

**Landfill Gas (LFG) Control System Operations &
Maintenance Services
At Vista Grande Park
For
City of La Habra**



TABLE OF CONTENTS

TABLE OF CONTENTS.....	ii
1.0 INTRODUCTION.....	1
2.0 QUALIFICATIONS.....	2
3.0 KEY PERSONNEL.....	3
4.0 REFERENCES.....	8
5.0 SCOPE OF WORK.....	9
5.1 General Approach.....	9
5.2 Project Understanding.....	10
5.3 Routine Operations and Maintenance Field Tasks.....	10
5.4 Reporting Requirements.....	14
5.5 Non-Routine Services – As Needed.....	15
6.0 OTHER REQUIREMENTS.....	15
6.1 Contract Term and Conditions.....	15
6.2 Proof of Insurance.....	15
6.3 Health and Safety.....	16
7.0 COST PROPOSAL.....	16
8.0 LIMITATIONS.....	17

Appendix A – Resumes, Licenses, and Certificates

Appendix B – Project Descriptions

Appendix C – Conflict of Interest Disclaimer Form & Acknowledgement of Insurance Requirements Form

Appendix D – Proposed Exceptions to Terms and Conditions

Fee Estimate attached separately in a sealed envelope marked “Fee Proposal”



1.0 INTRODUCTION

The City of La Habra, referred to hereafter as “the City”, is seeking proposals from qualified persons or firms interested in providing services related to the operation, maintenance, and compliance sampling and reporting for the Vista Grande Park (formerly known as La Habra Disposal Station #11), herein referred to as the Landfill, located at 1101 W. Las Lomas Drive, La Habra, California.

ES Engineering Services, LLC dba Montrose Environmental Solutions (Montrose), is pleased to provide our proposal to the City. Montrose is a full service-engineering firm, with extensive experience in providing similar services to a wide-range of clients. Montrose specializes in the delivery of engineering and environmental management services, and offers viable, innovative, low-cost, scientific solutions to environmental problems.

With an unparalleled reputation in the landfill gas and methane mitigation industry, extensive experience in landfill gas engineering including methane investigations, building methane protection systems, gas control system design, and operations and maintenance of the gas collection and mitigation control systems, Montrose is well qualified for this work. We are located less than 20 minutes of the Site and can mobilize to the site to respond to issues immediately. Qualified personnel have been assigned to this project. The assigned project manager is a Senior Manager at Montrose and has extensive experience in the landfill gas industry performing similar scope of work for other clients and he has been the primary contact at this particular site.

Time to time, maintenance issues and methane exceedance occurs at the landfills as it has been the case with methane exceedance in one of the probes at the Landfill. In 2000 ES was retained to respond to a Notice and Order that had been issued to a landfill owned by another city under the jurisdiction of the Orange County Local Enforcement Agency (LEA) for methane exceedance. Through ES’ efforts, the site was brought back into compliance with the Title 27 regulations, and the Notice and Order was rescinded. According to the LEA the landfill was able to reach compliance with methane quicker than any other landfills. This is a testimony to our responsiveness, technical knowledge, quality of work and good working relationship with the regulatory agencies! Montrose will continue to provide the same excellent service for the Landfill. We have provided a few project descriptions that demonstrate best how we are able to solve gas migration issues and bring sites into compliance with the regulations. We are pleased to say that we have remained the consultants to these clients because of the quality of services we have been providing to them! We encourage the City to contact our references who will attest to our technical expertise, responsiveness, and working within budget and schedule.

We understood the City’s economic concerns when we were awarded our contract in 2011 and to help the City with cost savings, we provided an all-inclusive fee where a constant monthly payment is made by the City for all operation and maintenance work. We have kept our fees constant for the duration of the contract. We will so the same for this contract!



Company Mission

Montrose strives to provide exceptional environmental consulting and engineering services to the solid waste, renewable energy, petroleum, wastewater and water treatment industries. We are a team of professionals who are passionate about achieving and maintaining a high level of client service. At the heart of Montrose is a desire to engage people in order to build partnerships to serve as stewards of the environment.

Company Values

Our Company is built on core values and we conduct business in a socially responsible and ethical manner.

At Montrose, we value:

Teamwork – partnering to achieve common goals

We have an unwavering commitment to being a good partner focused on building productive, collaborative, trusting and mutually advantageous relationships with our clients and colleagues.

Respect – recognizing the uniqueness of each individual

We learn from and respect all the people we work with. We value and demonstrate respect for the uniqueness of individuals and the perspectives and the talents they provide. We have an inclusive work environment and actively embrace diversity in people, ideas, talents and experiences.

Integrity – keeping our commitments

We do what we say we will do. We are honest with others and ourselves. We meet the highest ethical standards in all business dealings. We accept responsibility and hold ourselves accountable for our work and our actions. We strive to earn the trust of our colleagues and partners.

Quality – meeting and exceeding internal and external expectations

We are committed to providing quality services and products. Quality is viewed from two perspectives: the actual production of quality work and the perception by clients that a quality product has been produced. Substance and perception are of equal value. We desire quality in all activities, projects, business development and administration. Our drive for quality is passionate and continuous.

Service – protecting people and the environment

We promote workplace safety and environmental preservation. Through training and practice, we regard safety as paramount and are encouraged to think, act and behave in an environmentally responsible manner.

2.0 QUALIFICATIONS

Montrose provides a wide range of environmental engineering and consulting services including solid waste and landfill gas, groundwater and air quality assessment and compliance, geotechnical services,



and systems operation and maintenance. Montrose professionals have landfill gas expertise that is unsurpassed in the industry. We have performed services at hundreds of landfills regionally, throughout the United States and abroad. Early landfill gas projects in the late 1970's and early 1980's included landfill gas energy recovery engineering, construction, operation, and maintenance. This was followed by evaluation of groundwater contamination by landfill gas, landfill gas collection and groundwater monitoring systems design, construction and operation to control subsurface landfill gas migration and air emissions for protection of groundwater quality and the environment. Routine work performed by Montrose includes design, permitting, construction, and operation and maintenance for environmental compliance and energy recovery projects. Montrose also performs research to improve technologies related to landfill gas control, recovery and use. Some research projects currently being evaluated and developed by Montrose include removing siloxane from landfill gas, separating landfill gas methane into hydrogen and carbon, and generating hydrogen from wood waste.

Our existing clients support our qualifications. We have provided services similar to those required by many municipalities including:

- ✓ City of La Habra
- ✓ City of Garden Grove
- ✓ City of Bakersfield
- ✓ City of Redlands
- ✓ City of Watsonville
- ✓ City of Santa Monica
- ✓ City of Newport Beach

For many of the municipalities listed above, we have been in contracts for over 15 years.

Part of the work Montrose performs is providing software to control programmable logic controllers (PLC) and supervisory control and data acquisition systems (SCADA). Montrose personnel has also recommended and/or modified burners and controls for industrial boilers, reformers, and small packaged boilers to allow them to use landfill gas.

3.0 KEY PERSONNEL

Montrose professionals are all experts in their respective fields. Montrose's full-service capabilities include highly skilled and trained environmental professionals including geologists, engineers, environmental assessors, technicians and draftsmen, but also include local area network (LAN), personal computers, CAD computers, numerous engineering and environmental software programs, and access to computerized databases. Montrose's structure and emphasis on cost-control enable us to efficiently and effectively provide our clients with top quality workplans, designs and reports.

Our geologists, hydrogeologists, engineers, environmental assessors all have significant experience in conducting hazardous material assessments, site characterizations, remedial investigations, and remedial



action planning and site closure. Most of our professionals have at least 10 years of experience in the environmental field, and the proposed Project Manager has more than 20 years of experience in the landfill gas industry. Her expertise include sound project management, extensive technical expertise, and ability to control budgets and schedules and good client relationships. Our staff strives to keep our clients informed, updated and confident of work that is being performed. Montrose environmental professionals possess current licenses and registrations in their respective fields.

We have assigned our experienced personnel to this project. Resumes for professionals identified for this project attesting to their levels of experience are presented in **Appendix A**.

Key Personnel

Richard Frizzell, PG – Mr. Frizzell, a Senior Manager at Montrose, is our proposed Project Manager. Mr. Frizzell is a Professional Geologist with over 30 years of experience in project management, environmental field and solid waste facilities as well as other environmental projects. Mr. Frizzell has experience dealing with environmental impacts from both landfill and oil field activities; Mr. Frizzell has been certified by the Orange County Fire Authority to design and sign methane investigations with regards to oil field issues. Mr. Frizzell will oversee the monthly and quarterly monitoring and schedule and manage the source test. Mr. Frizzell will be the contact for the City. Mr. Frizzell also performs construction quality assurance for projects engineered by Montrose. This includes landfill gas collection/flare projects. In addition to LFG project, Mr. Frizzell has been responsible for field operations and supervising field technicians during groundwater assessments at active and closed landfill sites including Superfund sites throughout Southern California.

Farideh Kia, PG, CHG, CEM, REA II - Ms. Kia, Senior Manager at Montrose, and proposed Technical Director for this project, is a Professional Geologist and Certified Hydrogeologist with over 30 years of experience in the landfill and oil field studies, landfill gas and oil field methane investigation and mitigation, and environmental and hazardous waste management field. Her expertise is in managing and coordinating geologic and hydrogeologic evaluations and remediation, landfill permits, closure and post closure maintenance plans, landfill excavation clean closure evaluations, groundwater quality assessment and remediation, and landfill and oil field methane gas control. Ms. Kia has day-to-day executive management responsibilities, is able to allocate resources to projects, and negotiate contracts on behalf of the company. Ms. Kia has assisted and directed numerous landfill and oil field closure projects involving locating and permitting, both air and water Solid Waste Assessment Tests (SWATs), CQA management of landfill cell lining operations, and groundwater and methane gas issues for both landfill and oil field development. Ms. Kia was responsible for an extensive Title V permit program for WMIs western region landfills.

Ms. Kia is well versed in all aspects of regulatory requirements and agency negotiations and will be responsible for interfacing with regulatory agencies.

Ms. Kia has been the Chair of the Training Committee and faculty for the Solid Waste Associate of North America (SWANA) training program, and provides training for the Landfill Gas Operation and Maintenance



and the Landfill Gas Basics courses for over 15 years. She was an integral part of a team that was awarded a grant by EPA, and served as a principal speaker for the EPA sponsored Energy Recovery and Emission Reduction training course in China in 2008. She was an integral part of a team that was awarded by EPA to conduct a feasibility study for few landfills in China.

Dane Nygaard – Mr. Nygaard a Senior Manager, managing office and field staff for site assessment, remediation, stormwater, and landfill projects. Engineering experience includes civil engineering, mapping, and 3D design, and environmental studies. He is currently managing over fifty remediation project sites throughout the west coast for Montrose’s major oil and independent clients, overseeing projects under direction from Regional Water Quality Control Boards, various Air Quality Management Districts, the Environmental Protection Agency, Department of Toxic Substances Control, and local agencies. He will oversee staff working on the project.

Chris Guesnon, PG, CHG, CEG – Mr. Guesnon has over 30 years of experience working on environmental contamination sites throughout California and has worked continuously and progressed to project management for numerous retail gasoline service station, landfill, real estate and waste management companies throughout California. Throughout Chris’ career, he has prepared and reviewed numerous Phase I and Phase II site assessments and supervised Workplan preparation, scheduling, and notifications for multiple site investigation activities including drilling assessments, underground storage tank (UST) removal and remediation projects, and fault investigations using geophysical and subsurface exploration.

Margaret Patrick, PG – Ms. Patrick is a Senior Geologist and a Project Manager. Ms. Patrick has been overseeing landfill gas system operations and maintenance services for over 20 years. Ms. Patrick has extensive environmental experience, especially as it relates to permitting and plan preparation. She commonly writes post closure maintenance plans, health & safety plans, site investigation plans, monitoring plans, etc. She will be responsible for interfacing with regulatory agencies and overseeing reporting.

Kristopher Kern, G.I.T. - Mr. Kern is a Project Geologist and a Project Manager and has over 8 years of experience in the site assessment and remediation field and landfill gas mitigation and control. As a project manager, Mr. Kern oversees landfill probe and well monitoring, well installation and abandonment, lateral pipe installation, LFG pipe welding, surface emission monitoring, system operations and maintenance, LFG system evaluation, system troubleshooting and repairs, data collection procedures, preparation of reports and quality assurance inspections. He has been responsible for troubleshooting and evaluating various issues on existing systems such as methane compliance exceedances, groundwater contamination, system controls, and system upgrades, and has provided solutions and recommendations to address these issues. He oversees construction and installation of components or systems. He also schedules and coordinates procurement of materials and services for projects. Other field experience includes installation of soil boring and monitoring wells, soil gas sampling and groundwater sampling.

Eduardo Rivera – Eduardo Rivera is one of Montrose’s senior technicians and has extensive knowledge and experience in data collection procedures, field operations and maintenance, project coordination,



and subcontractor procurement. Eduardo is in charge of field sampling and monitoring, indoor and outdoor air and groundwater monitoring, and the operation, maintenance, design and installation of remediation systems for various sites across northern and southern California and Washington. He performs and supervises Integrated Surface Sampling (ISS) and Instantaneous Surface Monitoring (ISM), perimeter probe monitoring and operations and maintenance of landfill gas (LFG) wells, flare stations, and soil vapor extraction systems. He has knowledge of federal and state regulations governing contaminated sites and waste disposal facilities.

Hector Ramirez - Mr. Ramirez is one of Montrose’s field technicians assigned to this project. He is currently responsible for the monitoring, troubleshooting, and maintenance and repair of various landfill gas systems. He has extensive knowledge and experience in data collection procedures, field maintenance, environmental report writing, project coordination, and subcontractor procurement. He will be the primary technician performing field monitoring. He is in charge of field sampling and monitoring, indoor and outdoor air monitoring, and the operation and maintenance of remediation systems for various sites. He performs and supervises Integrated Surface Sampling (ISS) and Instantaneous Surface Monitoring (ISM), perimeter probe monitoring and operations and maintenance of landfill gas (LFG) wells, flares, carbon canister blower stations and soil vapor extraction systems. Whenever he is at a landfill, he also observes landfill cover quality and will notify the owner if something requires repairs. He prepares LFG migration and surface emission reports for agency submittal. Other field experience includes installation of soil boring and monitoring wells, soil gas sampling, groundwater sampling and construction quality assurance. He has knowledge of federal and state regulations governing contaminated sites and waste disposal facilities.

Key Personnel Table

Landfill Gas Control System Services			
KEY PERSONNEL			
Name	Project Position	Years Exp.	Licenses / Certifications
Richard Frizzell	Senior Geologist / Project Manager	30	Registered Geologist, PG #6290 CA; Registered Geologist, RG #67049 AZ; Qualified SWPPP Developer / Qualified SWPPP Practitioner (QSP/QSD) #22846; City of Los Angeles, Deputy Building Inspector (Methane) #P026816; Orange County Fire Authority (OCFA) Approved Soil Gas Investigator



Farideh Kia	Senior Manager / Technical Advisor	32	Professional Geologist, PG #5908, California Certified Hydrogeologist, CHG #318, California Registered Environmental Property Assessor #512196 DHS Certified Lead Inspector/Assessor #I-13953 General A HAZ Contractor, California, #832426 Certified Environmental Manager
Dane Nygaard	Senior Manager	16	40-Hr OSHA HAZWOPER; OSHA Health and Safety Supervisor Training for HAZ Waste Sites
Chris Guesnon	Senior Geologist / Project Manager	30	Professional Geologist in California, PG# 7114; Professional Geologist in Arizona, PG# 60860; Certified Hydrogeologist (CHG) in California #1065; Certified Engineering Geologist (CEG) in California #2361; 40-Hr OSHA HAZWOPER
Margaret Patrick	Senior Geologist / Project Manager	25	Professional Geologist by National Associate of State Boards of Geologist; 30-Hr OSHA Outreach Training for General Industry; 40-Hr OSHA HAZWOPER
Kris Kern	Project Geologist / Project Manager	8	Geologist In Training. #576 (2014) CFR 1910.120 HAZWOPER 40 Hour safety trained (2013). Certificate # 33618 CFR 1910.120 HAZWOPER 8 Hour Refresher (2021) D.O.T. Code of Federal Regulations 192.273 and PPI TR-33 Generic Butt Fusion Joining Procedures



Eduardo Rivera	Senior Technician	17	CFR 1910.120 HAZWOPER 40 CFR 1910.120 HAZWOPER 8 Hour Refresher (2021) D.O.T. Code of Federal Regulations 192.273 and PPI TR-33 Generic Butt Fusion Joining Procedures
Hector Ramirez	Field Technician	10	CFR 1910.120 HAZWOPER 40 Hour safety trained

Copies of the professional license and certificates are provided in **Appendix A**.

4.0 REFERENCES

Contacts from similar projects:

Montrose has considerable and verifiable experience in current and past LFG system services work. A partial list of references is included below. A few Project Descriptions are included in **Appendix B**. Montrose will be happy to provide additional project descriptions and references upon request.

Project	Contact
City of Garden Grove	Mr. A.J. Holmon, III, MBA Environmental Services/Streets Manager City of Garden Grove and Garden Grove Sanitary District 11222 Acacia Parkway Garden Grove, CA 92840 714-741-5956
City of Newport Beach	Ms. Kathryn Cho, Civil Engineer Public Works Department 949 West 16 th Street Newport Beach, CA 92658 714-759-2367
City of La Habra	Mr. Elias Saykali City of La Habra 201 E. La Habra Blvd. La Habra, CA 90633
City of Watsonville	City of Watsonville Ms. Nancy Lockwood City Hall P.O. Box 50000 Watsonville, CA 95077-5000



	Tel: 831-768-3147 e-mail: nlockwood@ci.watsonville.ca.us
City of Santa Monica	Mr. James Velez-Conway Office of Sustainability and the Environment - City of Santa Monica 2500 Michigan Avenue Tel: 310-458-8711 e-mail: james.conway@smgov.net

We have been providing the services to our clients with whom we have had long working relationships. Montrose can provide many additional project descriptions if requested. Brief project descriptions are provided in **Appendix B**.

5.0 SCOPE OF WORK

5.1 General Approach

Montrose’s approach to monitoring and maintenance of the Landfill gas collection and control system (GCCS) projects is simple: **Be proactive!** We believe that good, proactive, timely approach to monitoring and troubleshooting helps to keep the site in compliance with the regulatory requirements. Methane exceedance in the compliance probes can and will happen at times because of the circumstances such as changes in site conditions including site cover porosity, settlement, rain or irrigation infiltration causing additional landfill gas generation, variations in barometric pressure during prolonged weather fronts, and due to offsite sources. Where Montrose has demonstrated our capabilities in the past is in our ability to quickly address any exceedance issues and make the required alterations to the system. Where an offsite source appears to be the source of methane exceedance, Montrose works closely with the regulatory agencies to demonstrate that and help prevent issue of Notice of Violation for the site.

We have implemented a procedure where we perform additional monitoring when circumstances that cause increased risk of offsite gas migration occur. We also believe that experienced operators should be able to foresee, analyze, and take action to fix the problem! We believe in communicating with our client and reporting the steps that would need to be taken to prevent and solve gas migration and exceedance issues. We have a long working/ communication history with the South Coast Air Quality District (SCAQMD), and Local Enforcement Agencies (LEAs), and believe that our approach has saved our clients from getting Notice of Violation (NOV), or better yet, rescinding the NOV, if they already have one! As stated before, we were the first consultants, who received a Termination of NOV from the LEA in a very short time.

Montrose will use our experienced technicians to do the monitoring and troubleshooting of the GCCS at the Landfill. We intend to do excellent work for the City, as we have been doing since 2000, and have done for our other long term happy clients. To the extent possible, we do our routine monitoring during the first part of the month and/ or quarter. This allows us time to take action to correct problems before



they are in the reports without follow up results showing how proactive monitoring has remedied the problem.

The following scope of work has been developed based on our project understanding and the schedule of monitoring events provided in the RFP.

5.2 Project Understanding

Vista Grande Park is located on top of the La Habra Disposal Station #11 Landfill. The Site is located at the corner of Idaho Street and Lambert Road, and can be accessed through the Lambert Road gate, approximately 400 feet east of the corner of Lambert Road and Idaho Street, or from the Vista Grande Park parking lot on Las Lomas Drive. The entire park comprises approximately 18 acres. On the north, east, and west sides the terrain slopes sharply down from the deck to an elevation of between 240 and 250 ft, which is the approximate level with the roads bordering the park. The Landfill was operated by the County of Orange Waste Management from about 1949 to 1959, and was used to dispose of municipal solid waste. The refuse is about 35-40 feet deep with a mass of about 111,000 tons. The Landfill was capped and closed in 1962. After many years as a closed site, the City developed about 10 acres into Vista Grande Park. Differential settlement of refuse caused the park surface to deteriorate; subsequently its use declined. In 2000, subsurface landfill gas monitoring probes were installed to determine if methane gas was migrating from the site. Probe monitoring indicated that methane gas was present in several areas along the eastern perimeter. As a result, the City constructed a GCCS to control subsurface LFG migration.

In early 2016, Montrose noticed a leak from the bottom of one of the carbon tanks. Upon further inspection, the tank bottom was found to be corroded with a hole in the bottom. On May 6, 2016, Montrose removed and safely disposed of the old carbon tanks, and replaced them with two new carbon tanks. The system is now performing to the permits specifications.

The GCCS consists of five vertical wells, one horizontal well, two 1,000 pounds (lbs) of activated carbon vessels, one 1/2 horsepower blower, one vent stack, one sump, and a 1,000 gallon condensate water holding tank. The GCCS is permitted to extract 42 SCFM of LFG which is routed to the Vent Stack. There are seventeen (17) single depth and multi-depth compliance monitoring probes at the landfill's boundary.

5.3 Routine Operations and Maintenance Field Tasks

The routine scope of work for monitoring, maintenance and troubleshooting, and reporting requirements for the Landfill includes: Operations and maintenance of the gas collection wellfield and compliance probes; Operation and maintenance of the activated carbon and sulfa treat systems, and; Monitoring and reporting in accordance with South Coast Air Quality Management District (SCAQMD) Rule 1150.1.



As a subsidiary of Montrose has been providing these services to the City since 2000 and has been doing similar work for many city and county landfills for decades. We take pride of the fact that our clients are long term and happy with our work.

Montrose’s senior personnel assigned to this project have extensive experience in the field of landfill gas collection system design, operation and maintenance of the systems, regulatory compliance and reporting. As stated before, our approach to monitoring and maintenance of the GCCS projects is simple: ***We are proactive!*** This is what we do and we are well known for our expertise. We understand the importance of the LFG system proper operation for the safety of the environment. Most of projects were brought to us where lack of understanding the nature of landfill gas generation and movement, and need for effective control of the gas have caused issues of regulatory and environmental concerns resulting in Notice of Violations. We will provide all operation, maintenance, and monitoring services for the existing LFG control system at the site. We have assigned engineers and senior field technician well trained in monitoring, operation and maintenance and troubleshooting of landfill gas collection and control systems in accordance with the existing SCAQMD permits, requirements, and approvals. We understand that the landfill and the LFG Control system are to be operated in compliance with the South Coast Air Quality Management District (SCAQMD) Rule 1150.1 Compliance Plan.

Montrose also understands that during the first quarter of 2023, the City will be breaking ground to build new amenities at the site. Improvements will include an expanded landfill gas system and new landfill cap. In addition, three out of the twelve gas monitoring wells will be modified as part of the improvements. At the appropriate times, Montrose anticipates replacing the irrigation control boxes at each well with monitoring well vaults under a separate agreement. Monitoring and sampling will be scheduled to minimize impacts to the construction activities.

The routine scope of work for monitoring, maintenance and troubleshooting the GCCS, and reporting requirements for Vista Grande Park includes monthly, quarterly and annual tasks. A description of the tasks is provided in the following sections.

5.3.1 Monthly Monitoring Tasks

Probes and Well Field Monitoring

In sequence, Montrose will monitor the perimeter compliance probes and the gas extraction wells. Knowing methane concentrations in the gas probes allows us to make gas well adjustments as they are monitored. The monthly monitoring event is performed over one day during the first two weeks of the month. Each well, the wellhead and control assembly, the sump and all other components of the system are monitored/ checked to verify that they are tight and functioning properly. We check the vacuum at the blower and in the landfill gas collection headers to verify that vacuum is constant. We use a GEM 5000, RKI Eagle, or equivalent gas monitor for LFG well and probe monitoring. A TSI thermal anemometer or equivalent is used to measure landfill gas flow from the wells and a PID is used to measure non-methane



hydrocarbons removal by the carbon canisters. The water holding tank is checked for level and the need to call for pickup is evaluated.

Blower Station Operation and Maintenance

The current operating blower / vent stack station consists of the following equipment:

- Two 1000-lb carbon canisters,
- One 1/3 hp blower,
- One exhaust vent stack,
- Associated flow, temperature and vacuum/pressure instruments.

General Maintenance

Routine maintenance at a minimum shall include;

- Monitor the blower station and include operating information in the monthly report,
- The blower performance shall be checked for abnormal operation. If problems are found or suspected, corrective action shall be reported in the monthly report,
- Check the water level in the condensate water sump,
- Check all valves,
- Check blower station environment cutting down weeds and removing trash regularly,
- Insure data recorders are operating properly,
- Check the water level in the condensate water tank. Arrange for and coordinate water removal and disposal when the tank is 80% full,
- Drain water from the carbon canisters,
- Arrange for and coordinate carbon replacement as needed, and
- Monitor the gas quality before the carbon canisters, between the carbon canisters and after the blower, and check the flow before the carbon canisters.

5.3.2 Quarterly Monitoring Tasks

Montrose will perform Instantaneous Surface Monitoring (ISM) and Integrated Surface Sampling (ISS), and Main Header monitoring and Sampling on a quarterly basis in accordance with the SCAQMD Rule 1150.1. All monitoring equipment will be calibrated daily prior to the startup of the work. The following tasks will be performed during the surface emission monitoring event.

Instantaneous Surface Monitoring (ISM)

Instantaneous surface monitoring (ISM) will be conducted over the entire accessible disposal area to identify the locations of areas with excessive landfill gas emissions. Landfill gas emissions will be monitored using a Thermo TVA 1000B portable flame ionization detector (FID) or equal, calibrated prior to the start of the work, while walking a pre-established pattern at a speed of 1 to 2 feet per second. At all times the monitoring probe tip will be maintained at approximately 0 to 3 inches above the landfill



surface. The locations with total organic compounds (TOC) concentration as methane in parts per million by volume (ppmv) will be marked and recorded on the Walk Route Map. Any readings exceeding 200 ppmv at areas of cap failure or fissures, wellheads, etc., will be recorded, the area will be flagged, and the City will be notified for cap repairs. Repairs must be completed within 10 days of notification.

Once the area of exceedance has been repaired, Montrose will retest the area within 10 days to verify that outflow has been remediated.

Integrated Surface Monitoring (ISS)

Montrose will perform ISS over a pre-established grid pattern on the landfill. ISS will be conducted when the landfill is dry and average wind speed is 5 mph or less, and the instantaneous wind speed is 10 mph or less. During sample collection, the sample tip will be maintained between 0 to 3 inches above the landfill surface, as the technician walks at a speed of 2-3 miles per hour over a 2,600 linear-foot walking pattern within the grid. The sample will be collected in a 10-liter Tedlar bag that is enclosed in a light sealed box. Each Tedlar bag will be monitored for TOC using a Thermo TVA 1000B portable flame ionization detector (FID) or equal calibrated prior to the start of the work. If no grids exceed 25 ppmv TOC, the two grids with the highest detectable average concentration of TOC will then be sampled and the samples will be submitted to the laboratory with a Chain-of-Custody record for analysis for SCAQMD 1150.1 Table 1 Toxic Air Contaminants (TACs), percent methane and hydrogen sulfide.

Main Gas Header Monitoring

During each quarter, Montrose will monitor the main header leading into the treatment center using a GEM 5000 and PID for gas quality; flow may be verified using a TSI anemometer for flow. A sample will be collected from the LFG in a 1-liter Tedlar bag using a vacuum sample box. The sample will be submitted to a State-certified laboratory for analysis for hydrogen sulfide, toxic air contaminants (TACs), methane, and total non-methane organic compounds (TNMOCs) as methane. Sampling and analysis will be performed as specified in approved SCAQMD Rule 1150.1 Permit. Sampling will be performed during one of the monthly monitoring events each quarter.

5.3.3 Semi-Annually Monitoring Tasks

On a semi-annual basis, Montrose will perform ambient air sampling and analysis. The upwind and downwind samples will be collected simultaneously over two 12-hour periods beginning between 9:00 a.m. and 10:00 a.m., and 9:00 p.m. and 10:00 p.m. on the same day. Wind speed and direction will be recorded continuously to verify that the meteorological criteria have been met during sampling.

The sampling equipment will consist of a 10-liter Tedlar bag, a DC-operated pump, Teflon fitting/tubing, flow meter, and bypass valve. Samples collected will be submitted to a State-certified laboratory for analysis for hydrogen sulfide, TACs, methane, and TNMOCs as methane. Sampling and analysis will be performed as specified in approved SCAQMD Rule 1150.1 Permit.

5.3.4 Annual Monitoring Tasks



Annual Source Test

According to Rule 1150.1 (d)(1)(c), the landfill control system shall route the collected gas to a control system designed and operated to either reduce non-methane organic compounds (NMOC) by at least 98 percent by weight or reduce the outlet NMOC concentration to less than 20 ppmv, dry basis as hexane at 3 percent oxygen. Therefore, an annual source test is required to verify the control efficiency of the activated carbon and removal of Non Methane Organic Compounds (NMOCs) from the gas. Montrose will perform the annual source test per the SCAQMD Rule 1150.1 (d)(1)(C)(i) and Permit to Operate F92777. All source testing and analytical methods will be submitted to the SCAQMD for approval at least 30 days prior to start of tests¹.

Probe Sampling and Analysis

The 1150.1 Permit for the site requires annual sampling of one of the perimeter probes for analysis for TACs. Montrose will sample one of probe with the highest methane concentration for laboratory analysis on an annual basis. The sample will be collected in a Tedlar bag and will be submitted under Chain-of-Custody to a State-certified laboratory for analysis.

Annual Landfill Cover Inspection

Per the requirements of the Regional Water Quality Control Board (RWQCB) (letter dated June 23, 2004), Montrose will visually inspect the cover prior to the wet season of each year. The inspection will be performed by one of Montrose's professional geologist with extensive experience in landfill cover inspection and CQA inspection of the significant repairs. The City will be notified of cracks, settlement or ponding that are observed immediately via phone call and e-mail with a map showing the locations of the areas of concern. Areas repaired by the City will be reinspected prior to preparing the report for submittal to the RWQCB.

5.4 Reporting Requirements

5.4.1 Monthly Reports

Montrose will prepare Monthly Reports that will document the monitoring results, and corrective actions taken, if any, during each month. The report will contain introduction, an executive summary, a summary of the site background, a summary of the operations of the previous month, description of the sampling and monitoring procedures and protocols used, tabulated monitoring data, a summary of field observations, well balancing, and discussions of the exceedances, if any. The report will also include copies of the calibration logs, laboratory reports. The monthly report will be submitted to the City for review, comments, and approval. Monthly reports will be submitted to the LEA.

¹ It is understood that the 2022 Source Test is still pending. Montrose will complete the 2022 Source Test during the 4th Quarter 2022 and then during the 3rd Quarter thereafter.



5.4.2 Quarterly Reports

Montrose will prepare Quarterly Reports for submittal to the SCAQMD. The report will include a summary of the monthly monitoring results, and discussions of the exceedances, if any, and mitigation measures taken to correct the methane exceedance. The report will contain summary on the site background, description of the sampling procedures used during monitoring and maintenance, tables of all data collected during the previous three months, and copies of the calibration logs.

5.4.3 Annual Cover Inspection Reports

A report will be prepared documenting the annual cover inspection results, and any repairs that were completed for submittal to the RWQCB. The report will contain a description of the activities performed and a before and after photographic logs of the areas of concern that were observed and repaired.

5.4.4 Annual Source Test Reports

Montrose will obtain a source test report for submittal to the SCAQMD. The report will include a summary of the site background, equipment description and operating conditions, a summary of the source test procedure used, and a summary of the test results.

5.5 Non-Routine Services – As Needed

Montrose’s extensive experience in landfill gas system design, monitoring and operation and maintenance affords us the benefit of knowing the problems ahead of time, therefore, lessening the emergency situations. However, we know emergencies will occur and require timely response. We are able and will respond to emergencies within four hours of notification. Should our inspection and observations indicate requirement for additional non-routine labor, repair parts, etc., beyond the scope of this proposal, we will provide the City with a description of required repairs/ work and cost associated with the additional scope for approval prior to performing the work. Additional work will be charged on a time-and-materials (T&M) as approved by the City.

6.0 OTHER REQUIREMENTS

6.1 Contract Term and Conditions

Montrose has reviewed the terms and conditions of the Services Agreement and has included our proposed contract exceptions to the terms and conditions of the attached Agreement for Services as **Appendix D**.

6.2 Proof of Insurance



Montrose has the required insurance coverage for this work. A copy of our Insurance Certificate is provided in **Appendix C**.

6.3 Health and Safety

Safety is our primary concern. We do understand the importance of safety to our staff and our clients. All field staff are trained by OSHA standards. We do prepare site specific health and safety plans for our sites based on the site conditions. We have extensive experience working in landfills and are aware of all hazard issues associated with the landfill gas. All our work will be performed in compliance with all State, Federal and other laws, rules, regulations, and orders relating to the safety of the public and workers.

7.0 COST PROPOSAL

Per the RFP, a copy of the estimated costs is provided in a sealed envelope marked “Fee Proposal”. Costs are subject to the assumptions and limitations stated in this section.

Assumptions and Basis of Cost

The proposed cost will remain the same for a period of three (3) years. The estimated costs are based on the following assumptions and limitations:

- Cost does not include replacement of a major component of the system, if necessary. Montrose will provide the City with an estimate cost on a time and material basis based on our current Rate Sheet (attached) and vendors’ cost of the equipment.
- Cost based on monthly monitoring of the existing components of the system.
- Laboratory costs are based on the number of samples and frequencies stated in the RFP.
- The work will be performed in OSHA Level D protection (including hard hat and safety vest). Any additional health and safety requirements may cause an increase in our price.
- This proposal and Assumption and Conditions will become part of a mutually agreed upon contract.
- Montrose will not take responsibility for the overall quality of the gas collected from the LFG control system in regards to trace components.
- Montrose takes no legal responsibility for any of the potential hazards associated with the condensate.
- At no time will the title to hazardous substances, solid wastes, petroleum contaminated, or the other regulated substances pass to Montrose, nor will any provisions of this Agreement be interpreted to obligate Montrose to assume status of a “generator,” “transporter,” “operator,” or “treatment, storage, or disposal facility” under state or federal law.
- The estimated cost only covers the tasks indicated in the proposal. Cost associated with any other tasks requested by the City and not included in the proposal will be provided under a separate proposal for City’s review and approval.



8.0 LIMITATIONS

Information gathered during the project by Montrose is considered confidential and will be released only upon written authorization by the Client as required by law. California law requires a person to inform the State if a situation is encountered that can be considered an immediate endangerment to the public's health or welfare and/or the environment.

The results contained in any oral or written report will be based upon the information acquired at the time of the investigation. It is possible that not all conditions will be identified during this project. The work will be consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in southern California. No warranty is expressed or implied.

This proposal is the property of Montrose and may be used only by the City and only for the purposes stated, within a reasonable time from its issuance.



Appendix A:

Resumes

Licenses/ Certificates





Education

Bachelor of Science (BS),
Geological Sciences, California
State University, Fullerton,
California (1991)

Professional Registration

Professional Geologist #6290,
California: Exp. 10/31/2022

Professional Geologist #67049,
Arizona: Exp. 9/31/2021

40-hour Health and Safety certified
satisfying OSHA Hazardous Waste
Operators and Emergency
Response Standard, Certificate
#37078: Exp. 9/10/2021

Qualified SWPPP Developer
(QSD) and Qualified SWPPP
Practitioner (QSP), Certificate
#22846: Exp. 4/21/2022

State of California, Asbestos
Building Inspector: Exp. 9/17/2021

City of Los Angeles, Deputy
Building Inspector License#:
P026816: Exp. 7/20/2023

- Liquid Boot® Certified by LBI
Technologies
- Tremco® Barrier Solutions
Certified Inspector
- EPRO® Methane Barrier
Certified Inspector

HDPE Heat Fusion Certificate
(Butt Fusion, 3408 PE Pipe—½ to
18-inch and Electrofusion)

Orange County Fire Authority
(OCFA) Approved Soil Gas
Investigator

Professional Affiliations

Member, Geological Society of
America (GSA)

Experience Summary

Mr. Frizzell is a Registered Geologist with over 31 years of experience in environmental sciences including Phase I Environmental Site Assessments (ESAs), Phase II soil and groundwater assessments; and underground storage tank (UST) removal and closures and Remedial Action Plans (RAPs), remediation system installation. He has been responsible for field operations and supervising field technicians during a groundwater assessment at active and closed landfill sites including Superfund sites throughout southern California. Mr. Frizzell was the field supervisor for stormwater (SWPPP) protection for a 3-mile high-pressure transmission and distribution gas line installation within a California State route adjacent to Lake Tahoe; Mr. Frizzell needed to coordinate with the contractor, agencies and Caltrans to maintain the strict stormwater requirements for the Lake Tahoe basin.

He has experience in completing site-specific Health and Safety Plans and has acted as the site Health and Safety Officer on numerous projects. Additional experience includes working knowledge of environmental regulations including but not limited to California Code of Regulation (CCR) Title 22, 23 and 27; Code of Federal Regulation (CFR) Title 40, Subtitle D, San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) Rule 4642 and South Coast Air Quality Management District (SCAQMD) Rules 1150.1 and 1166.

LANDFILL PROJECT EXPERIENCE

Mr. Frizzell has conducted construction quality assurance inspections (including well field balancing), geophysical, geotechnical, geologic and hydrogeologic surveys for future groundwater barrier projects, landfill gas (LFG) air barrier projects, and additional phases of groundwater and soil-gas sampling at many of the facilities listed below. In addition to these duties, Mr. Frizzell has completed work that was recommended by the completed SWAT for many of the listed facilities.

The following list of activities summarizes Mr. Frizzell's experience within the field similar to tasks required for Tequesquite Landfill:

CCR Title 27 Landfill Gas (LFG) Perimeter Monitoring Well Installation

Mr. Frizzell has had experience with the installation of perimeter compliance landfill gas (LFG) monitoring wells at several landfills in Kern County and the City of Duarte. The purpose for the installation of the wells was to meet new State of California regulations requiring additional sampling locations around all landfills (California Code of Regulations (CCR), Title 27 §20925). Well locations were selected to provide the required coverage within the permitted boundary; the wells were positioned a maximum of 1,000 feet apart in accordance with the new CCR Title 27 requirements.

LFG well depths were planned such that the deepest well screen interval was located near the same elevation as the deepest waste.



Mr. Frizzell installed LFG well casings at depths so that ongoing monitoring would characterize the gas quality in the zone adjacent to the landfill following Title 27 protocols. In accordance with Title 27 §20935(c) requirements, each shallow well casing was installed at a depth of 10 feet bgs with 2 feet of well screen.

Soil Gas-Monitoring Probe Installation:

Mr. Frizzell has installed over two hundred nested soil-gas perimeter-monitoring probe to evaluate the presence of possible LFG around the perimeter of many of these landfills. He has also installed several air injection wells at many of these facilities. Borings have been completed to a depth exceeding 360 feet below ground surface (bgs). Mr. Frizzell also has experience logging the subsurface by cuttings, continuous cores and downhole geophysical surveys that included induction and gamma ray logging. Mr. Frizzell knows how to interpret the readings and has successfully installed gas-monitoring probes within key zones of concern.

LFG Extraction Well Installation:

Mr. Frizzell has installed LFG wells as part of collection system installations at several of the listed facilities. Mr. Frizzell has logged the refuse and dated the material by checking dated material that was excavated from the boring. Mr. Frizzell also observed the installation of wells to the site. The wells installed included both the telescoping and high-density polyethylene (HDPE) wells. Many of the wells that Mr. Frizzell installed are still in use today.

Probe-LFG Extraction Well Monitoring/Integrated Surface Sampling (ISS)/Instantaneous Surface Monitoring (ISM)/Ambient Air Sampling:

Mr. Frizzell has been utilized to complete fieldwork that has included monitoring both perimeter probes and LFG collection wells; ISS-ISM-AA surveys for both active and closed facilities. Mr. Frizzell has both practical field experience, but has also had been placed in a field supervisor role for several field technicians.

LANDFILLS WITH WORK COMPLETED:

The following is short list of landfill whose projects Mr. Frizzell has worked:

Antelope Valley Sanitary Landfill (Palmdale Landfill)	Palmdale, California
Arvin Sanitary Landfill	Arvin, California
Bakersfield Metropolitan Sanitary Landfill (Bena Landfill)	Kern County, California
BKK Landfill	Azusa, California
Blanchard Disposal Facility	East Los Angeles, California
Boron Sanitary Landfill	Boron, California
Bradley Sanitary Landfill	Sun Valley, California
Brawley Clay Source Borrow Pit Assessment	Imperial County, California
Buttonwillow Sanitary Landfill	Buttonwillow, California
Centropolis Landfill	Kansas City, Missouri
China Grade Sanitary Landfill	Bakersfield, California
Compton Sanitary Landfill	Compton, California
Coyote Canyon Sanitary Landfill	Irvine, California
Delafield Sanitary Landfill	Delafield, Wisconsin
El Sobrante Landfill	Temecula, California

**BOARD FOR PROFESSIONAL ENGINEERS, LAND
SURVEYORS, AND GEOLOGISTS**
LICENSING DETAILS FOR: 6290

NAME: FRIZZELL, RICHARD JOHN

LICENSE TYPE: GEOLOGIST

LICENSE STATUS: CLEAR

ADDRESS

409 SOUTH CHATHAM CIRCLE APT A

ANAHEIM CA 92806

ORANGE COUNTY

ISSUANCE DATE

JULY 14, 1995

EXPIRATION DATE

OCTOBER 31, 2022

CURRENT DATE / TIME

SEPTEMBER 22, 2022

12:24:34 PM



Farideh Kia

Senior Manager
fkia@montrose-env.com

Santa Ana, California Office
O: (714) 282-8240, ext. 12903
C: (714) 376-6531

Expertise

Landfill Gas System Design, Operation and Maintenance, Groundwater Assessment, Monitoring and Remediation Landfill Closure and Post Closure, Air Quality Testing and Evaluation, Environmental Compliance and Reporting, Environmental Permitting, Environmental Impact Reports, Agency Liaison, Expert Reviews

Credentials

MS, Hydrogeology (candidate), California State University of Los Angeles
BS, Geology, California State University of Fullerton, California

Professional Accreditations

Professional Geologist, PG #5908, California
Certified Hydrogeologist, CHG #318, California
DHS Certified Lead Inspector/Assessor #I-13953
DHS Certified Lead Monitor #M-13953
General A HAZ Contractor, California, #832426
Certified Environmental Manager
Registered Mold Remediator
Certified Mold Inspector
Certified Liquid Boot Inspector
Certified Employee Training Coordinator
Broker, Real Estate; License #01215790, California

Experience

Ms. Kia's professional career spans over 30 years in environmental field, solid waste and hazardous waste management, and academic teaching and professional training experience. Her expertise/experience includes but are not limited to hiring, training and managing staff, project management, directing field personnel, performing review, analyses of field and laboratory data and preparation and QA/QC of documents/ reports, client and agency personnel liaison, and oversight of office administrative duties.

Ms. Kia's extensive experience in solid waste includes, assessment of groundwater, surface water and vadose-zone water issues at contaminated sites and solid waste disposal sites, permitting and compliance, landfill siting and expansion plans,

assessment and evaluation of landfill gas generation, migration, and impact to groundwater, preparation of Closure/ Post Closure Maintenance Plans (PCMP), preparation of landfill gas extraction systems, and remediation systems Operation and Maintenance (O&M) plans, remedial system permitting, preparation of remedial Investigation, feasibility study, and Remedial Action Plans (RAPs) per the requirement of CCR Title 27. Ms. Kia's experience also includes geologic and hydrogeologic evaluations and remediation focusing on air, soil, and groundwater contaminated sites and petroleum facilities throughout California and western states. Ms. Kia has performed, assisted and managed landfill and oil field closure projects involving locating and permitting, both air and water Solid Waste Assessment Tests, CQA management of landfill cell lining operations, and groundwater and methane gas issues for both landfill and oil field development. Her expertise in both landfill operations and oil field closures makes her particularly effective in managing soils gas, soil and groundwater remediation projects. Ms. Kia has conducted and managed numerous hydrogeologic investigations, Phase I and Phase II environmental site assessments, lead and asbestos surveys/ evaluation, and remediation studies at various sites in California for financial institutions, major oil companies and their distributors, developers, manufacturers, chemical companies, and municipalities. Ms. Kia is well-versed in federal, state regulations governing landfills and environmental contamination, including CFR 40 and 49, and CCR Title 8, Title 17, Title 22, Title 27, SCAQMD Rules 1150 and 1150.1, and regulations and ordinances. She is familiar with laboratory analytical methods, QA/QC procedures and data review and validation.

Ms. Kia is the Chair of the Training Committee and faculty for the Solid Waste Associate of North America (SWANA) training program, and provides training for the Landfill Gas Operation and Maintenance and the Landfill Gas Basics courses. She was an integral part of a team that was awarded a grant by EPA, and served as a principal speaker for the EPA sponsored Energy Recovery and Emission Reduction training course in China in 2008. She has been an integral part of a team that has been awarded by EPA to conduct a feasibility study for a landfill in China.

BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS

LICENSING DETAILS FOR: 318

NAME: KIA, FARIDEH

LICENSE TYPE: HYDROGEOLOGIST

LICENSE STATUS: CLEAR

ADDRESS

1530 YELLOWSTONE AVE

PLACENTIA CA 92870

ORANGE COUNTY

ISSUANCE DATE

DECEMBER 19, 1995

EXPIRATION DATE

FEBRUARY 28, 2023

CURRENT DATE / TIME

SEPTEMBER 22, 2022

12:27:59 PM

LICENSE RELATIONSHIPS

NAME: KIA, FARIDEH V.

LICENSE/REGISTRATION TYPE: GEOLOGIST

LICENSE NUMBER: 5908 **PRIMARY STATUS:** CLEAR

ADDRESS :

1530 YELLOWSTONE AVE

PLACENTIA CA 92870

ORANGE COUNTY

MAP



Dane Nygaard

Senior Manager
dnygaard@montrose-env.com

Santa Ana, California Office

O: (714) 919-6525
C: (949) 246-0903

Expertise

Environmental Site Assessment & Remediation
Evaluation of Environmental Regulatory Compliance
Groundwater Monitoring and Remediation
Remediation System Design, Permitting and Installation
15 years experience

Education

B.S. Mechanical Engineering, California State
University Long Beach

Professional Accreditations

Occupational Safety and Health Administration (OSHA)
Health and Safety Training for Hazardous Waste Sites
OSHA Health and Safety Supervisor Training for
Hazardous Waste Sites

Experience

Mr. Nygaard is a Senior Manager for Montrose Environmental Solutions in Santa Ana, CA, managing office and field staff for site assessment, remediation, stormwater, and landfill projects. He has authored numerous technical reports including soil and groundwater site assessments, remedial investigations, pilot tests, remediation O&M reports, Corrective Action and Remedial Action Plans, and Site Closure Plans.

Environmental project management experience includes site assessment and evaluation, and permitting, design, installation and maintenance of soil and groundwater remediation systems. Engineering experience includes civil engineering, mapping, and 3D design. Mr. Nygaard is currently managing approximately 60 remediation project sites throughout the West Coast for Montrose's major oil and independent clients, overseeing projects under direction from Regional Water Quality Control Boards, various Air Quality Management Districts, the Environmental Protection Agency, Department of Toxic Substances Control, and local agencies.

Representative Projects

Major Oil Companies, West Coast

Conducting site assessments and remedial pilot tests and feasibility studies, remediation system design, installation and operation throughout California. Responsibilities include overseeing site characterization activities, which require the collection of soil and groundwater samples to evaluate site environmental site conditions and the feasibility of potential remedial alternatives; overseeing the design and implementation of various pilot tests and implementation of full-scale remediation systems and supervising the remediation of petroleum impacted soils to attain site regulatory closure.

Additional responsibilities include routinely interfacing with clients and regulatory agencies to provide periodic program performance updates, budget and scope forecasts and proposals, the preparation of site assessment and groundwater monitoring reports, interim-remedial action work plans and pilot test work plans, feasibility studies and remedial action reports, corrective action plans and site closure reports.

Los Angeles Unified School District

Overseeing site assessments, site remediation, waste management, lead and asbestos testing, and methane mitigation in building design. Preparing Phase I and Phase II site investigations. Preparing Remedial Action Workplans (RAW), and overseeing RAW implementation for removal of impacted soil and disposal.

Overseeing compliance with South Coast Air Quality District (AQMD) Rule 1466, Department of Toxic Substance Control (DTSC) soil sampling requirements and health risk evaluations, and Regional Water Quality Control Board (RWQB) Waste Discharge Requirements (WDR).

Santa Monica Airport

Site assessment activities near recognized environmental conditions (RECs) identified during a Phase I environmental site assessment (ESA) for Area A of the Santa Monica Airport site. Based on the known RECs, mark out, geophysical investigation, concrete coring for a preliminary site assessment consisting of 25 soil borings in the locations designated for redevelopment. The preliminary investigation and laboratory analysis identified lead, arsenic and polychlorinated biphenyls (PCB) impacted soil. Based on the results of the preliminary soil sampling and analysis, a supplemental round of boring and sampling included 21 additional step out soil borings was in Areas A-1 and A-2. The supplemental investigation and additional laboratory analysis delineated the lead, arsenic and polychlorinated biphenyls impacts in Areas A-1 and A-2. Areas with soil impacts were removed by excavation.

The results of the investigations were summarized in the *Phase II Environmental Site Assessment Report, Area A-1* and *Phase II Environmental Site Assessment Report, Area A-1*.

California Army National Guard, San Luis Obispo

Overseeing operation and maintenance (O&M) of the soil vapor extraction and groundwater treatment system, system status reports, and compliance with the National Pollutant Discharge Elimination System (NPDES) permit requirements and reporting to the California Regional Water Quality Control Board and Air Pollution Control District.



Chris Guesnon

Senior Geologist
cguesnon@montrose-env.com

Santa Ana, California Office

O: (714) 919-6526
C: (714) 514-9056

Expertise

Environmental Site Assessment & Remediation,
Evaluation of Environmental Regulatory Compliance,
Groundwater Monitoring and Remediation, Remediation
Planning, Permitting and Implementation of Field Activities
30 years experience

Credentials

B.S. Geology

California State Polytechnic University, Pomona

Professional Accreditations

Professional Geologist (PG), California #7114
Professional Geologist (PG), Arizona #60860
Certified Hydrogeologist (CHG), California #1065
Certified Engineering Geologist (CEG), California #2361
OSHA 40-Hour HAZWOPER Training

Experience

Mr. Guesnon has over 20 years of experience working on environmental contamination sites throughout California and has worked continuously and progressed to project management for numerous retail gasoline service station, landfill, real estate and waste management companies throughout California. Throughout Chris' career, he has prepared and reviewed numerous Phase I and Phase II site assessments and supervised Workplan preparation, scheduling, and notifications for multiple site investigation activities including drilling assessments, underground storage tank (UST) removal and remediation projects, and fault investigations using geophysical and subsurface exploration.

Currently, as Senior Geologist, Chris prepares engineering reports summarizing monitoring data to recommend remedial techniques specific to the chemicals of concern for the individual site, and in consideration of further impacts to the environment or site structures from the remediation or waste discharge method. He is familiar with rules and regulations for establishing investigation techniques, and is familiar with permit requirements for State, County and City entities.

Representative Projects

Former USA Gasoline Corporation

Mr. Guesnon provides management of on-going soil and groundwater site assessments at existing and potential fuel retail service stations including preparation of workplans, permitting, subcontractor procurement, field activities, reporting, and regulatory agency interaction. Mr. Guesnon also oversees hydrogeologic and hydrologic investigations including infiltration rate tests, aquifer testing including pump tests, and slug tests. Responsibilities include routine and non-routine reporting, including quarterly and annual groundwater monitoring reports, assessment and remediation workplans, and remediation and assessment reports.

Additional responsibilities include routinely interfacing with clients and regulatory agencies to provide periodic program performance updates, budget and scope, forecasts and proposals, the preparation of site assessment and groundwater monitoring reports, interim-remedial action work plans and pilot test work plans, feasibility studies and remedial action reports, corrective action plans and site closure reports.

Thrifty Oil Company California

As the Senior Geologist, Mr. Guesnon oversees and conducts site assessments and remediation system design throughout California. Responsibilities include site characterization activities, permitting, subcontractor procurement, field activities, reporting, and regulatory agency interaction. Mr. Guesnon also prepares site assessment reports, and assessment and remediation workplans.

Department of Toxic Substances Control

Mr. Guesnon was responsible for the design, construction and oversight of several trench excavations, and geologic logging of the trench exposures of an area of the landfill potentially impacted by faulting. Mr. Guesnon also provided areal geologic mapping of geologic units to assist in the evaluation of long-term viability of closure of the landfill. Mr. Guesnon interfaced with the client to provide periodic updates, budget and scope forecasts, and proposals, and prepared technical reports of findings for these exhaustive projects.

Los Angeles Unified School District

Mr. Guesnon was responsible for site assessments including soil remediation excavations, well installations, groundwater monitoring and site assessments. Responsibilities include collecting fugitive dust and air monitoring records keeping and reporting as required by South Coast AQMD Rule 1166 requirements. Mr. Guesnon reviews the results of the site assessment activities to determine if additional investigation or site remediation is needed to assure minimal human health risks remain. Mr. Guesnon is often tasked with Workplan preparation including excavation plans, transportation plans, maintenance plans and closure plans per the requirements of the DTSC.

York Development, Palos Verdes, California

Mr. Guesnon conducted landslide evaluations for the north flank of the Portuguese Bend landslide, including approximately 20 diamond core borings to evaluate potential slide planes within the bedrock. In addition to continuous coring and logging of each boring, Mr. Guesnon worked with a borehole logging company during their hydroscopic analysis using the borehole imaging processing system (BIPS). The BIPS logs provide photographs which include flow rates, water quality, permeability and head, and were compared to the diamond core logs for development planning.

BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS

LICENSING DETAILS FOR: 2361

NAME: GUESNON, CHRIS ALBERT

LICENSE TYPE: ENGINEERING GEOLOGIST

LICENSE STATUS: CLEAR

ADDRESS

5920 BEDFORD COURT

YORBA LINDA CA 92887

ORANGE COUNTY

ISSUANCE DATE

JUNE 3, 2005

EXPIRATION DATE

SEPTEMBER 30, 2023

CURRENT DATE / TIME

SEPTEMBER 22, 2022

12:29:27 PM

LICENSE RELATIONSHIPS

NAME: GUESNON, CHRIS ALBERT

LICENSE/REGISTRATION TYPE: GEOLOGIST

LICENSE NUMBER: 7114 **PRIMARY STATUS:** CLEAR

ADDRESS :

5920 BEDFORD COURT

YORBA LINDA CA 92887

ORANGE COUNTY

MAP

Margaret Patrick, P.G.

Senior Geologist/Project Manager

mppatrick@montrose-env.com

Remote



Professional Experience

Ms. Patrick has worked in environmental compliance for the past 25 years. In addition to Environmental Consulting, she was an Environmental Manager for Republic Waste, overseeing compliance for 13 solid waste transfer, recycling, and maintenance facilities. She has extensive knowledge of regulatory compliance requirements and the current environmental challenges facing industrial facilities. She has prepared and delivered over 40 training sessions on storm water and hazardous material regulations to industrial clients.

Ms. Patrick has served as Subject Matter Expert resource for attorneys during storm water litigations, odor abatement orders, and legacy groundwater contamination negotiations. She is a strong technical writer who authors Workplans, Health & Safety (H&S) Plans, Storm Water Pollution Prevention Plans (SWPPPs), Spill Prevention Control & Countermeasures (SPCC) Plans, Odor Management Plans, Solid Waste Facility Permits (SWFPs), Phase I & II Reports, Hazardous Material Business Plans, Compost Technical Reports, and Emergency Response/Contingency Plans. She has conducted UST removals, fuel system upgrades, and subsurface investigations and remediation of soil and ground water contamination at landfills, gas stations, and other contaminated sites.

During her career, Ms. Patrick has successfully managed and conducted cost effective environmental investigations and remediation projects for solid waste, manufacturing, construction, petroleum and government clients. Most recently she was responsible for overseeing regulatory compliance at 13 large volume transfer stations and maintenance facilities operated by the second largest solid waste company in the United States. Ms. Patrick has also conducted subsurface investigations of soil and/or groundwater contamination at landfills, a former refinery, a geothermal facility, a poultry farm, numerous gas stations and other contaminated sites. She has overseen monitoring well installations, collected samples, prepared geologic logs, performed ground water recharge/recovery tests, interpreted results and prepared technical reports and conducted UST removals and fuel system installation/upgrade projects requiring permitting, contractor management, agency coordination, data analysis and final report preparation.

Education, Licenses & Certifications

B.A., Geology, Whittier College,

Certification(s): Professional Geologist by National Associate of State Boards of Geology; 40-HR OSHA HAZWOPER; 30-HR OSHA Outreach Training for General Industry.

Relevant Project Experience

Republic Services, Inc., 13 sites in Southern CA



Prepares SWFP revisions and Reports of Facility Information (RFI) amendments that are approved by the Health Department and CalRecycle. Performs annual site inspections, training, and reporting for storm water, and hazardous materials compliance. Assists with industrial wastewater and air compliance.

Pebble Beach Landfill, Catalina Island, CA

In addition to providing environmental monitoring, permitting, and reporting services to the landfill since 2002, Ms. Patrick managed the dismantling, confirmation sampling, and health risk assessment of the former historic incinerator, achieving project closure with the Los Angeles County Fire Department Health and Hazardous Materials Division, Site Mitigation Unit.

BKK Landfill, West Covina, CA

Oversaw the installation of groundwater monitoring wells, soil gas probes, and landfill gas extraction wells. Supervised a staff of six environmental technicians that maintained and monitored 200+ groundwater wells, 3,000+ landfill gas extraction wells, 150 soil gas probes, and a leachate collection system at the Class III and Class I (hazardous) landfills. She also managed and streamlined the extensive gas, groundwater, and ambient air analytical databases and interpreted hydrogeological conditions and analytical results. She was responsible for reviewing all laboratory analytical data, performing statistical calculations, identifying trends, preparing regulatory reports, and overseeing laboratory subcontractors. She later worked as a consultant to Cal-EPA and was involved with landfill gas analysis and Potentially Responsible Party negotiations.

Republic Services, Inc., 15+ sites in Northern and Southern CA

Assisted site managers and attorneys with third-party Settlement Agreements related to Storm Water. Helped suggest and negotiate cost saving Best Management Practices for industrial storm water treatment at the sites. Involved with permitting, reporting, and construction oversight of storm water infiltration and/or treatment systems.

Allied Waste, Wilmington and Compton, CA

Directed 12,000-gal UST removals and oversaw the installation of new USTs, with new double-walled piping, and dispensers. Obtained permits and provided monitoring required by the local Fire Authority, Water Board, and Air Quality Management District. Performed subsurface soil sampling collection and interpreted analytical data. Prepared initial Workplans, H&S plans, and the final reports, which were approved by the regulatory agencies.

Environmental Manager, Republic Services, CA

Helped save \$100,000 in consulting fees by preparing regulatory reports and permits in-house; performed engaging compliance training with customized presentations on storm water, emergency response, spill prevention, and hazardous materials regulations and inspected site facilities, audited new disposal clients, oversaw construction work and followed up to ensure compliance with environmental and health & safety regulations.

Regulatory and Compliance Support, Multiple Clients

Authored industrial Storm Water Pollution Prevention Plans (SWPPPs), Spill Prevention Control & Countermeasures (SPCC) plans, Solid Waste Facility Permit (SWFP) amendments, Hazardous Materials Business Plans (HMBP) and Emergency Response/Contingency Plans, EPA ID reports, industrial wastewater reports, site upgrade permit applications and storm water reports that received regulatory approval. Also tracked permit renewals, organized compliance records, and interfaced with regulators to prevent violations. Served as Quality Assurance Report and Document reviewer and editor for the Solid Waste Group for a confidential client.

**BOARD FOR PROFESSIONAL ENGINEERS, LAND
SURVEYORS, AND GEOLOGISTS**
LICENSING DETAILS FOR: 7620

NAME: PATRICK, MARGARET P

LICENSE TYPE: GEOLOGIST

LICENSE STATUS: CLEAR

ADDRESS

1770 PINNACLE RIDGE LN
COLORADO SPRINGS CO 80919
OUT OF STATE COUNTY

ISSUANCE DATE


JUNE 9, 2003

EXPIRATION DATE

JULY 31, 2024

CURRENT DATE / TIME

SEPTEMBER 22, 2022
12:30:44 PM

	Project Role: Environmental Geologist
	Education: B.A., Geology, California Lutheran University
	Certifications: OSHA 40-Hour HAZWOPER Trained (#39385) Geologist-in-Training (CA #576) CPR Certified
Key Qualifications <ul style="list-style-type: none"> ▪ 7+ years of experience with oil & gas remediation-related projects ▪ OSHA 40-Hour HAZWOPER Trained ▪ Experienced in oilfield and landfill management and monitoring 	<p>Mr. Kern has more than 7 years of experience working on environmental contamination sites in the western United States. Throughout his professional career, he has conducted numerous Phase I and Phase II site assessments, groundwater well installations, well destruction projects, underground storage tank removal projects, groundwater monitoring, operation and maintenance activities, overpurge events, remediation system installations, various types of permitting, landfill and oilfield gas management and monitoring, and landfill well installation and connection projects.</p> <p>He currently manages a landfill gas monitoring project in Winterhaven, CA within the Fort Yuma Indian Reservation of the Quechan Indian Tribe. In addition, Mr. Kern has drafted and authored numerous technical reports including groundwater monitoring reports, soil and groundwater site assessments, site conceptual models, and site closure plans.</p>
Key Project Experience <ul style="list-style-type: none"> ❖ City of Newport Landfill, Newport Beach, CA ❖ USA 291, Brawley, CA ❖ USA 292, El Centro, CA ❖ Imperial County Landfills, Imperial County, CA ❖ Brisbane Landfill, Brisbane, CA ❖ City of Santa Monica Landfill, City of Santa Monica, CA ❖ McKinley Phase 1, Prewitt, NM ❖ USA 256, Thousand Oaks, CA ❖ USA 259, Lompoc, CA ❖ USA 247, Brawley, CA ❖ Brea-Olinda Oil Field, Brea, CA ❖ Huntington Beach Library Landfill, Huntington Beach, CA ❖ USA 293, El Centro, CA 	



Eduardo Rivera

Senior Technician
erivera@montrose-env.com

Santa Ana, California Office

O: (714) 919-6500
C: (951) 490-7793

Expertise

Groundwater Monitoring, Landfill Gas Treatment system maintenance and repairs, construction project oversight, and remediation system troubleshooting and repairs

Credentials

Fusion training for polyethylene pipe & fittings
Transportation Worker Identification Credential
Forklift operation certification

Professional Accreditations

Occupational Safety and Health Administration (OSHA)
Health and Safety Training for Hazardous Waste Sites

Experience

Mr. Rivera is a Senior Technician for Montrose in Santa Ana, CA, overseeing groundwater monitoring, conducting landfill system operations and field monitoring, landfill and remediation system troubleshooting and repairs, and wastewater treatment system operation and repairs

Representative Projects

Brisbane Landfill, Brisbane, CA

The Brisbane site (Landfill) is a closed refuse disposal site located on the west side of the San Francisco Bay. Montrose Environmental conducts landfill gas monitoring, extraction well monitoring, gas collection system monitoring of the blower and flare, and five leachate wells. Mr. Rivera oversees troubleshooting and repairs to landfill treatment system flare, pumps, and headers as needed, replacement of the leachate pumps, compressor maintenance, and extraction header inspections and repairs.

Inland Biogas Environmental, Chino

The Inland Empire Utilities Agency (IEUA) Regional Plant Number 5 (RP-5) solid handling facility (SHF) in Chino, California, anaerobic digestion facility equipped with a materials receiving building, two anaerobic digester tanks, liquid food waste receiving tanks, a biofilter, gas compression equipment, and two bio-gas powered engines for generating electricity. Mr. Rivera has conducted system operation and repairs of digestors, screw press, sump pumps, transfer pumps, and flare as needed.

City of Santa Monica Landfill Gas System, Santa Monica, CA

The landfill gas monitoring and treatment system includes 37 perimeter and trench probes, an air compressor, blower, and carbon adsorption treatment system. The adsorption canisters are monitored with influent and effluent gas samples collected in 1-liter Tedlar bags and analyzed for VOCs by EPA Method T0-15, fixed gases by EPA Method 3C, sulfur emissions by EPA Method 15/16 and for TGNMOC as hexane by SCAQMD Method 25.1. When the combined VOC concentrations are above the limit of 20 parts per million by volume, the media is replaced. Mr. Rivera has conducted landfill gas monitoring, treatment system monitoring, and maintenance and repairs of landfill gas treatment system, extraction well connections, compressor, and pumps.

Bettencourt Park (Curti Dump)

The 2.5-acre Bettencourt Park is located on a former landfill. Monitoring of the landfill gas collection system is performed weekly. Irrigation boxes are also monitored with the GEM. Mr. Rivera has performed troubleshooting and repairs as needed on the on the Landfill Gas Extraction and Treatment System and compressors as needed.

Groundwater Monitoring, Watsonville Landfill

The Landfill is located approximately two miles west of the City of Watsonville, California. Samples are collected and analyzed samples for 18 groundwater monitoring wells, two agricultural wells, two leachate samples, one seep sample, and one gas condensate. Mr. Rivera has conducted the landfill groundwater monitoring and sampling at the Watsonville Landfill site.

Imperial Valley Landfills, various sites

Mr. Rivera has conducted landfill gas monitoring, probe inspection and repair at nine landfills located in the Imperial Valley cities of Brawley, Calexico, Holtville, and the Hot Spa Solid Waste Site, Imperial Solid Waste Site, Niland Solid Waste Site, Octotillo Solid Waste Site, Palo Verde Solid Waste Site, and the Picacho Solid Waste Site.



Hector Ramirez

Field Technician

hmramirez@montrose-env.com

Santa Ana, CA

Office: (714) 919-6500, Cell: (714) 246-0903

Professional Experience

Mr. Ramirez is a Field Technician for Montrose in Santa Ana, CA, conducting groundwater monitoring, landfill system operations and field monitoring, conducting air monitoring and overseeing soil remediation projects.

Fields of expertise includes the following: Groundwater Monitoring, Landfill Gas Monitoring, AQMD air monitoring, HDPE fusion and Fugitive Dust Control Training.

Education, Licenses & Certifications

Professional Accreditations: Occupational Safety and Health Administration (OSHA) Health and Safety Training for Hazardous Waste Sites

Relevant Project Experience

Brea Olinda Ranch, Brea, CA

Conducting probe and sump monitoring and well gauging at the former oil field. Methane monitoring is conducted on behalf of the home owner's association to ensure the safety of the community. Additional monitoring and/or change of monitoring frequency is required if Action Levels are triggered by elevated methane concentration measured during monitoring. Probes and vent risers at abandoned oil wells and subdrains are also tested quarterly for total hydrocarbons as methane, carbon dioxide, oxygen and hydrogen sulfide. Twelve oil and water sumps and one clarifier are gauged and emptied as needed

Soil Remediation, Long Beach, CA

Performing AQMD Rule 1166 air monitoring and collecting confirmation soil sampling during remedial soil excavations at a former refinery site. Wind and weather measurements are recorded and subcontractors are directed to perform the removal petroleum impacts per the approved Remedial Action Workplan.

California Street Landfill, Redlands, CA

Methane, carbon dioxide, oxygen levels are measured and recorded at monitoring probes and extraction wells in addition to temperature and pressure. System operational data is collected from the flare, including gas flow rates, flare temperature, and air compressor operational data. Monitoring devices are calibrated with documentation.

Longsdon Pit/Sierra Park Landfill

Monitoring and recording temperature, pressure, methane, carbon dioxide, and oxygen levels at monitoring probes at various depths and extraction wells. Prior to measuring gases in the perimeter gas migration

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monitoring probes the probes are int least two probe casing volumes of gas are evacuated using the Gas Extraction Monitor (GEM). The data recorded includes the date; probe number, pressure and gas component concentrations for each probe. Extraction wells and headers are visually inspected and repairs are conducted as needed.

Newport Terrace Landfill, Newport Beach, CA

The landfill gas monitoring system currently consists of 39 multi-depth probes along the perimeter of the site. Of these, 23 probes are Title 27 compliance probes; three of them contain three nested probes, and the rest contain two nested probes. The probes and wells are monitored for methane, carbon dioxide and oxygen using the GEM units are calibrated prior to monitoring; the calibration gases used for the equipment are listed below. Prior to monitoring, leak testing of the GEM units is conducted by bending the inlet tube to stop the pump. The pressure in both the wells and probes are measured using a GEM unit and recorded.

Bettencourt Park (Curti Dump)

The 2.5-acre Bettencourt Park is located on a former landfill. Monitoring of the landfill gas collection system is performed weekly. Irrigation boxes are also monitored with the GEM. The compressor belts, filters, flowmeter and oil levels are checked on the Landfill Gas Extraction and Treatment System (LFGETS) and the oil water separator and compressors. Condensate levels are checked in the storage tank.

La Habra Landfill, La Habra, CA

Performing quarterly surface monitoring with TVA pack, ensuring continuous calibration and good operational weather parameters. Scanning the surface of the site, sector by sector according to timing guidelines. Vapor sampling of sectors with highest recorded readings.

Groundwater Monitoring, various sites

The depths to water and to the bottom of the well are recorded on field forms. Depth to water measurements and well dimensions are used to calculate the volume of water within each casing. Instruments are calibrated. Dissolved oxygen content is measured prior to any activity that may disturb the groundwater. Water quality parameters (temp, pH, conductivity, color, odor and turbidity) are monitored as volume is removed. Water quality metrics are recorded at intervals until parameters have stabilized. When stabilization occurs or the well has run dry, samples are taken.

Appendix B

Project Descriptions





Longsdon Pit North/ Sierra Park Landfill Garden Grove, California

Key Elements

- Landfill Gas (LFG) Engineering and Redesign
- LFG Collection Station Redesign
- LFG Barrier Improvements
- Installation of New LFG Wells
- Regulatory Compliance
- Design/Construction

Key Personnel

- Richard Frizzell, RG (Project Manager)
- Eduardo Ramirez (Senior Technician)
- Hector Ramirez (Field Technician)

Dates

2007 to Present

Client

Mr. A. J. Holmon III
City of Garden Grove and
Garden Grove Sanitary District
11222 Acacia Parkway
Garden Grove, CA 92840
Telephone (562) 905-9652
e-mail: ajh@ci.gardengrove.ca.us

Montrose was contacted by the City of Garden Grove due to ongoing problems with their landfill gas (LFG) collection system. Montrose's personnel quickly completed an evaluation of the existing LFG system and took corrective actions to



assist the City in controlling offsite migration of methane. This included inspecting and making needed repairs and evaluating the performance of each LFG well to improve the gas collection efficiency. Montrose also prepared an action plan with recommendations to improve the long-term performance of the LFG control system. The recommendations included the installation of five (5) new LFG collection wells and their connection to the existing LFG header. With the installation of new wells, odor could become an issue (the landfill is located in the hotel district just north of Disneyland and across the street from an elementary school). Montrose also proposed installing an activated carbon filtration system to reduce the volatile organic compounds (VOCs) and odors from the vented gas.

Montrose performed field construction work for the LFG system enhancement and currently performs the operation and maintenance for the LFG system. In addition, Montrose completed an evaluation of the clean closure option for the landfill to enhance future land use.



Key Elements

- Control of Subsurface LFG
- LFG Regulatory Compliance
- Site Evaluation
- Construction Quality Assurance (CQA)
- O&M Services
- Troubleshooting Problems

Key Personnel

- Richard Frizzell, RG, (Project Manager)
- Eduardo Rivera (Senior Technician)
- Hector Ramirez (Field Technician)

Date

2009 - Present

Client

Ms. Kathyne Cho
Civil Engineer
Public Works Department
100 Civic Center Drive
Newport Beach, CA 92660

Newport Terrace Landfill Newport Beach, California

The Newport Terrace Landfill (Newport Terrace) is located at the corner of Balboa Boulevard and 19th Street in the City of Newport Beach, CA. The site contains the Newport Terrace Condominium complex that consists of 62 residential buildings containing between two to eight condominium units each, parking garages and ancillary buildings. A



portion of the condominium complex overlies an inactive municipal solid waste (MSW) landfill, operated in the 1960's and 1970's. The landfill actually has two distinct areas: (1) the main landfill, and (2) the "rubble fill," which received principally inert waste. An LFG system was installed in landfill areas in the early 1980's to protect the surrounding residential improvements.

A substantial reconstruction/replacement of the LFG system was initiated in September 2007 and completed in May 2008. The new system consists of 15 gas extraction wells, associated underground collection piping, four pneumatic condensate traps, and an indoor treatment facility consisting of blowers, hydrogen sulfide removal and carbon adsorption equipment. The system also contains cross-connections to allow extraction from portions of the previously existing gas control system. In addition, 39 multi-depth landfill gas monitoring probes exist at the site. Of these, 23 probes are Title 27 compliance probes; three of them contain three nested probes, and the rest contain two nested probes. The remaining 16 probes are non-compliance probes.

Montrose became the operator of this landfill after the City and Condominium Homeowners Association became disenchanted with operation and maintenance work by another consultant. This site has been plagued by problems caused by poor design of the gas extraction and treatment system and old header pipes causing problems with gas collection. GCE has been working with the City and the Homeowners Association to make needed repairs to upgrade system reliability, and control O&M costs.

One early problem encountered when Montrose first started operating the landfill gas collection and treatment system was numerous blower shutdowns caused by improperly sized blowers. It was reported that this had been an ongoing problem since initial construction. To solve the problem, Montrose recommended replacing one of the blowers with more appropriately sized blower. Additionally, the new blower was driven with a variable frequency drive to allow better vacuum control and to conserve blower horsepower.

Montrose performs routine operations and maintenance, regulatory monitoring services and reporting, troubleshooting problems, and giving recommendations for improvements of the LFG collection system.

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Project Profile



Key Elements

- Control of Subsurface LFG
- LFG Regulatory Compliance
- Site Evaluation
- Construction Quality Assurance (CQA)
- O&M Services
- Troubleshooting Problems

Key Personnel

- Farideh Kia, , RG, CHG, REAII (Senior Manager)
- Richard Frizzell (Project Manager)
- Eduardo Rivera (Senior Technician)

Date

2001 - Present

Client

Mr. Elias Saykali
City of La Habra
201 E. La Habra Blvd.
La Habra, CA 90633

Vista Grande Park La Habra, California



Vista Grande Park is located on top of the La Habra Disposal Station #11 Landfill. The Site is located at the corner of Idaho Street and Lambert Road, and can be accessed through the Lambert Road gate, approximately 400 feet east of the corner of Lambert Road and Idaho Street, or from the Vista Grande Park parking lot on Las Lomas Drive.

The entire park comprises approximately 18 acres. On the north, east, and west sides the terrain slopes sharply down from the deck to an elevation of between 240 and 250 ft, which is the approximate level with the roads bordering the park. The Landfill was operated by the County of Orange Waste Management from about 1949 to 1959, and was used to dispose of municipal solid waste. The refuse is about 35-40 feet deep with a mass of about 111,000 tons. The Landfill was capped and closed in 1962. After many years as a closed site, the City developed about 10 acres into Vista Grande Park. Differential settlement of refuse caused the park surface to deteriorate; subsequently its use declined.

In 2000, subsurface landfill gas monitoring probes were installed to determine if methane gas was migrating from the site. Probe monitoring indicated that methane gas was present in several areas along the eastern perimeter. As a result the City constructed a LFG collection and control system (GCCS) to control subsurface LFG migration. The GCCS consists of five vertical wells, one horizontal well, two 1,000 pounds (lbs) of activated carbon vessels, one 1/2 horsepower blower, one vent stack, one sump, and a 1,000 gallon condensate water holding tank. The GCCS is permitted to extract 42 SCFM of LFG which is routed to the Vent Stack. There are seventeen (17) single depth and multi-depth compliance monitoring probes at the landfill's boundary.

Montrose also performs routine operations and maintenance, regulatory monitoring services including probe monitoring, surface emission monitoring, ambient air sampling, and vent stack source testing for the LFG collection system.



City of Watsonville Landfill Watsonville, California

Key Elements

- Groundwater Contamination in a Lower Aquifer
- RWQCB Reporting
- LFG Migration
- GHG Reporting
- Regulatory Monitoring

Key Personnel

- Farideh Kia, RG, CHG, REAII (Senior Manager)
- Eduardo Rivera (Sr. Field Technician)
- Cory Blair (Field Technician)

Dates

2006 to Present

Client

City of Watsonville
Mr. Gabe Gordo
City Hall
P.O. Box 50000
Watsonville, CA 95077-5000
Tel: 831-768-3147
e-mail:
ggordo@ci.watsonville.ca.us

Montrose was initially contracted to evaluate the persistent presence of very low concentrations of volatile organic compounds in a downgradient deep groundwater monitoring well, when no other well in the deep aquifer was impacted. Groundwater flow direction in the shallow aquifer is opposite of the deep aquifer, and ground water quality in the shallow aquifer at the location of this well is not impacted by VOCs. Montrose evaluated the available data for the site and, based on the review, Montrose suggested that the groundwater contamination could have been caused by landfill gas reaching groundwater through a compromised well casing. Montrose recommended that the well be "pressure tested". Subsequently the well was pressure tested and the casing was videoed using a camera. The test data confirmed ES' assessment.



Montrose has also advised the City of the need for additional gas extraction wells and other enhancements to the existing gas collection system to help control offsite migration of the landfill gas.

Montrose performs Surface Emission Monitoring (SEM), groundwater monitoring and reporting in compliance with the requirements of California Code of Regulations, title 17, subchapter 10, article 4, subarticle 6, sections 95460 to 95476, Methane Emissions from Municipal Solid Waste Landfills ("regulation").

Montrose also performs annual Greenhouse Gas Reporting, groundwater data review and report preparation and submittal to Geotracker, and regulatory compliance document preparations for the landfill including the landfill's five-year facility permit renewal, and Closure/ Post Closure Maintenance Document preparations.

Montrose is evaluating the closure requirements for the active Phase III and potential beneficial use of the closed Phases I and II.



City of Santa Monica Corporation Yard Santa Monica, California

Key Elements

- Control of Subsurface LFG
- LFG Regulatory Compliance
- Site Evaluation
- Construction Quality Assurance (CQA)
- O&M Services
- Troubleshooting Problems

Key Personnel

- Farideh Kia, RG, CHG, REAI (Senior Manager)
- Kris Kern (Project Manager)
- Margaret Patrick, P.G. (Project Manager)

Date

2016 - Present

Client

Mr. James Velez-Conway
Office of Sustainability and the Environment
City of Santa Monica
2500 Michigan Avenue
Santa Monica, CA 90404



The subject site is an inactive landfill located in the City of Santa Monica, California. The subject site includes the City Corporation Yard, which contains offices, vehicle maintenance and storage areas, a firefighter training yard, a refuse transfer station, as well as a municipal park, Stewart Street Park. At the time of closure it was estimated that the former landfill contained approximately 300,000 cubic yards of refuse. It is estimated that the pit was a maximum of 30 to 35 feet deep at its southern edge and considerably shallower along the northern edge (about 3 to 5 feet deep.) A layer of approximately 3 to 5 feet of soil was reportedly used as a landfill cover material at the site.

In March 1998 an interim landfill gas (LFG) control system was installed to manage gases that are generated by the decomposition of the landfill. The primary LFG components are methane, carbon dioxide, and oxygen. The system is comprised of an extraction well network, conveyance piping, extraction blower, treatment equipment, and a subsurface monitoring probe network. The well field consists of ten vertical LFG extraction wells (LFG-1 through LFG-10). Each well is controlled and monitored at the wellhead and connected to a common below-grade header pipe that conveys the LFG to the treatment compound located in the southeastern corner of the City's Water and Wastewater Division yard. The extraction wells have been installed to approximately 40 feet below ground surface towards both the interior of the waste mass (to maximize LFG flow) and towards the periphery of the waste mass (to control LFG migration). The underground conveyance piping system from the extraction well to the treatment compound consists of three conduits: a 2-inch diameter high pressure air-line, a 3-inch diameter condensate return line, and an 8-inch diameter LFG collection header. Three condensate sumps are present at the low spots along the main header piping.

Within the treatment compound, the untreated LFG passes through an entrainment tank to remove separate-phase LFG condensate; a dehumidifying unit, which cools the LFG and then removes liquid condensate that is produced; and drums of vapor-phase granular activated carbon (GAC) and potassium permanganate alumina (PPA) to remove/oxidize select volatile organic compounds (VOCs). Treated LFG is discharged to the atmosphere through a 26-foot-high stack. The collected liquid condensate is pumped through two drums of aqueous-phase GAC and injected into the lower portion of the discharge stack to humidify the treated LFG.

A total of 51 probes have been installed to monitor subsurface LFG concentrations at various locations: trench probes, internal landfill probes, and perimeter probes.

Montrose performs routine operations and maintenance, regulatory monitoring services and reporting, troubleshooting problems, and giving recommendations for improvements of the LFG collection system.

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Project Profile

Appendix C:

Conflict of Interest Disclaimer Form & Acknowledgement of Insurance Requirements



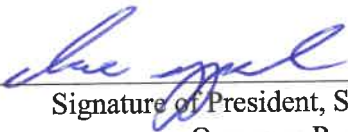
CONFLICT OF INTEREST DISCLAIMER

The undersigned, Dane Nygaard, declares that
(Print or Type Name)

ES Engineering Services, LLC ~~does have~~/does not have (cross one out)
(Name of Firm)

interest, ownership or receives or anticipates receiving remuneration of any type from the manufacturer(s), supplier(s), or distributor(s) which may be recommended on the project, as listed below.

<u>Firm</u>	<u>Product</u>	<u>Remuneration</u>
RES	ambient air analysis	\$4,512
euofins/Calscience	laboratory analysis	



Signature of President, Secretary, Partner,
Owner or Representative

9/21/2022
Date

**ACKNOWLEDGMENT OF INSURANCE REQUIREMENTS
AND CERTIFICATION OF ABILITY TO
PROVIDE COVERAGES SPECIFIED**

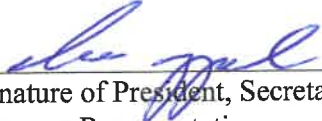
I, Dane Nygaard, the Representative
(President; Secretary; Owner or Representative)
of ES Engineering Services, LLC, dba Montrose Environmental Solutions, certify that the
(Company Name or Corporation, or Owner)

Insurance Requirements set forth in Article IV of the Proposed Agreement have been read
and understood that our insurance company(ies) Crum & Forster Specialty Insurance Co.,

Travelers Property Casualty Company of America, Aspen Specialty Insurance

(Name(s) of insurance company(ies))

is/are able to provide the coverages specified.


Signature of President, Secretary, Partner,
Owner or Representative

9/21/2022

Date

Appendix D

Proposed Exceptions to Terms and Conditions



City of La Habra

Operation and Maintenance Services to the Landfill Gas Control System at Vista Grande Park

Proposed Exceptions to Professional Services Agreement

RFP 2022

Page and Section No	Original Wording	Proposed Modification	Reason
33 / 4.4	<p>The Insurance obligations under this agreement shall be: (1) all the Insurance coverage and/or limits carried by or available to the CONSULTANT; or (2) the minimum Insurance coverage requirements and/or limits shown in this agreement; whichever is greater. Any insurance proceeds in excess of or broader than the minimum required coverage and/or minimum required limits, which are applicable to a given loss, shall be available to the CITY. No representation is made that the minimum Insurance requirements of this agreement are sufficient to cover the obligations of the CONSULTANT under this agreement.</p>	<p>The Insurance obligations under this agreement shall be: (1) all the Insurance coverage and/or limits carried by or available to the CONSULTANT; or (2) the minimum Insurance coverage requirements and/or limits shown in this agreement; whichever is greater. Any insurance proceeds in excess of or broader than the minimum required coverage and/or minimum required limits, which are applicable to a given loss, shall be available to the CITY. No representation is made that the minimum Insurance requirements of this agreement are sufficient to cover the obligations of the CONSULTANT under this agreement.</p>	<p>Policy requirements do not extend to any broader coverage of Consultant.</p>
37 / 5.6	<p>These Indemnification provisions are independent of and shall not in any way be limited by the Insurance Requirements of this Agreement. CITY approval of the Insurance contracts required by this Agreement does not in any way relieve the CONSULTANT from liability under this section.</p>	<p>These Indemnification provisions are independent of and shall not in any way be limited by the Insurance Requirements of this Agreement. CITY approval of the Insurance contracts required by this Agreement does not in any way relieve the CONSULTANT from liability under this section.</p>	<p>Consultant believes that its liability should exclude consequential damages and be capped at a reasonable and mutually agreeable limit</p>

37 / 5.7	New	<p>In no event shall CONSULTANT be liable to CITY or any third party for (a) any consequential damages, including loss of profits, lost business opportunity, loss or inability to use property or equipment, business interruption, and (b) exemplary, special or punitive damages arising in connection with this Agreement.</p> <p>CONSULTANT's liability to CITY for any indemnity commitments and for any damages arising in any way out of the performance of this Agreement is limited to the amounts actually recovered under contractually required insurance coverages and amounts, plus no more than one-and-a-half times the total fees paid to CONSULTANT under the applicable Purchase Order, work order or statement of work within the preceding twelve (12) months.</p>	<p>Consultant believes that its liability should exclude consequential damages and be capped at a reasonable and mutually agreeable limit</p>
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