft bTOC = feet below top of casing

A Terra Sonic tracked drill rig was used to over drill the well boreholes. LB-5D was over drilled using a 6-inch outside diameter casing down to the well's total depth (see Table 1 above). The other three wells were over drilled using a 10-inch outside diameter casing drilled down to the total depth of each well (Table 1). The PVC well casings were removed along with all backfill materials down to the total depth of each well. Backfill amounts and materials are shown in Table 1. A photographic log of the decommissioning activities is presented in Attachment 2. Copies of the driller's well reports filed with Ecology are included as Attachment 3.

If you have any questions or comments regarding this letter-report, please contact Barbara Lary at (971) 284-1297 or by email at blary@scsengineers.com.

Sincerely,

Sare Campbell Associate Professional

Save Compbell

SCS Engineers

Barbara E. Lary, LG **Project Manager** 

Barbara E. Lary

SCS Engineers

Louis Caruso, LG, LHG Project Director/Vice President SCS Engineers

Ms. Danielle Gibson October 20, 2025 Page 3

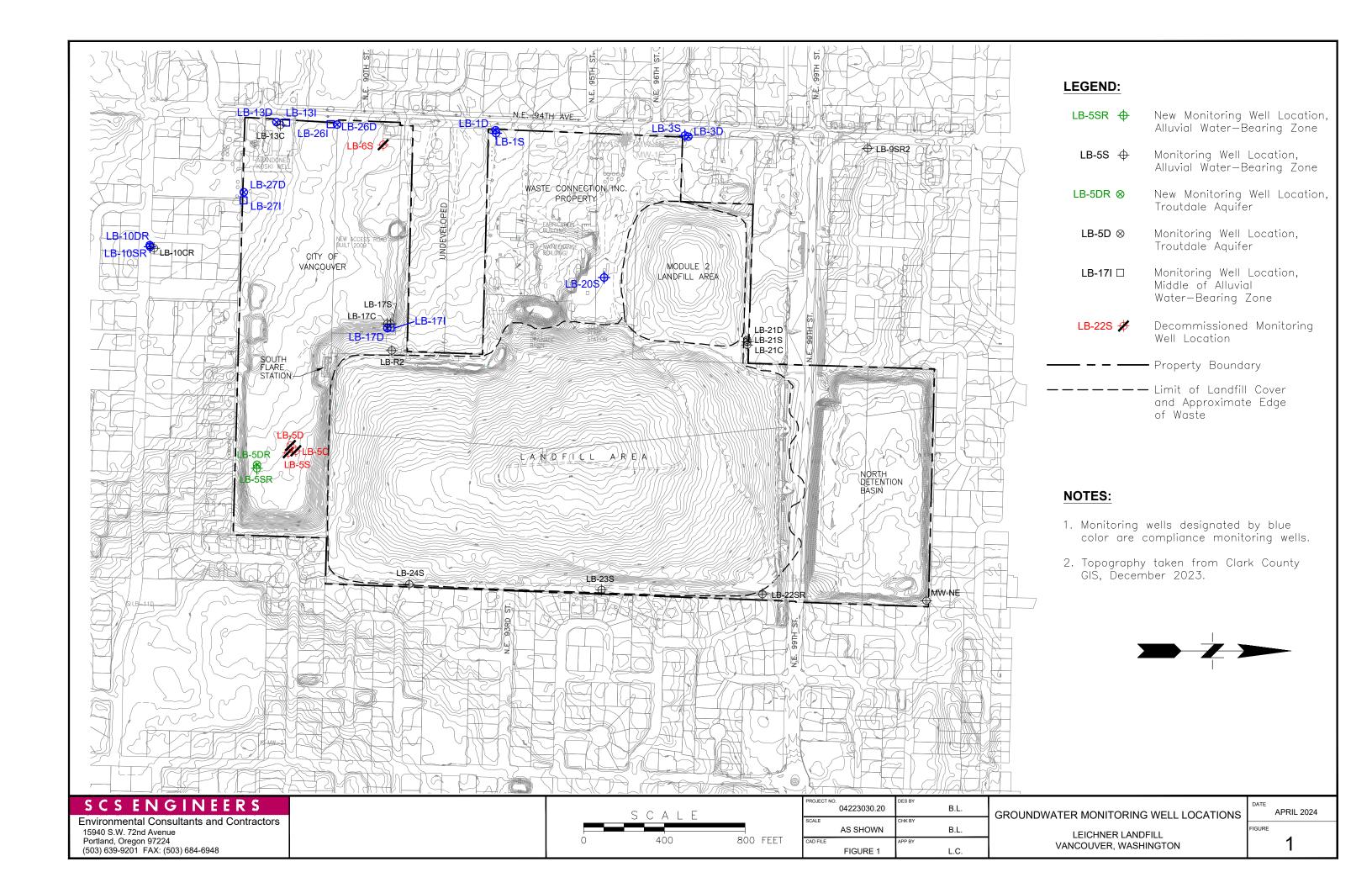
Attachments: Figure 1 - Landfill Gas Probe and Monitoring Well Locations

Attachment 1 - Washington Department of Ecology Variance Letter (August 20, 2025)

Attachment 2 - Photographic Log

Attachment 3 - State of Washington Resource Protection Well Reports

cc: Tina Kendall, CCPW
Mike Davis, CCPW
Joelle Loescher, CCPW



#### Attachment 1

Washington Department of Ecology Variance Letter (Aug 20, 2025)



## STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

Southwest Region Office PO Box 47775, Olympia, WA 98504-7775 • 360-407-6300

August 20, 2025

City of Vancouver c/o Paul Smith, Project Manager Holt Services Inc 12305 NE 56<sup>th</sup> Street, Vancouver, WA 98662

RE: Variance request from Washington Administrative Code (WAC) 173-160-460. The property address is 8713 Northeast 94<sup>th</sup> Avenue in Vancouver, in the SE ¼ NE ¼ of Section 4, Township 2 North, Range 02 East, W.M., on Tax Parcel 105740000 in Clark County.

The Department of Ecology (Ecology) received your original variance request via email on April 22, 2024. The request states strict compliance with WAC 173-160-460(1)(a)(b), which details decommissioning standards for resource protection wells, is impractical because of equipment decommissioning limitations. You propose to leave the existing 12" (0-20') and 8" (0-98') steel casing for well LB-5D in place and use sonic drilling techniques to overdrill 2" PVC well to 135' and backfill with bentonite grout.

This letter documents the variance you requested to 173-160-460(1)(a)(b) is granted an extension. The variance extension expires May 22, 2026, and is granted only for decommissioning of the resource protection well in the manner and location referenced in the variance request. If more time is needed before the work begins, we would require a new variance request to be submitted for review. Any licensed resource protection well driller can execute the decommissioning of the well according to the variance request, subject to the provisions listed below:

- A "Notice of Intent" and fees shall be submitted to Ecology at PO Box 47611, Olympia, WA, 98504-7611.
- All other minimum construction standards found in WAC 173-160 shall be followed to prevent degradation of the groundwater resource.
- A well report containing the details required by WAC 173-160-141 shall be submitted to Ecology at PO Box 330316, Shoreline, WA 98133, within 30 days of completion of work on the well. Attach a copy of this variance to the well report.
- With the exception of the specific provisions set forth (above) in this variance, all federal, state, and local requirements shall apply.

Your attention to these laws and regulations, and cooperation with the Department of Ecology in this matter, is appreciated. Please telephone Garrett Scheuerman at (564) 233-8151 or email him at <a href="mailto:gash461@ecy.wa.gov">gash461@ecy.wa.gov</a> if you have any questions concerning this variance.

DATED this 20th day of August, 2025, at Lacey, Washington.

Sincerely,

Garrett J. Scheuerman, LG

SWRO Well Construction Coordinator

Water Resources Program

Washington State Department of Ecology

Southwest Regional Office (SWRO)

(564) 233-8151

gash461@ecy.wa.gov



Requested by: Holt Services Inc (Paul Smith)

Mailing Address: 12305 NE 56th Street

Daytime Phone: 253-693-3402

# Water Resources Program Variance Request- Minimum Standards for Well Construction

City: Vancouver

State: Wa Zip: 98682

Date: 8/14/2025

WAC173-160-106(1) allows you to request a variance from the Department of Ecology when strict compliance with state well construction standards is impractical. The variance request must propose comparable alternative specifications that will provide equal or greater human health and resource protection than the minimum standards. You must apply for a variance in writing and receive approval before constructing or decommissioning the well. (All fields must be completed.)

Property Owner (if different	ent): City of Vancouver		
Site Location: SE 1/4 1		wnship: 2N Range: 2E	□E or □WWM
Tax Parcel Number: 105		N/ -	
Called Africa and Table and Called	94th Ave, Vancouver, V		
Well Driller/Company (if	known): Holt Services Ir	IC	
Check one: Water We	ell  Resource Protection V	Well Dewatering Well	
What construction standa Over drilling and removal	Carl A. Villa Land Co. and Carl L. St. 19	o known state well log was fil	led and no well label
is currently attached.			
sources of contamination	if setback variance is being r	ude <u>site map</u> and distances fro equested. casing (0-20') and the nested 8"	<del>-</del>
which appear to be s	ealed in place.		
provided by the minimum	standard.	provide equal or greater prote sing and removing the existing 2'	
pack to the bottom and se	ealing the borehole leaving th	e 8" & 12" steel casing in pla	ce.
(Attach additional pages regional office:	if necessary.) Complete and	return with your site map to	the appropriate
Northwest Regional Office	Southwest Regional Office	Eastern Regional Office	Central Regional Office
PO Box 330316 Shoreline, WA 98133-9716 206) 594-0000 wrNWRO@ecy.wa.gov	PO Box 47775 Olympia, WA 98504-7775 (360) 407-6300 wrSWRO@ccy.wa.gov	4601 N. Monroe St. Spokane, WA 99205-1265 (509) 329-3400 wrERO@ecy.wa.gov	1250 W. Alder St. Union Gap, WA 98903-0009 (509) 575-2490 wrCRO@ecy.wa.gov

PROJECT Leichner Brothers Landfill, Deep Monitoring Well Page 1 of 4

Location \_East Side Koski Field \_\_\_\_\_

Boring No. LB-5D

Surface Elevation 220.10 ft.

Drilling Method Telescoping Air Rotary

Total Depth 135.7 ft.

Drilled By McGhee Drilling

Date Completed \_5/19/87

Logged By C. Rankine

WELL DETAILS	PENE- TRATION	DEPTH	SA	MPLE	PERME- ABILITY	SYMBOL	LITHOLOGIC DESCRIPTION	WATER
WELL DETAILS	TIME/ RATE	(FEET)	NO.	TYPE	TESTING	STMBOL	ETTHOLOGIC DESCRIPTION	QUALITY
	Cenent	- 5					See "Leichner Brothers Landfill, Shallow Monitoring Well, logs for lithologic descriptions for 0-98.8' depth.	
8		- 10						
40 PVC Riser Pip		- 15						
2 inch Schedule	×××××××××××××××××××××××××××××××××××××××	- 20						
2 2	Casing	- 25						
	9	- 30						
		35						

PROJECT Leichner Brothers Landfill, Deep Monitoring Well Page 2 of 4

Boring No. LB-5D

VELL DETAILS	PENE - TRATION	DEPTH	SA	MPLE	PERME- ABILITY	SYMBOL	LITHOLOGIC DESCRIPTION	WATER
TIME/ RATE	(FEET)	NO.	TYPE	TESTING		ETHIOLOGIC DESCRIPTION	QUALITY	
		-35					See "Leichner Brothers Landfill, Shallow Monitoring Well, logs for lithologic descriptions for 0-98.8' depth.	
		-40						
		-45						
Riser Pipe		-50						
Schedule 40 PVC R		-55						
2 inch s		<del>-</del> 60				1		
		-65						
		-70						

PROJECT Leichner Brothers Landfill, Deep Monitoring Well Page 3 of 4

Boring No. LB-5D

ELL DETAILS	PENE - TRATION	DEPTH	SA	MPLE	PERME- ABILITY	SYMBOL	LITHOLOGIC DESCRIPTION	WATER
TIME/ RATE	(FEET)	NO.	TYPE	TESTING	O'IMBOL	EITHOLOGIC DESCRIPTION	QUALITY	
		-70						
		-75						
		-80					*	
PVC Riser Pipe		-85					"PLEISTOCENE ALLUVIUM" (Missoula Flood Sediments)	
Schedule 40		<del>-</del> 90					TROUTDALE FORMATION	
2 inch		-95					98-99': Water Sample Specific Conductivity (WSC) 672 us,	
		-100				0.00	GRAVELLY SAND, slightly weathered BASALT with oxidized cemented sand coating, fresh BASALT, QUARTIZITE, PORPHYRITIC VOLCANICS, META SEDIMENTS, WELDED TUFF (SP).	
		-105	i	CATCH		oʻ o	103-104': WSC 893 us, GRAVELLY SAND 35% fine gravel, 55% coarse sand, 10% medium sand, rock types as above (SP).	

PROJECT Leichner Brothers Landfill, Deep Monitoring Well Page 4 of 4

Boring No. LB-5D

WELL DETAILS	PENE - TRATION	DEPTH	SA	MPLE	PERME - ABILITY	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
TIME	TIME/ RATE	(FEET)	NO.	TYPE	TESTING		ETHIOLOGIC SEGONII TON	
		-105						
Pripe		-110	2	CATCH			108-109': WSC 841 uS, GRAVELLY SAND, 15% fine gravel, 30% coarse sand, 45% medium sand, 10% fine sand, trace fines, rock types as above (SP).	
PVC Riser		-115	3	CATCH			113-114': WSC 1046 uS, GRAVELLY SAND, 2% coarse gravel, 33% fine gravel, 60% coarse sand, 5% medium sand, rock types ad above (SP).	
2 inch Schedule 40		-120	4	CATCH		<u> </u>	118-119': WSC 952 us, GRAVELLY SAND, 40% fine gravel, 60% coarse sand, slightly weathered BASALT with oxidized comented sand coating, fresh BASALT, QUARTZINE, PORPHORITIC VOLCANICS, META SEDIMENTS, WELDED TUFF (SP).	
Clean S		-125	5	CATCH		0	123-124' WSC 786 uS, GRAVELLY SAND, 25% fine gravel, 60% coarse sand, 10% medium sand, 5% fines, rock types as above (SP).	
a se		-130	6	САТСН			128-129' WSC 792 us, GRAVELLY SAND, 10% fine gravel, 40% coarse sand, 50% medium sand, rock types as above, (SP).	
day of the		150	7	CATCH		0	131-132', WSC 776 us, GRAVELLY SAND, 1% coarse gravel, 20% fine gravel, 70% coarse sand, 5% medium sand, 4% fines, rock types as above, (SP).	
		-135	8	CATCH		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	135-135.71: WSC 664 us, GRAVELLY SAND, 20% fine gravel, 60% coarse sand, 20% medium sand, rock types as above, (SP).	
		-140					1) Drilled, telescoping 12 inch I.D. surface casing, 8 inch I.D. casing into top Troutdale Formation and 6 inch I.D. casing to bottom of hole.	
							2) Geologic units are "Pleistocene Alluvium" (Missoula Flood Sediments) and the upper portion of the Troutdale Formation.	

### Go gle Maps 45°41'11.1"N 122°34'10.0"W

Well Location



#### Attachment 2

Photographic Log



**Photo 1:** View looking northwest at LB-5D. The image shows the torching equipment used to remove 8-inch above ground metal casing.



**Photo 2:** View looking north at the Terra Sonic tracked drill rig stationed at LB-5D.



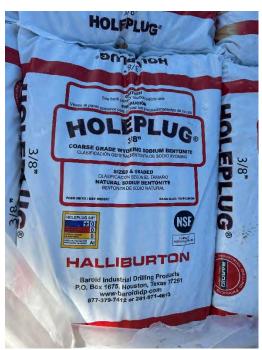


Photo 3: Images of the Quik-Grout and HolePlug bentonite chips.



Photo 4: View looking south at Holt drillers backfilling with bentonite chips at LB-5D.



Photo 5: View looking west at the Terra Sonic tracked drill rig stationed at LB-5C.



Photo 6: View looking southwest at LB-5S after it was grouted and chipped.



**Photo 7:** View looking west at the Terra Sonic tracked drill rig stationed at LB-6S.



Photo 8: Image of the removed well screen from LB-6S.

#### Attachment 3

State of Washington Resource Protection Well Reports



Notice of Intent No. AE89530				
Type of Well:				
Resource Protection Well  Injection Point				
Remediation Well Grounding Well				
Geotechnical Soil Boring Ground Source Heat Pump Environmental Boring Other				
Soil-   Vapor-   Water-sampling				
Property Owner CITY OF VANCOUNA				
Well Street Address 2713 NE 94th AVE				
City VANCOVOR County CLACK				
Tax Parcel No. /057 40000				
Location (see instructions):  NE 1/4-1/4 NE 1/4, Section 4 Town 2N Range 2E  Latitude (Example: 47.12345) U5, 696 424  Longitude (Example: -120.12345) — 122.576 445  (WGS 84 Coordinate System)  Borehole diameter 6 inches Casing diameter 2 inches  Static water level ft below top of casing Date				
[ [ [ ] ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [				
Stick-up of top of well easing ft above ground surface				
Start Date 9/15/25 Completed Date 9/16/25				
Driller's Log  O - 120' PVC / BOUTONETS  EDT CASTON  NUSC THEOUGH  FOUG TO 135'  IC BOUTONETS  SOUND  PVC  TO 135' FELTON SIOND/  PVC  TO 135' BOUTONETS  GLOUT				
֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜				



Resource Protection Well Report	Notice of Intent No. AE89530
Submit one well report per well installed. See page two for instruction	ons. Type of Well:
Type of Work:	Resource Protection Well  Injection Point
Construction	Remediation Well Grounding Well
Decommission ⇒ Original NOI No. LOT FOUND	☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
Ecology Well ID Tag No. Not Found	Environmental Boring Other
Site Well Name	Soil- Vapor- Water-sampling
Consulting Firm SCS	Property Owner CFT OF VANCOUNT
Was a variance approved for this well/boring? ☐ Yes 🕱 🗅	
If yes, what was the variance for?	City VANCOUVAL County CLARK
	Tax Parcel No. 1057 4000
	Location (see instructions): WWM □ or EWM □
WELL CONSTRUCTION CERTIFICATION: I constructed and	
accept responsibility for construction of this well, and its compliance with al Washington well construction standards. Materials used and the information	1
reported are true to my best knowledge and belief.	Longitude (Example: -120.12345) = 122.569319
☑ Driller ☐ Traince ☐ Engineer	
Name (Print Last, First Name) Sman ftu	(WGS 84 Coordinate System)
Driller/Engineer/Trainee Signature	Borehole diameter _/O inches Casing diameter Z inches
License No. 2989	Static water level fl below top of casing Date
Company Name Hour	Above-ground completion with bollards ☐ Flush monument
If trainee box is checked, sponsor's license number:	Stick-up of top of well easing ft above ground surface
Sponsor's signature	Simply of the casing it above ground surface
Construction Design	Start Date 9/16/25 Completed Date 9/16/25
Sonie	CASENY TO 94.5  WOLL MATIONIALS  FELL 0-2' COLAVEL 2'-94.5' BONTOWERV GROUT



Resource Protection Well Report	Notice of Intent No. AE 89530					
Submit one well report per well installed. See page two for instructions.	Type of Well:					
Type of Work:	Resource Protection Well Injection Point					
Construction	Remediation Well Grounding Well					
Decommission - Original NOI No. Not Counts	Geotechnical Soil Boring Ground Source Heat Pump					
Ecology Well ID Tag No. Nor FOUND	Environmental Boring Other					
Site Well Name LB 55	Soil- □ Vapor- □ Water-sampling					
Consulting Firm SCS	Property Owner CATY OF VANCOUVEL					
Was a variance approved for this well/boring? ☐ Yes 反No If yes, what was the variance for?	City VANCOURL County CLARIC					
if yes, what was the variance for?						
	Tax Parcel No/057_ 4000					
WELL CONCERNICATION OF THE PROPERTY OF THE PRO	Location (see instructions): WWM $\square$ or EWM $\square$					
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all	NB 1/4-1/4 NB 1/4, Section 4 Town ZN Range 26					
Washington well construction standards. Materials used and the information	Latitude (Example: 47.12345) 45. 686 494					
reported are true to my best knowledge and belief.	Longitude (Example: -120.12345) -122.569350					
Driller   Trainee   Engineer	(WGS 84 Coordinate System)					
Name (Print Last, First Name) SALL PAUL	Borehole diameter 10 inches Casing diameter 2 inches					
Driller/Engineer/Traince Signature	Static water level ft below top of casing Date					
License No. 2984	Above-ground completion with bollards     Flush monument					
Company Name Hout						
If trainee box is checked, sponsor's license number:	Stick-up of top of well easing ft above ground surface					
Sponsor's signature	Start Date _9/17/25 Completed Date _9/17/25					
DVORDR. SONIC REMOVE  BACK FILL	Well Data  SELL WITH 10'  CASFAY TO 52'  WELL MATCHAS  O-2'  GRANGE  2'-52'  REWIDING  GLOUT  Driller's Log  O-52'  AVC, BONTONSTO  EXITAL SAND					



Resource Protection Well Re	port Notice of Intent No	AE 89530
Submit one well report per well installed. See page tw	o for instructions. Type of Well:	V
Type of Work:	Resource Protect	ion Well Injection Point
Construction	Domodiation Wal	
Decommission ⇒ Original NOI No. No Ecology Well ID Tag No. Nor Found	Geotechnical Soi	Boring   Ground Source Heat Pump oring   Other
Site Well Name LR 65		or- □ Water-sampling
Consulting Firm SCS	Property Owner	ITT OF VANCOUND
Was a variance approved for this well/boring?		8713 NE 945 AVE
If yes, what was the variance for?	City VANCOUVUR	County CCALK
	Tax Parcel No	
WELL CONSTRUCTION CERTIFICATION: accept responsibility for construction of this well, and its consumption well construction standards. Materials used and reported are true to my best knowledge and belief.  Driller   Trainee   Engineer  Name (Print Last, First Name)   SWFTH  Driller/Engineer/Trainee Signature   License No.   2984  Company Name   Hour  If trainee box is checked, sponsor's license num  Sponsor's signature	Latitude (Example: 4  Longitude (Example: 4  Longitude (Example: 4  WO  Borehole diameter/  Static water level  Above-ground com  ber:  Stick-up of top of	Section 4 Town 2 Range 25  Section 4 Town 2 Range 25  7.12345) 45, 687573  -120.12345) -122.575387  GS 84 Coordinate System)  O inches Casing diameter 2 inches  ft below top of easing Date  upletion with bollards   Flush monument  f well easing ft above ground surface  Completed Date 9/19/25
Construction Design	Well Data	Driller's Log
10"	OVERDELL WETH 10" SONIC CASENG TO 45 REMOVE WELL MATERIALS  BACKFILL  0-2 GLAVE  2'-45 BENTOND  GROUT	PVC, BONTONETS FELTOR SAWS