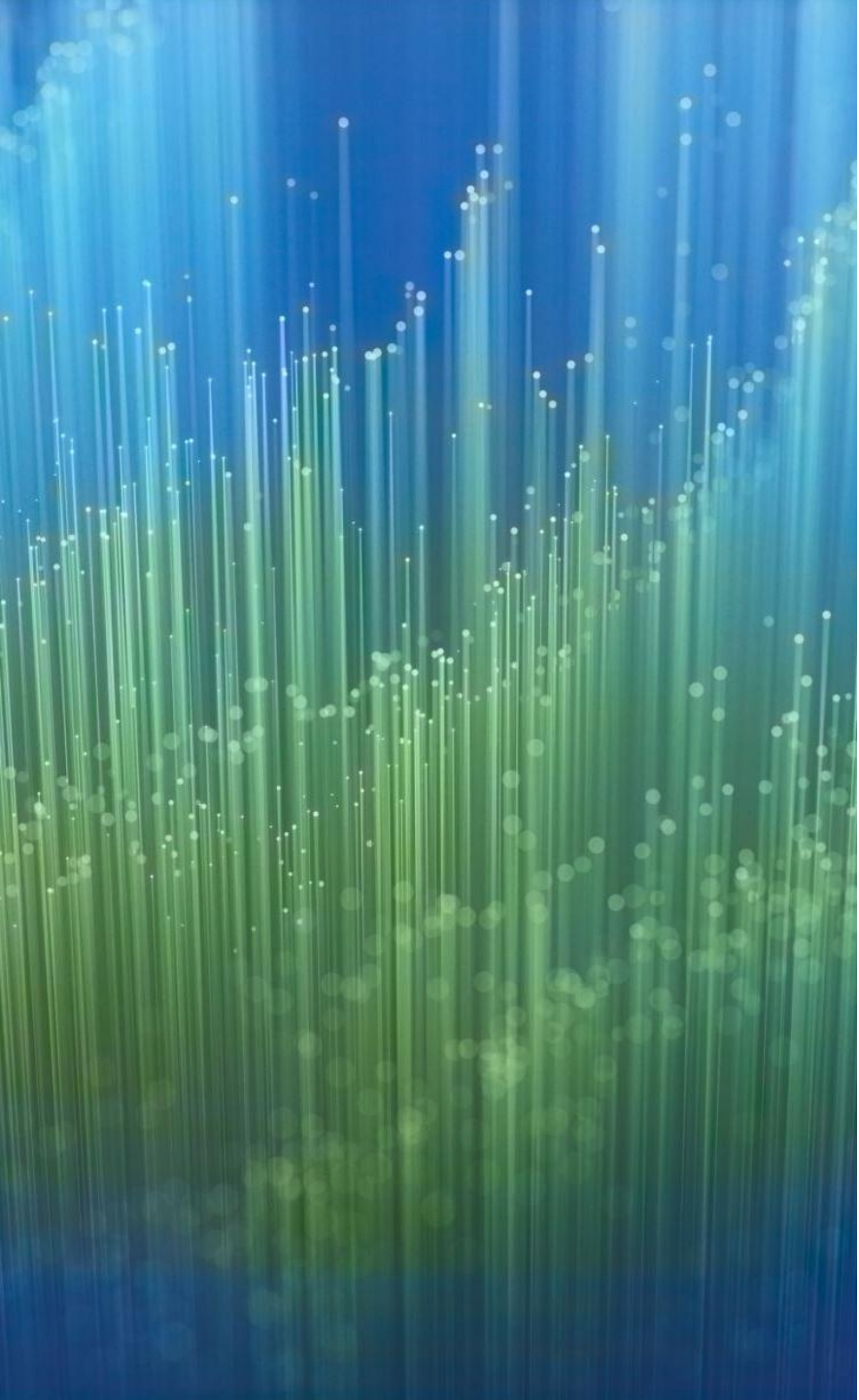


HB Sports Complex

Landfill Gas Monitoring/Extraction System Analysis

Public Works Dept.

July 29, 2026



Basic Description of Landfill Gas Monitoring/Extraction System

System Architecture & Components

34 vertical gas extraction wells distributed across the site footprint.

A **10-horsepower gas extraction blower facility** to pull sub-slab methane and landfill gases.

Activated carbon canister scrubbers and filtration units to filter emissions prior to release/venting, compliant with South Coast AQMD Rule 1150.1 standards.

Main header piping connecting into the local landfill gas collection grid.

History & Background

- **The Operational Era (1940s – 1970s)**
- **Unlined Municipal Dumping:** Long before the sports complex was built, the 30-acre site was operated as an unlined municipal solid waste landfill (often referenced alongside the broader Gothard Street / Central Park landfill footprint).
- **Refuse Accumulation:** Millions of cubic yards of commercial and household waste were buried up to 35 feet deep.
- **Closure & Dredged Cover:** When landfill operations ceased in the 1960s, the site was capped with a soil layer varying from 4 to 25 feet thick—partially composed of silty sand dredged from the Santa Ana River. Without engineered bottom liners, subterranean anaerobic decomposition naturally began generating significant quantities of landfill gas (primarily **methane** and **carbon dioxide**), along with volatile organic compounds (VOCs).

History & Background

- **Grand Opening & Continuous Operation (2000s – Present)**
- **Sports Complex Opening (2003):** The \$16 million+, 45-acre Huntington Beach Sports Complex officially opened, serving as a model for brownfield redevelopment.
- **Gas Production & System Output:** Over the decades, as the buried organic waste has matured, the landfill gas generation rate has naturally decayed. Current operational data indicates the system extracts roughly **40 standard cubic feet per minute (SCFM)** of gas at a methane concentration of around **30%**.
- **Ongoing Regulatory Oversight:** The system remains under strict quarterly surface emission and perimeter probe monitoring regulated by SCAQMD, the Regional Water Quality Control Board, and the Orange County Waste and Recycling agency.

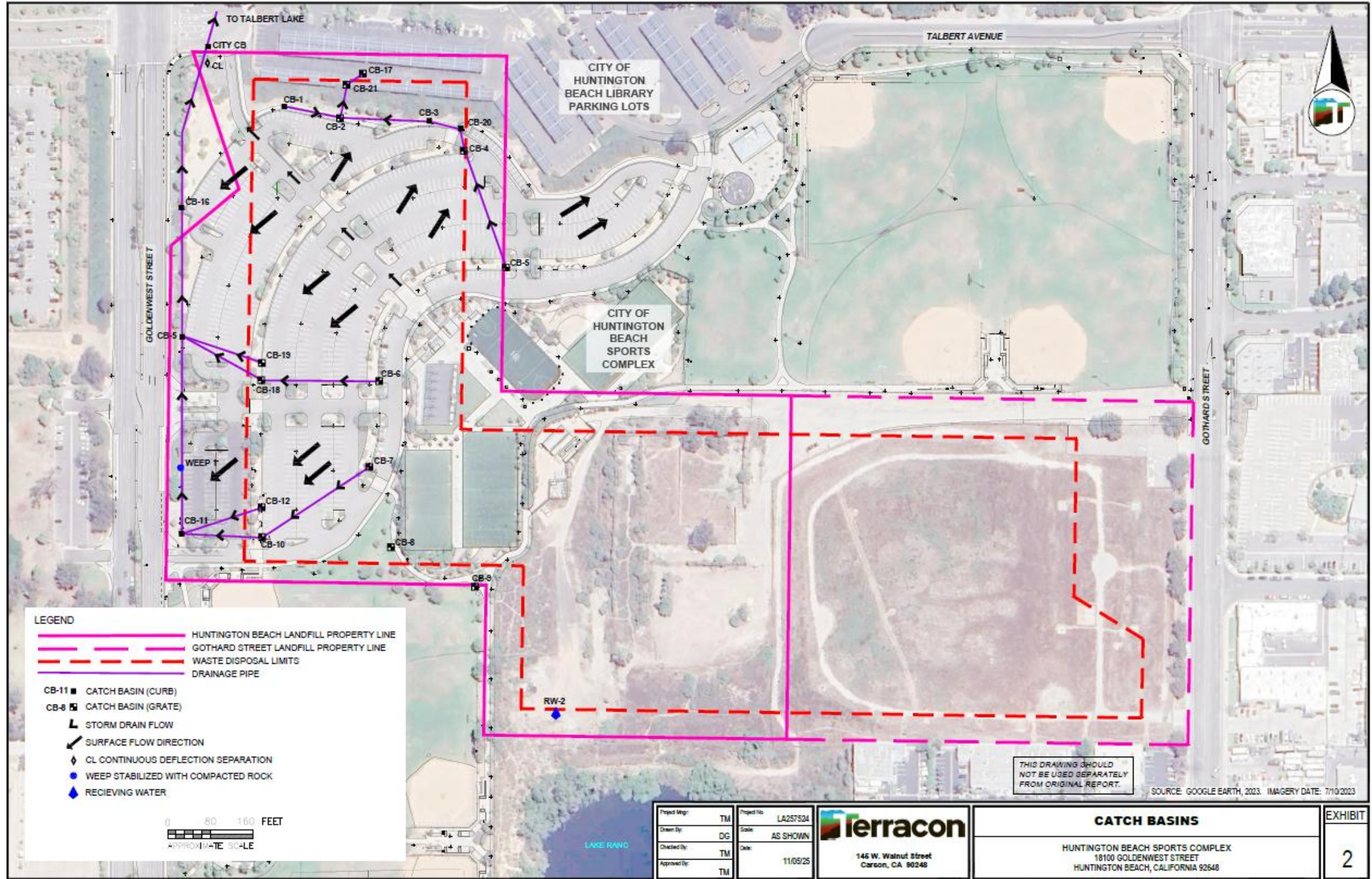
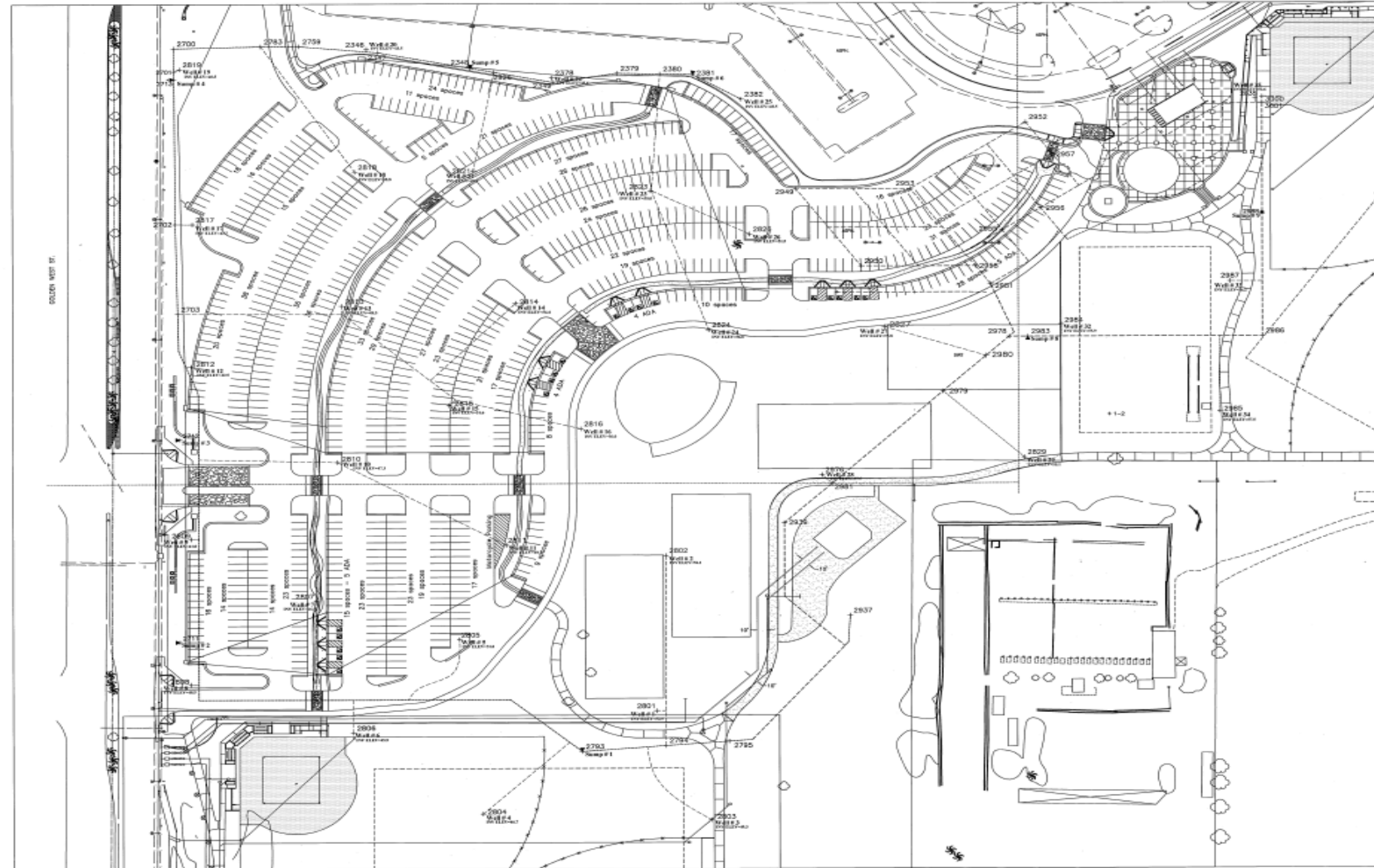


Diagram of Landfill Gas Monitoring/Extraction System



As-Built Pnt #	Northing	Easting
2346	2203076.98	6027758.58
2347	2203072.29	6027770.97
2348	2203051.93	6027868.77
2349	2203033.54	6027957.19
2378	2203039.40	6027956.26
2379	2203044.96	6028026.00
2380	2203043.91	6028071.32
2381	2203043.11	6028106.04
2382	2203011.21	6028158.20
2700	2203078.07	6027552.88
2701	2203048.07	6027553.07
2702	2202851.07	6027554.30
2703	2202735.31	6027556.63
2711	2202310.89	6027558.31
2712	2202572.89	6027558.66
2713	2203038.07	6027553.13
2759	2203080.43	6027868.81
2783	2203080.43	6027645.51
2793	2202168.97	6027987.14
2794	2202176.34	6028076.31
2795	2202181.91	6028143.78
2801	2202221.25	6028066.33
2802	2202421.91	6028076.31
2803	2202080.58	6028124.70
2804	2202088.74	6027881.17
2805	2202313.81	6027856.32
2806	2202193.51	6027743.18
2807	2202363.66	6027703.81
2808	2202255.98	6027570.25
2809	2202444.12	6027570.25
2810	2202543.48	6027726.60
2811	2202435.70	6027906.35
2812	2202667.28	6027570.94
2813	2202745.31	6027731.58
2814	2202746.22	6027917.01
2815	2202616.55	6027846.03
2816	2202586.13	6027986.25
2817	2202851.00	6027572.31
2818	2202918.21	6027745.92
2819	2203050.98	6027558.94
2821	2202819.61	6027872.16
2823	2202893.34	6028061.32
2824	2202713.49	6028122.92
2826	2202837.13	6028166.95
2827	2202716.88	6028311.01
2828	2202549.49	6028459.38
2835	2203011.11	6028706.13
2926	2203046.57	6027894.55
2937	2202344.07	6028273.20
2939	2202464.07	6028203.20
2948	2202895.49	6028216.43
2950	2202795.49	6028285.92
2951	2202772.32	6028423.81
2952	2202981.09	6028461.39
2953	2202895.50	6028338.21
2955	2202841.91	6028436.34
2956	2202870.44	6028477.40
2957	2202940.03	6028489.92
2958	2202795.50	6028407.70
2976	2202526.13	6028243.29
2978	2202704.48	6028443.62
2979	2202633.78	6028372.91
2980	2202679.74	6028418.86
2981	2202514.98	6028254.12
2983	2202704.48	6028463.62
2984	2202720.27	6028499.10
2985	2202607.66	6028568.09
2986	2202704.48	6028713.62
2987	2202775.42	6028679.23
2988	2202864.50	6028713.62
3000	2203013.50	6028713.62
3001	2203005.50	6028713.62



REVISIONS	DATE	BY	APP

PREPARED BY:
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 TEL: (949) 888-0241 • FAX: (949) 888-0249
 SCALE: 1" = 60' DATE: Jan 20, 2003

METHANE GAS AS-BUILT
 Huntington Beach Central Park
 Sports Complex
 for
 Valley Crest

SHEET : 1 OF 1
 FILE NO. 6173



Project No.	TM
Drawn By	OG
Checked By	TM
Approved By	TM

Project No.	LA257524
Date	AS SHOWN
Date	11/5/2025

Terracon
145 W. Walnut Street
Carson, CA 90340

SITE POINTS
HUNTINGTON BEACH SPORTS COMPLEX 16100 GOLDENWEST STREET HUNTINGTON BEACH, CALIFORNIA 92648

EXHIBIT
1

Ballpark Estimate of Replacement Costs

Full System Infrastructure Replacement (\$350,000 – \$800,000+)

- If the entire extraction infrastructure across the Sports Complex footprint required full replacement (re-drilling extraction wells, relaying headers, replacing sub-slab vapor barriers, and updating the blower/treatment skid):
- **Well Field Work (34 Extraction Wells):** Drilling, well screens, heads, and piping run roughly **\$8,000 to \$15,000 per well** (\$270,000 – \$500,000+ total).
- **Collection Piping & Trenching:** High-density polyethylene (HDPE) header piping across the park grounds adds **\$50,000 to \$150,000+** depending on surface restoration requirements (pavement, turf, or hardscape).
- **Blower Skid & Controls:** **\$50,000 – \$100,000+.**
- **Engineering, CEQA/Permitting & Construction Management:** Soft costs typically add **20% to 30%** to the total capital outlay.