NM - 22

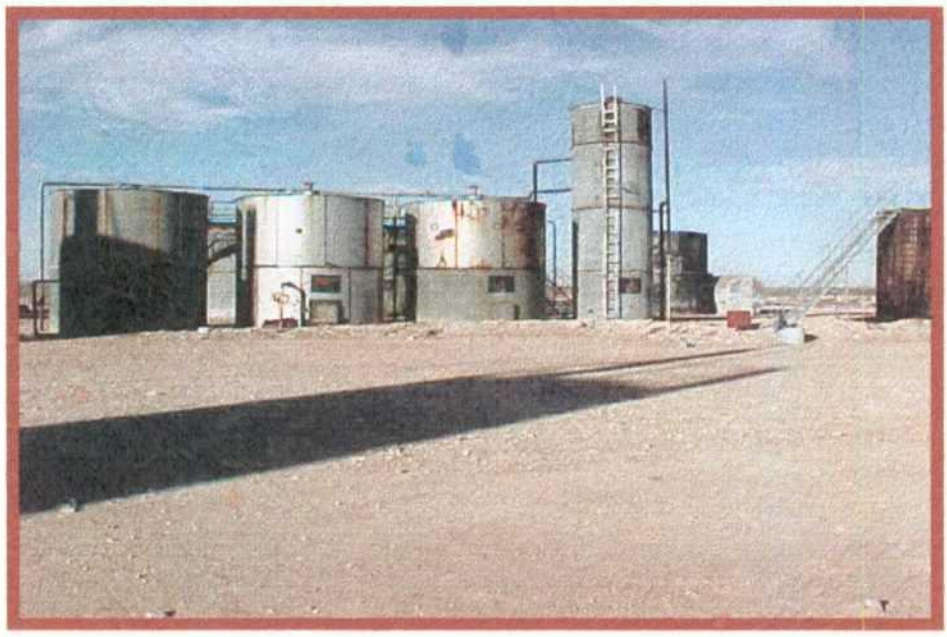
MONITORING REPORTS

PROPOSAL

YEAR(S):

JAN 31, 2021

Proposal for the Investigation, Cleanup and Environmental Remediation of the Goodwin Treating Plant Located in Lea County, New Mexico



Prepared for:

State of New Mexico Energy, Minerals and Natural Resources Department
New Mexico Oil Conservation Division

January 31, 2001

Prepared by:

4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262

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1.0 TRANSMITTAL LETTER

January 30, 2001

Ms. Martyne Kieling
New Mexico Oil Conservation Division
1220 S. Saint Frances
Santa Fe, New Mexico 87505

RE: Letter of Transmittal for Investigation, Cleanup and Environmental Remediation of the Goodwin Treating Plant

PSC (Philip Environmental Services Corporation) is pleased to submit this proposal for the Investigation, Cleanup and Environmental Remediation of the Goodwin Treating Plant located in Lea County, outside of Hobbs, New Mexico.

Martin Nee, Location Manager in Farmington, NM is authorized to contractually obligate PSC for this project. Mr. Nee is also authorized to negotiate the terms of a contract that may arise as a result of this bid and can be reached at 505-326-2262. The New Mexico Oil Conservation Division of the Energy, Minerals, and Natural Resources Department (EMNRD-OCD) can call either Martin Nee or Don Fernald in Farmington for any necessary clarifications pursuant to this bid.

PSC accepts the conditions governing the procurement as stated in Section II of the December 11, 2000 Request for Proposals.

PSC acknowledges the receipt of the questions and answers and a copy of the January 5, 2001 Highlander Environmental Corp. letter via electronic mail on January 19, 2001 and the questions and answers dated January 26, 2001 via electronic mail on January 26, 2001.

PSC is highly qualified to complete this project for EMNRD-OCD and has extensive experience that we have used to determine our pricing and schedule. PSC maintains safe operations from Farmington, New Mexico working over 250,000 man-hours without an OSHA recordable injury or accident. PSC – Farmington has successfully completed several projects very similar to this.

PSC appreciates this opportunity to provide this proposal to the EMNRD-OCD for the investigation, cleanup and environmental remediation of the Goodwin Treating Plant. Please call Don Fernald or Martin Nee at (800) 326-2262 if you need additional information, or if we can be of further assistance.

Sincerely,
PSC

Martin Nee
Location Manager, Farmington

2.0 Proposal Summary

PSC has prepared the following Scope of Work in response to the State of New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division's (EMNRD-OCD) Request for Proposal, dated December 11, 2000, for the Investigation, Cleanup and Environmental Remediation of the Goodwin Treating Plant. The EMNRD-OCD's response to questions submitted during the comment period was reviewed by PSC. With this information, PSC has developed this Scope of Work for effective and efficient completion this project. The following is a summary of proposed project activities to be provided by PSC:

Response to Technical Specifications

1. Project Approach - Scope of Work

<u>Remedial Investigation</u>

Task 1: Investigate Extent of Contamination within the Emergency Overflow Pit
Task 2: Monitor Well Installation and Completion
Task 3: Groundwater Sampling and Analysis
Task 4: NORM Survey
Task 5: Submittal of Phase 1 and Phase 2 Reports / Revise Project Plan

<u>Remediation Activities</u>

Task 6: Remove and Dispose of Liquids from Tanks
Task 7: Excavate, Transport and Dispose of Hydrocarbon Impacted Soils
Task 8: Remove Solids from Tanks, Vessels and Treaters
Task 9: Removal of NORM Regulated Materials
Task 10: Removal of Tanks, Vessels, Treaters and other related Equipment
Task 11: Back Fill Excavations
Task 12: Submit Phase 3 Report

2. Project Plan

A. Project Management Methodology and Action Plan
B. Project Schedule and Key Personnel
C. Project Security, Documentation, QA/QC

3.0 Response to Technical Specifications

1. Project Approach

PSC's approach for this project will include comprehensive project management, planning, investigation and remedial operations. PSC realizes that actual project costs can vary greatly depending on the thoroughness of initial project planning and continued active management of projects. PSC will assign an experienced project manager and crew who have completed numerous projects similar in scope. PSC has included resumes of key personnel proposed for this project along with a list of similar project assignments. The following is a summary of the Scope of Work proposed by PSC for completion of this project.

SCOPE OF WORK

PSC proposes to complete this work in two phases. The first phase is the Remedial Investigation which will include pre-remedial investigations, advancing a soil boring and conversion into a monitoring well, water sampling/testing and submittal of the Phase I and II reports. The project plan may be revised after completion of the remedial investigation and following approval from the EMNRD-OCD.

Secondly, Remedial Activities of this project will commence upon approval of the revised project plan from the EMNRD-OCD. PSC will have NORM trained personnel on site during the investigation and remedial activities of the project. A PID and a Ludlum Model 3 exposure meter fitted with a Model 44-2 Scintillation Probe will be onsite during the entire project to allow for field screening of soil and other materials.

REMEDIAL INVESTIGATION

Task 1: Investigate Extent of Contamination within the Emergency Overflow Pit
PSC will obtain samples at 3 to 5 feet below ground surface (bgs) and at 10-foot intervals within the emergency overflow pit. These samples will be analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylene (BTEX), and chloride. Field photo ionization detector (PID) measurements will be used as a screening tool. A sample from each interval will be sent for laboratory chloride analysis. A minimum of one sample from the 3 to 5-foot interval, one sample from the highest PID sample location and one bottom hole sample will be sent for laboratory analysis to confirm the concentration and extent of TPH and BTEX.

Drill cuttings from the soil boring/monitoring well locations may be thin spread at the site if soil samples show the boreholes clean and free of contaminants. If soil samples are not clean, then the drill cuttings will be stockpiled on plastic sheeting and left at the site for removal during remedial activities.

Task 2: Monitor Well Completion
PSC will complete the existing borehole as a 2-inch diameter groundwater monitor well. This well will be completed as specified by the EMNRD-OCD.

Task 3: Groundwater Sampling
PSC will obtain groundwater samples no less than 24 hours after the well is developed. The water from the monitor well will be purged, sampled and analyzed for concentrations of BTEX, polycyclic aromatic hydrocarbons (PAH), total dissolved solids (TDS), major cations/anions and New Mexico Water Quality Control Commission (WQCC) metals using EPA-approved methods and quality assurance/quality control (QA/QC) procedures. Soil and groundwater sampling will be documented using strict chain-of-custody procedures. Soil and groundwater samples will be sealed, placed in a cooler with ice and sent to an EPA approved laboratory for analysis.

Task 4: NORM Survey
PSC is licensed to conduct NORM surveys, decontamination and remediation. PSC will conduct a NORM survey of the waste within all tanks and treaters as they are opened. PSC will also test the gas in each vessel for hydrogen sulfide (H_2S) and explosivity using a tri-gas monitor. A representative sample of liquid-sludge-solid material will be obtained from each tank/treater. Each sample collected will be placed in an open container and removed to an area of background activity and scanned using a Ludlum Model 3 exposure meter fitted with a Model 44-2 Scintillation Probe. Any sample exhibiting greater than 50 microroentgens per hour (uR/hr) (0.5uSv/hr) will be placed into approved containers and submitted to a laboratory for analysis of Radium 226 using US EPA Method 901.1. Laboratory results from samples exceeding 30 picocuries per gram will not be considered exempt and will require disposal as regulated NORM.

Task 5: Submittal of Phase 1 and Phase 2 Reports
PSC will prepare and submit to the EMNRD-OCD, a Phase 1 and Phase 2 Report that details the findings of the Remedial Investigation of the Goodwin Treating Plant. The reports will include information regarding the subsequent transport and disposal of NORM materials identified at the site. The revised project plan will be submitted to the EMNRD-OCD for approval.

REMEDIATION ACTIVITIES

Task 6: Removal and Disposal of Liquids from Tanks
PSC will utilize vacuum trucks to remove the flowable liquids from the tanks located at the Goodwin Treating Plant. Liquids will be transported to an EMNRD-OCD approved facility for recycling/disposal.

Task 7: Excavation, Transportation and Disposal of Hydrocarbon Impacted Soils
PSC will mobilize a track excavator to remove up to 1,450 cubic yards of hydrocarbon impacted soils in excess of 100 ppm TPH, 50 ppm BTEX and 10 ppm Benzene from the Goodwin Treating Plant site. A PID will be used as the field-screening device to assist in determining hydrocarbon impacted areas. Excavations will be conducted to five feet below ground surface. PSC will initiate the New Mexico "One Call" service to identify and mark any subsurface utility lines within the project area. Excavation walls may be sloped back to allow for safe entry, in accordance with OSHA standards, allowing access for inspection of the soils within the excavation. The hydrocarbon-impacted soils will be directly loaded into belly dumps/end dumps for transport to an EMNRD-OCD approved waste management facility for remedial landfarming.

Task 8: Removal of Solids from Tanks, Vessels and Treaters
PSC will manually dismantle the tanks to allow for removal of solids located within the tanks/vessels. Once the top or walls of the tanks have been removed, solids can be accessed with the excavator bucket and allow for removal without performing confined-space entry excursions. Residuals may be removed from the tank by scraping and knocking them off with the excavator bucket. A hot pressure washer may be used to assist in the removal of solids/sludges from the tanks. Water will be captured for disposal with other tank liquids. Tank materials that may be classified as sludge may be stabilized with existing hydrocarbon impacted soils located onsite to allow for transport by conventional belly dumps and end dump trucks. Tank solids will be loaded for transport to an EMNRD-OCD approved waste management facility for remedial landfarming.

Task 9: Removal of NORM regulated materials
Tank 112 (a 500-bbl redwood tank with 5 feet of solids) has been identified by the EMNRD-OCD as being greater than 30 picocuries per gram (pC/gm) of Radium 226. Tank 112 contents are therefore not exempt and require remediation/disposal as NORM regulated material. PSC will perform the removal of the solids from Tank 112 in a similar manner to that described in Task 8, however, personal protective equipment will be upgraded to include respiratory protection (half-face air-purifying respirators fitted with HEPA filters). Additional health and safety procedures will include air monitoring for airborne Radium 226 and dosimetry monitoring of PSC crews during the entire project. PSC will provide a Radiation Safety Officer who will oversee all work related to onsite activities. Additional details regarding PSCs health and safety requirements will be detailed in a site specific health and safety plan to be prepared by PSC. NORM solids from tank 112 will be placed into approved roll-off containers for disposal at an EMNRD-OCD approved waste management facility. PSC understands that NORM may have contaminated the redwood. PSC will dismantle the redwood tank and place the redwood in a contained area onsite for decontamination by pressure washing.

Task 10: Removal of Tanks, Vessels, Treaters, Pipes and other related Equipment
The removal of the tanks, vessels, treaters, pipes, and other related equipment located on site will be completed by PSC. Materials that can be recycled will be sent to a salvage

yard for processing. PSC will remove the electrical power pole and transformer from the site if required by the EMNRD-OCD. Materials that cannot be recycled will be sent to an EMNRD-OCD approved waste management facility for disposal. During the removal of tanks, vessels and treaters, PSC will obtain soils samples and test them in the field with a PID to determine if hydrocarbon impacts to soil have occurred. Up to 35 soil samples will be obtained during remedial activities, submitted to a laboratory and tested for BTEX and TPH to determine concentrations of target hydrocarbons.

Task 11: Back filling of Excavations
PSC will conduct back-hauling of clean soil in conjunction with the removal of hydrocarbon impacted soils. Clean soil will be either stockpiled onsite for subsequent back filling or directly placed into the excavation after the excavation has been sampled and test results indicate that hydrocarbon impacted soils have been removed to levels acceptable to the EMNRD-OCD. After completion of back filling, PSC will compact the soils by wheel rolling the soil with a loader or equivalent and contour the area to allow for drainage of precipitation.

Task 12: Submittal of the Phase 3 Report
PSC will prepare and submit to the EMNRD-OCD, a Phase 3 Report that details the Remedial Activities at the Goodwin Treating Plant. The report will also include documentation regarding the transport and disposal of materials from the site, health and safety documentation, analytical test results, and site activities.

2. *Project Plan*

PSC will develop a comprehensive project plan prior to initiating any onsite activities. This plan is summarized as follows:

A. Project Management Methodology and Action Plan

The following includes information that will be detailed in a project plan that will be presented to the EMNRD-OCD prior to initiating this project.

a) PSC will designate an experienced project manager who has experience completing similar projects.
b) PSC will complete a detailed project plan for submittal to the EMNRD-OCD representative(s). PSC will review the project plan with EMNRD-OCD representative(s) prior to initiating onsite activities.
c) PSC's project manager will refine the preliminary schedule, which is included in section "B" of the project plan.
d) This project will be initiated with a "Kick-Off" meeting which will be attended by PSC's project manager, site supervisor, and representative(s) of the EMNRD-OCD.
e) PSC has developed a project team to complete this project for the EMNRD-OCD. Resumes of key project personnel are included in section "B" of the project plan.

f) PSC will develop a site-specific health and safety plan (HASP) for this project. The HASP will include detailed specifications for completing the various tasks identified within the Scope of Work.
g) Numerous regulatory issues must be addressed to complete this project. Issues will include compliance with EMNRD-OCD, State of New Mexico Environment Department, Rocky Mountain Low Level Radioactive Waste Board, United States Environmental Protection Agency, Occupational Safety and Health Administration requirements.
h) Project documentation will consist of daily field notes, health and safety meeting records/documentation, chain-of-custody documentation, soil boring logs, well diagrams, well development forms, laboratory results, field screening test results, and site maps.
i) PSC plans to utilize several contractors to complete the Scope of Work. The subcontractors will be briefed on all requirements of the Health and Safety Plan. PSC plans to subcontract the following companies to assist in completing this project:

    Eades Drilling
    Martinez Trucking
    Fluid Transport
    J&L Landfarms
    Lotus LLC
    Pinnacle Laboratories
    CRI, Inc.

    PSC reserves the right to use alternative subcontractors upon approval from the MNNRD-OCD.
j) In the event that unforeseen conditions or out-of-scope costs are encountered during the project, PSC will notify the EMNRD-OCD immediately. Unforeseen conditions will be discussed and negotiated with the EMNRD-OCD prior to taking additional actions.
k) Project communication is essential. PSC will provide a weekly report summarizing the activities of the prior week. Additionally, PSC's onsite personnel will have access to mobile phones throughout the project. PSC will present the EMNRD-OCD with a contact sheet listing PSC's key personnel for this project during the Kick-Off Meeting.
l) PSC will implement a quality assurance and quality control (QA/QC) program to ensure that the project is being completed in accordance to standard industry practices. A summary of PSC's QA/QC program is summarized in section "C" of the project plan.

B. Project Schedule and Key Personnel

PSC has included a preliminary project scheduled with is attached in herein. The following includes information regarding responsibilities of PSC's key personnel.

Project Manager – The project managers responsibilities will consist of management of the contract, final project plan development and overall director of all project activities

including directing PSC crews, coordinating subcontractors and ensuring that all documentation is being completed. The project manager will be the primary contact for project activities and communications between PSC and the EMNRD-OCD.

Site Supervisor – The site supervisors responsibilities will consist of overall direction of onsite activities and completing the assignments detailed in the final project plan associated with remedial activities and sampling. The site supervisor will act as the primary onsite contact during the remedial phase of this project. Other responsibilities will include conducting daily safety meetings, securing and establishing onsite work areas.

Project Geologist – The project geologist responsibilities will include, directing the driller, completing the subsurface soil boring, converting the boring into a monitoring well and sampling of soil and groundwater during the Remedial Investigation. The project geologist will prepare the Phase 1 and 2 reports.

Operators – Operators are responsible for safely, and efficiently operating heavy equipment such as backhoes, track excavators, loaders and trucks. The operators will report directly to the site supervisor and assist in completing Remediation Activities.

Technicians – Technicians are responsible for completing routine labor tasks associated with the project that will include dismantling tanks, decontamination, assisting operators and the site supervisor.

Radiation Safety Officer / Health and Safety Officer (RSO/HSO) – The RSO/HSO is responsible for preparing the site-specific health and safety plan that will be developed for this project. The RSO/HSO will coordinate all personal monitoring activities including air monitoring, dosimetry radiation monitoring and benzene monitoring. The RSO/HSO may perform random health and safety audits of PSC crews. The RSO/HSO will review all health and safety documentation to ensure that proper personal protection protocols are being followed by onsite personnel.

C. Project Security, Safety, Documentation, QA/QC

Project Security

The project is located in a rural area approximately 10 miles west of the town of Hobbs, New Mexico. Security issues do not appear to be a significant concern during project activities. However, PSC will limit access to the site to PSC, EMNRD-OCD and sub-contracted personnel. Site access will be limited by placing signage reading "Authorized Personnel Only". Additionally, the site supervisor will be responsible for limiting access to authorized personnel. Unauthorized personnel that come onsite during project activities will be intercepted and escorted from the site. Active areas that are under construction will be marked with caution tape or orange barricade fencing. During non-working hours, heavy equipment will be locked, secured and left onsite. Areas of

construction activity will be either marked with high visibility tape or barricaded with orange safety fence (excavations). PSC personnel will have access to a mobile phone that will be located onsite for use in event of emergencies. All PSC personnel and subcontractors are not authorized to carry firearms, alcohol or illegal drugs on their person or in their vehicles during the project and are subject to search. All PSC personnel and subcontractors are subject to drug and alcohol testing as determined by PSC's project manager and site supervisor.

Safety

PSC's number one requirement is to ensure that the project is performed safely. Any PSC employee has the right to stop the project if they believe that safety is being compromised. PSC will develop a project-specific health and safety plan. All PSC personnel and subcontractors will be briefed and familiar with the site-specific health and safety plan.

Documentation

PSC will document numerous activities that will occur in conjunction with the performance of this project. Documentation will include, as needed, but not be limited to the following:

NORM Survey Forms
Field Sampling Forms
Chain-of-Custody Forms
Soil Boring Logs
Well Diagrams
Well Development/Purging Forms
Site Drawings
Safety Meeting Forms
Task Specific Risk Assessment Forms
Phase 1, 2 & 3 Reports
Project Plan
Health and Safety Plan
Air Monitoring Forms
Decontamination Forms
Accident Report Forms
Near Miss Incident Report Forms
Laboratory Analytical Reports
Daily Field Notes
Material Manifests
Record of Communication Forms
PSC NORM License
PSC Personnel Training Certificates
Equipment Calibration Forms
Equipment Calibration Check Forms

Documentation will be provided to the EMNRD-OCD as required for this project. In particular, the Phase 1, 2 and 3 reports along with health and safety documentation will be provided to the EMNRD-OCD. Additional documentation is available upon request.

Quality Assurance and Quality Control (QA/QC)

Overall QA/QC will be the responsibility of PSC's project manager, however, the site supervisor, RSO/HSO, project geologist and others will assist in completing various QA/QC procedures.

Laboratory Sampling and Testing QA/QC – Soil, water and air samples that are obtained for laboratory analysis will be subjected to the following QA/QC procedures:

- Samples must be documented on Chain-of-Custody forms.

- A minimum of one trip blank will be submitted with every lot or every 20 samples submitted at a time for analysis.

- A minimum of one duplicate sample will be submitted for every lot or every 20 samples submitted at a time for analysis.

Field Testing Equipment – Field equipment (PIDs, Tri-Gas monitors, air sampling pumps and NORM Meters) will be tested and calibrated prior to mobilizing for use in the field. Daily calibration and/or calibration checks will be conducted and documented for all field equipment used.

Decontamination QA/QC – Field personnel, equipment, tools and materials that may potentially or intentionally come in contact with NORM will be screened with a NORM "Pancake Probe" to determine if contamination has occurred. Daily screening will be conducted and documented. In the event of NORM contamination has occurred, decontamination procedures will be conducted as outlined in PSC's site specific health and safety plan. Additional NORM screening will be performed to verify that decontamination has occurred.

Fit Testing – All half-face or full-face air purifying respirators to be used by PSC personnel must be fit tested within the last 12-months. Fit testing has been documented to ensure that respiratory protection factor of the equipment is adequate for the levels of exposures as determined by air monitoring

Air Monitoring Program – The RSO/HSO will design and implement an air monitoring program for this project to ensure that exposures to PSC personnel and others is minimized. The air monitoring program will be documented in PSC's site specific HASP.

Manifesting of Project Materials – Various materials including tank liquids, sludges, solids, soil, tanks, vessels, piping and other related equipment will be removed from the site. Additionally, soil will be delivered to the site for back filling excavations. Each load of materials will be manifested by PSC to document the volume of materials removed or delivered to the site. The manifest will include the following:

Material transported
Nature of Material
Volume (cubic yard or barrel) or weight of material
Material origination and destination
Date and time of manifest
Transporter Name and Signature
PSC Signature
EMNRD-OCD may wish to verify/sign manifest

Preliminary Project Schedule for Investigation and Remediation of the Goodwin Treating Plant

Milestone/Events	February 2001						March 2001																											April 2001							
Investigation Phase	23	24	25	26	27	28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8
Contract Effective																																												
Prepare & Submit Project Plan																																												
Assemble Crew and Organize																																												
Mobilize / Set-up / Kick-Off Meeting																																												
Complete Soil Boring / Install Well																																												
Develop & Sample Monitoring Well																																												
Remove Oil / Prep Equipment																																												
Conduct NORM Survey & Sampling																																												
Demobilize – Investigation Phase																																												
Prepare Phase I & II Reports																																												
Submit Phase I & II Report																																												
Submit Revised Project Plan (if needed)																																												

Milestone/Events	April 2001																														May 2001													
Remediation Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	12	14	15
Prepare for Remedial Activities																																												
Mobilize / Set-up / Kick-Off Meeting II																																												
Excavation / Sampling / Remediation																																												
Transport Soils to Landfarm																																												
Remove/Dispose of Liquids from Tanks																																												
Dismantle Tanks																																												
Remove Solids & Decon Tanks																																												
Remove Tanks, Equipment & Piping																																												
Decon Equipment																																												
Complete Backfill Site Grading																																												
Demobilize – Remediation Phase																																												
Prepare Phase III Report																																												
Submit Phase III Report																																												

PSC
4000 Monroe Road
Farmington, New Mexico 87401
(800) 326-2262

PSC and the transporter will determine the amount or volume of each load. The EMNRD may wish to verify the amount of each load during the execution of the manifest. PSC will require the EMNRD-OCD to sign each manifest or provide written permission for PSC to sign each manifest on behalf of the EMNRD-OCD.

4.0 Response to Business Specifications

PSC has examined all contract documents provided by EMNRD-OCD. PSC takes no exceptions to the contract language. PSC has reviewed the EMNRD-OCD's Request for Proposals for the Investigation, Cleanup and Environmental Remediation of the Goodwin Treating Plant. PSC is thoroughly familiar with the request for proposal and the technical specifications provided therein.

5.0 Offer Amount including Technical Specifications by Item, Total Turnkey Cost, and Supplemental Rates.

PSC proposes to complete this project for the EMNRD-ODC on a turn-key basis listed as follows:

	TECHNICAL SPECIFICATION	ITEM COST
1.	Sub-surface contamination investigation based on air rotary	$6,870.00
2.	Well completion based on 60 foot well	$2,620.00
3.	Groundwater sampling and analysis	$2,060.00
4.	NORM Requirements	$56,300.00
5.	NORM survey and lab analysis	$4,760.00
6.	Tank fluid removal and disposal	$14,930.00
7.	Tank solids removal and disposal	$6,690.00
8.	Tank and equipment removal	$21,455.00
9.	Near-surface contamination investigation based on 35 lab samples	$6,760.00
10.	Contaminated soil removal based on 1450 cubic yards	$38,800.00
11.	Back filling excavations with back-hauled clean soil	$26,900.00
12.	Phase 1 report	$2,000.00
13.	Phase 2 report	$2,000.00
14.	Phase 3 report	$3,500.00
	Total	$195,645.00
	NM Gross Receipts Tax	$10,271.36
	Total Turnkey Cost	**$205,916.36**

SUPPLEMENTAL RATE DESCRIPTION OF SERVICE	RATE PER	UNIT
Air rotary rig equipped to perform all work set out in technical specifications	$280.00	hour
Bentonite Pellets	$0.25	pound
Blank 2 inch PVC riser	$10.50	foot
Move-in, move-out charges	$85.00	hour
Water truck – capacity (120) bbls	$68.00	hour
Backhoe (Cat 416) minimum hours (8)	$30.00	hour

Trackhoe (JD 690) minimum hours (8)	$60.00	hour
Dozer – (D-6) minimum hours (8)	$85.00	hour
Trucking – minimum hours (1)	$60.00	hour
Front end loader (Cat 930) minimum hours (4)	$50.00	hour
Senior scientist	$70.00	hour
Environmental technician/operator	$35.00	hour
Certified NORM technician/scientist	$55.00	hour
Labor	$25.00	hour
Photo Ionization Detector (PID)	$25.00	day
Chloride laboratory analysis	$25.00	per analysis
TPH laboratory analysis	$52.00	per analysis
BTEX laboratory analysis	$45.00	per analysis
Radium 226 laboratory analysis	$110.00	per analysis
Contaminated soil offsite landfarm remediation (includes transport)	$26.00	per cubic yard
Back-haul clean soil	$12.50	per cubic yard
NORM contaminated soil offsite disposal w/transport	$1,345.00	per cubic yard
Produced-water and non-NORM liquids disposal	$8.00	per barrel

6.0 Offeror's Additional Terms and Conditions

1. PSC assumes that the New Mexico "One Call" system will identify all active gas, electric and other utility lines located within the project area. PSC will not be responsible for damage to any lines that are not properly identified or marked.
2. PSC will initiate this project upon signing of a mutually agreeable contract.
3. This proposal shall become part of the contract for services to be provided.
4. Based on information provided in the EMNRD-OCD proposal for the Goodwin Treating Plant, PSC has included costs for removal of 1,450 cubic yards hydrocarbon-impacted soils, 358 cubic yards of tank bottom solids and 1,784 barrels of tank liquids. PSC assumes that all of these materials are RCRA exempt oilfield wastes that can be transported to an EMNRD-OCD approved facility for recycling or disposal.
5. PSC's costs includes the removal of the contents of Tank 112 as NORM regulated material. All other material has been considered as exempt oilfield waste for the turn-key lump sum price that is proposed by PSC.
6. PSC will not take ownership of special or hazardous waste that may be encountered during the course of this project.
7. PSC has included costs in this proposal for laboratory testing of 13 samples for Radium 226.
8. If the EMNRD-OCD determines that back filling is not required as part of this project, then costs associated with transport of hydrocarbon impacted soils to an approved facility may be adjusted to reflect the one-way travel of an empty payload.
9. PSC assumes all work can be performed in Level D personal protective equipment (i.e., hard hat, steel-toed boots, and safety glasses). NORM work can be completed in modified Level C equipment, half-face respirators fitted with HEPA filters.
10. PSC assumes that no asbestos containing materials (greater than one-percent asbestos content) are located on the project site.
11. PSC's move in rate is $85.00 per hour per piece of equipment.

7.0 Other Supporting Material

PSC appreciates the EMNRD-OCD keeping this entire section of this bid confidential.

A. PSC NORM Licensure

PSC has included herein as other supporting material a copy of our NORM License Number LA-6229-S01. PSC will complete this project in accordance with the specification of this license and the application for License dated May 3, 1994, copy also attached. PSC will use the Louisiana license pursuant to 20 NMAC 3.1 Section 324 Reciprocal Recognition of Licenses.

B. PSC Corporate NORM Qualifications

PSC has included a copy of our corporate NORM brochure. References for our corporate qualifications are as follows.

- Chevron Production USA Company, Paul Kunicki - NORM Manager- (504) 592-6081
- Freeport McMoran - New Orleans, LA - John Williams - Manager Safety & Environmental - (504) 582-4000
- Smith International, Inc. - Houston, TX - Maurice Sticker - Director of Environmental Affairs - (281) 443-3370
- ExxonMobil - New Orleans, LA - Dennis Manual - Manager Remedial Construction - (504) 561-3612
- Texaco - New Orleans, LA - Jerry Mire - Manager of Environmental - (504) 680-1000

References for our staff are as follows.

Texaco Exploration and Production Inc.
NORM Investigation and Closure Workplan
PSC, Farmington delineated the extent of NORM impacted soil associated with three produced water NPDES ponds and the downstream drainage. The results of the investigation and a workplan were prepared and submitted to the regulatory agency. The workplan proposed a dose-based risk-assessment closure scenario that would allow the impacted soil to be capped and remain in place. The dose-based risk assessment was prepared by Argonne National Laboratory.
Contact: Mr. Jerry Boswell, (303) 793-4886

El Paso Natural Gas (EPNG)
PSC's Farmington crews remediated EPNG's produced water disposal pits and mercury manometer release sites. In addition, Farmington has investigated soil and groundwater impacts at numerous sites.
Contact: Ms. Sandra Miller (505) 599-2124

Coastal Oil and Gas (Coastal)

PSC decommissioned two natural gas plants for Coastal. These projects included the excavation, transportation and disposal of over 5,000 cubic yards of PCB impacted soil. Tanks, vessels, and piping were decontaminated and removed from these facilities.
Contact: Mr. Danny Huneycut (713) 877-3828

Los Alamos Technical Associates
PSC's Farmington crews cleaned the radioactive waste from the confines of an accelerator cooling water impoundment. Strict health and safety monitoring and worker protection was required. The impoundment sludge and impoundment liner were consolidated and packaged for disposal.
Contact: Ms. Felicia Aguilar (505) 662-1816

C. Experience

PSC has been supporting New Mexico's Oil and Gas industry with environmental investigation and remediation services since 1992. Some of the investigation and remediation projects completed by our New Mexico office include:

- Remediation of over one thousand produced water disposal pits.
- Installation of hundreds of groundwater monitoring wells.
- Remediation of over one thousand mercury manometer release sites.
- Remediation of several flare pits.
- Over fifty crude and produced water storage tank cleanings some of which contained NORM impacted tank bottoms.
- Numerous tank decommissioning projects up to fifty thousand barrels in size.
- Decommissioning of approximately nine gas plants and large compressor facilities.
- Decommissioning of an isolated oil field including the bulk crude storage facility that contained NORM in tank bottoms.
- Hundreds of NORM surveys that included screening tanks, vessels, piping, and soil.

D. Resumes

All Farmington personnel have radiation worker training for our contract for environmental restoration services at Los Alamos National Laboratory. In addition, all Farmington and any other personnel that will support this project will have NORM worker and survey training. PSC will have a certified radiation safety officers on-site and as required for this project. The following key personnel are proposed for this project.

Corporate Radiation Safety Officer, Mr. Rick Wimberley

Project Manager/Senior Scientist Mr. Don Fernald

Site Radiation Safety Officer/Certified NORM Technician, Mr. Robert Thompson

Site Supervisor, Mr. Morgan Killion

PSC
PHILIP SERVICES
INDUSTRIAL SERVICES GROUP

NORM Services

INDUSTRIES SERVED:

- Chemical
- Government
- Oil & Gas
- Pulp & Paper
- Refining & Petrochemical

- Turnkey Solutions
- Nationwide Network of Facilities

Philip provides NORM cleaning and decontamination using a variety of equipment and processes to enhance EPA and state regulatory compliance. NORM, or Naturally Occurring Radioactive Material, is found in virtually every oil and gas production system. This is caused by certain oil and gas bearing formations which have concentrations of radioactive elements. As a result, these elements are brought to the surface with the fluids and are further concentrated during the production and processing of the product. This creates a localized radioactive source strong enough to be regulated. Therefore, NORM remediation and decontamination is strictly regulated and the procedures used by Philip allows clients to comply with all regulations.

Philip's Morgan City, LA, NORM yard is the largest NORM decontamination facility in North America.

Philip has successfully completed NORM remediation and decontamination projects in gas plants, oil and gas production facilities, paper mills, refineries, chemical plants and abandoned sites. Philip has NORM-specific licenses in Louisiana and Texas, and maintains reciprocal arrangements with "agreement" states.

Decontamination Process

Philip's vessel decontamination methods typically consist of a combination of hydroblasting and heating techniques depending on the degree of contamination. Philip offers both wet and dry methods of tubular cleaning which consist of a 20,000 psi rigid lance and mechanical reaming devices which are, at times, used in concert.

These techniques quickly and effectively remove sediments, scale and other contaminated deposits and can be applied to tubulars, vessels, flow-lines, heat exchangers and pumps, as well as valves and headers. All NORM decontamination is reduced to levels which comply with regulations.

Philip provides comprehensive NORM services including assessment, remediation and decontamination.

Foreign debris and filters are decontaminated upon completion of each job. Philip has the capability of processing waste to a uniform grade for down-hole disposal. All contaminated waste generated is properly drummed, labeled and transported to the client's preferred destination.

Service and Availability

Philip is committed to finding tailor-made solutions for our clients' industrial cleaning and environmental service needs. Our trained specialists perform detailed assessments to determine the levels of radioactive contamination, as well as prepare project scope, cleaning and disposal requirements. These assessments provide clients with safe, cost-effective solutions for NORM decontamination and site remediation.

NORM Services

Philip can perform services on an hourly or turnkey basis to suit your specific needs. 24-hour emergency response services are also available.

Please call your customer service representative for more information and a no-cost assessment of your situation.

Philip Services is an integrated metals and industrial services company with operations throughout the United States, Canada and Europe. Philip provides steel, copper and aluminum processing and recovery services, together with diversified industrial outsourcing to all major industry sectors. Supported by 14,000 employees at over 350 locations, Philip is North America's leading provider of integrated metals processing and industrial services. Philip's ALLIES® approach allows our clients to outsource non-core functions, so that they can focus on their core businesses. Please contact your local representative for additional services.

Philip decontaminates a wide variety of tubulars, vessels, flow-lines, heat exchangers, and pumps and provides total waste management.

Philip Services' Oilfield Operations:

Golden Meadow, LA	(504) 475-7770
Venice, LA	(504) 534-2008
Lafayette, LA	(318) 233-4889
Morgan City, LA	(504) 631-3325
Morgan City, LA NORM Facility	(504) 631-3973
Jeanerette, LA Crude Oil Reclamation & NOW Injection Well	(318) 276-5163
Midland, TX	(915) 563-0118
Farmington, NM	(505) 326-2262

PHV Listed NYSE

Philip Services
Industrial Services Group
5151 San Felipe
Suite 1600
Houston, TX 77056
(888) 937-3669
www.philipinc.com

Responsible Care
A Public Commitment

Helping Clients Attain a Competitive Advantage in a Global Market℠

NORM - Naturally Occurring Radioactive Material

Features & Benefits:

- Assessment, Removal Transportation & Decontamination Both On-site & Off-site
- Chemical Chelation of Alpa & Beta Generators
- Enhanced EPA, OSHA & State Regulatory Compliance
- Filter Media Decontamination
- Land Remediation
- Radiation Safety Officers
- 24-hour Response
- State Licensed NORM Decontamination Facility
- Trained & Experienced Personnel
- Waste Minimization
- Waste Processing for Down–Hole Slurry

PSC PHILIP SERVICES
INDUSTRIAL SERVICES GROUP

DON J. FERNALD,
Project Manager / QA – QC Officer

Key Expertise/Rationale for Selection

- Extensive project management experience with remediation projects
- Developer of work plans and health and safety plans for hazardous waste sites
- Regulatory review of remedial action plans
- Environmental assessments to determine the presence and risk of hazardous materials

Pertinent Facts

B.S., Geology, Northwest Missouri State University, 1984

Selected Professional Development and Certifications:

- OSHA 1910.120 – 40-hour training 1991; refreshers through 2001
- Basic Radiation Worker Training – 1994
- NORM Worker Training - 1997
- Design Workshop for Soil and Groundwater Remediation University of New Mexico, 1992
- Asbestos Inspector Training, 1991-2000
- Asbestos Management/Supervisor Training, 1998 - 2001
- Hazmat IV – Laws Effecting Waste, 1991 (CERCLA – RCRA)

Career Summary

Experience includes over nine years of managing environmental investigations and conducting remedial activities. Management responsibilities have included safety issues, compliance assurance, estimating and proposal preparation, quality assurance and quality control of site investigations and various types of remediation projects. Has conducted environmental work in 20 states.

Relevant Experience

- Successfully designed, proposed, and managed the closure and remediation of a NORM contaminated oil field in southern Colorado that included removal of NORM impacted tank bottoms and site demolition.

- Extensive experience in conducting surface and subsurface investigations to determine hydrocarbon-related impacts to soil and groundwater. Co-managed an environmental assessment for a 75,000 acre oil lease in west Texas, which consisted of the following: 120 subsurface borings; managed two drilling crews that conducted subsurface sampling; a Naturally Occurring Radioactive Materials (NORM) survey; completed a regulatory compliance review; and compiled information for report submittal.

- Managed remediation activities for over 350 gas production pit locations in northwest New Mexico. The projects consisted of assessment of the locations and subsequent excavation and remediation of hydrocarbon and mercury impacted soils.

- Managed demolition and decommissioning projects for oil and gas field production and processing facilities. Managed and overseen the cleaning and dismantling of numerous petroleum storage tanks ranging from several hundred gallons to over 50,000 barrels.

ROBERT THOMPSON, PROJECT MANAGER, RSO/HSO

Key Expertise/Rationale for Selection

- Radiation Safety Officer Training
- NORM Oil and Gas Investigation / Remediation Experience
- Vast knowledge of remediation of oil and gas related waste sites
- Has managed a wide range of large remediation and demolition projects

Pertinent Facts

United States Air Force: Basic Training-Lackland AFB, San Antonio, Texas; Technical Training – Lowery AFB, Denver, Colorado; Duty Station – Kirtland AFB, Albuquerque, NM
Selected Professional Development and Certifications:

- OSHA 1910.120/40 Hour Course, Health and Safety or Hazardous Waste Operations; refreshers through 2001
- Radiation Safety Officer – 1995
- Radiation Worker I / Radiation Worker II Training, 2000
- Competent Person Training (Excavations) - 1994
- Naturally Occurring Radioactive Material (NORM) Surveying and Control Course -1995
- OSHA 1926.602 Material Handing Equipment Training - 1997
- DOT 49 CFR – Federal Motor Carrier Safety Regulations - 1997

Career Summary

Over 9 years experience managing and supervising remediation projects. Management and supervisory responsibilities include health and safety implementation, compliance with federal and state agencies laws and regulations, project estimating and proposal preparation, completion of detailed reports summarizing project activities and quality assurance and quality control of various remediation projects. Has completed numerous field characterization studies.

Relevant Experience

- Responsibilities include field supervision, health and safety supervision, scheduling, cost estimating, personnel training, and project management. Project types include soil remediation, (Hg, pH, PCB, Chromium, etc.), NMOCD site assessments, groundwater sampling and monitoring, groundwater remediation systems, soil sampling, waste characterization, and waste transporting and disposal.

- Personnel management and training, personnel and equipment scheduling, equipment management, safety training and supervision, project estimating, scheduling and management. Provided over sight of daily activities and functions associated with projects.

- Various types of hazardous waste cleanup, environmental sampling of soil, field screening of air and soil, installation and maintenance of remediation equipment. Operator of excavation equipment, operation of vacuum truck (Guzzle), operate and maintain personal protective equipment, prepared hazardous waste manifests labeling, DOT and CDC logs, and field activity documentation.

CURTIS MORGAN KILLION, SITE SUPERVISOR

Key Expertise/Rationale for Selection

- Demolition expert
- Extensive remediation experience with oil field waste sites
- Vast experience in the use of heavy equipment

Pertinent Facts

Selected Professional Development and Certifications:

- OSHA 1910.120 - 40 hour HAZWOPER training, 1991; refresher 1992-2001
- Asbestos Contractors and Supervisors Training Course & Refreshers, 1994 - 2001
- 49 CFR - Federal Motor Carrier Regulations Training, 1993
- 29 CFR - Material Handling Equipment Training, 1994
- Confined Space Training, 1995 - 2000
- Competent Person Training (Excavations), 1996
- Radiation Worker I / Radiation Worker II Training, 2000

Career Summary

Mr. Killion has over eight years of experience in remediation of hazardous waste materials. He has experience in remediation of over 2,500 drip pits, 5,000 mercury-contaminated sites, chromium contamination, PCB sites, and hydrocarbon contamination. Mr. Killion has been involved as an operator in the remediation of hydrocarbon-contaminated drip pits throughout the San Juan Basin, located near Farmington, New Mexico. He has knowledge in completing hazardous waste manifests, labeling, and paperwork.

Relevant Experience

- Mr. Killion acted as site supervisor for the remediation and closure of a radioactive "excellerator pond" located a Los Alamo National Laboratories. Mr. Killion also acted as site supervisor for the demolition of the former waste water treatment plant originally used during the Hanford project at Los Alamos, New Mexico.

- Mr. Killion has worked as an operator and was responsible for monitoring and sampling of hydrocarbon-contaminated pits in the San Juan Basin, located near Farmington, New Mexico.

- Mr. Killion is trained in the operation of trackhoes, front-end loaders, backhoes, demolition equipment, bulldozers, drilling rigs, forklifts, bobcats, cranes, vacuum trucks, and 2-ton trucks and trailers.

- He is knowledgeable in excavation procedures for removal of contaminated soil and debris. He has worked in remediation projects involving mercury-contaminated soil at natural gas meter stations in New Mexico. He is experienced in mercury monitoring and sampling.

- Mr. Killion has developed strong communication skills through his daily involvement with clients, subcontractors, vendors, and co-workers.

- Mr. Killion has acted as site supervisor for various projects using specialized demolition equipment. Mr. Killion is trained in the use of shears, hammers and grapples used in decommissioning projects.

DALE HOLDEN, OPERATOR

Key Expertise/Rationale for Selection

- Extensive knowledge and experience in the operation of heavy equipment
- Radiation Worker I/II training
- Hazardous Waste training
- Extensive excavation experience in remediation of soils

Pertinent Facts

Selected Professional Development and Certifications:

- OSHA 1910.120 - 40 hour HAZWOPER training, 1997 – 2001
- Radiation Working I/II Training – 2000
- CPR & First Aid, 1998 - 2001

Career Summary

Has over 30 years of practical experience in the operation of heavy equipment such as front-end loaders, backhoes, blades, bulldozers, trackhoes, cranes, sidebooms, and forklifts. Has three years experience as a heavy equipment operator excavating hydrocarbon-impacted soils at approximately 600 locations.

Relevant Experience

- Worked as a track hoe operator for the remediation of a radioactive contaminated "Excellerator Pond" at Los Alamos National Laboratories.
- Experience in the remediation of hydrocarbon-contaminated drip pits.
- Has developed strong communication skills through involvement with clients, vendors, and co-workers.
- Experienced in operating and maintaining trucks and heavy equipment, including bulldozers, loaders, excavators, backhoes, and blades.
- Has a broad knowledge of well-site preparation including all phases of dirt work, leveling, road building, and reclamation and clean up of reserve pits.
- Experience in installation, placement and removal of natural gas and petroleum pipelines.

NATURAL OCCURRING RADIOACTIVE MATERIAL (NORM) LICENSE

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SECTION 1

INTRODUCTION

1.1 GENERAL

This "Radioactive Material License" is designed to address procedures, requirements, and precautions necessary to perform cleaning of NORM contaminated tanks, vessels, pipe, soils, and areas and for the encapsulation, volume reduction and treatment (slurrying) of NORM contaminated materials at Philp Services') permanent facility or at temporary jobsites. Specific statements concerning license requirements, precautions and procedures apply to NORM operations at temporary jobsites, at the PSC permanent facility, or both, as appropriate. This License application covers:

Methods for Surveying
Required Postings
Record Keeping
Health Physics and Radiation Protection Procedures
Spill Contingency Plan
Employee Safety and Training Procedures
Decontamination Procedures for Land, Equipment and Personnel
Respiratory Protection

1.2 VESSEL AND TANK CLEANING

NORM contaminated tanks or vessels will be cleaned by use of vacuum trucks, shovels, or portable vacuum systems. The tanks or vessels will be cleaned on Temporary Jobsites of licensees or at the PSC permanent facility. Cleaning operations will take place over impermeable surfaces such as concrete, visqueen, or metal decking to prevent contamination of surrounding soils and waters. Tanks or vessels evaluated as confined spaces will be treated as such in accordance with 29 CFR 1910.

1.3 LAND/SOIL REMEDIATION

NORM contaminated soils and lands will be remediated using equipment such as backhoes, graders, front end loaders, and shovels, depending on the size of the affected area. Contaminated material will be placed in drums, cutting boxes, or other suitable containers.

1.4 WASTE HANDLING

NORM operations will be conducted over impermeable protective materials to minimize contamination of surrounding soils and water and to facilitate cleanup. All wastes will be either returned to the generator or transferred to another licensee as directed by the generator.

NORM wastes generated from cleaning operations will be sealed in steel or plastic drums, cuttings boxes, or other suitable containers for transfer, storage and/or disposal. Containers shall be made of or lined with materials that will not react with or be incompatible with the stored NORM waste.

1.5 PIPE CLEANING

Pipe or tubulars will be cleaned using a high pressure water lance, flex auger, dry cleaning, or fixed auger system. The water lance pressure wand will have a multi-port tip attached to it allowing circumferential spraying inside the pipe/tubular. All wash fluids will be recycled and filtered to minimize waste.

1.6 ENCAPSULATION

NORM wastes will be "encapsulated" in tubulars or pipe which are constructed of steel, PVC, or other materials not prone to deformation during the encapsulation process. A pipe or tubular capsule will be lowered into a steel lined tube hole. The area at the surface of the work hole will have an impermeable material such as concrete poured to prevent contamination of the surrounding area. Once a capsule has been lowered into the work hole a hopper unit will be placed over and connected (via a pipe union) to the capsule. Wastes will be emptied into the hopper and gravity fed into the capsule. Water may be added to waste to facilitate flow. The tubular is sealed by welding plates into both ends or by placing caps over the ends.

1.7 VOLUME REDUCTION

Soil and other containerized NORM waste material will be treated in a NORM treatment volume reduction device using various mesh screens and a shaker which will separate the material into respective particle sizes. Materials to be treated may be transferred to the treatment unit by a variety of methods depending on the material handling characteristics of the NORM. NORM contained in drums, or other containers, may be pumped or otherwise transferred directly to the volume reduction unit. The unit may also receive materials directly from crushers, loaders, backhoes, belt loaders, augers, stackers or other material handling devices. Water, mud, surfactants, emulsifiers, stabilizers and other chemicals may be added to waste materials to facilitate handling and treatment of the material during the treatment process. Water used in the treatment process is filtered and recycled. NORM wastes will be returned to the generator or transferred to another licensee as directed by the generator.

1.8 NORM TREATMENT (SLURRYING)

Treatment (slurrying) of NORM wastes will be accomplished using a mobile mixing and injection unit that will be utilized both at the Philip Services permanent facility and at temporary job-sites. The treatment unit consists of a shale shaker, chopper pump, auger tank, inclined auger, generator, triplex pump, centrifuge, water tank, settling tanks, and decon enclosure.

NORM wastes are emptied onto a shale shaker which allows smaller particles and wastes to fall through a mesh screen to a tank below. Material too large to fall through the screen are funneled to a chopper pump which grinds the material and drops it into the tank below. Items or materials that the chopper pump can not grind are removed and decontaminated by hand. Wastes that have fallen into the tank below are hydrated and circulated by an auger running the entire length of the base of the mixing tank. Slurried wastes are circulated in the auger tank until they are pumped directly into a well prepared for NORM disposal or pumped into cutting boxes for temporary storage.

SECTION 2

RESPONSIBILITIES

To ensure compliance with applicable rules, regulations, orders and procedures, the duties and responsibilities of key administrative and other personnel involved in NORM operations are outlined below.

2.1 RADIATION SAFETY OFFICER (RSO) and NORM SUPERVISOR(NS)

The Corporate Radiation Safety Officer (RSO) shall be in overall charge of radiological conditions during activities performed under this License. The RSO will coordinate activities with the Philip Services permanent facility NORM Supervisor (NS), temporary jobsite NSs, Work Supervisor(s), the Health, Safety and Environmental Officer and employees so that all work can be accomplished in a safe and radiologically sound manner. The "RSO" refers only to the Corporate RSO who is in overall charge of the radiologically licensed aspects of Philip Services' NORM activities. The NORM Supervisor refers to the RSOs designee who is directly overseeing the radiologically licensed aspects of PSC's NORM activities, either at the permanent facility or at temporary job-sites.

a. **Administrative Authority:** The RSO shall maintain control of NORM operations to ensure proper radiological health and safety procedures are in effect and ensure that annual audits of this license and the applicable procedures are conducted and documented. The RSO and the NS shall have the specific authority to stop operations any time an unsafe or environmentally hazardous condition exists. The RSO may purchase radiological supplies as necessary and in accordance with Philip Services' purchasing procedures, and he may promulgate changes to PSC's NORM Policies and Procedures as necessary to maintain radiological safety controls, .

b. **Radiation Work Permits:** The NORM Supervisor shall prepare a Radiation Work Permit (RWP) outlining radiological conditions and precautions to be taken during the days activities. The NS will ensure that all employees sign the RWP acknowledging their understanding of and responsibility to comply with the requirements of the RWP. The Radiation Work Permit shall be maintained available for review by all employees and contractors.

c. **Safety Meetings and Training:** The NS is responsible for briefing employees regarding radiological safety issues and ensuring that all employees are properly informed and trained in the safe handling of NORM. Topics shall include, but are not limited to; radiation safety and work procedures for employees and contractors, health physics precautions, contamination control, and other radiological conditions outlined in this License and the Louisiana Radiation Regulations (LRR).

d. **Operational Safety:** Ensuring that equipment used and operations involving NORM are operated and maintained in a safe working condition and in compliance with this License, LRR, and other applicable rules, regulations and orders.

e. **Radiological Surveys and Control:** Conduct baseline, release, dose rate and radiological surveys of equipment, lands, jobsite and personnel. Maintain control over the radiological aspects of NORM operations. Ensure proper decontamination of lands, equipment and persons who become contaminated with NORM.

f. **Control of Access and Postings:** Ensuring that only individuals properly trained in the safe handling of NORM shall have access to Controlled Areas and that all applicable areas are properly posted in accordance with this License and LAC 33:XV. He will also ensure that individuals frequenting Restricted Areas are provided personal dosimetry and outfitted and protected from NORM contamination.

g. **Inspections and Documentation:** The NS is responsible for inspecting all equipment, NORM activities, and areas where NORM is handled and stored to ensure NORM is properly handled and

contained.

h. **Emergency Response:** In the event of an emergency such as a fire, accident or uncontrolled NORM release, the NS shall have authority to respond so as to minimize injury to personnel or the environment. The RSO shall be contacted immediately.

I. **Regulatory Compliance**: Ensuring that the requirements of this License, LAC 33:XV, 29CFR, and other pertinent rules, regulations and orders are properly met and implemented.

2.2 HEALTH, SAFETY AND ENVIRONMENTAL (HS&E) OFFICER

A representative of PSC acting as the Health Safety and Environment Officer will periodically be on location during PSC operations. The HS&E Officer is responsible for the following:

a. **Implementation of Safety Procedures:** Ensure that all safety requirements and procedures are properly implemented and that all personnel working in the area follow proper safety procedures.

b. **Personnel Training:** Ensure workers are properly trained and knowledgeable of their duties and responsibilities on the worksite.

c. **Safety Equipment:** Ensure that the necessary safety, personal protective and environmental equipment is available and is functioning and in good repair.

d. **Safety Inspections:** Periodically inspect employee and contractor's work habits to ensure that they are working in a safety-conscious manner.

e. **Environmental Inspections:** Inspect all equipment, plastic protective sheeting, storage areas, containers and other jobsite materials to be sure they are properly maintained in accordance with the applicable provisions of this License and that NORM or other contaminants do not contaminate equipment, personnel or the environment.

2.3 WORK SUPERVISOR

The work supervisor will be a designated individual responsible for work activities taking place at the jobsite. The Work Supervisor is responsible for the following:

a. **Jobsite Supervision:** Supervision of all working personnel and all work activities taking place at the jobsite.

b. **Safety Meetings:** Conduct daily safety meetings to inform employee and contractors of safety concerns and procedures for each day's activities prior to the start of work.

c. **Inspections:** Perform daily/continual inspection of equipment and personnel work habits to ensure that safe and proper work procedures are being followed.

d. **Operational Safety:** Ensure operations and equipment are safe and in compliance with work plans,safety standards, safety procedures, License specifications and LRR.

e. **Emergency Shut Down**: Shut down operational activities in the event of any emergency which could result in injury to personnel or the environment.

f. **Accidents:** All accidents are to be reported to the RSO and HS&E Officer.

2.4 PERSONNEL WORKING IN RESTRICTED AND RADIOACTIVE (CONTROLLED) AREAS

The following conditions apply to individuals entering, leaving, and working in Controlled Areas. Only individuals properly trained and informed regarding the risks associated with NORM and proper handling of

sources of radiation shall be allowed to work in Controlled Areas. Personnel shall be properly trained in accordance with the requirements set forth in Section 6 (Health Physics)

a. **Radiation Work Permit:** All personnel working in a Controlled Area will be required to read and sign a Radiation Work Permit (RWP) prepared by the NS. The RWP shall be available for review at all times and will describe authorized activities, protective clothing/gear required, and expected radiological and safety concerns.

b. **Weekly Safety Meetings:** All personnel working in a Controlled Area shall attend weekly safety meetings. Meetings will include a review of all personnel concerns and the scheduled operations for the week, including any radiological hazards and concerns.

c. **Stop Work Authority:** All personnel working in the Controlled Area shall retain, at all times, "Stop Work Authority". All employees will have not only the right, but also the responsibility to immediately stop any operation or evolution which may be dangerous to safety, health, equipment, and/or the environment.

d. **Contamination Frisk:** All personnel entering Controlled Areas will be required, as a minimum, to perform a hand and foot "frisk" immediately upon exiting the Controlled Area. A whole body frisk will be performed before leaving the work site and when protective clothing was worn in the Controlled Area. Any reading above background when performing a personal frisk shall removed and the person refrisked.

e. **Accidents:** All accidents or injury, no matter how minor, will be reported immediately to the designated Work Supervisor, NS, RSO and HS&E Officer.

2.5 ENVIRONMENTAL RESPONSIBILITIES:

All personnel shall take measures to prevent contamination of the environment by trash, chemicals, fuels, oil, NORM and any other foreign material. To assure compliance with environmental practices the following environmental conditions shall apply:

a. **Proactive Response:** All persons working with NORM should make conscious efforts to avert conditions which may lead to uncontrolled releases of NORM which could contaminate equipment, personnel and the environment. Immediately report defective equipment or unsafe work conditions to the NS, RSO, Work Supervisor and HS&E Officer.

b. **Baseline Radiological Survey:** Prior to the start of any NORM activities on a temporary jobsite, a baseline radiological survey of equipment and lands shall be performed of the work area in accordance with Section 6 (Health Physics) of this License.

c. **Daily Inspections:** The HS&E Officer, NS or designated representative shall make a visual inspection of equipment before and after each days activities to ensure that pipes, hoses, valves, flanges, pumps and containers are not leaking NORM or other contaminants to the environment.

d. **Decontamination of Equipment:** All equipment to be released for unrestricted use shall be decontaminated and verified free of loose and fixed surface contamination according to procedures set forth in the Health Physics Section of this License. Items Philip Services is contracted to decontaminate, such as pipe, valves, vessels, and tanks, may be released with fixed contamination at levels above background, however, provided those levels are below the "exemption" levels established in LAC 33:XV Chapter 14, as directed by the contracting client.

e. **Completion Survey:** Upon completion of NORM operations at a temporary jobsite, a radiological survey of equipment and lands shall be performed to detect radiological changes from the baseline. Areas indicating increased activity shall be cleaned to a level at or below that level indicated by the initial baseline survey. Refer to the Health Physics section for further information on baseline and release surveys for jobsites.

f. **Annual Environmental Monitoring**: Annually, Philip Services will perform environmental soil

sampling and analysis for radium-226 and radium-228. Environmental sampling and analysis will be performed at the boundary of the facility, at the boundary of the cleaning areas within the facility and in the adjoining bayou.

SECTION 3

TEMPORARY STORAGE AND DISPOSAL OF NORM & NORM CONTAMINATED MATERIALS

NORM contaminated equipment and waste generated from NORM operations shall be stored and handled pursuant to the following procedures:

3.1 Material Storage - General

Containers holding or storing NORM shall be made from or lined with materials non-reactive and chemically compatible with the NORM waste. All equipment containing or contaminated with NORM shall remain in designated Temporary Storage Areas until decontaminated and verified free from loose surface and fixed contamination to the extent required by Louisiana Radiation Regulations and this License.

3.2 Storage Areas

Storage areas shall be cordoned and posted, as a minimum, with postings labeled as: Caution-Radioactive Materials.

a. **Contamination and Doserate Surveys:** The storage area and all items placed in Storage Areas shall be surveyed for radiation dose rate and for the presence of loose surface contamination. Items having loose surface contamination shall be controlled and postings and worker protection measures shall be taken (i.e. protective clothing) until such time that the items are decontaminated. In addition, trucks, boats, or other vehicles transporting materials with loose external contamination shall be surveyed for loose surface contamination and shall not be released for unrestricted use until verified free of contamination.

b. **Storage Conditions:** Any container holding NORM waste shall always be closed during storage, except when it is necessary to add or remove waste. Tanks, vessels, or other contaminated components awaiting decontamination shall have exposed openings sealed with plastic or other suitable materials to prevent the spread of loose contamination.

c. **Stacking, Labeling, and Handling:** Waste containers shall be labeled in accordance with LAC:33:XV, Chapter 4, Subchapter G. Containers shall be stacked so that each container identification label is readable from an access aisle or clear area. Storage containers having higher radiation exposure rates shall be arranged so as to minimize boundary exposure rates. Items containing NORM shall be handled so containers are not punctured or ruptured.

d. **Inventory:** An inventory of all containers stored in the Storage Areas shall be maintained. The inventory shall contain, as a minimum, item trace numbers and contents, owner or generator name, date transferred to storage, and item exposure rate.

e. **Storage Area Inspections:** Inspections shall be made of the Storage Area. Inspections shall be made for leaking or deteriorating containers, labeling, and of the condition of protective materials covering the ground of the storage area. Records of these inspections shall be maintained.

f. **Leaking or Defective Containers:** If NORM containers are leaking or are otherwise defective (i.e. severe rusting, apparent structural defects), PSC's employees will report this condition to the NS. NORM shall be transferred from defective containers to containers free from material defects and the area decontaminated. Following transfer of waste, defective containers shall be surveyed and decontaminated pursuant to the procedures described herein.

3.3 Transfer for Disposal and Manifests

Transfer: Waste transfers shall be accompanied by a shipment manifest (Form RPD-37) that contains the name, address, and telephone number of the person generating the waste. The manifest shall also include the name, address, and telephone number of the person transporting the waste. Waste manifest and documentation requirements shall be conducted pursuant to LAC 33:XV §1418. Department of Transportation regulations (DOT 49 CFR) will be complied with in regards to documentation and postings.

SECTION 4

OPERATIONAL PROCEDURE

4.1 GENERAL

The following serves as a general outline of the operational steps when performing NORM activities. NORM activities are operations involving NORM contaminated materials, equipment, tanks or vessels, or lands as authorized in this License. NORM activities include land and soil remediation, vessel, pipe, and tank cleaning and decontamination, encapsulation, volume reduction and NORM treatment. NORM activities also include general handling of NORM contaminated materials.

While these outlined steps are as specific as possible, it is difficult to anticipate all potential scenarios and proceduralize the steps to take therein. Because of that the Licensee will, at all times ensure that no contaminated, or potentially contaminated equipment or materials come in direct contact with unprotected skin or uncovered ground or soil. The basis for the following steps is that adequate protection be provided workers, the public, and the environment.

The following items pertain to NORM activities performed under this License.

a. **Temporary Jobsite Authorizations**(As Applicable): Prior to arrival at temporary jobsites, a Temporary Job-Site Notification Form (RPD-35) will be submitted to the Department of Environmental Quality (LDEQ). No temporary jobsite NORM activities will be performed without the Department of Environmental Quality's notification via Form RPD-35, unless other procedures are established by the LDEQ.

b. **Baseline Radiological Survey:** Prior to setup at temporary jobsites, a baseline radiological survey will be performed on the worksite. See Section 6 of this License for requirements regarding baseline radiological surveys.

c. **Qualified Personnel:** Only properly qualified, trained and monitored personnel will be utilized when working with NORM.

d. **Controlled Area Postings and Control:** During NORM activities, the area around the NORM work site will be cordoned off with radiological boundary rope and posted, as a minimum; "Caution - Radioactive Materials". Areas with radiation exposure rates above 2000 μR/hr or areas with loose surface contamination will be posted, as a minimum, "Caution - Restricted Area". The area posted and controlled as a Restricted Area will be kept as small as possible. However, the area will be large enough to allow for all work and the transit of personnel and equipment to be performed in a safe manner. The Norm Supervisor will be responsible to rope and post the area adequately, as per this License and the Louisiana Radiation Regulations.

   A Restricted Area is defined as "any area, access to which is controlled by the Licensee for purposes of protection of individuals from exposure to radiation or radioactive materials". The immediate areas in which NORM work activities are taking place shall be considered Restricted Areas. Areas with radiation exposure rates above 2000 μR/hr or areas with loose surface contamination will be posted, as a minimum, "Caution - Restricted Area".

   Inspections shall be conducted at sufficient frequencies to ensure that no member of the public continuously occupies any area within PSC Controlled Areas. By nature, these "controlled areas" are manned to prevent continuous occupancy by non-essential personnel.

   A Radioactive Material Area is generally defined as "areas and facilities where NORM contaminated equipment or waste is stored, utilized, or treated". A facility or jobsite may be posted as a Radioactive Material Area and contain within it one or more work areas controlled as a Restricted Area.

e. **Radiation Work Permits:** Prior to commencing work, the NS will complete a Radiation Work Permit

(RWP) delineating the day's work activities, work assignments, contamination and radiation levels, area postings, emergency procedures, respiratory protection requirements, and any other details necessary to inform workers and ensure personnel and environmental safety. Individuals performing work that day will read and sign the RWP. The RWP will be maintained available for review by all personnel.

f. **Records:** Records of personnel training, air sample reports, surveys, inspections, form DRC-3, the Temporary Jobsite Authorization (RPD-35)(as applicable), this License, and the Louisiana Radiation Regulations will be maintained on site during any NORM work activities.

g. **Contamination Controls:** Depending on site conditions and layout, plastic sheeting, Visqueen plastic, rubber or plastic mats, drip trays, cement or plastic lined slabs, and other material considered "non-porous", hereafter referred to as "protective sheeting" or "protective materials", shall be used to minimize the potential spread of contamination. It may not be necessary in all instances, such as when performing NORM activities on decking or diamond plate surfaces on offshore platforms, to use protective sheeting. The purpose of protective sheeting or materials is to minimize the contamination of areas, soils, lands, waters, and materials that would require extensive decontamination or remediation beyond that necessary to decontaminate the protective sheeting. It is also the intended purpose of protective sheeting to minimize the volume of waste generated.

h. **Personnel Contamination:** All personnel exiting posted areas will perform, as a minimum, a hand and foot frisk. All individuals wearing protective clothing while working in Controlled Areas shall, upon exit, perform a whole body frisk. Any reading above background when performing a personal frisk shall be cause for removal of the contamination and resurveying.

i. **Loose Contamination Check**: Containers and equipment used in NORM activities may be wiped or smeared for loose surface contamination to evaluate general radiological conditions. No containers will be released for unrestricted use which show loose surface contamination at levels equal to or greater than twice background.

j. **Release for Un-restricted Use:** Prior to removing materials, items, or equipment from posted Radioactive Materials or Restricted Areas, the materials, items, or equipment shall be surveyed for loose contamination as detailed in Section 6 of this license. In addition, a fixed contamination survey shall be performed of materials, items, and equipment prior to release for un-restricted use. Materials, items, or equipment showing loose or fixed contamination at levels above background shall not be released for un-restricted use. Items Philip Services is contracted to decontaminate, such as pipe, valves, vessels, and tanks, may be released with fixed contamination at levels above background, however, provided those levels are below the "exemption" levels established in LAC 33:XV Chapter 14, as directed by the contracting client.

k. **Radiation and Contamination Survey:** Radiation and contamination surveys will be performed of controlled areas as directed by the NS.

l. **Air Sampling:** During NORM activities, air samples will be taken of the workers "breathing zone" and at the radiological boundary.

m. **Work Area Decontamination:** When NORM activities will be continued the next day, the work area should be decontaminated or washed at the end of the work shift. This ensures that no contamination is spread to non-controlled areas and facilitates final cleanup/decontamination at job completion. Washwater will be dispositioned as per section 4.1.p.

n. **Sampling of Waste Stream:** A representative sample of NORM waste mixture may be taken and sent to an approved laboratory for radioanalysis, as required by the General Licensee or client.

o. **Waste Minimization:** To the greatest extent possible, wash or process water will be recycled to minimize the generation of contaminated fluids. All remaining wastewater will be sampled and analyzed by an approved laboratory for radioactivity and disposed of as per present regulations and

policies. At no time will contamination of soils or ground to 5 picocuries per gram or above be caused by disposal of wastewater or other NORM contaminants.

p. **Waste Disposal:** All waste materials generated from NORM activities will be surveyed, decontaminated and/or disposed of in accordance with present regulations and policies.

q. **Records and Documentation:** Records of NORM related activities must be properly recorded and documented in accordance with this License and the LRR.

r.. **Closure:** When temporary jobsite NORM activities are complete, a release survey shall be conducted in accordance with procedures of the Division's current "Implementation Manual for Management of NORM in Louisiana" and as per this license.

4.2 PIPE CLEANING

Pipe Cleaning will be conducted in accordance with the following general discussion:

a. **Pipe Cleaning Procedure:** Pipe or tubulars will be cleaned using a high pressure water lance, flex auger, dry method, or fixed auger system. The water lance pressure wand will have a multi-port tip attached to it allowing circumferential spraying inside the pipe/tubular. All wash fluids will be recycled and filtered to minimize waste.

b. **Work Area Safety:** Workers handling pipe shall make every effort to minimize their exposure during the cleaning process by standing upwind of the cleaning system, not aggressively disturbing the NORM, and proceeding in a slow, safe and deliberate manner.

c. **Protective Equipment:** Respirators and protective clothing will be used as prescribed by the NORM Supervisor and detailed in the RWP.

d. **Air Monitoring:** Breathing zone and boundary area air samples shall be taken as prescribed in the General Section above and the Health Physics Section of this License. Boundary air samples shall be taken on the downwind side, if wind conditions exist.

e. **Inspections:** Periodic inspections of the work area during pipe cleaning will be performed by the NORM Supervisor, Work Supervisor and HS&E Officer, as prescribed in Section Two and the General Section of this License.

f. **Gamma Dose Measurement:** After the pipe has been verified free of loose contamination the cleaned pipe will be surveyed for fixed contamination gamma activity with a Ludlum Model 3 instrument, or equivalent.

g. **Final Decontamination Procedures:** When pipe cleaning activities are complete the work area will be completely decontaminated and all NORM contaminated materials returned to the client for disposal. Water used for decontamination of the work area will be filtered and sampled. Upon completion of each job. NORM contaminated filters will be pressure washed to remove NORM solids. Each filter will be surveyed for contamination. If levels recorded are less than 50uR/hr, they will be packaged into containers in which their cumulative exposure reading is less than 50 uR/hr and sent to an approved landfill. Any filters that cannot be decontaminated will be returned to the Customer or sent to an approved NORM disposal facility.

h. **Closure:** Concurrent with decontamination of the work area, a radiation and contamination survey will be performed to ensure the work area is returned to pre-cleaning conditions. Surveys and release will be performed as per the Health Physics Section of this License.

i. **Waste Manifest:** NORM wastes returned to the client will be transferred and manifested as per current Louisiana Radiation Regulations.

4.3 LAND AND SOIL REMEDIATION

NORM contaminated soils and lands will be remediated (decontaminated) using equipment such as backhoes, graders, front end loaders, and shovels. Methods will consist of placing the contaminated material in drums, cutting boxes, or other suitable containers. Containerized wastes will be returned to the client, treated, or encapsulated for disposal. The following procedures outline land and soil NORM remediation:

a. **Radiological Baseline Survey:** Prior to commencing remediation, a thorough radiological assessment of the area should be performed, as directed by the client. The assessment will help to minimize the amount of non-contaminated soil and land that is removed during the remediation process and will ensure that contaminated areas are properly remediated.

b. **Decontamination Procedure:** Contaminated soil and land will be extracted by use of a backhoe, trowels, shovels, graters, or other appropriate means and will be immediately transferred to suitable drums, cutting boxes or other appropriate containers.

c. **Site Surveys and Screening:** Radiological screenings, surveys, and sampling should be performed regularly during remediation to monitor and control the decontamination process.

d. **Labeling and Survey:** All containers will be surveyed as discussed in the Health Physics Section of this License. Containers shall be labeled as per the client's procedures and current radiation regulations (LAC 33:XV:453 and Sect. IX.B of Implementation Manual for Management of NORM). As a minimum all containers shall be labeled as NORM, the contents, the date, the owner, and the maximum dose rate in microroentgens per hour.

e. **Radiological Controls:** Radiological controls and worker protection procedures will be incorporated into decontamination procedures as discussed in the General Provisions section, the Health Physics Section, and the General Section discussion above in this License.

f. **Release Survey:** At job completion a release survey shall be performed of the remediated area as described in the Health Physics Section of this License and per LAC 33:XV:1417. Once contaminated, areas may not be released for un-restricted use prior to closeout authorization by the Radiation Protection Division of the Louisiana Department of Environmental Quality, if applicable.

4.4 VESSEL AND TANK CLEANING

NORM contaminated tanks or vessels will be cleaned by use of vacuum trucks, shovels, or portable vacuum systems. Tanks or vessels evaluated as confined spaces will be treated as such in accordance with 29CFR1910.

a. **Cleaning Procedures:** NORM contaminated tanks and vessel will be cleaned by use of vacuum systems, vacuum trucks, shovels, or by pumping the waste to a volume reduction unit. Other methods may also be employed as necessary as long as the requirements of this License are maintained. The area around the tanks or vessels to be cleaned shall be protected from NORM contamination with suitable impermeable protective materials.

b. **Radiological Controls:** Radiological controls, postings and worker protection procedures will be incorporated into tank cleaning activities as discussed in the Health Physics Section, and the General Section above.

c. **Confined Spaces:** Tanks or vessels defined as Permit Required Confined Spaces will be cleaned in accordance with Federal Regulations detailed in 29CFR1910 regarding confined space entry.

d. **Contamination Minimization:** Workers handling the vacuum, hoses, or containers shall make every effort to minimize NORM exposure to themselves and the environment during the cleaning process. Attachment or detachment of hoses, fittings or valves should not result in spillage of NORM materials to unprotected areas.

e. **Safety Equipment:** Respirators and protective clothing will be required as prescribed by the NORM Supervisor and detailed in the RWP.

f. **Air Samples:** Breathing zone and boundary area air samples shall be taken as prescribed in the General section above and the Health Physics section. Boundary air samples shall be taken on the downwind side, if wind conditions exist.

g. **Inspections:** Periodic inspections of the work area during cleaning operations will be performed to ensure operations proceed in a safe manner as prescribed in Section 2 and the General Section above.

h. **Daily Cleanup:** Prior to completing work for the day, the work area will be secured and cleaned so as to minimize the potential spread of contamination.

i. **Waste Handling:** NORM materials removed from tanks or vessels will be containerized and returned to the client. NORM shipments, transfers and manifests will be in accordance with current regulations and policy.

j. **Waste Container Labeling:** Containers shall be labeled as per the client's procedures and current radiation regulations. As a minimum all containers shall be labeled as NORM, the contents, the date, the owner, and the maximum dose rate in microroentgens per hour.

k. **Surface Contamination Surveys:** Containers holding NORM from the tank cleaning process shall be surveyed for loose and fixed contamination as per the Health Physics Section of this License. No containers will be released for un-restricted use which show loose surface or fixed contamination levels at twice background or greater. Items Philip Services is contracted to decontaminate, such as pipe, valves. Vessels, tanks, etc. may be released with fixed contamination at levels above background, however, provided those levels are below the "exemption" levels established in LAC 33:XV Chapter 14, as directed by the contracting client.

l. **Release Survey:** End of job release surveys and decontamination shall be performed as discussed in the Health Physics Section and in the General Section above.

4.5 ENCAPSULATION

a. **Work Area:** The encapsulation work area will consist of a steel lined tube hole approximately 50 feet deep. At the surface, the area immediately around the tube hole will have an impermeable material such as set concrete to prevent contamination of soils and land and to facilitate cleanup after encapsulation operations are complete.

b. **Posting:** The encapsulation work area will be cordoned off with radiological rope and posted, as a minimum, "Caution: Restricted Area, Radioactive Materials." The area will contain all of the encapsulation equipment and allow sufficient room for safe operations.

c. **Monitoring:** All work and monitoring will be accomplished as per the General provisions section above and as per the Health Physics Section of this license.

d. **Operations:** Encapsulation will be begun by welding or threading a plate or cap onto one end of the steel or PVC capsule and lowering that end into the tube work hole. The capsule will be lowered by a crane, work rig, or other suitably safe means. Once the capsule is lowered into the tube work hole and secured, a portable hopper will be positioned over the tube hole and aligned to gravity feed into the capsule. Containers or drums will be lifted and handled using a forklift, crane, work rig, or other suitable means for dumping the NORM contents into the hopper. Precautions shall be taken to minimize the spread or potential spread of contamination during the dumping. A plastic cover may be used over the handling area, the area may be completely enclosed, HEPA ventilation units may be employed, or the NORM may be kept damp so as to minimize the potential spread of contamination and airborne radioactive material. When the capsule is full the hopper will be removed and either a plate will be welded or a cap will be threaded onto the capsule end. Prior to moving the hopper the immediate work area will be cleaned to the extent necessary to prevent the spread of contamination.

e. **Exposure Minimization:** Workers handling the drums or containers shall make every effort to

minimize their exposure during the dumping process by standing upwind of the container, not aggressively disturbing the NORM, and proceeding in a slow, safe and deliberate manner.

f. **Protective Equipment:** Respirators and protective clothing will be used as prescribed by the NS and detailed in the daily RWP.

g. **Air Sampling:** Breathing zone and boundary area air samples shall be taken as prescribed in the General Section above and the Health Physics Section of this license. Boundary air samples shall be taken on the downwind side, if wind conditions exist.

h. **Additives:** Water or other fluids may be added to the hopper to facilitate effective flow of the NORM waste into the capsule. A surfactant may be added to the hopper to facilitate flow and assist in hopper decontamination.

i. **Inspections:** Periodic inspections of the work area during encapsulation will be performed as prescribed in Section Two and the General Section of this license.

j. **Loose Contamination Survey:** Prior to removing the capsule form the tube hole any spilled NORM from the filling process will be removed from the tube hole work area. Accessible areas of the capsule will be surveyed for loose surface contamination prior to removal from the tube hole. Contaminated capsules will be decontaminated prior to removal from the tube hole, if possible. Immediately upon removing the capsule 100% of the capsule shall be surveyed for loose surface contamination. Any area showing contamination levels at or above twice background shall be decontaminated as per Section 5 of this license.

k. **Fixed Contamination Survey:** After the capsule has been verified free of loose contamination the capsule will be surveyed with a Ludlum Model 3 instrument, or equivalent, and labeled according to the client's NORM procedures. As a minimum, each capsule will have the date and maximum dose rate grease pencilled on it. The capsule will also be identified as NORM.

l. **Manifests:** NORM capsules returned to the client will be transferred and manifest as per current Louisiana Radiation Regulations and DOT 49 CFR.

m. **Decontamination:** When encapsulation activities are complete the work area will be completely decontaminated and all NORM contaminated materials returned to the client for disposal. Water used for decontamination of the work area will be filtered and sampled. If the activity exceeds 30 pCi/ml the water will be further filtered or disposed of as NORM waste. Contaminated filters will be returned to the client.

n. **Release Survey:** Concurrent with decontamination of the work area a radiation and contamination survey will be performed to ensure the work area is returned to pre-encapsulation conditions. Surveys and release will be performed as per the Health Physics Section of this license.

4.6 VOLUME REDUCTION

NORM Waste treatment and volume reduction will be conducted in accordance with the following general discussion:

a. **Volume Reduction:** NORM contaminated soils, sludges, scales, or other residue may be treated in a waste treatment device consistinf of various mesh screens and a shaker sdesigned to separate the material into respective particle sizes. Operations around the volume reduction device shall be conducted so as to minimize spillage of and to prevent the uncontrolled release of NORM to the environment.

b. **Work Area Safety:** Workers handling NORM contaminated materials in the volume reduction and

treatment unit shall make every effort to minimize their exposure during the cleaning process by standing upwind of equipment, not aggressively disturbing the NORM, and proceeding in a slow, safe and deliberate manner.

c. **Protective Equipment:** Respirators and protective clothing will be used as prescribed by the NS and detailed in the RWP.

d. **Air Monitoring:** Breathing zone and boundary area air samples shall be taken as prescribed in the General Section above and the Health Physics Section of this License. Boundary air samples shall be taken on the downwind side, as appropriate.

e. **Inspections:** Periodic inspections of the work area during volume reduction will be performed by the NS, Work Supervisor and HS&E Officer, as prescribed in Section Two (Responsibilities) and the General Section of this License.

f. **Release for Un-Restricted Use:** No equipment or materials will be released for un-restricted use showing the presence of loose or fixed contamination at levels above background. Material PHILIP SERVICES is contracted to decontaminate may be released with fixed contamination at levels above background, however, provided those levels are below the "exemption" levels established in LAC 33:XV Chapter 14, as directed by the contracting client.

g. **Final Decontamination Procedures:** When remedial/treatment activities are complete the work area and equipment will be completely decontaminated and all NORM contaminated materials returned to the client for disposal. Water used for decontamination of the work area will be filtered and sampled. Contaminated filters will be returned to the client. Components separated from the NORM waste will be sampled and stored in suitable containers or on protective surfaces until such time that the material is verified as decontaminated pursuant to current applicable regulations.

h. **Closure:** Concurrent with decontamination of the work area a radiation and contamination survey will be performed to ensure the work area is returned to pre-cleaning conditions. Surveys and release will be performed as per the Health Physics Section of this License.

i. **Waste Manifest:** NORM wastes returned to the client will be transferred and manifested as per current Louisiana Radiation Regulations and DOT 49CFR.

4.7 NORM TREATMENT (SLURRYING)

a. **Container Handling:** A forklift, crane will be utilized to move paletted drums or containers containing NORM waste from a temporary NORM storage area to the area of the NORM mixing tank. A crane or other suitable rigging will then be utilized to place the paletted drums or container on top of the mixing tank in the immediate vicinity of the inlet hopper. For drums, a drum handler will then be attached to the crane. The drum handler will be capable of tilting the drum 180° to remove its contents. The drum handler will then be attached to a drum and the drum moved as close as possible to the inlet hopper. The lid of the drum or container will then be removed. Utilizing the crane and/or the drum handler the contents of the container will then be immediately emptied into the inlet hopper. A water misting device may be utilized at the inlet to the hopper to minimize NORM airborne contamination. The inlet hopper will contain a screen and a shaker to remove large debris. Large debris will then be further wetted down and washed into a grinder to reduce particulate size prior to entering the mixing tank.

b. **Container Decontamination:** The emptied drums, lids and rings will then be moved from the top of the mixing tank to a decontamination booth where cleaning and decontamination procedures will take place. All drums will be cleaned according to equipment decontamination procedures in Section 5, and as further discussed in the next paragraph.

c. **Container Surveys and Release:** Loose Contamination levels on emptied drums will be determined in an area of low background (less than 50 cpm) using a Ludlum Model 2 meter with a GM pancake probe or equivalent. The drums will either be moved to an area of low background and directly

surveyed with the meter or wiped and the wipe taken to an area of low background to be counted. Any sustained increase in count rate equal to or greater than twice background activity will indicate that NORM contamination is present and warrant further decontamination activities. 100% of both the interior and exterior of the drums shall be surveyed.

d. **Waste Grinding and Mixing:** NORM waste which has entered the mixing tank via the inlet hopper or grinder will be moved using either an auger or a transfer pump located on the bottom of the tank to a chopper pump. The purpose of the chopper pump is to further reduce the particulate size of the NORM waste. Final particulate size of NORM waste will average 100 microns. The chopper pump will discharge back to the mixing tank where the auger/pump will once again be able to move the debris back to the chopper pump. Continuous mixing and grinding will thus be achieved of all NORM waste in the mixing tank.

e. **Protective Equipment:** Respirators and protective clothing will be used as prescribed by the NS and detailed in the daily RWP.

f. **Air Sampling:** Breathing zone and boundary area air samples shall be taken as prescribed in the General Section above and the Health Physics Section of this license. Boundary air samples shall be taken on the downwind side, as appropriate.

g. **Additives:** Water, an extended bentonite in a fresh water environment, a prehydrated bentonite in a saltwater environment, or a polymer will be added to the NORM slurry such that the NORM material will remain suspended until disposal is accomplished.

h. **Well Pre-Test:** Prior to injecting NORM slurry into a well the injection system valves and lines will be hydrostatically leak tested to 70% of rated test pressure (3,500 psi) using fresh water. If any leaks are found they will be corrected before the NORM slurry injection begins. Water used for the leak test will be either injected into the disposal well or collected and cleaned by a filtering system and treated as NORM waste until the activity of the water has been proven to be less than 60 pCi/ml.

i. **Well P & A:** Once the NORM slurry has been injected into the disposal well, the well will be "plugged" in accordance with the provisions of the Office of Conservation Statewide Order No. 29-B and the Department of Environmental Quality provisions set forth in LAC 33:XV.

j. **System Washdown:** Upon completion of the injection process a washdown and flush of affected equipment will be made utilizing a high pressure sprayer. The washdown and flush water will be collected and processed through a set of filters. The filtered water will then be sampled and analyzed by an acceptable laboratory. Water with activity greater than 60 pCi/ml will either be furthered filtered to a level less than 60 pCi/l or stored as NORM waste and disposed of accordingly. When disposing of water with activity less than 60 pCi/ml extreme care shall be taken. At no time will soils be contaminated to a level equal to or greater than 5 pCi/gm.

k. **Loose and Fixed Contamination Surveys:** All equipment shall be wiped tested for loose surface contamination on all accessible surfaces and be cleaned to a level of less than twice background (Maximum background activity for counting wipes shall be 50 cpm) before leaving the Restricted Area. Additionally, any equipment whose dose rate exceeds twice background at any accessible point as measured in µR/hr shall be handled and controlled as NORM contaminated. Both a radiation and loose surface contamination survey shall be performed on 100% of the accessible areas of all equipment leaving the Restricted Area.

SECTION 5

DECONTAMINATION

5.1 DECONTAMINATION FACILITY AREA

A decontamination area will be made available at the PSC Facility and at Temporary Jobsites for decontamination purposes.

a. **Facility Layout:** The cleaning area will be located within a posted and cordoned area accessible to trained personnel only. The cleaning area should be constructed so as to prevent the spray or spread of NORM contaminated fluids or materials to uncontrolled areas.

b. **System Design:** Wash water will be filtered to remove particulate activity and recycled for further washdown operations. Settling tanks will also be used to remove solids from the water. Decontamination activities will stop immediately if any water leaks from the system are noted and shall not recommence until the leak has been corrected.

c. **Decontamination Procedures:** Decontamination shall be accomplished by the simplest and most radiologically sound method. Wipedown and washing with low pressure water is preferable to hydro-lancing.

d. **Contamination Check:** Once an item has been decontaminated, the accessible surfaces shall be wipe surveyed for loose surface contamination and counted in an area with a background of less than 50 cpm. Items will not be removed from the decontamination area with loose surface contamination exceeding twice background activity unless they are wrapped or the contamination is otherwise properly contained. After the item has been verified free of loose surface contamination the item will be moved to an area of low background and surveyed for fixed contamination over 100% of all accessible areas. Any item found to contain fixed contamination greater than twice background measured in µR/hr shall not be released for unrestricted use and shall be handled and controlled as NORM *contaminated. Items Philip Services is contracted to decontaminate, such as pipe, valves,* vessels, tanks, drums, etc., may be released with fixed contamination at levels above background, however, provided those levels are below the "exemption" levels established in LAC 33:XV Chapter 14, as directed by the contracting client.

5.2 PERSONNEL DECONTAMINATION

All personnel shall be fully decontaminated before leaving areas with loose surface contamination. Personnel shall be considered free of contamination when no readings above background are detected when performing a personal frisk.

a. **Skin Contamination:** Personnel found to be contaminated on their skin shall be decontaminated by washing the affected area using soap and tepid water. A gentle scrubbing action shall be used. Upon completion of the washing evolution, the affected are shall be resurveyed. Areas found to be contaminated after the initial wash shall be re-washed and surveyed until free of contamination. Only injured personnel requiring immediate medical attention shall be allowed to leave the Restricted Area contaminated.

b. **Clothing Contamination:** Clothing found to be contaminated shall be washed and surveyed until free of contamination. Clothing that can not be decontaminated shall be disposed of as NORM waste.

c. **Incident Reporting and Documentation:** Any contamination detected on personnel shall be reported immediately to the NS. The NS shall attempt to identify where and how the individual became contaminated. Personnel protective measures and work activities shall be reviewed to prevent a reoccurrence of the incident. The NS shall complete a PSC Incident Report Form for each contaminated individual. This form shall be maintained at the PSC home office for a minimum of five years. The Incident Report Form shall as a minimum contain the following information:

1. The full name of the individual.
2. Date and time the incident occurred.
3. Location(s) on the body and the level(s) to which the person was contaminated.
4. Approximate length of time the person was contaminated.
5. Work location where the contamination occurred and the circumstances involved with the incident.
6. Methods of decontamination and the levels to which the individual was decontaminated to.

d. **Acknowledgement:** After completion of the Incident Form the NS shall review the form with the individual. The individual will then counter-sign the form indicating that all information contained on the form is true and correct to the best of his knowledge.

SECTION 6

HEALTH PHYSICS PROGRAM

6.1 BASIC PRACTICES AND GUIDELINES

Safety is the highest concern to PSC. At all times the workers will follow safe work procedures to protect themselves and their fellow employees from contact with NORM and to prevent the release of NORM contamination to the environment.

At all times, contractors and employees of PSC will maintain activities and operations so that NORM exposure levels are maintained "as low as reasonably achievable" (ALARA). The amount of time that workers are in close proximity to NORM wastes should be kept to a minimum

6.2 RESTRICTED AND RADIOACTIVE MATERIAL(CONTROLLED) AREAS:

a. **Establishment of Controlled Area Boundaries:** A boundary marked and posted with the appropriate signs shall be established to limit access to trained personnel. The signs posting the area shall bear the conventional radiation colors (magenta or purple on a yellow background) and the three-bladed tri-foil design. As a minimum the sign shall bear the words:

CAUTION

RADIOACTIVE MATERIALS

Additional postings such as "Radiation Area","Airborne Radioactivity Area", "Contaminated Area", and "Respiratory Protection Required" may also be utilized depending upon the scope of the work taking place. It will be the NS's responsibility to ensure that such areas are posted properly according to the LRR. The limiting exposure level at the boundary of the Restricted Area is 2000 microroentgen per hour. The Restricted Area should be as small as possible but large enough to comfortably accommodate personnel and equipment as required.

b. **Access to Controlled Areas:** Access to Controlled Areas shall be limited to individuals that have received training appropriate to the level of hazard they will encounter and as prescribed in section 1012 of LAC 33:XV. No member of the public will be allowed to continuously occupy any area within Philip Services' Controlled Area.

c. **Protective Clothing:** A minimum of coveralls, gloves, and shoe coverings shall be worn by all personnel who may come into contact with NORM contaminated items when entering a Controlled Area. Any coveralls, gloves or shoe coverings that become torn will be immediately discarded and replaced. Direct skin contact with NORM scale, sludge, solids, waters or materials will be avoided to the maximum extent possible. Upon exiting an area of known or suspected NORM contamination the worker will remove his protective clothing. Receptacles for used protective clothing will be made available at the exit area. All personnel exiting the Controlled Area will immediately proceed to a designated area of low background to perform a contamination frisk.

d. **Personnel Dosimetry:** All personnel working in a Controlled Area shall be provided with personnel dosimetry devices to monitor the individual's received radiation dose. Dosimeters will consist of either a film badge or a thermoluminescent device. Each dosimeter will be assigned to and worn by a specific person and will bear the name of the individual and/or a number corresponding to the individual assigned. When an employee reports to work they will attach their assigned dosimetry above their waist. At the end of the work day the employee will leave his dosimeter in a low

background location designated by the NS. A "control" dosimeter will be kept at this location at all times and be read at the same frequency as those dosimeters worn by employees. Utmost care shall be taken to prevent dosimeter damage or loss. Dosimeters will be read not less than every three months. Records of readings of the dosimeters will be maintained indefinitely at the home office of PSC. Results of the monitoring will be reported to each individual once results are received. Dosimetry reading services will be provided by Landauer or other qualified vendors.

e. **Prevention of Accidental Ingestion:** No eating, drinking, chewing of gum or tobacco products or smoking will be allowed within the Controlled Areas.

f. **Wounds or Cuts:** The presence of open wounds, sores or cuts shall be reported to the NS and covered with bandages and/or protective clothing prior to work in the Controlled Area.

g. **Accidents and Fires:** The NS and subsequently the RSO shall be immediately informed of any accident, fire, release, or spill. In the event of any accident first priority will always be given to injured personnel. In the event of a fire, priorities will first be given to injured personnel, than to the fire itself. Radiological concerns will be addressed only after conditions involving personnel or fires have been stabilized. In the event of a spill, the Spill Contingency Plan (see Section 7) will immediately be implemented by the person discovering the spill and the NS shall be notified.

6.3 AIRBORNE CONTAMINATION AREAS

Efforts shall be made to prevent airborne NORM through proper equipment layout, design and use of engineering controls.

a. **Engineering Controls:** Every practicable effort shall be made to utilize engineering controls (wetting down or NORM, ventilation systems) to reduce airborne contamination levels to an extent where respirator usage will not be necessary. Respirators will be used for worker protection during operations when the possibility for airborne contamination exists at levels above those specified in Appendix A of LAC 33:XV Chapter 4.

b. **Respiratory Protection:** Persons requiring the use of a respirator shall wear a properly fitted NIOSH/MSHA approved respirator equipped with cartridges capable of removing airborne radionuclides. Persons wearing respirators shall, as a minimum:

1. Have a medical evaluation by a qualified physician at least initially, and annually thereafter, to ensure that the person is physically able to perform work while wearing respiratory protective equipment.

2. Have a fit test performed using the same type of respirator to be used while performing NORM activities at least annually.

3. Be trained in the proper use of respirator equipment.

4. Be made aware that he may leave the work area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other condition that might require such relief.

c. **Bioassay Measurements:** Significant intakes by ingestion or inhalation are presumed to occur only as the result of accidents, inadvertence, poor procedure, or similar conditions. Intakes will be evaluated and accounted for by techniques appropriate for the occurrence. Techniques measuring the intake of radioactive material into the body may include whole body counts (the measurement of radioactivity in the body), bioassays (the measurement of radioactivity excreted from the body), or any combination thereof as necessary for timely detection and assessment of individual intakes. The RSO will determine the need for bioassays and/or whole body counts.

6.4 TRAINING REQUIREMENTS

All persons entering Controlled (Radioactive Material or Restricted) Areas shall receive training in the safe handling of radioactive materials.

a. **Minimum Requirements:** All persons working in Controlled Areas will be trained as outlined in LAC 33:XV:1012. This training should consist of a minimum of eight hours classroom instruction, including practical factors. Records of training and qualifications will be maintained on-site at each job for those personnel involved in radiological work.

Employees and contractors will also be instructed in basic radiation protection control practices as outlined in LAC 33:XV, Chapter 14, Appendix A. The course of instruction will be provided by individuals recognized by the Department of Environmental Quality, Radiation Control Division as having sufficient knowledge and skills to provide such training.

Visitors and short term contractors(working less than 8 hours) entering the Controlled Area will be briefed on the radiological health hazards contained in the area and made aware of precautions to be taken to prevent exposure to NORM. Guidelines used for the briefing shall be those contained in LAC 33:XV, Article 1012.

b. **Continuing Training:** All personnel working in the Controlled Area will receive, as a minimum, eight (8) hours of radiological training annually. This course will be taught by individuals recognized by the Department of Environmental Quality, Radiation Control Division, as having sufficient knowledge and skills to provide such training.

6.5 RADIATION SURVEYS

Radiation surveys shall be conducted to determine exposure rates, area postings, the presence or absence of loose surface, fixed, and airborne contamination and for establishing baseline and release criteria.

a. **Determination of Exposure Rates For Restricted Areas:** Radiation surveys shall be conducted to ensure that the exposure rates are less than 2000 microroentgen per hour at the boundary of any Restricted Area. If this exposure rate is encountered anywhere on the boundary of the Restricted Area the NS will immediately be notified.

b. **Measurement Scope and Frequency:** The Restricted Area boundary and other radiation surveys shall be conducted periodically. Survey results will be reported to the NS. Surveys shall also be conducted in the vicinity of cleaning activities, the decontamination area, associated equipment, and the storage area(s) at the direction of the NS.

6.6 AIR SAMPLING

Air sampling of the breathing zone and the boundary shall be determined to verify airborne contamination levels.

a. **Determination of Airborne Contamination:** Air sampling will be conducted to identify when persons are exposed to airborne radionuclides exceeding the values specified in Appendix B of LAC 33:XV Chapter 4 or Section 102 of LAC 33:XV. Additionally, air sampling shall be conducted at the boundaries of airborne causing evolutions to ensure that no airborne radionuclides are being released to the environment outside of a Controlled Area. Airborne sampling shall be performed in the "breathing zone" of all workers wearing respirator protection at the direction of the NS.

b. **Sampling Procedure:** A minimum volume 1.0×10^6 ml ($1\ m^3$) of air will be drawn through a filter paper patch using a standard air sampler. Air samplers will be run for a minimum of 20 minutes at a flow rate of 50 liters per minute (2 cubic feet per minute) to achieve this volume. Longer run times to obtain larger volumes will be allowed at the direction of the NS. Completed air filter samples should be removed from sampler housing and placed in plastic bags for analysis. Tweezers should be used to remove the filter to prevent cross-contamination. The bag should be labeled with the date the air sample was taken, the start and stop times of the sample, air flow rate, the sample location, and the

printed initials of the person taking the air sample. The results of all air samples will be documented and retained for a minimum of five years at the PSC home office.

6.7 BASELINE AND RELEASE SURVEYS FOR TEMPORARY JOBSITES

The purpose of baseline and release surveys is to establish the radiological background conditions of any worksite prior to and following any activities dealing with NORM. Baseline and release surveys shall be conducted on all temporary jobsites in the course of NORM activities. Radiological surveys for land and equipment shall be conducted in accordance with LAC 33:XV Chapter 14 and the guidelines contained in the Implementation Manual for Management of NORM in Louisiana Surveys shall as a minimum include the following:

a. **Baseline Dose Rate Survey:** Prior to commencing NORM activities at temporary jobsites a dose rate survey of the lands, equipment, buildings, well heads, tanks, or other equipment on site must be completed to establish radiological background exposure levels. Gridded survey maps or plats should be used to record all baseline surveys.

b. **Survey Procedure:** The immediate work area and adjacent areas shall be surveyed for radioactivity. The survey grid spacing shall not be greater than 10 x 10 meters and dose rates shall be measured and recorded at a minimum spacing of 3 meters. Survey instrument readings must be taken within 1 cm of all objects surveyed. Grid maps or plats used to record survey data shall be constructed so that grid locations can be easily identified and referenced. All notes or other information not recorded directly on maps shall be referenced to grid locations. Maps shall be of sufficient size and scale to contain all survey information, sample locations and all significant objects including: buildings, pits, tanks, roads, cultural and geographic features.

c. **Anomalous Activity:** Any areas surveyed showing radioactivity levels 2 X background or greater shall be annotated on the grid map for possible sampling.

d. **Soil Samples:** Representative soil sample of the temporary jobsite should be taken for NORM radionuclide analysis. A minimum of three soil samples shall be taken. The samples may be taken randomly in NORM work and storage areas or in areas showing exposure rates at or above twice background. Sample locations shall be marked on the survey map.

e. **Survey Copies:** Copies of the baseline survey indicating initial dose rates, soil sample locations, and soil sample results shall be retained indefinitely.

f. **Job Completion(Release) Survey:** Upon completion of any activities involving NORM, a completion, or release survey shall be made and documented of the work area and its perimeter. Any increase in dose rates as compared to the initial baseline survey shall be noted, documented and reported to the NS. Areas noted with radioactivity above that identified during the baseline survey shall be sampled or decontaminated. Soil samples shall, as a minimum, be taken in the initial three baseline locations and also in areas where increased dose rates have been noted. Soil locations shall be noted on a survey map along with the dose rates taken for the job completion survey.

6.8 SURVEY INSTRUMENTATION

Survey instrumentation used to measure radiation exposure and contamination levels should conform to the following guidelines:

a. **Exposure Instruments:** Instruments used to determine gamma exposure rates shall be capable of measuring from 1 to 500 microroentgen per hour (µR/hr). A Ludlum Model 3 with a Model 44-2 sodium iodide detector (or equivalent) shall be used to perform radiation area surveys.

b. **Contamination Instruments:** Instruments used to detect alpha and beta particle emitting radionuclides (Ludlum Model 2 with Model 44-9 GM pancake probe or equivalent capable of reading from 1 to 500,000 counts per minute (cpm) will be used to survey contamination levels of personnel and equipment.

c. **Air Sampling Instruments:** Air sampling devices used to detect airborne contamination in the breathing zone or other area shall be of low-volume design with a volumetric flow rate of at least 50 liters per minute (two cubic feet per minute) and be equipped with a two inch filter holder.

d. **Calibration Requirements:** Operational checks and battery tests will be performed on all instruments used and the beginning and end of each days activities. Exposure and contamination instruments require calibration every six months. Air samplers require calibration once yearly. All instruments require calibration after servicing.

6.9 ALARA PROGRAM

ALARA PHILOSOPHY

In keeping with radiation protection philosophy and current regulatory requirements, Philip Services will maintain all exposure to personnel and the environment ALARA (As Low As Reasonably Achievable). Exposures will be maintained ALARA by minimizing personnel time spent in the vicinity of radioactive sources and by maximizing the distance from radioactive sources. ALARA practices will also include the necessary surveys, safety/radiological meetings and other measures to track, control and dispose of NORM appropriately and in accordance with this License.

PROGRAM STRUCTURE AND RESPONSIBILITIES

The ALARA program consists of all licensee personnel; including workers, supervisors and management. Program structure and responsibilities include:

a. **Licensee Management**

Licensee management has the responsibility to generate and maintain company commitment to ALARA principles and practices. Management must also ensure that audits are performed at a frequency and depth to evaluate the success of this ALARA program and to facilitate necessary changes to ensure that all exposures to personnel and the environment are as low as reasonably achievable. Licensee management shall provide direction to the RSO and NS in the development and implementation of the ALARA program

b. **Radiation Safety Officer and NORM Supervisor**

Developing, implementing and evaluating ALARA procedures are the direct responsibilities of the Radiation Safety Officer and NORM Field Supervisor. The RSO and NS shall take direction from licensee management and oversee the ALARA conduct of all license personnel.

The RSO and NS shall participate in the developing and the administering of the program. He(they) shall also have the authority to enforce any regulations and administrative policies that affect any aspect of the ALARA program. The RSO or NS will be responsible for the continuous surveillance of any areas that apply to the program and addressing the conditions that exist.

c. **Radiation Workers**

All licensee personnel shall adhere to the rules and procedures established by the RSO and/or NS The worker must report any unsafe work practices and/or equipment malfunctions that could result in any increase of radiological hazard to the RSO or his designee. The worker may also make suggestions as to improve the ALARA program.

ADMINISTRATIVE PROCEDURES

In order to maintain consistency within the ALARA program it should be the intent of the managers to perform timely inspections and audits of the procedures and operations. Documentation of the findings help to enhance the program by providing future references to make comparisons during the development of an

effective ALARA program.

a. **Inspections and Audits** : Frequent inspections and audits of operational practices provide management necessary information to conduct an appropriate ALARA program. These inspections shall be made at intervals not to exceed 12 months. Documentation of the inspections and audits shall be maintained.

b. **Basis for documentation of inspections and audits:**(the following serves as a guideline)

1. Employee exposure records
2. Bioassay results
3. Logs of inspections made of the program
4. Documented training program activities
5. Pre-job briefs
6. Survey and sampling data
7. Facility changes and reviews
8. Discussions of the findings during the inspections and audits

c. **Training:** NORM training shall include reference to this program and the concepts this program is based on.

WRITTEN PROCEDURES

Standard procedures shall be written for all practices involving the handling, processing, and storage of NORM. These procedures should contain the proper radiation work practices to minimize exposure for all NORM activities.

OPERATING PROCEDURES

The ALARA Program shall be maintained while performing NORM work activities at a temporary jobsite. It is the responsibility of each individual to adhere to the procedures safe radiological work practices.

a. **Implementation:** During operations, the RSO or NS is responsible for implementing the ALARA program.

b. **Briefings:** Pre-job briefs shall be conducted prior to commencing work to inform workers of any changes in radiological conditions and new ALARA work practices.

c. **Surveys**: Surveys shall be performed in accordance with the license application to identify any changes in radiological conditions.

d. **Engineering controls** : Minimization of potential hazards can be accomplished through the use of engineering controls such as ventilation systems, H.E.P.A. units, wetting of materials to reduce airborne contaminants, etc.

e. **Protection from contaminants:** Protective equipment shall be worn as required to prevent any unnecessary exposure to radioactive materials. It will be the duty of the NORM Field Supervisor to assign the proper protective equipment for tasks associated with NORM.

f. **Access control:** Access to areas containing NORM should be controlled in such a way as to prevent any unnecessary exposures to personnel or the environment.

g. **Worker awareness:** Workers shall be made aware of any changes in the program and procedures pertinent to maintaining safe radiological work practices and be reminded of the basics, minimize time and maximize distance.

EQUIPMENT DESIGN AND FACILITY USE

a. **Facility layout:** The job-site layout should be established in such a manner as to minimize exposure

to personnel while at the same time reducing the risk of exposure to unauthorized persons and the environment.

b. **Equipment placement:** Types of equipment and the placement of the equipment to be used during NORM activities should be considered prior to commencing NORM activities. The placement of equipment should be such that exposures to personnel and the environment are minimized.

c. **Storage of NORM:** Packages containing NORM should be stored in the designated areas and posted in accordance with the license and the LAC 33:XV to prevent unnecessary exposures to personnel.

SECTION 7

SPILL CONTINGENCY PLAN

This spill contingency plan consists of procedures to follow in the event of a spill of NORM materials. The purpose of this plan is to provide coordinated response to spills or accidental discharges of NORM waste. It will be the responsibility of the NS to ensure that all workers are familiar with this plan. The NS will be responsible for ensuring that the spill is stopped and for any subsequent clean-up and decontamination efforts.

7.1 BASIC SPILL PROCEDURE

The spill contingency plan will follow the basic "S.W.I.M.S." procedures as outlined below. All the steps in the below procedure shall be carried out concurrently with each other.

a. **S**top the spill. The primary effort of personnel upon noticing a spill will be to stop the spill. This may be accomplished by such simple operations as shutting a valve, stopping a pump, or tightening a flange or gasket.

b. **W**arn others. It will be the responsibility of the person noticing a spill to warn other workers in the vicinity of the spill of the danger and to ensure that the RSO is notified of the occurrence as soon as possible.

c. **I**solate the area. It will be the responsibility of the persons combating the spill to contain the spill and isolate the area of occurrence to prevent possible inadvertent personnel contamination.

d. **M**inimize spill spread and personnel exposure. Every effort shall be made by the personnel combating the spill to contain the spill to as small an area as possible. Additionally, it will be the responsibility of all personnel combating the spill to minimize their exposure. Exposure to NORM contaminates can be prevented by the wearing of appropriate protective clothing. Time spent in the spill area will be minimized to prevent unnecessary whole body gamma exposure.

e. **S**ecure operations. All operations which could possibly result in the spread of the spill or which could cause the spilled effluent to become airborne shall be immediately stopped.

7.2 NOTIFICATION REQUIREMENTS

The NORM Supervisor on duty will be responsible for determining which spills and incidents need to be reported to the Louisiana Department of Environmental Quality in accordance with the LRR. Incidents requiring notification shall be reported to the following address and phone number:

Louisiana Department of Environmental Quality
Office of Air Quality and Radiation Protection
Radiation Protection Division
P.O. Box 82135
Baton Rouge, LA 70884-2135
(504) 765-0160

Additionally, the NORM Supervisor shall determine if it is necessary to notify one or more of the key individuals of responsibility at PSC and/or the Health Physics Consultants at the below phone numbers.

Rick Wimberley, Corporate Radiation Safety Officer ..... Work (504) 631-3973
..... Home (318) 828-3897

Bryan Wynn, General Manager ..... Work (318) 233-4889
..... Home(318) 981-3324

Upon detection of a spill or incident requiring notification the RSO will give verbal notification to the Radiation Protection Division.

As a minimum a verbal spill/incident report shall include the following:

1. Name of the NORM Supervisor reporting the spill and/or incident and a telephone number where he may be reached.

2. Location of the spill/incident.

3. Time and date the incident began and ended, or the estimated time of continuation if discharge is continuing.

4. Approximate volume of the spill.

5. Best estimate of the amount of NORM-contaminated material lost, including the method for calculating the spill volume.

Within seven days following a verbal report, a written report shall be submitted to the Radiation Protection Division. The written report shall include:

1. Name of the person who is filling the written report.

2. Time and date of the verbal notification and name of the person who made the verbal notification.

3. Date and time that the spill or incident occurred.

4. Details of the circumstances and events that caused the incident.

5. Best estimate of the amount of NORM-contaminated material lost, including the method for calculating the spill volume.

6. Description of the remedial action taken to recover any NORM contaminated material and to restore any contaminated area to its original state.

7. Procedures or measures which have or will be adopted to prevent the recurrence of the incident.

7. 3 SPILL CLEANUP

a. **Non-Vacuumable Materials:** In the unlikely event that a spill might migrate or occur over lands not covered by a plastic sheet or Visqueen material, contaminated grounds will be removed with shovels, trowels, loaders, backhoes or other suitable equipment. The contaminated ground will be removed and placed in DOT 17-H steel storage drums or equivalent storage containers. The drums shall be properly labeled in accordance with Chapter 4 of the Louisiana Radiation Regulations. The material from these drums will then be added to the material currently being mixed for injection or disposal.

b. **Decontamination Level:** The contaminated area will be cleaned until the average reading over a 100 meter square area is background or at the pre-job(baseline) levels. The area will be surveyed with a Ludlum Model 3 MicroR meter or equivalent to determine the extent of the contamination.

c. **Soil Samples:** Soil samples will be taken from affected areas and sent for analysis to ensure that all contaminants have been removed from the soil.

d. **Equipment Cleanup:** All equipment will be cleaned and surveyed for both loose surface and fixed contamination. Equipment will be cleaned until loose surface contamination on all accessible surfaces is less than twice background. (Maximum background count rate allowed is 50 cpm). Any equipment found to have fixed contamination at or greater than twice background as measured in microroentgen per hour shall be controlled as NORM contaminated.

Cleanup operations of spills to lands will cease once laboratory results on the soil show that the soil is contaminated at concentrations less than 5 picocuries per gram or to levels at or less than the baseline conditions.

SECTION 8

REPORTING AND RECORDKEEPING

Copies of all records associated with a PSC NORM activities will be kept on location at the jobsite for the duration of the job. All records shall be kept legible and master copies of all records shall be kept at the PSC home office. Records and information to be retained are pursuant to LAC 33:XV §451.

The following records shall be recorded and maintained for a period of not less than 5 years:

1. Training records of all supervisory and operational personnel.

2. All radiation surveys conducted before, during and after operations on Temporary Jobsites.

3. All environmental monitoring records, including air and soil laboratory results.

4. All records of decontamination and/or spill cleanup operations.

5. Records of all material processed at a specific facility. This shall include the generator of origin, date shipment was received, the number of drums or packages received, and the maximum dose reading and smearable contamination reading on each drum or package.

The following material must be retained for an indefinite period:

1. Records of all personnel monitoring data.

2. Records of the results of surveys used to evaluate release of NORM effluent to the environment.

3. Records of disposal of radioactive material.

SECTION 9

RESPIRATORY PROTECTION PROCEDURE

9.1 PURPOSE

This procedure delineates precautions and procedures for the use of respiratory protection equipment. Included in this procedure are items concerning selection, use, maintenance, and issuing of respirators. This procedure also addresses Medical and Bioassay evaluations.

9.2 RESPONSIBILITIES

1. The Radiation Safety Officer (RSO) is responsible to ensure that all aspects of this procedure are implemented. The RSO is responsible to ensure that all the necessary materials to implement this procedure are available, that potential wearers of respirators are properly trained and knowledgeable in the use of respirators, that respirator maintenance is accomplished as provided by this procedure, and that respirators are properly selected, issued, and used. It is also the responsibility of the RSO to determine the need for medical and bioassay evaluations.

2. All personnel wearing respirators are responsible to ensure that they are trained and knowledgeable in the use and maintenance of respirators. Personnel should also be knowledgeable in the requirements to wear respirators. They should ensure that they maintain themselves qualified to wear respirators.

3. It is the responsibility of all personnel to conduct themselves and their work assignments in a fashion so as to minimize, to the greatest extent possible, the need for respiratory protection. Even while wearing respirators it is each worker's responsibility to minimize the amount of radioactive material disturbed into the air.

9.3 MATERIALS

The equipment and materials necessary to implement this procedure vary. The following list serves as a guideline of items that should be kept on hand.

- NIOSH/MSHA Approved Respirators
- Respirator Filters
- Irritant Smoke Tubes
- Air Sample Filters
- Ziplock bags(for A/S filters)
- Respirator Qualification Sheet
- HEPA Ventilation Unit
- Iodine cleaning solution
- Resp. Repair Kit
- Air Sampler
- Air Sample Data Log
- Alcohol wipes
- Faceshields

9.4 OPERATING WITH RESPIRATORS

9.4.1 Respiratory Protection Philosophy

1. Respirators will be prescribed only when it is likely that a potential for the inhalation or ingestion of radioactive material exists at levels above those prescribed in section 102 of LAC 33:XV, or for use in oxygen deficient or toxic contaminant confined space entries. Respirators will not be a contamination control method nor will they be used as a substitute for engineering or process controls. Respirators will be used as a last choice when other alternatives are not feasible, physically or economically.

2. To the greatest extent practical, PSC, will incorporate process or engineering controls to limit concentrations of radioactive materials in the air to levels below those specified in LAC 33:XV Chapter 4 Appendix A. These controls will also be used to assist in confined space entries.

These controls will include, but are not limited to, system venting, system flushing, and the use of containments and HEPA filtered ventilation systems.

3. Contaminated equipment or areas may be wiped down or decontaminated to limit the potential for airborne radioactive materials or toxic contaminants and the need for respirators.

4. Good work practices will be incorporated so as to limit the potential for airborne radioactive materials or toxic contaminants and the need for respirators.

9.4.2 Respirator Selection

1. When personnel are to enter an Airborne Radioactivity Area or a confined space, or are to perform work which might disturb radioactive materials into the air, the use of a respirator may be required. The RSO, or NORM Supervisor will determine when respirators are justified for any maintenance activity and shall use the following considerations:

    1. Nature of the maintenance activity.
    2. Levels of NORM contamination.
    3. Duration of the task.
    4. The use and effectiveness of engineering and process controls.
    5. The potential for decontamination.
    6. Any other hazards present such as hydrogen sulfide, ammoniums, or oxygen deficiency.

2. The RSO will select the appropriate respirator so as to ensure that the average concentration of radioactive material inhaled during respirator use does not exceed the concentrations specified in Appendix B of LAC 33:XV Chapter 4. In the case of confined space entries, respirators will be selected for oxygen deficient atmospheres and to limit toxic contaminant exposure to levels below the PEL.

3. Half-face, full face negative pressure, supplied air, and self contained air respirators may be used, depending on the type and levels of contaminants encountered. For most activities the half face respirator will provide sufficient protection, however, for environments oxygen deficient or contaminated with ammoniums, hydrocarbons, or hydrogen sulfide, the RSO may determine that the self-contained breathing respirator is warranted.

4. As discussed in section 9.4.1 respirators will be used only when necessary to limit the potential ingestion or inhalation of radioactive materials or toxic contaminants, or in oxygen deficient atmospheres. When it is necessary or warranted to use respirators it is important to select a respirator that will adequately protect the worker but will not unnecessarily burden him. Negative pressure full-face respirators and SCBA's, in particular, increase worker fatigue and limit the time the worker may work safely.

5. If the RSO determines that respirators area warranted based on the items in 9.4.2.1 above, the RSO will specify the type of respirator and for what work activity it is to be worn on the Radiation Work Permit(RWP) or on the confined space permit.

9.4.3 Respirator Fit Test

1. To ensure a given respirator affords a worker the prescribed protection, fit tests will be performed by every potential respirator wearer with any and every respirator type that might be worn (i.e half face, full face negative pressure, SCBA, etc.)

2. Fit tests will tests will be performed initially, prior to respirator use, and with refresher training.

3. Qualitative fit tests are performed by donning the respirator, performing a negative pressure face seal test, and then testing the face seal area with an irritant or aroma smoke. By covering the face seal area with the irritant or aroma smoke and breathing naturally the respirator wearer immediately recognizes whether his/her respirator fits properly.

4. Fit test dates should be recorded on the Respirator Qualification Sheet.

9.4.4 Issuing Respirators

1. Prior to issuing anyone a respirator, the RSO, or his designee, will determine that the individual is qualified to wear that type of respirator.

2. As a minimum, the following items will be verified for each wearer.

    1. Physical examination
    2. Fit test
    3. Training
    4. Type and size of respirator, if appropriate

3. Either the RSO or a designated individual will verify that workers are qualified to wear a given type of respirator.

4. Respirator qualifications need only be verified once during a given job as long as any individual's qualifications will not expire during the job.

9.4.5 Using Respirators

Inspection

1. Each person issued a respirator will be required to inspect the respirator prior to its use to ensure that it is in good operating condition.

2. The inspection should include the tightness of connections and the condition of the harness, the coverings, the filter(s), the canister(s), and the cartridge(s).

3. Each respirator wearer should also ensure that the filter, cartridge, or canister being used is applicable for radioactive particulates or radionuclides. The filter, cartridge, or canister should be specified as 99.97% efficient for protection against radioparticulates or radionuclides; or for use with organic vapors and mists.

Seal Tests

1. To ensure proper protection the wearer of a respirator will check the seal of the facepiece prior to each use by performing a negative pressure seal test.

2. The negative pressure sealing test is performed by covering the respirator's canister or filter inlets with the palm(s) of the hands. The wearer then inhales gently and holds his breath for at least 10 seconds. If the facepiece collapses slightly and no inward leakage of air into the respirator is detected, the respirator fit is considered satisfactory.

3. No one is authorized to use any respirator without first performing a satisfactory face seal test.

Relief From Use

1. Each and every respirator user may leave the area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating condition, or any other condition that might require relief.

2. Relief from use will be included as part of the pre-job brief.

9.4.6 Air Monitoring

Air monitoring will be conducted as prescribed in Section 6.d.

9.5 MEDICAL & BIOASSAY EVALUATIONS

Physicals

1. Workers will be evaluated by competent medical personnel to ensure that they are physically and mentally able to wear respirators. These evaluations will be performed initially and at least annually thereafter.

Bioassays

2. Significant intakes by ingestion or inhalation are presumed to occur only as the result of accidents, inadvertence, poor procedure, or similar conditions.

3. Intakes will be evaluated and accounted for by techniques appropriate for the occurrence.

4. Techniques measuring the intake of radioactive material into the body may include whole body counts (the measurement of radioactivity in the body), bioassays (the measurement of radioactivity excreted from the body), or any combination thereof as necessary for timely detection and assessment of individual intakes.

5. The RSO will determine the need for bioassays and/or whole body counts.

9.6 RESPIRATOR MAINTENANCE(the following serves as a guideline)

Cleaning and Disinfecting

1. Respirators will be cleaned after each use with alcohol or betadine swabs.

2. At the end of each workday the respirators will be washed in soapy water and let to dry.

3. Respirators will be maintained in bags or some other protective enclosure to ensure they do not become contaminated.

Inspection and Repair

4. Respirators will be inspected prior to use, when cleaned and both during and after the day's work.

5. Any respirator not in working condition will be removed from use and repaired.

Storage

6. Respirators will be stored in a clean dry area, preferably out of direct sunlight.

7. Respirators will also be stored in plastic bags or equivalent to ensure they do not become contaminated.

NORM Respiratory Protection

When qualifying your branch specific programs with a third party compliance company it is mandatory that this submittal be completed and forwarded to the designated representative

Submitted By _____ (Branch) **at** _____ (Location).

Program Administrator: _____ (Name and Title) **Date:** _____

Respirator Type: _____ **Brand:** _____ **Model:** _____ **Cartridge:** _____

Alt. Respirator: _____ **Brand:** _____ **Model:** _____ **Cartridge:** _____

Employees Fit Tested: _____ **Qualitative** _____ **Quantitative (Check one)**

Name	Social Security Number	Date	Size of Respirator

Employees Pulmonary Function Tested

Name	Social Security Number	Date	Passed /Failed	Size of Respirator

The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

***Philip Services will not dictate to the specific branches the brand or model of respirator to be utilized but will require the selection be from the following:**

3-M	**Scott**	**Drager**	**MSA**
North	**Protec**	**A.O (American Optical)**	

DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF AIR QUALITY AND RADIATION PROTECTION

RADIOACTIVE MATERIAL LICENSE

LOUISIANA RADIATION PROTECTION DIVISION
P.O. BOX 82135
BATON ROUGE, LOUISIANA 70884-2135

Pursuant to the Louisiana Environmental Quality Act (Louisiana Revised Statutes 30:2101 et seq.) and the Louisiana Radiation Regulations, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess and transfer radioactive material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in the Louisiana Revised Statutes 30:2105 of the Louisiana Nuclear Energy and Radiation Control Law, and is subject to all applicable rules, regulations, and orders of the Louisiana Radiation Protection Division now or hereinafter in effect, including the Louisiana Radiation Regulations (LAC 33:XV) and to any condition specified in the license.

LICENSEE	LICENSE NUMBER	EXPIRATION DATE
Philip Services/Louisiana, Inc. 138 Tiger Court Morgan City, Louisiana 70380 Attention: Rick Wimberley, Corporate Radiation Safety Officer	LA-6229-S01	July 31, 2002
	AMENDMENT NUMBER: 15	PREVIOUS AMENDMENTS ARE VOID
	THIS LICENSE ISSUED PURSUANT TO AND IN ACCORDANCE WITH: Letter SIGNED BY: Michael W. Duke DATE: June 27, 2000	

RADIOISOTOPE ELEMENT	RADIOISOTOPE MASS NO.	MAXIMUM NUMBER OF SOURCES	MAXIMUN ACTIVITY * OR QUANTITY PER SOURCE	SEALED SOURCE IDENTIFICATION / CHEMICAL FORM – PHYSICAL STATE	STORAGE CONTAINER OR EXPOSURE DEVICE / AUTHORIZED USE
Ra	226/ 228 and daughters	Total	As Needed	Any Chemical Form Radioactive Material From Oil/ Gas Drilling & Production, Chemical Processing, and Related Activities	Decontamination & Maintenance of Equipment, Facilities, Tanks/Vessels, Tubular Goods, Pipe (dry/wet method), and Land; Encapsulation, Volume Volume Reduction; NORM Treatment
Any	3-247	Total	2 Curies	Any Chemical Form Radioactive Material From Oil/ Gas Drilling & Production, Chemical Processing, and Related Activities	Decontamination of tanks, vessels, equipment, pipe, tubular goods, & facilities; Remediation of lands & soils; Storage for decay

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1. Radioactive material shall be handled and used only at Philip Services/ Louisiana, Inc. 138 Tiger Court, Morgan City, Louisiana (Highway 662, Bayou L'ourse Road, near Amelia, Louisiana), and at temporary jobsites of the licensee in and offshore Louisiana.

2. Prior to operation at temporary jobsites, the licensee shall comply with applicable provisions of other regulations of the Department of Environmental Quality and obtain all applicable state and local permits.

* pCi-picocuries; uCi-Microcurie; mCi-Millicurie; Ci-Curie

RA M 11

Bliss M. Higgins
Assistant Secretary

DATE: July 22, 2000

DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL SERVICES
PERMITS DIVISION
BATON ROUGE, LOUISIANA 70884-2135

LICENSEE	LICENSE NUMBER	AMENDMENT NO.	EXPIRATION DATE
Philip Services/Louisiana, Inc.	LA-6229-S01	15	July 31, 2002

RADIOISOTOPE		MAXIMUM NUMBER OF SOURCES	MAXIMUM ACTIVITY* OR QUANTITY PER SOURCE	SEALED SOURCE IDENTIFICATION	STORAGE CONTAINER OR EXPOSURE DEVICE
ELEMENT	MASS NO.			CHEMICAL FORM--PHYSICAL STATE	AUTHORIZED USE

3. The Radiation Safety Officer for this license is Rick Wimberley.

4. Upon beginning a new temporary jobsite involving commercial NORM services, the licensee must notify the Department using the Form RPD-35.

5. The participation in the disposal of NORM into the wellbore of a well to be plugged and abandoned shall have prior written approval from the Assistant Secretary of the Office of Environmental Services.

6. No individual shall handle radioactive material until satisfactorily completing Department accepted training in the safe handling of radioactive materials and who has been designated by Rick Wimberley.

7. Pursuant to LAC 33:XV.104 and Chapter 4 of the Louisiana Radiation Regulations, records of receipt, transfer, and disposal of NORM-contaminated material shall be maintained for five years for inspection by the Department.

8. A quarterly report of job activities shall be submitted to the Department which includes customer name, jobsite location and dates, amount of waste generated, and date the waste was transferred. Such reports shall be submitted to the Department no later than 30 days after the end of each calendar quarter.

CONFIDENTIAL

9. A. Contamination surveys appropriate to the job shall be performed at each temporary jobsite at the beginning and conclusion of every job, including in the vicinity of waterways.

B. Contamination surveys shall be performed monthly at 138 Tiger Court, Morgan City, Louisiana (Highway 662, Bayou L'ourse Road, near Amelia, Louisiana) on the bed of Bayou Boeuf, and in the dock/barge area where NORM contaminated equipment and containerized NORM waste may be loaded or unloaded.

C. Survey records shall be maintained for five years for inspection by the Department.

10. Transfer of NORM, NORM waste and NORM contaminated equipment shall only be to persons specifically licensed to receive such material or to persons generally licensed under LAC 33:XV.1408.

11. The licensee is authorized for decay in storage of licensed radioactive waste (other than NORM) received from customers resulting from the decontamination of tanks, vessels, equipment, pipe, tubular goods, and facilities or remediation of lands and soils, provided that the maximum amount does not exceed 2 Curies.

*μCi-microcurie; mCi-millicurie; Ci-Curie

DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL SERVICES
PERMITS DIVISION
BATON ROUGE, LOUISIANA 70884-2135

LICENSEE	LICENSE NUMBER	AMENDMENT NO.	EXPIRATION DATE
Philip Services/Louisiana, Inc.	LA-6229-S01	15	July 31, 2002

RADIOISOTOPE ELEMENT	RADIOISOTOPE MASS NO.	MAXIMUM NUMBER OF SOURCES	MAXIMUM ACTIVITY* OR QUANTITY PER SOURCE	SEALED SOURCE IDENTIFICATION / CHEMICAL FORM--PHYSICAL STATE	STORAGE CONTAINER OR EXPOSURE DEVICE / AUTHORIZED USE

12. Containerized NORM waste shall not be stored for more than ninety (90) days at either a temporary jobsite or at the permanent facility located at 138 Tiger Court, Morgan City, Louisiana (Highway 662, Bayou L'ourse Road, near Amelia, Louisiana).

CONFIDENTIAL

13. Containerized waste stored for decay shall be held for no less than ten (10) half lives before disposal. Waste held for decay shall be stored only at the permanent facility located at 138 Tiger Court, Morgan City, Louisiana (Highway 662, Bayou L'ourse Road, near Amelia, Louisiana.

14. Documentation supporting all NORM activities shall be maintained for five years for inspection by the Department. This includes, but is not limited to, training, fit tests, and safety meetings.

15. Except as specifically provided otherwise by this license or LAC 33:XV, the licensee shall possess, handle, and use radioactive material in the schedule of this license in accordance with statements, representations, and procedures contained in the licensee's application dated May 3, 1994 and in all subsequent correspondence.

DLL:bt

*μCi-microcurie; mCi-millicurie; Ci-Curie

PAGE 1 SIGNED BY:	Bliss M. Higgins	DATE	PAGE OF	PAGES