



		SUBCONTRACTOR TRANSMITTAL / STATUS SHEET		
Subcontract Number: 89795-000-11		STR Name: Robin Reynolds		
SUBCONTRACTOR	Company Name: Eberline Services, Inc.		Date Submitted: October 11, 2011	
	Street Address: 7021 Pan American Fwy		<input checked="" type="checkbox"/> Initial Submittal of a New Document <input type="checkbox"/> Re-Submittal of Previous Document	
	City, State, Zip code: Albuquerque, NM 87109			
	Subcontractor's Point of Contact: Veronica Ybarra			
	Submittal Number:	89795-002-10		
	Submittal Title:	IWD for Well R-66		
	Revision Number:	0		
	Subcontractor's Representative's signature below indicates that submittal has been reviewed for accuracy and meets the requirements of the subcontract.			
	Subcontractor's Representative's signature: <div style="text-align: center;"><i>Veronica Ybarra</i></div>			
	CONTRACTOR	Date Received:		
Stated By:				
Date:				
Comments:				
Status Code: <input type="checkbox"/> 1 Reviewed- Work may proceed <input type="checkbox"/> 2 Reviewed-Revise and resubmit. Work may proceed subject to incorporation of indicated comments. <input type="checkbox"/> 3 Reviewed. Revise and resubmit. Work may not proceed. <input type="checkbox"/> 4 Reject. Submittal does not meet requirements. Resubmit. <input type="checkbox"/> 5 Permission to proceed not required.				
Submit comments to:				



IWD – PART 1 (Activity Specific Information)

IWD#: Eberline Services' Task Order 2 R-66 IWD, R0		Activity/Task Title: Implementation of the Drilling Work Plan for Regional Aquifer Well R-66 for Task Order 2, subcontract number 89795-002-11, under the Drilling Master Task Ordering Agreement (MTOA), subcontract number 89795-000-11.	
Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Activity Description/Overview: This integrated work document (IWD) addresses field work activities associated with implementing Exhibit D of Task Order 2, Subcontract Number 89795-002-11, Scope of Work and Technical Specifications, Rev. 1, of the Master Task Ordering Agreement (MTOA) for Professional Services and Drilling Support, Subcontract Number 89795-000-11.

Eberline Services Inc. (Eberline Services), teaming partner Kleinfelder, Inc., and lower-tier subcontractors (Yellow Jacket Drilling, LLC., Schlumberger, Inc., David Schafer and Associates, Enviroworks, Inc., and others to be determined as necessary) will manage and perform a variety of groundwater well-related work to include drilling and geophysical logging of the R-66 borehole, installing a one-screen regional groundwater well, developing screens, performing aquifer tests, installing sampling system, completing well pad, performing on-site waste management, and preparing well fact sheets and well completion report.

The primary goal of well R-66 is to monitor groundwater in the upper part of the regional aquifer downgradient of TA-21 and associated potential infiltration zones in Los Alamos and DP Canyons. R-66 will also be used as a sentinel well for municipal production well Otowi (O)-4 and replace Test Well (TW)-3. The depth to Regional Aquifer groundwater is estimated to be 807 feet below ground surface (bgs) and planned borehole total depth (TD) is 900 ft bgs. The well is planned to be completed with one well screen and will be drilled and constructed on a 24/7 schedule.

The field work tasks to be conducted at R-66 are detailed below:

- (1) **General Activities** – Includes all hazards, controls, reference documents, and training that are consistent for all activities.
- (2) **Mobilization/Demobilization of Equipment** – This step will involve activities related to transport, staging, and removal of equipment and supplies at the drill sites.
- (3) **Site Maintenance** – This task will involve activities related to snow removal, access road and drill pad maintenance.
- (4) **Setting up the Drilling Rig and Auxiliary Equipment** – This task involves the setting up of the drill rig and support equipment.
- (5) **Drilling Operations** – This task involves the operation of the drill rig and support equipment, and also collecting cuttings samples.
- (6) **Recovery of Lodged Equipment** – This task includes deploying special designed tools down a borehole to recover lodged or dropped equipment.
- (7) **Geophysical Logging** – This task includes performing geophysical logging of the borehole.
- (8) **Well Installation** – This task includes installing the wells.
- (9) **Well Backfill** – This task includes backfilling the wells and removing the drive casing (if installed).
- (10) **Removing Lodged Casing** – This step involves the use of casing jacks to remove lodged casing from a borehole.
- (11) **Well Development and Aquifer Testing** – This task involves developing the wells, performing aquifer tests, and collecting water samples.
- (12) **Well-Head Completion** – This task involves completing the well heads.
- (13) **On-site Waste Management** – This task involves the management of the investigation derived waste (IDW) following all applicable procedures and LANSs' Waste Characterization Strategy Form (WCSF) requirements.
- (14) **Decontamination Activities** – This task involves the decontamination of well drilling, construction, and development equipment

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Task 1. General Activities <i>Includes all hazards, controls, reference documents, and training of a general nature.</i>				
General Field Work	Unknown development/discovery/event HOLD POINT	<ul style="list-style-type: none"> Contractual stop work order H&S stop work order Change to scope Amendment to controlling document (IWD, ES&H Plan, OPSEC) Change impacting project scope, cost, or schedule 	<ul style="list-style-type: none"> MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness Requirements) "SUBCONTRACTOR must comply with CONTRACTOR's emergency response requirements" Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) Eberline Services' ES&H Plan Training Matrix 	<ul style="list-style-type: none"> General Employee Training (GET) Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) briefing IWD Part 3 (Form 2103 Validation and Release) employee signature Daily tailgate safety meeting and pre-job briefing
General Field Work	Unauthorized work and unaccounted for personnel	<ul style="list-style-type: none"> To be authorized, all work must be listed on LANL Corrective Actions Program (CAP) Plan of the Day (POD) or Daily Shift Order. Site representative (ES&H Representative, Field Geologist, Drilling Supervisor) shall contact the TA-64 Operations Center to report the number of personnel on site and the representative's name: <ul style="list-style-type: none"> When entering the field; Every two hours throughout the day/shift; 	<ul style="list-style-type: none"> MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness Requirements) "SUBCONTRACTOR must comply with CONTRACTOR's emergency response requirements" 	<ul style="list-style-type: none"> General Employee Training (GET) Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) briefing Daily tailgate safety meeting

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		<ul style="list-style-type: none"> • When personnel arrive or depart; • When moving to a new location; • When leaving the field. 	<ul style="list-style-type: none"> • Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) • Eberline Services' T.O. #2 Training Matrix 	and pre-job briefing
General Field Work	Access to R-66	<ul style="list-style-type: none"> • Access to R-66 is controlled by Videx Key. • All Visitors and Delivery Personnel not having Videx Keys Issued to them will contact the Lead Geologist to coordinate Access to the Site. 	<ul style="list-style-type: none"> • MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness Requirements) "SUBCONTRACTOR must comply with CONTRACTOR's emergency response requirements" • Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) 	<ul style="list-style-type: none"> • General Employee Training (GET) • Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) briefing • Daily tailgate safety meeting and pre-job briefing
General Field Work	Work in remote area	<ul style="list-style-type: none"> • Use of buddy system is required when performing any work. • At least two forms of communication shall be with the field team. • At least one team member will be trained and current in Cardiopulmonary Resuscitation (CPR) and First Aid. 	<ul style="list-style-type: none"> • MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness Requirements) "SUBCONTRACTOR must comply with CONTRACTOR's emergency response requirements" 	<ul style="list-style-type: none"> • General Employee Training (GET) • Daily tailgate safety meeting and pre-job briefing

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General Field Work	Emergency Communication	<ul style="list-style-type: none"> • Emergency communication (cellular telephones LANL Corrective Actions Project [CAP] two-way radios). 	<ul style="list-style-type: none"> • MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness Requirements) "SUBCONTRACTOR must comply with CONTRACTOR's emergency response requirements" • Eberline Services' T.O. #2 R-66 Field Implementation Plan (FIP) 	<ul style="list-style-type: none"> • General Employee Training (GET) • Eberline Services' R-66 FIP briefing • Daily tailgate safety meeting and pre-job briefing
General Field Work	Personal Protective Equipment Requirements	<ul style="list-style-type: none"> • All personnel shall wear safety shoes, boots, or footwear. complying with ANSI Z41.1 • All Personnel shall wear safety glasses with side shields complying with ANSI Z87.1 • All personnel shall wear hard hats ANSI Z89.1 • All Personnel shall wear high-visibility clothing (jackets, vests or shirts). ANSI 107 or ANSI 207 • All personnel shall wear shirts with sleeves and long pants. 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 12.0 "Personal Protective Equipment" 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
General Field Work	Slips, Trips, and Falls from Improper Housekeeping	<ul style="list-style-type: none"> • Practice good housekeeping at all times. • Avoid and/or remove tripping hazards if possible. • Use caution and be observant while moving in areas of potential concern. • Keep walk areas clean of debris, tools, supplies and equipment. • Tools and materials will be properly stored when 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 10.0 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing

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		not in use. • DO NOT expect someone else to cleanup, if you notice a hazard, pick it up.	“Housekeeping”	
General Field Work	Slips, Trips, and Falls from Ice and Winter Conditions	• Practice good housekeeping at all times. • Containers or sand or de-icing materials (i.e., salt) shall be available and maintained on site to minimize respective hazards.	• Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i> , Section 10.0 “Housekeeping”	• Daily tailgate safety meeting and pre-job briefing
General Field Work	Injury from Hand or Portable Power Tools (hand tools are instruments, such as hammers, screwdrivers, and wrenches, used or worked by hand. Portable power tools are electrical, pneumatic, gasoline, hydraulic, or power-actuated tools that are capable of being carried or easily moved)	• All tools shall be inspected by the user before use. • Personnel will be instructed to use hand tools for their intended purpose. • Wooden handles shall be free of splinters or cracks and shall be firmly attached to the tool. • All guards shall be in place and no modifications shall be made to the tool. • Disconnect tools from power source before changing accessories. • Electrically-powered hand tools should be double-insulated or properly grounded and connected to a GFCI when used outdoors. • Ensure that pneumatically-powered hand tools are securely attached to hoses, hoses are securely coupled together, and tools are handled in a safe manner. Comply with the psi limits for the safe use of the equipment. • Use the tool in accordance with manufacturer's operating rules or safe practices.	• Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i> , Section 17.0 “Tools and Equipment” • Eberline Services' <i>ESH-PROG-06, Electrical Safety Program</i>	• Eberline Services' <i>ESH PROG-06, Electrical Safety Program</i> briefing • Daily tailgate safety meeting and pre-job briefing

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		<ul style="list-style-type: none"> • Wear required personal protective equipment such as eye/face protection, gloves, safety shoes, and hearing protection. 		
General Field Work	Vehicle Accidents (injuries/damage from collisions)	<ul style="list-style-type: none"> • Do not transport a passenger unless he/she is in a seat. • Wear seatbelts in vehicles that are equipped with them. • Do Not Operate a Site Vehicle without a current inspection and unless it is in Operable Condition • If driving, do not use cellular phone, palm pilot, Blackberry or perform other distracting activities while the vehicle is in motion. • Obey all posted speed limits. • Determine the safest route to and within the R-66 site prior to moving any equipment. • Field team personnel exposed to vehicle traffic shall wear reflective safety vests or other suitable garments of reflective or high visibility material. • Be observant and yield to bicyclists, joggers, and other pedestrians on or near the roadway. 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing • Valid driver's license
General Field Work	Electrical Shock	<ul style="list-style-type: none"> • Inspect all energized equipment prior to use. • GFCIs are required for all electrical equipment used outdoors. • Routine maintenance on equipment will be provided by on-R-66 personnel. • Non-routine maintenance will be performed by qualified electrician only. • Proper grounding of all portable generators as required per manufacturer's specifications. 	<ul style="list-style-type: none"> • Eberline Services' <i>ESH-PROG-06, Electrical Safety Program</i> 	<ul style="list-style-type: none"> • Eberline Services' <i>ESH-PROG-06, Electrical Safety Program</i> briefing • Daily tailgate safety meeting and pre-job briefing

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		<ul style="list-style-type: none"> • Use only electrical equipment that is listed by a Nationally Recognized Testing Laboratory (NRTL) • Extension cords shall not be used in series. • Only outdoor rated equipment shall be used. 		
General Field Work	Potential for Electrocution from Lightning	<ul style="list-style-type: none"> • Watch for lightning and listen for thunder; count the seconds between seeing lightning and hearing thunder. If you see lightning and thunder is heard within 30 seconds (approximately 6 miles), seek shelter. If you hear thunder, but did not see the lightning, you can assume that lightning, is within 6 miles, and you should seek shelter. Remain in sheltered location for 30 minutes following the last lightning strike. • Move away from any metal objects and grounding system components; take cover in a vehicle or small dwelling. • Do not remain upright in an open area or seek shelter near tall, upright objects. 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 18.0 "Inclement Weather" • National Weather Service, Lightning Safety (http://www.lightningsafety.noaa.gov/job.htm) 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
General Field Work	Exposure to Nuisance Dust	<ul style="list-style-type: none"> • Nuisance dust monitoring will be conducted in the work area during excessive dust-producing activities. • If area monitoring so warrants, workers' breathing zone will be monitored. • If dust level exceeds 3 mg/m³ (ACGIH 2011) temporarily suspend work, re-evaluate conditions and controls. 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 13.0 "Respiratory Protection" • Eberline Services' <i>ESH-PROC-7.3, Use of Respiratory</i> 	<ul style="list-style-type: none"> • Eberline Services' <i>ESH-PROC-7.3, Use of Respiratory Protection Procedure</i> briefing • Daily tailgate safety meeting and pre-job briefing

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			<i>Protection Procedure</i>	
General Field Work	Heat and Cold Stress	<ul style="list-style-type: none"> • Monitor personnel for indication of stress. • Strive to prevent exposure by implementing appropriate work regime, as outlined by the ACGIH Threshold Limit Values (TLV) Booklet, including work breaks so personnel can warm up or cool down. • Stay hydrated. • Dress appropriately. 	<ul style="list-style-type: none"> • ACGIH TLV Booklet • Eberline Services' ESH-PROC-7.1, <i>Heat Stress Control and Monitoring Program</i> • Eberline Services' ESH-PROC-7.2, <i>Cold Exposure Control Procedure</i> 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing • Eberline Services' ESH-PROC-7.1, <i>Heat Stress Control and Monitoring Program</i> briefing • Eberline Services' ESH-PROC-7.2, <i>Cold Exposure Control Procedure</i> briefing
General Field Work	Dehydration	<ul style="list-style-type: none"> • Drink fluids. • Take breaks to cool down. 	<ul style="list-style-type: none"> • Eberline Services' ESH-PROC-7.1, <i>Heat Stress Control and Monitoring Program</i> • Eberline Services' ESH-PROC-7.2, <i>Cold Exposure Control Procedure</i> 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing • Eberline Services' ESH-PROC-7.1, <i>Heat Stress Control and Monitoring Program</i> briefing • Eberline Services' ESH-PROC-7.2, <i>Cold Exposure Control</i>

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				<i>Procedure briefing</i>
General Field Work	Sunburn	<ul style="list-style-type: none"> Wear sunscreen and a hard hat, preferably with a bill. 	<ul style="list-style-type: none"> Eberline Services' ESH-PROC-7.1, <i>Heat Stress Control and Monitoring Program</i> 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing Eberline Services' ESH-PROC-7.1, <i>Heat Stress Control and Monitoring Program</i> briefing
General Field Work	Biological Hazards: Bodily Fluids	<ul style="list-style-type: none"> Avoid contact with bodily fluids when performing rescue breathing, CPR, or first aid. Immediately inform ES&H Representative if exposure to bodily fluids occurred. At least one person on-R-66 will have current CPR and first aid training. 	<ul style="list-style-type: none"> Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory, Section 50.0 "Biological Safety"</i> Eberline Services ESH-PLAN-08.1 Exposure Control Plan for Blood-borne Pathogens 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing CPR/First Aid
General Field Work	Biological Hazards: Wildlife, Hantavirus	<ul style="list-style-type: none"> Look for and avoid rodent droppings and nests. If droppings or nests must be disturbed to complete work, notify the STR or TA-64 for disinfecting. All personnel will be informed to avoid animals (dead or alive). If exposure to wildlife 	<ul style="list-style-type: none"> Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos</i> 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing CPR/First Aid

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		bites/contamination is suspected, medical attention is required as soon as possible. <ul style="list-style-type: none"> • All personnel will be informed to be alert for and cautious of wildlife. • Workers will not approach wildlife. • Standing water shall be minimized and water drained from atop storage drums/rolloff containers to minimize wildlife and insect attraction to the area. 	<i>National Laboratory, Section 50.0 "Biological Safety"</i>	
General Field Work	Biological Hazards: Portable Toilet Instability - Damage to Property or Environment	<ul style="list-style-type: none"> • All temporary portable toilet units shall be secured to prevent disturbance by wind or wildlife. • Temporary portable toilet units shall not be staged near storm-water outfalls. 	• None	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
General Field Work	Biological Hazards: Biting and Venomous Plants and Animals	<ul style="list-style-type: none"> • Inform ES&H Representative/Professional if you are allergic to insect bites/stings or carry an Epipen™ or any other personal emergency device/medication. • Use insect repellent. • Avoid contact with all wildlife. • Watch out for and avoid poisonous plants, animals, and insects. • At least one person on-R-66 will have current CPR and first aid training. • A first aid kit will be available at the R-66 site. 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory, Section 50.0 "Biological Safety"</i> 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing • CPR/First Aid
General Field Work	Wildland Fire	<ul style="list-style-type: none"> • Call the STR, TA-64, or Emergency Management and Response (EM&R) (667-6211) for the latest fire conditions. • Check LANL homepage, 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support</i> 	<ul style="list-style-type: none"> • Eberline Services' ESH-PROC-01, <i>Welding and</i>

IWD – PART 1 (Activity Specific Information)

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		<p>http://int.lanl.gov/fire_matrix.html</p> <ul style="list-style-type: none"> • Comply with Notice 0174, Restrictions Due to Wildland Fire (if superseded, comply with current requirements) and case-by-case instructions from the STR. • Fire extinguishers will be located in work areas close to spark-producing activities. Only trained personnel will be allowed to use fire extinguishers. • The LANL emergency response and Los Alamos County Fire Department will be notified prior to the start of work. • At least one fire extinguisher (ABC) shall be maintained readily accessible. • Flammable and combustible liquids shall be stored in a fire proof cabinet. • Obtain permit for spark/flame-producing operations. • Combustion engines must have a spark arresting muffler or alternate controls approved by the area's Fire Marshall. • Arrange work area so fire roads, fire lanes, and access for emergency response vehicles are not restricted. • Motor vehicles will not be parked on grassy areas because hot catalytic converters could potentially ignite the vegetation. 	<p><i>MTOA at Los Alamos National Laboratory, Section 21.0 "Fire Protection and Prevention"</i></p> <ul style="list-style-type: none"> • LANL Fire Protection Program, P-1220, Rev 2 • Eberline Services' ESH-PROC-01, <i>Welding and Cutting Safety Procedure</i> • Eberline Services' ESH-PLAN-01, <i>Fire Hazard Control Plan</i> 	<p><i>Cutting Safety Procedure</i> briefing</p> <ul style="list-style-type: none"> • Eberline Services' ESH-PLAN-01, <i>Fire Hazard Control Plan</i> briefing • Daily tailgate safety meeting and pre-job briefing
General Field Work	High Wind Conditions	<ul style="list-style-type: none"> • High wind conditions are typically gusts over 40 mph accompanied by limited visibility and safety concerns (e.g., flying objects, dust particles in eyes, equipment instability, etc.). 	<ul style="list-style-type: none"> • MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness) 	<ul style="list-style-type: none"> • General Employee Training (GET) • Eberline

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		<ul style="list-style-type: none"> • Projected high wind conditions are communicated from the STR and/or the TA-64 Operations Center. • If wind conditions cause limited visibility or there are other safety concerns, work will be suspended until the conditions clear. • If high wind conditions cause a halt or suspension to work activities, the Drilling Supervisor, STR and TA-64 will be notified. • The Drilling Supervisor, STR and TA-64 shall be notified when high-wind conditions abate and work activities resume. • All Hoisting and Rigging Activities will be suspended at the lesser wind speed of 35mph or the Manufacturer's Recommended Maximum Wind Speed. 	Requirements) "SUBCONTRACTOR must comply with CONTRACTOR's emergency response requirements" <ul style="list-style-type: none"> • Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) 	Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) briefing <ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
General Field Work	Flash Flood Conditions	<ul style="list-style-type: none"> • Flash flood conditions can be life-threatening events to personnel working in canyon bottoms, or if exit routes from work sites must cross or follow limited access roads or trails in canyon bottoms. • The impacts of flash flooding are magnified by the recent Las Conchas Fire, which destroyed surface vegetation in the headwaters of LANL canyons. • Projected flash flood conditions are communicated from the STR and/or the TA-64 Operations Center. • Local FM radio stations will broadcast flash-flood alerts for impacted Counties. • If flash-flood conditions cause a halt or suspension to work activities, the Drilling Supervisor, STR, and TA-64 will be notified. 	<ul style="list-style-type: none"> • MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness Requirements) "SUBCONTRACTOR must comply with CONTRACTOR's emergency response requirements" • Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) 	<ul style="list-style-type: none"> • General Employee Training (GET) • IWD Part 1 (Form 2100A briefing) • IWD Part 3 (Form 2103 Validation and Release) employee signature • Daily tailgate safety meeting

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		<ul style="list-style-type: none"> • The Drilling Supervisor, STR, and TA-64 shall be notified when flash-flood conditions abate and work activities resume. 		and pre-job briefing
General Field Work	Night work	<ul style="list-style-type: none"> • Use integrated generator lighting systems to minimize the use of power cords that present tripping hazards. • Avoid looking directly into lights; it will reduce vision. • Practice good housekeeping by removing tripping hazards from work areas and worker pathways. • Delay to the next day those tasks that cannot be safely performed under lights. • Contact lists for night work shall be clearly posted. • Set up at least two or more light systems around the drill rig location so that they minimize shadows in the work area. • Verify that the following minimum illumination levels are attained by taking foot-candle power reading 18 inches above the walking and working surfaces: <ul style="list-style-type: none"> • An average of five (5) foot-candle power on the whole of the derrick floor, with no less than three (3) foot-candle power at any point; and • A minimum of three (3) foot-candle power at all other walking and working surfaces. • Weather and other circumstances such as the need to perform fine work may warrant higher lighting values. 	<ul style="list-style-type: none"> • OSHA Standards for the Construction Industry (29 CFR Part 1926), Subpart D, 1926.56(a) 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing.

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

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		<ul style="list-style-type: none"> Run the lighting system from about 30 minutes before dusk and until 30 minutes after dawn. Provide additional illumination or post and tape-off work areas where the required lighting levels are not attained. Move chemical toilets closer to illuminated work area if necessary. Take flashlights to toilet, if necessary. If additional lighting is needed, contact the ES&H Representative. 		
Task 2. Mobilization/Demobilization of Equipment				
Hazards and controls as listed above in "General Activities" with emphasis on the following specific work tasks, hazards, and controls				
Moving Drilling Rigs and Support Equipment	Unauthorized equipment	<ul style="list-style-type: none"> All major equipment mobilized under MTOA Task Order 2 (Subcontract # 89795-002-11) shall be declared to the LANL STR using Exhibit F Form F16-1, <i>Major Equipment Declaration</i>. 	<ul style="list-style-type: none"> MTOA 89795-000-11 Exhibit F 	<ul style="list-style-type: none"> None
Moving Drilling Rigs and Support Equipment	Personal Injury or Property Damage	<ul style="list-style-type: none"> Ensure trailer is positioned and secured properly, level, and on a surface sufficient to support the load. Inspect trailer and associated equipment to ensure they are in safe working condition. Use spotters (wearing safety vests) when backing drilling rigs, equipment, or trailers. Maintain line of sight between spotter and operator. Restrict access to non-essential personnel while moving, loading, or unloading trailers. Ensure the load is properly secured once on the trailer or transport vehicle. 	<ul style="list-style-type: none"> Operating manuals Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" FIP-LANS89795-03 	<ul style="list-style-type: none"> Valid driver's license Operator will be certified by employer as a competent operator of the equipment. Daily tailgate safety meeting and pre-job briefing

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
			Field Implementation Plan for Regional Aquifer Well R-66 at Los Alamos National Laboratory Technical Area-21; Section 1.2 Access and Traffic Control	
Movement of Trailers	Vehicle Accidents (injuries/damage from collisions)	<ul style="list-style-type: none"> • Use spotters (wearing safety vests) when backing or staging trailers at work location. • Ensure the brake, tail lights, and trailer brakes are functioning properly before moving the vehicle. • Ensure trailer safety chains are connected to the towing vehicle. • Ensure towing vehicle and associated equipment has the rated capacity to handle the trailer. • Block tires and set stabilizer jack(s) if equipped. • Restrict access to non-essential personnel while moving or unloading trailers. 	<ul style="list-style-type: none"> • Operating manuals • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" • FIP-LANS89795-03 Field Implementation Plan for Regional Aquifer Well R-66 at Los Alamos National Laboratory Technical Area-21; Section 1.2 Access and Traffic Control 	<ul style="list-style-type: none"> • Valid driver's license • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job briefing

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Loading and Unloading Vehicles and Trailers	Slips, Trips, Falls	<ul style="list-style-type: none"> • See Task 1, General Activities. 	<ul style="list-style-type: none"> • See Task 1, General Activities. 	<ul style="list-style-type: none"> • See Task 1, General Activities.
Loading and Unloading Vehicles and Trailers	Back Injury	<ul style="list-style-type: none"> • Use mechanical lift assist equipment when practicable. • Repackage to reduce weight and/or bulk. • Ensure travel path is clear of obstructions. • Use proper lifting technique to safely lift the load. • Place feet close to load and lift mostly by straightening the legs, keeping the load close to the body. • Lift with legs and stand up in a smooth, even motion. • Do not twist the back or bend sideways. 	<ul style="list-style-type: none"> • OSHA Technical Manual, Section VII: Chapter 1, Back Disorders and Injuries, Sec. V. Prevention and Control 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
Loading/Unloading Materials	Heavy Equipment Operation	<ul style="list-style-type: none"> • Inspect heavy equipment upon its arrival to R-66 and daily prior to start of work shift. • Equipment will be inspected per manufacturer's recommendations and good industry practice. • Defective equipment shall be removed from service, and any defects shall be corrected or repaired before equipment is put into service. • Records of each inspection shall be kept readily available for review. • Be observant as to your location with respect to moving and overhead parts. • Approach the equipment only after making eye contact with the operator and then only when necessary. • Be observant as to your location with respect to 	<ul style="list-style-type: none"> • Operating manuals • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" 	<ul style="list-style-type: none"> • Valid driver's license • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job briefing • Valid equipment operator's license

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		heavy equipment. • Level D PPE will be worn unless unexpected contaminants or hazards are encountered, then the PPE will be upgraded as appropriate.		
Loading/Unloading Materials and Equipment	Property or Environmental Damage	<ul style="list-style-type: none"> • All operational materials and equipment capable of inadvertent oil or chemical spills must be staged on a secondary impermeable barrier (containment). • Any materials and equipment stored / staged (not in use) at the R-66 site do not require secondary containment. • Secondary containment will not be required for in-use crew vehicles. • All secondary containment shall be bermed to control run off. 	<ul style="list-style-type: none"> • Operating manuals • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" 	<ul style="list-style-type: none"> • Valid driver's license • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job briefing • LANL SPCCC self-study and site specific hands-on training
Loading/Unloading Materials and Equipment	Property or Environmental Damage from Equipment/ Supplies Delivery/ Demobilization	<ul style="list-style-type: none"> • Delivery/demobilization truck drivers are considered visitors unless they exit the cab of the respective vehicle. • If exiting the cab of the delivery/demobilization vehicle, truck drivers are considered workers and therefore must be briefed on and sign acknowledgment of the respective IWD. • If designated as workers, delivery/demobilization personnel shall comply with all safety and control 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Valid Driver's license • Operator will be certified by employer as a competent operator of the equipment

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

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		measures in the respective IWD.		
Staging Materials and Equipment	Personal Injury or Property Damage	<ul style="list-style-type: none"> Casing, drill rods, and tremie pipe shall be racked and blocked on appropriate cribbing off the ground surface to facilitate forklift retrieval and ensure minimal manual labor/assistance. 	<ul style="list-style-type: none"> Operating manuals Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" 	<ul style="list-style-type: none"> Valid driver's license Operator will be certified by employer as a competent operator of the equipment. Daily tailgate safety meeting and pre-job briefing
Staging Materials and Equipment	Personnel Injury, Property or Environmental Damage	<ul style="list-style-type: none"> Supplies including borehole and well completion materials (e.g., sand, bentonite, cement, pre-mixed grout) shall be staged on pallets off the ground surface and protected from sunlight exposure or inclement weather to facilitate forklift retrieval and ensure minimal manual labor/assistance. 	<ul style="list-style-type: none"> Operating manuals Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" 	<ul style="list-style-type: none"> Valid driver's license Operator will be certified by employer as a competent operator of the equipment Daily tailgate safety meeting and pre-job briefing
Staging Materials and Equipment	Property or Environmental Damage from Chemical Storage	<ul style="list-style-type: none"> Chemicals staged at R-66 shall use appropriately labeled chemical cabinets or storage units (e.g., secondary containment and/or clamshells for used or unused oil or lubricants, flammable cabinet for fuels, chemical cabinet for storing acid/base sample 	<ul style="list-style-type: none"> Eberline Services' <i>ESH-PROG-02, Chemical Handling and Management Program</i> 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing

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Work Document #: (work order #) Subcontract No. 89795-002-11			
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		preservatives). <ul style="list-style-type: none"> Storage cabinets shall be centralized to the work area, use secondary containment and have fire extinguisher(s) within usable proximity, 		
Staging Materials and Equipment	Property Loss from Theft	<ul style="list-style-type: none"> Inventories of Eberline Services’ materials, equipment, chemicals, and waste stored at R-66 shall be maintained by Eberline Services or respective lower-tier subcontractors. Upon detection, any inventory discrepancy shall be immediately communicated to the STR with supporting dates, quantities, volumes, and monetary value. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing

Task 3. Site Maintenance

Hazards and controls as listed above in “General Activities” with emphasis on the following specific work tasks, hazards, and controls

Installing/Inspecting Erosion Controls	Injury from Hand Tools (shovel, rake, spud bar)	<ul style="list-style-type: none"> No equipment or supplies shall be staged on erosion control berms. All hand tools shall be inspected by the user before use. Personnel will be instructed to use hand tools for their intended purpose. Wooden handles shall be free of splinters or cracks and shall be firmly attached to the tool. Use the tool in accordance with manufacturer’s operating rules or safe practices. Wear required personal protective equipment such as eye/face protection, work gloves, and safety shoes. 	<ul style="list-style-type: none"> Eberline Services’ <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory, Section 17.0 “Tools and Equipment”</i> 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing
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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

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Installing/Maintaining Erosion Controls	Back Injury	<ul style="list-style-type: none"> • Use mechanical lift-assist equipment when practicable. • Repackage to reduce weight and/or bulk. • Ensure travel path is clear of obstructions. • Use proper lifting technique to safely lift the load. • Place feet close to load and lift mostly by straightening the legs, keeping the load close to the body. • Lift with legs and stand up in a smooth, even motion. • Do not twist the back or bend sideways. 	<ul style="list-style-type: none"> • OSHA Technical Manual, Section VII: Chapter 1, Back Disorders and Injuries, Sec. V. Prevention and Control 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
Snow Removal	Equipment Operation	<ul style="list-style-type: none"> • Inspect heavy equipment upon its arrival to the site and daily prior to start of work shift. • Equipment will be inspected per manufacturer's recommendations and good industry practice. • Defective equipment shall be removed from service, and any defects shall be corrected or repaired before equipment is put into service. • Records of each inspection shall be kept readily available for review. • Be observant as to your location with respect to moving and overhead parts. • Approach the equipment only after making eye contact with the operator and then only when necessary. • Be observant as to your location with respect to heavy equipment. • Level D PPE will be worn unless unexpected contaminants or hazards are encountered, then the 	<ul style="list-style-type: none"> • Operating manuals • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" 	<ul style="list-style-type: none"> • Valid driver's license • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job briefing • Valid driver's license

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		PPE will be upgraded as appropriate.		
Task 4. Setting up the Drilling Rig and Auxiliary Equipment				
Hazards and controls as listed above in “General Activities” with emphasis on the following specific work tasks, hazards, and controls				
Setting up the Drill Rig	Improper Drill Rig Setup	<ul style="list-style-type: none"> • Drill rig must be level. Outriggers shall be fully extended, and pads used as necessary in soft soil. • Drill rigs must be leveled in accordance with manufacturer’s recommendations. • Observe overhead power-line clearances (see Task 2, Mobilization/Demobilization of Equipment) 	<ul style="list-style-type: none"> • Operating manuals • Eberline Services’ <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 “Motor Vehicles and Powered Industrial Equipment” 	<ul style="list-style-type: none"> • Valid driver’s license • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job briefing • Valid driver’s license
Setting up the Drill Rig	Underground Utilities	<ul style="list-style-type: none"> • Per Exhibit D, Section 2.1.2, CONTRACTOR will also complete ... the excavation permitting process prior to SUBCONTRACTOR arriving at the site. 	<ul style="list-style-type: none"> • Excavation/Soil Disturbance Permit 11X-0159 for R-66 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing

IWD – PART 1 (Activity Specific Information)

IWD#: Eberline Services' Task Order 2 R-66 IWD, R0		Activity/Task Title: Implementation of the Drilling Work Plan for Regional Aquifer Well R-66 for Task Order 2, subcontract number 89795-002-11, under the Drilling Master Task Ordering Agreement (MTOA), subcontract number 89795-000-11.	
Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
Loading/Unloading Materials	Heavy Equipment Operation	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/ Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/ Demobilization of Equipment.
Operating the hoisting mechanism in the mast	Failure of Rig Hoisting and Rigging Equipment	<ul style="list-style-type: none"> • Competent person will inspect the drill rig upon arrival to the site and daily prior to start of work shift. • Equipment will be inspected per manufacturer's recommendations and good industry practice. • Only qualified personnel shall operate the drill rig per DOE (<i>Drilling Safety Manual</i>, 1983 and <i>Construction Safety Reference Guide</i>, 1993) • Drill rigs shall be designed, manufactured, erected, used, and maintained in accordance with appropriate American Petroleum Institute (API) Specifications and Recommended Practices. Hoist, hooks, wires, ropes, slings, and rigging accessories shall be designed, installed, operated, inspected, and tested in accordance with applicable requirements of the <i>DOE Hoisting and Rigging Manual</i> (April 1993, DOE/ID-10500). • There shall be no apparent damage, excessive wear, or deformation of any part of the drilling equipment. • Equipment shall be inspected by a qualified/ competent person at the frequencies indicated below. Defective equipment shall be removed from service, and any defects shall be corrected or repaired before equipment is put into service. Records of each inspection shall be kept readily 	<ul style="list-style-type: none"> • Operating manuals • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" 	<ul style="list-style-type: none"> • Valid driver's license • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job briefing

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		available for review. Reduction of original strength shall be noted and taken into account for determining when equipment shall be taken out of service. <ul style="list-style-type: none"> ▪ Rigs and masts shall be inspected daily. ▪ Augers and casing shall be inspected before use. ▪ Hoists, hooks, wires, ropes, slings, and rigging accessories shall be inspected at the beginning of each shift that they are to be used and as necessary during use to ensure safety. Hoisting lines shall be inspected visually each day and thoroughly at a minimum of 30-day intervals. <ul style="list-style-type: none"> • Each derrick or mast and hoist shall be permanently marked with its rating capacity. • Pressure-hose connections shall be secured with safety chains or other suitable devices, or clamped to prevent whipping in the event of a breakage. 		
Setting up air compressor(s)	Exposure to concentrated high air pressure, flying objects, and hose whip.	<ul style="list-style-type: none"> • Prior to use on each shift, operator or helpers complete daily heavy equipment inspection, including all hoses, fittings, valves, safety valves, whip checks, and regulators. • Any item found to be defective shall be removed from service or repaired prior to use. • Follow manufacturer's specifications, warning labels, operator's manual. • Avoid exposing body parts to compressed air. • Use connections rated and designed for air pressures and air-flow capacity. • Use appropriately sized whip checks on all fitting connections transferring the high air pressure and 	<ul style="list-style-type: none"> • Manufacturer's specifications, warning labels, operator's manual 	<ul style="list-style-type: none"> • Eberline Services' ESH-PROG-03, <i>Hearing Conservation Program</i> briefing • Daily tailgate safety meeting and pre-job briefing

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		air flow. • All hoses exceeding ½-inch in diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.		
Setting up air compressor(s)	Exposure to Excessive Noise	<ul style="list-style-type: none"> • Evaluate hearing zone(s) of the employees affected by excessive noise first day of occurrence and whenever activities change (e.g., new site, extra compressor) • Periodic monitoring frequency thereafter per ES&H Representative’s discretion. • Utilize controls to maintain noise exposure below 85dBA for an 8-hour TWA and Impulse noise below 130dBA • When feasible, implement engineering controls to reduce excessive noise levels. Post zones of excessive noise, and limit access to authorized employees. Increase distance between employee and work zones and noise operations when possible. • Work Areas Requiring hearing protection will be determined using noise monitoring. The boundary of these areas will be posted. For ease of delineation, site/natural boundaries may be used, even if some of the area is below the action level. • Wear hearing protection as required by postings and activities. 	<ul style="list-style-type: none"> • Eberline Services’ ESH-PROG-03, <i>Hearing Conservation Program</i> 	<ul style="list-style-type: none"> • Eberline Services’ ESH-PROG-03 “Hearing Conservation Program” briefing • Daily tailgate safety meeting and pre-job briefing

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
Task 5. Drilling Operations				
Hazards and controls as listed above in “General Activities” with emphasis on the following specific work tasks, hazards, and controls				
Drilling Operations	Failure of Rig Hoisting and Rigging Equipment	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment. 	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment. 	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment.
Drilling Operations	Pinch Points	<ul style="list-style-type: none"> • Be aware of drilling operations and heed operator’s signals to stand clear or approach the drilling rig. • Only trained drilling personnel shall approach live drilling operations. • Be aware of locations on the heavy equipment where pinch points may be a concern and be especially careful around those areas. • Ensure proper guards and safety devices are in place and functioning. • Level D PPE will be worn unless unexpected contaminants or hazards are encountered. PPE will be upgraded as appropriate. • Wear appropriate work gloves when working around pinch points. 	<ul style="list-style-type: none"> • Manufacturer’s specifications, warning labels, operator’s manual 	<ul style="list-style-type: none"> • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job briefing

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Work Document #: (work order #) Subcontract No. 89795-002-11			
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Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
Drilling Operations	Crushing Hazards and Rotating Parts	<ul style="list-style-type: none"> • Emergency kill switches shall be confirmed operational. • Only trained drilling personnel shall approach live drilling operations. • Be aware of drilling operations, and heed operator's signals to stand clear or approach the drilling rig • Be observant as to your location with respect to moving, rotating, and overhead parts. • Personnel shall not wear loose clothing, badge lanyards, or jewelry around rotating parts. Long hair shall be pulled back. • Approach the drill rig only after making eye contact with the operator and then only when necessary. 	<ul style="list-style-type: none"> • Manufacturer's specifications, warning labels, operator's manual 	<ul style="list-style-type: none"> • Operator will be certified by employer as a competent operator of the equipment • Daily tailgate safety meeting and pre-job briefing
Drilling Operations	Fall from elevated work position	<ul style="list-style-type: none"> • Include the aerial lift equipment on the Major Equipment Declaration Form. • Do not exceed the boom and basket load limits specified by the manufacturer that will be clearly visible on the lifting equipment. • All work performed over six feet above the ground surface requires fall protection. • Fall protection equipment shall be inspected prior to use and removed from service if warranted. • Personnel will be trained on the specific aerial lift and/or fall protection equipment. • Follow manufacturer's instructions on the safe use of aerial lift and/or fall protection equipment. • Only authorized/trained persons shall operate an aerial lift or use fall protection equipment. • Belting off to an adjacent pole, structure, or 	<ul style="list-style-type: none"> • 29CFR1926.453, <i>Aerial Lifts</i> • 29CFR1926.500, <i>Fall Protection</i> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 16.0 "Motor Vehicles and Powered Industrial Equipment" • Eberline Services' <i>ESH-PROG-4, Fall Protection Program</i> 	<ul style="list-style-type: none"> • Operator will be "authorized" by his employer as a qualified operator of the aerial lift equipment (§1926.453(b)(2)(ii)). • Eberline Services' <i>ESH-PROG-4, Fall Protection Program</i>, or equivalent training • Daily tailgate safety meeting

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		<p>equipment while working from an aerial lift shall not be permitted.</p> <ul style="list-style-type: none"> • Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position. • All persons inside the work platform shall wear a full body harness and a lanyard attached to the boom or basket designated anchoring points when working from an aerial lift. • The brakes shall be set and when outriggers are used, they shall be positioned on pads or a solid. 	<ul style="list-style-type: none"> • Manufacturer's specifications, warning labels, operator's manual 	<p>and pre-job briefing</p>
Drilling Operations	Pressurized Systems (hydraulic and air)	<ul style="list-style-type: none"> • All pressurized systems are to be inspected upon their arrival to the site and daily prior to use on each shift. • Maintenance on pressurized systems to be performed by qualified site personnel only. • Prior to maintenance, the operator shall verify pressure has been released from systems before proceeding. • Operations and maintenance on all pressurized systems shall be conducted per manufacturer's recommendations. • Pressure-hose connections shall be secured with safety chains or other suitable devices, or clamped to prevent whipping in the event of a breakage. 	<ul style="list-style-type: none"> • Manufacturer's specifications, warning labels, operator's manual 	<ul style="list-style-type: none"> • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job briefing
Drilling Operations	Exposure to Excessive Noise	<ul style="list-style-type: none"> • Evaluate hearing zone(s) of the employees affected by excessive noise first day of occurrence and whenever activities change (e.g., new site, extra compressor) 	<ul style="list-style-type: none"> • Eberline Services' ESH-PROG-03, <i>Hearing Conservation</i> 	<ul style="list-style-type: none"> • Eberline Services' ESH-PROG-03, <i>Hearing</i>

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

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		<ul style="list-style-type: none"> • Periodic monitoring frequency thereafter per ES&H Professional's discretion. • Utilize controls to maintain noise exposure below 85dBA for an 8-hour TWA and Impulse noise below 130dBA • When feasible, implement engineering controls to reduce excessive noise levels. Post zones of excessive noise and limit access to authorized employees. Increase distance between employee and work zones and noise operations when possible. • Work Areas Requiring hearing protection will be determined using noise monitoring. The boundary of these areas will be posted. For ease of delineation, site/natural boundaries may be used, even if some of the area is below the action level. • Wear hearing protection as required by postings and activities. 	<i>Program</i>	<p><i>Conservation Program</i> briefing</p> <ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
Drilling Operations (installing and/or removing casing)	Pinching, Crushing, Slips, Trips, Falls	<ul style="list-style-type: none"> • Be aware of drilling operations and heed operator's signals to stand clear or approach the drilling rig. • Only trained drilling personnel shall approach live drilling operations. • Be observant as to your location with respect to moving and overhead parts. • The area within one mast height of the drill rig will be established as a safety zone. All visitors and employees will be notified to remain out of this safety zone unless it is absolutely necessary to enter. If entry into the safety zone is required, personnel will approach the drill rig only after 	<ul style="list-style-type: none"> • Manufacturer's specifications, warning labels, operator's manual 	<ul style="list-style-type: none"> • Operator will be certified by employer as a competent operator of the equipment. • Helpers will be trained by the Drilling company on specific hazards of drilling operations.

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		receiving approval of the operator.		<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
Drilling Operations	Heavy Equipment Operation	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/ Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/ Demobilization of Equipment.
Cuttings Sample Collection	Exposure to Contamination	<ul style="list-style-type: none"> • Personnel shall wear nitrile gloves when handling sample material or decontaminating supplies. Do not wear gloves containing natural rubber latex as allergic reactions may occur. • Personnel shall wear Level D PPE unless unexpected contaminants or hazards are encountered. PPE will be upgraded as appropriate. • Personnel shall wear hard hat within drill rig cone of safety. 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 12.0 "Personal Protective Equipment" 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
Decontaminating Drilling Tools & Sampling Equipment	Exposure to Chemicals	<ul style="list-style-type: none"> • Dry decontamination techniques will be utilized wherever possible to minimize waste. • Personnel shall wear nitrile gloves when handling sample material or decontaminating supplies. Do not wear gloves containing natural rubber latex as allergic reactions may occur. • Personnel will be trained on Material Safety Data Sheets (MSDSs), hazards, and PPE requirements for chemicals used. • Personnel shall wear safety glasses. 	<ul style="list-style-type: none"> • Eberline Services' <i>ESH-PROG-02, Chemical Handling and Management Program</i> 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
Refueling Equipment	Fuel Spill	<ul style="list-style-type: none"> • Per Exhibit D, Section 3.23, LANL will refuel the drill rig and compressors on site. • All other equipment (rig tender, generator(s), light 	<ul style="list-style-type: none"> • Eberline Services' <i>ESH-PROG-02, Chemical Handling</i> 	<ul style="list-style-type: none"> • Eberline Services' <i>ESH-PROG-02,</i>

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

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		<p>plants, crew vehicles will be fueled by SUBCONTRACTOR off site, if possible.</p> <ul style="list-style-type: none"> • A spill kit will be kept on site, and personnel shall be trained to use the kit. • All equipment will be thoroughly inspected before use. • Plastic sheeting will be placed beneath all stationary spill sources (e.g., drilling rig, compressors, generator, light plant) to contain any potential spills. • Flammable and combustible liquids shall be stored in a fire proof cabinet. • All spills, no matter the quantity, will be reported to the STR and logged in the LWSP's project-specific SWPPP. • LWSP and ENV-RCRA personnel will contact regulatory agencies, if required. 	<i>and Management Program</i>	<p><i>Chemical Handling and Management Program</i> briefing</p> <ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
Refueling Equipment	Fire	<ul style="list-style-type: none"> • At least one fire extinguisher (ABC) shall be maintained readily accessible. • Flammable and combustible liquids shall be stored in a fire-proof cabinet. • No open flames or spark-producing activities will be allowed during refueling. • Maintain on-site the appropriate fire extinguisher for anticipated class of fire. • Fire Extinguishers will be inspected monthly and the inspection will be documented on inspection tags attached to the fire extinguishers. • All equipment shall be shut off before being 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 21.0 "Fire Protection and Prevention" • OSHA 29 CFR 1910.157, <i>Portable Fire Extinguishers</i> 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing • Fire Extinguisher Training

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		refueled.		
Welding, Cutting, Grinding	Fire	<ul style="list-style-type: none"> • An active spark or flame-producing operations permit will be in place. • Inspect equipment before use. • Maintain the appropriate fire extinguisher in the area of spark or flame-producing operations. • Fire Extinguishers will be inspected monthly and the inspection will be documented on inspection tags attached to the fire extinguishers. • Welding and cutting will be performed at least 35 feet away from all combustible or ignitable materials. • Complete training in the proper use of welding and cutting equipment. • Place welding cables and other equipment clear of passage ways. • Shut off and/or de-energize equipment before leaving the work area. • Use of a designated fire watch to watch for fires during the operation and to remain in the area for 30 minutes following operations to assure a fire doesn't start. • Spent welding rods and cut materials must be disposed of properly. • All gases must be shut off at the cylinder valve when the operation is complete. • Use engineering controls to reduce fire hazards, (e.g., wet method). 	<ul style="list-style-type: none"> • Eberline Services' ESH-PROG-01, <i>Welding and Cutting Safety Procedure</i> • Eberline Services' ESH-PLAN-01, <i>Fire Hazard Control Plan</i> • LANL Fire Protection Program, PD1220, Rev 2 	<ul style="list-style-type: none"> • Eberline Services' ESH-PROG-01, <i>Welding and Cutting Safety Procedure</i> briefing • Eberline Services' ESH-PLAN-01, <i>Fire Hazard Control Plan</i> briefing • Daily tailgate safety meeting and pre-job briefing
Welding, Cutting, Grinding	Gas Cylinder Storage	<ul style="list-style-type: none"> • All gas cylinders not in use shall be capped, stored, 	<ul style="list-style-type: none"> • Eberline Services' 	<ul style="list-style-type: none"> • Eberline

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		<p>and managed per OSHA 29 CFR 1926.350(a)(10) Storage of Cylinders-General.</p> <ul style="list-style-type: none"> • Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet (6.1 m) or by a noncombustible barrier at least 5 feet (1.5 m) high, having a fire-resistance rating of at least one-half hour, • Definition of "in-storage" gas cylinders: a cylinder is in storage when it is reasonably anticipated that gas will not be drawn from the cylinder within 24 hours (overnight hours included). • Cylinders, cylinder valves, couplings, regulators, hose, and apparatus shall be kept free from oily or greasy substances. Oxygen cylinders or apparatus shall not be handled with oily hands or gloves. A jet of oxygen must never be permitted to strike an oily surface, greasy clothes, or enter a fuel oil or other storage tank. 	<p>ESH-PROC-01, <i>Welding and Cutting Safety Procedure</i></p> <ul style="list-style-type: none"> • OSHA 29 CFR1926.350(a)(10) <i>Storage of Cylinders-General</i>. • LANL Fire Protection Program, PD1220, Rev 2 	<p>Services' ESH-PROG-01, <i>Welding and Cutting Safety Procedure</i> briefing</p> <ul style="list-style-type: none"> • Eberline Services' ESH-PLAN-01, <i>Fire Matrix Hazard Control Plan</i> briefing • Daily tailgate safety meeting and pre-job briefing
Welding, Cutting, Grinding	Eye Flash Burn	<ul style="list-style-type: none"> • Appropriate welding hoods and cutting goggles or shields shall be worn by personnel performing welding and cutting operations. • Hoods and goggles shall be integrated with hard hat requirements. • Nonessential onsite personnel shall be trained to stay clear of and not look directly at welding and cutting operations. • Complete training in the proper use of welding and cutting equipment. • Welding shields will be used to protect onsite and offsite personnel from eye flash burn. 	<ul style="list-style-type: none"> • OSHA 29 CFR 1910.252 Subpart Q, <i>Welding, Cutting, and Brazing</i> • LANL Fire Protection Program, PD1220, Rev 2 • Eberline Services' ESH-PROC-01, <i>Welding and Cutting Safety Procedure</i> • OSHA 29 CFR 	<ul style="list-style-type: none"> • Eberline Services' ESH-PROC-01, <i>Welding and Cutting Safety Procedure</i> briefing • Eberline Services' ESH-PLAN-01, <i>Fire Hazard Control Plan</i> briefing

IWD – PART 1 (Activity Specific Information)

IWD#: Eberline Services' Task Order 2 R-66 IWD, R0		Activity/Task Title: Implementation of the Drilling Work Plan for Regional Aquifer Well R-66 for Task Order 2, subcontract number 89795-002-11, under the Drilling Master Task Ordering Agreement (MTOA), subcontract number 89795-000-11.	
Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
			1910.252 Subpart Q, <i>Welding, Cutting, and Brazing</i>	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
Welding, Cutting, Grinding	Burns	<ul style="list-style-type: none"> • Proper welding hood will be used. • Personnel shall be qualified in the proper use of welding equipment. • Proper welding apparel shall be on site. • Wear fire retardant clothing (leather gloves, sleeves, aprons). • Welded or cut materials shall be staged and allowed to cool to prevent burns. • Non-essential personnel (except fire watch) shall be restricted from the immediate vicinity of welding and cutting operations, including handling cut materials (casing). • A first aid kit will be available on site. 	<ul style="list-style-type: none"> • Manufacturer's specifications, warning labels, operator's manuals • OSHA 29 CFR 1910.252 Subpart Q, <i>Welding, Cutting, and Brazing</i> • Eberline Services' ESH-PROC-01, <i>Welding and Cutting Safety Procedure</i>" 	<ul style="list-style-type: none"> • Eberline Services' ESH-PROC-01, <i>Welding and Cutting Safety Procedure</i> briefing • Compressed gas cylinder safety training • Daily tailgate safety meeting and pre-job briefing • First Aid/CPR

Task 6. Recovery of Lodged Equipment

Hazards and controls as listed above in "General Activities" with emphasis on the following specific work tasks, hazards, and controls

Lodged Equipment	Equipment Stuck in Borehole (abnormal condition)	<ul style="list-style-type: none"> • Suspend activities once an abnormal condition arises. • Inform line management prior to proceeding with any operations once an abnormal condition arises. • Line management will review situation and authorize all actions during abnormal conditions. 	<ul style="list-style-type: none"> • Eberline Services' T.O. #2 R-66 FIP "Conduct of Operations" • Manufacturer's specifications, warning labels, operator's manual 	<ul style="list-style-type: none"> • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job
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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
				briefing
Lodged Equipment	Unintentional Break of Wireline or Cable	<ul style="list-style-type: none"> Do not exceed rated load capacities of cable or drill rods. The rated load capacities, warning, and instructions shall be reviewed and strictly adhered to by the drill rig operator. Rated load capacities for all cables or drill rods will be posted in plain view of the drill rig operator. Maximum hook load based on gear ratio will be posted in plain view of drill rig operator. 	<ul style="list-style-type: none"> Eberline Services' T.O. #2 R-66 FIP "Conduct of Operations" Manufacturer's specifications, warning labels, operator's manual 	<ul style="list-style-type: none"> Operator will be certified by employer as a competent operator of the equipment. Daily tailgate safety meeting and pre-job briefing
Lodged Equipment	Forced Break of Wireline or Cable	<ul style="list-style-type: none"> Suspend activities once an abnormal condition arises. Inform line management prior to proceeding with any operations once an abnormal condition arises. Line management will review situation and authorize all actions during abnormal conditions. 	<ul style="list-style-type: none"> Eberline Services' T.O. #2 R-66 FIP "Conduct of Operations" Manufacturer's specifications, warning labels, operator's manual 	<ul style="list-style-type: none"> Operator will be certified by employer as a competent operator of the equipment.
Fishing	Fishing String Failure	<ul style="list-style-type: none"> Do not exceed rated load capacities of drilling rig. The rated load capacities, warning, and instructions shall be reviewed and strictly adhered to by the drill rig operator. Rated load capacities for all fishing tools will be posted in plain view of the drill rig operator. Maximum hook load based on gear ratio will be posted in plain view of drill rig operator. Only essential personnel will located within 20 ft. of the drill rig while tension is placed on the lodged tooling. 	<ul style="list-style-type: none"> Eberline Services' T.O. #2 R-66 FIP "Conduct of Operations" Manufacturer's specifications, warning labels, operator's manual 	<ul style="list-style-type: none"> Operator will be certified by employer as a competent operator of the equipment.

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Work Document #: (work order #) Subcontract No. 89795-002-11			
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Task 7. Geophysical Logging				
Hazards and controls as listed above in "General Activities" with emphasis on the following specific work tasks, hazards, and controls				
Geophysical Logging	Failure of Logging Equipment Hoisting and Rigging	<ul style="list-style-type: none"> • Competent person will inspect the geophysical rig upon arrival to the site and daily prior to start of work shift. • Equipment will be inspected per manufacturer's recommendations and good industry practice. • Only qualified and trained personnel shall operate the geophysical logging equipment. • There shall be no apparent damage, excessive wear, or deformation of any part of the geophysical logging equipment. 	<ul style="list-style-type: none"> • Manufacturer's specifications, warning labels, operator's manual 	<ul style="list-style-type: none"> • Operator will be certified by employer as a competent operator of the equipment. • Daily tailgate safety meeting and pre-job briefing
Geophysical Logging	Exposure to ionizing radiation	<ul style="list-style-type: none"> • Geophysical borehole logging may involve introducing a radiation sealed source into LANL property. • Specific source details including type and current leak test data must be submitted to and approved by LANL Radiation Protection prior to entering LANL property. • LANL Radiation Protection personnel must screen the sealed source before it enters and departs LANL Property. • Schlumberger's radiation work control procedure shall apply to all activities involving the radioactive sealed source. • Nonessential personnel will follow geophysical logging direction to stand back or depart the site during surface handling of the radioactive sealed source. 	<ul style="list-style-type: none"> • Manufacturer's specifications, warning labels, operator's manual • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 47.0 "Radioactive Sealed Sources and/or Radiation Generating Devices" 	<ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing • Schlumberger's radiation work control procedure briefing for non-Schlumberger personnel remaining on site

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Work Document #: (work order #) Subcontract No. 89795-002-11			
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Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
Geophysical Logging	Pinch Points	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations.
Task 8. Well Installation				
Hazards and controls as listed above in “General Activities” with emphasis on the following specific work tasks, hazards, and controls				
Well Installation	Pinching, Crushing, Slips, Trips, Falls	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations.
Well Installation	Back injury	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment.
Well Installation	Failure of Rig Hoisting and Rigging Equipment	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment. 	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment. 	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment.
Well Installation	Improper Drill Rig Setup	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment. 	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment. 	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment.
Well Installation	Pinch Points	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations.
Well Installation	Crushing Hazards and Rotating Parts	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations.

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Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
Well Installation	Pressurized Systems (hydraulic and air)	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations.
<p>Task 9. Well Backfill</p> <p>Hazards and controls as listed above in “General Activities” with emphasis on the following specific work tasks, hazards, and controls</p>				
Well Backfill	Heavy Equipment Operation	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment.
Well Backfill	Exposure to silica dust	<ul style="list-style-type: none"> • MSDSs for well backfill materials (sand, bentonite) will be available on site. • To document personnel training, well-completion material MSDSs and respective chemical hazards will be discussed during daily safety tailgate meetings when well backfilling task begins. • Well backfill materials (sand, bentonite) will be tremied into the well annular space using potable water. • If pouring well backfill materials results in excessive dust, implement engineering controls (e.g., wet method) as necessary. • If engineering controls (e.g., wet method) fail to mitigate excessive dust, disposable respirators (e.g., Moldex™ N95 Standard Respirator) will be available on site to personnel in the immediate area of the dust-producing activity. • Employees will be medically qualified and trained on the respiratory protection program prior to using any respirators – including disposable 	<ul style="list-style-type: none"> • Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory</i>, Section 13.0 “Respiratory Protection” • Eberline Services' <i>ESH-PROC-7.3, Use of Respiratory Protection Procedure</i> 	<ul style="list-style-type: none"> • Eberline Services' <i>ESH-PROC-7.3, Use of Respiratory Protection Procedure</i> briefing • Daily tailgate safety meeting and pre-job briefing

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Work Document #: (work order #) Subcontract No. 89795-002-11			
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		<ul style="list-style-type: none"> If dust level exceeds 3 mg/m³ (ACGIH 2011), temporarily suspend work, re-evaluate conditions and controls. 		
Task 10. Removing Lodged Casing				
Hazards and controls as listed above in “General Activities” with emphasis on the following specific work tasks, hazards, and controls				
Mobilization of Casing Jacks	Slips, trips, and falls	<ul style="list-style-type: none"> See Task 1, General Activities. 	<ul style="list-style-type: none"> See Task 1, General Activities. 	<ul style="list-style-type: none"> See Task 1, General Activities.
Mobilization of Casing Jacks	Pinch Points	<ul style="list-style-type: none"> See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> See Task 5, Drilling Operations.
Pulling on Casing	Unintentional Break of casing	<ul style="list-style-type: none"> Do not exceed rated strength capacities of casing jacks. The rated strength capacities, warning, and instructions shall be reviewed and strictly adhered to by the drill rig operator. Maximum strength of casing jacks will be set so not to exceed the strength of casing. 	<ul style="list-style-type: none"> Eberline Services’ FIP “Conduct of Operations” Manufacturer’s specifications, warning labels, operator’s manual 	<ul style="list-style-type: none"> Operator will be certified by employer as a competent operator of the equipment. Daily tailgate safety meeting and pre-job briefing
Pulling on Casing	Hydraulic hose breakage with extreme pressures applied	<ul style="list-style-type: none"> See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> See Task 5, Drilling Operations.
Pulling on Casing	Burns from hydraulic oil, fittings, and hose	<ul style="list-style-type: none"> Use caution, avoid contact with hot areas and/or spilled hydraulic oil A first aid kit shall be on site 	<ul style="list-style-type: none"> Manufacturer’s specifications, warning labels, operator’s manual 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing

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Work Document #: (work order #) Subcontract No. 89795-002-11			
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Removing Casing	Hot Work	<ul style="list-style-type: none"> • See Task 5, Welding, Cutting, Grinding 	<ul style="list-style-type: none"> • See Task 5, Welding, Cutting, Grinding 	<ul style="list-style-type: none"> • See Task 5, Welding, Cutting, Grinding
Task 11. Well Development and Aquifer Testing				
Hazards and controls as listed above in “General Activities” with emphasis on the following specific work tasks, hazards, and controls				
Well Development and Aquifer Testing	Electrical Shock from High-Voltage Portable Generator	<ul style="list-style-type: none"> • Inspect all energized equipment prior to use. • GFCIs are required for all electrical equipment used outdoors. • Routine maintenance on equipment will be provided by onsite personnel. • Non-routine maintenance will be performed by qualified electrician only. • Proper grounding of all portable generators as required per manufacturer's specifications. • Use only electrical equipment that is listed by a Nationally Recognized Testing Laboratory (NRTL). • Extension cords shall not be used in series. • Only outdoor rated equipment shall be used. 	<ul style="list-style-type: none"> • LANL Electrical Safety Program P101-13 • Eberline Services' ESH-PROG-06, <i>Electrical Safety Program</i> 	<ul style="list-style-type: none"> • Eberline Services' ESH-ESH-PROG-06, <i>Electrical Safety Program</i> • Daily tailgate safety meeting and pre-job briefing
Well Development and Aquifer Testing	Failure of Rig Hoisting and Rigging Equipment	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment. 	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment. 	<ul style="list-style-type: none"> • See Task 4, Setting up the Drilling Rig and Auxiliary Equipment.
Well Development and Aquifer Testing	Pinch Points	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations.

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Task 12. Well-Head Completion				
Hazards and controls as listed above in “General Activities” with emphasis on the following specific work tasks, hazards, and controls				
Pouring Cement or Grout	Slips, Trips and Falls	<ul style="list-style-type: none"> • See Task 1, General Activities. 	<ul style="list-style-type: none"> • See Task 1, General Activities. 	<ul style="list-style-type: none"> • See Task 1, General Activities.
Borehole Abandonment	Pressurized Systems	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations. 	<ul style="list-style-type: none"> • See Task 5, Drilling Operations.
Working with Cement or Grout	Chemical Exposure	<ul style="list-style-type: none"> • See Task 1, General Activities. 	<ul style="list-style-type: none"> • See Task 1, General Activities. 	<ul style="list-style-type: none"> • See Task 1, General Activities.
Mixing Cement or Grout	Dust Exposure	<ul style="list-style-type: none"> • See Task 1, General Activities. 	<ul style="list-style-type: none"> • See Task 1, General Activities. 	<ul style="list-style-type: none"> • See Task 1, General Activities.
Task 13. On-site Waste Management				
Hazards and controls as listed above in “General Activities” with emphasis on the following specific work tasks, hazards, and controls				
Waste Inspections	Unauthorized work and unaccounted for personnel	<ul style="list-style-type: none"> • To be authorized, all work must be listed on LANL Corrective Actions Program (CAP) Plan of the Day (POD) or Daily Shift Order. • Site representative (ES&H Representative, Field Geologist, Drilling Supervisor) shall contact the TA-64 Operations Center to report the number of personnel on site and the representative’s name: <ul style="list-style-type: none"> • When entering the field • Every 2 hours throughout the day/shift • When personnel arrive or depart • When moving to a new location 	<ul style="list-style-type: none"> • MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness Requirements) “SUBCONTRACTOR must comply with CONTRACTOR’s emergency response requirements” • Eberline Services’ T.O. #2 R-66 IWD 	<ul style="list-style-type: none"> • General Employee Training (GET) • Eberline Services’ T.O. #2 R-66 IWD Part 1 (Form 2100A) briefing • IWD Part 3 (Form 2103 Validation and Release)

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Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
		<ul style="list-style-type: none"> • When leaving the field. 	Part 1 (Form 2100A) <ul style="list-style-type: none"> • Eberline Services' T.O. #2 Training Matrix 	employee signature <ul style="list-style-type: none"> • Daily tailgate safety meeting and pre-job briefing
Waste Inspections	Access to R-66	<ul style="list-style-type: none"> • Access to R-66 is controlled by Videx Key. • All Visitors and Delivery Personnel not having Videx Keys Issued to them will contact the Lead Geologist to coordinate Access to the Site. 	<ul style="list-style-type: none"> • MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness Requirements) "SUBCONTRACTOR must comply with CONTRACTOR's emergency response requirements" • Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) 	<ul style="list-style-type: none"> • General Employee Training (GET) • Eberline Services' T.O. #2 R-66 IWD Part 1 (Form 2100A) briefing • IWD Part 3 (Form 2103 Validation and Release) employee signature • Daily tailgate safety meeting and pre-job briefing
Waste Inspections	Emergency Communication	<ul style="list-style-type: none"> • Emergency communication (cellular telephones LANL Corrective Actions Project (CAP) two-way radios). 	<ul style="list-style-type: none"> • MTOA 89795-000-11 Exhibit F Section F11.0 (Emergency Preparedness Requirements) "SUBCONTRACTOR must comply with 	<ul style="list-style-type: none"> • General Employee Training (GET) • Eberline Services' R-66 FIP briefing • Daily tailgate

IWD – PART 1 (Activity Specific Information)

IWD#: Eberline Services' Task Order 2 R-66 IWD, R0		Activity/Task Title: Implementation of the Drilling Work Plan for Regional Aquifer Well R-66 for Task Order 2, subcontract number 89795-002-11, under the Drilling Master Task Ordering Agreement (MTOA), subcontract number 89795-000-11.	
Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
			CONTRACTOR's emergency response requirements" • Eberline Services' T.O. #2 R-66 Field Implementation Plan (FIP)	safety meeting and pre-job briefing
Waste Storage	Property or Environmental Damage	<ul style="list-style-type: none"> Liquid waste materials shall be stored atop secondary containment having sufficient capacity. Industrial or special waste containers shall have secure covers to prevent waste from eolian or wildlife distribution. Municipal waste containers shall have secure covers to prevent waste from eolian or wildlife distribution. Municipal waste containers shall be emptied regularly, and at a minimum weekly, to prevent waste from eolian or wildlife distribution. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing Waste Generation Overview RCRA Personnel and current RCRA Refresher
Waste Storage	Property or Environmental Damage	<ul style="list-style-type: none"> Municipal waste containers shall have secure covers to prevent waste from eolian or wildlife distribution. Municipal waste containers shall be emptied regularly, and at a minimum weekly, to prevent waste from eolian or wildlife distribution. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing
Opening and Sealing Waste Containers	Pinch Points	<ul style="list-style-type: none"> Personnel shall wear leather or equivalent work gloves. Use the correct tool. Be mindful of hand placement 	<ul style="list-style-type: none"> Eberline Services' <i>ES&H Plan for Professional Services and Drilling Support MTOA at Los Alamos National Laboratory,</i> 	<ul style="list-style-type: none"> Daily tailgate safety meeting and pre-job briefing

IWD – PART 1 (Activity Specific Information)

IWD#: Eberline Services' Task Order 2 R-66 IWD, R0		Activity/Task Title: Implementation of the Drilling Work Plan for Regional Aquifer Well R-66 for Task Order 2, subcontract number 89795-002-11, under the Drilling Master Task Ordering Agreement (MTOA), subcontract number 89795-000-11.	
Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
			Section 12.0 "Personal Protective Equipment"	
Moving Empty Drums Manually	Back Injury	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment.
Transporting Cuttings	Vehicle Accidents (injuries/damage from collisions)	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment. 	<ul style="list-style-type: none"> • See Task 2, Mobilization/Demobilization of Equipment.

Task 14. Decontamination Activities

Hazards and controls as listed above in "General Activities" with emphasis on the following specific work tasks, hazards, and controls

Decontamination Activities	Exposure to Contaminants and Decontamination Fluids	<ul style="list-style-type: none"> • Wear required PPE as follows: <ul style="list-style-type: none"> - Long-sleeved shirt and long pants - Nitrile or other suitable gloves for examining samples - Safety glasses with side shields • If a radiation work permit is issued—work to it. • Avoid direct contact of sample media and avoid decontamination fluids contact with skin • Avoid hand-to-face contact • Wash hands upon completing decontamination activities • MSDS required for chemicals used on site 	<ul style="list-style-type: none"> • MSDS included in the active field files • Review documentation found with the WCSF addressing current contaminants expected at the specific site 	<ul style="list-style-type: none"> • Haz Com training • PPE training • WCSF review for specific site
	Generation of Decontamination Waste	<ul style="list-style-type: none"> • Manage in accordance with approved WCSF 	<ul style="list-style-type: none"> • WCSF for specific area 	<ul style="list-style-type: none"> • Pre job briefing • PPE training • WCSF training

IWD – PART 1 (Activity Specific Information)

IWD#: Eberline Services' Task Order 2 R-66 IWD, R0		Activity/Task Title: Implementation of the Drilling Work Plan for Regional Aquifer Well R-66 for Task Order 2, subcontract number 89795-002-11, under the Drilling Master Task Ordering Agreement (MTOA), subcontract number 89795-000-11.	
Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
				<ul style="list-style-type: none"> • Waste Generation Overview • RCRA Personnel and current RCRA Refresher
	Incompatible Materials	<ul style="list-style-type: none"> • Do not place incompatible materials in the same waste container (e.g., acetone or samples mixed with acetone) and oxidizers such as nitric acid • Comply with approved WCSF 	<ul style="list-style-type: none"> • Eberline Services ES&H plan • Eberline Services Haz Com Plan • MSDSs included in active field files 	<ul style="list-style-type: none"> • Haz Com training or equivalent • PPE training • WCSF training • Waste Generation Overview • RCRA Personnel and current RCRA Refresher
	Pressure Washer Injury	<ul style="list-style-type: none"> • Follow manufacturer's operating limits for pressure and temperature • PPE may include, but is not limited to, face shield, chemical gloves, and water repellent clothing • Utilize correct pressure-washing, flow-regulating nozzle to limit flow to non hazardous flow rates • Manage temperature of pressure-washing water when utilizing hot wash 	<ul style="list-style-type: none"> • Pressure washer manufacturer specifications 	<ul style="list-style-type: none"> • Pre-job briefing • PPE training • Eberline Services ES&H Plan

IWD – PART 1 (Activity Specific Information)

IWD#: Eberline Services' Task Order 2 R-66 IWD, R0		Activity/Task Title: Implementation of the Drilling Work Plan for Regional Aquifer Well R-66 for Task Order 2, subcontract number 89795-002-11, under the Drilling Master Task Ordering Agreement (MTOA), subcontract number 89795-000-11.	
Work Document #: (work order #) Subcontract No. 89795-002-11			
TA:21	Building: n/a	Room: n/a	Additional Location Description: none

**Attachment F20-1
Integrated Work Document (IWD) – Form 2100A**

IWD#: <u>R-66</u> Revision#: <u>R0</u>		Activity/Task Title: Implementation of the Drilling Work Plan for Regional Aquifer Well R-66 for Task Order 2, subcontract number 89795-002-11, under the Drilling Master Task Ordering Agreement (MTOA), subcontract number 89795-000-11.		
Company Name / Subcontract # Eberline Services / 89795-002-11				
TA:21	Building: NA	Room: NA	Additional Location Description: None	
Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Hazards, Concerns, and Potential Accidents/ Incidents Identify both activity and work-area hazards for each task/step.	Controls, Preventive Measures, and Bounding Conditions Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific PPE, TIDs, alarms, safes, recycle, waste minimization)	Reference Documents List permits, operating manuals, security plans, and other reference procedures.	Training List training and qualification requirements.
Insert Rows above for additional Tasks/Steps or attach pages to clearly communicate ES&H/S&S hazards and associated controls.				
The SUBCONTRACTOR line manager approves work based up on confidence that this IWD has been properly prepared, that the work will be performed within ES&H/S&S requirements, and will be performed in accordance with this IWD.				
Signature <u><i>Richard Knapp</i></u>		Z# <u>204113</u>	Date <u>10-10-2011</u>	
Name of Primary PIC <u>Richard Knapp</u>		Reviewed by SUBCONTRACTOR ES&H Representative		
Signature of STR _____		Signature <u><i>James R. Shultz</i></u>		
Signature of LANL ES&H Rep. _____		Z# <u>255106</u> Date: <u>2011</u>		
Signature of FOD Rep. _____				

RDL Requirements and Approval for Entry and Area Hazards and Controls

RDL must determine the facility entry and coordination requirements and identify the ES&H/S&S hazards and controls associated with the activity location.

FMU 8	TA- 21	Bldg. NA	Room NA	Other Location R-66 Well Location
RDL Designated Facility Point-of-Contact	Name Levi Trujillo	Phone 699-0746	Pager NA	Email trujillo_levi_a@lanl.gov

Entry and Coordination Requirements (Check one or more of the following)

<input type="checkbox"/> No entry/coordination requirements	<input type="checkbox"/> RDL designated facility point-of-contact must sign IWD Part 3	<input type="checkbox"/> Work-Area Training Required	<input type="checkbox"/> Security Clearance Requirements
<input checked="" type="checkbox"/> POTD/POTW	<input checked="" type="checkbox"/> Check in at Start of Work	<input type="checkbox"/> Escort Required	<input type="checkbox"/> Other Security Requirements
<input checked="" type="checkbox"/> Work must be scheduled	<input checked="" type="checkbox"/> Check in Daily	<input type="checkbox"/> Quality Issues	
<input type="checkbox"/> Co-located Hazards/Concerns	<input type="checkbox"/> Check out at End of Work	<input checked="" type="checkbox"/> Other Bounding – Establish emergency response and access to areas with LAFD.	
<input type="checkbox"/> Review under AB/Safety Basis/USQ	<input type="checkbox"/> Check out Daily		

Additional Comments: All work must be approved by the Utilities FOD or OM. POD – 1:00pm Mon thru Fri, POW – 1:00pm Thursday, location is TA-223 or 1437. No Smoking around Natural Gas Systems. Coordinate with Utilities Work Control (Ted Lopez or Kika Sanchez) to be placed on the UI POD. Evaluate area for above ground Utilities structures. Maintain a safety perimeter of 5 feet around Utilities structures with mechanical equipment or vehicles. If work is required within safety perimeter contact POC. Evaluate ground conditions during cold or wet weather, wear appropriate foot wear for snow and ice conditions. Ensure area and roads are safe for vehicle and equipment access. Be aware of snakes, insects, and wild life. Ensure all electrical activities, equipment, & instruments are ESO approved (especially outdoor use).

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s). Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ES&H/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards & Concerns Identify site hazards and concerns that could potentially affect the worker(s).	Work Area Hazard Present	Facility Controls/Preventive Measures/Bounding Conditions Specify preventive measures, controls and bounding conditions for each site hazard	Reference Documents List permits, operating manuals, and other reference procedures	Training and Qualification List training requirements
<input type="checkbox"/> No Work Area Hazards				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. Specify Hazard:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	In working in area with radiological postings follow Radiation Protection Program and RWP as applicable. Not applicable to areas with no postings	P 121 Radiation Protection	Rad Worker II
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, Temperature/humidity extremes or high explosives. Specify Hazard:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

RDL Requirements and Approval for Entry and Area Hazards and Controls

ES&H/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards & Concerns Identify site hazards and concerns that could potentially affect the worker(s).	Work Area Hazard Present	Facility Controls/Preventive Measures/Bounding Conditions Specify preventive measures, controls and bounding conditions for each site hazard	Reference Documents List permits, operating manuals, and other reference procedures	Training and Qualification List training requirements
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. Specify Hazard: Drill rig and heavy equipment operation ____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Assess work area and access routers for overhead hazards and add controls to IWD, if applicable to tasks. Contact Sam Martinez (699-2945) if working near overhead energized lines to determine safe distances or follow applicable OSHA guidance. Cover safe distances in IWD.		
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. Specify Hazard: _____	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If task involves confined space entry, two person rule. Use vault ladder for entry and exit. Wear leather gloves.	P101-27	Confined Space Training
Elevated Work Surface Unprotected structures or work surfaces elevated by more than 4 feet.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If a task involves work above 4 feet follow LANL fall protection requirements.	P101-20	Fall Protection
Environmental Impact Activities conducted in areas containing potential release R-66, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological R-66s, or other work area condition that can be impacted by or can impact the environment. Specify Hazard: _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Obtain and follow Excavation Permit requirements if tasks involve soil disturbances. NEPA review. Review requirements with LANS ESH&Q division representatives.	P101-17.0	Excavation and Soil Disturbance Course.
Security or Other Hazard Specify Hazard: Vehicle traffic	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Ensure awareness of traffic due to open space activities, environment, water stewardship, etc. Coordinate with entities as appropriate		
I have confidence that the IWM process has been applied appropriately, and I approve this activity to be performed in my facility.				
RDL or Representative Approval (Signature / Z# / Date) Required _____ Date Approval Expires _____				

Validation and Release

Eberline Services' Task Order 2 R-66 IWD, R0

Pre-Job Brief Content

- What are the critical steps or phases of this activity?
- How can we make a mistake at that point?
- What is the worst thing that can go wrong?
- What controls, preventive measures, and bounding conditions are needed?
- What work permits are required and how will we meet their requirements?
- What are the handoffs and coordination requirements among workers and multiple PICs?
- Are there hold-points including those that require sign-offs?
- What are the stop work responsibilities and expectations (e.g. for unanticipated conditions or hazards)?
- How would we respond to alarms and emergencies?
- Are there lessons learned from previous similar work?
- Is other information needed to perform this activity in a safe, secure, and environmentally responsible manner?
- Does everyone agree to the work tasks/steps, hazards, and controls and commit to follow them?

PRE-JOB BRIEF ATTENDANCE ROSTER	
By signing below, I agree to the following: <ul style="list-style-type: none"> ▪ I agree to follow the work steps and implement the controls as written. ▪ I agree to stop work when conditions or hazards change or when I encounter unexpected conditions during the execution of work, or when work cannot be performed as written, or instructions become unclear during execution. ▪ I confirm that I am authorized, qualified, and, fit to perform the work. 	
Worker (Signature / Z # / Date) Required	Worker (Signature / Z # / Date)
Worker (Signature / Z # / Date)	Worker (Signature / Z # / Date)
Worker (Signature / Z # / Date)	Worker (Signature / Z # / Date)
Worker (Signature / Z # / Date)	Worker (Signature / Z # / Date)
Worker (Signature / Z # / Date)	Worker (Signature / Z # / Date)
Work Release	
By signing below, I verify this activity is compatible with current facility configuration and operating conditions RDL designated facility point-of-contact (Signature / Z # / Date) If required by RDL Approval of activity expires _____ Date	
By signing below, I have verified the following: <ul style="list-style-type: none"> • I have verified authorization by ensuring approval signatures of the RLM and RDL. • I have jointly conducted a walkdown with workers to confirm the IWD can be performed as written, required initial conditions and other prerequisites of R-66 are in-place. • The assigned workers are authorized and are qualified to perform the work in a safe, secure, and environmentally responsible manner. • I have conducted the pre-job briefing, and all workers have been briefed. • I have ensured coordination with any required RDL work-area representatives (e.g., area work coordinators). 	
PIC (Signature / Z # / Date) Required	
Alternate PIC Signatures when PIC authority is assumed the first time (Note: alternate PICs are required to sign only once, but formal handoff and employee notification are required for each PIC change).	
Alternate PIC (Signature / Z# / Date) Required _____	
Alternate PIC (Signature / Z# / Date) Required _____	
Alternate PIC (Signature / Z# / Date) Required _____	

IWD Part 4

IWD#: Eberline Services' Task Order 2 R-66 IWD, R0

A post-job review with the workers and PIC should include the following:

- Verify that the activity is complete and make notifications in accordance with RDL requirements;
- Ensure that follow-through actions (e.g. clean-up, recycle, waste disposal, equipment removal, and secure storage) are completed;
- Identify inefficiencies, problems during the activity, coordination issues, unanticipated conditions, and near misses; and
- Develop recommendations for improvement.

Lessons Learned; safety, security, and environmental issues; coordination issues; and unexpected conditions.

-

Suggested improvements to enter into the JHA Tool based on Lessons Learned

-

Other recommendations for Improvements

-

Completion Statement

By signing below, I have verified that the activity scope, final site ES&H/S&S restoration, and cleanup are complete, and I have ensured proper notifications and turnover in accordance with RDL requirements.

PIC (Signature / Z# / Date) **Required**