

TABLES

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Table 2-1. Project Team Roles and Responsibilities

Position	Qualifications	Duties and Responsibilities	Authority Level
Project Manager	<ul style="list-style-type: none"> • Tom Cooper, PG, PMP • Mr. Cooper is a Professional Geologist (PG) and Project Management Professional (PMP) with 11 years of experience as a hydrogeologist on complex groundwater remediation projects and 5 years of experience as a Project Manager for firm-fixed-price, performance-based acquisition (PBA) projects including hybrid PBAs with options. He has expert knowledge of groundwater and soil sample collection/data evaluation and has extensive experience working proactively with clients and regulators to determine the best technologies to reach remedial performance objectives. • Mr. Cooper has served as the Project Manager for DoD projects at Former Air Force Plant PJKS, Pueblo Chemical Depot, and Vandenberg AFB. For these projects, he has established a strong and cooperative working relationship with his clients as well as the state and EPA regulators. At PJKS, he successfully negotiated with the regulators to implement an environmental covenant and technical impracticability waiver as opposed to a pump-and-treat system. The environmental covenant saved the Air Force millions of dollars. At Pueblo, Mr. Cooper developed ten remedy-specific work plans that were approved within the first year of the project. He and his team then completed installation of eight in situ bioremediation systems within the second year of the project. 	<ul style="list-style-type: none"> • Manages task order (TO) deliverables, schedules, and budgets • Implements procedures to eliminate conflicts, errors, and omissions, and ensure the accuracy of all output • Establishes and maintains close communication and coordination with the USACE for the duration of the project • Assigns scientists, engineers, and select subcontractors • Procures services, equipment, and supplies as needed • Ensures personnel follow approved work plans/specs • Tracks materials and resources and justifies change orders • Coordinates subcontractors' work to ensure compliance with safety and health, quality, and contract procedures 	<ul style="list-style-type: none"> • Full responsibility and authority to execute TOs • Approves subcontractor invoices, project charges, and deliverables • Implements corrective action • Stops work for non-compliance/safety violation
Site Supervisor	<ul style="list-style-type: none"> • Terry Rulon • Mr. Rulon has over 22 years as a Site Supervisor on restoration, remediation, demolition, and hazardous waste sites. His role has been primarily bid preparation, estimating, overall site management, and field work on numerous complex environmental projects throughout the U.S. • Mr. Rulon's experience includes, but is not limited to, management of contaminated soil remediation, in situ bioremediation of groundwater for chlorinated compounds, shock sensitive chemical packaging, and emergency response actions. 	<ul style="list-style-type: none"> • Tracks progress of daily well installation production and soil excavation • Schedules manpower and balances project resources • Schedules use of equipment • Manages sampling of environmental media and investigation-derived waste (IDW), handling of IDW, and coordination of IDW disposal. • Manages operation and maintenance of all equipment • Addresses field issues to keep project on schedule • Communicates daily with Project Manager to keep project on schedule 	<ul style="list-style-type: none"> • Supervises field TO engineering and design staff • Manages subcontractors • Implements corrective action • Stops work for non-compliance/safety violation

Table 2-1. Project Team Roles and Responsibilities (continued)

Position	Qualifications	Duties and Responsibilities	Authority Level
<p>Field Team Manager - SVE</p>	<ul style="list-style-type: none"> • James T. Sparkman, PE, LEED AP • Mr. Sparkman is a registered Professional Engineer (PE) with 23 years of experience in mechanical, construction and environmental projects including maintenance engineering, HVAC, plumbing, air permitting, environmental remediation including contaminated groundwater extraction and treatment, contaminated soil treatment, waste water treatment and incineration. His experience related to engineering and design includes mechanical and process engineering calculations, the preparation of preliminary and detail design drawings, writing scopes of work, and procurement of materials and subcontractors for construction. His recent experience includes HVAC and plumbing design and reviews for vertical construction projects. Some of the recent projects required LEED certification and as of May 2008 Mr. Sparkman became a LEED Accredited Professional. He also has experience with HVAC and plumbing specifications in addition to other mechanical specifications including conveyors, pumps, blowers, feeders and piping. Mr. Sparkman has prepared complete engineering and construction estimates for remediation projects and has been the project engineer responsible for managing all engineering disciplines required to complete design, procure materials and subcontractors, provide construction oversight, and assist with system start-up. 	<ul style="list-style-type: none"> • Identifies, trains, mentors, and assigns qualified engineering staff to tasks/projects • Ensures compliance and consistency of engineering and technical program execution across all TOs • Provides professional engineering certification of drawings, specifications, and documents as necessary • Ensures compliance with all applicable engineering and design codes, standards, and guidance 	<ul style="list-style-type: none"> • Supervises field TO engineering and design staff • Defines qualifications and requirements of engineering and technical staff at TO level • Evaluates performance of engineering staff and provides feedback, including recommendations, to Project Manager • Stops work for non-compliance/safety violation
<p>Field Team Manager – In Situ</p>	<ul style="list-style-type: none"> • Gary Hecox, PhD, PG, CGWP • Dr. Hecox is a PG and certified groundwater professional (CGWP) with 32 years of experience in hydrogeology, GIS development and application, contaminant investigations, risk analysis, and remediation. He is a technical expert in non-aqueous phase liquid (NAPL) assessment and remediation, groundwater modeling, geostatistics, statistics, and error analysis. • Dr. Hecox has served as Shaw’s senior scientist/engineer for federal remediation projects dealing with in excess of 5 million gallons of LNAPL contamination. He specializes in designing and implementing process treatment systems such as the chemical stabilization of soils and groundwater. He has provided technical input and strategy support in Resource Conservation and Recovery Act (RCRA) site remediation negotiations and technical impracticability waivers for various federal sites. Dr. Hecox has also developed and deployed new technologies and applications of GIS for hydrogeologic assessments. 	<ul style="list-style-type: none"> • Prepares groundwater modeling to assist with the design of remediation systems • Executes the MNA evaluation study • Evaluates and documents all hydrogeologic data to confirm LNAPL and plume containment 	<ul style="list-style-type: none"> • Supervises field TO design staff • Defines qualifications and requirements of technical staff at TO level • Evaluates performance of technical staff and provides feedback, including recommendations, to Project Manager • Stops work for non-compliance/safety violation

Table 2-1. Project Team Roles and Responsibilities (continued)

Position	Qualifications	Duties and Responsibilities	Authority Level
<p>Field Team Manager – Bioremediation</p>	<ul style="list-style-type: none"> • Charles Schaefer, PhD • Dr. Schaefer has 14 years of experience with assessing the fate and transport of organic contaminants in soil and groundwater systems. His work has included design and performance of laboratory scale experiments, mathematical and numerical modeling, and conceptual design and evaluation of field-scale bioremediation systems. He has taught graduate-level courses in contaminant hydrogeology, and has been successful in attaining research funding from the EPA, DoD, and the U.S. Department of Energy (DOE). Dr. Schaefer’s research has included development of experimental methods to evaluate new and emerging technologies including EDB degradation in Shaw’s treatability study laboratories located in Lawrenceville, New Jersey and Knoxville, Tennessee. As a result of his research, he has developed and published several conceptual and mathematical models that have been used to better understand, interpret, and predict contaminant fate and transport. • Dr. Schaefer has been the lead engineer and/or technical manager on several field projects, many of which have used innovative investigation and treatment technologies. His key contributions include the conceptual design and performance evaluation of an air sparging/soil vapor extraction Superfund site in New Jersey; development of a transport model to evaluate contaminant biodegradation in an engineered biocell at a Superfund site in Delaware; and development and implementation of an innovative cosolvent technology for investigation of dense, non-aqueous phase liquid (DNAPL) in bedrock. 	<ul style="list-style-type: none"> • Identifies, trains, mentors, and assigns qualified engineering staff to tasks/projects • Ensures compliance and consistency of engineering and technical program execution across all TOs • Provides professional engineering certification of drawings, specifications, and documents as necessary • Ensures compliance with all applicable engineering and design codes, standards, and guidance 	<ul style="list-style-type: none"> • Supervises field TO engineering and design staff • Defines qualifications and requirements of engineering and technical staff at TO level • Evaluates performance of engineering staff and provides feedback, including recommendations, to Project Manager • Stops work for non-compliance/safety violation

Table 2-1. Project Team Roles and Responsibilities (continued)

Position	Qualifications	Duties and Responsibilities	Authority Level
<p>Field Team Manager – Chemistry</p>	<ul style="list-style-type: none"> • Pamela Moss • Ms. Moss has 32 years of experience in chemical QC, analytical chemistry, and project management in support of federal contracts. Ms. Moss has supported projects at Kirtland AFB from 1996 to 2010. During this time, she managed in excess of \$5 million in analytical lab services. She has also participated in RCRA site investigations, remedial actions, long-term groundwater monitoring, compliance monitoring and sampling programs, which include hazardous wastes and routine and non-routine analytical parameters for groundwater, drinking water, soil, and air. • Ms. Moss has 14 years of experience at Kirtland participating in regular communications and negotiating with the NMED to ensure compliance with all applicable regulations. Ms. Moss also has extensive knowledge and experience implementing federal programs in accordance with the USACE; DoD Quality Systems Manual; and EPA requirements, protocols, and analytical methodologies. 	<ul style="list-style-type: none"> • Approves project-specific data quality objectives that will meet the project-specific performance standards • Determines appropriateness of sampling procedures, analytical methods, and laboratory quality systems • Approves the final Quality Assurance Project Plan • Verifies the selection of appropriately qualified laboratories • Coordinates field and laboratory quality assurance surveillance per contract specifications • Notifies the Project Manager of any problems or nonconformance issues • Directs the performance of data review per contract specifications • Oversees data management and ERPIMS submittals 	<ul style="list-style-type: none"> • Supervises field scientists and technical staff • Defines qualifications, requirements, and assigns engineering and technical staff at TO level • Evaluates performance of technical staff and provides feedback, including recommendations, to Project Manager • Stops work for non-compliance/safety violation
<p>Field Team Manager – Geophysics</p>	<ul style="list-style-type: none"> • Tim Deignan, PGP • Mr. Deignan is a registered PGP with more than 21 years of experience, which include executing multiple projects at Kirtland AFB. As a recognized subject matter expert, Mr. Deignan has also donated his time to serve as an archeological expert for efforts at Kirtland AFB. His experience includes design and management of integrated geophysical programs to investigate and assess sites and geotechnical, geologic, hydrogeologic, and cultural resource features. He specializes in high-resolution, integrated geophysical programs for environmental remediation and munitions investigations. • Mr. Deignan works with numerous state and federal agencies to increase the usability of results for geophysical and statistical sampling data, and is integral in developing more adequate and innovative sampling approaches. He is a two-time recipient of the Industry Recognition Award from the Interstate Technology and Regulatory Council. 	<ul style="list-style-type: none"> • Functions in lead technical role for efforts requiring expert level support • Identifies, trains, mentors, and assigns qualified technical staff to tasks/projects • Ensures compliance and consistency of technical program execution • Ensures compliance with all applicable federal, state, and local regulations • Serves as the project geophysicist of record 	<ul style="list-style-type: none"> • Supervises field scientists and technical staff • Defines qualifications, requirements, and assigns engineering and technical staff • Evaluates performance of technical staff and provides feedback, including recommendations, to Project Manager • Stops work for non-compliance/safety violation

Table 2-1. Project Team Roles and Responsibilities (continued)

Position	Qualifications	Duties and Responsibilities	Authority Level
Environmental Regulatory Specialist	<ul style="list-style-type: none"> • Jan Martin, PE • Ms. Martin is a New Mexico-registered PE with more than 24 years of experience ensuring compliance on complex environmental investigation and remediation projects. Located in Shaw's Albuquerque office, Ms. Martin has executed a number of environmental remediation projects for DoD in New Mexico and other states, including active installations under the Installation Restoration Program at Wright-Patterson AFB, and Formerly Used Defense Sites (FUDS) at the Former Walker AFB in Roswell, New Mexico and at a FUDS adjacent to Kirtland. • She has worked with DoD clients, EPA regulators, and private and tribal stakeholders to ensure compliance on projects conducted under RCRA as well as various DoD programs, state statutes, and regulations. Ms. Martin has prepared remedial investigation, engineering evaluation/cost analyses, and feasibility study reports, various decision documents, land use control plans, Operating Properly and Successfully (OPS) documents, RCRA closure and corrective action documents, and design analysis documents including plans and specifications. 	<ul style="list-style-type: none"> • Identifies regulatory requirements and oversees implementation of environmental regulatory requirements • Supports Project Manager in regulatory interaction • Works closely with the installation representatives to ensure that environmental policies and procedures are implemented • Stops work for non-compliance/safety violation 	<ul style="list-style-type: none"> • Reports regulatory updates to Project Manager • Coordinates regulatory meeting in concert with project Manager • Maintains list of team personnel who have authority to contact regulatory agencies • Stop-work authority
Risk Assessor	<ul style="list-style-type: none"> • Mark Weisberg, CHMM • Mr. Weisberg, a Certified Hazardous Materials Manager (CHMM), has prepared hundreds of risk assessments at more than 25 Army/DoD facilities, including Former Walker AFB in Roswell, New Mexico. At Walker, he prepared NMED-approved screening-level environmental risk assessments for sites throughout the base. He has more than 20 years of experience in ecology and environmental assessment, where he has been responsible for supervising and conducting risk assessments and RCRA facility investigations at numerous hazardous, toxic, and radioactive waste sites for the Army, Air Force, and Navy. His areas of expertise include ecological and human health risk assessment; toxicology; statistical analysis; water quality; site assessment; and federal, state, and local permit preparation. 	<ul style="list-style-type: none"> • Functions in lead technical role for efforts requiring expert level support • Identifies, trains, mentors, and assigns qualified technical staff to tasks/projects • Ensures compliance and consistency of technical program execution • Ensures compliance with all applicable federal, state, and local regulations 	<ul style="list-style-type: none"> • Supervises field scientists and technical staff • Defines qualifications, requirements, and assigns engineering and technical staff • Evaluates performance of technical staff and provides feedback, including recommendations, to project manager • Stops work for non-compliance/safety violation

Table 2-1. Project Team Roles and Responsibilities (continued)

Position	Qualifications	Duties and Responsibilities	Authority Level
<p>Certified Industrial Hygienist (CIH)</p>	<ul style="list-style-type: none"> James Joice, CIH, Certified Safety Professional (CSP), CHMM Mr. Joice, Shaw's CIH for the Huntsville Worldwide Environmental Remediation contract, has 30 years of experience managing the health and safety for projects and programs at hundreds of environmental remediation sites. He has extensive experience establishing and maintaining health and safety plans and procedures where EPA Levels A, B, and C PPE were required. He regularly supervises project safety personnel; monitors subcontractor activities; develops, implements, and enforces site-specific safety and health plans (SSHPs); audits sites for compliance with health and safety (H&S) program requirements; conducts personnel training, and verifies regulatory compliance. He has also prepared and implemented H&S programs for several PBA and firm-fixed-price contracts. 	<ul style="list-style-type: none"> Implements and oversees H&S program and plans Develops, implements, and oversees APPs inclusive of SSHPs and directs/approves any changes Notifies Contracting Officer of changes in the approved plan within 48 hours Interfaces with the USACE on H&S program requirements Assesses risk and ensures engineering controls and/or appropriate PPE are used for worker and public protection 	<ul style="list-style-type: none"> Approves APPs/SSHPs and all modifications before issuance to the USACE Manages H&S Program and directs training and required attendance Investigates safety concerns raised by staff Investigates any accidents Stops work for non-compliance/safety violation
<p>Community Relations Specialist</p>	<ul style="list-style-type: none"> Lisa Stahl Ms. Stahl is a senior community relations specialist/anthropologist with 17 years professional experience that includes active participation on projects in New Mexico. Ms. Stahl provided public involvement and social science support for efforts at both the Los Alamos National Laboratory as well as Pueblo of Isleta. She has 17 years of experience working with a variety of assessment tools and information; establishing positive working relationships with multiple stakeholders; and preparing and distributing various bilingual outreach materials to a variety of end-users. Ms. Stahl specializes in identifying and facilitating community perspectives into program and policy processes through active involvement and regular communication with members of the community. She is also skilled at writing innovative public participation strategies tailored and targeted to the specific needs and concerns of the community. Her various experiences have included liaison activities between project staff and communities, conducting community assessments, evaluating various public programs, and providing community involvement support to a variety of government clients. 	<ul style="list-style-type: none"> Performs community outreach to facilitate off-site drilling program Establishes and maintains regular communication regarding project and field efforts with the all members of community Plans, organizes, and participates in public meetings regarding the project., including working with all applicable parties to prepare for public meetings Prepares and advertises public notices as necessary Prepares project fact sheets and facilitates distribution of fact sheets and other presentation materials Performs research and community interviews to gather needed information 	<ul style="list-style-type: none"> Reports updates to Project Manager Coordinates public meetings in concert with project Manager Maintains list of team personnel who have authority to conduct community interviews Stops work for non-compliance/safety violation

Table 2-1. Project Team Roles and Responsibilities (concluded)

Position	Qualifications	Duties and Responsibilities	Authority Level
Driller	Water Development Corporation	<ul style="list-style-type: none"> • Installs groundwater, soil vapor monitoring, and soil vapor extraction wells • Uses direct-push methods to advance soil borings • Collects continuous soil samples • Collects soil vapor samples 	<ul style="list-style-type: none"> • Stops work for non-compliance/safety violation
Laboratory	Empirical Laboratories, LLC – groundwater sample analysis Gulf Coast Analytical Laboratories, Inc. – soil sample analysis RTI Laboratories – soil vapor sample analysis	<ul style="list-style-type: none"> • Conducts analytical services in accordance with the Quality Assurance Project Plan and DoD Quality Systems Manual • Provides analytical data in electronic Adobe® PDF format • Provides ERPIMS-formatted deliverables 	<ul style="list-style-type: none"> • Stops work for non-compliance/safety violation
Transportation and Disposal	Rhino	<ul style="list-style-type: none"> • Furnishes trucks, drivers, and all associated services required for transporting hazardous waste oil mixtures from Kirtland AFB to an offsite disposal facility • Ensures compliance with federal, state, and local environmental regulations • Provides all equipment and materials required for performing work at the disposal site 	<ul style="list-style-type: none"> • Stops work for non-compliance/safety violation

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Table 5-1. Hydraulic Test Well Summary

Well	NMED Location	Screen Interval	Aquifer Depth Interval	Grain-size Analysis	Lab Tests ¹	Slug Test	Gamma Log	Neutron Log
KAFB-10610	Existing	483-508	Shallow			X	X	X
KAFB-10613	Existing	486.5-511.5	Shallow			X	X	X
KAFB-10617	Existing	482-507	Shallow			X	X	X
KAFB-10618	Existing	476-501	Shallow			X	X	X
KAFB-10619	Existing	493-518	Shallow			X	X	X
KAFB-10620	Existing	482-507	Shallow			X	X	X
KAFB-10621	Existing	458-483	Shallow			X	X	X
KAFB-10625	Existing	465-490	Shallow			X	X	X
KAFB-10628	Existing	488-513	Shallow				X	X
KAFB-106029	GWM-01-1	450.8-470.8	Shallow	X	X			
KAFB-106030	GWM-01-2	469.5-484.5	Intermediate	X	X	X		
KAFB-106031	GWM-01-3	495.8-509.5	Deep	X	X		X	X
KAFB-106032	GWM-02-1	456-476	Shallow	X	X	X		
KAFB-106033	GWM-02-2	477-492	Intermediate	X	X	X		
KAFB-106034	GWM-02-3	502-517	Deep	X	X	X	X	X
KAFB-106035	GWM-03-1	452-482	Shallow	X	X			
KAFB-106036	GWM-03-2	481.8-496.8	Intermediate	X	X	X		
KAFB-106037	GWM-03-3	507-522	Deep	X	X		X	X
KAFB-106038	GWM-04-1	478-508	Shallow			X		
KAFB-106039	GWM-04-2	508.3-523.3	Intermediate	X	X	X		
KAFB-106040	GWM-04-3	530.6-545.6	Deep	X	X	X	X	X
KAFB-106041	GWM-05-1	449-469	Shallow	X	X			
KAFB-106042	GWM-05-2	469-483.5	Intermediate	X	X	X		
KAFB-106043	GWM-05-3	543-557.5	Deep	X	X			
KAFB-106045	GWM-06-3	528.3-543.3	Deep				X	X
KAFB-106046	GWM-07-1	490-510	Shallow	X	X			
KAFB-106047	GWM-07-2	512-527	Intermediate	X	X			
KAFB-106048	GWM-07-3	535.5-550.5	Deep	X	X		X	X
KAFB-106049	GWM-08-1	456.8-476.8	Shallow	X	X			
KAFB-106050	GWM-08-2	474.4-489.4	Intermediate	X	X	X		
KAFB-106051	GWM-08-3	500.8-515.8	Deep	X	X		X	X
KAFB-106052	GWM-09-1	449.6-479.6	Shallow	X	X			
KAFB-106053	GWM-09-2	478.4-493.4	Intermediate	X	X	X		
KAFB-106054	GWM-09-3	504-519	Deep	X	X		X	X

Table 5-1. Hydraulic Test Well Summary (continued)

Well	NMED Location	Screen Interval	Aquifer Depth Interval	Grain-size Analysis	Lab Tests ¹	Slug Test	Gamma Log	Neutron Log
KAFB-106055	GWM-10-1	465.8-485.8	Shallow	X	X			
KAFB-106057	GWM-10-3	484.9-499.9	Intermediate	X	X	X		
KAFB-106058	GWM-10-4	511.8-526.8	Deep	X	X		X	X
KAFB-106059	GWM-11-1	483.4-503.4	Shallow	X	X			
KAFB-106060	GWM-11-2	503-518	Intermediate	X	X			
KAFB-106061	GWM-11-3	573.2-588.2	Deep				X	X
KAFB-106062	GWM-12-1	575.3-590.3	Deep				X	X
KAFB-106063	GWM-12-2	505-520	Intermediate	X	X			
KAFB-106064	GWM-12-3	485-505	Shallow	X	X			
KAFB-106065	GWM-13-1	508-523	Intermediate	X	X			
KAFB-106066	GWM-13-2	575.6-590.6	Deep	X	X			
KAFB-106067	GWM-14-1	485-505	Shallow	X	X	X		
KAFB-106068	GWM-14-2	580-595	Deep	X	X	X	X	X
KAFB-106069	GWM-14-3	506-521	Intermediate	X	X			
KAFB-106070	GWM-15-1	460-480	Shallow	X	X			
KAFB-106071	GWM-15-2	548-563	Deep	X	X	X	X	X
KAFB-106072	GWM-15-3	475-495	Intermediate	X	X			
KAFB-106073	GWM-16-1	499.5-514.5	Intermediate	X	X	X		
KAFB-106074	GWM-16-2	569.5-584.5	Deep	X	X	X	X	X
KAFB-106075	GWM-16-3	480-500	Shallow	X	X	X		
KAFB-106076	GWM-17-1	480-500	Shallow	X	X			
KAFB-106078	GWM-17-3	573.5-588.5	Deep				X	X
KAFB-107079	GWM-18-1	483.9-503.9	Shallow	X	X	X		
KAFB-106080	GWM-18-2	503.1-518.1	Intermediate	X	X			
KAFB-106081	GWM-18-3	574.8-589.3	Deep	X	X		X	X
KAFB-106082	GWM-19-1	472-492	Shallow	X	X	X		
KAFB-106083	GWM-19-2	495.5-510.5	Intermediate	X	X	X		
KAFB-106084	GWM-19-3	566-581	Deep	X	X	X	X	X
KAFB-106085	GWM-20-1	446.5-476.5	Shallow	X	X			
KAFB-106086	GWM-20-2	476-491	Intermediate	X	X	X		
KAFB-106087	GWM-20-3	546-561	Deep	X	X		X	X
KAFB-106088	GWM-21-1	460-480	Shallow	X	X			
KAFB-106089	GWM-21-2	481.5-496.5	Intermediate	X	X	X		
KAFB-106090	GWM-21-3	555-570	Deep	X	X		X	X

Table 5-1. Hydraulic Test Well Summary (concluded)

Well	NMED Location	Screen Interval	Aquifer Depth Interval	Grain-size Analysis	Lab Tests ¹	Slug Test	Gamma Log	Neutron Log
KAFB-106091	GWM-22-1	454-474	Shallow	X	X			
KAFB-106092	GWM-22-2	474-489	Intermediate	X	X	X		
KAFB-106093	GWM-22-3	544-559	Deep	X	X		X	X
KAFB-106094	GWM-23-1	484.2-504.2	Shallow	X	X			
KAFB-106095	GWM-23-2	503.8-518.8	Intermediate	X	X	X		
KAFB-106096	GWM-23-3	576.3-591.3	Deep	X	X	X	X	X
KAFB-106097	GWM-24-2	506-521	Intermediate	X	X			
KAFB-106098	GWM-24-3	531-546	Deep	X	X		X	X
KAFB-106099	GWM-25-2	501-516	Intermediate	X	X			
KAFB-106100	GWM-25-3	526-541	Deep	X	X		X	X
KAFB-106102	GWM-26-3	521.1-534.8	Deep				X	X
KAFB-106103	GWM-27-2	485-500	Intermediate	X	X			
KAFB-106104	GWM-27-3	510-525	Deep	X	X		X	X
KAFB-106105	GWM-28-1	484-499	Shallow	X	X	X		
KAFB-106106	GWM-28-2	453.6-483.6	Intermediate					
KAFB-106107	GWM-28-3	510.2-525.2	Deep	X	X	X	X	X
KAFB-106157	Extraction well	495-550	Intermediate					
		Totals		68	68	37	35	35

1. Hydraulic conductivity, effective porosity, fraction of organic carbon on bucket samples from screen interval.

2. Blank monitor well screen interval and aquifer depth interval mean well has not yet been installed.

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Table 5-2. Hydraulic Testing Laboratory Summary

Parameters	Method Reference	No. Samples	Comments
Grain-size analysis using laser method	ASTM D4464M	52	Clay to coarse sand grain-size
Hydraulic conductivity	API RP40/EPA 9100	34	Permeability and hydraulic conductivity
Porosity	Mod. ASTM D425	34	Total and effective porosity
Fraction of organic carbon	Walkley-Black	34	

Laboratory tests will be conducted on re-molded bucket samples collected from the drill rig cyclone.

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Table 5-3. Enhanced Well Development Test Well Summary

Well	NMED Location	Screen Interval¹	Test Use
KAFB-106157	LNAPL Extraction	495-550	Developing well (transducer)
KAFB-106082	GWM-19-1	472-492	Obs. Well (transducer)

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Table 5-4. Treatability Analytical Test Schedule

Sample Location	Sample Location			Analysis					
	Influent	Effluent 1	Effluent 2	Field Parameters	TPH Analysis	VOC Analysis			
Final Day Sample	X	X	X	Daily all locations	X	X			
Field parameters--pH, specific conductance, dissolved oxygen, ORP, ferrous iron Daily VOC samples will be analyzed at local lab with 24-hour turn-around.									

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Table 5-5. NAPL and Groundwater Laboratory Analyses

		Location ID					
		KAFB-1065	KAFB-1066	KAFB-1068	KAFB-1069	KAFB-10610	KAFB-10614
		Media					
Parameter	Method	NAPL	NAPL	NAPL	NAPL	NAPL	NAPL
NAPL cleaning	Lab specific	X	X	X	X	X	X
Density	ASTM D1481	X	X	X	X	X	X
Viscosity	ASTM D445	X	X	X	X	X	X
Interfacial tension	ASTM D970	X	X	X	X	X	X
Flashpoint	ASTM D93	X	X	X	X	X	X
API gravity	ASTM D287	X	X	X	X	X	X
PIANO + BTEX + EDC and EDB	Proprietary	X	X	X	X	X	X
		Water	Water	Water	Water	Water	Water
Volatiles	EPA 8260C	X	X	X	X	X	X
Semivolatiles	EPA 8270D						
TPH	Lab specific	X	X	X	X	X	X
Metals and cations	EPA 6010C	X	X	X	X	X	X
Anions	EPA 300.0	X	X	X	X	X	X
Hydrocarbon degrading bacteria	Proprietary	X	X	X	X	X	X
BTEX denotes benzene, toluene, ethylbenzene, and xylene. EDB denotes ethylene dibromide. EDC denotes 1, 2 dichloroethane. PIANO denotes paraffin, isoparaffins, aromatics, naphthalene, and olefins. Locations may be modified depending on presence or absence of NAPL.							

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Table 5-6. NAPL Migration Soil Test Summary

CORE ID	Depth feet	Core Recovery feet	Field Lithology	Slab and Core Photo	Pore Fluid Saturation Package	Grain Size Analyses	Air/Water Drainage Capillarity Pkg.	LNAPL/Water Drainage Capillarity Pkg.	Test Interval
				--	API RP40	ASTM D 4464 (laser)	ASTM D6836, API RP40	ASTM D6836, API RP40	
KAFB-106059-GEO2	304-306	1.95	GW	X	X	X	X	X	304.3-305.5 sandy gravel
KAFB-106060-GEO1	486-489	2.90	SW	X	X	X	X	X	486-487 sand
KAFB-106063-GEO1	489-490.5	1.90	SW	X	X	X	X	X	489.5-490.5 sand
KAFB-106063-GEO2	335-336	1.00	SW	X	X	X	X	X	335-336 sand
KAFB-106078-GEO1	486-489	2.95	SW/GW	X	X	X	X	X	488-489 sand
KAFB-106078-SAND	489-491	1.83	SW	X	X	X	X	X	489-490 sand
KAFB-106080-GEO2	427-428	1.00	SM	X	X	X	X	X	427-428 silty sand
KAFB-106081-GEO1	489-492	2.65	SP	X	--	X	--	--	489-490.5 grain size only
KAFB-106081-GEO2	450-452	1.90	ML	X	X	X	X	X	451-452 silt
Totals				9	9	9	9	9	

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