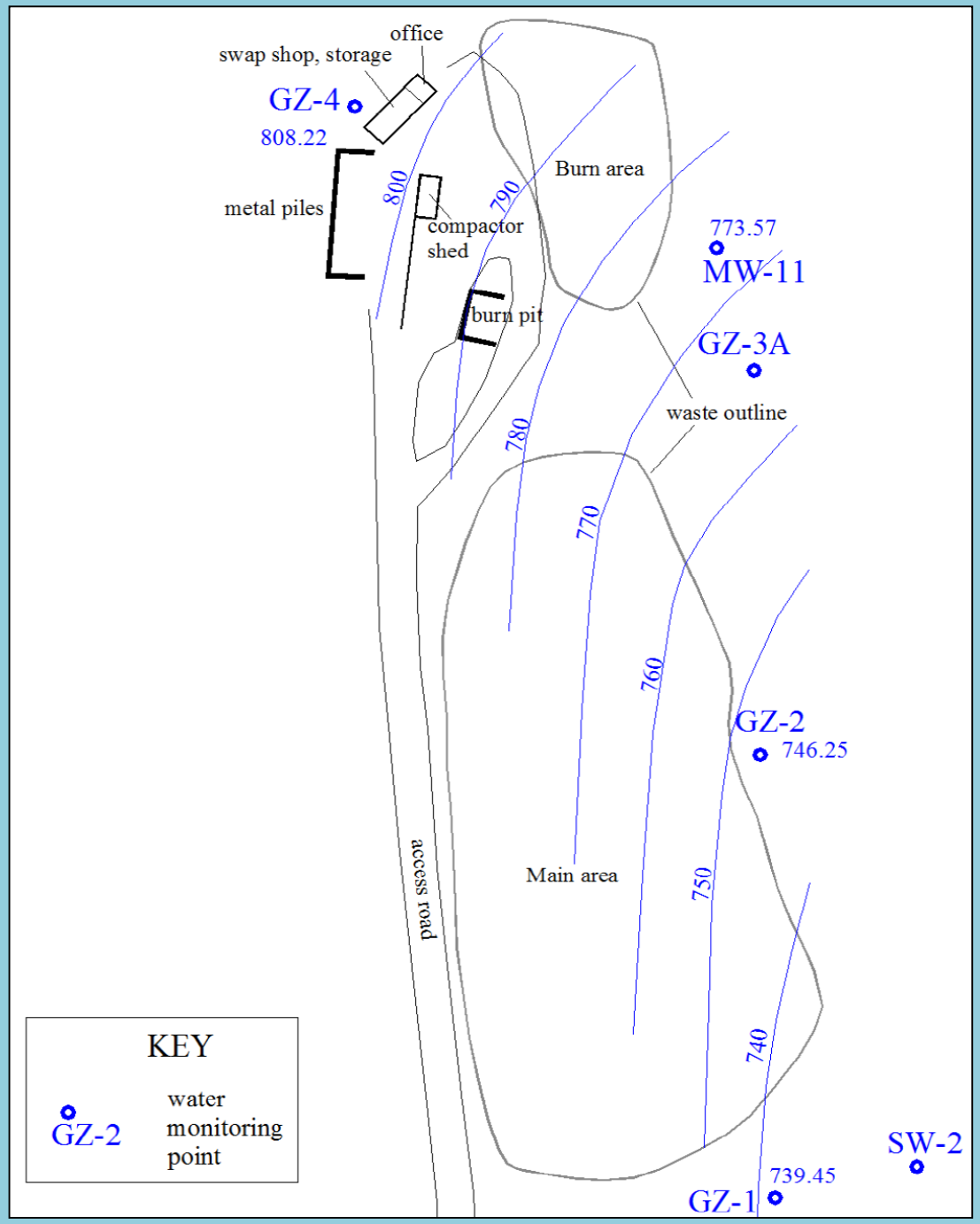
Sandwich Landfill


Sandwich Landfill
BURN AREA
MAIN AREA

Well Layout & Water Table Contours



Sandwich Landfill – Main Area


Sandwich Landfill – compactor building; Burn Area in background
1
2
3
TOWN OF SANDWICH
FULL
clothes shoes


Sandwich Landfill –
East side of Burn Area


Sandwich Landfill – Berm and diversion ditch on upslope side of facility


Sandwich Landfill –
Downgradient
monitoring well

Permit

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

The

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES

hereby issues

GROUNDWATER MANAGEMENT PERMIT NO. GWP-198405037-S-005

to the permittee

TOWN OF SANDWICH

to monitor the groundwater quality at the

CLOSED SANDWICH LANDFILL
(N.H. Route 113)

in SANDWICH, N.H.

via the groundwater monitoring system comprised of

4 monitoring wells and 1 surface water location

as depicted on the Site Plan entitled

"Figure 6 – Sandwich Landfill Groundwater Contours, 7/15/16"

dated July 15, 2016, prepared by HydroSource Associates, Inc.,

TO: TOWN OF SANDWICH
PO BOX 194
CENTER SANDWICH, NH 03227

Date of Issuance: December 9, 2016
Date of Expiration: December 8, 2021

Pursuant to authority in N.H. RSA 485-C:6-a, the New Hampshire Department of Environmental Services (Department), hereby grants this permit to monitor groundwater at the above described location for five years subject to the following conditions:

Sampling Schedule and Parameter List

STANDARD MANAGEMENT PERMIT CONDITIONS

1. The permittee shall not violate Ambient Groundwater Quality Standards adopted by the Department (N.H. Admin. Rules Env-Or 600) in groundwater outside the boundaries of the Groundwater Management Zone, as shown on the referenced site plan.

2. The permittee shall not cause groundwater degradation that result in a violation of surface water quality standards (N.H. Admin. Rules Env-Ws 1700) in any surface water body.

3. The permittee shall allow any authorized staff of the Department, or its agent, to enter the property covered by this permit for the purpose of collecting information, examining records, collecting samples, or undertaking other action associated with this permit.

4. The permittee shall apply for renewal of this permit prior to its expiration date but no more than 90 days prior to expiration.

5. This permit is transferable only upon written request to, and approval of, the Department. Compliance with the existing Permit shall be established prior to permit transfer. Transfer requests shall include the name and address of the person to whom the permit transfer is requested, signature of the current and future permittee, and a summary of all monitoring results to date.

6. The Department reserves the right, under N.H. Admin. Rules Env-Or 600, to require additional hydrogeologic studies and/or remedial measures if the Department receives information indicating the need for such work.

7. The permittee shall maintain a water quality monitoring program and submit monitoring results to the Department's Waste Management Division no later than 45 days after sampling. Samples shall be taken from monitoring wells and the surface water sampling point as shown and labeled on the referenced site plan listed on the following table in accordance with the schedule outlined herein:

Monitoring Locations	Sampling Frequency	Parameters
GZ-1, GZ-2, GZ-4, MW-11, and SW-2	July of even numbered years beginning in 2018	Specific Conductance @ 25°C, pH, Chloride, TKN, Iron, Manganese, and Static Water Level Elevations (wells only)

Sampling shall be performed in accordance with the documents listed in Env-Or 610.02 (e). Samples shall be analyzed by a laboratory certified by the U.S. Environmental Protection Agency or the New Hampshire Department of Environmental Services pursuant to Env-C 300. All overburden groundwater samples collected for metal analyses (iron, manganese) shall be analyzed for dissolved metals; and thus must be field filtered (with a 0.45-micron filter) and acidified after filtration in the field. Surface water samples and samples collected from bedrock or water supply wells shall be analyzed for total metals, and shall not be filtered.

Accumulated Data for Well GZ-2

Table 1 - Comprehensive Groundwater Quality Summary
Sandwich Landfill, Sandwich, NH

Updated 9/20/18			PARAMETERS																				Water Level	
			As ug/l	Ba ug/l	Cd ug/l	Cr ug/l	Pb ug/l	Hg ug/l	Se ug/l	Ag ug/l	Cl mg/l	Fe mg/l	Mn mg/l	Phenol mg/l	NO3 mg/l	SO4 mg/l	Na mg/l	TKN mg/l	VOCs	1,4-diox. ug/l	COD mg/l	Cond umhos	pH	Temp °C	Depth ft	Elev ft
NH GW1 STANDARD			10	2000	5	100	15	2	50	100			0.84	4000	10	500										
SECONDARY MCL											250	0.3	0.05			250										
POINT	DATE	BY	LAB																							
GZ-2																										
	3/22/90	DH	SCI								11	65.6	1.76							43.9	648	6.42	9	2.86	747.44
	10/17/91	DH	SCI	55	<100	<0.5	<5	<3	<0.5	<5	<1	7	88.1	1.83	<0.05	<0.1	13	7.96	5			30.8	596	6.53	12.7	2.93	747.37
	11/8/95	DH	SCI	<5	40	<0.5	<5	<3	<0.3	<5	<1												467	6.5	8.2	3.00	747.30
	4/7/97	DH	SCI									4	68	1.22		0.2			4.06				351	6.48	10.1	2.76	747.54
	7/15/97	DH	SCI									5	44	0.86		<0.1			6.7				318	6.19	13.7	2.78	747.52
	11/13/97	DH	SCI									3	73	1.2		<0.1			3.73				396	6.16	7.4	3.04	747.26
	4/8/98	DH	SCI									3	72	1.1		0.7			3.9				431	5.81	7.8	2.90	747.40
	7/7/98	DH	SCI									3	60	1		<0.1			4.8				412	5.99	13.1	2.95	747.35
	11/10/98	DH	SCI									4	68	1		<0.1			4.2				426	6.46	6.9	3.13	747.17
	5/5/99	HSA	EA									5	51	1		<0.5			<0.5				380	6.8		3.15	747.15
	8/19/99	HSA	EA									3	59	0.98		<0.5			2				348		13	3.25	747.05
	11/15/99	HSA	EA									3	88	1.5		<0.5			2.6				386	6.3		2.90	747.40
	4/26/00	HSA	EA									3	83	0.66		<0.5			2.5				374	6.9		2.20	748.10
	7/19/00	HSA	EA	<.01	0.08	<.001	<.002	0.02	<.0002	<.05	<.005	3	55	0.89		<0.5	2		2.1	**			324	6.27		3.00	747.30
	11/29/00	HSA	EA					<.01				2	63	1.1		<0.5			1.9				359	6.5		3.20	747.10
	7/9/01	HSA	EA									5	70	1.2		<0.5	5		2.4				180	6.2		3.20	747.10
	7/31/02	HSA	EA									3	60	1.1		<0.5			2.4				270	6.3		2.70	747.60
	8/7/03	HSA	EA			<.001		<.001				3	53	0.9		<0.5			2.3	***			130	6.4		3.10	747.20
	6/11/04	HSA	EA									5	51	1.3		<0.5			2.8				120	5.7		2.95	747.35
	7/27/05	HSA	EA									2	45	0.95		<0.5			2				120	5.7		3.17	747.13
	7/20/06	HSA	EA			<.001		<.001				4	34	0.82		<0.5			2.3				160	5.9		3.15	747.15
	7/27/07	HSA	EA									4	39	0.88		<0.5			2.2				110	5.9		3.35	746.95
	7/18/08	HSA	EA									4	42	0.9		<0.5			2.2				140	6.3		3.36	746.94
	7/10/09	HSA	EA									3	28	0.72		<0.5			2	ND	<1		130	6.2		3.05	747.25
	7/21/10	HSA	EA									3	41	0.84		<0.5			1.7				140	6.2		3.49	746.81
	7/7/11	HSA	EA									3	45	0.98		<0.5			2.6				200	6		3.38	746.92
	7/26/12	HSA	EA									3	31	0.57		<0.5			2.1				110	5.9		3.50	746.80
	7/10/14	HSA	EA									4	40	0.78		<0.5			2.3				100	6.2		3.49	746.81
	7/15/16	HSA	EA									3	21	0.43		<0.5			3				110	6		4.30	746.00
	8/7/18	HSA	EA									4	28	0.7					2.2				100	5.95		4.05	746.25

** 6 ppb 1,4-Dichlorobenzene
3 ppb 1,2-Dichlorobenzene
2 ppb cis-1,2-Dichloroethane
*** 6 ppb 1,4-Dichlorobenzene
2 ppb 1,2-Dichlorobenzene

Trend Analysis, Well GZ-2